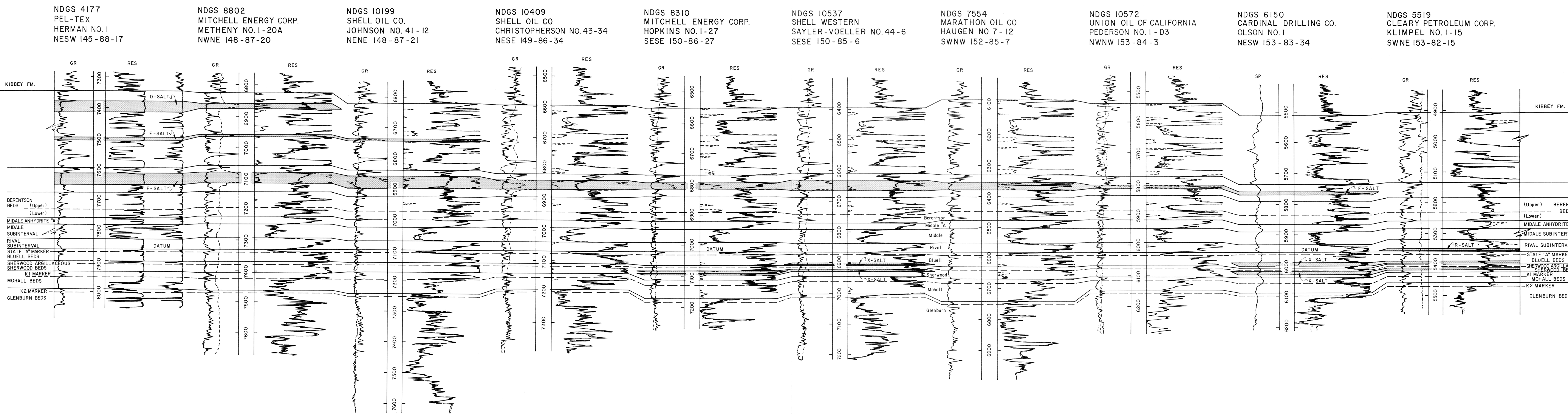
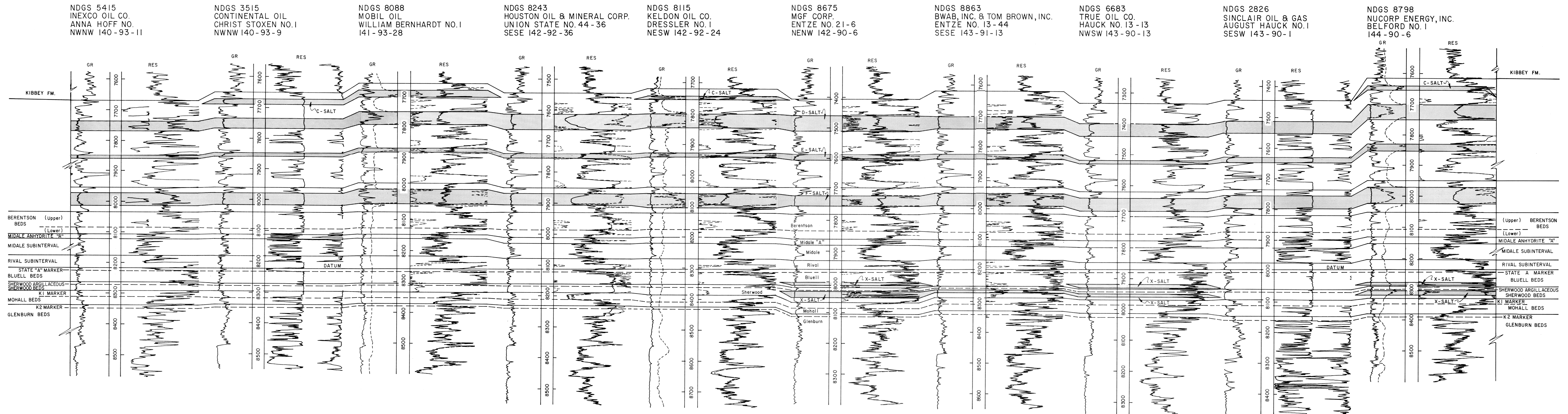
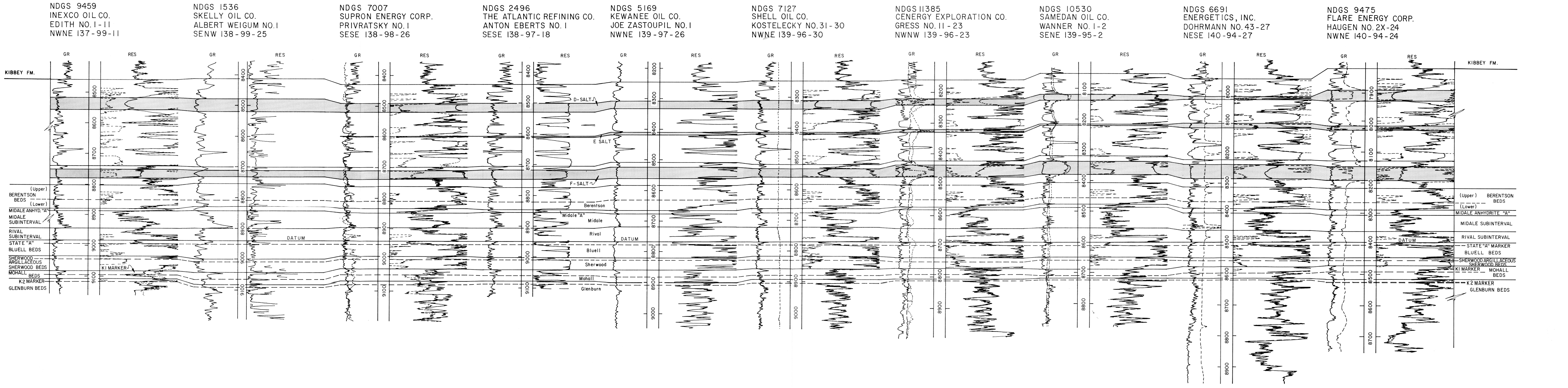


# MISSISSIPPIAN CORRELATION CROSS-SECTION, SOUTHWESTERN TO NORTH-CENTRAL, NORTH DAKOTA

by  
Julie A. LeFever and Sidney B. Anderson  
1989

MISCELLANEOUS SERIES NO. 73  
NORTH DAKOTA GEOLOGICAL SURVEY

A



NDGS 4891  
KOCH EXPLORATION CO.  
FERN E. HERIGSTAD NO. 1  
SWSE 154-82-31

NDGS 11002  
INEXCO OIL CO.  
ABELSTAD NO. 1-33  
NWNW 154-82-33

NDGS 11112  
INEXCO OIL  
REINKE NO. 1, 7  
SESE 154-82-7

NDGS 6100  
ANADARKO PRODUCTION CO.  
MARTIN NO. 1  
SWSW 155-82-25

NDGS 5531  
CITIES SERVICE OIL CO.  
STIP NO. A-1  
SWSW 155-81-21

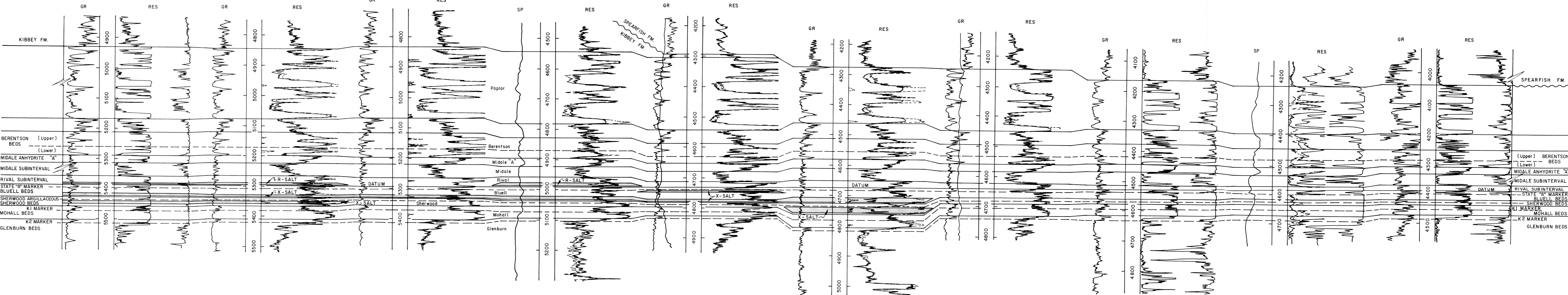
NDGS 11055  
INEXCO OIL CO.  
HUNTZINGER NO. 1-19  
NENW 156-81-19

NDGS 5563  
CLEARY PETROLEUM CORP.  
WILSON NO. 1-8  
SESW 156-81-8

NDGS 4923  
UNION OIL CO. OF CALIFORNIA  
VERNON OLSON NO. 1-B-5  
NWNW 156-81-5

NDGS 4209  
CALVERT DRILLING CO.  
LOUIS HASKINS NO. 1  
SWSW 157-81-27

NDGS 4409  
GOFOR OIL  
JAMES GLEASON NO. 1  
SENE 157-81-24



NDGS 11213  
CNG PRODUCTION CO.  
CHILSON STATE 16-1  
NWSW 157-81-16

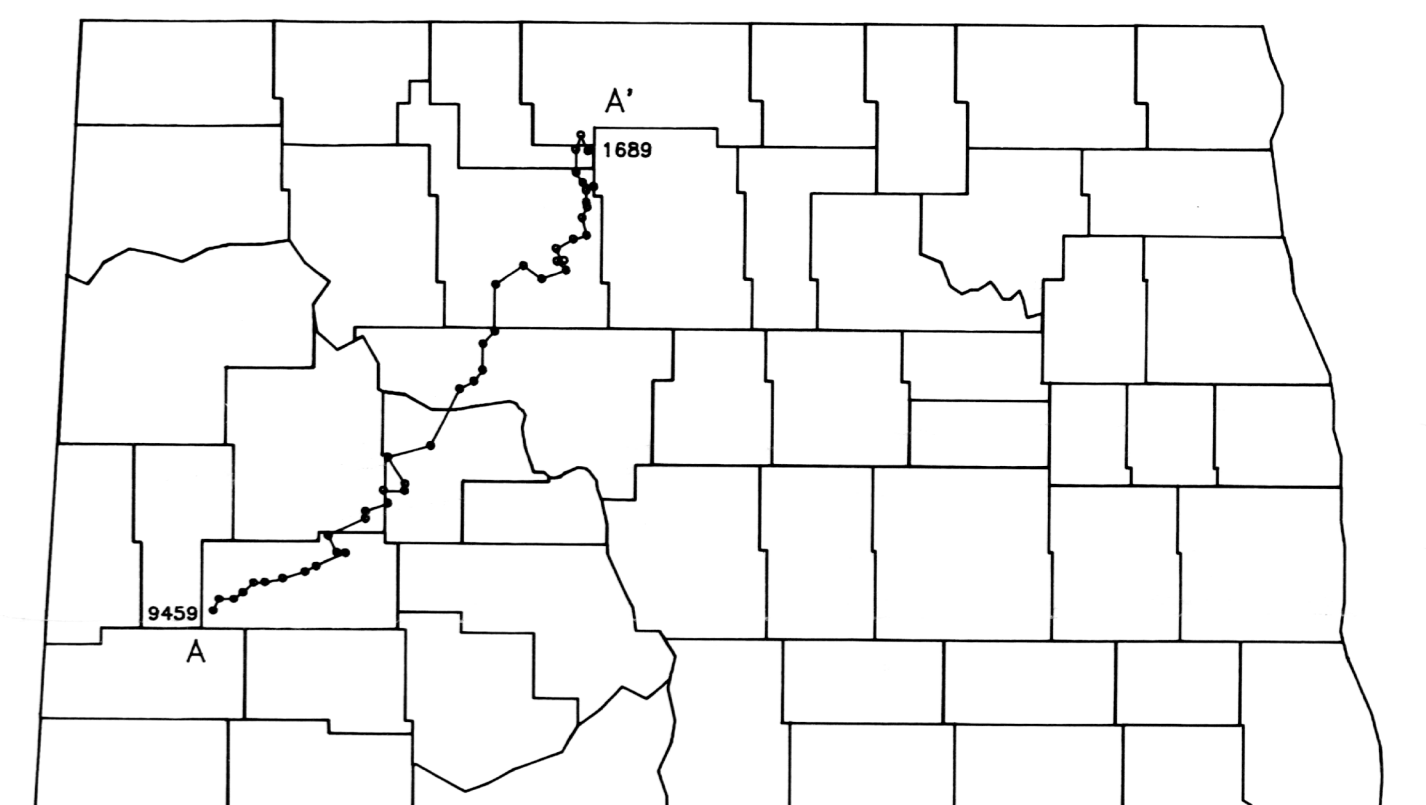
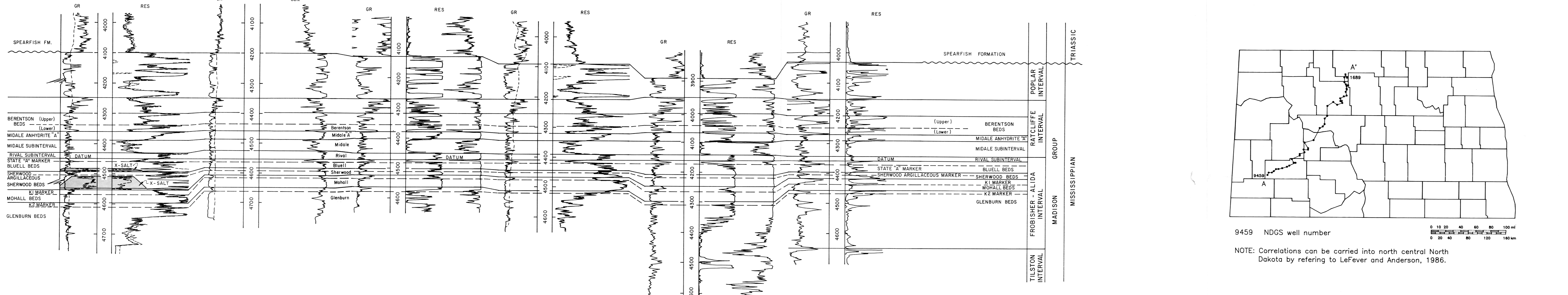
NDGS 10403  
CABOT PETROLEUM  
DETLAFF NO. 1-6  
NENE 157-81-6

NDGS 4354  
JOHN B. HAWLEY, JR. TRUST I  
KJONAAS - BAKER NO. 1  
NENW 158-81-30

NDGS 8389  
CHEVRON USA, INC.,  
M. THOMPSON NO. 7  
SESW 158-81-7

NDGS 4790  
UNION OIL CO. OF CALIFORNIA  
ABRA STEEN NO. 1  
SESE 159-81-20

NDGS 1689  
ANSCHUTZ OIL CO.  
EINER CHRISTIANSON NO. 1  
NENW 158-81-7



9459 NDGS well number  
NOTE: Correlations can be carried into north central North Dakota by referring to LeFever and Anderson, 1986.

Well No.	Operator	Location	Formation	Interval	Notes
4891	Koch	SWSE 154-82-31	Kibbey	C-8, C-7, C-6, C-5, C-4, C-3, C-2, C-1	
11002	Inexco	NWNW 154-82-33	Berentson	Middle A, Middle B, Middle C	
11112	Inexco	SESE 154-82-7	Rival	Rival	
6100	Anadarko	SWSW 155-82-25	Blueell	Blueell	
5531	Cities Service	SWSW 155-81-21	Sherwood	Sherwood	
11055	Inexco	NENW 156-81-19	Mohall	Mohall	
5563	Cleary	SESW 156-81-8	Glenburn	Glenburn	
4923	Union Oil	NWNW 156-81-5	Spearfish	Spearfish	
4209	Calvert	SWSW 157-81-27	Berentson	Berentson	
4409	Gofor	SENE 157-81-24	Middle Anhydrite	Middle Anhydrite	
11213	CNG	NWSW 157-81-16	Spearfish	Spearfish	
10403	Cabot	NENE 157-81-6	Berentson	Berentson	
4354	John B. Hawley, Jr. Trust I	NENW 158-81-30	Rival	Rival	
8389	Chevron	SESW 158-81-7	Blueell	Blueell	
4790	Union Oil	SESE 159-81-20	Sherwood	Sherwood	
1689	Anschutz	NENW 158-81-7	Mohall	Mohall	

DISCUSSION

The cross section A-A' displayed in this report approximately follows the eastern margin of the Williston Basin from Stark to Bottineau Counties. A portion of the Mississippian Madison Group is shown on this cross section with its informal subdivisions. Three formations formally belong to the Madison Group, in ascending order they are: the Lodgepole, the Mission Canyon, and the Charles Formations. This study deals with the upper Mission Canyon and the lower Charles Formations. However, since these formations are facies and are difficult to work with in the subsurface, the Madison Group has been informally divided into intervals, subintervals, and beds based on wireline log markers. Correlations displayed in this report deal with the informal subdivisions of a portion of the Madison section, specifically from the upper Tilston interval to the lower Poplar interval. These intervals have been further divided into subintervals and beds. The Mississippian salts are indicated where present. Table 1 shows the nomenclature used in this report and its relationship to the nomenclature used for the Madison in the rest of the Williston Basin.

The informal stratigraphic units used in this report have been used in the North Dakota portion of the Williston Basin for several years. The "intervals" and "subintervals" were first proposed by Smith in 1960 and have been used by the North Dakota Geological Survey since that time. Greater detail has been added to the upper Mission Canyon Formation or Frobisher-Alida interval by Harris and others, 1966. The upper Mission Canyon Formation was divided into six distinct mappable units, in ascending order they are: the Landa beds, Wayne beds, Glenburn beds, Mohall beds, Sherwood beds, and Blueell beds. These units are separated by a corresponding series of marker beds. Correlations of the upper four beds, the Glenburn through Blueell beds, are followed on this cross section. There is difficulty in tracing the marker beds that define the Landa and Wayne beds through the study area. The commonly used nomenclature previously restricted to the north-central portion of North Dakota can be correlated to, and used along the basin margin in the southern part of the state.

A more comprehensive discussion of Madison nomenclature is presented in Carlson and LeFever, 1987. This cross section also ties to the previous cross sections presented in North Dakota Geological Survey Report of Investigation 84.

REFERENCES

Carlson, C. G., and LeFever, J. A., 1987, The Madison, a nomenclatural review with a look to the future: in Fifth International Williston Basin Symposium, p. 77-82.

Harris, S. H., Land, C. B., Jr., and McKeever, J. H., 1966, Relation of Mission Canyon stratigraphy to oil production in north-central North Dakota: American Association of Petroleum Geologists Bulletin, v. 50, p. 2269-2276.

LeFever, J. A., and Anderson, S. B., 1986, Structure and stratigraphy of the Frobisher-Alida and Ratcliffe intervals, Mississippian Madison Group, north-central North Dakota: North Dakota Geological Survey Report of Investigation 84, 17p.

Smith, M. H., 1960, Revised nomenclature for Williston Basin: American Association of Petroleum Geologists Bulletin, v. 44, p. 959-960.

Chronostratigraphic and geochronometric scales from CDLUNA (Salvador, 1985).  
Nomenclature of the Mississippian Madison Group, lithostratigraphic units formally defined as in the North American Stratigraphic Code are shown in upper case letters. The age assignments are approximate. The correlation of the age assignments was made following Petros (1984). This figure encompasses the paper "The Madison, a nomenclatural review with a look to the future" by C. G. Carlson and J. A. LeFever; to Carlson, C. G., and Christopher, J. E., eds., Fifth International Williston Basin Symposium, Saskatchewan Geological Society Publication No. 9, 1987.