Amended Petition to the Environmental Quality Council for Designation of an Area Known as Sand Creek as Very Rare or Uncommon

Under the Authority of the Wyoming Environmental Quality Act, W.S. §35-11-112

and

Chapter VII of the Wyoming Department of Environmental Quality Rules of Practice and Procedure

Submitted to the Chairman of the Environmental Quality Council

on

August 12, 2009

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This petition is formatted according to the numbering scheme found in Section 6(a) of Chapter VII of the Department of Environmental Quality Rules of Practice and Procedure. A legal brief outlining the State of Wyoming's authority to render Very Rare or Uncommon designations on lands of federal ownership accompanies this petition as Addendum 1.

Section 6(a)(i) The name, address, phone number, and fax number for the petitioner.
Petitioner:

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Section 6(a)(ii) The **location by legal description**, including section, township and range, of the area the petitioner is proposing for designation.

The petition is for surface lands managed solely by the United States Forest Service (USFS) in Crook County, Wyoming, 6th Principal Meridian:

T52N R60W
Sec. 19 SW¼ ; S½ NW¼; W½ SE¼
Sec. 30 W½; SE¼; W½ NE¼
Sec. 31

T52N R61W
Sec 24 SE¼ SE¼ ; SW¼ SE¼
Sec. 25 E½; SW¼; S½ NW¼
Sec. 26 SE¼ ; S½ NE¼
Sec. 35 E ½; E ½ SW¼
Sec. 36

T51N R61W
Sec. 1; 12; 24; 25; 11; 13
Sec. 2 E½; SW¼ ; NE¼ NW¼ ; SW¼ NW¼ ; SE¼ NW¼
Sec. 3 SE¼ SE¼
Sec. 10 N½ NE¼
Sec. 14 E½; NW¼ ; NW¼ SW¼ ; NE¼ SW¼ ; SE¼ SW¼
Sec. 23 E½ E½
Sec. 25 N ½; N ½ SW¼; SE¼
Sec. 36 S½ NE¼; N½ SE¼

T51N R60W
Sec. 6; 7; 18; 19; 20; 28; 29; 30; 32; 33
Sec. 8 SW ¼; W½ NW¼
Sec. 21 S ½; S½ N½, NW¼ NW¼
Sec. 17 W½; NW¼ SE¼; S½ SE¼
Sec. 31 N½; N½ SW¼ ; SE¼

T50N R60W
Sec. 4 N½; N½ S½
Sec. 5 N½
Sec. 6 NE¼ NE¼ ,

and excludes privately owned lands in the form of patented mining claims described in the Crook County, Wyoming plat as 5160 28 1 00 001.00, 5160 21 2 00 002.00, 5160 33 1 00 004.00, 5160 28 1 00 005.00, 5160 17 2 00 007.00, 5160 21 3 00 008.00, 5160 28 1 00 009.00, 5160 21 4 00 010.00, 5160 28 1 00 012.00, 5160 04 1 00 551.00, 5160 28 4 01 001.00, and 5160 28 4 01 002.00, with legal descriptions as follows:

- Certain mining claims or premises, known as the Washtenaw, Frankfort, Mountain Side, Tallaho, Florence, Lafayette No. 2, Lafayette No. 3 and Hartford lode mining claims, designated by the Surveyor General as Survey No. 282, embracing a portion of Sections

twenty-eight and thirty-three in Township fifty-one north of Range sixty west of the sixth Principal Meridian, Crook County, Wyoming;

- Certain patented mining claims located in Township 51 North, Range 60 West, Section 21 and more particularly described as the Silverwave, Patent # 18458, M.S. 39; American Eagle, Patent # 21584, M.S. 44; and Dakota Lode, Patent # 18458, M.S. 39, Crook County, Wyoming.

- Certain patented lode mining claims located in Township 51 North, Range 60 West, Sections 21 and 28, designated as Mineral Survey No. 345, Patent # 45587, more particularly described as Humbolt; Lessing; Attilla; Attilla No. 1; Attilla No. 2; Uhland; Arcade; Arcade # 1; Arcade # 2; and Arcade No. 3, Crook County, Wyoming..

- Certain lode and placer mining claims situated in the Hurricane Mining District, in Sections 28, 29, and 32 of T51N R60W, 6th Principal Meridian, Crook County, Wyoming, more particularly described as the Brown, Ironside, # 41342, M.S. 161; McCleery, # 41342, M.S. 161; Thompson, Patent # 41342, M.S. 161; Continental, Patent # 30000, M.S. 75; Little Hughie, Patent # 30000, M.S. 75; London, Patent # 30000, M.S. 75; Eastern, Patent # 143575, M.S. 397; Hub, Patent # 143575, M.S. 397; Eclipse, Patent # 41342, M.S. 161; Fox Lode, M.S. 398; Frankfort, Patent # 41342, M.S. 161; Goldcoin, Patent # 41342, M.S. 161; Goldbank, Patent # 41342, M.S. 161; Goldfinch, Patent # 41342, M.S. 161; Interocean, Patent # 39932, M.S. 45; Interocean #2, Patent # 41317, M.S. 163; Interocean #3, Patent # 41317, M.S. 163; Sand Creek & Welcome Gulch, Patent # 22662, M.S. 46; Thompson, Patent # 41342, M.S. 161; and Vanderbilt Tract, Patent # 30000, M.S. 161, Crook County, Wyoming.

- Certain lode and placer mining claims situated in the Hurricane Mining District, in Sections 20, 21, and 28 of T51N R60W, 6th Principal Meridian, Crook County, Wyoming, more particularly described as the Blacktail, Patent # 29920, M.S. 74; Creston, Patent # 21673, M.S. 42; Hungry, Patent # 21674, M.S. 41; January, Patent # 29920, M.S. 74; Napoleon, Patent # 30000, M.S. 40; and Parnell, Patent # 21517, M.S. 43, Crook County, Wyoming..

- A certain patented mining claim located in Section 21 of Township 51 North Range 60 West, 6th P.M., known as the New Orleans, M.S. 589, Crook County, Wyoming..

- A certain patented mining claim known as the Ypsilanti Fraction, U.S. Mineral Survey No. 282, situated in T51N R60W of the 6th P.M., Crook County, Wyoming.

- A certain patented mining claim known as the Florence Mining Claim, M.S. 282, Lots 1 and 2, located in T51 N R 60W Sections 28 and 33, Crook County, Wyoming.

- A certain placer mining claim known as the Ada May No. 3, Survey No. 145, embracing a portion of sections 17 and 18, Township 51 North, Range 60 West, Crook County, Wyoming.

Section 6(a)(iii) The **names by which the area is known locally**:

Portions of the area are known as Upper Sand Creek Canyon, Corral Creek, Idol Spring, Idol Gulch, Dugout Gulch, Thompson Gulch, Bull Hill, Welcome, Sand Creek Crossing, Cement Ridge, Spotted Tail Gulch, Pole Cabin Spring, Pole Cabin Gulch, Cranberry Spring, and Green Hill.

Section 6(a)(iv) The distance of the area to the nearest city or town, and the county in which the area is located: The petitioned area is in Crook County, Wyoming. Beulah, Wyoming is the nearest town, approximately 5.5 miles to the north of the petitioned Very Rare or Uncommon area. Sundance, Wyoming is the nearest incorporated town, approximately 11 miles west, and Spearfish, South Dakota is approximately 11.5 miles northeast of the petitioned area.

Section 6(a)(v) Original **USGS topographic maps** showing the area in question which reflect the surface land ownership pattern (private, state, federal) in the area are attached to this petition and titled Map 1 (quad A), Map 1 (quad B), and Map 1 (quad C).

Section 6(a)(vi) Below is a list of the **names and addresses of the surface and mineral owners whose lands are included within the area proposed** for designation, along with a description of the ownership interest of each surface and mineral owner, including a legal description of the lands in which each person has an interest:.

Surface Owners and Mineral Owners inside the proposed Very Rare or Uncommon area

Name/Company		Address	City	State	Zip	
United States Forest Service	All surface lands	1019 North 5th Street	Custer	SD	57730	
Description of Lands: All surface lands within the area being petitioned are owned by the United States of America and are managed by the United States Forest Service. See legal description above in section (ii). Some private lands are surrounded by the petition area. These are listed below in the list of adjacent landowners and private inholders.						
U.S. Dept. of Interior Bureau of Land Management (see note 1)	Minerals	5353 Yellowstone Road	Cheyenne	WY	82009	
Description of Lands: Minerals within the area being petitioned are owned by the United States of America (with the exception of the Moskee Land Corporation tract listed immediately below) and managed by the U.S. Department of Interior Bureau of Land Management, with the Cooperation of the United States Forest Service. See legal description above in section 6(a)(ii).						
Moskee Land Corporation, LLC	Minerals	PO Box 939	Wayzata	MN	55391	
Description of Lands: Minerals under T51N, R61W Section 2: SW/4NE/4; SE/4NW/4; Lot 3 (aka Tract 37); SE/4NE/4; N/2SE/4; NE/4SW/4 (aka Tract 40); S/2S/2 (aka Tract 41) aggregating 440 acres; T52N, R61W Section 35: SE/4SW/4, comprising 40 acres; T52N R 60 W Section 30: W/2SE/4: E/2SW/4 – aggregating 160 acres, and also rights of way for road or other access to facilitate mining and other uses on these properties. See also complete list of unpatented claims and owners below.						
Note 1: There are unpatented mining claims in the petition area. A list of the claimants holding these unperfected mineral claims is attached to this petition on the following page, with legal descriptions in Appendix A.						

In addition, the following claimants hold **unpatented mining claims** within the proposed Very Rare or Uncommon Area. While these are not strictly speaking mineral owners (ownership accrues to patented mining claims only, while a claimant holds an exclusive right to explore for and extract minerals from a tract of land), we provide the names and addresses of mining claimants in the table below. A list of claims with legal descriptions is found in Appendix A accompanying this petition.

Claimant	Address	Phone
Sundance Engineering Inc.	1407 Charles St. Spearfish, SD 57783	
Bentz Bruce	N 215 2nd St. Riverdale, ND 58565	
Ottema Donald R	PO Box 364 Whitewood, SD 57793	
Ottema Douglas M	1218 Easy Street Whitewood, SD 57793	
Bronco Ck Mining and Exploration	1815 East Winsett Street Tucson, Arizona 85719-6547	
Johnson David	Bronco Creek Exploration employee-same as above	
Mineral Hill Venture	PO Box 33010 Austin, TX 78764	
Jensen Eric	1916 E. Edison St. Tucson, AZ 85719	
Hubbard Todd	1407 W Charles St. Spearfish, SD 57783	
Pope and Talbot, Inc.	Randy Lewis, Newcastle Box 370	(307) 7 4481
	Corporate Address- 1500 SW First Ave. Suite 200 Portland, OR 97201	
Thomas C. Barber et al.	5111 Rocky Point Dr Gillette, WY 82718-8402	
Mary L. Cullum	48 Montgomery St. Custer, SD 57730	
Erik R. Flesch or Flesca	Bronco Creek Exploration employee-same as above	
Newmont NA Exploration Unlimited	555 Fifth St. Elko NV, 89801	
Board of Crook Cty Commissioners (Public)	PO Box 37 Sundance, Wyoming 82729-0037	
BLM	5353 Yellowstone Road Cheyenne, WY 82009	
Wells Fargo, NA	131 W. Hudson St. Spearfish, SD 57783	605-64 2723
First Western Bank, Sturgis	1200 Main St. PO Box 9 Sturgis, SD 57785	605-34 2562
First Interstate Bank	222 S. Gillette Ave. Gillette, WY	
Osier Terrence: Strathmore Resources US	2420 Watt Court Riverton, WY 82501	

In addition, while grazing permittees are considered lessees rather than owners (and hold a 10-year revocable privilege to graze publicly owned forage), the table below provides an accounting of lessees who have a grazing allotment that includes lands within the proposed area. All of the permittees below also lease lands contiguous to the proposed area.

Sand Creek Allotment		
	Charles and Sallie Nicholas	20026 Bear Ridge Rd., Spearfish, SD 57783
W.W. Thompson and Sons, Inc.	Aaron Thompson	10326 Upper Redwater Rd., Spearfish, SD 57783
Haiar Enterprise, Inc.	Keith Haiar	159 Homestake Rd., Spearfish, SD 57783
Idol Allotment		
W.W. Thompson and Sons, Inc.	Aaron Thompson	10326 Upper Redwater Rd., Spearfish, SD 57783
Bush Ranches	Dewey Turbiville	P.O. Box 861, Sundance, WY 82729
Betty J Durfee Trust	Jett Schloredt	P.O. Box 1064, Sundance, WY 82729

Willow Springs Allotment		
Watson Land, LLC	Doug Watson	171 Moskee Road, Sundance, WY 82729
Cement Ridge Allotment		
	J. Daniel and Renee Schenk	19757 Red Hill Rd., Spearfish, SD 57783

Finally, while by law easements convey a right of a non-owner to access and use a property owner's property, rather than land or mineral ownership pursuant to Section VII, the table below lists easement holders within the proposed area.

Location	Easement Holder	Address	Type of Easement	
T52N R61W Sec. 25, 26	Red Canyon Ranch Property Owner's Assn. Inc.	c/o Cecilia Rongstad, P.O. Box 231, Beulah, Wyoming 82712	Forest Road Easement	
T52N R61W Sec.26 or Sec. 28	The Range Telephone Cooperative	P.O. Box 127, Rosebud, MT 59347	telephone	Note: This is almost certainly a recording error and not in fact within the proposed area.
T52N R60W Sec. 19, T52N R60W Sec. 30, T52N R62W Sec. 24, 25, 26	U.S. Forest Service	1022 North 5th Street Custer, SD 57730	Road Easements	Note: Granted from Homestake Mining to U.S. Forest Service, but fee title for these sections later transferred to USFS, so USFS now holds easements across USFS property.

Section 6(a)(vii) A concise statement of the reasons the area is alleged to be very rare or uncommon and a description of the archaeological, surface geological, historical, wildlife, botanical, or scenic attributes of the area. We present the Concise Statement first in subsection (A) followed by a full description of the attributes and values in subsection (B).

(A) **Concise Statement of the Reasons Sand Creek is Very Rare or Uncommon:**

Present in the Sand Creek area being petitioned is a remarkable convergence of rare and uncommon values. Addressing the specific criteria for designation from Section 6 and Section 11 of Chapter VII of the Rules of Practice and Procedure, these values include:

(1) Over 4,000 acres of mule deer crucial winter range, which are considered "vital" under the Wyoming Game and Fish Commission mitigation policy, a specific eligibility criterion of the Very Rare or Uncommon Rule . (See Appendix E)

(2) Seven rare vegetation types, including types in pristine condition for which pristine stands are unusual (plus 80 rare plant species), another specific eligibility criterion in the Rule.

(3) A population of the finescale dace, an extremely rare native fish. This fish is ranked Native Species Status NSS1 ("on-going significant loss of habitat" and "populations are greatly restricted or declining – extirpation appears possible") by Wyoming Game and Fish Department (hereafter WGFD) and is assigned a mitigation category of "vital" by the Wyoming Game and Fish Commission, an explicit eligibility criterion of the Rare and Uncommon rule (mapped at Appendix B).

(4) The area could affect, and WGFD is on-record expressing concerns directly related to, the Blue Ribbon, Class 1 nationally important trout fishery directly downstream on Sand Creek. This is a specific Rare and Uncommon criterion. In 2005, the downstream fishery contained 6,300 trout per mile with values as high as 8,800 fish per mile in 2002 and 10,700 fish per mile in 1999. The fishery is hydrologically connected to the petition area on the surface, occurring in the same channel/watershed. It is believed to be connected through subsurface waters as well.

(5) Numerous "fragile lands" are present, such as vegetated wetlands, seeps and springs, and concentrations of ecological and aesthetic features (see Appendix J). The extremely high number (71 species) of rare plants present easily meets the "concentration of ecological features" criterion. Additionally, scientists consider Sand Creek to be an Ice Age plant refuge where the cooler and moister conditions allowed populations of boreal plants to survive as the climate warmed at the end of the last ice age, when similar vegetation retreated far to the north. Some of the plants in Sand Creek are separated by hundreds of miles from their current primary populations in the forests of Canada. Thus Sand Creek provides a rare glimpse into the past and can serve as an important living laboratory of substantial scientific value. The aesthetic values of the area have been found by prior analyses to be "outstandingly remarkable," "some of the most scenic landscape features in the Hills," and "spectacular scenery," which would be apparent to a reasonable person. (Marriott and Faber-Langdoen, 1999).

(6) The U.S. Forest Service has recognized some of the rare and uncommon values present in Sand Creek by designating in its Forest Plan an upstream (southern) portion of Sand Creek and Dugout Gulch as "Botanical Areas" and a large part of the downstream portion as a "Late Successional Forest Landscape" (see Apendix I for map). In the most comprehensive and most recent vegetation inventory of the Black Hills, scientists designated a large portion of the Sand Creek petition area as an "exemplary site" because of the presence of high-quality stands of native vegetation. (Marriott and Faber-Langdoen, 1999).

(7) The Wyoming EQC also has previously recognized the rare or uncommon values of the Sand Creek waterbody by designating it a Class 1 Water (see Appendix J). Sand Creek is one of only 15 rivers and lakes in the entire state designated by name as Class 1—the highest and most protective designation that can be applied to a water body within the state of Wyoming. Class 1 Waters are river/stream segments and lakes designated specifically by the EQC "based on value determinations" after considering the aesthetic, scenic, recreational, ecological, agricultural, botanical, zoological, municipal, industrial, historical, geological, cultural, archaeological, fish and wildlife…" and other values. The local and statewide public has supported full protection of the values of Sand Creek via Class 1 designation of the Creek portion flowing through the petition area when attempts have been made to downgrade the classification or allow placer mining in the creek bed.

(8) The area contains surface geological features including sink and rise features on Sand Creek itself and on Pole Cabin Gulch.

(9) Numerous unique scenic values are present in the area.

(10) Historic values in the form of the Cement Ridge historic fire lookout are present in the area.

In summary, biologists, botanists, ecologists, and other scientists have long recognized the very rare or uncommon values present in Sand Creek, and have repeatedly called for their protection. This petition is submitted to gain such protection for this remarkable area.

(B) A description follows of the wildlife, botanical, geological, historical, and scenic attributes of the area, arranged in the order found in Section 11, Criteria for Designation, in Chapter VII of the Rules of Practice and Procedure, subsections (d) for wildlife values, (f) for botanical values, and (g) for scenic values.

(1) **§11(d) - Wildlife Values.** The lands proposed to be designated are very rare or uncommon because they exhibit wildlife values that are very rare or uncommon when compared with other areas of the state or region and are seldom found within the state or region and which, if left unprotected, could become extinct or extirpated. In particular:

(a) 4,035 acres of the petition area has been designated as crucial winter range for mule deer by the Wyoming Game and Fish Department (WGFD 2006a). This is shown on Appendix E. Crucial winter range is considered "vital" under the Wyoming Game and Fish Commission mitigation policy. The presence of lands considered as "vital" habitat meets §11(d)(iii) of the rule. "Vital" habitat is defined as that which "directly limits a community, population, or subpopulation, and restoration or replacement may not be possible (WGF Commission 1998).

(b) A population of finescale dace (ranked S2), an extremely rare native fish, is present in the petition area near the headwaters of Spotted Tail Creek. WGFD ranks finescale dace NSS1 and considers the fish "dangerously close to extirpation in Wyoming" and "ranked highest for conservation efforts with the greatest immediate needs in Wyoming" according to a recent WGFD report (Miller and Weitzel 2003). NSS1 means "there are low population densities, habitat is declining and the species is in danger of disappearing from the state" (WGFD 2007a). Habitat for NSS1 species such as finescale dace is assigned a mitigation category of "vital" by the Wyoming Game and Fish Commission. As mentioned above, "vital" habitat is a criterion under §11(d)(iii) of the Rare and Uncommon rule.

Finescale dace also are glacial relicts, isolated after the last Ice Age. It is possible that these dace populations have formed unique characteristics due to this genetic isolation. According to Stasiak and Cunningham (2006), finescale dace populations

> "were forced south into several different refuges during the last Ice Age advance. Finescale dace followed the melting ice as they dispersed back to the north via several different routes. Long after the last glacial retreat, we now have isolated populations of finescale dace that exist in spring seeps in Nebraska, Wyoming, and South Dakota. In many cases, these populations have been separated and isolated from other dace populations for many generations. The dace have had sufficient time in isolation for selection processes to allow genetic changes, and many of these regional populations may be uniquely adapted to their own ecological conditions."
>
> "Populations of finescale dace throughout USFS Region 2 appear to be declining (Clausen and Stasiak 1994), and given the isolated position of these populations and the unique habitat types required by this relict species, long-term viability is questionable... Every attempt should be made to maintain the natural flow regime in

the streams where this species resides and to manage for the expansion of beaver activity within these watersheds."

There is some uncertainty regarding the origins of the finescale dace population in the Sand Creek area. Some authorities believe the population was naturally established while other reports indicate the population was planted in 1983 (e.g., WGFD 1996a) using stock from nearby sources. One expert indicated that, despite the difficulty determining if the existing population is native or has been transplanted from nearby sources, the distinction probably doesn't matter at such reduced population sizes (D. Isaak, USDA Forest Service Rocky Mountain Research Station Boise Aquatic Sciences Lab, personal communication 2006). In short, a population of a fish so rare in Wyoming merits protection regardless of its origins.

(c)The Sand Creek watershed feeds a fishery classified as Class I by the Wyoming Game and Fish Department and therefore meets the criterion found at §11(d)(iv) of the Rule. The petition area is in the same drainage and directly upstream from the nationally important Class I trout fishery on Sand Creek starting at Ranch A. The Wyoming Game and Fish Department considers this fishery to be "one of the best wild brown trout streams (Class 1, Blue-Ribbon) in the state" (WGFD 1996a). By definition, Class 1 waters are "premium trout waters of national importance" (WGFD 1995a).

The Wyoming Game and Fish Commission own 284 acres along 1.85 miles of Sand Creek a short distance downstream from Ranch A. An easement for fishing access on an additional 2.75 miles adjacent to the Commission property has been arranged with the Ox Yoke Ranch (WGFD 2007b).

Survey data from 2005 from Sand Creek found a naturally reproducing rainbow and brown trout fishery of 1,400 lbs/mile (6,300 fish/mile), with similar estimates in prior years back to 1999 (WGFD 2006b). Estimates from 1995 were specified for four distinct portions of the fishery and found 2,741 trout per mile (213 pounds per acre) on the Reinecke [Ox Yoke] easement; 2,275 trout per mile (270 pounds per acre) on the State Land (WGFD) section; 5,875 trout per mile (348 pounds per acre) on the Country Club section; and 3,281 trout per mile (255 pounds per acre) on the Ranch A section (WGFD 1996a). The most recent visitor day information WGFD has recorded is from May through October 1985 when they estimated 353 anglers fished in the publically accessible portion of Sand Creek near Ranch A (WGFD 2007c).

Sand Creek begins as a small perennial stream near Cement Ridge and flows north-northwest for about more than five miles at which point it generally sinks underground. For the next several miles, until Ranch A, the flow is ephemeral or intermittent depending on the specific locations and recent climatic conditions. During storms and other meteorological events, surface flow can occur in these nonperennial sections, sometimes at extremely high rates. The Class 1 fishery begins when the creek becomes continuously perennial again at several large cold springs which surface at Ranch A with a discharge of several thousand gallons per minute. It is the second largest spring in the Black Hills (Rahn and Gries 1973).

Agencies and experts have expressed concern that mining which could take place in the petition area may negatively affect the fishery at Ranch A through both surface transport of sediments and pollutants and through impacts to the quality and quantity of the water surfacing at the springs at Ranch A. These concerns have been expressed in response to very small mineral exploration proposals, and it follows that the potential impacts would be much greater from larger mining proposals.

The Sand Creek channel at Ranch A is directly connected through surface flow to the petition area during storm events and floods (Macy 1996). The Wyoming Game and Fish Department has stated that "fishery impacts could occur" from small-scale exploratory or recreational mining "due to elevated quantities of sediments or other pollutants being carried off site by high flow events" (WGFD 1995a). Such high flow events have occurred in Sand Creek in recent years and can be expected to occur again (e.g., highest flood flow on record occurred in May 1995 as reported in WGFD 1996a and Macy 1996).

Larger mining operations would increase WGFD concerns. "If mineral exploration reveals sufficient mineral potential to warrant further development, potential impacts to the fisheries will be greater as will our concerns… [f]urther development would require that major steps be taken to avoid adverse impacts to the downstream fishery" (WGFD 1995a). Even in the ephemeral sections of the channel, WGFD stated that disturbances "are still a cause for concern" (WGFD 1995).

Individuals at WGFD "have seen high flows from the canyon flowing into the Ranch A area - this is also evidenced by the high bedload movement that can be seen in the stream channel throughout," leading to this concern: "Sand Creek from Ranch A downstream already deals with considerable sediment and further input from upstream perturbations could affect the channel capacity, habitat for fish, and spawning potential for the wild brown and rainbow in lower Sand Creek" (WGFD 2005),

Subsurface flow is also a concern. Hydrology experts believe the petition area contributes to the recharge of the springs upon which the Class 1 fishery at Ranch A depends, and that land management activities in the petition area—such as mining—would be expected to affect the quality of the water in the aquifer and springs (Dr. P. Rahn, Professor Emeritus of Geology and Geological Eng., SD School of Mines, Personal Communication Jan. 4, 2005; Macy 1996). A USFS hydrologist assessing the possible impacts from a mineral exploration proposal found that "perhaps the greatest risk" from this very small proposal was "leaks of any size" of fuel and oil which "have the potential to impact water quality with aquifer contamination possible. Large spills or leaks could cause downstream fish kills." He goes on to conclude that "Aquifer contamination is possible if fuel or oil is spilled" and "harm to downstream fisheries is possible if a fuel or oil spill occurs" (Macy 1996).

The most comprehensive study of Black Hills hydrology ever conducted found that the aquifer source of the Sand Creek Class I fishery to be "especially sensitive to contamination because of high secondary permeability and potential for streamflow recharge" (Driscoll, et al. 2002).

In addition to the Class I wild fishery at Ranch A, there is a self-sustaining wild brook trout fishery completely within the petition area at Spotted Tail Creek. WGFD considers this a "locally important, naturally reproducing" fishery (WGFD 2006b) According to WGFD, a substantial investment has been made by the Department to improve this fishery:

> "Spotted Tail Creek is a short tributary to the upper portion of Sand Creek that supports a wild brook trout population… The last plant of BKT was in 1993, but natural reproduction was considered adequate to sustain the population… A series of 40-50 overpour (plunge) structures and rock riprap/tree revetments were completed by the WGFD on Spotted Tail Creek in 1985. This habitat enhancement has increased the carrying capacity of this stream for BKT [brook trout]. Estimates from electrofishing in 1994 were 1,956 BKT per mile (372 pounds per acre) (WGFD Sheridan Region file records)" (WGFD 1996a).

A third trout population exists in Spotted Tail Pond. This is a supplemented rainbow trout fishery:

> "This pond was stocked with catchable rainbow trout (ELR) in 1992, KRB in 1994 and BKT fingerlings and catchable ELR in 1995. The pond is managed as a Put and Take fishery with catchable rainbow (300) scheduled annually. No estimates of angler use of the pond or stream have been made by the WGFD" (WGFD 1996a). The Forest Service describes this area as "one of the more popular fishing areas within the Sand Creek Drainage" (USDA Forest Service 1996a). It is stocked with "approximately 200 catchable trout annually, and is also a fishery of local importance" (WGFD 2006b).

Lastly, another wild brook trout fishery exists near the upper reaches of Sand Creek.

> "Portions of the upper end of Sand Creek, rated as a Class 3 trout fishery, support a small, wild population of brook trout" (WGFD 1996a). This fishery "increases/decreases in habitat area based on the intermittent flows, remaining pools as flows recede, and of course, the water year and how the numerous springs in the canyon are functioning (possibly an issue with the mining on how it might affect these springs) " (WGFD 2005).

(d) The area contains fragile lands that offer unique wildlife or scientific values specified in criterion §11(d)(v).

Fragile lands are defined in the Rule at §4(c) as "geographic areas containing natural, ecologic, scientific, or aesthetic resources that could be damaged or destroyed by mining operations," while the specific criterion in the Rule at §11(d)(v) states these fragile lands must offer "unique wildlife or scientific values." Thus, it appears the "fragile lands" criterion is not restricted solely to wildlife values but also may include unique scientific values which could be harmed by mining.

The petition area contains numerous values which meet the "fragile lands" criterion. Many are described in some detail in other sections of this petition, while others are not. All are described briefly below.

Wetlands

Several vegetated wetlands are present in the petition area according to government wetlands inventories (USFWS 1997). Wetlands meet the fragile lands criterion because they are "natural" and "ecologic" resources "that could be damaged or destroyed" by mining. (See Appendix I)

According to the US Fish and Wildlife Service, wetlands present in the petition area include 34 "pond" type wetlands totaling 6.1 acres and 8 linear wetlands totaling 4,452 feet or 0.84 miles. All but one are natural rather than man-made wetlands. Most of the pond-type wetlands are palustrine, aquatic bed, intermittently exposed beaver ponds except for a small number which are classified as emergent. The linear wetlands are palustrine (without flowing water), emergent, seasonally flooded except for two aquatic bed, intermittently exposed, beaver ponds.

According to the definitions in the Wyoming Environmental Quality Act (§35-11-103 (c)(xvi)), "wetland value" means those socially significant attributes of wetlands such as uniqueness, heritage, recreation, aesthetics and a variety of economic values."

In addition to the fragile lands criterion, the petitioners note that the Wyoming Game and Fish Commission Mitigation Policy assigns wetlands to the "vital" category. The presence of lands

considered as "vital" habitat is an explicit eligibility criterion of the Rare and Uncommon rule at §11(d)(iii).

Springs and Seeps

Numerous small springs and seeps present in the area contribute to the conditions which make Sand Creek hospitable for some of the rare plants described in the botanical values section below. Foxtail sedge, Bebb's sedge, stalk-grain sedge, moschatel, rosy sedge, and highbush cranberry are just a few of the rare plant species in Sand Creek living in these moist habitats. Rare vegetation types such as beaked willow scrub also depend on such conditions made possible in part by springs. The springs also create (or allow beaver to create) biologically rich "hanging" ponds on the terraces above the stream channel.

Ice Age Plant Refugium of High Botanical Value

As described further in the botanical values section below, botanists and other scientists consider Sand Creek to be a "refugium" for boreal plants (plants of the north) hundreds of miles distant from the great northern forests of Canada. Sand Creek is the best, most pristine example of this in the region and is of great scientific value. These values would clearly be harmed by mining and meet the fragile lands criterion.

Rare Plant Concentration Area

The petition area contains a very large number of rare plant species (described further in the "botanical values" section below). The Rule refers to the surface coal mining rule for examples of fragile lands. The petitioners note that the specific Coal Rule chapter referenced by the Rare and Uncommon Rule have changed and are now found at Chapter 17, Section 1 rather than Section 1(a) Chapter XXVIII. Among the examples of fragile lands found in the Coal Rule are "environmental corridors containing a concentration of ecologic and aesthetic features." With 71 rare plants in one relatively small area, plus the presence of the boreal ice age relict plants, Sand Creek appears to be exactly the type of value contemplated by the Rule. The presence of several globally rare vegetation types adds to the qualifications of the area. In addition, the concentration of rare plants is of substantial scientific value and certainly could be harmed by mining. It therefore meets this criterion as well.

Class 1 Outstanding Water and Rare Native Fish

Sand Creek's classification as a DEQ Class 1 "Outstanding Water," which is Wyoming's highest possible designation, also fits under the "fragile lands" criterion.

The finescale dace population in the petition area is another "ecologic" fragile resource that could easily be harmed by mining. The population has both unique wildlife value and scientific value: unique wildlife value because it is an extremely rare fish in Wyoming ranked of greatest conservation concern by WGFD and habitat considered "vital" by the WGF Commission; unique scientific value because 1) the fish population is a glacial relict left over from the last Ice Age and 2) due to this isolation of populations after the last Ice Age, it is possible that the dace populations have formed unique characteristics due to their genetic isolation. These fish could be unique to this portion of Wyoming.

Old Growth/Late Successional Forest

Old growth forest stands in Sand Creek are of great value as demonstrated by the designation by the Forest Service of much of the petition area as "late successional landscape." These old

growth forest stands meet the "fragile lands" criterion due to the rare wildlife habitat they contain, the special ecological role they play, and their scientific value. Further description of the values of old growth forest is presented below in the "special designations" section.

Presence of White Spruce (*Picea glauca*)

White spruce (*Picea glauca*) is a significant component in more mesic (wet) situations, such as lower north-facing slopes of both the main and side drainages. In the wetter northern Black Hills it usually occurs in lower elevations. White spruce is not found in Wyoming outside the Black Hills. The species is considered a disjunct (disconnected) species and was separated from its mother populations during the ice age, and has evolved distinct genetic characteristics due to the long isolation of this population. Black Hills spruce (*Picea glauca var. densata*) is a subspecies unique only to the Black Hills.

Recreational Value Due to High Environmental Quality

The definition of "fragile lands" in the Rare and Uncommon rule explicitly mentions aesthetic resources, but it is unclear if the criterion for "fragile lands" applies to aesthetic values. The "examples" of fragile lands referred to by the Rule includes "environmental corridors containing a concentration of ecologic and aesthetic features" and "areas of recreational value due to high environmental quality." Large portions of the petition area have been found by the USFS and local land owners to be "as pristine as any on the Forest," "essentially undeveloped," and "'outstandingly remarkable' for the solitude it affords" (USDA Forest Service 1996a). These values are discussed further in the "scenery values" section of this petition. However, in response to previous mineral exploration proposals, the local landowners organization, Sand Creek Country Club, has stated that "the upper Sand Creek is an area largely undisturbed from logging and mining… and it deserves to remain this way" (Sand Creek Country Club 1996). Another Sand Creek Country Club member recently characterized the area as "an extremely unique, sensitive, and pristine area, and one of the only rather undeveloped areas within the Black Hills... We are concerned about the effect hard rock, deep mining would have on the springs, which feed Sand Creek, and the run off from mining activity, as it affects water quality, and macro invertebrate populations. Another major concern would be the damage done by mining activity to the pristine and sensitive Northern Black Hills forest, including the wild brook trout populations" (Mortimer 2005).

Finally, in an assessment of the entire Black Hills National Forest, the USFS found large portions of the petition area along the creek to possess scenery, recreation, and ecological/rare plant values that were "outstandingly remarkable" (USDA Forest Service 1996a).

(2) §11(e) – **Surface Geological Values**. The lands proposed to be designated as very rare or uncommon contain a hydrological "sink" in which the entire flow of Sand Creek disappears below the streambed gravels at normal flows inside the proposed Very Rare or Uncommon area, to rise at a large spring at Ranch A, north of the proposed Very Rare or Uncommon area. The entire flow of Pole Cabin Creek disappears at a sink in T51N R60W Sec. 31, at a point in which the drainage takes an abrupt southward turn and the stream disappears into the base of the hillside. Sinks Canyon on the Popo Agie River is one other such geological feature, so rare that it has been designated as a State Park. These "sink and rise" occurrences are very rare or uncommon in Wyoming and therefore this feature is a criterion for designation of this area for protection by the EQC.

(3) **§11(f) - Botanical Values.** The lands proposed to be designated are very rare or uncommon because they have particular botanical value when compared with other areas of the state or region and are seldom found within the state or region and which, if left unprotected, could become extinct or extirpated (Marriott and Faber-Langdoen, 1999).

In particular, the Sand Creek petition area contains stands of rare native vegetation types and contains stands of native vegetation types in pristine conditions for which pristine stands are unusual. Sand Creek meets both criteria. These botanical values are present:

(a) Stands of seven globally rare native vegetation types are found in Sand Creek. All seven, found in a total of eight different sites within the petition area, have been ranked by expert botanists as "critically imperiled," "imperiled," or "vulnerable" at a global scale (Marriott and Faber-Langdoen, 1999). Not only are they critically imperiled when viewed from a state perspective, but also from a global perspective. The rare vegetation types are listed in Attachment 1; locations of these rare vegetation types are shown on Appendix D (Marriott and Faber-Langdoen, 1999).

(b) A single site within the petition area contains stands of seven native vegetation types in pristine condition for which pristine stands are unusual. The Cranberry Springs site, totaling 3,450 acres, has been identified by scientists specifically due to the presence of stands of native vegetation types that are in pristine condition for which pristine stands are unusual. The Cranberry Springs site is in the north and western part of the Sand Creek petition area has been designated an "exemplary site" by scientists in the Black Hills Community Inventory, the most comprehensive and most recent vegetation inventory of the Black Hills (Marriott and Faber-Langdoen, 1999). The site was designated due to the presence of high-quality stands of native vegetation listed in Attachment 2. The site is shown on Appendix C.

(c) In addition to rare vegetation types, eighty (80) plant species designated by scientists as rare and imperiled or extremely imperiled are found in Sand Creek. This is an extremely large number of imperiled species in a relatively small area. Only a small number of these species are shown in the enclosed maps because many of the data were not available in map form from Fertig and Oblad (2000). Fourteen of the 71 rare species present in the petition area are so-called "disjunct" species occurring far from other populations of the same species. Disjunct populations are both scientifically important and of great conservation value. A list of the disjunct species is presented in Attachment 3, while Fertig and Oblad (2000) did a survey for rare plants only in the two Special Botanical Areas and the Late Successional Landscape designated in the Black Hills Forest Plan and occurring within the proposed area (*see* Appendix G and Attachment 4).

NatureServe and the Wyoming Natural Diversity Database recognize "S" rankings as the statewide rankings for rare plants in Wyoming, as follows (Fertig and Beauvais 1999). S1 plants are "Critically imperiled because of extreme rarity (often known from 5 or fewer extant occurrences or very few remaining individuals) or because of some factor of a species' life history makes it vulnerable to extinction" S2 plants are "Imperiled because of rarity (often known from 6 – 20 occurrences) or because of factors making a species vulnerable to extinction." S3 plants are "Rare or local throughout its range or found locally in a restricted range (usually known from 21 – 100 occurrences)." Thus S1 and S2 plants would be considered rare on a statewide basis, while S3 plants would be either rare or uncommon (See Attachment 3).

In addition, some of the rare plants found in Sand Creek are at the periphery of their range, common elsewhere in North America but very rare or uncommon in Wyoming. Recent science

has shown that such peripheral populations can have extraordinary conservation value. According to Hooper (2004), "Studies on both persistence and genetics suggest that the distinction between central and peripheral populations may not be an important distinction for conserving biodiversity. Thus, conservation plans should include populations found both near the center and the periphery of a species' distribution." The Nature Conservancy, in their scientifically-based conservation plan for the Black Hills (described below in the "Special Designations" section), specifically aimed to protect disjunct and peripheral species as "primary" conservation goals, which they call "targets" (Hall et al. 2002). Other scientists have discussed the high value of both disjuncts and peripherals species like those found in Sand Creek:

> "Disjunct populations, such as those in the Black Hills of Wyoming and South Dakota contribute unique components to the flora of the region and special distributional occurrences to the species overall… It is generally agreed upon that conservation of disjunct peripherals to preserve potential genetic diversity and uniqueness is ecologically desirable."

(Marriott and Faber-Langdoen, 1999). Beyond the huge number of rare plant species present in Sand Creek, an expert in Black Hills fungi and other organisms has located two "noteworthy" lichen species within the petition area, *Icmadophila ericetorum* (L.) Zahlbr. and *Letharia vulpina* (L.) Hue. Both were found in the Cranberry Springs area (Gabel 2006).

(d) Botanists and other scientists consider Sand Creek to be a refuge or "refugium" for Ice Age plants. The boreal plants (plants of the north) found in Sand Creek are hundreds of miles distant from their current populations in the great northern forests of Canada. The boreal forests once extended to the Black Hills and even a bit further south. But by 10,000 years ago, when the climate warmed after the end of the last ice age, the boreal forest retreated far to the north and other vegetation moved in. In only a handful of places, boreal plants found refuge in the cooler and moister climate of the gulches of the northern Black Hills. Sand Creek is the best, most pristine, and most boreal species-rich such refugium in the region with nearly a dozen boreal disjunct species, listed in Attachment 3. These ice age survivors are now widely separated from their main ranges far to the north. As a result, Sand Creek serves as a living laboratory of great scientific value.

Edward Raventon (1994) states in his "*Island in the Plains: A Black Hills Natural History,*"

> "With the final retreat of the last ice invasion, many Arctic species of both plants and animals are left stranded high up on the remote peaks and valleys of the Black Hills as small disjunct populations. Their presence will later provide botanists and ecologists with living clues to the Earth's great changes in climate."

(e) The Sand Creek area is home to a number of hardwood trees that are typical of eastern deciduous woodlands but which are very rare or uncommon in Wyoming. These include the paper birch, hazelnut, and American elm. These species are not found in native stands in Wyoming outside the Black Hills. (See Appendix C, F, G, and H)

(4) **§11(g) - Scenic Values.** The lands proposed to be designated are very rare and uncommon because they exhibit scenery values that are very rare and uncommon when compared with other areas of the state or region and are seldom found within the state or region and which, if left unprotected, could become extinct or extirpated. In particular, the area has substantial aesthetic value and its value would be apparent to a reasonable person.

In a formal evaluation for possible for Wild and Scenic River designation, the U.S. Forest Service found that the northernmost 4 miles of the river corridor within the petition area (that portion south of Forest Road 863 to 0.3 mile north of Sand Creek Crossing) "is as pristine as any on the Forest." The Forest Service made particular note of "the scenic cliffs and sandstone outcrops in Grand Canyon and Sand Creek can be seen close to where the two drainages merge. From this vantage point, scenic values are considered 'outstandingly remarkable.'" This segment was also ranked as "outstandingly remarkable" for recreation due to pristineness and solitude (USDA Forest Service 1996a).

Nearly 3,000 acres (computer maps show 2,968 acres) of the Sand Creek area have been found by another U.S. Forest Service analysis to contain "some of the most scenic landscape features in the Hills" (USFS No Date). The analysis highlighted "valleys with… elevation differences of 500 feet or more" and "significant limestone outcroppings creating dominant scenic features." These features were given a "Class A – Distinctive" rating by the agency. Class A refers to "unusual and/or outstanding landscape variety that stands out from the common features." The overall rating given to Sand Creek was "Significant," which is defined as "infrequently found in the province."

According to the Forest Service (USDA Forest Service 1996a), Sand Creek

> "offers some spectacular scenery" with "cliffs and steep slopes of limestone. As a result of topography, the area is considerably isolated from the sights and sounds of humans. Steep slopes in excess of 45 percent and elevation differences of more than 500 feet nearly surround the area, primarily along Idol Gulch and Spotted Tail Creek."

The Dugout Gulch Botanical Area is a featured hike in the book *Hiking Wyoming: 110 of the State's Best Hiking Adventures*. According to author Bill Hunger,

> "It's a world of complete solitude and endless avian chatter amid a forest setting not usually associated with Wyoming" (Hunger 2008).

In the popular guidebook to the Black Hills, *Exploring the Black Hills and Badlands*, author Hiram Rogers states that

> "Even to the amateur the diversity of the boreal forest of Sand Creek is a striking contrast to the ponderosa pine-dominated forest typical of the Black Hills… Springtime brings an explosion of wildflowers to the creek bottoms and slopes of the canyons. Buttercups, larkspur, blue flax, geraniums, violets, and even the lowly hound's tongue brighten the valleys" (Rogers 1993).

Edward Raventon's "*Island in the Plains: A Black Hills Natural History*" notes that

> "Just beyond the log barn (of Ranch A), the canyon opens into a wide park. The west side of the canyon features high, curved walls of smooth white and red rock. This area is an excellent place to hear and see birds at all seasons of the year. In the summer and early fall a host of common hawks and small falcons, along with golden and bald eagles, are often sighted above the west wall where they launch out on the updrafts blowing down the canyon."

Section 6(a)(viii) Description of the **current and historical land use** of the area:

Prior to 1700, Kiowa, Apache, and Crow controlled the Black Hills. Starting in 1700 movements of tribal peoples began as Shoshonean groups begin displacing Athabascan groups. Shoshonean groups, Arapaho and Cheyenne occupied parts of the Black Hills to be replaced eventually by Dakotas in 1775. Access of tribal peoples to horses and guns may have party influenced these changes. The area is of great spiritual, cultural, and historic significance to the Sioux and other tribes including the Northern Arapaho. Native American use of the area concentrated along ridgetops, stream courses, and at springs.

In the 1840s, wagon trails created conflict with Native Americans and in 1851 the first Fort Laramie Treaty was signed that allowed wagon passage through Indian country. But the U.S. government recognized Indian Territory stretching across the western half of the Dakotas and into Wyoming as far as the Big Horn Mountains. In 1861, the Dakota Territory was created and then in 1868 Wyoming Territory was created. After another conflict with Native Americans in 1868, the U.S. signed a treaty recognizing that the Black Hills belonged to the Sioux in perpetuity. The treaty could be reversed only if three-quarters of all interested adult males signed away the land. Within four years white miners were trespassing in the area due to rumors of "treasures" in the Black Hills.

In 1874, General George A. Custer, in violation of this treaty, led an Army exploration into the Black Hills and discovered gold. This kicked off a gold rush into the Hills.

In 1875, Red Cloud and other chiefs went to Washington, D.C. and were told that the government intended to take possession of the Black Hills. They could sell it or have it taken from them. The chiefs refused to sell. A commission in 1875 tried unsuccessfully to get the Sioux to sell the Black Hills. In December of that year, the Commissioner of Indian Affairs ordered all Indians to vacate the unceded Indian territory and return to the reservation by January 31, 1876. This deadline could not be met, given the harsh winter. In February, all Indians not on the reservation were declared "hostile." A new treaty was signed by some Sioux on the reservations. A military campaign eventually forced most of the "hostiles" onto the reservation by the end of the year.

To this day, many Sioux contest the legality of the new treaty, both because it was signed under duress and it did not include the leaders specified in the 1851 Fort Laramie treaty. The Sioux maintain that they never consented to the cession of the Black Hills. The land claims case has gone through the cycle of the courts a number of times but remains unsettled. The Supreme Court in 1980 held that the government had to pay for the land taken, including more than a hundred years of interest. This sum was above $100 million, but the tribes refused to accept the money, preferring. *United States v. Sioux Nation of Indians*, 100 S.Ct. 2716 (1980).

Railroad building, mining, and lumbering of the Black Hills soon commenced in earnest. Supplying the Black Hills Gold rush was a commercial boon to Cheyenne. A slaughterhouse was once sited in the lower reaches of Dugout Gulch within the proposed Very rare or Uncommon area according to oral history, although traces of this structure are difficult to locate today.

Livestock Grazing

Grazing followed mining, as mining played out. A cattle boom began in 1878 or 1879, ran its course by 1883 or 1884 with a hard winter in 1887 bringing down the curtain on the heyday of

cattle raising in the region. Cattle ranching continuous to be a dominant agricultural land-use in the surrounding area into the present.

Portions of the area have historically been grazed by domestic livestock. The petition area includes portions of four Forest Service grazing allotments: Sand Creek, Idol, Cement Ridge, and Willow Springs.

Recreational Uses

The Sand Creek area has been used since settlement times primarily for livestock grazing as well as hunting and fishing, particularly along Sand Creek itself and in reservoirs and beaver ponds on tributary streams. Guiding and outfitting of hunters and/or fishermen has occurred in the area. Black Hills Discovery Tours currently offers a "Backcountry Tour" that includes a visit to Cement Ridge. Hiking, wildlife viewing, scenic driving, and nature study are current uses of the area, and a botanical trail has been established by the Forest Service in Dugout Gulch. Recreational goldpanning may also occur.

There are several seasonal residences or cabins on private inholdings contiguous to the petition area, including on the Ada May claim near Sand Creek crossing and on the John Green property near Mineral Hill at the former site of Welcome. The Sand Creek Country Club has several dozen seasonal residences along Sand Creek just downstream of the proposed Very Rare or Uncommon Area.

The neighboring historic Ranch A property bounds the northern side of the petition area, and is owned by the State of Wyoming and run as an educational facility.

Mining History

Both placer mining and lode mining have taken place in specific portions of the petition area, most notably in the Mineral Hill area. Parts of the old Hurricane Mining District fall within the proposed area. Placer mining for gold occurred here, and also some unsuccessful lode mining. Across the state border, the Tinton Mining District had a greater amount of mining activity withb greater commercial success, focusing on gold, tin, and tantalum to be found associated with pegmatite dikes that present a very different geological setting than the Wyoming portions of the area (Holland and Coleman 1989). Mining has occurred for gold, copper, and tin. After brief initial success with placer mining for gold, miners had greater difficulty making a living at lode mining for gold and later tin. Much of Mineral Hill is patented mining claim land. The Tinton mining district abuts the petition area to the east and also contains patented land. Portions of the Sand Creek streambed in the petition area have been subjected to placer mining. Prospecting began along Sand Creek (mainly placer claims) and the Bear Gulch District in neighboring South Dakota in 1876, and Forrest City (later Tinton) was a boom town in South Dakota by 1778 (Waterland 1991). There is a record of a hotel and schoolhouse in the mining camp, and at least one record of gunplay after rowdies shot out the lights of the saloon (id.). The Inter Ocean claim above Sand Creek was mined via open cut and short tunnels from 1890 to 1900, and several dwellings and a boarding house were built at the mouth of Welcome Gulch, which became known as "Welcome City" (id.). A stamp mill was built at the Inter Ocean in 1893, but its operation was delayed by an injunction by the State of Wyoming that forbade them from dumping the tailings directly into Sand Creek (id.). The Inter Ocean operation was never a commercial success.

A 1931 account described a placer mining outfit as "old" with "no additional information" available at the time (Driscoll et al. 1931). Mineral Hill Gold Company, Inc. was incorporated in 1933, with 2,200 feet of tunnels and drifts being constructed in pursuit of hard-rock minerals; there is no record of any ore ever being shipped from this operation (Waterland 1991). Humble Oil Company drilled several core samples seeking hard-rock minerals in 1970, but found little; similarly, Molycorp drilled three core holes on Mineral Hill in 1986-87 and found so little that they terminated their mineral leases in the area. (Holland and Coleman 1989). Some recent core drilling for exploration purposes (focused on copper and/or gold prospects) has been conducted by the Bronco Creek company in the Mineral Hill area. Holland and Coleman (1989) surveyed for placer gold prospects in the area, and concluded,

> "It is apparent that the placer gold possibilities of those parts of Sand and Spottedtail Creeks are not attractive. Much of the latter stream has been mined. TRYCCO's sampling shows low and erratic values….On the basis of TRYCCO's sampling and test work, it is our conclusion that the Caldak property is not economic as a gold operation because of a very modest gravel reserve, much of which has been worked, and the associated magnetite is not a saleable product at present.""

Remnants of an abandoned mine or stamp mill can be located near Spotted Tail Creek.

Logging and Forest Administrative Uses

Logging has occurred across portions of the petition area, and is typically expressed as old stumps from selective harvest in the midst of timber stands. In the early days in the Black Hills (1870s and 1880s) timber was cut as close as possible to the places where it was needed. According to Mahoney (1998),

> "The first timber cuts occurred near mines and settlements. As these timber reserves were depleted, portable sawmills were moved farther from towns, following the timber line".

In 1892, a sawmill was built on Sand Creek by the Power Brothers of Spearfish, S.D., to serve local mines (Waterland 1991). Logging today is limited by Roadless Area designation for 7,700 acres, while Botanical Area and Late Successional designations under the Forest Plan further restrict commercial logging across the majority of the proposed Very Rare or Uncommon unit. Much of the southern portion of the area is dominated by aspen or birch woodlands, which are not commercially suited for timber production. Ponderosa pine stands scattered across the area hold potential for commercial logging in areas where this use is permitted by Forest Service regulations. The Rattlesnake logging project is currently under consideration by the Forest Service and may allow commercial logging in some parts of the proposed Very Rare or Uncommon area to the south of the roadless area.

The Cement Ridge Fire Lookout was constructed in 1941 for the purposes of locating forest fires, and is still in use today. This lookout is a historic feature of the area and is listed on the National Historic Lookout Register, a stepping-stone to National Register of Historic Places designation.

In its scoping notice for the Rattlesnake Timber Sale, which partially overlaps the proposed Very Rare or Uncommon area, the Forest Service described historic uses of the area as follows:

> The ridges and springs were sites of prehistoric camps and quarries. One site shows evidence of use at least 9,000 years ago. Many American Indian tribes have long considered the Black Hills sacred. Euro-American settlement began to affect the project area in the 1870s. An

early account (Graves 1899) blames careless hunters for large areas of severely burned forest. Small mining towns developed at Welcome and Mineral City, though they have all but disappeared. Timber harvest took place in most of the accessible parts of the project area.

(USFS 2008). The Rattlesnake Timber Sale awaits approval, and could potentially include harvest units inside the Very Rare or Uncommon area.

Section 6(a)(ix) A list of any **special designations or descriptions of the area** made by other governmental agencies, including, but not limited to, designations by the Department of Interior Bureau of Land Management or Office of Surface Mining, designations by the U.S. Fish and Wildlife Service, and designations by the Wyoming Department of Game and Fish:

(a) Sand Creek has long been recognized by scientists as having extraordinary botanical and ecological values. One of the first multi-agency efforts which identified Sand Creek as deserving of and needing protection was the November 1984 Wyoming Natural Area Needs Workshop (Collins 1985). At this workshop, "over 100 scientists, planners, and administrators from government agencies, private organizations, and academic institutions and representing ten states" came together to systematically identify "elements of Wyoming's natural diversity occurring on federal and state lands" that require protection in a "special management system."

The workshop designated the "Upper Sand Creek Site" (Sections 20, 21, and 33) as "Category 1, Clearly Significant" based on the presence of vegetation types ("habitat types") and rare plants. Category 1 is the highest ranking in the Workshop. All Category 1 sites were recommended for special management designation.

(b) The United States Forest Service has applied two special designations to portions of the Sand Creek area. (See G)

(1) The first is known as a "Botanical Area." Botanical Areas are defined as "a unit of land that contains plant specimens, plant groups, or plant communities that are significant because of their form, color, occurrence, habitat, location, life history, arrangement, ecology, rarity or other features" (USDA Forest Service 1996a). In 1997, the Forest Service designated approximately 7,348 acres of the total Forest as Botanical Area (MA 3.1) with one area called Upper Sand Creek totaling 1,395 acres. This botanical area is part of the Sand Creek petition, and has Botanical Area qualities due to the presence of the paper birch/hazelnut vegetation type and numerous rare plants (USDA Forest Service 1997). Paper birch and hazelnut are both very rare in Wyoming, and do not occur outside the Black Hills. The agency acknowledged that mining activities ("mining exploration") posed "detrimental risks to the botanical values of the area" and told the public that botanical area designation would provide for withdrawal of designated botanical areas from mineral entry (USDA Forest Service 1996a).

The second Botanical Area managed as MA 3.1 in the Forest Plan that falls within the petition area is known as Dugout Gulch. This area has rare plant associations including paper birch/beaked hazel woodlands and bur oak/ironwood woodlands, and a large number of rare plant occurrences (Burhhart, pers. comm.). According to the Forest Service, for Dugout Gulch,

> "This area has outstanding examples of rare and common Black Hills plant communities. Plant species found in Dugout Gulch are rare in Wyoming and occur in the Black Hills as populations peripheral and disjunct to the main ranges of the species."

(USDA Forest Service 1996a). Mining was listed as a potentially detrimental activity that could impact botanical values in this area (id.). Recreational goldpanning has occurred in Sand Creek

in the past, although commercial placer mining has ceased. In 1997, the U.S. Environmental Protection Agency and Department of Environmental Quality agreed that commercial placer mining was not allowable under the Class I designation for Sand Creek, and denied a mining permit to Freedom Minerals for placer exploration using bulldozers in the streamcourse.

The Forest Service admits that, "Exploration or development of oil, gas or other mineral reserves could directly result in the removal of sensitive plant species or their habitat. Such land use can also indirectly affect these areas through hydrologic modification, leaching of waste products, or increased sedimentation... Such projects could adversely affect many species in these areas of interest" (USDA Forest Service 1996a).

Mining on the South Dakota side of the northern portion of the Black Hills has already severely impacted habitat for one of the rare plants present, known as *Vaccinium membranaceum*. "The surface mines in the northern Hills have alone destroyed no less than several hundred acres of habitat for this species in just the last 15 years. If that's not a downward trend, then I don't know what is" (Ode, no date).

(2) A second special Forest Service designation has been applied to a separate portion of Sand Creek—Late Successional Forest Landscape. Late successional forest refers to areas of forest with large, older trees. Such older areas of forest are of great value to certain wildlife species (e.g., brown creeper, a bat species known as Black Hills fringed myotis, black-backed woodpecker) and plants which depend upon or spend a great deal of their life cycle within older forest (Wiggens 2005, Keinath 2004). Late succession ponderosa pine forest is now extremely rare, less than 1.5% in the Black Hills (and also very rare elsewhere in Wyoming). According to the Forest Service (1996a), "only light stands of scattered remnant late succession remained on about half the Forest by the 1970s."

In 1997, the Forest Service designated the Sand Creek Late Successional Forest Landscape in the northernmost half of the petition area, describing it as "one of the few intact late successional landscapes in the Black Hills" (USFS 1997). Relatively denser tree canopy conditions in this part of the Forest were documented as early as 1898" (USDA Forest Service 1997).

A recent U.S. Geological Survey/National Park Service publication succinctly described the values found in late successional forest on the Black Hills:

> "many species require the structure and ecosystem processes that characterize old growth forest but do not exist in forest in earlier stages of development. Although this is the reason most often cited for protecting old-growth forest, there are many others (Kaufmann et al. 1992). For example, old-growth areas may harbor genetic resources not found in younger forest stands – those adapted to the environmental conditions of later stages. Old-growth stands also harbor long-term biological records of climate useful for understanding current, and perhaps future, conditions in the context of the past. Old-growth forest can also provide a unique recreational experience. Finally, old-growth areas are part of the cultural and spiritual heritage of indigenous peoples…" (Symstad and Bynum 2005).

According to Forest Service and other experts, late successional ponderosa pine like that found in the petition area "probably afford the best [northern goshawk] nesting habitat in the Black Hills" (USFS 1996a (Appendix I)). For brown creepers, a Forest Service Sensitive Species, "at least 90 percent of all creeper observations in each of the past three years have occurred in mature or late-successional habitats" (USDA Forest Service 2004). Late successional forest is

also important for the range of cavity nesting birds, particularly those requiring large snags which are more plentiful in late successional stands. "The Black Hills National Forest (BHNF) has at least 23 birds and 10 mammals dependent on snags during a portion of their life history" (USDA Forest Service 1996a).

Much of the Sand Creek area is dominated by ponderosa pine forest. It is tempting to view this forest type as common and without need for protection, even though closed-canopy ponderosa pine forests are uncommon throughout Wyoming. Scientists, however, have recognized the importance and uniqueness of the Black Hills ponderosa pine forest.

> "Although ponderosa pine, as a species and as a forest type, occurs over a large part of western North America… the combination of species and ecosystem processes in the Black Hills makes the Black Hills ponderosa pine forest a unique ecosystem" (ROD pg. 43 of Forest Plan). Sand Creek is probably the most pristine portion of ponderosa forest in the Black Hills. As mentioned above, the petition area is "one of the few intact late successional landscapes in the Black Hills" (Symstad and Bynum 2005).

(3) Most of the proposed Sand Creek Very Rare or Uncommon area falls within the Sand Creek Inventoried Roadless Area established by the Forest Service in 2000. Inventoried Roadless Areas have been managed for no commercial timber harvest (with exceptions for fire risk reduction) and no additional road construction. Inventoried Roadless Areas combined with designated wilderness comprise approximately two percent of the Black Hills National Forest.

(4) The Cement Ridge fire lookout has been designated as an administrative site by the federal government.

(c) 3,450 acres in the north and western part of the Sand Creek petition area have been designated an "exemplary site" by scientists in the most comprehensive and most recent vegetation inventory of the Black Hills. (See Appendix C) The site was designated due to the presence of high-quality stands of native vegetation. These rare and uncommon values are described further in the botanic values section above. "The Black Hills Community Inventory (BHCI) was launched in 1995 to systematically classify and describe the vegetation of the Black Hills, and to identify high-quality examples of vegetation (plant community association) types (Marriott et al.1999). The goals of the project were to compile a comprehensive description of the vegetation of the Black Hills; to identify high quality occurrences of each community type throughout the study area; and to identify biologically significant sites where these types occur" (Hall et al. 2002).

(d) Three separate portions of the petition area have been found to be "areas of biodiversity significance" by the Nature Conservancy in their recent plan for conservation of the Black Hills. These sites were chosen to ensure "the long-term survival of all viable native species and community types through the design and conservation of portfolios of sites." (Hall et al. 2002, The Nature Conservancy 1996). The three areas, and their acreages are Cranberry Springs at 7,172 acres, all USFS; Sand Creek Botanical Area at 1,395 acres, all USFS; and Cement Ridge 1,600 acres, Sand Creek Headwaters at 1,260 acres, all USFS. (See Appendix C)

(e). The Sand Creek water body itself has been designated a Class 1 Water by the Environmental Quality Council (unrelated to the Class 1 fishery designation by WGFD). Class 1, also known as "outstanding waters," is the highest and most protective designation that can be applied to a water body within the state of Wyoming. Sand Creek is one of only 15 rivers/lakes in the entire

state singled out by name when designated as Class 1. Class 1 Waters are river/stream segments and lakes designated specifically by the EQC "based on value determinations" after considering the aesthetic, scenic, recreational, ecological, agricultural, botanical, zoological, municipal, industrial, historical, geological, cultural, archaeological, fish and wildlife, the presence of significant quantities of developable water and other values of present and future benefit to the people."

During the late 1990s, there was a proposal to downgrade the portion of Sand Creek within the petition area from Class 1 status. However, a broad spectrum of the public—ranging from local elected officials to local landowners to conservationists from across the state—requested that the EQC continue the strongest possible protection for Sand Creek by maintaining the Class 1 designation. Local State Representative Marlene Simons (now deceased) advocated strongly for maintaining the Class 1 designation for Sand Creek in the petition area (Casper Star-Tribune September 24, 1998). In response to this vocal public outcry, the EQC retained Class 1 status for Sand Creek within the petition area.

(f) As mentioned previously in the wildlife values section, the WGFD has designated over 4,000 acres of the petition Crucial Winter Range for mule deer.

Section 6(a)(x) The **names and addresses of all expert witnesses** whose work or whose testimony may be offered by the petitioner to support the petition are:

Dr. Walter Fertig – botanical values, ice age refuge (scientific values)

1117 W Grand Canyon Dr
Kanab, UT 84741

Ms. Hollis Marriott – botanical values, Ice Age refugium (scientific values)

655 N. Cedar St.
Laramie, WY 82072

Dr. Perry Rahn – geohydrology, potential impacts to Class 1 fishery

1207 11th St.
Rapid City, SD 57701

Dr. William Baker– values of old growth forest

Dept. of Geography
Dept. 3371, 1000 E. University Ave.
Univ. of Wyoming
Laramie, WY 82071

Edward Raventon – scenic and recreation values

P.O. Box 55
Faith, SD 57626

Bonnie Heidel – botanical values

University of Wyoming
Department 3381 // 1000 E. University Ave.
Laramie, Wyoming 82071

Dr. Gary P. Beauvais- wildlife values

Director, Wyoming Natural Diversity Database
University of Wyoming
Department 3381 // 1000 E. University Ave.
Laramie, Wyoming 82071

Joe Sandrini - (WGFD) – wildlife and big game values

P.O. Box 615
Newcastle, WY 82701

Paul Mavrakis – (WGFD) - trout fishery at Ranch A, finescale dace population

Fisheries Supervisor
700 Valley View Drive
Sheridan, WY 82801

Beth Burkhart – botanical values

Botanist
Black Hills National Forest
1019 North Fifth Street
Custer, SD 57730

Steve Kozel

District Ranger
Black Hills National Forest, Bearlodge Ranger District
P.O. Box 680
Sundance, WY 82729

Nancy Hilding

President, Prairie Hills Audubon Society
P.O. Box 788
Black Hawk, SD 57718

Sam Mortimer

President, Sand Creek Country Club

4280 Skyline Ranch Ct.
Rapid City, SD 57701

James Mortimer

Sand Creek Country Club
4321 Timberlane Place
Rapid City, SD 57701

Warren Braun

Sand Creek Country Club
4322 Timberlane Place
Rapid City, SD 57701

Jean and Jennifer Adams

1981 State Hwy 585
Sundance, WY 82729

Matt Stefanich

Wildlife Biologist, Bearlodge Ranger District
Black Hills National Forest
P.O. Box 680
Sundance, WY 82729

Section 6(a)(xi) The names and addresses of the surface or mineral owners of lands contiguous to the area proposed for designation are listed in the table below.

	Name of Contiguous Property Owner	Address	Phone
T50N R60W 6th P.M.			
Sec. 4, 5, 6	US Forest Service	1022 North 5th Street Custer, SD 57730	
T51N R60W 6th P.M.			
Sec. 17, 18	Hart Daniel C and Mary M	PO Box 615 Upton, WY 82730-0615	
21	Christensen Randall and Patricia	432 Hillsview Dr. Spearfish, SD 57783	
	Ferderer Donald L and Gayle	PO Box 801 Sundance, WY 82729	
	Maher Patricia A	PO Box 801 Sundance, WY 82729	

	Sleep Richard D and Karen E	HC 66 Box14 Spearfish, SD 57783	
	Steele Gloria G.	HC 66 Box14 Spearfish, SD 57783	
28	Tinton Partners- Attn. John Beatty	590 Thornwood Ln. Northfield, IL 60093	
	Reece Bridgette E.	18 Reese Drive Austin, TX 78745	
	Rebbe Robert Wetal	14650 Hudson St. Sherman Oaks, CA 91403	
	Rebbe Wilma Maxine Rev Liv Trs	14650 Hudson St. Sherman Oaks, CA 91403	
28, 32 and 29	Mineral Hill Venture Attn: John Green	PO Box 33010 Austin, TX 78764	
	Utecht Donna M and Robert M	21386 Snowshoe Rd Lead, SD 57754-3822	
	Reece Bridgette E.	same as above	
33	Sleep Richard D and Karen E	HC 66 Box14 Spearfish, SD 57783	
	Steele Gloria G.	HC 66 Box14 Spearfish, SD 57783	
Sec. 5, 6, 8, 16, 17, 21, 31	US Forest Service	1022 North 5th Street Custer, SD 57730	
T51N R61W 6th P.M.			
Sec. 2, 3, 10, 14, 15, 23, 25, 26, 36	US Forest Service	1022 North 5th Street Custer, SD 57730	
3	Medicine Lake Ranch Corp.	4339 Old Highway 14, Sundance, WY 82729-9704	283-3800
T51N R60W, 6th P.M.			
Sec 19	State of Wyoming	Office of State Lands and Investments, Herschler Bldg., 3rd Floor West, Cheyenne, WY 82002	
Sec 19, 29, 30, 32	US Forest Service	1022 North 5th Street Custer, SD 57730	
T52N R61W 6th P.M.			
Sec 26	Rongstad John and Cecilia	Box 231 Beulah, WY 82717	
	Greschke Jack W and Stoner Susan K	Box 280 Beulah, WY 82717	
	Knutson Richard and Virginia	2408 Davidson Ave Cody, WY 82414-8461	
	Pridgeon William L and Elaine P	1462 Hi Light Road Gillette, WY 82718	

	Bureau of Land Management	5353 Yellowstone Rd., Chenenne, WY 82009	
Sec. 19, 25, 29, 30, 32, 35, 36	US Forest Service	1022 North 5th Street Custer, SD 57730	
Sec. 24	State of Wyoming	Office of State Lands and Investments, Herschler Bldg., 3rd Floor West, Cheyenne, WY 82002	
T6N R1E Black Hills Meridian			
Sec.18	US Forest Service	1022 North 5th Street Custer, SD 57730	
	Gloria Sleep Steele/Sleep Land & Livestock LLC	10438 W. Hwy 14 Spearfish, SD 57783	
	Christensen, Randall & Patricia	$32 Hillsview Rd., Spearfish, SD 57783	
Sec. 19	US Forest Service	1022 North 5th Street Custer, SD 57730	
	Tinton Partners, c/o John T Beatty	590 Thronwood Ln., Northfield, IL 60093	
	Gloria Sleep Steele/Sleep Land & Livestock LLC	10438 W. Hwy 14 Spearfish, SD 57783	
Sec. 30	US Forest Service	1022 North 5th Street Custer, SD 57730	
	Sleep Richard and Karen E, Gloria Sleep Steele, and Sleep Land & Livestock LLC	10438 W. Hwy 14 Spearfish, SD 57783	
Sec. 31	US Forest Service	1022 North 5th Street Custer, SD 57730	

In addition, although easement holders are not land or mineral owners, we have provided a list of holders of easements that are contiguous to the proposed Very Rare or Uncommon area in the table below.

T52N R61W Sec. 26	The Range Telephone Cooperative	P.O. Box 127, Rosebud, MT 59347	Telephone ROW, buried telecommunications ROW	
T52N R61W Sec. 26	William and Elaine Pridgeon	1462 Hi Light Road, Gillette, WY 82718	ingress/egress	
T52N R61W Sec. 26	Jack Greschke	800 Sand Creek, Sundance, WY 92729	buried telecommunications	
T52N R61W Sec. 26	U.S. Forest Service	1022 North 5th Street Custer, SD 57730	road easement	

T52N R61W Sec. 26, T52N R61W Sec. 24	Powder River Energy Corporation	P.O. Box 930, Sundance, WY 82729	electrical line easement	
T52N R61W Sec. 26	Ron and Amy Hetzer	1013 E Boxelder Road, Gillette, WY 82718	road easement	
T52N R61W Sec. 24	Qwest, Inc.	1801 California Ave, Suite 5200, Denver CO 80202	Telephone line easement	
T52N R61W Sec. 24	Crook County	P.O. Box 37, Sundance, WY 82729	County Road right-of-way	

Contiguous grazing permittees are the same as the permittees listed above under Section 6(a)(vi).

Section 6(a)(xii) The next section is the **list of scientific documents** to be offered by the petitioner to support the petition that discuss the area to be designated.

Literature Cited/Documents to be Offered by the Petitioner to Support the Petition

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ATTACHMENT 1 – RARE VEGETATION ASSOCIATIONS PRESENT IN SAND CREEK PETITION AREA	
Botanical Name	**Site Name**
Populus tremuloides / Corylus cornuta Forest Aspen/paper birch woodland	Cranberry Springs
Betula papyrifera / Corylus cornuta Forest Paper birch/beaked hazel woodland	Cranberry Springs, Upper Sand Creek, Idol Gulch, Pole Cabin Gulch
Pinus ponderosa / Quercus macrocarpa Woodland Ponderosa pine/bur oak woodland	Cranberry Springs, Dugout Gulch
Salix bebbiana Shrubland Beaked willow scrub	Sand Creek Headwaters
Crataegus douglasii - (Crataegus chrysocarpa) Shrubland Black hawthorn shrubland	Sand Creek Headwaters
Sporobolus heterolepis - Stipa richardsonii - Danthonia intermedia Herbaceous Vegetation	Sand Creek Headwaters
Quercus macrocarpa - Ostrya virginana Bur oak/ironwood woodland Ostrya virginana – Crataegus succulenta Hophornbeam/hawthorn woodland Ostrya virginiana – Betula payrifera Hophornbeam/paper birch woodland	Dugout Gulch

ATTACHMENT 2 – Native Vegetation Types in Cranberry Springs Site: Pristine Conditions	
Botanical Name	**Site Name**
Aspen / Beaked Hazel Forest (CEGL000583) AB	Populus tremuloides / Corylus cornuta Forest
Paper Birch / Hazel Forest (CEGL002079) AB	Betula papyrifera / Corylus cornuta Forest
Ponderosa Pine / Bearberry Woodland (CEGL000844) B	Pinus ponderosa / Arctostaphylos uva-ursi Woodland
Ponderosa Pine / Bur Oak Woodland (CEGL000873) AB	Pinus ponderosa / Quercus macrocarpa Woodland
Ponderosa Pine / Chokecherry Forest (CEGL000192) B	Pinus ponderosa / Prunus virginiana Forest
Ponderosa Pine / Little Bluestem Woodland (CEGL000201) B	Pinus ponderosa / Schizachyrium scoparium Woodland
Ponderosa Pine / Snowberry Forest (CEGL000203) B,BC	Pinus ponderosa / Symphoricarpos albus Forest

ATTACHMENT 3 – RARE PLANT SPECIES PRESENT IN SAND CREEK PETITION AREA, INCLUDING DISJUNCT SPECIES			
Scientific Name	**Common Name(s)**	**Rank**	

Adoxa moschatellina	Moschatel	S2	
Adenocaulon bicolor	American Trailplant	S2	Disjunct
Agastache foeniculum	Blue Giant hyssop	S2	
Agrimonia striata	Woodland Agrimony	S2S3	
Anemone cylindrica	Candle Anemone	S2S3	
Antennaria neglecta	Field Pussytoes	S1	
Apocynum x florlibundum (A. medium)	Intermediate Dogbane	S2	
Aralia nudicaulis	Wild Sarsaparrilla	S2	
Asclepias ovalifolia (oval-leaf milkweed)	Dwarf Milkweed	S2	
Athyrium filix-femina	Subarctic Lady Fern	S2	
Betula papyrifera	Paper Birch	S2S3	
Botrychium virginianum	Rattlesnake Fern	S2	
Carex alopecoidea	Foxtail Sedge, USFS R2 Sensitive Species	S2	Disjunct
Carex backii var. backii	Rocky Mountain Sedge	S2	
Carex bebbii	Bebbs Sedge	S2	
Carex deweyana var. deweyana	Short scale sedge	S2	
Carex granularis var. haleana	Meadow Sedge	S2	
Carex peckii	White tinged Sedge	S2	
Carex rosea	Rosy Sedge	S1	Disjunct
Carex stipata	Awl fruit Sedge	S2	
Carex tenera	Slender Sedge	S2	
Carex torreyi	Torrey's Sedge	S2	
Celastrus scandens	Climbing Bittersweet	S1S2	
Cinna latifolia	Slenderwood Reed Grass	S2	
Circaea alpina var. alpina	Small Enchanter's Nightshade	S1S2	
Corallorhiza wisteriana	Spring Coralroot	S2	
Cornus canadensis	Dwarf Dogwood	S2	
Corylus cornuta	Beaked Hazelnut	S2	
Crataegus columbiana var. chrysocarpa	Fireberry Hawthorn	S2	
Dichanthelium linearifolium	Slim-leaf Witchgrass	S1	
Diphasiastrum complanatum (syn: Lycopodium complanatum	Ground Cedar, USFS R2 Sensitive Species	S1	Disjunct
Dryopteris filix-mas	Male Fern	S2	
Elymus diversiglumis (interrupted wild rye)	Interrupted wild rye	S1	
Equisetum scirpoides	Dwarf Scouring Rush	S1	Disjunct
Equisetum sylvaticum	Woodland Horsetail	S1	
Erigeron philadelphicus	Philadelphia Fleabane	S2	
Galium aparine var. aparine	Catchweed Bedstraw	S3	
Geranium bicknellii	Bicknell's Northern Crane's bill	S2	
Geranium carolinianum	Carolina Crane's bill	S2	
Gymnocarpium dryopteris	Northern Oak Fern	S2	Disjunct

Habenaria viridis var. bracteata	SNR- Not Yet Ranked		
Halenia deflexa	Spurred Gentian	S2	
Hieracium umbellatum var. umbellatum	Umbellate Hawkweed	S2S3	
Lathyrus ochroleucus	Creamy peavine	S2S3	
Liatris ligulistylis	Strap-style Gayfeather	S2	
Lonicera dioica var. glaucescens	Mountain Honeysuckle	S2	
Luzula multiflora	Common Woodrush	S2	
Lycopodium annotinum	Stiff Clubmoss	S2	
Lycopodium complanatum	S1		
Lycopodium dendroideum	Treelike Clubmoss	S1S2	Disjunct
Maianthemum canadense	Canada Mayflower, False Lily of the Valley	S2	Disjunct
Melica subulata	Alaska Onion Grass	S2	
Muhlenbergia glomerata	Marsh Muhly	S2	
Ostrya virginiana	Eastern Hop Hornbeam	S2	Disjunct
Oxalis stricta	Common Yellow Woodsorrel	S2	
Pellaea suksdorfiana	Ground Pine	S1	
Penstemon grandiflorus	Large-flower BeardtongueBeartongue	S2	
Picea glauca	White Spruce, Black Hills Spruce	S2	Disjunct
Polygala senega	Seneca Snakeroot	S2	
Polystichum lonchitis	Northern Holly Fern	S2	
Prosartes hookeri var. oregano	Hooker's Mandarin	S2	
Prunus pennsylvanica	Pin Cherry	S2	
Pteridium aquilinum var. latiusculum	Bracket Fern	S2	
Quercus macrocarpa	Bur Oak	S2S3	
Ranunculus pennsylvanicus	Pennsylvania buttercup	S2	
Ribes americanum	Wild Black Currant	S2	
Ribes oxyacanthoides var. oxyacanthoides	Canada Gooseberry	S2	
Rubus pubescens	Dwarf Red Raspberry	S2	
Sambucus racemosa var. pubens	European Red Elder	Not Yet Ranked	
Scirpus atrocinctus	Black girdle Bullrush	S1	
Scirpus cyperinus	Cottongrass Bulrush	S2	Disjunct
Ulmus americana	American Elm	S2	
Unamia alba	Prairie Golden Rod	S2	
Vaccinium membranaceum	Square-twigged Huckleberry	S2	
Verbena stricta	Hoary Vervain	S2	
Viburnum lentago	Nannyberry, Sheepberry, Wild Raisin	S2	Disjunct
Viburnum opulus var. americanum	Highbush Cranberry	S2	Disjunct
Viola pubescens	Downy Yellow Violet	S2	
Viola renifolia var. brainerdii	Kidney-leaf White Violet	S1	Disjunct

These 80 species have been ranked as critically imperiled or imperiled statewide by Nature Serve, and many are also tracked by WNND as species of concern. Some of these species are common in the Black Hills, but are rare on a statewide basis.

S = State rank assigned by Nature Serve: probability of extinction from Wyoming

These letters are each followed by a numeric, 1-5 score:
1 = Critically imperiled because of extreme rarity (often <5 extant occurrences) or because some factor makes it highly vulnerable to extinction
2 = Imperiled because of rarity (often 6-20 extant occurrences) or because of factors making it vulnerable to extinction
3 = Rare or local throughout its range or found locally in a restricted range (often 21-100 known occurrences)

Disjunct Species- populations isolated from the primary range of the species. Disjunct populations often evolve unique genetic characteristics over time.

Peripheral, Periphery Species- on or near an edge or constituting an outer boundary; the outer area or edge of the population.

ATTACHMENT 4 – RARE PLANT SPECIES PRESENT IN BOTANICAL AREAS AND Late successional landscape (Fertig and Oblad 2000)

Family	Species	Synonym	GRank	SRank	Dist	Form	Biome	DG SBA (2)	USC SBA (2)	SC LSL (2)
AST	Adenocaulon bicolor		G5?	S1	D	FORB	RMF		X	X
ADX	Adoxa moschatellina		G5	S1	S	FORB	RMF		X	X
LAM	Agastache foeniculum		G4G5	S2	P	FORB	GRS		X	X
ROS	Agrimonia striata		G5	S2S3	W	FORB	RMF		X	
RAN	Anemone cylindrica		G5	S2S3	W	FORB	GRS			X
APO	Apocynum x floribundum	A. medium	HYB	S2	W	FORB	RMF	X		X
ARL	Aralia nudicaulis		G5	S2	P	FORB	EDF	X	X	X
ASC	Asclepias ovalifolia		G5?	S1	P	FORB	GRS	X		X
ASL	Athyrium filix-femina		G5	S2	W	FERN	RMF		X	
BET	Betula papyrifera		G5	S2S3	P	TREE	EDF	X	X	X
OPH	Botrychium virginianum		G5	S1	P	FERN	RMF	X	X	
CYP	Carex alopecoidea		G5	S1	D	GRASS	WET		X	

CYP	Carex backii var. backii		G4	S2	P	GRASS	RMF	X	X	
CYP	Carex bebbii		G5	S2	W	GRASS	WET	X		X
CYP	Carex deweyana var. deweyana		G5T?	S2	P	GRASS	EDF	X	X	X
CYP	Carex peckii		G4G5	S2	P	GRASS	EDF	X	X	
CYP	Carex stipata		G5	S2	W	GRASS	WET			X
CYP	Carex tenera		G5	S2	P	GRASS	EDF			X
CYP	Carex torreyi		G4	S2	W	GRASS	GRS	X	X	
CEL	Celastrus scandens		G5	S1S2	P	FORB	EDF	X		X
POA	Cinna latifolia		G5	S2	W	GRASS	RMF		X	
ONA	Circaea alpina var. alpina		G5T?	S1S2	S	FORB	RMF		X	X
ORC	Corallorrhiza wisteriana		G5	S2	W	FORB	RMF		X	
COR	Cornus canadensis		G5	S2	P	FORB	RMF		X	
BET	Corylus cornuta		G5	S2	D	SHRUB	EDF	X	X	
ROS	Crataegus columbiana var. chrysocarpa	C. chrysocarpa; C. rotundifolia	G5	S2	W	SHRUB	RMF	X		X
ASL	Dryopteris filix-mas		G5	S2	W	FERN	RMF		X	
POA	Elymus diversiglumis	Elymus interruptus	G3?Q	S1	P	GRASS	EDF		X	
EQU	Equisetum scirpoides		G5	S1	D	FERN	EDF		X	
AST	Erigeron philadelphicus		G5	S2	P	FORB	GRS	X	X	X
RUB	Galium aparine var. aparine		G5T?	S2	W	A-FORB	WET	X	X	
GER	Geranium bicknellii		G5	S2	W	FORB	RMF		X	
GER	Geranium carolinianum		G5	S2	P	A-FORB	GRS			X
ORC	Habenaria viridis var. bracteata	Coeloglossum viride	G5	S2	W	FORB	RMF		X	X
GEN	Halenia deflexa		G5	S2	D	A-FORB	WET	X	X	X
AST	Hieracium umbellatum var.		G5?	S2	W	FORB	RMF		X	

	umbellatum									
FAB	Lathyrus ochroleucus		G4G5	S2S3	P	FORB	EDF	X	X	X
AST	Liatris ligulistylis		G5?	S2	W	FORB	GRS		X	
CPR	Lonicera dioica var. glaucescens		G5TU	S2	P	FORB	EDF		X	X
JUN	Luzula multiflora	L. campestris var. multiflora	G5	S2	W	GRASS	RMF		X	
LYC	Lycopodium annotinum		G5	S2	W	FERN	RMF		X	
LYC	Lycopodium complanatum	Diphasiastrum complanatum	G5	S1	D	FERN	EDF		X	
LIL	Maianthemum canadense		G5	S2	W	FORB	EDF	X	X	X
POA	Melica subulata		G5	S2	W	GRASS	RMF			X
BET	Ostrya virginiana		G5	S1	P	TREE	EDF	X	X	
OXL	Oxalis stricta		G5	S2	P	FORB	GRS	X		X
ADI	Pellaea suksdorfiana	P. glabella var. simplex	G5T4?	S1	P	FERN	RMF			X
SCR	Penstemon grandiflorus		G5?	S2	P	FORB	GRS			X
PIN	Picea glauca		G5	S2	D	TREE	RMF		X	
PGL	Polygala senega		G4G5	S2	P	FORB	EDF	X	X	X
ASL	Polystichum lonchitis		G5	S2	W	FERN	RMF	X?	X	
ROS	Prunus pensylvanica		G5	S2	P	TREE	RMF		X	
DST	Pteridium aquilinum var. latiusculum			S2	D	FERN	RMF		X	X
FAG	Quercus macrocarpa		G5	S2S3	P	TREE	EDF	X	X	X
RAN	Ranunculus pensylvanicus		G5	S2	W	A-FORB	WET			X
GRS	Ribes americanum		G5	S2	W	SHRUB	WET		X	
GRS	Ribes oxyacanthoides var. oxyacanthoides		G5T?	S2	W	SHRUB	GRS		X	
ROS	Rubus pubescens		G5	S2	P	FORB	RMF	X	X	X

CPR	Sambucus racemosa var. pubens	S. racemosa var. leucocarpa	G5T4T5	S2	P	SHRUB	RMF	X	X	X
CYP	Scirpus atrocinctus	S. cyperinus	G5	S1	D	GRASS	WET		X	
ULM	Ulmus americana		G5?	S2	P	TREE	EDF	X		X
AST	Unamia alba	Solidago ptarmicoides	G5	S2	W	FORB	GRS	X	X	
ERI	Vaccinium membranaceum		G5	S2	W	SHRUB	RMF		X	
VRB	Verbena stricta		G5	S2	W	FORB	GRS			X
CPR	Viburnum lentago		G5	S2	P	SHRUB	EDF	X?	X	X
CPR	Viburnum opulus var. americana		G5T5	S1	D	SHRUB	EDF	X	X	
VIO	Viola pubescens		G5	S2	P	FORB	EDF	X	X	
VIO	Viola renifolia var. brainerdii		G5T5	S1	D	FORB	RMF			X

NOTE:			
DGSBA=	Dugout Gulch Botanical Area		
USCSBA=	U. Sand Ck. Bot. Area		
SCLSL=	S. Ck. Late Succession. Landscape		

some 10 acres - 1,000's acre; LR2000

PAGE 01/07

BLM NEWCASTLE

01/21/2009 08:24 3077466639

Run Time: 08:28 AM

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LIST OF MINING CLAIMS BY SECTION

Run Date: 01/21/2009

MTRS: 06 051ON 060OW 006

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC251884	NW	CROSSBARD #7	SUNDANCE ENGINEERING INC	WMC258887	384201	ACTIVE	02/05/2000	2000

MTRS: 06 051ON 060OW 007

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC254778	NE NW SW SE	CROSSBARD #3	SUNDANCE ENGINEERING INC	WMC254778	384201	ACTIVE	09/01/1998	2000
WMC258988	NW	CROSSBARD #7	SUNDANCE ENGINEERING INC	WMC258887	384201	ACTIVE	02/05/2000	2000

MTRS: 06 051ON 060OW 017

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC254684	SW	KLONDITE NO. 1 ASSOC	BENTZ BRUCE	WMC254684	384201	ACTIVE	09/01/1998	2000
	SW		OTTEMA DONALD R	WMC254684	384201	ACTIVE	09/01/1998	2000
	SW		OTTEMA DOUGLAS M	WMC254684	384201	ACTIVE	09/01/1998	2000

MTRS: 06 051ON 060OW 018

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC254778	NE	CROSSBARD #3	SUNDANCE ENGINEERING INC	WMC254778	384201	ACTIVE	09/01/1998	2000

MTRS: 06 051ON 060OW 020

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC260062	NE	CROSSBARD #2	SUNDANCE ENGINEERING INC	WMC260062	384201	ACTIVE	12/24/1999	2000
WMC254684	NE NW	KLONDITE NO. 1 ASSOC	BENTZ BRUCE	WMC254684	384201	ACTIVE	09/01/1998	2000
	NE NW		OTTEMA DONALD R	WMC254684	384201	ACTIVE	09/01/1998	2000
	NE NW		OTTEMA DOUGLAS M	WMC254684	384201	ACTIVE	09/01/1998	2000
WMC254685	NE SE	KLONDITE NO. 2 ASSOC	BENTZ BRUCE	WMC254684	384201	ACTIVE	09/01/1998	2000
	NE SE		OTTEMA DONALD R	WMC254684	384201	ACTIVE	09/01/1998	2000
	NE SE		OTTEMA DOUGLAS M	WMC254684	384201	ACTIVE	09/01/1998	2000

Appendix A

MTRS: 06 0510N 0600W 020

Serial Number	Count	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC259987	SE	CROSSBARD #6	SUNDANCE ENGINEERING INC	WMC259987	384201	ACTIVE	8/26/2003	2009
WMC260220	SE	POLE 38	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260229	SE	POLE 39	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260233	SW SE	POLE 47	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260239	SE	POLE 48	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260235	SE	POLE 49	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260240	SE	POLE 50	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260241	SE	POLE 51	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC272812	SW SE	POLE 46	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/26/2005	2009
	SW SE		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/26/2005	2009

MTRS: 06 0510N 0600W 021

Serial Number	Count	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC248062	SW SE	CROSSBARD #1	SUNDANCE ENGINEERING INC	WMC248062	384201	ACTIVE	12/24/1994	2009
WMC248063	NE NW	CROSSBARD #2	SUNDANCE ENGINEERING INC	WMC248062	384201	ACTIVE	12/24/1994	2009
WMC260221	SW	POLE 37	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260238	SW	POLE 48	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260240	SW	POLE 50	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260241	SW	POLE 51	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009

MTRS: 06 0510N 0600W 028

Serial Number	Count	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC161916	SW	LOOKOUT	MINERAL HILL VENTURE	WMC161916	384101	ACTIVE	07/24/1984	2009
WMC162020	SW	TIN FRACTION	MINERAL HILL VENTURE	WMC161916	384101	ACTIVE	10/25/1984	2009
WMC162029	SW	ZULU	MINERAL HILL VENTURE	WMC161916	384101	ACTIVE	03/15/1984	2009
WMC162032	SW	BABY	MINERAL HILL VENTURE	WMC161916	384101	ACTIVE	05/16/1984	2009
WMC248062	NE NW	CROSSBARD #1	SUNDANCE ENGINEERING INC	WMC248062	384201	ACTIVE	12/24/1994	2009
WMC259387	SW	CLAY FRACTION	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	SW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259386	SW	CLAY MAR	BRONCO CK MINING & EXPLORATION	WMC259386	384101	ACTIVE	04/24/2003	2009
	SW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC260219	NW SW	POLE 35	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260220	NW SW	POLE 36	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260229	NW	POLE 39	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC260239	NW	POLE 48	BRONCO CK MINING & EXPLORATION	WMC260181	384101	ACTIVE	04/26/2004	2009
WMC270441	NW SW	RUB	BRONCO CK MINING & EXPLORATION	WMC270438	384101	ACTIVE	06/23/2005	2009

MTRS: 06 051ON 060OW 028

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Annivl
	NW SW		JENSEN ERIC	WMC276436	384101	ACTIVE	06/22/2001	2009

MTRS: 06 051ON 060OW 029

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Annivl
WMC162002	NE SE	PATHFINDER	MINERAL HILL VENTURE	WMC161915	384101	ACTIVE	05/19/1995	2009
WMC162021	SW	TREADWELL	MINERAL HILL VENTURE	WMC161915	384101	ACTIVE	05/30/1902	2009
WMC162022	SW	TREADWELL #1	MINERAL HILL VENTURE	WMC161915	384101	ACTIVE	10/08/1891	2009
WMC162023	SW	TREADWELL #2	MINERAL HILL VENTURE	WMC161915	384101	ACTIVE	10/08/1891	2009
WMC162024	SW	TREADWELL #3	MINERAL HILL VENTURE	WMC161915	384101	ACTIVE	10/08/1891	2009
WMC255887	NE	CROSSBOARD #6	SUNDANCE ENGINEERING INC	WMC255887	384201	ACTIVE	02/06/2000	2009
WMC255385	SE	CLAY FRACTION	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/24/2003	2009
	SE		JENSEN ERIC	WMC255385	384101	ACTIVE	04/24/2003	2009
WMC255386	SE	CLAY MAN	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/24/2003	2009
	SE		JENSEN ERIC	WMC255385	384101	ACTIVE	04/24/2003	2009
WMC255387	SE	KATIE MARIE	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/24/2003	2009
	SE		JENSEN ERIC	WMC255385	384101	ACTIVE	04/24/2003	2009
WMC255388	NW SW	MHN-4	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/27/2003	2009
	NW SW		JENSEN ERIC	WMC255385	384101	ACTIVE	04/27/2003	2009
WMC255389	NW	MHN-5	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/28/2003	2009
	NW		JENSEN ERIC	WMC255385	384101	ACTIVE	04/28/2003	2009
WMC259438	NW SW	MHN-6	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/28/2003	2009
	NW SW		JENSEN ERIC	WMC255385	384101	ACTIVE	04/28/2003	2009
WMC259401	NW SW	MHN-7	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/26/2003	2009
	NW SW		JENSEN ERIC	WMC255385	384101	ACTIVE	04/26/2003	2009
WMC259402	SW	MHN-8	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/26/2003	2009
	SW		JENSEN ERIC	WMC255385	384101	ACTIVE	04/26/2003	2009
WMC259403	NW SW	MHN-9	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/26/2003	2009
	NW SW		JENSEN ERIC	WMC255385	384101	ACTIVE	04/26/2003	2009
WMC259404	SW	MHN-10	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/26/2003	2009
	SW		JENSEN ERIC	WMC255385	384101	ACTIVE	04/26/2003	2009
WMC259405	SW	MHN-11	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/26/2003	2009
	SW		JENSEN ERIC	WMC255385	384101	ACTIVE	04/26/2003	2009
WMC259406	SW	MHN-12	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/26/2003	2009
	SW		JENSEN ERIC	WMC255385	384101	ACTIVE	04/26/2003	2009
WMC259408	SW	MHN-14	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/26/2003	2009
	SW		JENSEN ERIC	WMC255385	384101	ACTIVE	04/26/2003	2009
WMC259411	SW	MHN-15	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/27/2003	2009
	SW		JENSEN ERIC	WMC255385	384101	ACTIVE	04/27/2003	2009
WMC259412	SW	MHN-17	BRONCO CK MINING & EXPLORATION	WMC255385	384101	ACTIVE	04/25/2003	2009

MTRS: 06 051ON 0600W 029

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Lac Date	Last Assmt
	SW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/25/2003	2009
WMC259413	SW	MIN-15	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/25/2003	2009
	SW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/25/2003	2009
WMC259418	SE	REESE	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	SE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259419	SE	REESE FRACTION	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	SE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259420	SE	STACIE	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	SE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC260219	NE SE	POLE 29	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/26/2004	2009
WMC260220	NE	POLE 30	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/26/2004	2009
WMC260224	NE NW	POLE 34	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/26/2004	2009
WMC260225	NE NW	POLE 35	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/26/2004	2009
WMC260226	NE	POLE 36	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/26/2004	2009
WMC260227	NE	POLE 37	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/26/2004	2009
WMC260228	NE	POLE 38	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/26/2004	2009
WMC260229	NE	POLE 39	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/26/2004	2009
WMC260237	NE	POLE 47	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/26/2004	2009
WMC260238	NE	POLE 48	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/26/2004	2009
WMC260239	NE	POLE 49	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/26/2004	2009
WMC272812	NE NW	POLE 46	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/29/2005	2009
	NE NW		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/29/2005	2009
WMC278438	SW	BALL FRACTION	BRONCO CK MINING & EXPLORATION	WMC278438	384101	ACTIVE	06/22/2006	2009
	SW		JENSEN ERIC	WMC278438	384101	ACTIVE	06/22/2006	2009
WMC278439	SE	FOREST FRACTION	BRONCO CK MINING & EXPLORATION	WMC278438	384101	ACTIVE	06/22/2006	2009
	SE		JENSEN ERIC	WMC278438	384101	ACTIVE	06/22/2006	2009
WMC278440	SE	GOLD PENNY FRACTION	BRONCO CK MINING & EXPLORATION	WMC278438	384101	ACTIVE	06/22/2006	2009
	SE		JENSEN ERIC	WMC278438	384101	ACTIVE	06/22/2006	2009

MTRS: 06 051ON 0600W 030

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Lac Date	Last Assmt
WMC259405	NE	MINE	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/25/2003	2009
	NE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/25/2003	2009
WMC259406	NE SE	MINE 11	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NE SE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259408	SE	MINE 12	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	SE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259407	NE SE	MINE 13	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/25/2003	2009
	NE SE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/25/2003	2009

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LIST OF MINING CLAIMS BY SECTION

Run Date: 01/21/2009

MTRS: 06 051ON 060ØW 030

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Lse Date	Last Assmt
WMC256408	SE	MHN-14	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/30/2003	2009
	SE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/30/2003	2009
WMC259413	SE	MHN-18	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/27/2003	2009
	SE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/25/2003	2008
WMC272815	SE	MHN-15	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/29/2006	2009
	SE		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/29/2006	2009
WMC272816	SE	MHN-19	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/29/2006	2009
	SE		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/29/2006	2009

MTRS: 06 051ON 060ØW 031

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Lse Date	Last Assmt
WMC259380	NE	D9	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2008
	NE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2008
WMC256413	NE	MHN-18	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/25/2003	2008
	NE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/25/2003	2008
WMC272813	NE SE	JANE	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/29/2005	2009
	NE SE		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/29/2005	2009
WMC272815	NE	MHN-19	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/29/2006	2009
	NE		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/29/2006	2009

MTRS: 06 051ON 060ØW 032

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Lse Date	Last Assmt
WMC161928	NE NW	ARTIC #1	MINERAL HILL VENTURE	WMC161916	384101	ACTIVE	05/30/1992	2008
WMC167021	NW	TREADWELL	MINERAL HILL VENTURE	WMC161916	384101	ACTIVE	01/30/1992	2008
WMC162083	NW	TREADWELL #2	MINERAL HILL VENTURE	WMC161916	384101	ACTIVE	10/08/1991	2008
WMC162084	NW	TREADWELL #3	MINERAL HILL VENTURE	WMC161916	384101	ACTIVE	10/08/1991	2008
WMC259385	NE NW	AL	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2008
	NE NW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2008
WMC259386	NE	ARLENE	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2008
	NE		JENSEN ERIC	WMC259386	384101	ACTIVE	04/24/2003	2008
WMC259388	NE	CLAY MAN	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2008
	NE		JENSEN ERIC	WMC259388	384101	ACTIVE	04/24/2003	2008
WMC259389	NW	D9	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2008
	NW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2008
WMC259390	NW	DAVID	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2008
	NW		JENSEN ERIC	WMC259386	384101	ACTIVE	04/24/2003	2008

NO WARRANTY IS MADE BY BLM FOR USE OF THE DATA FOR PURPOSES NOT INTENDED BY BLM

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BLM NEWCASTLE

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Appendix A

MTRS: 06 051ON 060OW 032

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC259381	NW	DEB	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259383	NE	FS FRACTION	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259384	NW	GAIL	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259386	NE	KATIE MARIE	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259412	NW	MHN-17	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/25/2003	2009
	NW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/25/2003	2009
WMC259413	NW	MHN-16	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/25/2003	2009
	NW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/25/2003	2009
WMC259417	NE	PAUL	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259418	NE	REESE	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259420	NE	STACIE	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259422	NW SW SE	VIVIAN	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NW SW SE		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC260193	NE SE	POLE 9	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/25/2004	2009
WMC260203	NE SE	POLE 10	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/25/2004	2009
WMC260204	NW SW	POLE 14	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/24/2004	2009
WMC260206	NW SW	POLE 16	BRONCO CK MINING & EXPLORATION	WMC260191	384101	ACTIVE	04/24/2004	2009
WMC272812	NE SE	FOREST	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/29/2005	2009
	NE SE		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/29/2005	2009
WMC272813	NW	JAMIE	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/29/2005	2009
	NW		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/29/2005	2009
WMC272814	NE SE	LINNEA	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/29/2005	2009
	NE SE		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/29/2005	2009
WMC272816	NW	MHN-19	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/29/2005	2009
	NW		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/29/2005	2009
WMC272817	SE	POLE 6	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/29/2005	2009
	SE		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/29/2005	2009
WMC272818	NE NW SE	TRAPPER	BRONCO CK MINING & EXPLORATION	WMC272812	384101	ACTIVE	10/29/2005	2009
	NE NW SE		JOHNSON DAVID	WMC272812	384101	ACTIVE	10/29/2005	2009

MTRS: 06 051ON 060OW 033

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC162029	NW	ZULU	MINERAL HILL VENTURE	WMC151916	384101	ACTIVE	03/15/1984	2009

Run Time: 08:21 AM

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LIST OF MINING CLAIMS BY SECTION

Run Date: 01/21/2009

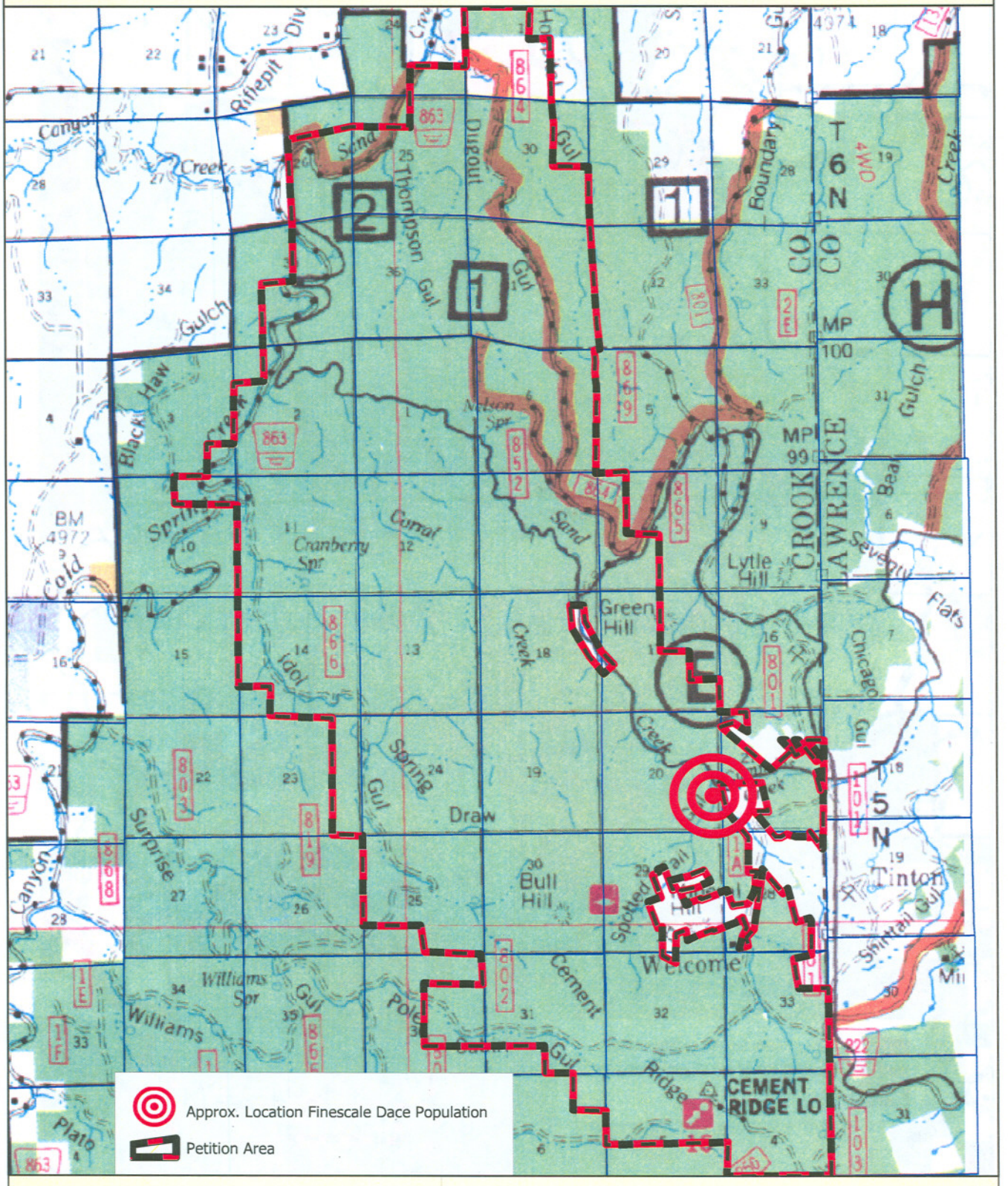
MTRS: 06 051ON 060OW 033

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC259384	NW	ARLENE	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259386	NW	CLAY VAN	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC259418	NW	REESE	BRONCO CK MINING & EXPLORATION	WMC259385	384101	ACTIVE	04/24/2003	2009
	NW		JENSEN ERIC	WMC259385	384101	ACTIVE	04/24/2003	2009
WMC260199	SW	POLE 9	BRONCO CK MINING & EXPLORATION	WMC260201	384101	ACTIVE	04/25/2004	2009
WMC260200	NW SW	POLE 10	BRONCO CK MINING & EXPLORATION	WMC260201	384101	ACTIVE	04/25/2004	2009

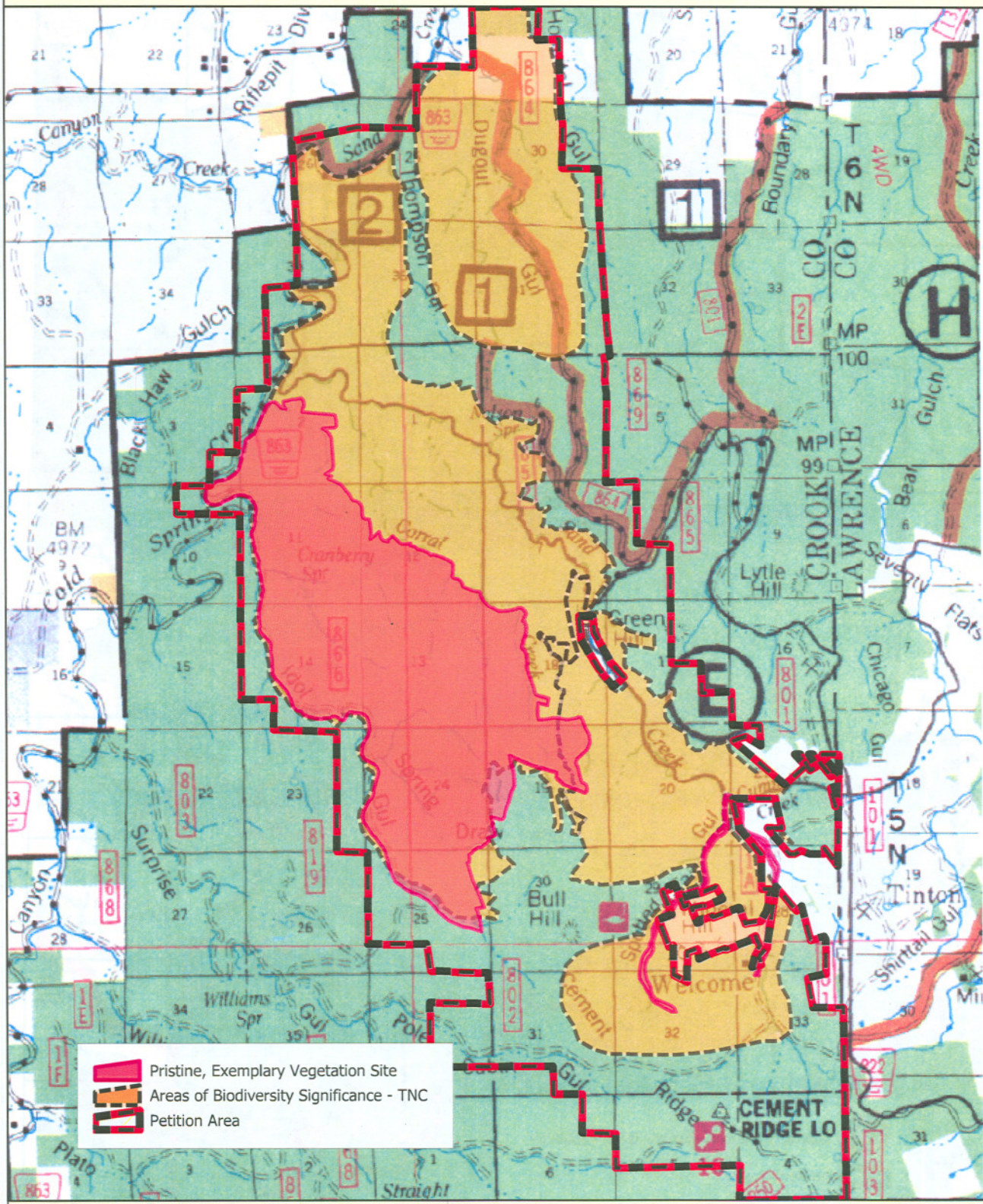
MTRS: 06 051ON 061OW 001

Serial Number	Quad	Claim Name	Claimant	Land File	Case Type	Status	Loc Date	Last Assmt
WMC259867	NE NW SE	CROSSBARD #7	SUNDANCE ENGINEERING INC	WMC259867	364201	ACTIVE	03/05/2003	2009

Finescale Dace
(approximate location shown to protect population)



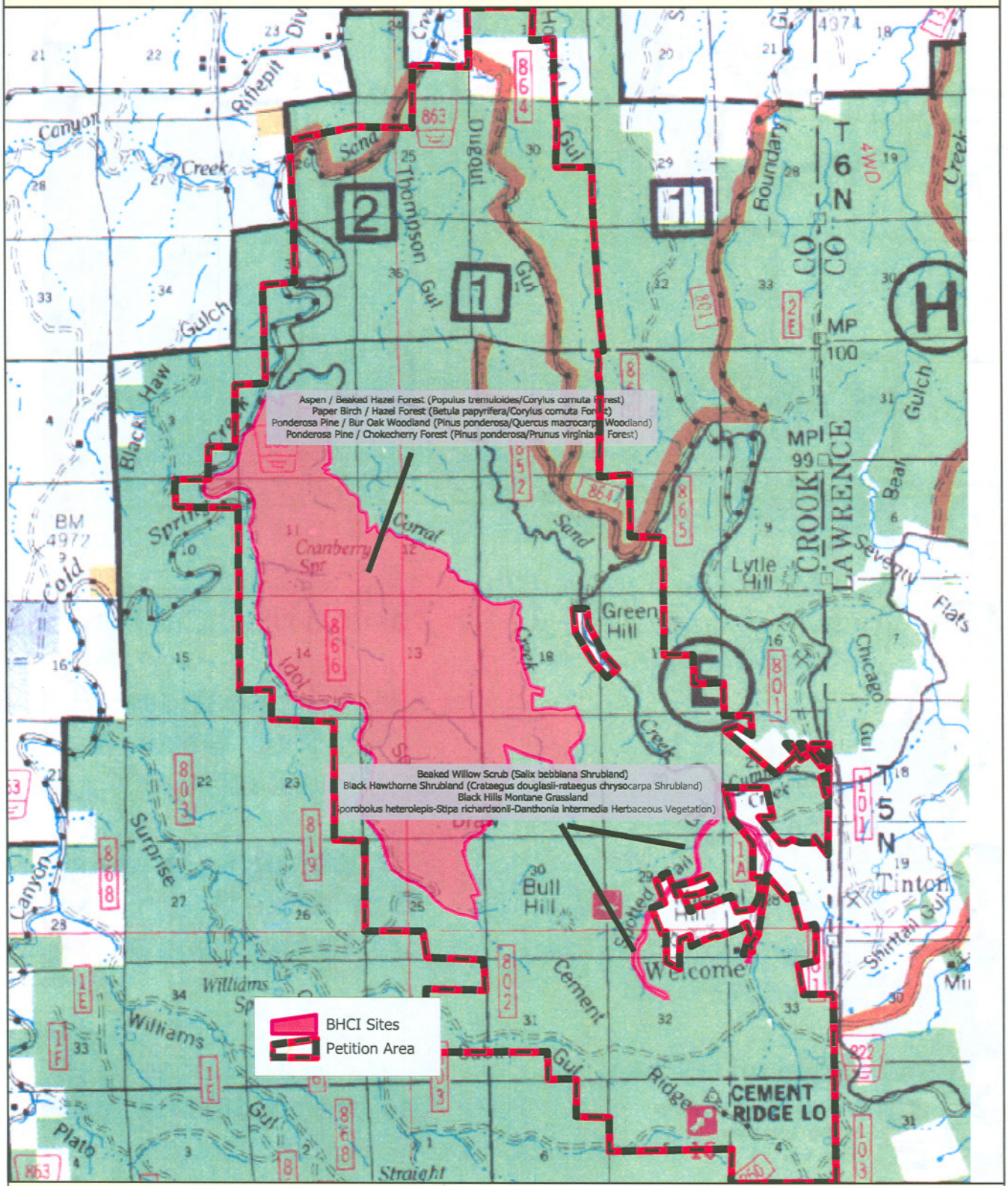
Special Designations by The Nature Conservancy and Black Hills Community Inventory



Petition Before the Wyoming EQC
to Designate Sand Creek as Rare and Uncommon

Appendix C

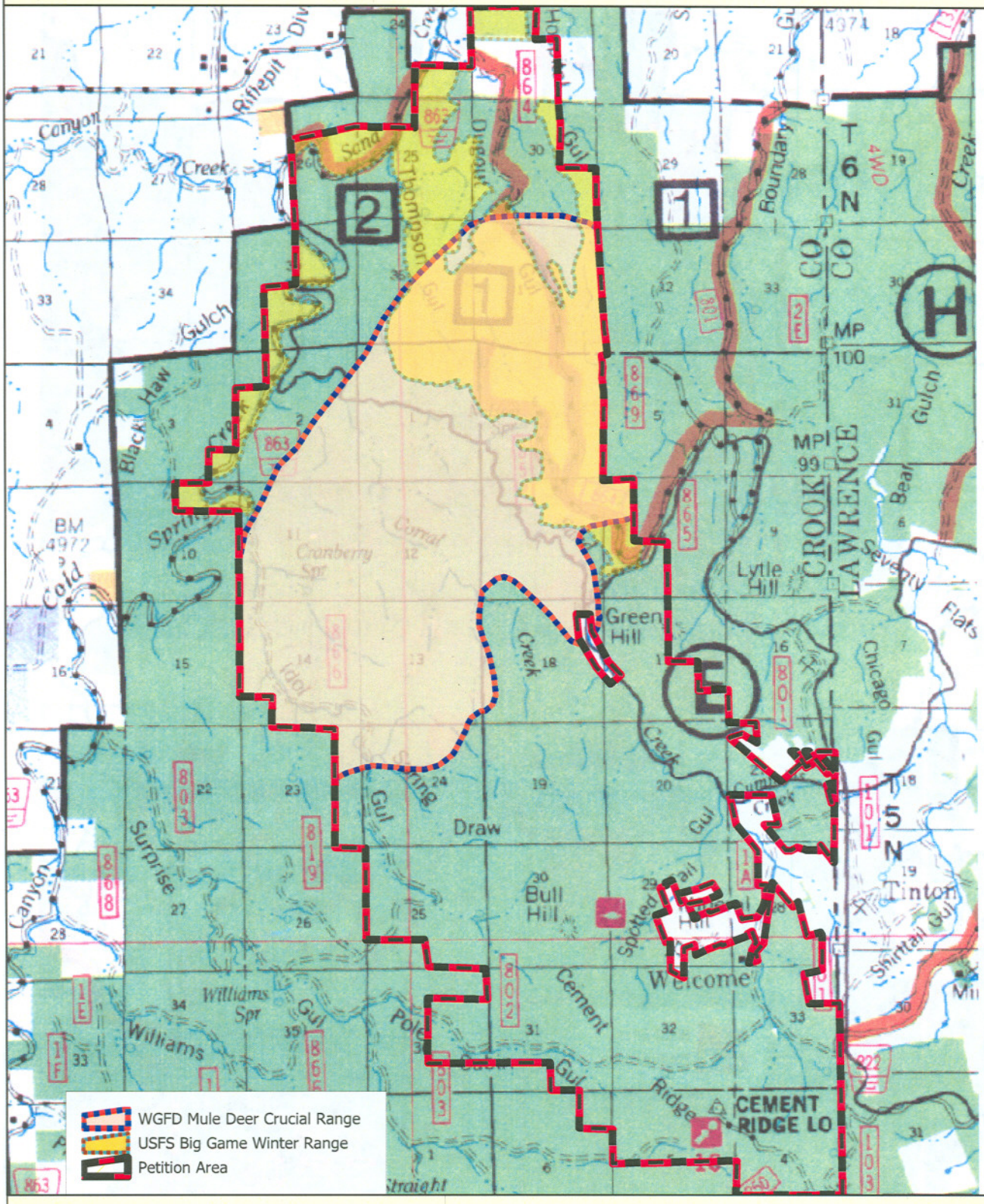
Rare Vegetation Types from Black Hills Community Inventory



Petition Before the Wyoming EQC
to Designate Sand Creek as Rare and Uncommon

Appendix D

Mule Deer Crucial Winter Range (WGFD) and Big Game Winter Range (USFS)



0 1 mi

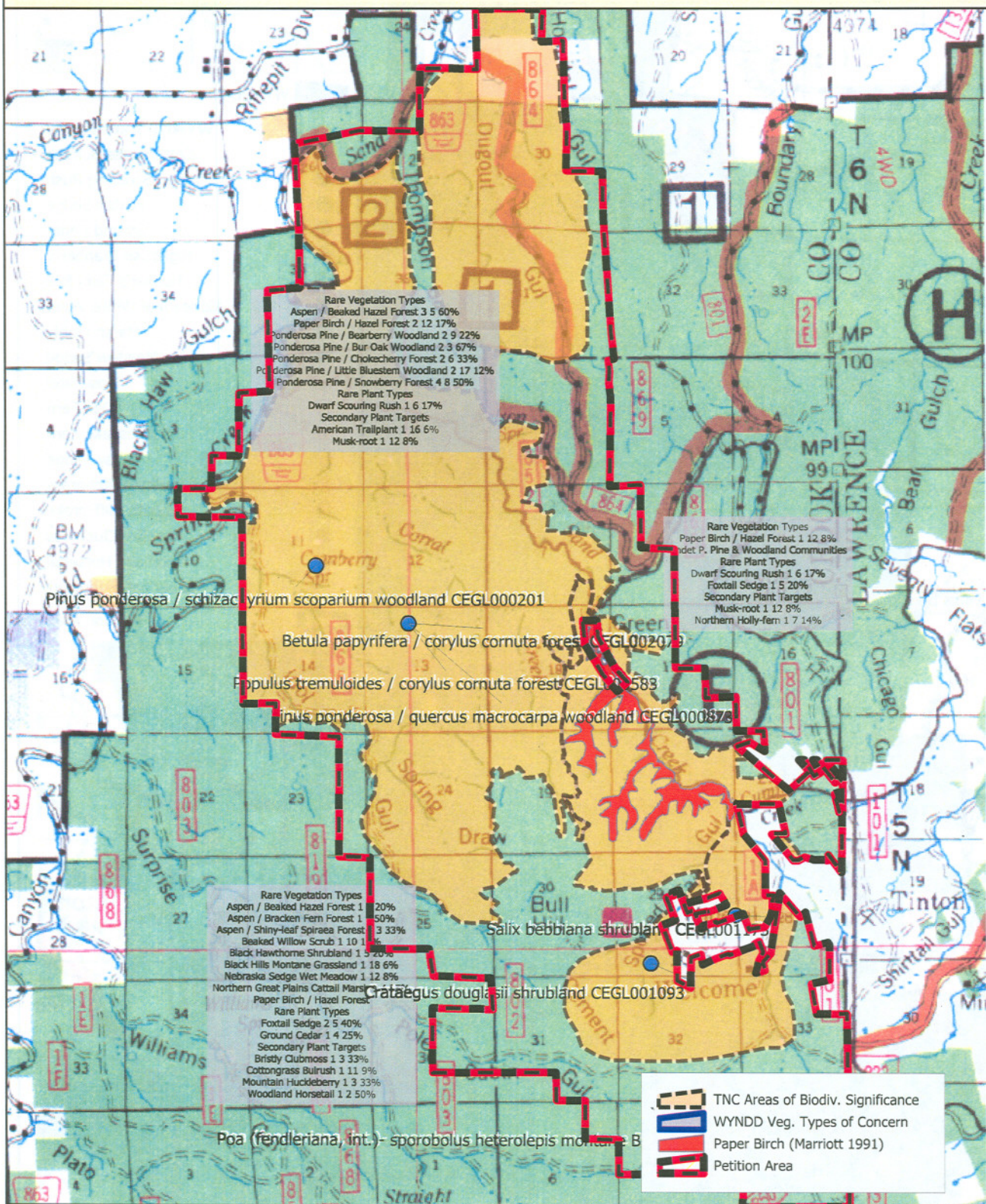
N

Universal Transverse Mercator - Zone 13 (N)

Petition Before the Wyoming EQC
to Designate Sand Creek as Rare and Uncommon

Appendix E

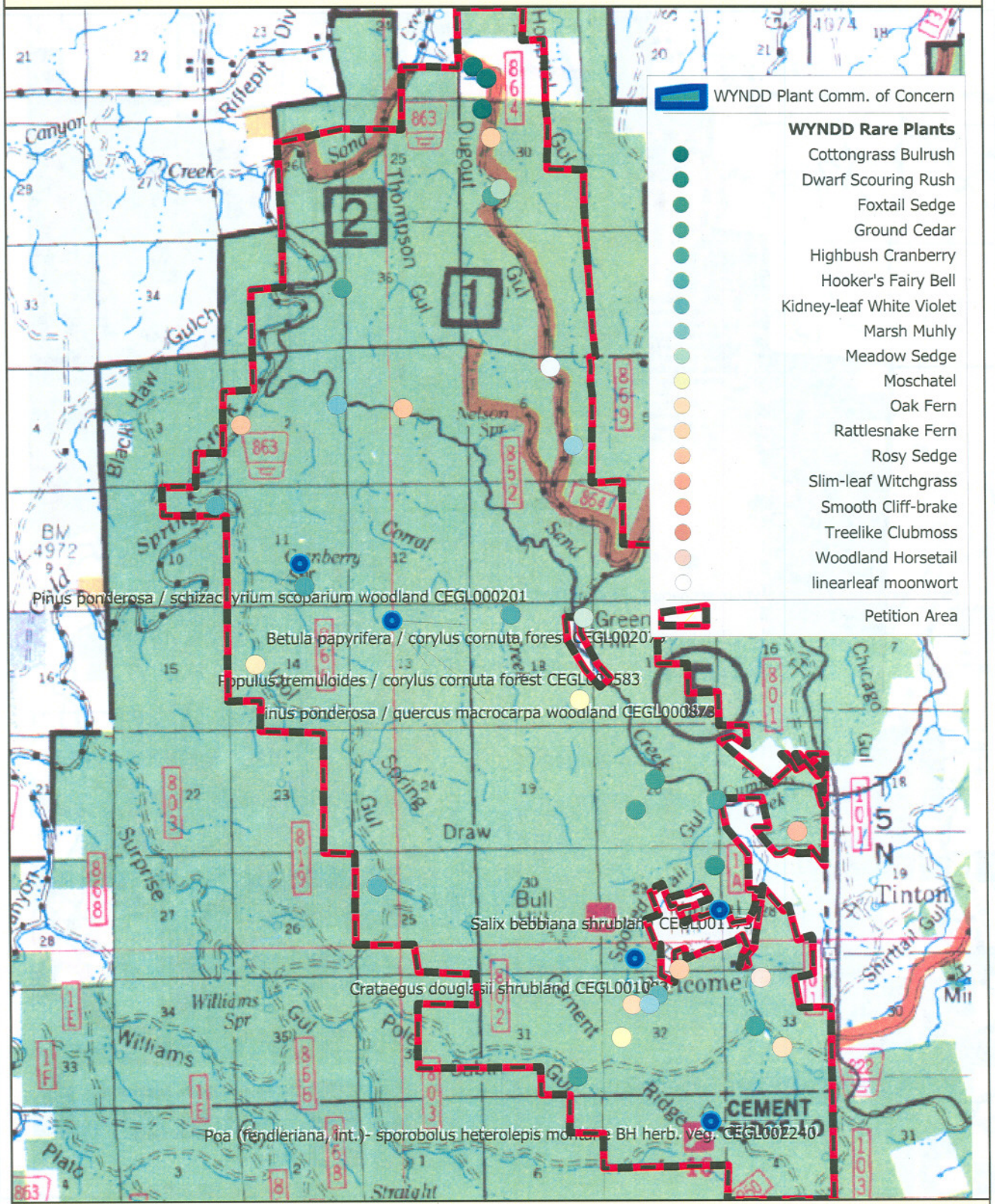
Rare Plants and Vegetation Types from TNC and Others



Petition Before the Wyoming EQC
to Designate Sand Creek as Rare and Uncommon

Appendix F

Rare Plants and Vegetation Types from Wyoming Natural Diversity Database



0 1 mi

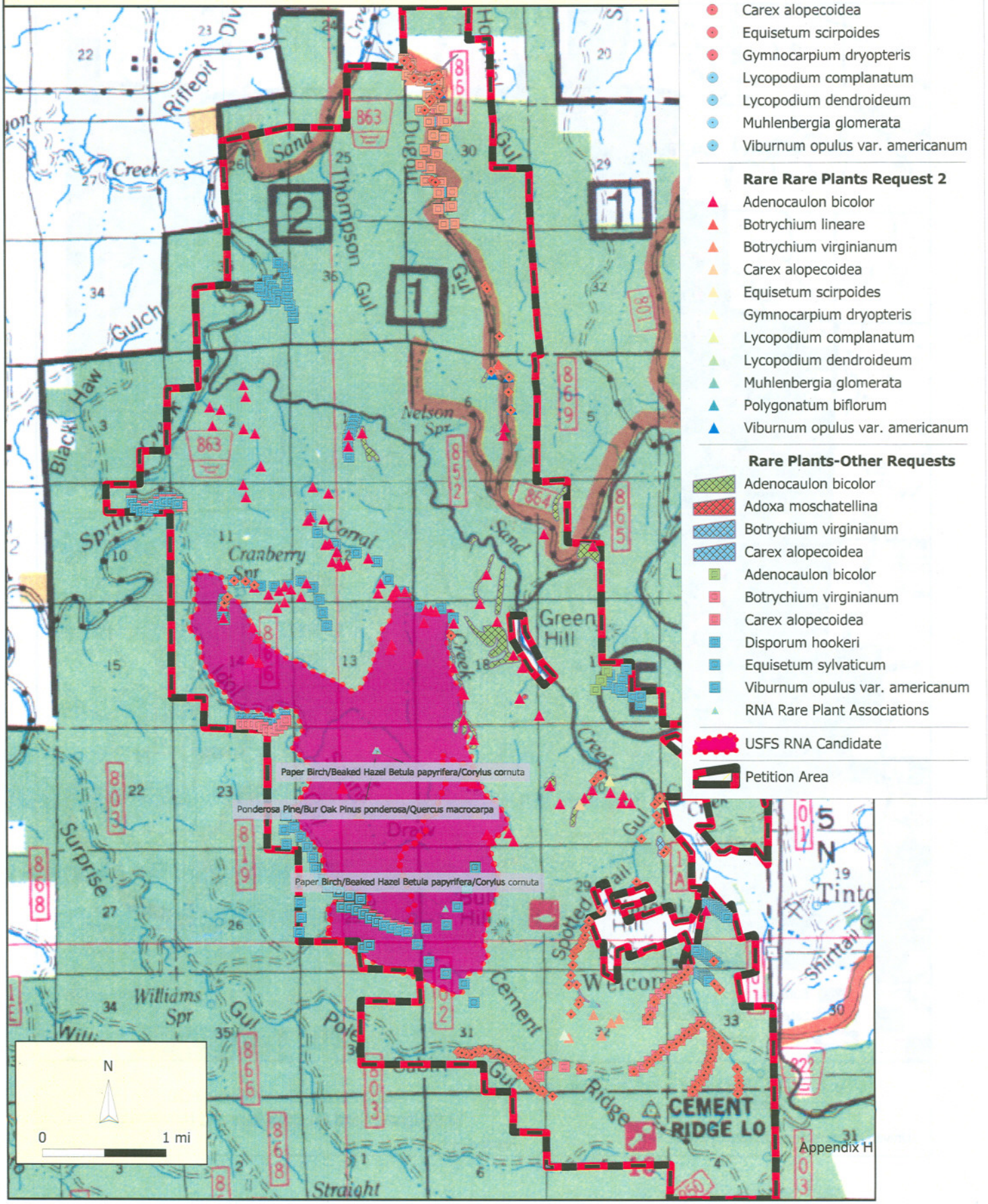
N

Universal Transverse Mercator - Zone 13 (N)

Petition Before the Wyoming EQC
to Designate Sand Creek as Rare and Uncommon

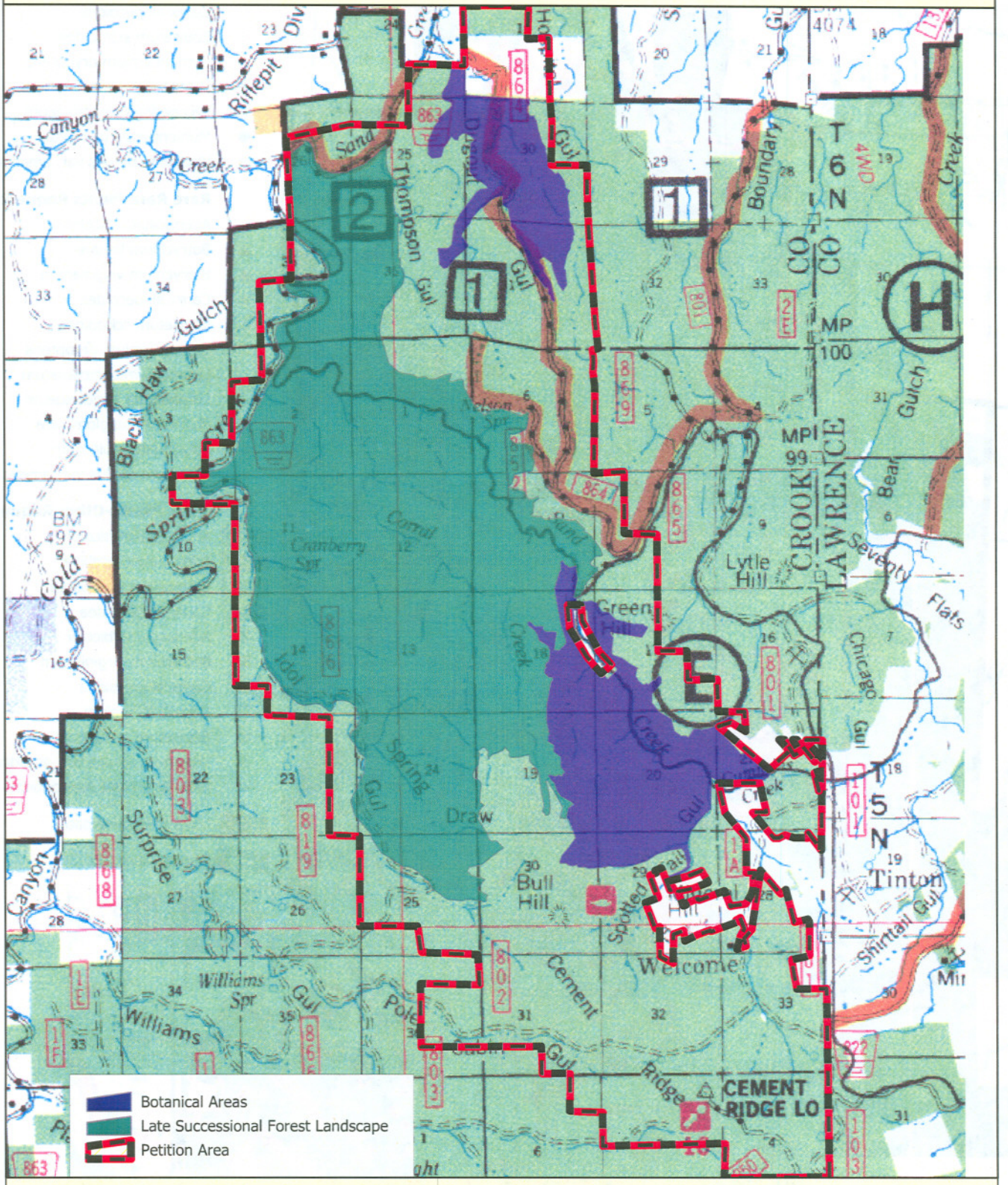
Appendix G

Sand Creek Rare Plants and Vegetation Types from USFS



Appendix H

Designated Late Successional Forest Landscape and Botanical Areas (USFS)



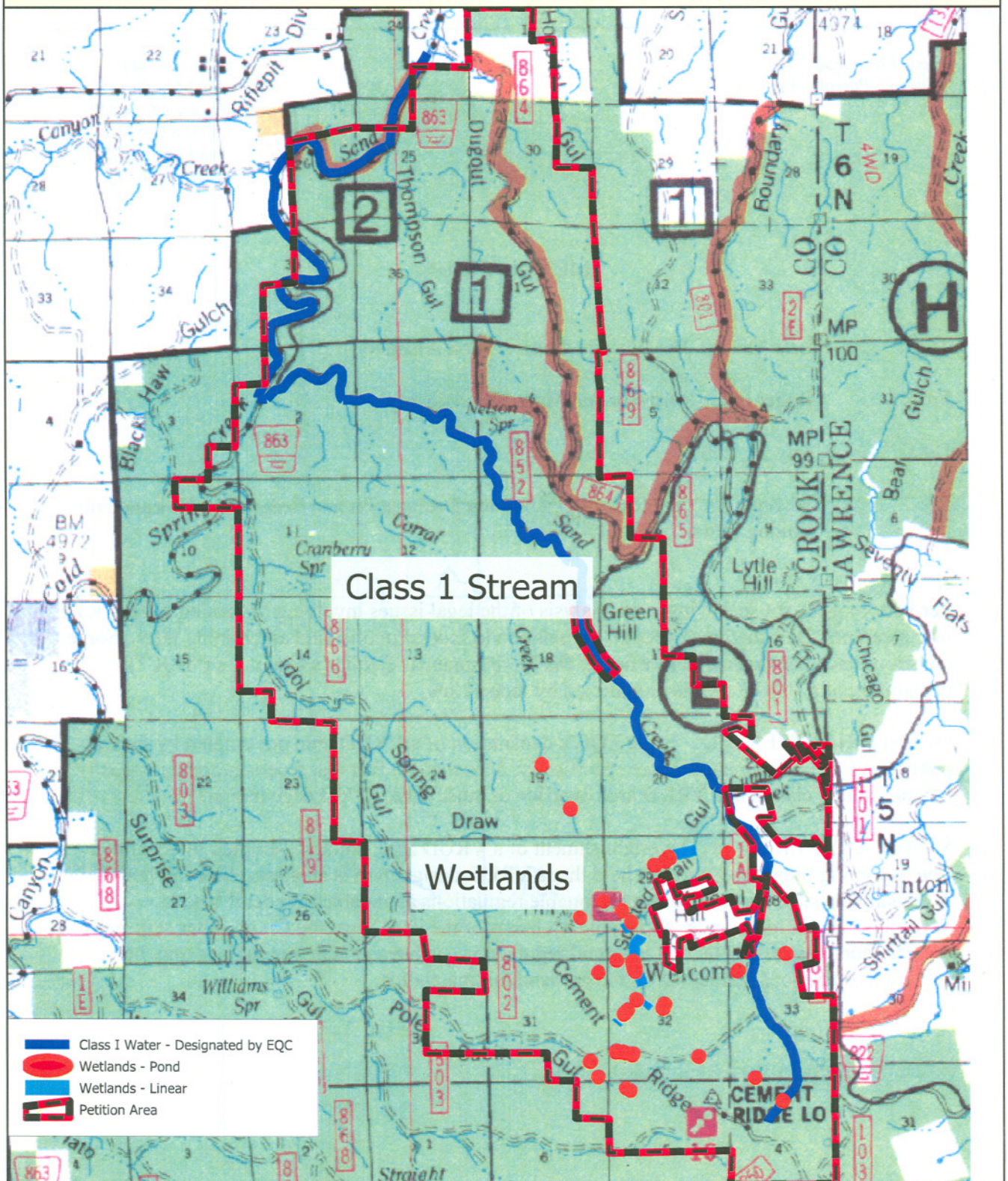
Petition Before the Wyoming EQC
to Designate Sand Creek as Rare and Uncommon

Appendix I

Contiguous Right-of-Way Easement Across Ranch A

In the 1960s, Homestake Forest Products held an easement to log on property ultimately conveyed to other owners (ultimately including the U.S. Forest Service) before July 1, 1965. Together with this right (which has clearly expired), Homestake Forest Products held a right-of-way access across Ranch A, which is contiguous to the proposed Very Rare or Uncommon Area where it adjoins Ranch A, and "its successors and assigns, rights of way over, across, along and upon said properties, or any part thereof, for the purpose of building, construction, using and maintaining thereon such highways, roads and logging trails as grantee may deem necessary or advisable as a part of and in connection with any lumber, timber and logging operation of grantee, its successors and assigns." The deadline to complete this logging passed more than 34 years ago, and thus it seems improbable that any right-of-way easement to access said logging project remains. In addition, Homestake Forest Products appears no longer to exist, but it is safe to project that its successor would be Homestake Mining Company, of which it was a subsidiary. The current addess for Homestake Mining Company, should the EQC wish to notify this company relating to their presumably extinguished contiguous right-of-way easementm, is 11457 Bobtail Gulch Street, Central City, SD 57754.

Wetlands and Class 1 Water (WYDEQ)



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N

Universal Transverse Mercator - Zone 13 (N)

Petition Before the Wyoming EQC
to Designate Sand Creek as Rare and Uncommon

Appendix J

WESTERN MINING ACTION PROJECT

Roger Flynn, Esq.,
Jeffrey C. Parsons, Esq.

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Fax (303) 823-5732
wmap@igc.org

MEMORANDUM

To: Erik Molvar, Biodiversity Conservation Alliance

From: Roger Flynn, Director and Managing Attorney

Date: July 22, 2009

Re: Wyoming's Very Rare or Uncommon Designation and Federal Public Land and Mining Laws

Per your request, the following is an analysis of the legal issues involving Wyoming's Very Rare or Uncommon Designation ("VRUD") in relation to federal public land and mining laws. Some questions have been raised as to whether the Environmental Quality's Council's ("EQC") declaration of a VRUD area is pre-empted by federal law.

QUESTION PRESENTED: Is the EQC's declaration of a VRUD area pre-empted by federal public land and mining law? More specifically, does that the fact that a person/company has federal mining claims in a VRUD area override or nullify the VRUD designation?

SHORT ANSWER: No. The establishment of a VRUD area is not pre-empted by federal law. The Wyoming Supreme Court has held that a VRUD designation is an appropriate method for exercising the state's right to enact reasonable regulations applicable to federal land in Wyoming. In addition, under applicable decisions of the U.S. Supreme Court, other state and federal courts, as well as federal laws and regulations, such reasonable regulations may be applied to operations conducted on federal land mining claims.

DISCUSSION

FEDERAL MINING AND PUBLIC LAND LAWS DO NOT PREEMPT THE EQC's AUTHORITY TO DESIGNATE A VRUD AREA

A. Federal Constitutional and Statutory Background

Every western state asserts jurisdiction over mining operations on federal lands within their borders. *See* 65 Fed. Reg. 69998, 70008-70009 (Nov. 21, 2000) (preamble to Interior Department mining regulations confirming state regulation of mining along with federal agencies). While Congress is the proprietor of minerals located on the federal lands under the General Mining Law of 1872 and has legislative power over federal lands pursuant to the Property Clause of the Constitution, U.S. Const. art. IV, § 3, cl. 2, the states still may exercise their police power to regulate activities on federal lands within their boundaries without violating the Supremacy Clause of the Constitution, U.S. Const. art. VI, cl. 2. California Coastal Comm'n v. Granite Rock Co., 480 U.S. 572, 107 S.Ct. 1419 (1987). Thus, mining activities on the public domain are subject to dual regulation by the federal and state governments.

Under the Tenth Amendment to the United States Constitution, those "powers not delegated to the United States… are reserved to the States respectively, or to the people." U.S. Const. Amend. X. The Tenth Amendment "expressly declares the constitutional policy that Congress may not exercise power in a fashion that impairs the States' integrity or their ability to function in a federal system." Fry v. United States, 421 U.S. 542, 547 n. 7 (1975). The power of the State to regulate its "police, its domestic trade, and to govern its own citizens" was first recognized in Gibbons v. Ogden, 22 U.S. 1(1824), giving rise to the modern day police power derived from this constitutional provision. The police power includes the power to protect the public health, safety, morality, and general welfare. It is from these roots that the states retain the authority to regulate activities such as mining on federal lands.

The police power is a legitimate purpose for a variety of regulations related to the health, safety, and welfare of the community. The police power may be the source of land use planning functions, and many courts recognize that environmental impacts are a legitimate concern included in the "general welfare" of a community. From these roots, the police power has become a well-settled source for environmental regulation and has been upheld as providing authority for regulation of water and air pollution. *See e.g.*, Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440 (1960).

When a state or local government enacts regulations of mining on federal lands, the issue of preemption by the existing federal regulatory framework may be implicated. There is a "presumption that state or local regulation of matters related to health and safety is not invalidated under the Supremacy Clause." Hillsborough County v. Automated Med. Labs., Inc., 471 U.S. 707, 715 (1985). "When considering pre-emption, 'we start with the assumption that the historic police powers of the States were not to be superseded by the Federal Act unless that was the clear and manifest purpose of Congress.'" Wisconsin Public Intervenor v. Mortier, 501 U.S. 597, 605 (1991), *quoting* Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947).

If preemption is not clearly expressed by Congress, preemption may still occur in either of two circumstances: either through "field" preemption or "conflict" preemption. In its leading case on preemption regarding federal land, the Supreme Court articulated the distinction between these two types of preemption:

> [S]tate law can be preempted in either of two general ways. If Congress evidences an intent to occupy a given field, any state law falling within that field is pre-empted. If Congress has not entirely displaced state regulation over the matter in question, state law is still pre-empted to the extent it actually conflicts with federal law, that is, when it is impossible to comply with both state and federal law, or where the state law stands as an obstacle to the accomplishment of the full purposes and objectives of Congress.

Granite Rock Co., 480 U.S. at 582.

In this case, as discussed in more detail below, there is no express declaration of preemptive effect in the regulatory framework for mining on federal lands. Further, the relevant Forest Service and BLM regulations are not so broad as to preclude any state regulation, and in fact recognize the applicability of state law. Therefore, local regulation of mining on federal lands is valid unless "it is impossible to comply with both state and federal law" (i.e. "conflict preemption"). Granite Rock Co., 480 U.S. at 581.

B. State Regulation of Mining on Federal Land is Recognized by the U.S. and Wyoming Supreme Courts

Both the United States and Wyoming Supreme Courts have recognized and confirmed the ability of states to place significant regulations on mining operations on federal land.

1. *Granite Rock* and other federal court decisions

In Granite Rock, the U.S. Supreme Court held that state and local governments may regulate hardrock mining activities on federal lands. The Court held that states can require holders of mining claims on federal lands to comply with reasonable state environmental regulation.

The Granite Rock Corp. held unpatented mining claims to limestone deposits in the Big Sur region of Los Padres National Forest. Complying with Forest Service regulations, Granite Rock submitted a proposed plan of operations to the Forest Service for approval.[1] The federal agency approved the mine with some alterations to reduce the environmental impacts of the mining. The Granite Rock Corp. began mining without seeking a permit from the California Coastal Commission (CCC) as required under California law.

[1] The Forest Service regulations at issue in Granite Rock, 36 C.F.R. Part 228, are similar to the BLM mining regulations, 43 C.F.R. subpart 3809, especially regarding the express acknowledgement of dual federal/state permitting authority over mining on public lands.

Rather than apply for the CCC permit, the Granite Rock Corp. instead sought an injunction in federal district court, arguing that the state regulation was preempted by the 1872 Mining Law (sometimes referred to as the General Mining Law (GML)), the federal Coastal Zone Management Act, and Forest Service regulations, thereby prohibiting the CCC from imposing a permit condition on mining. See Granite Rock at 576. The district court denied the Granite Rock Corp.'s motion for summary judgment and dismissed the action. Granite Rock Co. v. California Coastal Comm'n, 590 F. Supp. 1361 (N.D. Cal. 1984). The Ninth Circuit reversed, holding that the CCC permit requirement was preempted by the General Mining Law and Forest Service regulations. Granite Rock Co. v. California Coastal Comm'n, 768 F.2d 1077 (9th Cir. 1985). The Supreme Court reversed the Ninth Circuit decision, finding no preemption of the permit condition in the regulations, the GML, or the Coastal Zone Management Act. Granite Rock Co., 480 U.S. 572 (1987).

In its determination that federal mining regulations did not prohibit concurrent state regulation, the Supreme Court relied on numerous provisions in the regulations that assumed compliance with state laws in areas such as water quality, disposal and treatment of waste, and air quality standards. Other portions of the regulations also made reference to compliance with state law, making it "impossible to divine from these regulations, which expressly contemplate coincident compliance with state law as well as with federal law, an intention to pre-empt all state regulation of unpatented mining claims in national forests." 480 U.S. at 584. The Court also noted that "it is appropriate to expect an administrative regulation to declare any intention to pre-empt state law with some specificity." Id. at 583. Indeed, the 1872 Mining Law specifically states that any activities done pursuant to that law can only occur pursuant to "regulations

prescribed by law," 30 U.S.C. § 22, and only "so long as they comply with the laws of the United States, and with State, territorial, and local regulations." 30 U.S.C. § 26.

Having found no field preemption over state regulation of mining on federal land, the Court then looked at the applicable public land statutes to determine if an actual conflict existed between the Forest Service regulations and state law, since these statutes provide the agency authority to enact the regulations. Id. at 585-586. Because the 1872 Mining Law contains express provisions directing agency coordination with state agencies, the Court saw no conflict. Id. at 589.

In its reasoning, the Court drew a distinction between state environmental regulation, which is permitted by the GML on federal lands, and categorical land use planning, which is prohibited. This distinction is described as follows:

> Land use planning in essence chooses particular uses for the land; environmental regulation, at its core, does not mandate particular uses of the land but requires only that, however the land us used, damage to the environment is kept within prescribed limits.

Id. at 587. To support this distinction, the Court looked to Congressional recognition of the difference between land use planning and environmental regulation because this recognition provides for different responses by federal agencies to state and local land use planning versus environmental regulation. Id. at 587-588.

The Court did recognize that there is occasionally an overlap between environmental regulation and land use planning. The Court held that a state permit process is acceptable regulation of federal lands so long as the process is intended to be used for "reasonable…environmental regulation." Id. at 587.

A number of federal court decisions have followed Granite Rock's finding that state regulation of activities concurrently covered by federal regulations are not in conflict with

federal law. Relying on Granite Rock, the Ninth Circuit upheld Washington State's regulation of the Navy's proposal to construct a port facility partially on federal land. Friends of the Earth v. U.S. Navy, 841 F.2d 927 (9th Cir. 1988). The court paraphrased Granite Rock and stated: "The [Supreme] Court held that the environmental permit requirements of a state statute with both environmental and land use purposes apply to activities on federal land." Friends of the Earth, 841 F.2d at 936. The Ninth Circuit went on to specifically note that such state/local authority is not diminished when a federal agency also has a permit requirement (such as the case here with the Forest Service or BLM). Id.

Other federal courts of appeals have followed this rationale. The Second Circuit expressly cited Granite Rock for the rule that "federal regulations do not reflect intent to preempt state law where regulations expressly contemplate coincident compliance with state law." Luna v. Harris, 888 F.2d 949, 953 (2nd Cir. 1989)(upholding state drug treatment laws, even though more stringent than federal regulations, as not in conflict with federal system); see also Shell Oil v. City of Santa Monica, 830 F.2d 1052 (9th Cir. 1989); Baltimore & Ohio Railroad v. Oberly, 837 F.2d 108 (3rd Cir. 1988); Kerr-McGee v. City of West Chicago, 914 F.2d 820 (7th Cir. 1990).

In one unique case, however, an overly-burdensome local regulation was found to be pre-empted by federal mining law. In South Dakota Mining Association, Inc. v. Lawrence County, 155 F.3d 1005 (8th Cir. 1998), the court held that a complete and categorical ban on the predominant form of mining in an area, open pit mining, violated the Supreme Court's rule in Granite Rock that prohibitory local/state regulations were pre-empted.

2. The Wyoming Supreme Court and other state court decisions

In addition to these federal cases, a number of state courts have upheld the direct regulation of mining activities on federal land. These courts have specifically found that such regulation, even if more stringent than federal review and even in the face of federal approval of the mining operation, was not in conflict with the 1872 Mining Law and related mining and public land laws.

In Wyoming, the leading case is LeFaivre v. Environmental Quality Council, 735 P.2d 428 (Wyo. 1987). In that case, the Wyoming Supreme Court upheld the state's designation of a VRUD area and the denial of a mining permit application submitted by the holder of federal mining claims under the 1872 Mining Law. The court specifically rejected the mining company's argument that federal mining laws precluded the state from denying a permit application in a VRUD area. Relying on Granite Rock, the court affirmed the state's denial based on the need to protect the "special features" of the rock formation in the VRUD area covered by the federal mining claims. Id. at 434.

In Gulf Oil Corp. v. Wyoming Oil and Gas Conservation Commission, the Wyoming Supreme Court also found that the federal Mineral Leasing Act of 1920 did not preempt the state from imposing environmentally protective conditions on drilling activities proposed for federal lands. 693 P.2d 227 (Wyo. 1985). Rather, the court declared that "[w]e find that Congress, far from excluding state participation, has prescribed a significant role for local governments in the regulation of environmental impact of mineral development on federal land." Id. at 235. The Court specifically relied on provisions requiring cooperation with state and local governments under the National Environmental Policy Act (NEPA) – which would be applicable to review of mining proposals on federal land. Id. at 235-236.

Other state courts have upheld the authority of states to place significant and reasonable limitations on mining on federal land. In State ex. rel. Andrus v. Click, the Idaho Supreme Court held that a state law requiring miners to obtain a state permit for dredge mining on federal lands claimed under the 1872 Mining Law was not preempted, even though the dredging was permitted by federal statute. 554 P.2d 969 (Idaho 1976). The Idaho Supreme Court specifically found that the objectives and purposes of Congress in the Mining and Mineral Policy Act of 1970 would not be undermined by the state's ability to deny a mining permit.

An Oregon court rejected a similar challenge to an Oregon state permit requirement in State ex. rel. Cox v. Hibbard, 570 P.2d 1190 (Or. App. 1977). In extensively quoting the Idaho Supreme Court's decision in Andrus v. Click with approval, the Court noted: "We likewise conclude that federal mining laws do not indicate an intent to preempt state regulation and we find no conflict between any particular provision of the federal mining laws and [Oregon law]." 570 P.2d at 1193.

In another case, the Oregon Court of Appeals upheld the state's denial of a water quality permit for a proposed copper mine on federal land. Kinross Copper Corp. v. State, 981 P.2d 833 (Or. App. 1999), *adhered to on reconsideration*, 988 P.2d 400 (Or. App. 1999). In rejecting the mining company's argument that the denial of the permit had taken the company's rights to use its unpatented mining claims on federal land, the court ruled that the fact that the company had federal mining claims did not override the state's authority to deny a permit. As the court stated:

> In short, plaintiff's takings claim is predicated on the loss of a right that it never possessed, namely, the "right" to discharge mining wastes into the waters of the state. It necessarily follows that, in denying plaintiff's application for a permit to conduct that activity, the state has not effected a taking of private property within the meaning of either the state or federal constitutions.

Kinross Copper, at 840. The appeals court based its decision on this lack of a "right" to discharge under federal and state mining and water quality laws, and expressed no opinion on the lower court's somewhat different rationale. The appeals court described the lower court's ruling:

> [T]he trial court explained that, because holding an unpatented mining claim requires proof that the claim continues to be marketable, and, because state regulations render plaintiff's claims unmarketable [since the mining operation could not be conducted without the ability to discharge pollution], plaintiff's mining claims were "extinguished," leaving plaintiff with no property right that could be taken. The extinguishment of the claim did not amount to a taking, the court held, because **unpatented mining claims constitute a unique form of property right that—by definition—is subject to state and federal regulatory authority and is more appropriately regarded as analogous to a contract right that is subject to a condition subsequent.**

Id. at 835 (emphasis added) (citing Michael Graf, *Application of Takings Law to the Regulation of Unpatented Mining Claims*, 24 ECOLOGY L.Q. 57 (1997)).

Although the appeals court decision is important in its own right, in confirming that there is no "right" to mine on federal lands absent compliance with environmental requirements, the lower court's decision is also instructive. Under that ruling, the underlying property interest in a federal mining claim is placed in its proper context, since such an interest is predicated on compliance with environmental protection requirements. Thus, there could be no "taking" of that interest by an environmental requirement.[2]

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[2] This basic theme was specifically noted by the Ninth Circuit in Clouser v. Espy, where the court upheld the Forest Service's significant restrictions on mining access and operations based on environmental considerations. "Virtually all forms of Forest Service regulation of mining claims—for instance, limiting the permissible methods of mining and prospecting in order to reduce incidental environmental damage—will result in increased operating costs, and thereby will affect claim validity." Clouser v. Espy, 42 F.3d 1522, 1530 (9th Cir. 1994). In fact, under the Mining Law itself, the expense associated with compliance with environmental regulations may so increase the cost of mining as to render a claim not valuable. United States v. Pittsburgh Pacific, 30 IBLA 388 (1977); Great Basin Mine Watch, 146 IBLA 248, 256 (1998).

In addition to federal and state caselaw precedent, it is important to note that the State of South Dakota, just across the border in the Black Hills, specifically recognizes its ability to designate Special, Exceptional, Critical and Unique Lands (SECUL) in the state, including on federal lands. *See* S.D. Rev. Stat. §§ 45-6B-33 *et seq*. In such areas, the state may require mitigation measures, or prevent mining altogether, to protect the values for which the area was designated. Although not identical, the South Dakota SECUL provisions are similar to Wyoming's VRU provisions and represent a neighboring state's position that such designations are not pre-empted by federal mining law.

C. Federal Law Expressly Contemplates Wyoming's Regulation of Mining on Federal Land.

The above caselaw affirms the right of Wyoming to establish a VRUD area and to regulate, even deny, permits to mine on federal land. This authority is related to the applicable federal public land and mining statutes and regulations that cover mining on public land.

The Mining Law of 1872 is one of the statutes that govern mining on federal lands. The Mining Law does not itself provide for any environmental standards to be applied to the federal lands. However, the Mining Law specifically states that any activities done pursuant to that law can only occur "so long as they comply with the laws of the United States, and with State, territorial, and local regulations." 30 U.S.C. § 26.

The two types of federal land that may be affected by a VRUD designation are lands administered by the Forest Service or BLM. As discussed above, the Supreme Court in Granite Rock specifically recognized the co-existence of state regulation on Forest Service lands. 489 U.S. at 582-586. The Court highlighted the fact that numerous federal laws, such as the National Forest Management Act (NFMA) and the Forest Service's mining regulations, at 36 CFR Part 228, expressly contemplate state regulation of mining on Forest Service lands. Id.

Regarding BLM lands, the primary land use and environmental statute controlling mining is the Federal Land Policy and Management Act of 1976 (FLPMA), which amended the Mining Law. 43 U.S.C. §§ 1701 et seq. FLPMA provided land management direction to the BLM and authorized the Secretary to "take any action necessary to prevent the unnecessary or undue degradation of the lands" Id. FLPMA specifically intended an accommodation of state regulation on federal lands. 43 U.S.C. § 1712(c)(8) (BLM land use plans must "provide for compliance with applicable pollution control laws, including State and Federal air, water, noise, or other pollution standards or implementation plans"); § 1712(c)(9) (BLM land use plans "shall be consistent with State and local plans to the maximum extent [found] consistent with Federal law and the purposes of this Act."). *See also* Granite Rock, 480 U.S. at 585.

BLM first promulgated its mining regulations in 1980, with substantial revisions in 2000 and 2001. From the first regulations in 1980, BLM has recognized the authority of local and state governments to regulate mining operations on federal land:

> Nothing in this subpart shall be construed to effect a preemption of State laws and regulations relating to the conduct of operations or reclamation on Federal lands under the mining law.

43 C.F.R. § 3809.3-1 (regulations prior to January 20, 2001). The 2000 revisions confirmed the authority of state and local governments to regulate federal lands.[3] Specifically, the new rule stated that:

> If State laws or regulations conflict with this subpart regarding operations on public lands, you [the operator] must follow the requirements of this subpart. **However, there is no conflict if the State law or regulation requires a higher standard of protection for public lands than this subpart.**

[3] 65 Fed. Reg. 69998, 70008-70009 (Nov. 21, 2000). On unrelated issues, these regulations were amended on October 30, 2001. 66 Fed. Reg. 54834 (2001). The revisions, importantly, did not change the Interior Department's position regarding state and local authority.

43 C.F.R. § 3809.3 (emphasis added).

The preamble to the revised regulations confirmed that local regulation may be more protective than federal review. "One purpose of subpart 3809 is to establish a minimum level of protection for public lands....States may continue to assert jurisdiction over mining operations on the public lands." 65 Fed. Reg. at 70009. The preamble also stated that:

> there are also certain situations where the State law or regulations may provide a higher standard of protection than subpart 3809, such as the restriction on cyanide-leaching based operations approved by voters in Montana. In this situation, the State law or regulation will operate on public lands. **BLM believes that this is consistent with FLPMA, the mining laws, and the decision in the *Granite Rock* case.**"

Id. (emphasis added).[4]

D. A VRUD Designation Complies with Federal Law

Based on the above-detailed laws and court decisions, it is clear that Wyoming's designation of a VRUD area is not pre-empted by federal mining or public land laws. Under Wyoming law, the state can deny a mining proposal if:

> The proposed mining operation would irreparably harm, destroy, or materially impair any area that has been designated by the council a rare or uncommon area and having particular historical, archeological, wildlife, surface geological, botanical or scenic value.

WRS §35-11-406(m)(iv). Under this provision, each mining proposal will be judged on a case-by-case basis to determine whether it can be conducted in a manner consistent with the purposes for which the VRUD area was designated. This type of "reasonable state regulation" of mining is the type of regulation affirmed in the Wyoming and federal court decisions discussed above.

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[4] The Montana restriction discussed by the BLM was a ballot initiative passed by Montana voters in 1998. The initiative prohibited the State from approving any new (or expanded) open-pit mining operations utilizing cyanide ore-processing reagents. The new law would also prohibit such mining on federal lands due to the State of Montana's dual role in mine permitting (along with the federal land management agencies).

Importantly, this does not represent the type of categorical "ban on mining" that one court has said is pre-empted. *See* South Dakota Mining Assoc., 155 F.3d 1005 (8th Cir. 1998). Here, it is entirely possible that certain types of mining may be conducted in a VRUD area, depending on the specific location, environmental controls, mitigation measures, etc. These types of controls, and the analysis of the project's impacts on federal land, would be reviewed under state and federal permitting processes, including those under the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 *et seq.*

At a minimum, a "facial" challenge to the VRUD designation (i.e., an up-front challenge to the VRUD designation prior to the submittal of any mining proposal to the state) would clearly fail under Granite Rock. This is because, until an actual site-specific mining proposal was submitted, it would be impossible to know whether, and to what extent, the VRUD designation would interfere with the mining operation. In other words, the simple fact of a VRUD designation does not categorically prohibit mining and thus is not pre-empted.

Thus, any challenge to the VRUD designation would have to wait until the state actually denied a mining permit. Even then, the permit denial would be upheld if it was reasonably based on the protection of Wyoming's environment or public health – state authority upheld by the courts and the federal land management agencies. *See* Oil Dri Corporation of Nevada v. Washoe County, CV-02-02196 (Dec. 30, 2004)(Nevada state court rejecting mining company argument that county denial of mining project on federal land, that had been approved by BLM, was pre-empted by federal mining law).

CONCLUSION

Wyoming's designation of a VRUD area would not be pre-empted by federal mining or public land law. Further, in the event that a mining claimant may eventually propose mining on federal lands, Wyoming's decision to place conditions on the operation, or deny a specific permit application in a VRUD area, would not be pre-empted, as long as the state's action was based on reasonable application of its regulations designed to protect the environment, public health, or general welfare.