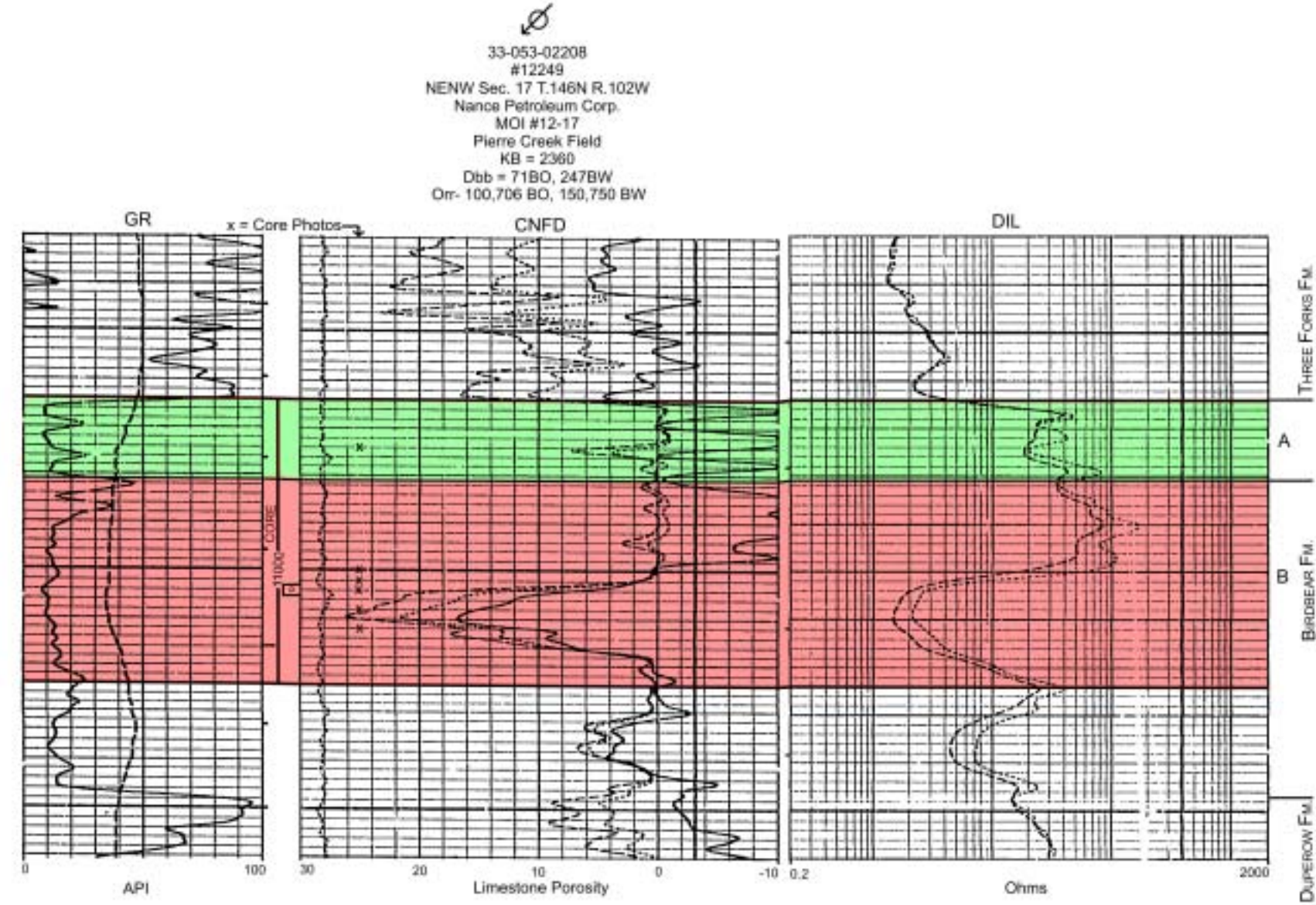


CORE PHOTOS PAY ZONE

Birdbear Representative Log



Birdbear Formation - 'A' porosity zone
Well Core: File # 12249; API: 33-053-02208
NENW Sec. 17 - T146N - R102W
Core Photo - Log Depth: 10,977.9 - 10,078.5 feet
Dolomitic limestone overlain by anhydrite; mudstone to wackestone texture (mud to mud dominated with less than 50% grains); laminated to thin bedded dolomitized limestone; bladed mosaic anhydrite interpreted to be deposited subaqueously
Porosity appears to result from dolomitization of limestone; fine grained intercrystalline dolomite porosity. Core plug porosity 6.5%

Birdbear Formation - 'B' porosity zone
Well Core: File # 12249; API: 33-053-02208
NENW Sec. 17 - T146N - R102W
Core Photo - Log Depth: 11,005.8 - 11,006.5 feet
Dolomitic limestone; wackestone texture (mud dominated with less than 50% grains); laminar stromatoporoids and brachiopod skeletal fragments; disturbed bedding interpreted as bioturbation; interpreted to be subaqueous
Porosity appears to result from dolomitization of limestone; fine grained intercrystalline dolomite porosity resulting from dolomite replacement of calcite. Neutron cross-plot porosity 17%



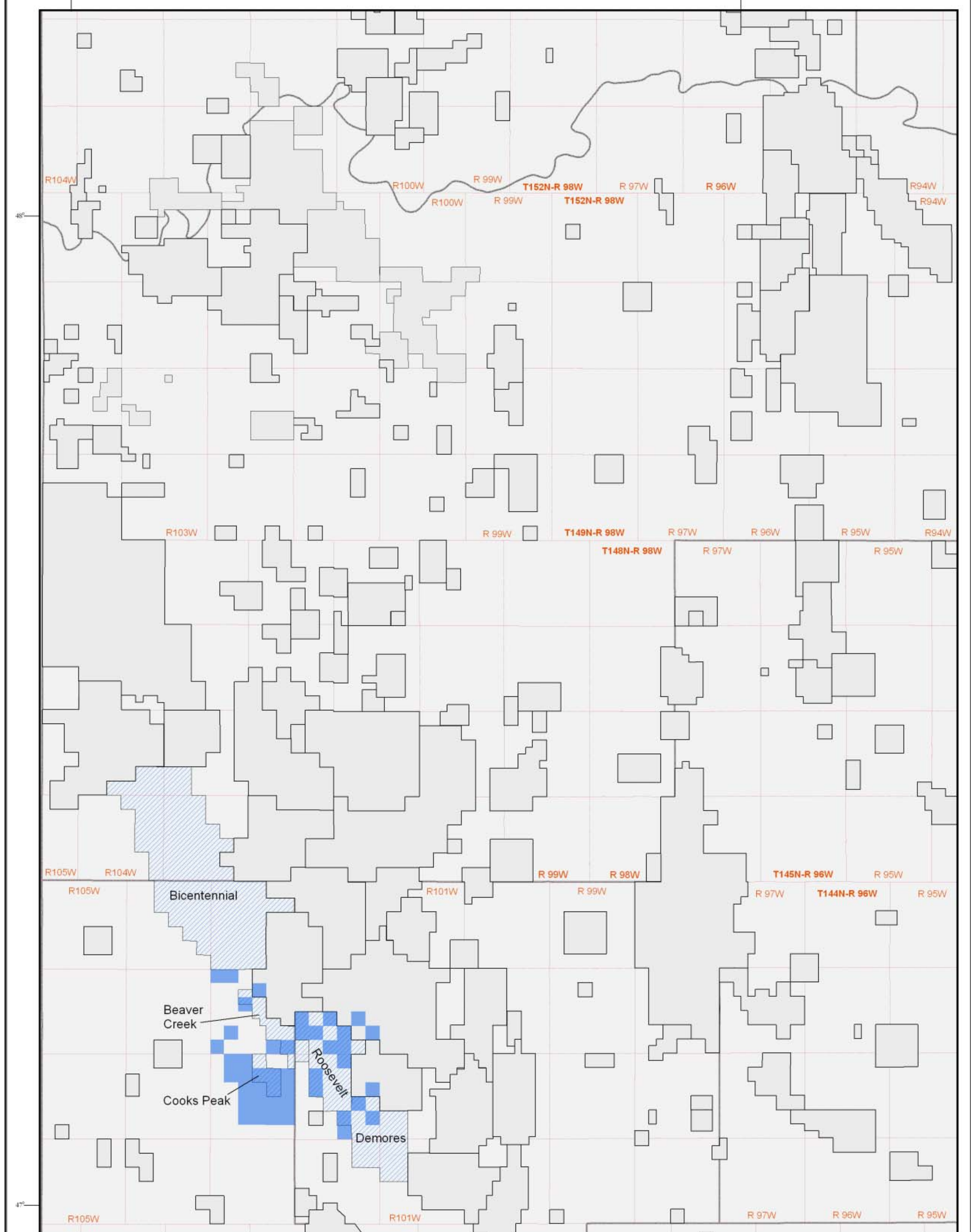
Birdbear Formation - 'A' porosity zone
Well Core: File # 12249; API: 33-053-02208
NENW Sec. 17 - T146N - R102W
Core Photo - Log Depth: 10,978.6 - 10,078.9 feet
Dolomitic limestone; mudstone to wackestone texture (mud to mud dominated with less than 50% grains); thin bedded dolomitized limestone
Porosity appears to result from dolomitization of limestone; fine grained intercrystalline dolomite porosity. Neutron cross-plot-porosity 5.5%

Birdbear Formation - 'B' porosity zone
Well Core: File # 12249; API: 33-053-02208
NENW Sec. 17 - T146N - R102W
Core Photo - Log Depth: 11,011.8 - 11,012.4 feet
Dolomitic limestone; poorly fossiliferous wackestone texture (mud dominated with less than 50% grains); brachiopod skeletal fragments; disturbed bedding interpreted as bioturbation; interpreted to be subaqueous
Porosity appears to result from dolomitization of limestone; fine grained intercrystalline dolomite porosity resulting from dolomite replacement of calcite. Minor cementation of some porosity by calcite or anhydrite. Core plug porosity 20.2%

Evolving Birdbear (Nisku) Play in North Dakota

2005

R. B. Burke



Explanation

- Birdbear approved drilling and spacing units
- Non-Producing Areas
- Birdbear Fields
- Other Fields

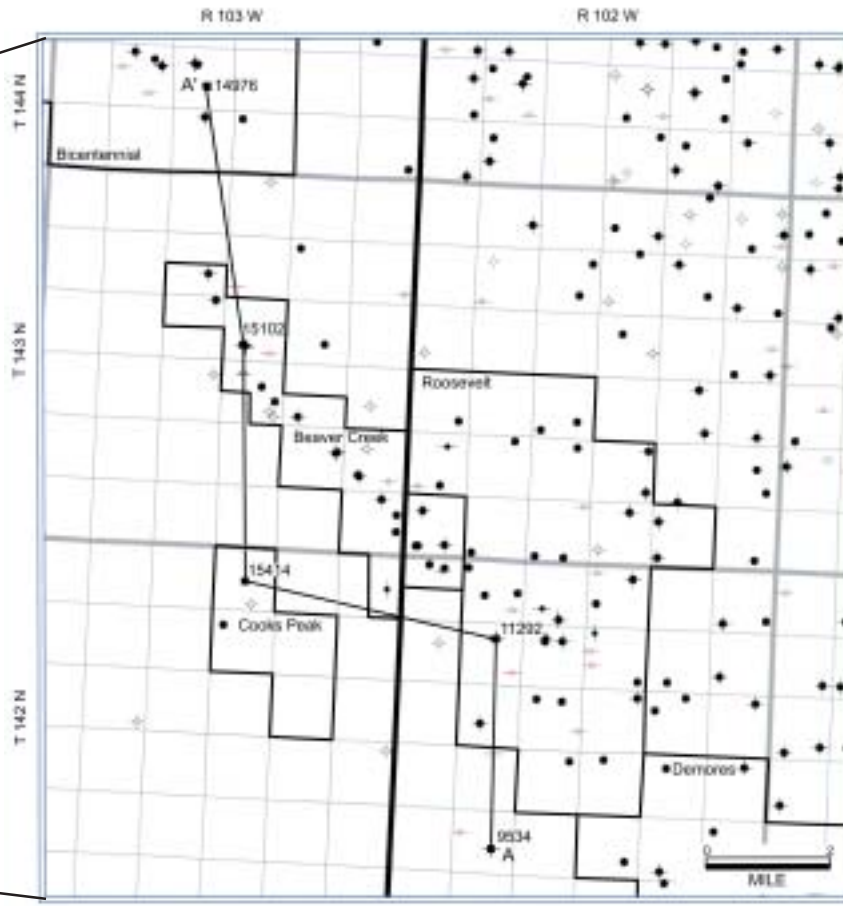
Scale 1:220,000



The North Dakota Geological Survey compiled this map according to current national cartographic standards, using what is thought to be the most reliable information available. The North Dakota Geological Survey does not guarantee freedom from errors or inaccuracies and disclaims any legal responsibility or liability for interpretation made from this map, or decisions based thereon. The oil and gas field boundaries were compiled by the Oil & Gas Division of the North Dakota Industrial Commission.



Location of Cross Section



Birdbear Formation Cross Section

