

GOSSE'S BLUFF NO. 1 WELLCORE DESCRIPTIONSCore No. 1: 319' - 329' recovered 1'

Coring Times: 1, 1, 1, 1, 1, 1, 1, 1, 1, 1 mins./ft.

Core is badly broken up into small pieces.

Shale, green, very slightly calcareous, with 25% Limestone, light grey, argillaceous, soft, crypto-crystalline dense, as interbeds. Scattered fossil remains: Bryozoa, Brachiopods?, crinoids stems(??). Few small vugs in Limestone lined with well developed calcite euhedra. Scattered small pyrite patches and fracture fillings. Some surfaces have a radial-acicular appearance - possibly percussion fractures?

No dip possible.

No oil or gas indications.

Core No. 2: 616' - 626' recovered 2'

Coring Times: 2, 4, 3.5, 4, 4, 4, 4, 4.5, 4, 7 mins./ft.

Core is broken into many small pieces.

Shale 70% red ferruginous, 30% green, interbedded, partly badly crushed and contorted, well indurated. Several thin lenticular beds (up to 5 mm. thick) of dense white crypto-crystalline Limestone. Several sheared surfaces as in Core No. 1.

Dip is approximate due to size of pieces - 60° to 80°.

No oil or gas indications.

Core No. 3: 1019' - 1029' recovered 3'

Coring Times: 11, 8, 8, 7, 8, 7, 6, 10, 8, 8 mins./ft.

Shale very silty, grading partly to Siltstone, greenish grey, micaceous, slightly calcareous. Top of core contains much Dolomite, white, sandy and silty, fine crystalline in thin irregular streaks. Rare patches of acicular crystalline Anhydrite and Galena. Many shearing patterns with radiating - acicular habit, as in other cores. Core is badly broken up, and shows the effects of strong shearing.

No oil or gas indications.

Core No. 4: 1222' - 1232' recovered 4'

Coring Times: 4, 4, 3, 4, 4, 4, 4, 4, 6, 4 mins./ft.

Sandstone, light green, partly mottled pink, very fine grained, sub-angular, silty. White, argillaceous, very slightly calcareous cement, slightly friable. Core is partly damp indicating very slight porosity in patches. Few sand-filled worm-tubes at random directions. Scattered thin streaks and rare small angular fragments of green Shale. Rare vertical hairline fractures. Many acicular-radiating tension fracture patterns as in previous cores. Sandstone is massive, dip of bedding 45° - 50°.

No oil or gas indications.

Core No. 5: 1530' - 1540' recovered 4"

Coring Times: 5, 4, 4, 4, 3, 5, 5, 5, 5, 7 mins./ft.

Sandstone, light grey, very fine to fine grained, well sorted, sub-angular grains, white, argillaceous cement, clean, scattered rare dark lithic grains. Many small dark grey argillaceous and carbonaceous (?) inclusions and paper-thin lenses. One  $\frac{1}{8}$ " fracture parallel to bedding, filled with white crystalline calcite. Rare very faint outlines of shell fragments. Dry core absorbs water slowly, indicating slight permeability.

Dip of bedding 60°.

No oil or gas indications.

Core No. 6: 2064' - 2074' recovered 5'

Coring Times: 8, 9, 8, 5, 6, 8, 5, 5, 5, 5 mins./ft.

Sandstone, light grey, very fine grained, sub-angular to angular, well sorted, clean, white argillaceous cement. Abundant scattered very fine flecks, streaks, irregular patches, lenses and laminations of black carbonaceous and argillaceous matter comprising approximately 10% of the rock. Some of these structures are possibly organic, or more probably due to contemporaneous deformation, or later re-working of the rock during formation of salt dome. Many fine fractures at random directions. Few poorly developed worm-tubes at random directions. Many coarse fluted tension-fracture planes are developed. Sandstone is friable, no visible porosity.

Dip of bedding 60°.

No oil or gas indications.

Core No. 7: 2537' - 2547' recovered 1'

Coring Times: 6, 5, 4, 4, 4, 4, 4, 4, 4, 4 mins./ft.

Interbedded Shale 60% and Sandstone 30%. Sandstone is light to medium grey, very fine to fine grained, white argillaceous cement, dense and tight; occurring as irregular streaks laminations, lenses and nodules intimately mixed with shale. Some sandstone appears in the form of poorly developed worm tubes. Shale is black, carbonaceous, variably sandy, micaceous and silty.

Dip of bedding - perpendicular.

Tension fractures are well developed.

No oil or gas indications.

Core No. 8: 3086' - 3092' No recovery

Coring Times: 3, 1, 1, 3, 1, 2 mins./ft.

Cut only six feet in attempt to increase recovery. Samples while coring consisted mainly of white sandstone as above, and black Shale.

Note: Brief gas flare after trip between core 8 and core 9 indicate a small flow of gas (methane odour) from interval cored in core 8.

Core No. 8: (cont.)

Note: One sample while coring contained a trace of Sandstone, brown, fine grained, silty and argillaceous, friable, with fair blue fluorescence and faint blue fluorescence cut with  $\text{CCl}_4$ .

Core No. 9: 3092' - 3104' recovered 6"

Coring Times: 3, 2, 3, 11, 10, 10, 12, 17, 15, 11,  
10, 10 mins./ft.

Sandstone, white to light grey, very fine grained, sub-angular, well sorted clean and milky quartz. Clean, slightly siliceous, argillaceous and silty matrix. Scattered small patches and thin streaks on bedding planes of black carbonaceous and argillaceous material. Rare disseminated pyritohedra of pyrite. Few fluted tension - fracture planes.

Dip of bedding  $70^\circ$ .

Rock appears tight but soaks up moisture indicating slight intergranular porosity.

No oil or gas indications.

Core No. 10: 3124' - 3132' recovered 5'

Coring Times: 10, 10, 10, 11, 14, 8, 10, 15 mins./ft. -  
then core jammed.

Sandstone, white, very fine to fine grained, sub-angular, white, argillaceous, silty, and slightly siliceous cement, firm; no visible porosity. Many small, often closely packed irregular patches of black argillaceous - carbonaceous matter, appears at least in part to have been re-worked by worm borrowings. Fluted tension fracture planes are present. Sandstone is massive with bedding indistinct - bedding appears to be  $70^\circ$ .

Core is broken up, has been intensely crushed and broken.

No oil or gas indications.

Core No. 11: 3848' - 3858' recovered 6"

Coring Times: 11, 11, 8, 7, 8, 7, 6, 7, 7, 8 mins./ft.

Sandstone, green, very fine grained, silty, argillaceous, grading slightly to siltstone. Scattered zones of very coarse rounded milky quartz grains in sandstone matrix. Few black carbonaceous, argillaceous patches. Few poorly developed sand-filled, carbonaceous worm tubes at random directions. Sandstone is moderately hard, no visible porosity.

Dip of bedding  $80^\circ$ .

No oil or gas indications.

Core No. 12: 4520' - 4535' recovered 1'6"

Coring Times: 11, 10, 7, 6, 6, 7, 8, 8, 11, 9, 7, 7, 6,  
7, 7 mins./ft.

Shale, black silty, partly very fine sandy, firm with

Core No. 12: (cont.)

scattered laminated streaks, small rounded to angular inclusions and pods of green and brown very fine pyritic Sandstone and Siltstone showing some evidence of re-working by worm burrowings. One 1" bed of Sandstone, green, very fine grained, hard, tight, slightly calcareous, argillaceous, very silty, at base of recovered interval. Rare very coarse rounded milky quartz grain concentrations. Shale has been disturbed by faulting and shearing. One prominent slickensided shear dips at  $45^{\circ}$ . Few fine thrust (?) faults displace bedding up to  $\frac{1}{2}$ ".

Dip of bedding  $70^{\circ}$ .

No oil or gas indications.