

FIELD DATA COLLECTED:

- 301 SAMPLES
- 216 GEOLOGICAL PHOTOS
- 145 PALEOCURRENT MEASUREMENTS
- 18 MEASURED SECTIONS, RANGING FROM 150 TO 3649 FEET THICK
- GEOLOGIC MAPPING AND FIELD CHECKING

KEY RESULTS OF 1982 FIELD SEASON:

1. FOUR RESERVOIR HORIZONS IDENTIFIED.

AGE	LITHOLOGY	THICKNESS	GEOMETRY	POROSITY/ PERM.	ENVIRONMENT
TERTIARY	 Cobble conglomerates, abundant SRF's, MRF's, and VRF's, pebble size decreases upward.	1000 ft. th.	Fan deposits bordering south edge of basin, braided stream deposits extending south to north.	30% primary intergranular.	Alluvial fan and fluvial.
CRETACEOUS	 Lithic arenite, tabular to trough cross-bedded, thin conglomeratic zones.	2500 ft. th.	Thick sheet throughout basin.	15 to 20% average. Secondary and primary intergranular.	Transgressive barrier bar, possibly wave-dominated delta.
DEVONIAN	 Dolomitized coralline wackestone and algal dolomicstone.	270 ft. th.	?? May be restricted by diagenetic environment.	25% interxtaline. Very good.	Shallow shelf and tidal flat.
DEVONIAN	 Vuggy, rextalized dolomite.	800 to 300 ft. th.	Laterally extensive sheet.	30% vuggy and interxtaline. Excellent.	Tidal flat?

2. TWO MAJOR SOURCE ROCK ZONES IDENTIFIED.

				SOURCE TYPE	
L. CRETACEOUS	 Black shales with siltstone and sand interbeds.	400 to 3000 ft. th.	Laterally extensive.	Oil and gas source.	Prodelta and bathyal muds.
SILURIAN	 Black limestones with interbedded black shales.	800 to 3000 ft. th.	Laterally extensive deposit, may be restricted by faults.	Oil and gas source.	Bathyal sediments, possibly restricted basin.

Minor source rock zones present throughout Cretaceous (e.g. floodplain deposits, crevasse splays), probably minor gas sources.

3. THREE SEAL ZONES IDENTIFIED.

				EFFECTIVENESS	
U. CRETACEOUS	 Interbedded mudstone, siltstone, and some sandstone.	50 to 200 ft. of very good seal.	Laterally extensive as a unit.	Moderate to good seal.	Fluviatile.
L. CRETACEOUS	 Black shales described above.			Excellent seal.	
M. DEVONIAN	 Massive micstone.	525 ft. th.	Laterally extensive.	Good seal.	Shallow shelf and lagoonal to tidal flat.

4. GREATER STRUCTURAL UNDERSTANDING OF AREA

Cretaceous is present south of Nixon Fork Fault.

Upper Cretaceous present west of basin.

Intrusives occur as cores of many hills surrounding basin.

Paleozoics folded very tightly, Cretaceous folded less tightly.

Shallow water carbonates present in basin.

CF82 0098



Amoco Production Company
Denver Region
FAR WEST DIVISION

**RESULTS OF 1982 FIELD PROGRAM,
MINCHUMINA BASIN, ALASKA**

By: Stephen Waller Date Sept. 1982

Scale: Encl. No. 4