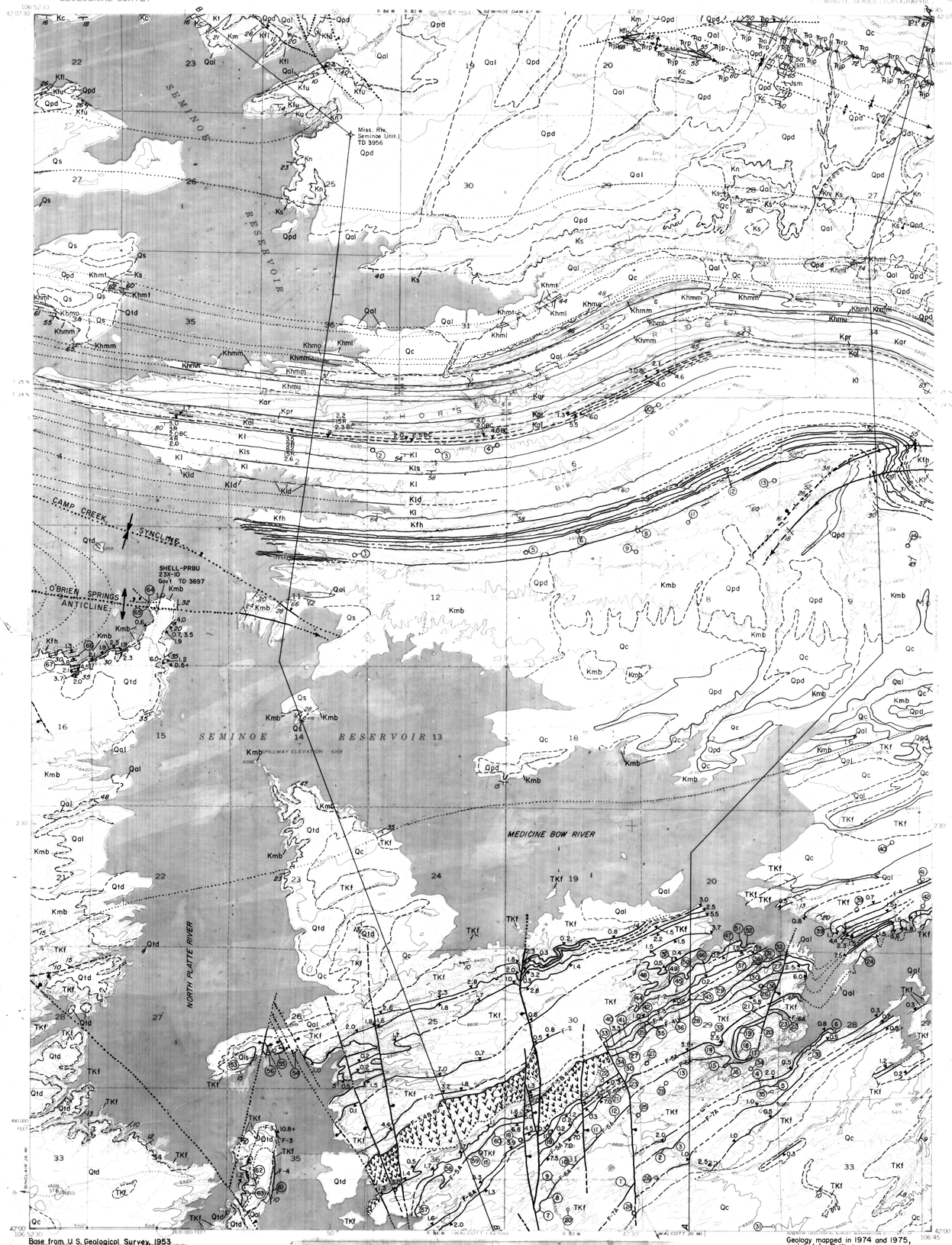
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BIG DRAW QUADRANGLE
WYOMING-CARBON CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Base from U.S. Geological Survey, 1953

Photogrammetry by U.S. Geological Survey as part of the Department of the Interior program for the development of the Missouri River Basin

Control by USGS and USC&GS

Topography from aerial photographs by multiplex methods
Aerial photographs taken 1949. Field check 1953

Polyconic projection. 1927 North American datum
10,000-foot grid based on Wyoming coordinate system, east central zone

Dashed land lines indicate approximate locations

SCALE 1:24000
0 Mile
0 Kilometer

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

Geology mapped in 1974 and 1975, assisted by R. W. Jones

ROAD CLASSIFICATION

Heavy duty ——— 4 LANE 2 LANE Light duty
Medium duty — — 4 LANE 2 LANE Unimproved dirt . . . . .
U.S. Route ◯ State Route

WYOMING
QUADRANGLE LOCATION

SEMINOE DAM SE
BIG DRAW, WYO
N4200—W10645/7.5

CORRELATION OF MAP UNITS

Qal	Holocene	QUATERNARY
Qs	Holocene(?)	
Qc	Holocene and Pleistocene	
Qtd Qpd	Pleistocene(?)	
TKf	Paleocene and Upper Cretaceous	TERTIARY AND CRETACEOUS
Kmb		
Kfh		
Kld		
Kl		
Kls		
Kal		
Kpr		
Unconformity		
Kar		CRETACEOUS
Khmu		
Khmh		
Khmm s Khmm		
Khmo		
Khml		
Khmt		
Ks		
Kn		
Ku		
Kfu		
Kfl		
Km		
Kt	Upper Cretaceous	
Kc	Lower Cretaceous	
Unconformity		
Jsm	Upper and Middle Jurassic	JURASSIC
Unconformity		
₹jp	Upper Triassic	TRIASSIC
₹a		
₹rp	Lower Triassic	
₹Pge		PERMIAN
Pt		PENNSYLVANIAN
PMa		MISSISSIPPIAN
Mm		PALEOZOIC
Pz		

Shown in cross section only

DESCRIPTION OF MAP UNITS

Qal — ALLUVIUM (HOLOCENE)--Unconsolidated clay, silt, sand, and gravel along present stream channels and tributaries

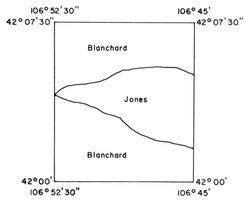
Qs — STABLE SAND DUNES (HOLOCENE?)--Unconsolidated eolian sand stabilized in dunes by vegetation

Qc — COLLUVIUM AND SLOPE WASH (HOLOCENE AND PLEISTOCENE)--Thin poorly sorted deposits of clay, silt, sand, gravel, and boulders; includes talus deposits on steep slopes in northeastern part of quadrangle

Qtd — TERRACE DEPOSITS UNDIVIDED (PLEISTOCENE?)--Poorly sorted unconsolidated deposits of clay, silt, sand, and cobble-size gravel. Cobbles are predominantly rounded and quartzitic; quartzite cobbles have a weathering rind as thick as 0.5 in.

Qpd — PEDIMENT DEPOSITS (PLEISTOCENE?)--Poorly sorted unconsolidated deposits of clay, silt, sand, gravel, and boulders. Gravel and boulders consist of igneous and metamorphic rocks similar to rocks that crop out in the mountains to the north and northwest and are very angular

TKf — FERRIS FORMATION (PALEOCENE AND UPPER CRETACEOUS)--Upper part: mudstone, shale, siltstone, sandstone, conglomeratic sandstone, and coal. Sandstone is white to light tan to dark orangish brown, very fine to coarse grained and conglomeratic, arkosic, ferruginous, and concretionary. Numerous thick coal beds occur throughout the unit. About 3,600 ft thick. Not mapped separately from lower part. Lower part: conglomeratic sandstone, sandstone, shale, carbonaceous shale, mudstone, and minor coal. Conglomeratic sandstone is dark gray to dark brown, ferruginous; contains pebbles of black, red, and yellow chert, red and gray quartzite, and sparse rhyolite and quartz latite porphyry. Bone fragments are common and some have been identified as Triceratops (Bowen, 1918, p. 230-231). Plant microfossils collected by Gill, Merewether, and Cobban (1970) yielded a Late Cretaceous assemblage. Generally, the conglomeratic sandstone and sandstone are poorly exposed and form low rounded ridges. From 1,000 to 2,600 ft thick. Total thickness about 4,800 ft



Map index showing areas of responsibility

Kmb — MEDICINE BOW FORMATION (UPPER CRETACEOUS)--Shale, mudstone, sandstone, carbonaceous shale, and coal. Upper part: coarse-grained massive friable sandstone interbedded with dark-gray and maroon shale. Middle part: thick-bedded fine-grained sandstone interbedded with dark-colored shale. Lower part: massive to crossbedded sandstone forming conspicuous ledges interbedded with shale, carbonaceous shale, and coal; about 700 ft thick. Total thickness about 6,600 ft

Kfh — FOX HILLS FORMATION (UPPER CRETACEOUS)--Sandstone, light-gray, weathering to yellowish-gray and light-brown, thin-bedded to massive; olive-gray to dark-gray sandy shale, nonresistant and poorly exposed. Sandstone contains fossiliferous sandstone concretions, Ophiomorpha, and oysters; shale contains oysters. Upper part contains carbonaceous shale near contact with Medicine Bow Formation and brackish-water fossils and thin beds of impure coal. About 450 ft thick

Kl — LEWIS SHALE (UPPER CRETACEOUS)--Total thickness about 2,300 ft. Upper part: predominantly silty shale with shaly siltstone and very fine grained silty platy fossiliferous sandstone. Middle and basal parts: silty shale and sandy siltstone

Kld — Dad Sandstone Member--Very fine to fine-grained silty sandstone, laminated to thin-bedded, partly irregular-bedded, mostly poorly cemented; sandy and shaly siltstone, laminated to thin-bedded; and silty shale

Kls — Lower unnamed sandstone member--Very fine to fine-grained silty sandstone

Kal — ALMOND FORMATION (UPPER CRETACEOUS)--Yellowish-gray to yellow, weathering to brown, fine-grained thin-bedded sandstone; locally contains Ophiomorpha and oysters; sandy, carbonaceous siltstone; carbonaceous, coaly shale, and coal. Dark-gray shale locally contains fossiliferous limestone concretions. About 460 ft thick

Kpr — PINE RIDGE SANDSTONE (UPPER CRETACEOUS)--Yellow-gray, weathering to to light gray and white, very fine grained sandstone; carbonaceous siltstone; carbonaceous shale and thin beds of impure coal. About 180 ft thick

Kar — ALLEN RIDGE FORMATION (UPPER CRETACEOUS)--Brown very fine to fine-grained sandstone, siltstone, shale, carbonaceous shale, and thin coal. About 700 ft thick

HAYSTACK MOUNTAINS FORMATION (UPPER CRETACEOUS)--Total thickness in this quadrangle from 2,300 to 2,400 ft

Khmu — Upper unnamed member--Dark-gray silty shale, siltstone, and very fine to fine-grained sandstone. From 300 to 350 ft thick

Khmh — Hatfield Sandstone Member--Pale-yellowish-gray very fine to fine-grained cliff-forming sandstone; thin-bedded and crossbedded. From 180 to 225 ft thick

Khmm s Khmm — Middle unnamed member--Dark-gray silty shale, very fine to fine-grained sandstone (s, top of sandstone), and sandy siltstone.

Khmo — O'Brien Spring Sandstone Member--Pale-yellowish-gray very fine to fine-grained thin-bedded cliff-forming sandstone. Contains abundant Ophiomorpha. From 160 to 220 ft thick

Khml — Lower unnamed member--Dark-gray silty shale, sandy siltstone, and very fine grained silty sandstone. From 500 to 900 ft thick

Khmt — Tapers Ranch Sandstone Member--Grayish-green fine- to coarse-grained thin-bedded glauconitic sandstone, with laminae of dark-gray sandy shale. From 200 to 250 ft thick. (Description of unit from Gill and others, 1970)

Ks — STEELE SHALE (UPPER CRETACEOUS)--Dark-gray shale with thin layers of limestone concretions, very fine grained sandstone, and siltstone. Nonresistant and very poorly exposed. About 2,800 ft thick

Kn — NIOBRARA FORMATION (UPPER CRETACEOUS)--Medium- to dark-gray calcareous and concretionary shale. Nonresistant and poorly exposed. About 1,200 ft thick

Ku — UNNAMED SHALE UNIT (UPPER CRETACEOUS)--Dark-gray concretionary shale. Nonresistant and poorly exposed. Described by Merewether (1972). About 140 ft thick

FRONTIER FORMATION (UPPER CRETACEOUS)--Total thickness about 950 ft

Kfu — Upper part (includes Wall Creek Member)--Fine- to medium-grained sandstone interbedded with dark-gray shale. Sandstone is conglomeratic near top, thin-bedded, irregular-bedded and cross-bedded, and concretionary and burrowed. About 250 ft thick

Kfl — Lower part--Very dark gray shale, siltstone, and very fine to fine-grained sandstone. About 700 ft thick

Km — MOWRY SHALE (LOWER CRETACEOUS)--Gray, weathering to white, siliceous shale. About 200 ft thick

Kt — THERMOPOLIS SHALE (LOWER CRETACEOUS)--Dark-gray shale, siltstone, and tan to light-gray fine-grained irregular-bedded sandstone (Muddy Sandstone Member, about 10 ft thick). About 200 ft thick

Kc — CLOVERLY FORMATION (LOWER CRETACEOUS)--White to gray fine- to coarse-grained conglomeratic massive to crossbedded sandstone. About 160 ft thick

Jsm — MORRISON (UPPER JURASSIC) AND SUNDANCE (UPPER AND MIDDLE JURASSIC) FORMATIONS UNDIVIDED--Morrison Formation: siltstone and fine-grained sandstone; very poorly exposed; about 180 ft thick. Sundance Formation: tan very fine to fine-grained thin-bedded laminated to crossbedded and massive sandstone; shale, siltstone, and thin limestone; very poorly exposed; about 310 ft thick. Total thickness about 490 ft

₹jp — POPO AGIE AND JELM FORMATIONS UNDIVIDED (UPPER TRIASSIC)--Red shale and mudstone, and tan to red siltstone; very poorly exposed. May include Bell Springs Member of Nugget Sandstone (Lower Jurassic) at top of unit. About 380 ft thick

₹a — ALCOVA LIMESTONE (TRIASSIC)--Gray thin-bedded limestone; crenulated and resistant. About 10 ft thick

₹rp — RED PEAK FORMATION (LOWER TRIASSIC)--Red calcareous siltstone, red shale, and white to tan fine-grained sandstone; poorly exposed. About 580 ft thick

₹Pge — GOOSE EGG FORMATION (LOWER TRIASSIC AND PERMIAN)--Unexposed. Diverse lithology includes purple, pink, and gray dolomitic limestone, red siltstone, and limy sandstone (Harshman, 1972, p. 13). About 580 ft thick. Shown in cross section only

Pt — TENSLEEP SANDSTONE (PENNSYLVANIAN)--Upper part: fine- to medium-grained massive crossbedded sandstone and quartzite; very well indurated and resistant; forms flatirons in northeastern corner of quadrangle. Lower part not exposed. Total thickness about 600 ft

PMa — AMSDEN FORMATION (PENNSYLVANIAN AND MISSISSIPPIAN)--Shown in cross section only

Mm — MADISON LIMESTONE (MISSISSIPPIAN)--Shown in cross section only

Pz — PALEOZOIC ROCKS UNDIVIDED--Shown in cross section only

23B F-4 (11) — COAL BED--Approximately located; short dashed where inferred; dotted where concealed. Thickness of coal, measured at triangle, in feet; R, rock; BC, bony coal; B, bone. Number in circle refers to location of measured coal section. Letter-and-number symbol indicates identification of coal bed. Trace and thickness of coal beds in Almond Formation (Kal) are from Dobbin, Bowen, and Hoots (1929); no coal bed thicknesses are shown for Medicine Bow Formation (Kmb)

BAKED AND FUSED ROCK--Trace of burned coal bed approximately located; short dashed where inferred. Inverted v's represent approximate areal extent of burned coal

CONTACT--Approximately located; short dashed where inferred; dotted where concealed

FAULT--Approximately located; short dashed where inferred; dotted where concealed. Bar and ball on downthrown side; R, reverse throw

ANTICLINE--Approximately located; short dashed where inferred; dotted where concealed. Arrow along axis shows direction of plunge

SYNCLINE--Approximately located; short dashed where inferred; dotted where concealed. Arrow along axis shows direction of plunge

STRIKE AND DIP OF BEDS

60 — Inclined

83 — Overturned

Miss Riv Seminoe Unit I TD 3956 — ABANDONED OIL AND GAS TEST HOLE--Showing operator, lease name, and total depth

(21) — COAL DRILL HOLE--Number in circle refers to location of correlated drill hole

Table 1.--Correlation of coal beds

This report	Dobbin, Bowen, and Hoots (1929)
F-2	121 (27)
F-3	122 (28)
F-4	123 (31)
F-4U	124 (33)
F-5A	125
F-6A	127
F-7A	129

Table 2.--Coal analyses for two drill-cutting samples from holes drilled in the Seminoe Dam SE quadrangle, Carbon County, Wyoming

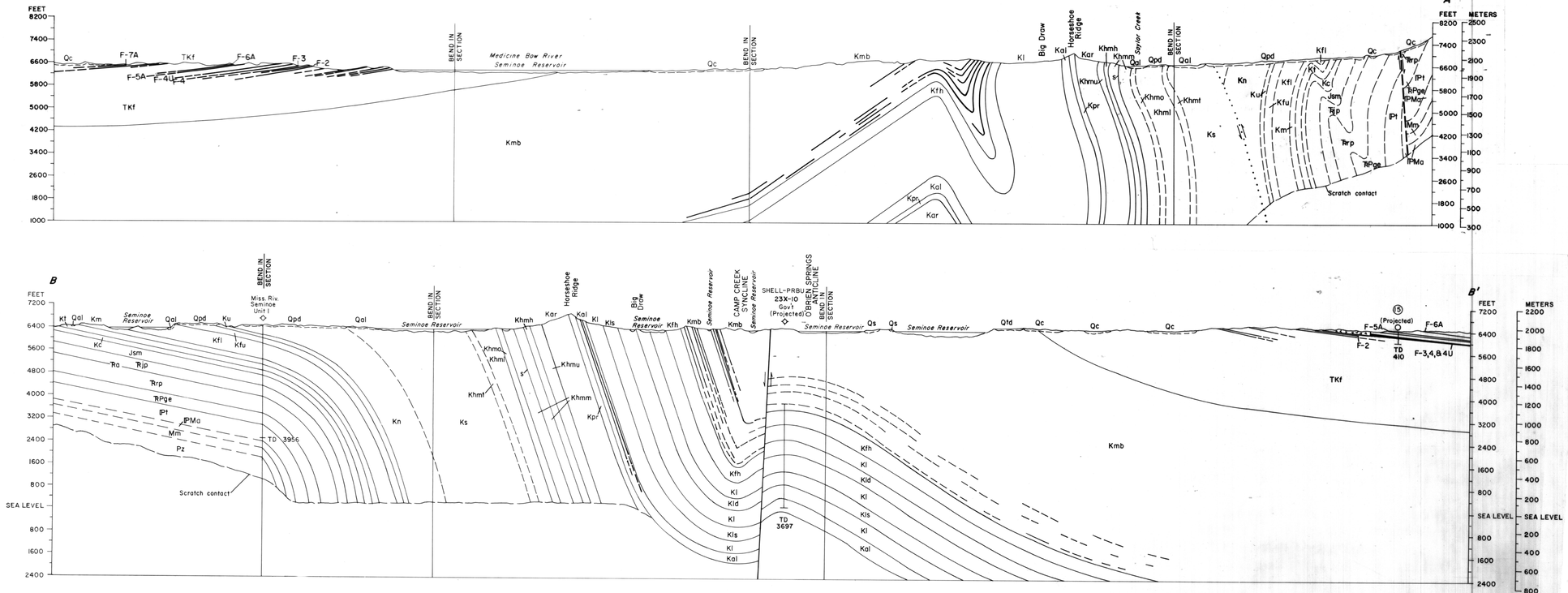
[Type of analysis: A, as received; B, moisture free; and C, moisture and ash free. ---, not applicable]

Drill-hole SD-1-36, SW¼NE¼ sec. 36, T. 24 N., R. 84 W. (No. 15 on map)

Sample interval (feet)	Coal bed(s)	Type of analysis	Proximate analysis (in percent) Moisture	Volatile matter	Fixed carbon	Ash	Heating value (Btu/lb)
253-298	F-3, F-4, and F-4U	A	29.9	25.1	34.8	10.2	7,844
		B	---	35.8	49.6	14.6	11,195
		C	---	41.9	58.1	---	13,106

Drill-hole SD-1-32, NW¼SW¼ sec. 32, T. 24 N., R. 83 W. (No. 26 on map)

97-108	F-7A	A	7.1	28.8	35.1	29.0	8,311
		B	---	31.0	37.8	31.2	8,943
		C	---	45.0	55.0	---	12,991



GEOLOGIC MAP AND COAL DEPOSITS OF THE SEMINOE DAM SE QUADRANGLE, CARBON COUNTY, WYOMING

By

L. F. Blanchard

1981