THE GEOLOGICAL SURVEY OF WYOMING

Gary B. Glass, State Geologist

OPEN FILE REPORT 87-10

PRELIMINARY MAP OF KNOWN SURFICIAL STRUCTURAL FEATURES FOR THE RAWLINS 1° x 2° QUADRANGLE

compiled by

Jon K. King, Phillip L. Greer, and Alan J. VerPloeg

Laramie, Wyoming
1987

This listing of sources of information and index map were prepared to accompany the preliminary map of known surficial structural features for the Rawlins 1°x 2° Quadrangle.

Sources of geologic data

General

(These references are the sources of geologic data where more detailed, specific maps were not available).

Barclay, C.S.V., Edson, G.M., and Hettinger, R.D., 1978, Unpublished mapping in southwestern Carbon County for the Bureau of Land Management: U.S. Geological Survey unpublished maps, scale approximately 1:62,500.

Blackstone, D.L., Jr., 1983, Laramide compressional tectonics, southeastern Wyoming: University of Wyoming Contributions to Geology, v. 22, no. 1, p. 1-38, figures at various scales.

Blackstone, D.L., Jr., 1987, Unpublished mapping on the Corner Mountain and Arlington thrust faults, submitted for publication to University of Wyoming Contributions to Geology.

Buffler, R.T., 1967, The Browns Park Formation and its relationship to the Late Tertiary geologic history of the Elkhead region, northwestern Colorado and south-central Wyoming: Ph.D. dissertation, University of California, Berkeley, California, 175 p., plate 1, scale 1:125,000, (only used in a small area where better mapping was not available).

Case, J.C., 1986, Earthquakes and related geologic hazards in Wyoming: Geological Survey of Wyoming Public Information Circular 26, 22 p., sheet 1, scale 1:1,000,000.

Houston, R.S., and Ebbett, B.E., 1977, Geologic map of the Sierra Madre and western Medicine Bow Mountains, southeastern Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-827, scale 1:125,000, (only used in a small area where better mapping was not available).

Love, J.D., and Christiansen, A.C., 1985, Geologic map of Wyoming, U.S. Geological Survey map, scale 1:500,000.

Love, J.D., and Weitz, J.L., 1951, Geologic map of south central Wyoming: U.S. Geological Survey unnumbered map, scale approximately 1:150,000, (only used in a small area where better mapping was not available).

Weitz, J.L., and Love, J.D., 1952, Geologic map of Carbon County, Wyoming: Geological Survey of Wyoming miscellaneous map, scale 1:158,400, (only used in a small area where better mapping was not available).

Specific - published

1. **Barclay, C.S.V.**, 1976, Preliminary geologic map of the Tullis Quadrangle, Carbon County, Wyoming: U.S. Geological Survey Open File Report 76-794, scale 1:24,000.

2. **Berry, D.W.**, 1960, Geology and ground-water resources of the Rawlins area, Carbon County, Wyoming: U.S. Geological Survey Water Supply Paper 1458, 74 p., plate 1, scale 1:63,360.

3. **Blackstone, D.L., Jr.**, 1970, Structural geology of the Rex Lake Quadrangle, Laramie Basin, Wyoming: Geological Survey of Wyoming Preliminary Report 11, 17 p., plate 1, scale 1:24,000.

4. **Blackstone, D.L., Jr.**, 1973, Structural geology of the eastern half of the Morgan Quadrangle, the Strouss Hill Quadrangle, and the James Lake Quadrangle, Albany and Carbon Counties, Wyoming: Geological Survey of Wyoming Preliminary Report 13, 45 p., map scale 1:24,000.

5. **Blackstone, D.L., Jr.**, 1976, Structural geology of the Arlington-Wagonhound Creek area, Carbon County, Wyoming--a revision of previous mapping: Geological Survey of Wyoming Preliminary Report 15, 16 p., map scale 1:39,600.

6. **Blanchard, L.F.**, and Comstock, M.C., 1980, Geologic map and coal deposits of the Pats Bottom Quadrangle, Carbon County, Wyoming: U.S. Geological Survey Open File Report 80-52, scale 1:24,000, (relied mostly on Glass and Roberts, 1979).

7. **Dobbin, C.E.**, Bowen, C.F., and Hoots, H.W., 1929, Geology and coal and oil resources of the Hanna and Carbon Basins, Carbon County, Wyoming: U.S. Geological Survey Bulletin 804, 88 p., plate 27, scale 1:62,500, (only used where better mapping not available).

8. **Edson, G.M.**, 1979, Preliminary geologic map and coal sections of the Seaverson Reservoir Quadrangle, Carbon County, Wyoming: U.S. Geological Survey Open File Report 79-1577, scale 1:24,000.

9. **Graff, P.J.**, Houston, R.S., and Flunkey, A.J., compilers, 1981, Geologic map of the northern Sierra Madre, Wyoming, *in* Karlstrom, K.E., and others, A summary of the geology and uranium potential of Precambrian conglomerates in southeastern Wyoming, Volume 1: U.S. Department of Energy Technical Report GJBX-139 (81), plate 5, scale 1:50,000. (This is a different map than is in Graff's 1978 Ph.D. dissertation, done at the University of Wyoming. The newer map presents several major revisions resulting from further examinations.)

10. **Glass, G.B.**, and Roberts J.T., 1979, Remaining strippable coal resources and strippable reserve base of the Hanna coal field in south-central Wyoming: Geological Survey of Wyoming Report of Investigations 17, 166 p., plates 1-4, scale 1:48,000 (used in areas of coal mining).

11. **Houston, R.S.**, and Karlstrom, K.E., compilers, 1981, Geologic map of the Precambrian metasedimentary rocks of the Medicine Bow Mountains, Wyoming,

in Karlstrom, K.E., and others, A summary of the geology and uranium potential of Precambrian conglomerates in southeastern Wyoming, Volume 1: U.S. Department of Energy Technical Report GJBX-139 (81), plate 1, scale 1:50,000. (This is the same map that is in Karlstrom's 1981 Ph.D. dissertation, done at the University of Wyoming).

12. **Houston, R.S.**, and Orback, C.J., 1976, Geologic map of the Lake Owen Quadrangle, Albany County, Wyoming: U.S. Geological Survey Geologic Quadrangle Map GQ-1304, scale 1:24,000.

13. **Houston, R.S.**, and others, 1968, A regional study of rocks of Precambrian age in that part of the Medicine Bow Mountains lying in southeastern Wyoming, *with a chapter on* The relationship between Precambrian and Laramide structure: Geological Survey of Wyoming Memoir 1, 167, p., plate 1, scale 1:62,500.

14. **Hyden, H.J.**, 1966, Geologic map of the Pierce Reservoir Quadrangle, Albany and Carbon Counties, Wyoming: U.S. Geological Survey Geologic Quadrangle Map GQ-510, scale 1:24,000.

15. **Hyden, H.J.**, 1966, Geologic map of the McFadden Quadrangle, Carbon County, Wyoming: U.S. Geological Survey Geologic Quadrangle Map GQ-533, scale 1:24,000.

16. **Hyden, H.J.**, 1966, Geologic map of the Bengough Hill Quadrangle, Albany and Carbon Counties, Wyoming: U.S. Geological Survey Geologic Quadrangle Map GQ-579, scale 1:24,000.

17. **Hyden, H.J.**, Houston, R.S., and King, J.S., 1968, Geologic map of the White Rock Canyon Quadrangle, Carbon County, Wyoming: U.S. Geological Survey Geologic Quadrangle Map GQ-789, scale 1:24,000.

18. **Hyden, H.J.**, King, J.S., and Houston, R.S., 1967, Geologic map of the Arlington Quadrangle, Carbon County, Wyoming: U.S. Geological Survey Geologic Quadrangle Map GQ-643, scale 1:24,000.

19. **Hyden, H.J.**, and McAndrews, Harry, 1967, Geologic map of the TL Ranch Quadrangle, Carbon County, Wyoming: U.S. Geological Survey Geologic Quadrangle Map GQ-637, scale 1:24,000.

20. **Masursky, H.**, 1962, Uranium-bearing coal in the eastern part of the Red Desert area, Wyoming: U.S. Geological Survey Bulletin 1099-B, 152 p., plate 1, scale 1:62,500.

21. **Merewether, E.A.**, 1972, Geologic map of the Rawlins NW Quadrangle, Carbon County, Wyoming: U.S. Geological Survey Geologic Quadrangle Map GQ-1010, scale 1:24,000.

22. **Merewether, E.A.**, 1973, Geologic map of the Lone Haystack Mountain Quadrangle, Carbon County, Wyoming: U.S. Geological Survey Geologic Quadrangle Map GQ-1064, scale 1:24,000.

23. **Olson, A.B.**, 1959, Photogeologic map of the Flat Top Mountain NE Quadrangle, Carbon County, Wyoming: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-301, scale 1:24,000.

24. **Sanders, R.B.**, 1974, Geologic map and coal resources of the Riner Quadrangle, Carbon and Sweetwater Counties, Wyoming: U.S. Geological Survey Coal Investigations Map C-68, scale 1:24,000.

25. **Sanders, R.B.**, 1975, Geologic map and coal resources of the Creston Junction Quadrangle, Carbon and Sweetwater Counties, Wyoming: U.S. Geological Survey Coal Investigations C-73, scale 1:24,000.

26. **Vine, J.D.**, and Prichard, G.E., 1959, Geology and uranium occurrences in the Miller Hill area, Carbon County, Wyoming: U.S. Geological Survey Bulletin 1074-F, p. 201-239, plate 14, scale 1:48,000.

Specific - thesis (see separate index map)

1. **Barlow, J.A., Jr.**, 1953, The geology of the Rawlins uplift, Carbon County, Wyoming: Ph.D. dissertation, University of Wyoming, Laramie, Wyoming, 179 p., plate 16, scale 1:31,680.

2. **Barton, Raymond**, 1974, Geology of the Kennaday Peak-Pennock Mountain area, Carbon County, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, 74 p., plate 1, scale 1:24,000.

3. **Carey, B.D., Jr.**, 1950, Geology of the eastern part of the Flat Top anticline, Albany and Carbon Counties, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, 62 p., map scale 1:21,120.

4. **Chadeayne, D.K.**, 1966, The geology of Pass Creek Ridge, Saint Marys, and Cedar Ridge anticlines, Carbon County, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, 87 p., plate 1, scale approximately 1:60,000.

5. **Davis, J.R.**, 1963, The "Measverde" Formation of the Kindt Basin, Carbon County, Wyoming: M.A. thesis, University of Wyoming, Laramie, Wyoming, 134 p., plate 6, scale 1:24,000.

6. **de la Montagne, J.M.**, 1955, Cenozoic history of the Saratoga Valley area, Wyoming and Colorado: Ph.D. dissertation, University of Wyoming, Laramie, Wyoming, 140 p., plate 1, scale 1:62,500.

7. **Denault, K.J.**, 1967, Geology and distribution of copper, lead, and zinc in streams and soil-Broadway mine area, Carbon County, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, plate 2, scale 1:25,000.

8. **Dimitroff, P.B.**, 1967, Structural geology of Foote Creek anticline and adjacent area, Carbon and Albany Counties, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, 71 p., plate 1, scale 1:12,000.

9. **Duebendorfer, E.M.**, 1986, Structure, metamorphism, and kinematic history of the Cheyenne Belt, Medicine Bow Mountains, southeastern Wyoming: Ph.D. dissertation, University of Wyoming, Laramie, Wyoming, 323 p., map scale 1:24,000.

10. **Dunbar, R.O,** 1942, The geology of Como Bluff anticline, Albany - Carbon Counties, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, map scale approximately 1:34,000.

11. **Eaton, G.M.,** 1960, Geology of the central portion of Como Bluff anticline, Albany County, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, map scale approximately 1:25,000.

12. **Ferris, C.S., Jr.,** 1964, Petrology and structure of the Precambrian rocks southeast of Encampment, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, map scale 1:22,600.

13. **Gries, J.C.,** 1964, The structure and Cenozoic stratigraphy of the Pass Creek Basin area, Carbon County, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, 69 p., plate 1, scale 1:48,000.

14. **Huang, C.,** 1970, Cataclastic rocks in the Little Beaver Creek area, Carbon County, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, map scale 1:24,000.

15. **Karlstrom, K.E.,** 1977, Geology of the Proterozic Deep Lake Group, central Medicine Bow Mountains, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, map scale 1:24,000.

16. **Knight, W.H.,** 1944, The geology of the western part of Flat Top anticline, Carbon County, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, 30 p., map scale approximately 1:24,000.

17. **Lackey, L.L.,** 1965, Petrography of metavolcanic and igneous rocks of Precambrian age in the Huston Park area, Sierra Madre, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, map scale 1:25,000.

18. **Lanthier, L.R.,** 1978, Stratigraphy and structure of the lower part of the Precambrian Libby Creek Group, central Medicine Bow Mountains, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, map scale 1:12,000.

19. **Miller, W.R.,** 1971, Geology of the Indian Rocks area, Carbon County, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, 40 p., map scale approximately 1:12,000.

20. **Ridgley, N.H.,** 1971, Precambrian rocks in the Blackhall Mountain area, Carbon County, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, 50 p., map scale approximately 1:49,000.

21. **Ritzma, H.R.,** 1949, Geology along the southwest flank of the Sierra Madre, Carbon County, Wyoming: M.A. thesis, University of Wyoming, Laramie, Wyoming, 77 p., plate 8, scale 1:63,360.

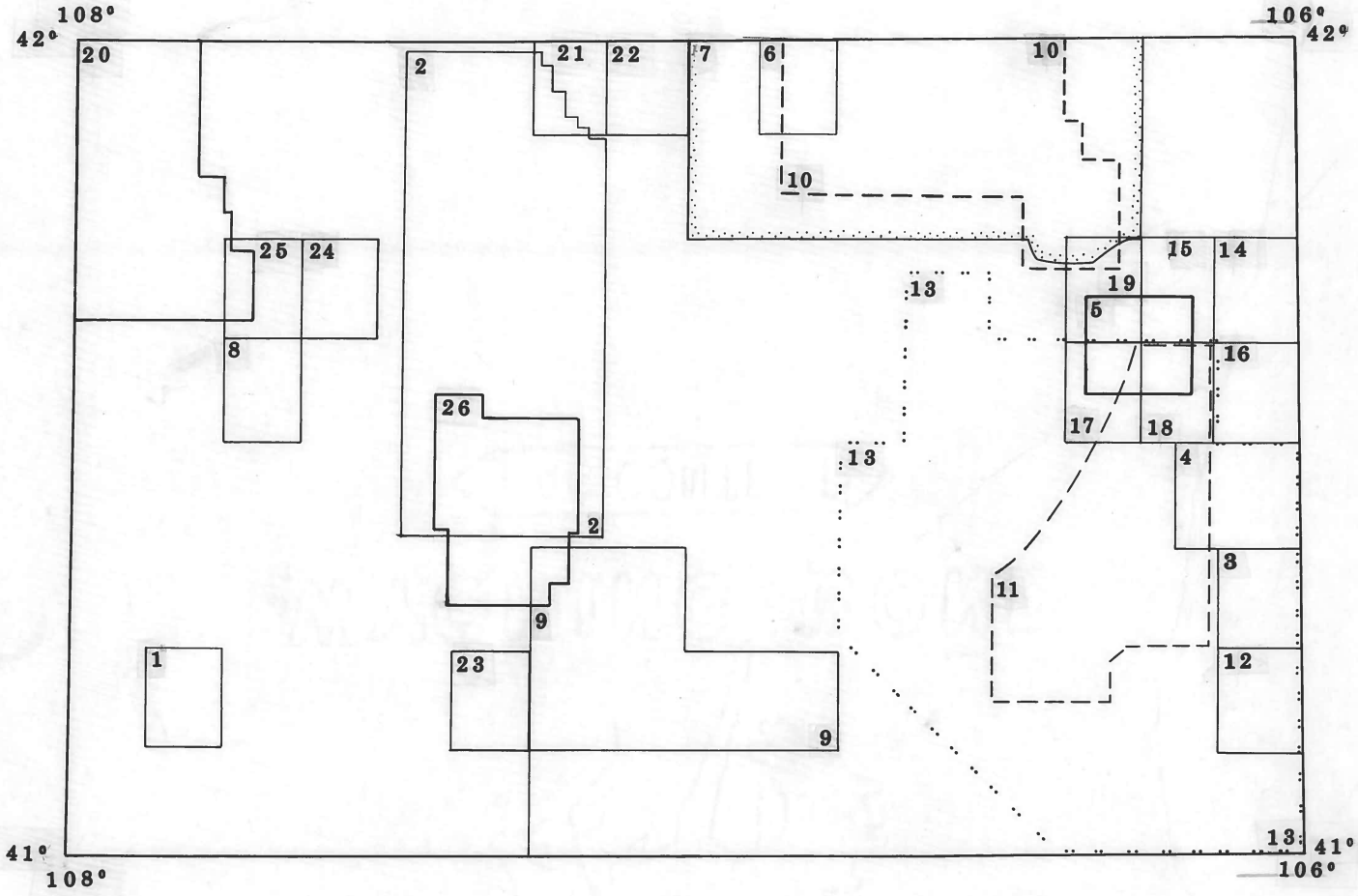
22. **Schmidt, T.G.,** 1983, Precambrian metavolcanic rocks and associated volcanogenic mineral deposits of the Fletcher Park and Green Mountain areas, Sierra Madre, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, 113 p., map scale 1:24,000.

23. **Sever, C.K.**, 1975, Structural geology of the Sheephead Mountain area, Carbon County, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, 96 p., plate 1, scale 1:24,000.

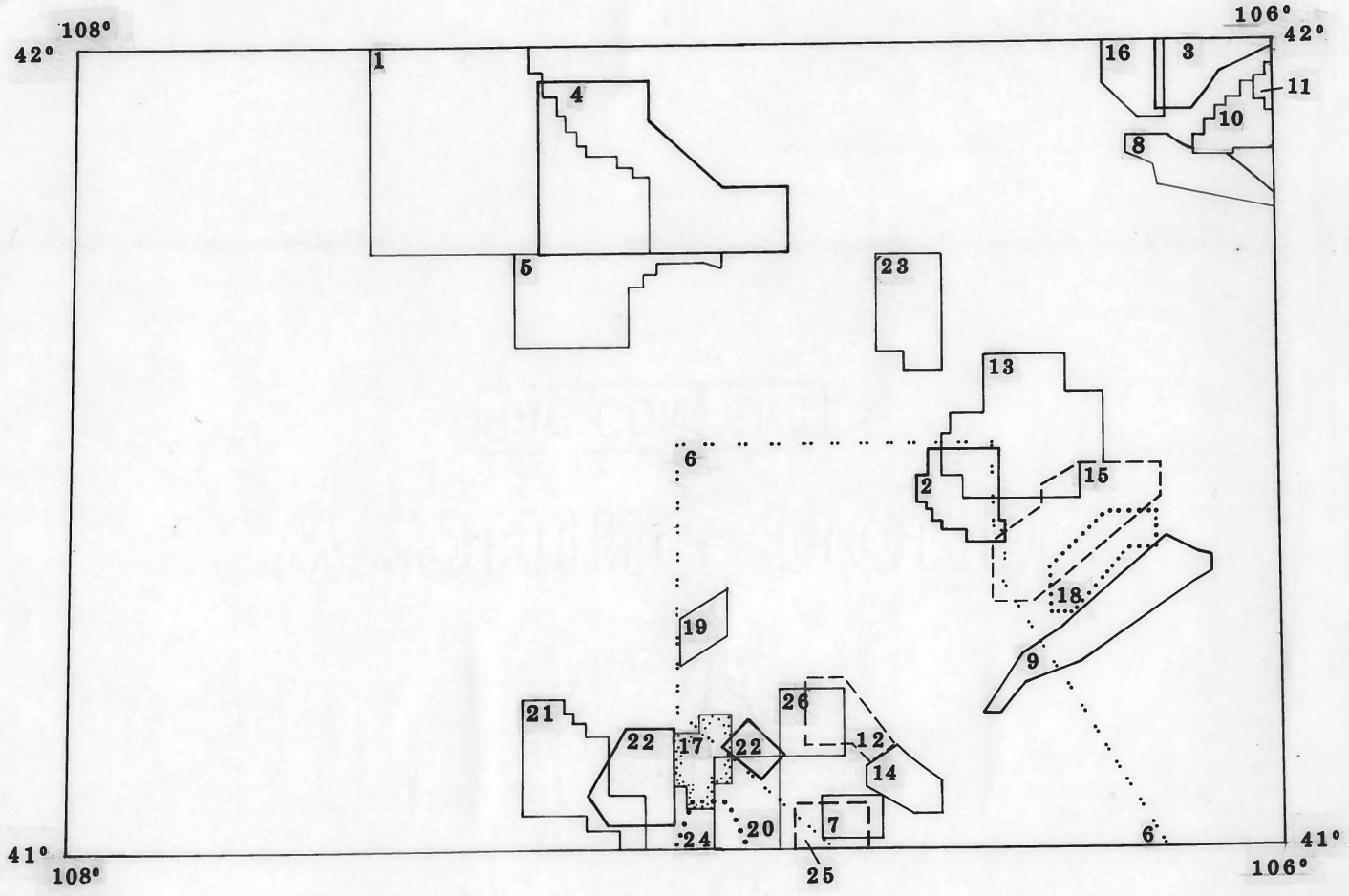
24. **Swift, P.N.**, 1982, Precambrian metavolcanic rocks and associated volcanic mineral deposits of the southwestern Sierra Madre, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, map scale 1:24,000.

25. **Ware, D.C.**, 1982, Amphibolite complex of the Blackhall Mountain area, southeastern Sierra Madre, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, plate 3, scale 1:24,000.

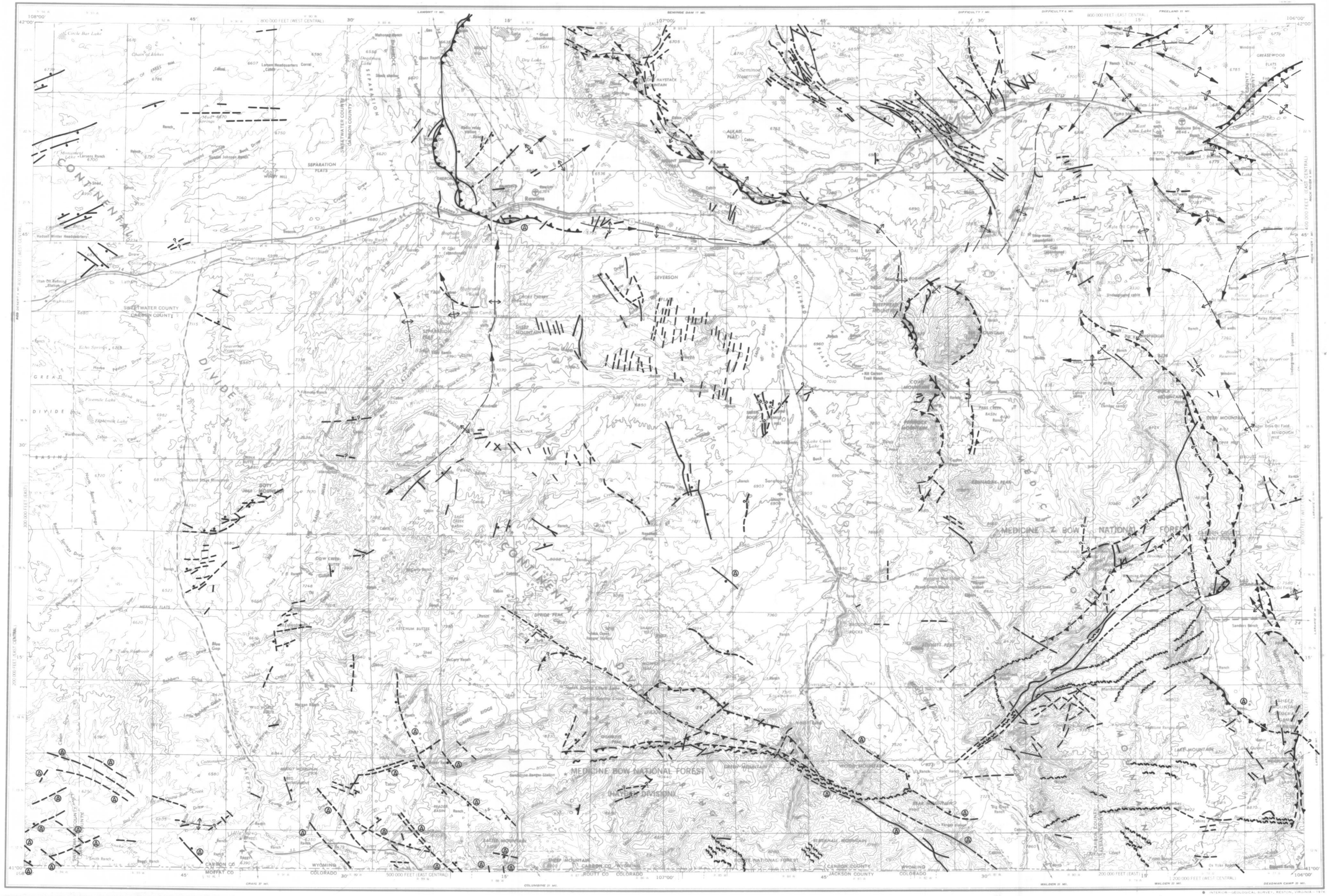
26. **Wied, O.J.**, 1960, Geology of the Encampment area, Carbon County, Wyoming: M.S. thesis, University of Wyoming, Laramie, Wyoming, map scale approximately 1:22,600.



Index To Sources Of Geologic Data-published



Index To Sources Of Geologic Data-theses



EXPLANATION

Anticline- arrows perpendicular to axis show symmetry, i.e., short arrow indicates flank with steeper dip. Axis is dashed where covered or approximately located. Arrow on axis indicates direction of plunge.

Normal Faults- ball on downthrown block (dashed where covered or approximately located). Queried where existence is questionable.

Thrust/Reverse Faults- teeth on upthrown block (dashed where covered or approximately located). Queried where existence is questionable.

Shear Zones

Possible Active Fault- as identified by Case (1986).

THIS MAP WAS COMPILED FROM THE MOST RECENT AVAILABLE INFORMATION AND IS ONLY AS RELIABLE AND COMPLETE AS THE SOURCES CONSULTED. SOME SMALLER FEATURES WERE OMITTED SINCE THEY COULD NOT BE PLOTTED AT THIS SCALE. SOURCES CONSULTED ARE LISTED IN ACCOMPANYING REFERENCE LIST.

5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometres
5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
TRANSVERSE MERCATOR PROJECTION

BASE MAP FROM THE U.S. GEOLOGICAL SURVEY, 1962.

THIS MAP HAS NOT BEEN REVIEWED FOR CONFORMITY WITH THE EDITORIAL STANDARDS OF THE GEOLOGICAL SURVEY OF WYOMING.

PRELIMINARY MAP OF KNOWN SURFICIAL STRUCTURAL FEATURES FOR THE RAWLINS 1° x 2° QUADRANGLE

COMPLIED BY JON K. KING, PHILLIP L. GREER, AND ALAN J. VER PLOEG

1987