Amoco Production Company

Surface Log

Name STEP MOUNTAIN SECTION

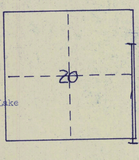
COUNTY Eagle Area **STATE** Alaska

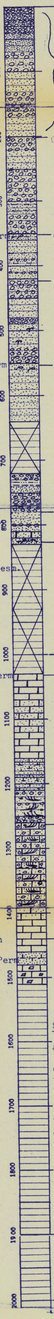
LOCATION ___ E. °N ___ °W **Sec.** 20 **TWN** 8N **RNG** 31E

MEASURED BY C. Harrison, A. Ormiston, G.Self **DATE** 8/07/71

INTERVAL Step Conglomerate - Permian

REMARKS Base of Section runs to shale valley mapped as Ford Lake shale - no outcrops seen





INTERVAL INACCESSIBLE - Estimated

GW8255L — Conglomerate & quartzose ss, pebbles are chert, gry, brn, & dk gry, up to 2" in diameter. Por. 1.6%, Perm. <.05 md.

Minor gray siltstone

Early Perm — GW8256 — Fenestellids, sandstone, gry, med grained, siltstone, brown & maroon cong. ss - float only

GW8257L — Pebble congl., lt. gry, matrix a quartzite-chert pebbles interlocking med. to thick bedded Por. 5.1%, Perm. .18 md.

Sandstone, med. gry, ortho quartzite, some pinpoint porosity, thinbedded Fenestellids in float

Penn-Perm — GW8258 — Sandstone, quartzose, v fine grained, brownish gray & maroon, slabby Chonetids

Mostly scree

Covered

Congl., ss, shale & siltstone

Quartzose ss, f-grained, 30% chert

Congl. ss, maroon shale

? — GW8259L — SS, fine grained, brn, limonitic cement, laminated Por 2.9%, Perm. <.05 md.

Interbedded w/congl. ss.

Ls, crinoidal, calcarenite, quartz sand

GW8260C — Calc, ss, Fenestellids

Penn. Prod. Desn.

Covered

Miss-Perm — GW8261CD — Ls + sandy ls, gray, med xtalline, crinoidal packstone med to thick bedded

Interbedded gry sandy ls. + calc. ss, quartzose, thin bedded

X-bedded brn, quartzose, pebbly (chert) ss + chert pebble congl.
Por. 2.3%, Perm. <.05 md.

GW8262CD — Conglomeratic, x-bedded calcarenitic, crinoidal, gry, thick bedded + resistant (cliff former)
Chert pebbles - quartz detritus in ls

Thin argill ls. break

Transitional at base to crinoidal grainstone

E.Penn comp. Miss-Perm — GW8263CD — Ls, gry, crinoidal grainstone, med bedded + resistant-resembles Tahkandik Ls. (Reworked Late Dev. - Late Miss. conodonts)

Ss, brn, quartzose, calc., limonitic cement, platy weathering

Recrystallized ls, brn, large calcite rhombs, well bedded, resistant

Penn? Miss. — ? ? — Section covered beneath - presumably Ford Lake Shale (Early Miss.?)

Step Mountain Section

These rocks were measured at fair exposures on the northeast end of Step Mountain, and are the type section of the Step Conglomerate.

A 700' sequence of limestone, sandy limestone, and sandstone crops out above a covered interval that is thought to be Ford Lake Shale. Both conodonts and megafossils date this sequence as Pennsylvanian (Morrow-Desmoinesian). This limestone sequence is similar to the Ettrain Formation in the nearby Ogilvie Mountains.

The limestone sequence is overlain by 800' of marine sandstone and conglomerate that contains an Early Permian fossil assemblage near its middle. The contact between Pennsylvanian and Permian rocks cannot be specifically picked; however, it most likely occurs at the limestone-sandstone contact. This contact should be an unconformity, but no physical evidence for one was seen in the field.