

INTERVAL SHEET

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VDMR Well No: 2135

Date rec'd:

Sample Interval: from 3' to: 63'

PROP: BLM A-051911

Number of samples: 52

Hole No.: T4-16A

COMP: Minerals Development Corp.

Total Depth: 63'

COUNTY: Giles

Oil or Gas: Water: Exploratory: X

From-To	From-To	From-To	From-To
3' - 11'6" (3 spls)	40'6" - 41'	-	-
11'6" - 17'5" (3 spls)	41' - 46' (2 spls)	-	-
17'5" - 17'11"	46' - 52' (2 spls)	-	-
17'11"- 18'0"	52' - 52'5"	-	-
18'0" - 22'10"	52'5" - 52'7"	-	-
22'10"- 24'10" (2 spls)	52'7"- 53'5"	-	-
24'10"- 25'4"	53'5" - 53'10"	-	-
25'4" - 25'10"	53'10"- 54'1"	-	-
25'10"- 26'3"	54'1" - 54'3"	-	-
26'3" - 28'6" (2 spls)	54'3" - 55'2"	-	-
28'6" - 30'11" (2 spls)	55'2"- 56'0"	-	-
30'11"- 31'2"	56' - 57'	-	-
31'2" - 31'4"	57' - 57'4"	-	-
31'4" - 31'8"	57'4" - 59'	-	-
31'8" - 31'10"	59' - 60'1"	-	-
31'10"- 32'0"	60'1" - 60'10"	-	-
32'0" - 32'9"	60'10"- 61'3"	-	-
32'9" - 33'5"	61'3" - 61'5"	-	-
33'5" - 34'11"	61'5" - 61'10"	-	-
34'11"- 35'5"	61'10"- 62'1"	-	-
35'5" - 35'6"	62'1" - 62'6"	-	-
35'6" - 36'	62'6" - 63"	-	-
36' - 36'5"	-	-	-
36'5" - 36'10"	-	-	-
36'10"- 37'10"	-	-	-
37'1" - 38'2"	-	-	-
38'2" - 38'5"	-	-	-
38'5" - 38'8"	-	-	-
38'8" - 38'10"	-	-	-
38'10"- 40'6" (2 spls)	-	-	-

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Number of samples: 52

COMP: Minerals Development Corp.

Total Depth: 63'

COUNTY: Giles

Oil or Gas: Water: Exploratory: X

From-To	From-To	From-To	From-To
3' - 11'6" (3 apks)	40'6" - 41'	-	-
11'6" - 17'5" (3 apks)	41' - 46' (2 apks)	-	-
17'5" - 17'11"	46' - 53' (2 apks)	-	-
17'11" - 18'6"	53' - 53'5"	-	-
18'6" - 22'10"	53'5" - 53'7"	-	-
22'10" - 24'10" (2 apks)	53'7" - 53'5"	-	-
24'10" - 25'4"	53'5" - 53'10"	-	-
25'4" - 25'10"	53'10" - 54'1"	-	-
25'10" - 26'3"	54'1" - 54'3"	-	-
26'3" - 28'6" (2 apks)	54'3" - 55'2"	-	-
28'6" - 30'11" (2 apks)	55'2" - 56'0"	-	-
30'11" - 31'2"	56' - 57'	-	-
31'2" - 31'4"	57' - 57'4"	-	-
31'4" - 31'8"	57'4" - 59'	-	-
31'8" - 31'10"	59' - 60'1"	-	-
31'10" - 32'0"	60'1" - 60'10"	-	-
32'0" - 32'9"	60'10" - 61'3"	-	-
32'9" - 33'5"	61'3" - 61'5"	-	-
33'5" - 34'11"	61'5" - 61'10"	-	-
34'11" - 35'5"	61'10" - 62'1"	-	-
35'5" - 35'6"	62'1" - 62'6"	-	-
35'6" - 36'	62'6" - 63'	-	-
36' - 36'5"	-	-	-
36'5" - 36'10"	-	-	-
36'10" - 37'11"	-	-	-
37'11" - 38'2"	-	-	-
38'2" - 38'5"	-	-	-
38'5" - 38'8"	-	-	-
38'8" - 38'10"	-	-	-
38'10" - 40'6" (2 apks)	-	-	-

HOLE NUMBER: T4-16A

Drill alignment: Vertical

Date started:

Date completed:

Driller: Vaughan Bowling, Cunningham Core Drilling and Grouting Co.

Depth in Feet			Description
From	To	Thickness	
0	3'	3'	Overburden.
3'	11'6"	8'6"	Sandstone, maroon, coarse grained, ferruginous; contains quartz granules, maroon clay galls and sporadic rust brown clay galls; also includes contained vugs, weathered and broken. Includes 2'6" core loss, probably maroon shale.
11'6"	17'5"	5'11"	Sandstone, maroon, fine to medium grained, ferruginous; contains maroon clay galls and maroon shale partings; broken, includes 1'6" core loss, probably maroon shale.
17'5"	17'11"	6"	Sandstone, dark maroon, coarse grained, slightly ferruginous; contains maroon clay galls; rock broken.
17'11"	18'	1"	Sandstone, pale tan to rust brown, fine grained.
18'	22'10"	4'10"	Shale, pale grayish green to pale yellowish tan, unctuous; includes 3'9" core loss.
22'10"	24'2"	1'4"	Shale, pale yellowish tan to pinkish tan, unctuous.
24'2"	24'10"	8"	Shale, pale yellowish tan; contains interbeds of pale gray sandy shale.
24'10"	25'4"	6"	Sandstone, pale gray to mottled rust brown, fine grained, shaly and platy.
25'4"	25'10"	6"	Shale, pale gray to pale lavender; contains sporadic rust brown partings of shaly sandstone parallel to the bedding planes.
25'10"	26'3"	5"	Sandstone, pale gray to pale rust brown, fine grained.
26'3"	28'6"	2'3"	Shale, pale grayish purple to pale olive drab, contains rust brown shale partings parallel to the bedding planes.
28'6"	30'11"	2'5"	Shale, pale grayish green, contains sporadic rust brown paper thin shale partings parallel to the bedding planes; contains gray fine grained sandstone interbeds and intercalations. These sandstone interbeds contain ostracod remains <u>Zygosella</u> sp and <u>Mostigobolbina</u> sp.

<u>Depth in feet</u>			<u>Description</u>
<u>From</u>	<u>To</u>	<u>Thickness</u>	
30'11"	31'2"	3"	Shale, pale rust brown to grayish green.
31'2"	31'4"	2"	Sandstone, gray, medium to coarse grained quartzitic.
31'4"	31'8"	4"	Shale, greenish gray to pale olive drab; contains scattered brachiopod fragments.
31'8"	31'10"	2"	Sandstone, pale grayish maroon, fine grained.
31'10"	32'	2"	Shale, pale gray includes 4" core gain.
32'	32'9"	9"	Shale, pale gray.
32'9"	33'5"	8"	Sandstone, pale grayish maroon, fine grained, platy.
33'5"	34'11"	1'6"	Shale, pale gray to tan, unctuous, contains rust brown sandy shale partings parallel to the bedding planes.
34'11"	35'5"	6"	Shale tan to sienna.
35'5"	35'6"	1"	Shale, bright maroon.
35'6"	36'	6"	Shale and sandstone, shale chocolate to rust brown and black, contains irregular manganese partings; sandstone, pale gray, fine grained.
36'	36'5"	5"	Sandstone, grayish maroon, fine to coarse grained, ferruginous, contains maroon galls and scattered quartz granules, vuggy.
36'5"	36'10"	5"	Shale, pale pea green to greenish gray.
36'10"	37'1"	3"	Sandstone, grayish maroon, includes 3" core gain, fine grained, slightly ferruginous.
37'1"	37'3"	2"	Shale, pale brown.
37'3"	37'8"	5"	Shale, pale brown, contains interbeds of maroon, fine grained ferruginous sandstone.
37'8"	38'2"	6"	Shale, pale grayish green.
38'2"	38'5"	3"	Sandstone, maroon, fine grained, ferruginous, contains abundant maroon shale partings.
38'5"	38'8"	3"	Shale, pale gray to pale lavender.
38'8"	38'10"	2"	Sandstone, gray to rust brown, fine grained.

<u>Depth in feet</u>			<u>Description</u>
<u>From</u>	<u>To</u>	<u>Thickness</u>	
38'10"	40'6"	1'8"	Sandstone, maroon, fine grained, ferruginous, contains abundant maroon shale partings parallel to the bedding planes; contains sporadic encrustations of wavelite.
40'6"	41'	6"	Sandstone, maroon, fine grained, ferruginous, contains clay galls and quartz granules.
41'	46'	5'	Sandstone, maroon, fine to medium grained, ferruginous, contains abundant maroon shale partings and intercalations parallel to the bedding planes. Includes 2' core loss.
46'	52'	6'	Sandstone, maroon, medium to coarse grained, ferruginous, contains quartz granules; contains abundant maroon shale partings parallel to the bedding planes. Includes 1'6" core loss.
52'	52'5"	5"	Shale, maroon to pale olive drab.
52'5"	52'7"	2"	Sandstone, pale grayish maroon, fine grained.
52'7"	53'5"	10"	Sandstone, maroon, fine grained, ferruginous, contains sporadic quartz granules.
53'5"	53'10"	5"	Sandstone, maroon, coarse grained, ferruginous, contains quartz granules and abundant maroon shale partings up to 1/4 inch in thickness.
53'10"	54'1"	3"	Shale, drab maroon.
54'1"	54'3"	2"	Sandstone, maroon, fine grained ferruginous.
54'3"	54'10"	7"	Shale, drab maroon, contains partings of maroon fine to coarse grained ferruginous sandstone.
54'10"	55'2"	4"	Sandstone, maroon, coarse grained, ferruginous.
55'2"	56'	10"	Shale, drab maroon, contains partings of fine to coarse grained maroon ferruginous sandstone.
56'	57'	1'	Shale, pale brown to pale grayish maroon, includes 4" core loss.
57'	57'4"	4"	Sandstone, gray to grayish maroon, fine grained, contains rust brown shaly sandstone partings.
57'4"	59'	1'8"	Shale, pale gray, contains 2" of grayish maroon, fine grained sandstone; includes 1' core loss.

Depth in feet			Description
From	To	Thickness	
59'	60'1"	1'1"	Shale, gray to tan, contains abundant rust brown, fine grained sandstone interbeds averaging 1/2 inch in thickness and rust brown shaly sandstone partings parallel to the bedding planes.
60'1"	60'10"	9"	Shale, pale tan to brownish gray, contains two maroon shale partings parallel to the bedding planes.
60'10"	61'3"	5"	Shale, grayish green.
61'3"	61'5"	2"	Shale, tan.
61'5"	61'10"	5"	Shale, grayish green.
61'10"	62'1"	3"	Sandstone gray to grayish green, fine grained quartzitic.
62'1"	62'6"	5"	Shale, maroon to grayish green.
62'6"	63'	6"	Sandstone, gray to grayish green, fine grained, quartzitic, platy. 3 inches left in hole.

End of hole.

Log of Split Core T4-16A

Date Logged: November 18, 1961

Depth in feet		Thickness	Description
From	To		
			Sample 1 (3' - 11'6")
3'	11'6"	8'6"	Sandstone, maroon, fine to coarse grained, ferruginous, contains quartz granules, maroon clay galls and sporadic yellowish brown to rust brown clay galls. Also contains vugs and yellowish brown shale partings. Includes 2'6" core loss probably maroon shale.
			Sample 2 (11'6" - 17'11")
11'6"	17'5"	5'11"	Sandstone, maroon, fine to medium grained, ferruginous, contains maroon clay galls and maroon shale partings, broken includes 1'6" core loss.
17'5"	17'11"	6"	Sandstone, dark maroon, coarse grained, ferruginous, contains maroon clay galls, broken.
			Sample 3 (36' - 37'1")
36'	36'5"	5"	Sandstone, maroon, fine to coarse grained, ferruginous, contains scattered quartz granules, vuggy.
36'5"	36'10"	5"	Shale, pale pea green to greenish gray.
36'10"	37'1"	3"	Sandstone, grayish maroon, fine grained, slightly ferruginous; includes 3" core gain.
			Sample 4 (40'6" - 46')
40'6"	41'	6"	Sandstone, maroon, fine grained, ferruginous, contains clay galls and quartz granules.
41'	46'	5'	Sandstone, maroon, fine to medium grained, ferruginous, contains abundant maroon shale partings and intercalations parallel to the bedding planes. Includes 2' core loss. Contains wavelite seam at 42'10". Shale comprises about 35%.
			Sample 5 (46' - 52')
46'	52'	6'	Sandstone, maroon, medium to coarse grained, ferruginous, contains quartz granules and abundant maroon shale partings parallel to the bedding planes. Includes 1'6" core loss. Also contains sporadic wavelite encrustations at 51'.
52'	52'5"	5"	Shale, maroon to pale olive drab.
52'5"	52'7"	2"	Sandstone, pale grayish maroon, fine grained.

<u>Depth in feet</u>		<u>Description</u>	
<u>From</u>	<u>To</u>	<u>Thickness</u>	
			Sample 6 (52'7" - 55'2")
52'7"	53'5"	10"	Sandstone, maroon, fine grained, ferruginous, contains sporadic quartz granules.
53'5"	53'10"	5"	Sandstone, maroon, coarse grained, ferruginous, contains quartz granules and abundant maroon shale partings up to 1/4" in thickness.
53'10"	54'1"	3"	Shale, drab maroon.
54'1"	54'3"	2"	Sandstone, maroon, fine grained, ferruginous.
54'3"	54'10"	7"	Shale, drab maroon, contains partings of maroon fine to coarse grained ferruginous sandstone.
54'10"	55'2"	4"	Sandstone, maroon, coarse grained, ferruginous.

End of Sampling.