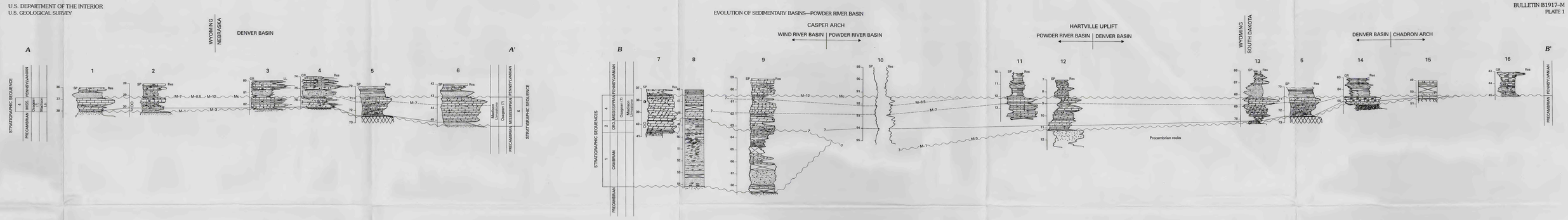
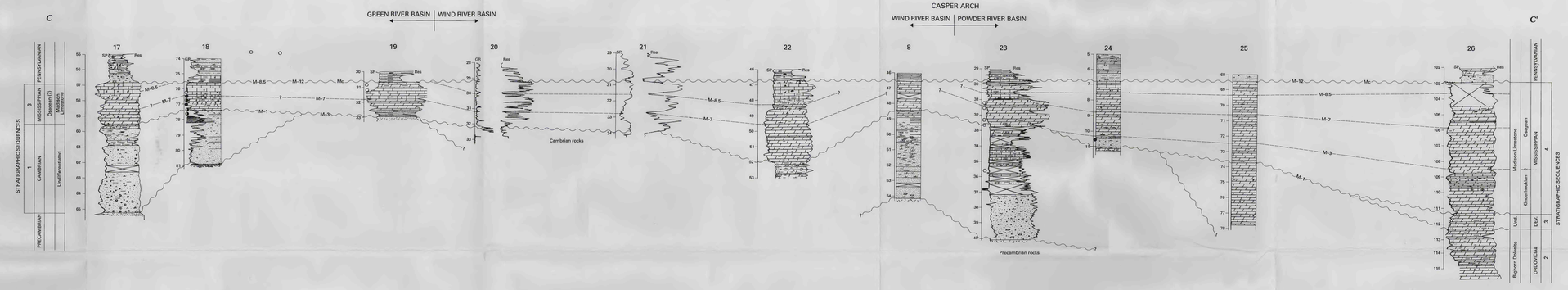
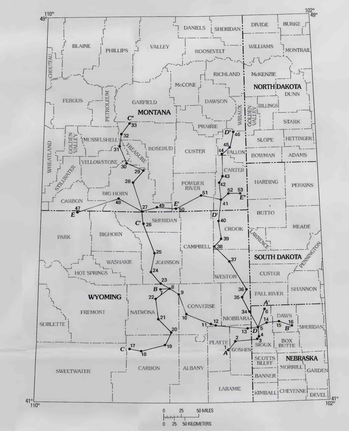
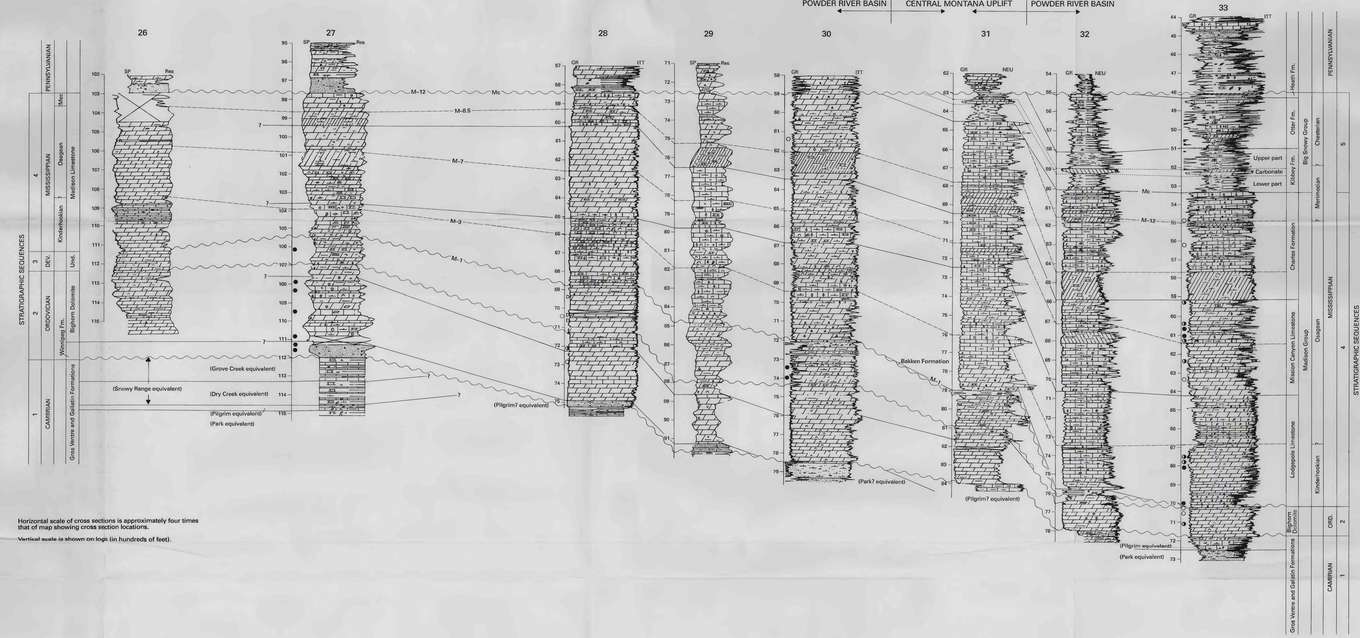
EVOLUTION OF SEDIMENTARY BASINS—POWDER RIVER BASIN







MAP SHOWING LINES OF SECTIONS



Horizontal scale of cross sections is approximately four times that of map showing cross section locations.

Vertical scale is shown on logs (in hundreds of feet).

EXPLANATION

- Limestone [1]
- Dolomite [1]
- Calcareous clay, dolomitic clay
- Anhydrite, primary
- Anhydrite, secondary
- Gypsum
- Claystone, [2] gray
- Claystone, [2] colored
- Mudstone, gray
- Mudstone, colored
- Sandstone
- Siltstone
- 'Granite wash' (weathered basement)
- Igneous, basic
- Igneous, acidic
- Metamorphic
- Limestone, thin beds
- Dolomite, thin beds
- Anhydrite, thin beds
- Claystone or mudstone partings
- Anhydritic [3]
- Gypsiferous [3]
- Chert; light, dark
- Glauconite [3]
- Limestone, pebble
- Phosphatic, nodules
- Pyritic
- Siliceous
- Calcite crystals
- Fossils
- Brachiopods [3]
- Algal [3]
- Crinoids [3]
- Coral
- Bioclastic or fragmental
- Oolds [3]
- Pisoids-oolds [3] or peloids
- Pisoliths [3]
- Sandy
- Silty
- Argillaceous [3]
- Calcareous [3]
- Dolomitic [3]
- Floating sand grains
- Earthy texture
- Oil, heavy stain
- Oil, medium, poor, or spotted stain
- Oil, light, quantitatable, or positive test
- Oil, dead or asphaltic
- Boundary of stratigraphic unit
- Physical stratigraphic marker horizon (Peterson, 1984)
- Boundary of horizon within stratigraphic unit

FOOTNOTES

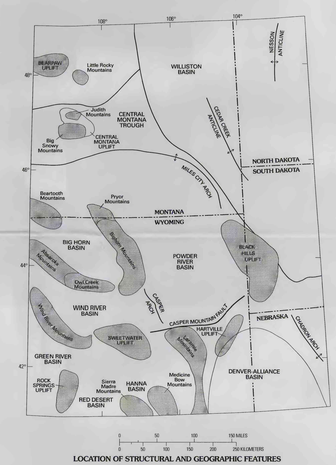
[1] Thickness of symbol is roughly proportional to thickness of beds within individual logs

[2] Length of symbols is roughly proportional to hue of units within individual logs

[3] Repeated symbol denotes increasing importance of component

Table. Wells used on cross sections

Well no.	Location	Company	Well name
1	SE¼SW¼ sec.29, T.23 N., R.65 W.	Seaboard Oil	No. 1 Wilson
2	Center, SE¼SW¼ sec.25, T.27 N., R.64 W.	Pan American Petroleum	No. 1 USA-R.D. St.John
3	Center, SE¼NE¼ sec.13, T.27 N., R.57 W.	Continental Oil	No. 13-1 Hatch
4	Center, SW¼SW¼ sec.27, T.28 N., R.56 W.	Continental Oil	No. 1-27 Cherry
5	SW¼NE¼SW¼ sec.27, T.30 N., R.56 W.	The California Co.	No. 1 R.A. Mann
6	Center, SW¼SE¼ sec.10, T.34 N., R.54 W.	Amerada	No. 1 Fed.-Geiser
7	SE¼NE¼NW¼ sec.31, T.40 N., R.80 W.	Shell Oil	No. 1 Unit
8	NW¼NW¼ sec.35, T.40 N., R.79 W.	Midwest Refining Co.	Gov. No. 29 DT
9	NW¼NW SE¼ sec.10, T.38 N., R.78 W.	U.S. Navy	No. 1-G-10
10	SW¼NE¼NW¼ sec.4, T.33 N., R.75 W.	Phillips Petroleum	No. 1 McNeal
11	NW¼NE¼NW¼ sec.20, T.31 N., R.69 W.	California	No. 1 Nylen-Gillespie
12	Center, SE¼SE¼ sec.29, T.31 N., R.68 W.	McRae	No. 1 Kemgany
13	NE¼NE¼SW¼ sec.32, T.30 N., R.60 W.	General Petroleum	No. 45-32-P
14	Center, NE¼NE¼ sec.23, T.31 N., R.54 W.	San Jacinto	No. 1 Oldaker
15	Center, NW¼SE¼ sec.11, T.31 N., R.51 W.	Fred Morgan	No. 1 Levi Richardson
16	Center, SW¼SW¼ sec.14, T.30 N., R.48 W.	Tucker and Boer	No. 1 Armer
17	SW¼SE¼ sec.14, T.25 N., R.89 W.	Occidental Petroleum	Gov.-Sherard
18	NE¼NE¼ sec.34, T.25 N., R.86 W.	Atlantic & Fremont	No. 3 Unit
19	NW¼ SE¼SE¼ sec.17, T.26 N., R.80 W.	Amerada et al.	No. 1 Bolton
20	SE¼SW¼ sec.11, T.29 N., R.79 W.	Wolf Exp.	No. 1 Korfiet Ck.
21	NE¼NE¼SW¼ sec.35, T.33 N., R.97 W.	Texas Co.	No. 1 Irene Clark
22	NE¼NE¼ sec.17, T.37 N., R.82 W.	Herman & Geo. Brown	No. 1 Gow
23	NE¼ NW¼NE¼ sec.21, T.41 N., R.81 W.	Tidewater Assoc.	No. 74-21
24	NE¼SW¼SW¼ sec.9, T.44 N., R.83 W.	The Texas Co.	No. 1 McAlpin Gov.
25	Center, NW¼SE¼ sec.17, T.48 N., R.82 W.	Carter Oil	No. 3 Rider
26	NE¼SE¼NW¼ sec.22, T.55 N., R.85 W.	Shell Oil	Demple No. 1
27	NE¼NE¼NE¼ sec.36, T.9 S., R.37E.	Shell Oil	No. 1 Crow
28	Center, SE¼SE¼ sec.2, T.9 S., R.35E.	Humble Oil	No. 1 Crow Tribal
29	SW¼SW¼SW¼ sec.12, T.1 N., R.37E.	Forest	No. 12-1 Anderson
30	Center, NE¼NW¼ sec.13, T.3 N., R.33 E.	Amerada	No. 1 G. Van Cleve
31	Center, SE¼SW¼ sec.18 , T.7 N., R.32 E.	Atlantic	No. 1 Horton State
32	Center, SE¼NW¼ sec.29, T.10 N., R.32 E.	Continental	No. 1 NP
33	Lot 1, sec.6, T.12 N., R.34 E.	Amerada	No. 1 Savage Brothers
34	Center, NE¼SW¼ sec.29, T.34 N., R.60 W.	Raymond Oil	No. 1 Christensen
35	SW¼SW¼SE¼ sec.10, T.37 N., R.62 W.	Coronado Petroleum	No. 1 Gov. Tuttle
36	SE¼SW¼NW¼ sec.16, T.39 N., R.61 W.	Pacific Western	No. 1 Grimes-State
37	SE¼NE¼NW¼ sec.3, T.46 N., R.65 W.	Trigood Oil	No. 272 E Fiddler Ck U.
38	E/2 NW¼ sec.5, T.49 N., R.68 W.	True Oil	No. B-9 Burrows
39	Center, SE¼NW¼ sec.18, T.51 N., R.66 W.	Continental Oil	No. 1 Colburg
40	SE¼SW¼SW¼ sec.9, T.55 N., R.67 W.	Gulf Oil	No. 1 Little Missouri Fed.
41	Center, NW¼NE¼ sec.14, T.7 S., R.56 E.	Skelley	No. 1 Bergan
42	SW¼NW¼ sec.13 , T.3 S., R.55 E.	Sinclair	No. 1 Krettel
43	NE¼NE¼NE¼ sec.35, T.1 S., R.56 E.	Shannon Oil	No. 1 Gov.-Pure
44	Center, NW¼NE¼ sec.30, T.5 N., R.56 E.	Alpar Resources	No. 1 Wollard-Southland
45	NW¼SE¼NE¼ sec.1, T.6 N., R.57 E.	Atlantic Refining	No. 1 NPRR
46	Center, NE¼NW¼ sec.17, T.10 N., R.58 E.	Shell	NP-21-17 Cabin Ck Unit
47	Center, NW¼SE¼ sec.33, T.58 N., R.100 W.	Texaco Inc.	No. 55-33 Silver Tip
48	SW¼NW¼NE¼ sec.34, T.6 S., R.32 E.	Island Exp.	No. 32-34 Crow Tribal
49	Center, NW¼NE¼ sec.36, T.8 S., R.41 E.	Terra Resources	No. 1-36 Helms
50	Center, NE¼NW¼ sec.11, T.9 S., R.45 E.	Gulf	No. 1 Biden
51	NE¼SW¼ sec.7, T.6 S., R.52 E.	Kirby Royalties	Nash No. 1
52	Center, SW¼SW¼ sec.17, T.6 S., R.58 E.	Union	No. 2 Gov.-Hamilton
53	NW¼NW¼ sec.13, T.6 S., R.60 E.	Miles Jackson	No. B-1 Gov.



LOCATION OF STRUCTURAL AND GEOGRAPHIC FEATURES

REFERENCES CITED

Peterson, J.A., 1984, Stratigraphy and sedimentary facies of the Madison Limestone and associated rocks in parts of Montana, Nebraska, North Dakota, South Dakota, and Wyoming: U.S. Geological Survey Professional Paper 1273-A, 36 p.

CROSS SECTIONS OF LOWER PALEOZOIC ROCKS IN THE POWDER RIVER BASIN AND ADJACENT AREAS, WYOMING, MONTANA, AND SOUTH DAKOTA

By
David L. Macke
1993

Compiled by David L. Macke, 1987-1991
using gamma-ray and neutron logs combined with lithologic data from American Stratigraphic Company (AMSTRAT) logs whenever possible and spontaneous potential and resistivity logs where gamma-ray or neutron logs were not available. Only the AMSTRAT sample logs were available for several wells, and if sample logs were not available only the semi-line logs were used