

APPENDIX B

APPLICATION OF THE FOUR COAL LAND USE PLANNING SCREENS

APPENDIX B-1 — IDENTIFICATION OF AREAS WITH COAL DEVELOPMENT POTENTIAL

Identification of areas with coal development potential is the first of the four land use planning screens for federal coal (43 CFR 3420.1-4). In applying this screen, the BLM utilized coal information collected by federal agencies in addition to data provided by industry, state and local governments, and the general public. **This includes an estimated 6,000 publicly available geophysical logs of coal test holes and water wells plus an additional 2,000 logs provided by industry.** A public call for coal resource information was made in conjunction with the Notice of Interest for the Initiation of a Planning Activity (Federal Register, Vol. 49, No. 245; Dec. 19, 1984).

The BLM Branch of Solid Minerals, MSO, evaluated federal coal in North Dakota to determine areas with **high or moderate** development potential. **This was done using the above mentioned drilling data and over 70 years of published and unpublished mapping data and reports. The most current of these are listed under Literature Cited, Coal Data References.**

Criteria for determination are:

- (1) Maximum 20:1 stripping ratio,
- (2) Maximum 200 feet overburden,
- (3) Coal at least five feet thick, and
- (4) **Minimum 5,000 Btu/lb as received heating value.**

These criteria define the North Dakota lignite considered to have high or moderate potential for development in the next few decades. Coal not meeting these standards has low potential. The criteria values reflect the extremes of present and planned coal recovery in North Dakota.

For the purpose of the RMP screening, legal subdivisions were used to describe acreages rather than free-flowing, and somewhat smaller, actual boundaries of the known coal resources. Tonnage figures used in the RMP were estimated by multiplying the acres of known coal with development potential by the minable seam thickness and average tons per acre-foot.

Table B-1 gives the estimated tonnages for each of the study areas as well as some of the coal characteristics for each area.

TABLE B-1
COAL CHARACTERISTICS OF COAL STUDY AREAS

Coal Study Area	Tons of Coal With Development Potential (Millions)	Coal Beds in Descending Order	Bed Thickness (Feet)	Overburden/ Interburden to Bed Above (Feet)
Antelope	2,043	Beulah-Zap	15	0-200
Arnegard	348	Horse Creek HT Butte	2.0-7.0 2.5-17.9	0-200 67
Beulah-Zap	1,350	Beulah-Zap School House	11 8	0-200
Bowman-Gascoyne	5,960	Harmon Hansen	8-31 5-15	0-200 30
Center-Stanton	1,086	Stanton Berg Yeager Upper Hagel Lower Hagel	5-16 3-8 3-7 5-8 7-14	0-200 3-50
Dickinson	14,192	Dickinson Lehigh Heart River Fryburg	0-10 0-5 0-29 0-20	0-200 30 50 50
Divide	802	Noonan Unnamed	7-10 3-12	0-200 60
Dunn Center	5,126	C B A Dunn Center	1-10.5 2-10.5 0-8.5 7-26	0-180 6-72 31-113 2-124
Elgin-New Leipzig	721	Harmon Hansen	8 4	0-200 60
Elkhorn	258	Unnamed	5	0-200
Fortuna	674	Unnamed Unnamed	7-22 3-5	30-200 100
Garrison	1,852	Minter-Zone Garrison Creek Zone Coteau	1-15 1.5-24 17-19	0-100 53-104 30
Golden Valley	1,096	Harmon Hansen	3-37 1-15	0-200 15-122
Hanks	2,476	Hanks Grenora	2-18 2-10	0-200 20-80
Keene	1,633	Keene Williston	1.2-10.0 3.0-13.4	0-200 3-110
Mott	1,346	Heart River Fryburg HT Butte Coal Bank Creek Garner Creek (2 benches) Nomad Harmon Hansen	6.7 7.4 6 7 10 0-12 10 10	35-110 35-110 30-145 3-100 40-120 50-130 22-166 13-100
New England	4,947	Lehigh	6.7	0-200
Niobe	142	Bonus Niobe	5-11.5 3-8	36-103 36
Sand Creek	2,097	Williston Avoca	2-10 0-10	0-200 40
Tobacco Garden	650	Green Blue Yellow	3-6 4-12 4-10	0-200 80-140 50
Underwood, Washburn	345	Underwood	5-13	0-180
Velva	1,852	Coteau	16	0-200
Williston	2,777	Mormon Williston Avoca Pittsley	5.9-13.1 3.9-12.1 0-12.1 3.0-15.7	0-200 210 39 217

APPENDIX B-2 — UNSUITABILITY CRITERIA

Application of the unsuitability criteria was largely carried out between August 1985 and July 1986. The following is a summary of results obtained by application of each unsuitability criterion along with corresponding exceptions and exemptions. All exemptions were considered at the time of application of each unsuitability criteria to the CSAs. Specific exceptions were applied when it was possible. Certain exceptions will be applied after site-specific information is obtained during mine activity planning and/or lease application. After application of site-specific exceptions unsuitability designations may change.

In general, criteria 1, 2, 3 and 6 refer to land status; criteria 4, 5, and 8 refer to recreational and natural values; criterion 7 refers to cultural resources; criteria 9 through 15 refer to wildlife; criteria 16 through 19 refer to watershed; and criterion 20 refers to issues proposed by the State. Complete definitions of each of the criteria are provided in 43 CFR 3461.1. Acres dropped from further consideration due to coal unsuitability criteria in Alternative A are summarized in Table B-2. The summary for Alternative B, C, and D is presented in Table B-3. The following discussion applies to Alternatives B, C, and D.

Criterion 1 — Federal Land System

Tracts totalling 13,939 acres were identified within the CSAs as unsuitable without exception. These lands included wetland easements, wildlife refuges, waterfowl production areas, and incorporated cities and towns.

Criterion 2 — Rights-of-Way Easements

No areas were identified as unsuitable under this criterion.

Criterion 3 — Buffer Zones along Road Rights-of-Way and Adjacent to Communities, Public Schools, Occupied Dwellings, Churches, Public Parks, and Cemeteries.

A total of 43,383 acres of road rights-of-way and buffers; lands under occupied dwellings; and areas containing cemeteries, schools, churches, parks, communities, or institutional buildings was identified as unsuitable for mining. It is expected that the exception to this criterion would often apply. Application of the exception requires site-specific data and, in some cases, additional public input.

Criterion 4 — Wilderness Study Areas

There are no wilderness study areas located within the CSAs.

Criterion 5 — Scenic Areas

No areas were identified as unsuitable under this criterion. There are no Class I visual quality lands identified within the CSAs.

TABLE B-2
ALTERNATIVE A
ACRES EXCLUDED FROM FURTHER CONSIDERATION DUE TO COAL UNSUITABILITY CRITERIA

CSA	UNSUITABILITY CRITERIA										Gross Total ²	Net Total ³
	1	3	7 ¹	11	13	14	15	16	19			
Antelope	0	1,217	0	0	0	0	0	0	0	0	1,217	1,217
Arnegard	0	0	0	0	0	0	0	0	0	0	0	0
Beulah-Zap	0	851	0	0	0	0	0	100	0	0	951	943
Bowman-Gascoyne	320	0	0	0	0	0	0	0	0	0	320	320
Center-Stanton	0	1,060	0	0	0	0	140	0	0	0	1,200	1,200
Dickinson	0	5,511	0	0	0	0	0	1,215	26,130	32,856	26,469	26,469
Dunn Center	0	2,187	2,897	0	0	0	0	560	14,342	19,986	14,342	14,342
Elgin-New Leipzig	0	0	0	0	0	0	0	160	1,240	1,400	1,400	1,400
Garrison	1,351	640	0	0	0	0	0	0	0	1,991	1,991	1,991
Golden Valley	0	182	10	0	0	0	0	109	0	301	291	291
Hanks	560	0	0	0	0	1,701	0	0	0	2,261	2,261	2,261
Mott	0	0	0	0	0	790	0	0	0	790	790	790
New England	0	0	0	0	0	0	0	1,560	18,280	19,840	18,280	18,280
Sand Creek	200	0	0	0	0	0	0	0	0	200	200	200
Tobacco Garden	0	0	0	945	0	0	17,294	0	10,240	28,479	25,892	25,892
Underwood	280	132	0	0	0	0	0	0	0	412	400	400
Washburn	0	52	0	0	0	0	0	0	0	52	52	52
Williston	40	0	0	5,200	0	0	50,270	0	18,160	73,670	55,510	55,510
TOTAL	2,751	11,832	2,907	6,145	0	2,491	67,704	3,704	88,392	185,926	151,568	151,568

¹Would no longer apply due to a 1983 regulation change.

²No consideration given to overlap among unsuitability criteria.

³Overlap among unsuitability criteria subtracted from gross total.

TABLE B-3
ALTERNATIVES B, C, D
ACRES EXCLUDED FROM FURTHER CONSIDERATION DUE TO COAL UNSUITABILITY CRITERIA

CSA	UNSUITABILITY CRITERION									Gross Total ²	Net Total ³
	1	3 ¹	7	11	13	14	15	16	19		
Antelope	40	1,156	0	0	0	25	0	444	571	1,080	910
Arnegard	0	296	0	0	0	0	0	105	0	105	105
Beulah-Zap	0	468	0	0	0	913	8,979	600	1,801	12,293	10,274
Bowman-Gascoyne	320	368	0	0	0	0	0	189	0	509	231
Center-Stanton	0	664	0	0	0	0	0	226	1,018	1,244	1,197
Dickinson	40	2,411	0	1,057	0	1,024	0	3,939	2,984	9,044	6,842
Divide	347	66	0	0	0	37	0	80	80	544	461
Dunn Center	285	1,472	0	0	0	695	0	3,897	3,489	8,366	5,196
Elgin-New Leipzig	0	287	0	0	0	0	0	201	167	368	325
Elkhorn	0	460	0	310	0	0	0	0	0	310	267
Fortuna	4,690	412	0	0	0	3,908	0	0	0	8,598	8,539
Garrison	1,960	452	0	0	0	1,874	0	569	753	5,156	4,067
Golden Valley	640	745	0	0	0	0	0	211	211	1,062	850
Hanks	95	4,337	0	0	0	1,701	0	436	1,144	3,376	2,917
Keene	0	2,323	0	702	98	900	11,805	516	1,549	15,570	14,600
Mott	0	2,340	0	0	0	790	0	9	0	799	806
New England	0	10,700	0	0	0	0	0	2,225	5,533	7,758	5,569
Niobe	0	11	0	0	0	0	0	0	0	0	0
Sand Creek	60	4,261	0	0	0	0	0	943	1,320	2,323	1,761
Tobacco Garden	0	1,242	0	8,970	0	0	36,711	384	5,440	51,505	50,385
Underwood	303	79	0	0	0	657	0	0	0	960	995
Velva	5,159	644	0	0	0	11,419	0	0	0	16,578	16,122
Washburn	0	29	0	0	0	0	0	100	17	117	85
Williston	0	8,160	0	5,200	0	0	50,270	441	5,932	61,843	60,878
TOTAL	13,939	43,383	0	16,239	98	23,943	107,765	15,515	32,009	209,508	193,382

¹Criterion 3 acreages not included in gross or net totals because overlap with other criteria is unknown.

²No consideration given to overlap among unsuitability criteria.

³Overlap among unsuitability criteria subtracted from gross total.

Criterion 6 – Land Used for Scientific Study

No areas were identified as unsuitable under this criterion.

Criterion 7 – Historic Lands and Sites

No areas were identified as unsuitable under this criterion. There are no places within the CSAs which are listed on the NRHP.

Criterion 8 – Natural Areas

There are no designated natural areas or National Natural Landmarks within the CSAs.

Criterion 9 – Federally Designated Critical Habitat For Threatened and Endangered Species

No areas were identified as unsuitable under this criterion.

Criterion 10 – State Listed Endangered Species

No areas were identified as unsuitable under this criterion. There are no state-listed endangered species.

Criterion 11 – Bald and Golden Eagle Nest Sites

Twenty-one golden eagle nests and buffer zones, totalling 16,239 acres, were identified as unsuitable. No bald eagle nest sites are known within the CSAs.

Criterion 12 – Bald and Golden Eagle Roost and Concentration Areas

No areas were identified as unsuitable under this criterion. There are no Bald and Golden Eagle roost and concentration areas within the CSAs.

Criterion 13 – Falcon Cliff Nesting Sites

One prairie falcon cliff nest site and appropriate buffer zone, totalling 98 acres, was identified in conjunction with USFWS as unsuitable under this criterion. No other falcon cliff nest sites have been identified within the CSAs.

Criterion 14 – Migratory Birds of High Federal Interest

High priority habitat and appropriate buffer zones for ferruginous hawks and canvasbacks, totalling 23,943 acres, were identified in conjunction with the USFWS.

Criterion 15 – State Resident Fish and Wildlife

A total of 107,765 acres of essential habitat for species of high interest to the State of North Dakota were identified as unsuitable. The habitat consisted mainly of year-round and winter ranges for big game populations.

Criterion 16 – Floodplains

Criterion 16 applied to 15,515 acres of floodplains on which mining would pose a substantial threat of loss of life or property. Only the floodplains of major streams and tributaries were deleted. Floodplains of lesser streams were not deleted because mining was not identified as posing a substantial threat of loss of life or property.

Criterion 17 – Municipal Watersheds

No areas were identified as unsuitable under this criterion. There have been no municipal watersheds designated by the Surface Management Agency within the CSAs.

Criterion 18 – Natural Resource Waters

No areas were identified as unsuitable under this criterion. There are no natural resource waters within the CSAs.

Criterion 19 – Alluvial Valley Floors

A total of 32,009 acres within the CSAs were identified as preliminary AVFs based on geologic maps, color infrared air photo interpretation, and comparison with 1:100,000 scale reconnaissance maps of AVFs in West-Central North Dakota, prepared in 1983 for the Office of Surface Mining. These areas have been included in all figures, maps, and tables as unsuitable within the CSA.

Criterion 20 – State Proposed Criteria

The State of North Dakota has proposed no unsuitability criteria.

APPENDIX B-3 MULTIPLE-USE TRADEOFFS

This appendix has been substantially rewritten from the draft RMP/EIS to provide more detail on the multiple-use tradeoffs considered. However, the only acreage changes involve the Dunn Center and Golden Valley CSAs in Alternatives B, C, and D. In the draft RMP 1520 acres (34.56 MM tons of coal) in the Dunn Center CSA were excluded under "Oil and Gas Fields" and 160 acres (5.32 MM tons of coal) in the Golden Valley CSA were excluded under "Cultural Resources." These acreages have not been excluded in this document and are available for further consideration.

Coal planning regulation 43 CFR 3420.1-4e(3) states that "multiple land use decisions shall be made which may eliminate additional coal deposits from further consideration for leasing, to protect resource values of a locally important or unique nature not included in the unsuitability criteria."

Methods

Transparent overlays for each of the factors listed below were delineated on 1:100,000 scale base maps for each of the 24 CSAs. The presence of any one multiple-use conflict was sufficient to exclude an area from further consideration for coal leasing. These overlays are available for review in the Dickinson District BLM office.

Factors in Analysis

For Alternative A, explanations for application of the multiple-use tradeoff screen can be found in the McKenzie-Williams, West-Central, Southwest, and Golden Valley MFPs.

For Alternatives B, C, and D, seventeen factors were identified that would result in acreages being excluded from further consideration for coal leasing or exchange. Below is a detailed account of the definition of each tradeoff, the rationale for applying it, the acreages of federal coal affected, and the coal tonnages affected. These are gross totals. They include all acreages and tonnages affected by the tradeoff and do not take into account overlap among tradeoffs. Overlap is taken into account in Tables B-6 through B-8 of this appendix under the heading "Net Total". If no alternative is specified, the tradeoff applies equally to Alternatives B, C, and D.

Summary data of the gross and net multiple-use tradeoff acreages by CSAs are located in Tables B-4 through B-8 of this appendix. These tables correspond with Tables D-1 through D-5 of the draft RMP/EIS with the following exceptions. Items A through I (below) were combined under the category "High Use, Utility, Trans." in the draft RMP. Item J was placed under category "Intensive Use Buffer". Items K and L were combined under "Cultural Resources".

A. COMMUNITIES HAVING 1980 POPULATIONS LESS THAN 500 PERSONS.

Definition – A buffer area 1/4 miles wide from the edge of communities with populations less than 500 persons, based on the 1980 census, would be excluded from further consideration for coal leasing.

Rationale – Small communities enjoy a quality of life free from offensive noise, dust, and visual intrusions. A buffer is necessary to protect that quality.

Effects of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Bowman-Gascoyne	520	35.67
Dickinson	80	1.68
Dunn Center	240	6.72
Fortuna	480	10.67
Hanks	345	6.04
Keene	40	1.05
New England	40	1.61
Velva	160	1.68
Williston	40	0.49
TOTAL	1945	65.61

B. COMMUNITIES HAVING 1980 POPULATIONS GREATER THAN 500 PERSONS.

Definition – A buffer area 1/2 mile wide from the edge of communities with populations great-

er than 500 persons, based on the 1980 census, would be excluded from further consideration for coal leasing.

Rationale — Larger communities enjoy a quality of life free from offensive dust, noise, and visual intrusions. They also require space for community expansion and dispersed recreational activities. A buffer is needed to protect the quality of life and ensure that adequate space will be available adjacent to the community.

Effects of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Antelope	640	7.84
Center-Stanton	160	2.52
Dickinson	160	4.48
Dunn Center	325	5.69
Golden Valley	200	9.80
New England	240	6.30
Sand Creek	200	4.20
TOTAL	1925	40.83

C. RESIDENTIAL SUBDIVISION

Definition — Areas occupied by, or platted for, residential subdivisions would be excluded from further consideration for coal leasing.

Rationale — Substantial investments have been made to develop subdivisions and construct homes. Subdivisions often provide housing opportunities that attract people and thus are important to local economies. It is necessary to protect these investments and housing opportunities.

Effects of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Dickinson	80	2.73
Dunn Center	480	8.40
Sand Creek	920	9.66
Williston	560	19.60
TOTAL	2040	40.39

D. INDUSTRIAL CONCENTRATIONS

Definition — Areas occupied by or adjacent to industrial concentrations; e.g., warehouse complexes, manufacturing areas, industrial parks, would be excluded from further consideration for coal leasing.

Rationale — Considerable monetary investments have been made to develop areas for industrial use. They also provide logical locations for future industrial growth. It is necessary to protect these investments and future opportunities.

Effects of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Beulah-Zap	60	0.00
Center-Stanton	614	0.19
Dickinson	1120	38.22
Sand Creek	360	6.30
TOTAL	2154	44.71

E. MINUTEMAN MISSILE SILOS

Definition — A buffer area with a 2½-mile radius from each MINUTEMAN missile silo would be excluded from further consideration for coal leasing.

Rationale — The MINUTEMAN missile system is an integral part of the nation's defense system. A study conducted by the U.S. Air Force (1984) determined coal mining could interfere with the launch capabilities of the missiles. A buffer zone of a 2½-mile radius is necessary to protect their operational integrity.

Effects of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Garrison	8,560	190.25
Velva	2,680	37.52
TOTAL	11,240	227.77

F. MINUTEMAN COMMUNICATION CABLES

Definition — A corridor 100 feet wide on each side of MINUTEMAN communication cables would be excluded from further consideration for coal leasing.

Rationale — The MINUTEMAN communication system is an integral part of the nation's defense system. A study conducted by the USAF (1984) determined coal mining could interfere with operation of the missile communication system. A buffer of 100 feet on each side of the cables is necessary to protect their operational integrity.

Effects of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Garrison	36	0.80
Velva	230	3.22
TOTAL	266	4.02

G. ELECTRIC TRANSMISSION LINES EQUAL TO OR GREATER THAN 230 KV.

Definition — A corridor 50 feet wide on each side of electric transmission lines equal to or greater

than 230 KV would be excluded from further consideration for coal leasing.

Rationale — Substantial investments are made to construct the larger electric transmission lines. Lines equal to or greater than 230 KV generally require construction of towers whereas smaller lines do not. Large populations depend on continuous operation of each part of the electric grid. A buffer is necessary to protect both the investments and the supply of electrical power.

Effects of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Antelope	63	0.89
Beulah-Zap	115	1.21
Bowman-Gascoyne	6	0.41
Center-Stanton	105	1.65
Dickinson	60	2.05
Divide	3	0.04
Dunn Center	96	2.18
Golden Valley	3	0.15
Underwood	6	0.08
Washburn	12	0.14
TOTAL	469	8.82

H. PIPELINES EQUAL TO OR GREATER THAN 12 INCHES IN DIAMETER.

Definition — A corridor 50 feet wide on each side of pipelines equal to or greater than 12 inches in diameter would be excluded from further consideration for coal leasing.

Rationale — Substantial investments are made to construct larger pipelines. The 12 inch diameter generally separates the larger transmission lines from smaller distribution lines. A buffer is needed to protect these investments and avoid disruption in pipeline operation.

Effects of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Antelope	15	0.21
Arnegard	75	0.72
Beulah-Zap	76	0.80
Center-Stanton	42	0.37
Dickinson	30	0.53
Dunn Center	60	1.05
Elkhorn	63	0.55
Keene	221	2.20
Velva	9	0.13
Williston	69	0.97
TOTAL	660	7.52

I. OPERATING RAILROADS

Definition — A corridor 50 feet wide on each side of operating railroads would be excluded from further consideration for coal leasing.

Rationale — Substantial investments are made to construct railroads, and because of grade (steepness) restrictions, desirable railroad routes are not easily obtained. Also, the most direct routes between population centers or facilities and main-line tracks are desirable. It is necessary to protect the investment in, and integrity of, the system.

Effects of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Bowman-Gascoyne	33	2.26
Dickinson	18	0.41
Dunn Center	93	2.12
Fortuna	42	0.93
Garrison	6	0.06
Golden Valley	9	0.41
Hanks	54	0.00
Underwood	9	0.17
Velva	21	0.22
Williston	24	0.42
TOTAL	309	7.01

J. AGRICULTURAL EXPERIMENT STATION

Definition — A buffer area 1/2 mile from the edge of the agricultural experiment station would be excluded from further consideration for coal leasing.

Rationale — Research projects at the facility are sensitive to small changes in environmental conditions. Coal mining within 1/2 mile could disrupt research by changing microclimate, fugitive dust, or other conditions. It is necessary to protect the integrity of baseline data collection and ongoing research projects.

Effect of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Sand Creek	440	6.16
TOTAL	440	6.16

K. ELIGIBLE KNIFE RIVER FLINT QUARRY DISTRICT

Definition — All federal coal within the boundary of the Knife River Flint Quarry National Register District would be excluded from further consideration for coal leasing.

Rationale — The cultural resources within the subject district are of national significance. There are at least 54 sites within the district. Most of these sites are large and complicated exhibiting multicomponent and multifunctional characteristics. Because these sites are nationally significant and contextually complex — preservation is the only suitable treatment.

Effect of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Dunn Center	3761	94.74
TOTAL	3761	94.74

L. WRITING ROCK HISTORIC SITE

Definition — A buffer area of 40 acres around and including the Writing Rock Historic Site would be excluded from further consideration for coal leasing.

Rationale — Writing Rock Historic Site is one of the few Late Prehistoric Rock Art sites in North Dakota. It is also a developed recreational site. It is necessary to protect the cultural resources and preserve a positive recreational experience for visitors to the site.

Effect of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Fortuna	40	0.89
TOTAL	40	0.89

M. KEY WILDLIFE HABITATS

Definition — Wooded draws, wooded shrublands, and riparian habitats greater than approximately 40 acres in extent were placed in a category called Wildlife Threshold Acres. A certain percent of these habitats, depending on the CSA (Table B-4), would be conditionally excluded from further consideration for coal leasing. If all the wildlife threshold acreage available for leasing within a CSA were leased, no further leasing would be allowed without a joint review of current leasing, mining, and reclamation in the CSA by BLM, NDGFD, and USFWS.

Rationale — Large, contiguous wooded draw, wooded shrubland, and riparian habitats provide essential cover, food, and nest sites for many more game and non-game species than other habitats in the planning area. Many of these areas did not qualify as unsuitable under strict interpretation of the Unsuitability Criteria. Further, full reclamation of these habitats has not been successfully accomplished. Therefore, it is necessary to protect a percentage of these habitats sufficient to maintain regional populations of key game, sensitive, and non-game wildlife species. The vegetative reclamation stipulation for threshold acres that are mined would be that an acreage equivalent to that disturbed be reclaimed to approximately its former condition (e.g., species diversity, production, canopy cover).

Procedure — After the wildlife Unsuitability Criteria (Criteria 9-15) were applied in each

CSA, other key wildlife habitats, as described above, were identified from 1:24,000 color infrared aerial photographs and vegetation maps. These acreages comprise the Original Threshold Acres (Table B-4).

A judgment was then made as to what percentage of these acreages would be allowed to go forward for further consideration for coal leasing without significantly impacting wildlife populations described above. BLM, NDGFD, and USFWS agreed that it was not necessary to protect specific geographic portions of these habitats but only to protect an adequate amount somewhere in the CSA. The judgment of percentage to go forward for further consideration for leasing was based on: (1) the acreages of different habitats in the CSA, (2) the acreages of different habitats on lands surrounding the CSA, (3) known populations of key species, as described above, and (4) current leasing and mining patterns in the CSA.

Once these acreages were delineated, it was necessary to determine what portions were already protected under other (non-wildlife) Unsuitability Criteria, surface owner consultation, or other multiple-use tradeoffs. The Original Threshold acreages less the acreage excluded for other considerations are listed by alternative and by CSA in Table B-4 as Remaining Threshold Acres.

Effects of Tradeoff

See Table B-4.

N. STEEP SLOPES

Definition (Alternative C) — Concentration of slopes (generally areas or parts of areas of 40 acres or more) greater than 30 percent would be excluded from further consideration for coal leasing.

Rationale — The BLM, NDPSC, and coal industry agree that terrain with concentrations of slopes exceeding 30 percent is difficult to reclaim to approximate original contour (see McKenzie-Williams MFP, Summary Decision Document [BLM 1984]). Such lands are highly susceptible to excessive erosion after being disturbed. In addition, steep slopes often have relatively high aesthetic interest. Although less steep slopes may also present problems to surface coal mining and reclamation, industry has demonstrated their ability to deal with them. Hilly areas with slopes less than 30 percent would be dealt with on a case-by-case basis during activity planning. Areas with complex slope patterns may be excluded from mining while those with long, simple slopes may be acceptable.

Effects of Tradeoff (Alternative C)

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Antelope	2,264	32.09
Arnegard	46	0.44
Beulah-Zap	3,952	41.50
Center-Stanton	374	3.27
Dickinson	894	20.34
Dunn Center	1,995	45.39
Elgin-New Leipzig	220	3.47
Elkhorn	1,802	15.77
Hanks	2,597	49.99
Keene	3,866	38.56
Mott	433	4.17
New England	981	6.87
Sand Creek	1,379	16.65
Tobacco Garden	22,597	316.36
Velva	100	2.10
Washburn	227	2.62
Williston	35,751	538.05
TOTAL	79,478	1137.63

Definition (Alternative D) — Slopes greater than 15 percent would be excluded from further consideration for coal leasing.

Rationale (Alternative D) — On areas with complex topography, terrain with slopes greater than 15 percent can be difficult to reclaim. Such lands may be susceptible to excessive erosion after being disturbed. Exclusion of lands with slopes greater than 15 percent will ensure that most all hilly and steep areas susceptible to excessive erosion are protected.

Effects of Tradeoff (Alternative D)

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Antelope	9,806	139.00
Arnegard	1,499	14.43
Beulah-Zap	24,362	255.80
Bowman-Gascoyne	846	58.04
Center-Stanton	4,667	40.84
Dickinson	7,862	178.86
Dunn Center	8,410	191.33
Elgin-New Leipzig	717	11.29
Elkhorn	8,574	75.02
Fortuna	1,091	24.25
Garrison	2,703	47.30
Golden Valley	136	2.09
Hanks	9,137	175.89
Keene	39,097	389.99
Mott	4,808	46.28
New England	2,281	39.92
Sand Creek	8,577	103.57
Tobacco Garden	38,095	533.33
Underwood	497	6.96
Velva	4,162	87.40
Washburn	709	8.19
Williston	66,951	1007.61
TOTAL	244,987	3437.38

O. KEY OIL AND GAS FIELDS

Definition — Major oil and gas fields, as delineated by the North Dakota Industrial Commission based on production, likelihood of future production, and expected life, would be excluded from further consideration for coal leasing.

Rationale — Substantial investments in exploration and development have been made in major oil and gas fields. Coal leasing could interfere with the continued production of these fields. After oil and gas production has been completed, the coal resources of the field would still be available for future leasing.

Effects of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Arnegard	920	8.86
Dickinson	9,400	320.78
Fortuna	2,400	53.34
Golden Valley	480	7.39
Keene	46,280	809.90
Sand Creek	3,840	73.92
Williston	13,200	198.66
TOTAL	76,520	1472.84

P. BURIED-VALLEY AQUIFERS

Definition (Alternative D) — Buried-valley aquifers would be excluded from further consideration for coal leasing.

Rationale (Alternative D) — Buried-valley aquifers generally contain water of high quality, have relatively high flows, and are at a shallow depth. The ground water in them may be suitable for domestic and/or irrigation purposes. It is necessary to protect these water sources from being eliminated by coal mining. Procedures of the NDPSC usually provide this protection. However, by excluding all buried-valley aquifers from further consideration for coal leasing, the integrity of these water sources is ensured.

Effects of Tradeoff (Alternative D)

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Antelope	917	1.42
Arnegard	1,107	2.41
Beulah-Zap	1,825	3.15
Center-Stanton	1,004	0.00
Divide	49	0.00
Dunn Center	2,635	29.58
Elgin-New Leipzig	200	3.15
Elkhorn	64	0.56
Fortuna	5,903	44.45
Garrison	50	0.00
Hanks	562	0.00
Keene	7,495	29.93

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Sand Creek	878	7.00
Tobacco Garden	4,659	12.25
Underwood	114	0.00
Velva	1,037	25.41
Williston	3,774	15.05
TOTAL	32,273	174.34

Q. CITY OF DICKINSON MUNICIPAL WATERSHED

Definition – The entire watershed along the Heart River that supplies the City of Dickinson’s municipal water would be excluded from further consideration for coal leasing.

Rationale – Dickinson’s only source of municipal water is from the watershed of the Heart River. It is necessary to protect the quality and quantity of this water supply from the possible adverse effects of coal mining.

Effect of Tradeoff

CSA	Gross Totals	
	Acres	Coal Tonnage (Millions)
Dickinson	38,536	1315.04
TOTAL	38,536	1315.04

**TABLE B-4
WILDLIFE THRESHOLD ACREAGES BY ALTERNATIVE¹**

CSA	ALTERNATIVE B					ALTERNATIVE C				ALTERNATIVE D			
	Original Threshold Acres ²	Remaining Threshold Acres ³	Percent Remaining Threshold Acres Excluded	Threshold Acres Excluded	Coal Tonnages Excluded ⁴	Remaining Threshold Acres ³	Percent Remaining Threshold Acres Excluded	Threshold Acres Excluded	Coal Tonnages Excluded ⁴	Remaining Threshold Acres ³	Percent Remaining Threshold Acres Excluded	Threshold Acres Excluded	Coal Tonnages Excluded ⁴
Antelope	3685	3386	40	1354	19.19	2164	50	1082	15.34	510	30	153	2.17
Arnegard	7409	4294	20	859	8.27	4294	50	2147	20.66	5602	90	5042	48.53
Beulah-Zap	5582	4949	30	1485	15.59	3253	50	1627	17.08	169	0	0	0.00
Bowman-Gascoyne	1929	2169	40	868	59.54	2169	60	1301	89.25	2002	80	1602	109.90
Center-Stanton	2811	2635	40	1054	9.22	2193	60	1316	11.52	592	50	296	2.59
Dickinson	3046	1987	10	199	6.79	1450	20	290	9.90	741	50	371	12.66
Divide	0	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
Dunn Center	5195	3193	20	639	14.54	1911	20	382	8.69	982	50	491	11.17
Elgin-New Leipzig	1278	924	10	92	1.45	731	30	219	3.45	628	60	377	5.94
Elkhorn	7326	6280	40	2512	21.98	4883	50	2442	21.37	2461	70	1723	15.08
Fortuna	998	562	10	56	1.24	562	30	169	3.76	560	60	336	7.47
Garrison	1150	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
Golden Valley	191	181	0	0	0.00	181	0	0	0.00	181	0	0	0.00
Hanks	12762	9506	20	1901	44.91	7894	50	3947	93.25	4787	70	3351	79.17
Keene	12059	10494	30	3148	31.40	9363	60	5618	56.04	2244	50	1122	11.19
Mott	3418	2786	10	279	2.69	2599	50	1300	12.51	1719	60	1031	9.92
New England	3964	1624	10	162	2.84	979	20	196	3.43	919	10	92	1.61
Niobe	0	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
Sand Creek	10515	6164	10	616	7.44	5820	40	2328	28.11	4752	80	3802	45.91
Tobacco Garden	1919	197	0	0	0.00	197	0	0	0.00	224	0	0	0.00
Underwood	0	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
Velva	261	122	0	0	0.00	54	0	0	0.00	0	0	0	0.00
Washburn	478	429	20	86	0.99	325	40	130	1.50	40	0	0	0.00
Williston	4268	2167	10	217	3.27	2028	40	811	12.21	740	0	0	0.00
Totals	90244	64049	24	15527	251.35	53050	48	25305	408.07	29853	66	19787	363.31
Percent of Original Threshold Acres			17				28				22		

¹See Text for Explanation

²Acreage of key wildlife habitats remaining after application of the wildlife unsuitability criteria.

³Acreage of key wildlife habitats remaining after application of wildlife unsuitability criteria, all other unsuitability criteria, multiple-use tradeoffs, and surface owner consultation.

⁴Millions of tons

TABLE B-5
ALTERNATIVE A
ACRES EXCLUDED FROM FURTHER CONSIDERATION DUE TO MULTIPLE-USE TRADEOFFS

CSA	Slopes > 30%	Wildlife Refuge Watershed	Buried- Valley Aquifer	Intensive Use Buffer	Oil & Gas Fields	Wetlands	Municipal Watershed	Land Use Plan Consist.	Lake Buffer Zone	Gross Total	Net Total
ANTELOPE	0	0	0	0	0	0	0	0	0	0	0
ARNEGARD	0	0	0	0	0	0	0	0	0	0	0
BEULAH-ZAP	0	0	0	0	0	0	0	0	0	0	0
BOWMAN-GASCOYNE	0	1440	0	0	0	0	0	0	0	1440	1440
CENTER-STANTON	0	0	0	0	0	0	0	0	0	0	0
DICKINSON	0	0	0	0	0	0	54492	0	0	54492	28986
DIVIDE											
DUNN CENTER	0	0	0	0	0	0	0	0	800	800	0
ELGIN-NEW LEIPZIG	100	0	0	0	0	0	0	0	0	100	100
ELKHORN											
FORTUNA											
GARRISON	0	0	0	0	0	0	0	0	0	0	0
GOLDEN VALLEY	0	0	0	0	0	80	0	0	0	80	80
HANKS	1920	1760	1200	0	0	0	0	0	0	4880	4605
MOTT	240	1000	0	0	0	0	0	0	0	1240	1031
NEW ENGLAND	620	0	0	0	0	0	0	0	0	620	620
NIOBE											
SAND CREEK	1050	240	520	440	0	0	0	320	0	2570	2410
TOBACCO GARDEN	5860	0	6440	0	0	0	0	0	12230	24530	2507
UNDERWOOD	0	0	0	0	0	0	0	0	0	0	0
VELVA											
WASHBURN	0	0	0	0	0	0	0	0	0	0	0
WILLISTON	31390	0	2360	0	10168	0	0	0	23357	67275	3493
TOTAL	41180	4440	10520	440	10168	80	54492	320	36387	158027	45272

TABLE B-6
ACRES EXCLUDED FROM FURTHER CONSIDERATION DUE TO MULTIPLE-USE TRADEOFFS
ALTERNATIVE B

CSA	Communities Having 1980 Pop. Less Than 500 Persons	Communities Having 1980 Pop. Equal To or Greater Than 500 Persons	Residential Subdivisions	Industrial Concentrations	Minuteman Missile Silos	Minuteman Communication Cables	Electric Transmission Lines Equal To or Greater Than 230 KV	Pipelines Equal To or Greater Than 12 Inches in Diameter	Operating Railroads	Agricultural Experiment Station	Eligible Knife River Flint Quarry District	Writing Rock Historic Site	Wildlife Threshold	Key Oil & Gas Fields	City of Dickinson Municipal Watershed	Gross Total	Net Total
Antelope	0	640	0	0	0	0	63	15	0	0	0	0	1354	0	0	2072	2014
Arnegard	0	0	0	0	0	0	0	75	0	0	0	0	859	920	0	1854	1774
Beulah-Zap	0	0	0	60	0	0	115	76	0	0	0	0	1485	0	0	1736	1556
Bowman																	
Gascoyne	520	0	0	0	0	0	6	0	33	0	0	0	868	0	0	1427	1395
Center-																	
Stanton	0	160	0	614	0	0	105	42	0	0	0	0	1054	0	0	1975	1640
Dickinson	80	160	80	1120	0	0	60	30	18	0	0	0	199	9400	38536	49683	40263
Divide	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0
Dunn																	
Center	240	325	480	0	0	0	96	60	93	0	3761	0	639	0	0	5694	3766
Elgin-New																	
Leipzig	0	0	0	0	0	0	0	0	0	0	0	0	92	0	0	92	92
Elkhorn	0	0	0	0	0	0	0	63	0	0	0	0	2512	0	0	2575	2512
Fortuna	480	0	0	0	0	0	0	0	42	0	0	40	56	2400	0	3018	1875
Garrison	0	0	0	0	8560	36	0	0	6	0	0	0	0	0	0	8602	5623
Golden																	
Valley	0	200	0	0	0	0	3	0	9	0	0	0	0	480	0	692	861
Hanks	345	0	0	0	0	0	0	0	54	0	0	0	1901	0	0	2300	2188
Keene	40	0	0	0	0	0	0	221	0	0	0	0	3148	46280	0	49689	45496
Mott	0	0	0	0	0	0	0	0	0	0	0	0	279	0	0	279	279
New																	
England	40	240	0	0	0	0	0	0	0	0	0	0	162	0	0	442	277
Niobe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Creek	0	200	920	360	0	0	0	0	0	440	0	0	616	3840	0	6376	5742
Tobacco																	
Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Underwood	0	0	0	0	0	0	6	0	9	0	0	0	0	0	0	15	0
Velva	160	0	0	0	2680	230	0	9	21	0	0	0	0	0	0	3100	1525
Washburn	0	0	0	0	0	0	12	0	0	0	0	0	86	0	0	98	86
Williston	40	0	560	0	0	0	0	69	24	0	0	0	217	13200	0	14110	8189
Total	1945	1925	2040	2154	11240	266	469	660	309	440	3761	40	15527	76520	38536	155832	127153

TABLE B-7
ACRES EXCLUDED FROM FURTHER CONSIDERATION DUE TO MULTIPLE-USE TRADEOFFS
ALTERNATIVE C

CSA	Communities Having 1980 Pop. Less Than 500 Persons	Communities Having 1980 Pop. Equal To or Greater Than 500 Persons	Residential Subdivisions	Industrial Concentrations	Minuteman Missile Silos	Minuteman Communication Cables	Electric Transmission Lines Equal To or Greater Than 230 KV	Pipelines Equal To or Greater Than 12 Inches in Diameter	Operating Railroads	Agricultural Experiment Station	Eligible Knife River Flint Quarry District	Writing Rock Historic Site	Wildlife Threshold	Steep Slopes > 30%	Key Oil & Gas Fields	City of Dickinson Municipal Watershed	Gross Total	Net Total
Antelope	0	640	0	0	0	0	63	15	0	0	0	0	1082	2264	0	0	4064	3436
Arnegard	0	0	0	0	0	0	0	75	0	0	0	0	2147	46	920	0	3188	3108
Beulah-Zap	0	0	0	60	0	0	115	76	0	0	0	0	1627	3952	0	0	5830	4013
Bowman-Center	520	0	0	0	0	0	6	0	33	0	0	0	1301	0	0	0	1860	1828
Stanton	0	160	0	614	0	0	105	42	0	0	0	0	1316	374	0	0	2611	2457
Dickinson	80	160	80	1120	0	0	60	30	18	0	0	0	290	894	9400	38536	50668	42877
Divide	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0
Dunn Center	240	325	480	0	0	0	96	60	93	0	3761	0	382	1995	0	0	7432	5339
Elgin-New Leipzig	0	0	0	0	0	0	0	0	0	0	0	0	219	220	0	0	439	399
Elkhorn	0	0	0	0	0	0	0	63	0	0	0	0	2442	1802	0	0	4307	4185
Fortuna	480	0	0	0	0	0	0	0	42	0	0	40	169	0	2400	0	3131	2028
Garrison Golden Valley	0	0	0	0	8560	36	0	0	6	0	0	0	0	0	0	0	8602	5623
Hanks	345	0	0	0	0	0	0	0	9	0	0	0	0	0	480	0	692	692
Keene	40	0	0	0	0	0	0	0	54	0	0	0	3947	2597	0	0	6943	6663
Mott	0	0	0	0	0	0	0	221	0	0	0	0	5618	3866	46280	0	56025	49462
New England	40	240	0	0	0	0	0	0	0	0	0	0	1300	433	0	0	1733	1591
Niobe	0	0	0	0	0	0	0	0	0	0	0	0	196	981	0	0	1457	1266
Sand Creek	0	200	920	360	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tobacco Garden	0	0	0	0	0	0	0	0	0	0	0	0	2328	1379	3840	0	9467	8406
Underwood	0	0	0	0	0	0	0	0	0	0	0	0	0	22597	0	0	22597	283
Velva	160	0	0	0	2680	230	0	9	9	0	0	0	0	0	0	0	15	0
Washburn	0	0	0	0	0	0	12	0	21	0	0	0	0	100	0	0	3200	1596
Williston	40	0	560	0	0	0	0	69	0	0	0	0	130	227	0	0	369	273
Total	1945	1925	2040	2154	11240	266	469	660	309	440	3761	40	25305	79478	76520	38536	245088	154555

TABLE B-8
ACRES EXCLUDED FROM FURTHER CONSIDERATION DUE TO MULTIPLE-USE TRADEOFFS
ALTERNATIVE D

CSA	Communities Having 1980 Pop. Less Than 500 Persons	Communities Having 1980 Pop. Equal To or Greater Than 500 Persons	Residential Subdivisions	Industrial Concentrations	Minuteman Missile Silos	Minuteman Communication Cables	Electric Transmission Lines Equal To or Greater Than 230 KV	Pipelines Equal To or Greater Than 12 Inches in Diameter	Operating Railroads	Agricultural Experiment Station	Eligible Knife River Flint Quarry District	Writing Rock Historic Site	Wildlife Threshold	Steep Slopes > 15%	Key & Gas Fields	Oil Buried-Valley Aquifers	City of Dickinson Municipal Watershed	Gross Total	Net Total
Antelope	0	640	0	0	0	0	63	15	0	0	0	0	153	9806	0	917	0	11594	7065
Arnegard	0	0	0	0	0	0	0	75	0	0	0	0	5042	1499	920	1107	0	8643	8320
Beulah-Zap	0	0	0	60	0	0	115	76	0	0	0	0	0	24362	0	1825	0	26438	18523
Bowman-Gascoyne	520	0	0	0	0	0	6	0	33	0	0	0	1602	846	0	0	0	3007	2890
Center-Stanton	0	160	0	614	0	0	105	42	0	0	0	0	296	4667	0	1004	0	6888	3854
Dickinson	80	160	80	1120	0	0	60	30	18	0	0	0	371	7862	9400	0	38536	57717	47614
Divide	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	49	0	52	29
Dunn Center	240	325	480	0	0	0	96	60	93	0	3761	0	491	8410	0	2635	0	16591	14017
Elgin-New Leipzig	0	0	0	0	0	0	0	0	0	0	0	0	377	717	0	200	0	1294	887
Elkhorn	0	0	0	0	0	0	0	63	0	0	0	0	1723	8574	0	64	0	10424	10232
Fortuna	480	0	0	0	0	0	0	0	42	0	0	40	336	1091	2400	5903	0	10292	4371
Garrison	0	0	0	0	8560	36	0	0	6	0	0	0	0	2703	0	50	0	11355	5837
Golden Valley	0	200	0	0	0	0	3	0	9	0	0	0	0	136	480	0	0	828	940
Hanks	345	0	0	0	0	0	0	0	54	0	0	0	3351	9137	0	562	0	13449	12911
Keene	40	0	0	0	0	0	0	221	0	0	0	0	1122	39097	46280	7495	0	94255	72358
Mott	0	0	0	0	0	0	0	0	0	0	0	0	1031	4808	0	0	0	5839	5274
New England	40	240	0	0	0	0	0	0	0	0	0	0	92	2281	0	0	0	2653	2463
Niobe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Creek	0	200	920	360	0	0	0	0	0	440	0	0	3802	8577	3840	878	0	19017	15991
Tobacco Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	38095	0	4659	0	42754	2665
Underwood	0	0	0	0	0	0	6	0	9	0	0	0	0	497	0	114	0	626	189
Velva	160	0	0	0	2680	230	0	9	21	0	0	0	0	4162	0	1037	0	8299	1992
Washburn	0	0	0	0	0	0	12	0	0	0	0	0	0	709	0	0	0	721	588
Williston	40	0	560	0	0	0	0	69	24	0	0	0	0	66951	13200	3774	0	84618	17089
Total	1945	1925	2040	2154	11240	266	469	660	309	440	3761	40	19789	244987	76520	32273	38536	437354	256099

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APPENDIX B-4 — SURFACE OWNER CONSULTATION

The 1977 Surface Mining Control and Reclamation Act (SMCRA) and implementing regulations (43 CFR 3420.1-4) require that all comprehensive land use plans involving potential coal leasing shall include consultation with qualified surface owners over federal coal. During the week of December 2, 1986, letters were sent to 1844 surface owners requesting the surface owner to state his/her preference for or against the surface mining of federal coal under his/her land. Surface owners were requested to respond before January 21, 1986. A news release announcing the consultation process and deadlines was provided news media located throughout western North Dakota. Three open houses were held in Dickinson, Williston and Hazen, North Dakota, to answer questions of surface owners. A follow-up letter was sent during the week of January 20, 1986, asking that all responses be returned to BLM by February 14, 1986. Another news release announcing the extended deadline was issued to media located throughout western North Dakota.

Surface owners were not recontacted in portions of the nine CSAs that were considered in the McKenzie-Williams and Southwest North Dakota MFPs (USDI 1984c, d) because the views expressed during the preparation of these plans were considered up-to-date. **The validity of this assumption was supported by the lack of concern raised by surface owners over federal coal within the two MFP areas following the public announcement of the consultation process by both BLM and local interest groups.** All surface owners located over federal coal in the remaining 15 CSAs were contacted.

In the letter, owners were asked to show themselves as: (1) in favor of, (2) against, or (3) unsure about leasing of federal coal underneath their surface. They were also asked to state if their surface was already under lease by a coal company and whether they met the requirements as a qualified surface owner under SMCRA. A sample of the consultation letter and response form are included at the end of this appendix.

Areas with significant surface owner opposition were dropped from further consideration for leasing.

In all cases boundaries of significant opposition were delineated using some or all of the eight decision factors listed below. Greatest emphasis was placed on the number of landowners involved, the total acreage of federal coal included under "opposed," and the distribution of "opposed" responses. For instance, one "opposed" response involving 800 acres would not be considered significant while four "opposed" responses covering an equal area would be significant, all other factors being equal.

The application of the decision factors involved an extremely complex system of weighing and comparing any number of combinations. Detailed explanations and maps can be provided by the Dickinson District Office.

The eight decision factors, listed in descending order of importance, were:

1. Number of landowners over federal coal within the CSA opposed to leasing;
2. Acreage included under "opposed";
3. Distribution of "opposed" comments;
4. Percent of federal coal in the CSA;
5. Distribution of federal coal;
6. Location, size, and number of existing federal leases;
7. Location, size, and number of surface lease agreements on lands over federal coal.
8. Location, size, and number of private and state coal leases;

Results of surface owner consultation are shown in Tables B-9 and B-10.

APPENDIX B-5 — LANDS ACCEPTABLE WITH STIPULATIONS

Included in the acreage acceptable for further consideration for coal leasing are lands with special reclamation stipulations for wildlife and buried-valley aquifers. Originally 240,465 acres were included in this category. However, overlap with other unsuitability criteria, multiple-use tradeoffs, and surface owner opposition reduced the acreages. The net acreages appear in Table B-11.

The wildlife habitats in this category were identified at the same time the wildlife unsuitability criteria and multiple-use tradeoffs were applied. **These habitats consisted of small, scattered units (less than 40 acres) that could be successfully reclaimed.** They include native prairie with gentle slopes, small scattered wetlands, shelterbelts, woodlots, and small riparian areas. The specific sites are mapped (1:100,000) and are available for inspection in the Dickinson District Office. The vegetative reclamation stipulation for each parcel will be that an acreage equivalent to that disturbed be reclaimed to approximately its former condition (e.g., species diversity, production, canopy cover). **This is the same stipulation that would be applied to Wildlife Threshold acreages that might be mined.**

Buried-valley aquifer stipulations will be evaluated on a site-specific basis. Stipulations will depend on the action needed to prevent damage to the ground water hydrology of the aquifer.

Areas near National Park Service units in three CSAs have been designated as special review areas. These areas may require stipulations to protect high resource values. Acreages for this review area listed in Table B-11 include only areas fully acceptable for coal leasing or exchange. However, acreages under the wildlife threshold category in those CSAs would also be subject to special review.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT DICKINSON DISTRICT OFFICE

P.O. Box 1229
Dickinson, ND 58602

Dear Landowner:

The Bureau of Land Management (BLM) is screening federal coal areas to identify which areas should be considered further for possible leasing in accordance with the Department of the Interior's coal management regulations. The screening is part of the process of preparing a resource management plan for public lands and federal minerals managed by BLM in North Dakota.

Our review of federal and county records shows that you own the surface of lands in which the United States has retained ownership of the coal. On the enclosed consultation form you will find the legal description of these lands.

The Surface Mining Control and Reclamation Act of 1977 gives certain types of protection to surface owners who qualify under the law. The law contains both a consent requirement and a consultation requirement. If you qualify, the BLM cannot issue a coal lease and authorize a company to surface mine the coal under your land unless you agree to let that mining take place (the consent requirement). The surface mining law also requires BLM to consult with surface owners as part of the planning process and ask whether they favor or oppose leasing of coal under their land (the consultation requirement).

The purpose of this letter is to consult with you and to give you a chance to tell us whether you favor or oppose leasing the coal under your land. The BLM is not now proposing to lease the coal under you land. Also, we are not asking for your consent to leasing and mining. The resource management plan we are preparing will help us decide which coal lands in North Dakota should and should not be considered further for possible leasing. The decision on which specific coal lands will be leased will be made in a separate process.

The reason for this consultation with you and other surface owners in your area is to give the BLM an opportunity to understand your feelings about surface mining of coal under your land. The coal under your land might be included in a tract which we would offer for federal leasing. However, if a significant number of qualified surface owners in your area are opposed to surface mining of coal under their land, we may decide to refrain from leasing any federal coal in that area for surface mining. If this is the case, receiving your views at this early stage of planning will allow us to avoid making specific plans for coal leasing in your area.

Views Expressed During Consultation Not Binding

The views you express in this consultation are not binding, either on you or on the BLM. Here is what your views will do and what they will not do:

1. If you state at this time that you favor leasing, you may still stop surface mining at any time before a lease is issued by withholding your consent to mining. This will prevent the BLM from leasing the coal. However, if you (or a previous owner) have already given written consent to allow surface coal mining on your land, you may have already given up your right to stop leasing and mining.
2. If you express a preference for leasing, the BLM is under no obligation to offer the coal under your land for lease. Analysis may indicate the coal should not be leased because of environmental problems, that other lands contain better coal and should be leased first, or that there is no need to lease the coal under your land because sufficient coal lands are already available for mining.
3. If you express a preference against surface coal mining under your land and a significant number of other surface owners in your area are opposed to leasing a part of or the whole area may be eliminated from consideration for leasing. However, the BLM will consider other matters, such as the availability of other coal land for leasing, in making the decision whether or not to issue leases in the area.

The Consent Requirement vs. The Consultation Requirement

The two protections of the surface mining law for surface owners are very different.

The consent requirement concerns each surface owner's authority to prevent surface mining of coal under his land. The BLM will not at any time seek consent from you directly. If a coal company wants to surface mine the coal under your land, the company will have to negotiate with you to obtain your consent to mine. If a qualified surface owner refuses to grant consent for surface coal mining, BLM is required to withhold the coal from leasing. Your decision to give consent or refuse consent does not need to be made until a later time when BLM is preparing a specific coal leasing plan that includes your lands.

The consultation requirement of the law concerns the ability of a group of surface owners to influence coal leasing plans in their area. The BLM has to decide during the planning process whether to make lands eligible for coal leasing or to eliminate lands from leasing consideration within the life of the resource management plan. If there are a significant number of surface owners opposed to leasing for surface mining, and if other acceptable areas are available for leasing, the BLM may decide not to lease lands in the area for surface coal mining. Your preferences, along with those of neighboring surface owners, will be taken into consideration now, during planning.

The Effect of Significant Opposition to Leasing

If a significant number of surface owners in your area oppose leasing for surface coal mining, the BLM may issue no leases in the area, even though some surface owners do favor surface coal mining under their land. Just how many surface owners would amount to a "significant number" cannot be answered at this time. This will have to be determined on a case-by-case basis for each coal study area. But, in no case will the coal under your land be leased without your consent if you are a qualified surface owner.

Qualified Surface Owners

The protections of the surface mining law apply only to surface owners as defined by the surface mining law. The law defined surface owners as a person or persons who:

- (1) hold legal or equitable title to the land surface;
- (2) have their principal place of residence on the land; or personally conduct farming or ranching operations upon a farm or ranch unit to be affected by surface coal mining operations; or receive directly a significant portion of their income, if any, from such farming or ranching operations; and,
- (3) have met the conditions of paragraphs (1) and (2) for a period of at least three years prior to the granting of consent.

If you meet the requirements of law listed above, you can help ensure that your preferences are considered in the BLM planning process by letting us know that you meet each of the requirements. If you do not meet the requirements, please let us know this also.

If Consent to Mine has Already Been Given

If you have already given your consent to a coal company or someone else to surface mine the coal under your land, it is important that the BLM know about this in preparing its land use plans. The enclosed consultation form provides an opportunity for you to list any such agreements.

If you have already given your consent to surface coal mining on your land, the BLM must consider you to be in favor of mining those tracts to which the consent agreements apply [according to BLM regulations 43 CFR 3420.1-4 (e)(4)(ii)].

Outside Advice

You may want to seek the advice of someone outside the federal government (for example, neighboring surface owners, a lawyer, or someone familiar with surface coal mining operations) before you answer this letter.

Time for Answering

In order to fully consider your views, we must have your response to this consultation by January 6, 1986. Please express your views on the enclosed form with preprinted name and legal descriptions

The form is designed so that you can respond individually for each separate parcel of land, and you may separate the parcels by legal descriptions as you see fit. If there is an error in the preprinted legal descriptions, please make the necessary correction. The form without preprinted name and legal descriptions is for your records. You may want to fill it out and save it, so you will have a record of your response.

The preprinted descriptions only cover federal coal with an identified potential for development. If you wish to know the boundaries of coal with development potential in your area, you can inspect the coal deposit maps on display at the County Auditor's Office in your county. Those who are unable to visit the courthouse can request deposit maps from this office.

If you have questions concerning consultation or any other aspect of the planning process, please call Mark Stiles or Ken Burke at (701) 225-9148. Or stop in at our office, which is on the second floor of the Gate City Building, 204 Sims Street, Dickinson. Our office hours are from 7:45 a.m. to 4:30 p.m.

To make it easier for surface owners to talk individually with BLM staff about consultation, three question-and-answer sessions will be held. These sessions will be informal, there will be no program presented, and persons can drop by any time during the scheduled hours.

Schedule

We are looking forward to finding out your views.

Sincerely yours,



District Manager

TABLE B-9
SUMMARY OF SURFACE OWNER CONSULTATION¹

Coal Study Area	Letters Sent	Responses Received	Percent Response	Surface Owners Qualified or Assumed Qualified	Qualified Owners Under Previous Consent Agreements	Qualified Owners Under Previous Consent Agreements "Opposed"	Qualified Owners Without Previous Consent Responding "In Favor"	Qualified Owners Without Previous Consents Responding "Unsure" ²	Qualified Owners Without Previous Consents Responding "Opposed"
Antelope	147	57	39	141	26	9	15	14	21
Arnegard ³	93	57	61	90	2	0	5	8	38
Beulah-Zap	167	70	42	154	23	3	19	20	18
Bowman-Gascoyne ⁴	99	50	51	99	30	10	19	—	11
Center-Stanton	107	44	41	96	25	3	15	7	11
Dickinson ³	417	216	52	400	37	21	17	22	137
Divide	24	14	58	22	0	0	1	1	10
Dunn Center	285	149	52	272	53	34	30	14	92
Elgin-New Leipzig, Mott, and New England ⁵	529	290	55	529	78	44	26	0	162
Elkhorn	72	33	46	68	0	0	5	6	18
Fortuna	99	62	63	93	1	1	16	18	22
Garrison	72	39	54	67	4	2	7	7	20
Golden Valley	94	55	59	86	18	2	8	15	24
Hanks ⁴	175	115	66	175	28	13	10	—	61
Keene	191	89	47	179	1	1	11	23	46
Niobe	2	1	50	2	0	0	0	0	1
Sand Creek ⁴	263	140	53	263	42	18	18	—	71
Tobacco Garden ³	162	77	48	158	2	0	6	12	41
Underwood	6	4	67	6	1	0	2	1	1
Velva	83	39	47	80	4	0	7	8	20
Washburn	13	8	62	10	4	0	2	1	2
Williston ⁴	303	141	47	303	49	23	30	—	61
Total	3403	1750	51	3293	428	184	269	177	888

¹Numerical summary only; identification of significant opposition was based on maps and overlays located in the Dickinson District Office.

²Tabulations of "unsure" responses are not available for CSAs or portions of CSAs included in the McKenzie-Williams and Southwest North Dakota MFPs.

³Portions of surface owner consultation conducted during preparation of McKenzie-Williams or Southwest North Dakota MFPs.

⁴Surface owner consultation conducted during preparation of McKenzie-Williams or Southwest North Dakota MFPs.

⁵Consultation results combined in Southwest North Dakota MFP.

**TABLE B-10
ACRES EXCLUDED FROM CONSIDERATION DUE TO
SIGNIFICANT SURFACE OWNER OPPOSITION**

CSA	ALTERNATIVES						
	A		B, C, D		B	C	D
	Gross	Net	Gross	Net	Net	Net	
Antelope	0	0	0	0	0	0	
Arnegard	9,563	9,563	10,900	10,561	10,517	10,082	
Beulah-Zap	0	0	1,800	1,779	1,779	55	
Bowman-Gascoyne	0	0	0	0	0	0	
Center-Stanton	0	0	1,120	1,120	1,120	1,120	
Dickinson	0	0	15,040	9,050	8,882	8,009	
Divide			480	480	480	480	
Dunn Center	0	0	15,640	14,315	14,315	12,585	
Elgin-New Leipzig	0	0	240	240	240	240	
Elkhorn			4,080	4,070	3,911	3,610	
Fortuna			2,760	1,676	1,636	1,517	
Garrison	0	0	1,400	627	627	558	
Golden Valley	0	0	2,520	2,478	2,478	2,360	
Hanks	0	0	3,280	3,084	2,755	1,917	
Keene			18,280	16,304	16,085	9,123	
Mott	0	0	0	0	0	0	
New England	8,600	3,800	12,920	11,889	11,770	11,668	
Niobe			0	0	0	0	
Sand Creek	5,520	5,280	8,040	7,906	7,298	6,514	
Tobacco Garden	4,760	429	22,390	3,884	3,796	3,103	
Underwood	0	0	0	0	0	0	
Velva			0	0	0	0	
Washburn	0	0	0	0	0	0	
Williston	13,174	40	10,640	154	154	154	
TOTAL	41,617	19,112	131,530	89,617	87,843	73,095	

**TABLE B-11
COAL ACREAGES WITH SPECIAL STIPULATIONS**

Coal Study Area	Vegetative Reclamation Stipulation			Buried-Valley Aquifer National Park Service Stipulation		
	B	Alternative		C	Alternative	
		C	D		C	D
Antelope	7,168	6,780	5,395	486		
Arnegard	1,313	1,272	1,182	384		
Beulah-Zap	13,215	12,593	7,259	1,152		
Bowman-Gascoyne	5,053	5,025	4,746	0		
Center-Stanton	5,630	5,496	4,944	256		
Dickinson	7,336	7,336	5,442	0	16,795	16,310
Divide	1,490	1,490	1,453	49		
Dunn Center	17,898	17,562	15,697	1,945		
Elgin-New Leipzig	3,686	3,686	3,628	0		
Elkhorn	5,043	4,952	1,884	64	13,285	10,240
Fortuna	4,557	4,557	2,652	2,483		
Garrison	246	246	160	26		
Golden Valley	738	738	738	0	6,145	6,145
Hanks	6,271	6,222	5,265	179		
Keene	16,680	16,680	5,672	2,432		
Mott	10,913	10,897	9,489	0		
New England	17,047	17,021	16,781	0		
Niobe	80	80	80	0		
Sand Creek	15,211	15,006	11,126	588		
Tobacco Garden	1,751	1,705	1,377	793		
Underwood	55	55	7	0		
Velva	540	540	513	201		
Washburn	400	339	224	0		
Williston	10,166	10,102	5,316	1,280		
Totals	152,487	150,380	111,030	12,318	36,225	32,695

TABLE B-12
SUMMARY OF AREAS ACCEPTABLE FOR FURTHER
CONSIDERATION

CSA	Acres Acceptable by Alternative			
	A	B	C	D
Antelope	18265	29436	28014	24385
Arnegard	2037	12580	11290	6513
Beulah-Zap	9670	43591	41134	28348
Bowman-Gascoyne	19560	19694	19261	18199
Center-Stanton	11695	23523	22706	21309
Dickinson	23469	52473	50027	46163
Divide		2819	2819	2790
Dunn Center	27208	65283	63710	56762
Elgin-New Leipzig	12900	13743	13436	12948
Elkhorn		18531	17017	11271
Fortuna		7310	7197	4973
Garrison	6817	2343	2343	2198
Golden Valley	11413	17611	17780	17650
Hanks	40234	38911	34765	29355
Keene		46300	42553	26619
Mott	40379	41115	39803	36120
New England	73100	78065	77195	76100
Niobe		160	160	160
Sand Creek	49350	41831	39775	32974
Tobacco Garden	4092	9791	9596	7907
Underwood	1030	1605	1605	1416
Velva		2633	2562	2166
Washburn	983	1189	1002	687
Williston	38977	28799	27958	19899
Total	391179	599496	573868	487072