

Amoco Production Company  
Surface Log

Name KITCHEN Anchorage  
 AREA OR Cold Bay STATE Alaska  
 QUAD East line of Sec. 35 TWN 58S RNG 85W  
 LOCATION measured by Brown, Williams, Smirnov DATE 16 JUNE 97  
 MEASURED BY Belkofski  
 INTERVAL

REMARKS Measured in the proximity of the previous  
Amoen Belkopski Bay - 201 section. Section consists  
of horizontal bedded units of massive ss & tuffaceous breccia  
capped by a silicite / loess and intruded by continuous vertical dikes

LOCATION 55° 06' N 162° 08' W

PLOTTED BY L.G. Brown DATE 16 JUNE 77

| PERIODS  | EPOCHS               | GROUP or FM. | MEMBER | AGES (Stegos) | FOSSILS | CORES | SHOWS | DEPTH | LITHOLOGY | POROSITY                                                                                                                                                                                                   | SAMPLES | DESCRIPTION                                                        |
|----------|----------------------|--------------|--------|---------------|---------|-------|-------|-------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------|
| TERTIARY | Oligocene - Eocene ? | Belkofski    |        |               |         |       |       |       |           |                                                                                                                                                                                                            |         | Top of the Section<br>(The highest outcrop at the top of the hill) |
|          |                      |              | UNIT 1 | 100           |         |       |       |       |           | Andesite flow, massive, highly jointed                                                                                                                                                                     |         |                                                                    |
|          |                      |              | UNIT 2 | 200           |         |       |       |       |           | Green tuffaceous volcaniclastic breccia. Highly altered, similar to greenstone. Cut by vertical dark gray aphanitic intrusive dike. The entire 1400' of section carbonaceous log at the bottom of the unit |         |                                                                    |
|          |                      |              |        | 300           |         |       |       |       |           | Gray silty mudstone, fissile, included as lens in granular tuffaceous breccias. Numerous carbonaceous inclusions. Altered & silicified                                                                     |         |                                                                    |
|          |                      |              |        | 400           |         |       |       |       |           | Green coarse sandstone, angular, poorly sorted, low porosity, massive, interbedded with tuffaceous breccias                                                                                                |         |                                                                    |
|          |                      |              | UNIT 3 | 500           |         |       |       |       |           | Gray medium sandstone, rounded, med-sorted, massive, sandwiched on both sides by tuffaceous micro breccia                                                                                                  |         |                                                                    |
|          |                      |              |        | 600           |         |       |       |       |           | Gray fine-med sandstone, angular, med-sorted, poor porosity, fissile otherwise massive                                                                                                                     |         |                                                                    |
|          |                      |              |        | 700           |         |       |       |       |           | Gray granular breccia, tuffaceous, very angular, extremely poorly sorted, very well indurated                                                                                                              |         |                                                                    |
|          |                      |              | UNIT 4 | 800           |         |       |       |       |           | Gray fine-med sandstone, sub-angular, med-sorted, low-fair porosity, laminated, iron stains. Highly sheared gouge with boudinage structure in the vicinity of the vertical andesite dike                   |         |                                                                    |
|          |                      |              |        | 900           |         |       |       |       |           | Gray-green tuffaceous breccia. Included thin interbeds of med-coarse ss, ang, sorting. low porosity                                                                                                        |         |                                                                    |
|          |                      |              |        | 1000          |         |       |       |       |           | Gray-green fine-med sandstone, angular, poorly sorted, poor porosity, volcanic/tuffaceous grains massive                                                                                                   |         |                                                                    |
|          |                      |              | UNIT 5 | 1100          |         |       |       |       |           | Green medium sandstone, angular, poorly sorted, poor porosity. High % of volcanic grains, massive, some iron stains                                                                                        |         |                                                                    |
|          |                      |              |        | 1200          |         |       |       |       |           | Green medium sandstone, angular, very poorly sorted, well indurated, massive. Feld > 40%, volcanic 25%, lith etc 10%. poor porosity                                                                        |         |                                                                    |
|          |                      |              |        | 1300          |         |       |       |       |           | Green coarse sandstone, subangular, poorly sorted, low porosity, massive, included interbeds of green granular volcanic breccia                                                                            |         |                                                                    |
|          |                      |              |        | 1400          |         |       |       |       |           | Green-gray medium sandstone, angular, poorly sorted, poor porosity, argillaceous, tuffaceous, carbonaceous, massive                                                                                        |         |                                                                    |
|          |                      |              | UNIT 6 | 1500          |         |       |       |       |           | Green medium sandstone, med-sorting, sub-ang, low porosity, argillaceous, massive. Arkose ie Feld 75%, lith 25%                                                                                            |         |                                                                    |
|          |                      |              |        | 1600          |         |       |       |       |           | Green conglomeratic coarse ss, A, vpsorted, no porosity, highly indurated massive, sub-rounded, included greenstone pebbles                                                                                |         |                                                                    |
|          |                      |              |        | 1700          |         |       |       |       |           | Green med ss, ang, m-p sorted, argillaceous, arkose, massive, poor porosity, carbonaceous                                                                                                                  |         |                                                                    |
|          |                      |              | UNIT 7 | 1800          |         |       |       |       |           | Dark gray argillaceous very fine sandstone, thinly laminated, bioturbated, sub-ang, p. sorted, med sorted, random carbonaceous frags, minor sub-rounded granulars < 1%                                     |         |                                                                    |
|          |                      |              |        | 1900          |         |       |       |       |           | Bottom of the Section<br>(Last outcrop at sea level)                                                                                                                                                       |         |                                                                    |