

WELL HISTORY REPORT

Murphy Mesa BP S Whitestone YT N-58

Unit N Section 58 Grid 66-00-138-15

Yukon Territory

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Unit N, Section 58, Grid 66-00-138-15

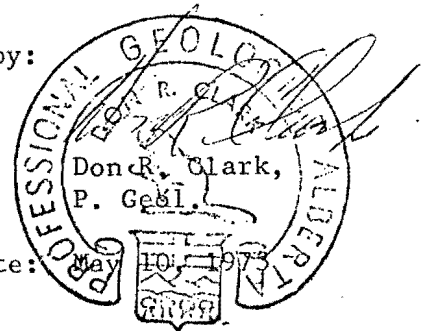
Lat.  $65^{\circ} 57' 50''$  N., Long.  $138^{\circ} 25' 30''$  W.

Yukon Territory

WELLSITE GEOLOGIST

DON R. CLARK

Submitted by:



Date: May 10, 1973

SECTION 1 - Summary of Well Data

(a) Well Name:

Murphy Mesa BP S Whitestone YT N-58

(b) Permittee:

Imperial Oil Enterprises, Ltd.

(c) Operator:

Murphy Oil Company Ltd.,  
700 Aquitaine Tower,  
540 - 5th Avenue S.W.,  
Calgary, Alberta,  
T2P 2M7.

(d) Location:

Unit N, Section 58, Grid 66-00-138-15  
Latitude  $65^{\circ} 57' 50''$  North, Longitude  $138^{\circ} 25' 30''$  West  
Unique Well Identifier 300 N 586600138150  
Universal Well Location Reference: Lat.  $65.96389^{\circ}$  N.,  
Long.  $138.42500^{\circ}$  W.

(e) Co-ordinates:

(f) Permit No.:

5748

(g) Drilling Contractor:

Westburne Drilling Ltd.  
G. P. Drilling Rig No. 24 - Rotary

(h) Drilling Authority:

No. 645

- (i) Classification:  
New Field Wildcat.
- (j) Elevations:  
K.B. 2918'  
Ground 2907'
- (k) Spudded:  
February 10, 1973
- (l) Completed Drilling:  
April 10, 1973
- (m) Total Depth:  
6993'
- (n) Status:  
Dry and abandoned.
- (o) Rig Released:  
April 17, 1973
- (p) Hole Sizes:  
17½" to 957'  
8-3/4" to 6993'
- (q) Casing:  
957' 13-3/8" 48# H40

SECTION 11 - Geological Summary

(a) Formation Tops: (K.B. Elev. 2918')

<u>Formation</u>	<u>Sample Depth</u>	<u>E-log Depth</u>	<u>Sub-Sea</u>
Cretaceous	Surface		
Blackie Sandstone	2350'	2353'	+ 565'
Shale	3030'	3000'	- 82'
Paleozoic			
Jungle Creek	5900'	5898'	-2980'
Ettrain	6150'	6150'	-3232'
Total Depth:	6993'	6963' (fill)	

(b) Cored Intervals:

None.

(c) Core Descriptions:

N.A.

(d) Sample Descriptions:

See Page 4.

(e) Paleontological Determinations:

None.

Murphy Mesa BP S Whitestone YT N-58

SAMPLE DESCRIPTION

0-10'	Sandstone, coarse grained, salt-and-pepper, weathered yellow - brown.
10-30'	Siltstone, light grey, micro-micaceous, weathered yellow - brown in part.
30-70'	No cuttings.
70-80'	Siltstone, as above.
80-100'	Shale, grey, in part weathered yellow - brown.
100-120'	Siltstone, black, micro-micaceous, in part weathered yellow - brown.
120-130'	Sandstone, coarse grained, poorly sorted, sub-angular, salt-and-pepper.
130-140'	No sample, lost circulation.
140-160'	Shale, dark grey, micro-micaceous, (partial returns only to 210 feet).
160-170'	Sandstone, coarse grained, poorly sorted, sub-angular, salt-and-pepper.
170-190'	Shale, dark grey, micro-micaceous.
190-200'	Sandstone, coarse grained, poorly sorted, sub-angular, salt-and-pepper. In part weathered yellow - brown.
200-210'	Siltstone, black, micaceous.
210-220'	Shale, dark grey.
220-240'	Siltstone, black, micaceous.
240-250'	Shale, medium grey.
250-260'	Shale, black, carbonaceous.
260-270'	Siltstone, black, micaceous.
270-280'	Shale, light grey.

- 280-290' Siltstone, black, micaceous.
- 290-300' Shale, dark grey, micro-micaceous, trace greywacke siltstone.
- 300-320' No sample.
- 320-350' Sandstone, very fine grained, silty. In part weathered yellow-brown. Claystone, weathered yellow - brown.
- 350-360' Claystone, weathered yellow - brown.
- 360-380' Sandstone, medium grained greywacke, in part weathered yellow - brown. Interbedded, weathered claystone, yellow - brown.
- 380-420' Shale, dark grey, micro-micaceous, with thin interbeds of greywacke, argillaceous.
- 420-470' Shale, dark grey, micro-micaceous, with siltstone interbeds.
- 470-500' Sandstone, medium grained, sub-angular, poorly sorted, kaolinitic, in part weathered yellow - brown.
- 500-510' Shale, dark grey, micro-micaceous.
- 510-530' Sandstone, medium grained, sub-angular, poorly sorted, in part weathered yellow - brown.
- 530-570' Sandstone, greywacke, coarse grained, sub-angular, poorly sorted, slightly calcareous.
- 570-670' Conglomerate, composed of quartz chert, greenstone, mafics, many loose grains. Porosity probably fair.
- 670-710' Sandstone, medium grained, composition as conglomerated above. Interbeds of dark grey shale.
- 710-730' Siltstone, with dark grey shale interbeds.
- 730-740' Sandstone, medium grained, salt and pepper, poorly sorted, silty and argillaceous.
- 740-790' Sandstone, greywacke, silty and argillaceous. Fair porosity in part.
- 790-860' Shale, dark grey, trace of coal.

- 860-900' Shale, dark grey, micro-micaceous, with siltstone interbeds. Trace coal.
- 900-920' Sandstone, greywacke, fine grained, sub-angular, poorly sorted. Trace of porosity.
- 920-950' Shale, dark grey, silty. Trace of coal, slickensides.
- 950-960' No sample.
- 960-1080' Cement from casing. Coal at 1000-1010'.
- 1080-1090' Coal.
- 1090-1700' Shale, dark grey. Traces of coal in very thin stringers. Slickensided shale in all samples. Notable lack of iron pyrite.
- 1700-1710' Coal.
- 1710-1720' No sample.
- 1720-1800' Shale, dark grey, with traces of coal, and slickensides common.
- 1800-1820' Siltstone, dark grey, argillaceous.
- 1820-2350' Shale, dark grey, with traces of coal, and slickensides common. Calcite coating of slickensides at 1940 - 1950'. No sample 2100', 2140' and 2160'.
- 2350-2360' Sandstone, fine grained, sub-angular, moderately well sorted, salt-and-pepper type with kaolinite. Trace of glauconite, slightly siliceous 2380-2400'. Trace of porosity 2390-2460'. Sample missing 2420-2430'.
- 2360-2370' Siltstone, salt-and-pepper and quartzose, clean, well compacted.
- 2370-2520' Sandstone and siltstone, interbedded. Sandstone, medium grained, salt-and-pepper; sandstone, fine grained, quartzose; and siltstone, black, greywacke, micro-micaceous. Pyrobitumen along some bedding planes and free chunks of bitumen.
- 2520-2600' Sandstone, fine grained, salt-and-pepper sandstone, and very fine grained greywacke. Trace glauconite. Sandstone, well compacted, silty. Some interbedded black, micro-micaceous shale. Siltstone, in part micro-micaceous. All sandstone and siltstone have flattened or preferred orientation.

- 2600-2610' Shale, dark grey; and shale, black, micro-micaceous. Trace of coal, slickensides abundant.
- 2610-2650' Interbedded sandstone and shale; sandstone, very fine grained, silty quartzose sandstone. Shale, dark grey, in part black. Abundant slickensides.
- 2650-2690' Sandstone, fine grained, salt and pepper, well compacted. Sub-angular, moderately sorted, no porosity.
- 2690-2700' Sandstone and siltstone, interbedded. Sandstone, quartzose to salt-and-pepper, very light colored. Siltstone, dark brown - grey, argillaceous.
- 2700-2710' Sandstone, siltstone and shale. Sandstone and siltstone, as above. Shale, black, micro-micaceous.
- 2710-2730' Sandstone and siltstone, interbedded. Sandstone, salt-and-pepper to quartzose, very fine grained. Siltstone, dark brown - grey, all well compacted.
- 2730-2740' Siltstone, dark brown - grey; and shale, black, micro-micaceous.
- 2740-2800' Sandstone and siltstone. Sandstone, very fine grained, quartzose to salt-and-pepper, tight, well compacted, with trace of glauconite. Siltstone, dark brown - grey, argillaceous. Siltstone tends to be laminar bedded. Occasional bed of black, micro-micaceous, hard shale.
- 2800-2820' Siltstone and shale, as above.
- 2820-2840' Sandstone and siltstone; sandstone, very fine grained, as above.
- 2840-2880' Siltstone and shale, as above.
- 2880-2940' Very fine grained sandstone and siltstone, as above.
- 2940-3030' Siltstone and shale. Siltstone, salt-and-pepper, to very fine grained quartzose sandstone. Siltstone, dark brown - grey, with laminar bedding. Shale, black, hard, micro-micaceous.
- 3030-3430' Distinct lith. break to shale, black, hard, micro-micaceous, with a high luster. At 3210', decreasing micro-micaceous, and becoming in part dark grey.
- 3430-3490' Siltstone, dark brown - grey, argillaceous, with black shale interbedded. Trace of pyrite.
- 3490-3590' Siltstone, quartzose, micro-micaceous, tight. Siliceous 3520-3530', becoming dark, argillaceous below 3530' with black shale interbeds.

- 3590-3980' Shale, black, hard, micro-micaceous, with high luster.  
 3690-3700' Sample missing.  
 3850-3860' Trace slickensides.  
 3930-3940' Trace carbonaceous twigs or tree needles.  
 Trace slickensides.
- 3980-4100' Shale, as above, and shale, dark grey, micro-micaceous, but smoother than the black shale. Slickensides abundant.
- 4100-4210' Shale, dark grey, micro-micaceous. Trace calcite-coated fracture 4200-4210'.
- 4210-4530' Shale, dark grey, as above; and shale, black, as above.  
 4410-4420' Sample missing.  
 4510-4520' Trace coarse crystalline dolomite, black and white, scattered slickensides.
- 4530-5830' Shale, black, hard, micro-crystalline, slickensides common, traces of ironstone and pyrite. Glauconite, trace in 4770'. Trace of olive-green bentonite in 4860'.  
 5760' Trace massive chert.  
 5800' Dispersed pyrite common.
- 5830-5880' Shale, black, with a trace of dark brown, argillaceous limestone. Some black, calcareous shale. Some very glauconitic shale. Trace carbonaceous material.  
 5870-5880' Limestone stringer, dark brown, coarse crystalline. Stringers of glauconite and pyrite. Crinoid (?).
- 5880-5900' Siltstone, black, very glauconitic and pyritic.
- 5900-5920' Sandstone, coarse grained, angular, well sorted, composed of black chert and clear quartz. Sparry calcite cement fills pore space estimated greater than 20%. Diagenesis order: 1) calcite cement, 2) fracturing, 3) siliceous in fracture. Disseminated pyrite common. No porosity.
- 5920-5970' Conglomerate, composed of black chert and white chert, with quartz and chert sandstone. Sparry calcite cement. Disseminated pyrite common. Trace of porosity, no oil stain, spotty bright fluorescence. Trace of pyrobitumen. Trace of glauconite.
- 5970-5990' Sandstone, white, quartzose to greywacke, with trace of tripolite. Sub-rounded, moderately well sorted, no porosity. Disseminated pyrite common. Sparry calcite cement. Brachiopod fragments.

- 5990-6020' Conglomerate, as above.
- 6020-6040' Sandstone, very fine grained quartz to greywacke, with well rounded, black chert and white chert pebbles. Sub-angular, well sorted, sparry calcite cement. Fragment of brachiopod. Disseminated pyrite common. Trace of pyrobitumen.
- 6040-6050' Sandstone, quartzose, very fine grained, with well rounded chert pebbles, sub-angular, well sorted. Sparry calcite cement. Trace of porosity. Trace of pyrobitumen. No oil stain.
- 6050-6060' Poor sample - Trip trash.
- 6060-6100' Sandstone, fine grained, sub-angular, well sorted, chert and quartz grains, with occasional well rounded chert pebble, abundant disseminated pyrite. Trace of glauconite. Trace of pyrobitumen. Complete sparry, calcite cement. Abundant tripolitic chert 6080-6090'. Trace porosity 6090-6100'. No oil stain, no fluorescence.
- 6100-6130' Conglomerate, well rounded chert pebbles in fine grained sandstone matrix. Abundant disseminated pyrite. Trace of porosity, trace of pyrobitumen. Trace of glauconite. Nearly complete sparry calcite cement.
- 6130-6140' Sandstone, coarse grained, sub-rounded, well-sorted cherty grains. Disseminated pyrite abundant. Complete calcareous cement.
- 6140-6150' Sandstone, as above, and limestone. Limestone, white, sparry, with fossil fragments. Brachiopods, echinoids (?), spines and spicules.
- 6150-6160' Limestone, sandy (limestone 50%). Limestone, dark brown, coarse crystalline, in part fragmental (spines, brachiopod, echinoid ?).
- 6160-6170' Siltstone, green, very glauconitic.
- 6170-6180' Limestone, light brown, fragmental and pelletal (?), in part slightly sandy, medium granular.
- 6180-6190' Sandstone, medium grained, angular, well-sorted with large white chert pebbles or massive chert.

- 6190-6200' Limestone, light buff, sparry, grading to sandy limestone to limy sandstone.
- 6200-6220' Sandstone, medium grained, angular, calcareous, with sparry limestone stringers. Scattered round chert pebbles, trace of tripolitic chert. Glauconite common.
- 6220-6450' Limestone, light brown to grey, coarse granular, in part skeletal, at times pelletal, with abundant white, sparry calcite. It is arenaceous throughout, the grains often being flakes or grains of chert. Insoluble residue of pyrite. Becoming glauconitic below 6420'.
- 6450-6470' Limestone, fine granular, light brown, slightly dolomitic, cherty, pyritic.
- 6470-6490' Limestone, as above, with some interbedded, non-calcareous, dark grey shale.
- 6490-6590' Limestone, light brown to light grey, fine granular, with massive chert. Interbeds of black, very sandy limestone, very glauconitic and cherty.
- 6590-6600' Sandstone, fine grained, calcareous, glauconitic, tight.
- 6600-6610' Limestone, as before.
- 6610-6620' Limestone, light brown. The extremely sandy portions are dark grey, with abundant glauconite grains.
- 6620-6630' Sparry calcite and calcite crystals. Probably fractures.
- 6630-6860' Limestone, light brown, medium granular, strongly arenaceous, pelletal, faintly skeletal, with bedded chert. Glauconite throughout. Abundant sparry calcite 6660-6680' and 6810-6820'. Trace brachiopod 6810-6820'.
- 6860-6910' Limestone, dark, extremely cherty, glauconitic, pyritic, with scattered large chert pebbles below 6890'. Spicules in 6910' sample.
- 6910-6930' Sandstone, very fine grained, well sorted, dolomitic, possibly slightly siliceous, medium and dark brown. Glauconitic.
- 6930-6940' Siltstone, brown, dolomitic, glauconitic, slightly argillaceous, possibly slightly siliceous.

- 6940-6960' Sandstone, very fine grained, brown, glauconitic, slightly argillaceous, with calcareous and siliceous cement.
- 6960-6970' Trip trash.
- 6970-6980' Sandstone, as above, with abundant calcite crystals as fracture filling.
- 6980-6993' Limestone, medium granular, white to grey, arenaceous. Abundant calcite crystals as fracture fill, pyrite common. Limestone is mostly pelletal.-