Recovery
P= poor
G= good
Mo= moderate
C= common
M= Massive

O - Pollen Rec.
O - dinoflagellate
O - No recovery

NS= Non-Source
P= Poor
F= Fair
VG= Very Good

Amoco Production Company
Surface Log

Coal Bay
Port Moller Alaska
32-35 T55S R78W
Brown, Pierce, Williams, Smirnov 25JUNE77
Stepovak

Measured down section along exposed beach outcrops W-E. There has been significant faulting of the units in this area. The section begins with the apparent uppermost and ended with the lowest exposed Stepovak

55° 22′ 161° 22′

LGBrown 25JUNE77

Beach Section; begins with uppermost exposed unit of the Stepovak.

UNIT 1

20′-AP5031Pf P C
Siltstone, muddy, red-black, fissile, iron rich, few concretions, 1″ thick interbeds of ss:
Sandstone, gray, silt-fine grain, poor sorting, ang. Minor carbonaceous inclusions, 4″ calcareous concretions, subspherical, NO iron in ss. Fault.

75′-AP5032Pf M
90′-AP5033Pf G C
Silty shale, black, fissile, [illegible] calcareous concretions
N35W 18SW @20′
N25W 6SW @25′

145′-AP5034Pf
150′-AP5035SR NS-.3%
160′-AP5036Pf M C

UNIT 2

195′-AP5037PP 10.2% / 0.09 MD
Sandstone, green gray, coarse-medium (occasional granules) grades downward to very fine, poorly sorted, SR-SA, argillaceous, gray lithic frags, occasional red chert, qtz ≈20%, feldspar ≈20%, lith ≈50%, x-bedding, climbing ripples?, festoon x-beds,

225′-AP5038Pf B C
Siltstone, 5′ thick, includes petrified logs.
SS as above, parallel beds 1′-3′ thick, subspherical calcareous concretions, numerous calcite veins

340-AP5178F
Scattered burrows, highly weathered/clayey, capped by recent dunes, sparse mollusk shells

Covered Interval: estimated dip 12° ∴ sin12 × 490′ ≈ 100′ it is assumed that the above sequence of siltstone, ss & sh has continued.

UNIT 3

450′-AP5039Pf P
AP5040SR C P-.4
Mudstone/Claystone, gray, fissile to hackley fracture, highly jointed, concretions (slightly calcareous), some interbedded sandstone: gray, med, poorly sorted, subangular. 1-2′ to 10′ thick.

485′-AP5041Pf M C
Partly covered interval, outcrops every 10′-20′

560′-AP5042Pf P
AP5043SR C NS-.4
Mudstone as above
E-W strike
45°S
shale & siltstone, gray, fissile, as above

Partly covered interval as above

660-AP5044Pf M M
shale, gray, fissile

725′-AP5045Pf P M

Possible fault in this vicinity, partially covered interval, beach intersected by a stream.

UNIT 4

855′-AP5046Pf P
Sandstone, gray, medium-coarse, poorly sorted, angular, bedded ≈3′ thick, interbedded with shale, primarily lithic frags, some biotite. N70W 46°SW

AP5047Pf P M
905′-AP5048SR
P-Gas-Pregeneration .5%
shale, gray-black, in part iron rich, fissile-hackley, beds 10′-15′ thick with 18″-3′ thick interbeds of ss as above.
Sandstone interbeds: gray-green, med. grain, poor sorting, angular, otherwise massive.

Calcite veins throughout this unit, no concretions.

985′-AP5049Pf P M
shale as above

Partly covered interval, ss, siltstone & sh outcrops 10′-40′ as above.

1045′-AP5050Pf P M
1065′-AP5051Pf P M
Shale, silty, otherwise as above

Sandstone, gray-green, medium, poor sorting, angular, ≈3′ thick beds, some biotite.

1190′-AP5052Pf P M
Shale as above, thinly bedded, with thin interbeds

1215′-AP5053Pf B Mo
(1″-3″) of ss as above.
Pebble Cong., green, bedded, matrix = green volcanic med. ss, Andesite clasts, pebble size, sub rounded. At bottom of UNIT 4.
Faulted zone, highly disturbed, convoluted, brecciate with gouge. Plastic deformation, numerous calcite veins. Slump features & soft sediment deformation. Unable to determine direction of fault.

UNIT 5

Shale, dark black, fissile, thinly bedded

1360′-AP5054Pf M Mo
Strike E-W, 40°S

1385′-AP5057PP 11.1 / 0.05
Silty mudstone, gray, hackly fracture

1400′-AP5055Pf M-Mo
AP5056SR P-Gas
Sandstone, gray-green, med, p sorting, ang, 3′ thick, low porosity
shale as above

1420-AP5058Pf G-Mo
Early Peak Gas-.5
Sandstone, green, medium, p. sorting, ang, laminated, x-beds, flagstone "like cleavage, in part massive, x-beds strike N80E, 50°S, bedding lineations strike N60W - ripples? - faint oscillation ripples, porosity poor.

1450′-AP5059Pf
1465′-AP5060Pf M Mo
AP5061SR .7
F-Gas-Early Peak Gas
Rythmic sequence of sh, siltstone, & ss.: green med ss as above, resembles an air fall tuff?

1500-AP5062Pf
M-Mo
Rythmic deposition as above, here ss contains numerous carbonized wood. Some sand has ang, v. crse volcanic clasts, laminated otherwise as above.

1540′-AP5063Pf
lineation N63E - ripples? - ½″ amplitude symmetrical
structural strike E-W, 43°S
ss & sh as above, some ss 1/16″-1/4″ thick "sandpaper" sand, possible airfall interbedded in sh.

UNIT 6

Mudstone, green, very highly indurated with some calcite veins.

UNIT 7

1670-AP5064Pf M one species
Sandstone, gray green, very crse-med, very poorly sorted, ang-sub ang. Alternating well/poorly cemented beds, poorly developed iron concretions, some chloritized clasts & carbonized wood. Ripples-E-W

1685-AP5065Pf M one species
lineation. Soft sed deformation 3-4′ diapiric structures lineated N75W
Rythmic sequence of gray shale and ss as above; ss gray-green, med-fine, poorly sorted, ang, massive, thin beds, highly volcanic

1770′-AP5066Pf B
AP5067SR
VG-Gas-Early Peak Gas 4.1%
very black shale, otherwise as above
Shale is predominant over ss, which is thinly interbed in sh. 1″-4″ thick

1825′-AP5068Pf B
AP5069SR VG-Gas-Peak Gas-4.1%
Some calcite veins conformable to bedding.

1870′-AP5070Pf B
shale as above
Highly altered rythmic ss & sh as above - baked/bleached by Andesite intrusion.

Diorite intrusion, green, very mafic, med. grain xlls, numerous calcite veins

2205 AP5071Pf B
Shale, gray; laminated, slightly fissile, baked near contact

Diorite intrusion, similar/same as above

UNIT 9

2310-AP5072Pf B
AP5073SR F-Gas
Peak Gas-.8%
Mudstone, dark gray ; N85E, 37°SE

2350 AP5074Pf P
SS, yellow-gray, fine-med, p-mod sort, ang, laminated carb. plant frags.
Shale, coaly, very thin laminations, numerous plant impressions

2380 AP5075PP 8.8% / 0.15 MD
ss gray med-crse, mod sort, ang, largest inclusion gravel/pebble, bedded & x-bedded at the bottom, 1″ thick, (N70W) ripples lineation of. Trend of x-beds S16W, S25W. Strike N78E, 35SE

2395 AP5076Pf P 14.0% / <0.05 MD
2405-AP5078PP
sh/siltstone, gray, vf

2420 AP5077Pf B
AP5078Pf M
2440 AP5079SR one species
NS-.4
ss, green, fine at top, med-crse at bottom, poor-v poorly sorted, ang, well bedded in the upper (lower flow regime), laminated to massive otherwise. Included sh clasts ≈2′ dia - rip up clasts?, channel deposit volcanic sand, chloritized, soft sediment deformation. diapir structures 3-4′ N80E, 24SE

2470-AP5080Pf M one species
sh. thinly laminated as above

2505-AP5081Pf P
ss, gray-green, vf-f, mod sorting, subang, thinly bedded 1-2″

AP5082SR VG-Gas
Early Peak Gas-4.3%
coaly seam ≈8″ thick. N88E 26SE
Rythmic sequence of fine-v. fine ss gray, mod sorting, SA with gray to black shale interbedded 3′-15′ thick
E-W, 31°S

2570-AP5083Pf P
ss, gray, f-m, p-mod sort, SA, argillaceous, groove casts orientated S10°W, 1″ thick interbed of green friable tuff

2600-AP5084Pf M
AP5085SR F-Gas-Early gen. Gas .8%
shale as above with 3″-4″ dia concentric Liesegang banding

50′ Covered Interval, assumed to be a logical lithologic continuum
Rythmic sequence as above

2610-AP5086Pf M
ss dike, vertical with carbonaceous clasts

2705 AP5087Pf M
Andesite dike, vertical, calcite veins, baked & altered sh nearby

UNIT 10

2735-AP5088PP 15.5% / <0.05 MD
Siltstone/shale, as above, faint iron conc. 2″-4″ dia, numerous carbonized wood & plant frags. More siltstone & vfine ss than shale ≈4:1.

2745-AP5089Pf M
AP5090SR
NS-.4%
Sandstone, lt. green, very fine-silty, ang, mod sorted, volcanic/tuffaceous, weathered ash (clayey) matrix, soft sediment deformation structures

2780-AP5091Pf M
N80E, 33S, E-W lineation of deformation structures ≈2′ amp.
Ang breccia at the bottom

UNIT 11

2815. AP5092Pf P

2840′. AP5093Pf M
2850 AP5094SR
P-Gas-Early gen. gas .5%
Rythmic sequence of sh, ss, & siltstone, black sh; friable green ash, siltstone, ss, green, vf, subang, p-mod sort, 1″-10″ thick max. Every 15-20′ N80W, 28°SW

2885. AP5095Pf M
Andesite sill, strike of sill N80W 35°SW
graded beds; 1″ thick x-beds trend of dip S25E

2905-AP5096Pf B
Coaly seams ≈ sub bituminous
N86E, 38SE
Andesite sill

2945. AP5097Pf P
AP5098SR VG-Gas-Early gen. gas. 4.2%
Covered interval, appear to be as above i.e. rythmic sequence

2985. AP5099Pf M-Mo
2990 AP5100SR 1 spec.
NS-<.1
Breccia, vc-granular, purple, tuffaceous, highly weathered
Large fault here, direction not known, most 12 ss are similar to Unit 5 ss i.e. "sandpaper" ss. N56E, 66°SE

UNIT 12

3040-AP5101Pf P-Mo 1 spec.
Rythmic sequence of sh, mudstone, siltstone, vf ss & some crse ss very similar to Units.

3090. AP5102Pf M-Mo
AP5103SR P 1 spec.
Sandstone tan-green vf-crse ang, poor-mod sorting, low porosity, thinly laminated beds 6″-3′
wet gas - Pregen - .5%

3130-AP5104Pf M M
discordant calcite veins, hackly fracture, non equal interbedding, primarily mudstone & siltstone.

3165-AP5105Pf M-Mo
AP5106SR
P-Gas-Early gen-Gas .5%
Numerous carbonaceous-woody inclusions on bedding planes, some iron concretions ≈1″ dia

Bottom of the Section

Last visible outcrop, going downsection in the Stepovak. After the covered interval the next outcrop is where the bay curves around & the outcrops are upsection.