

HOLE NO: X-1 SHEET 1 OF DATE: 24 NOV 74 LOGGED BY: E. C. GENTNER (SOLAR) TO:

FROM	TO	DEPTH	DESCRIPTION
35	50		SILTSTONE, lt gray, silty, calc.
50	60		SANDSTONE, lt gray, f. to med. gr., no much kinked
60	70		f. sand. calcite. Arg. to subangular grains, med. sorted, f. calc cement.
<del>70</del>	<del>75</del>		
70	75 (2)		SHALE, med. Brn, thinly bedded, fissile.
75 (2)	80		SANDSTONE, lt gray, f. to med. gr.
80	90		SHALE, lt gray to med. Brn, thin-bedded, fissile
90	100		
100	110		SILTSTONE becoming SANDSTONE, lt gray, f. to med. gr.
110	120		SANDSTONE, (as above)
120	130		
130	140		
140	150		(Some becoming lt Brn)
150	160		
160	170		
170	180		Becoming calc. sand
180	190		fine sand
190	200		
200	210		
210	220		
220	230		SHALE, lt to med. Brn, fissile, soft
230	240		SHALE, lt to med. Brn (uncalcified) Moulton (20)
240	250		CALLAZION'S SHALE - lt Brn with some sand
250	260	260	SANDSTONE, RED BR to LT BR - CALC. SHALES AT BOT
260	270	270	GREEN CALC. SHALES &
270	280	280	GREEN CALC. SHALES BECOMING SANDS
280	290	290	SHALE LT GR to LT BR (CALC)
290	300	300	SANDSTONE LT GR to BR. BITUMEN FLAKES
300	310	310	SANDSTONE LT GRAY TO BROWN
310	320	320	SANDSTONE LT GRAY TO BROWN
320	330	330	" " " " WITH BITUMEN LENS
330	340	340	SANDSTONE " " " " (SMALL SAMPLE)
340	350	350	SS. LT GRAY TO BR.
350	360	360	" " " " (SMALL SAMPLE)
360	370	370	SS LT GRAY (SMALL SAMPLE)
370	380	380	SS " " WITH BITUMEN CHIPS OR LENS
380	390	390	SS " " (SMALL SAMPLE)
390	400	400	SS " " (SMALL SAMPLE)
400	410	410	SS " " SOME BLACK FLAKES (SMALL SAMPLE)
410	420	420	SS " " " "
420	430	430	SS " " " "
430	440	440	SS " " " "

ELEV	DEPTH	INCH	FEET	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	DESCRIPTION
450	460												NO SAMPLE
460	470												SS & GRAY GRADING INTO A BR SHALE
470	480												BR SHALE HARD AND FISSILE
480	490												BR SHALE
490	500												SHALE, med to dk Brn, fissile <sup>(2' first)</sup> but becoming
500	510												less so w/ depth, & variable organic content
510	520												
520	530												
530	540												
540	550												
550	560												
560	570												
570	580												
580	590												
590	600												w/ minor amounts of ss, clay, & sand (probably thin lens
600	601												
601	602												Probable Nalcoite Fens
602	608												SHALE, med to dk Brn, somewhat fissile w/ calc. chert
608	610												SS & Brn, Micaceous
610	620												SHALE, MED TO DK BRN. (CALC.)
620	630												
630	640												SHALE, LIGHT BR. (HARD)
640	650												SHALE, LIGHT BR. GRADING INTO DR. BR.
650	660												SHALE, DR. BR.
660	670												
670	680												" " CALCINIOUS
680	690												SHALE, DK BR WITH LT BR LENS (FESSILE)
690	700												" " (697-698 KELLY BRZ DRIFT
700	710												" " APPROX 1-2' VOID & RE
710	720												FRACTURE ZONE
720	730												SHALE, med-dk Brn, fissile
730	740												
740	750												
750	760												
760	770												SHALE, DR to V. DR Brn, fissile
770	780												
780	790												
790	800												
800	810												
810	820												
820	830												
830	840												
840	850												
850	860												
860	870												

[illegible]

1. *Chlorophyll a* (Chl a) and *Chlorophyll b* (Chl b) are the primary photosynthetic pigments in green plants. They are responsible for capturing light energy and converting it into chemical energy through the process of photosynthesis. Chl a is the most abundant pigment, while Chl b is present in smaller amounts. Both pigments are found in the chloroplasts of green plants.

HOLE NO: X-1 SHEET 2 OF 6 DATE: 12/2/79 LOGGED BY: W. MOUNTAIN COLLAR: EL CIENTELES TD:

DEPTH	±MM	FRX	PP	ASSAY 10 20 30 40	GAL TON	REC ERGO	LITH.	DESCRIPTION
900			.80			900.11		OIL SHALE MED. DRK BIRN
901			.34			900.32	+++	FINELY LAMINATED WITH SOME
902	1100					900.34	+++	SANDY LENS
903		VERT.						
904							+++	904.15 - 904.24 SAND LAYERS
905								
906								
907		907.33						
908							+++	908.53 908.65 SAND LAYERS
909								
910								
911								
912	110							
913								
914								
915								
916			.01				+++	916.14 916.34 SAND LAYERS
917							+++	917.50 - 917.86 " "
918								
919								
920			.35				+++	920.92 - 921.05 SAND LAYERS
921								
922	150		.85					
923								
924								
925								
926								
927								
928								
929		NEUT	.10					
930		.35						
931			.76					
932	170		.19					931.96 - 932.19 LAST .23 FEET OF CORE
933								
934			.43					
935			.44					OIL SHALE MED TO DR BIRN WITH
936								FINELY LAMINATED WITH THINLY
937								BEDDED SAND LENS
938			.56					936.44 - 937.06 LINK
939			.40					WINDUP WAVEY BED
940			.71					CONTOURED SAND LAYER
941								
942	160							941 - 944 DARK BIRN BANDS OF
943								RICHLY OIL SHALE
944								
945								
946			.50					946 - 949 DARK BIRN BANDS OF
947								OIL SHALE (SOME BLACK)
948			.38					
949								

COMMENTS:

HOLE NO: X-1 SHEET 3 OF 6 DATE: 3 DEC 74 LOGGED BY: W. MAXTON COLLAR: EL. GENTILEIS TD:

DEPTH	±MM	FRX	PP	ASSAY	CAL	REC	LITH	DESCRIPTION
				10 20 30 40	TON	GRD		
950		79.1	.32					OIL SHALE DARK BKN TO BLK-KH
951		79.1	.14					FINELY LAMINATED WITH SOME
952	+50							INNER BEDDED SAND LENS
953			.58					
954			.67					
955			.88					
956								LOSS-OK 957.11 TO 957.25 (.19' LOST)
957								- NO! L. ON BOTTOM & RECOVERED
958			.71					MIN. RUN - GCM
959		80.1	.73					
960		80.1						intermediate (unconformity)
961								SHALE - SILTSTONE, (intermediate silty shale)
962	+40							med. blk. B. n. & thin
963								ly. thin py. lam. layers, sec. within p. d. of
964								bitumen, & thin full ss beds (gray - clay)
965								Low grade (oil) zone (965.10-.75) 1/2 in. thin
966								Tuff ss (966.24-.27), highly bituminous & low grade
967								part of oil saturated
968			.87					Low grade zone (968.05-.35)
969			.78					SHALE (unconformity) but it med blk.
970								contains thin lens of #1 B. n. shale
971								
972	+30		.33					
973		85.1						NALITE (?) - thin layer (oil) clay, with clay
974								very p. d. (973.41) & ss beds & discontinuous
975			.12					layers - inter. thin
976								OIL SHALE, low grade (976.08 - )
977			.14					bituminous med blk. gray of med. porosity
978			.51					Along E. limb of upper portion of fold, E. limb
979								
980			.66					
981								
982	+20							
983			.32					Tuff ss lens (983.74-.84) oil sat, med contacts
984								
985								NALITE (?) (?) (985.32-.54), white B. n., clayey
986								clayey, w. med. py. lam., some calc.
987								Each of many thin layers of NALITE, also the med
988			.68					of thin, med. oil sat, tuff ss beds in dist. sh.
989								Tuff ss (988.75-.99.15), med, oil sat, alkali th
990			.28					" " below w. thin layers of NALITE @ top of bottom
991								OIL SHALE HARD WITH FINE BEDDING
992	-10		.05, M					LIGHT BKN TO BLACK WITH INNER BEDDED
993			.81					ZONES OF OIL SATURATED SANDS AND SOME SANDSTONE LENSES
994								AND BITES.
995								
996								
997								
998								GRD - 1000 LIGHT BKN LOW GRADE
999								OIL SHALE WITH SOME INNER BEDDED
1000								

DISTRIBUTED LOST CASE INTO FPP ZONES

4-4

COMMENTS: 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

HOLE NO: X-1 SHEET 4 OF 6 DATE: 4 DEC 74 LOGGED BY: W. MOWSON COLLAR: TD:

DEPTH	±MM	FRX	PP	ASSAY 10 20 30 40	GAL TON	REC ERGD	LITH.	DESCRIPTION
1000			.74					SANDY LAMINATED THROUGHOUT SECTION
1001								ARE COZING OIL
1002			.31					1002.45 - 1002.77 SAND LENS (w/COLE) X 10
1003								MAHOGANY MARKER
1004								RICH OIL ZONES BELOW
1005								
1006			.69 28					1006 - 1007 IN A SMALL SAND LENS
1007			.00 .15					TRUCK, BREAK
1008								1007 - 1012 DARK GRAY OIL ZONE
1009								
1010								1010.8 - 1012.56 thin, irregular layers of full
1011								oil shale
1012								1012.56 - 1013.00 thin, irregular layers of full
1013			.86					oil shale
1014			.12 (32) (48)					1014 - 1016 HIGH GRADE OIL SHALE
1015			57.66					1015 - 1016 HIGH GRADE OIL SHALE
1016								1016 - 1017 SAND LENS
1017			.81					
1018								
1019								
1020								LOOSELY OF COKE
1021								OIL SHALE, MOSTLY HIGH GRADE
1022								DEK BKN TO BLACK - IRREGULAR
1023								THIN BEDDING WITH SOME
1024								CONTOURED SAND LENS
1025			.33					1025 - 1026 SAND LENS
1026								1026 - 1027
1027			.23					VERY BLACK OIL SHALE
1028			.41					
1029								
1030								
1031								
1032								
1033			.11					32.28 - 32.13 SAND LENS
1034								
1035								BANDING - DEK BROWN TO LIGHT BROWN
1036								OIL SHALES
1037								
1038								
1039								
1040								
1041								
1042								
1043			.44					LIGHT BROWN OIL SHALE
1044			.38					
1045								
1046								
1047			.7					
1048								
1049								

PP EXIST MOSTLY ON CONTACTS BETWEEN SAND LENS AND OIL SHALE

LOGGING ZONE  
DIRECTION OF SECTION  
CUT 30.00 / REC 30.34  
6:00 PM 4 DEC 74

91 CALCITE LENS?

HOLE NO: X-1 SHEET 5 OF 6 DATE: 5 DEC '74 LOGGED BY: L.C. CENTER COLLAR: TD:

DEPTH	±MM	FRK	PP	ASSAY 10 20 30 40	GAL TON	REC RGD	LITH	DESCRIPTION
1050								Oil Shale, low grade, # Med Ben, Hard, V. Gf
1051								
1052	-50							Med Grade Zone (1052.0 - 1053.0)
1053								
1054			.12 .14					
1055			.67					
1056								
1057			.10					
1058								only slightly calc (1057.2 - 1062.3)
1059			.140 .140 .57					Tuff. ss (1057.95 - 1060.30) w/ calc
1060			.62 .68					
1061			.83 (avg)					Med Grade Zone - w/ some layers (101 ft) of high
1062	-60							tuff. ss layer to top bleeding oil.
1063								
1064								
1065								
1066			.10					Med-high Grade Zone w/ numerous thin lam. of calc
1067								
1068			.32					
1069								Nehalite layer (1070.22 - 25) chalky, white, lam.
1070			.22					
1071			.85					
1072	-70							Nehalite (??) (1073.20 - 22) dk grey! some w/ calc
1073			.73 (avg)					Nehalite (1073.45 - 44) distorted, buff
1074			.12 (avg)					Tuff. ss (1073.44 - 1074.22) calc, buff, G/S
1075			.50 .57					Nehalite + calc (1075.10 - 15) Tuff layer
1076								
1077								becoming silty
1078			.37					
1079								
1080								OIL SHALE LOW TO MED GRADE, HARD
1081								WITH INNER BITUMEN SAND LAMINAE AND
1082	-80							BITUMEN ZONES - BITUMEN ZONES
1083								ARE COZING
1084								ALL THE ABOVE ARE THINLY BEDDED
1085			.36					
1086								
1087								
1088								
1089			.71					
1090			.22 .50 .93					20% SANDY ZONE WITH SULFIDE LAYER
1091			.31					(MAYBE 2) ALSO BITUMEN
1092	-90							
1093								OOZE ZONES (LENS OR BUBB) BITUMEN
1094								
1095			.33 (.6)					1095.82 - 1096 SANDY LENS WITH SULFIDE ZONE
1096								GEN. MARC. LITE.
1097								OOZE ZONES (BITUMEN)
1098								"
1099								"

DOCUMENT 757

HOLE NO: Y-1 SHEET 7 OF 6 DATE: 5 DEC 71 LOGGED BY: W. W. Moulton COLLAR:        TD:       

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