

INTERVAL SHEET

Page 1 of 1

VDMR Well No: 2120

Date rec'd:

Sample Interval: from 4' to: 155'5"

PROP: BLM A-051841
Hole No. T6-12A

Number of samples: 84

COMP: Minerals Development Corp.

Total Depth: 155'5"

COUNTY: Giles

Oil or Gas: Water: Exploratory: X

From-To	From-To	From-To	From-To
4' - 6'7"	62'8" - 65'10"	110'4" - 110'9"	-
6'7" - 10'	65'10" - 67'10"	110'9" - 112'10" (2 spls)	-
10' - 12'6"	67'10" - 69'	112'10" - 115'2" (2 spls)	-
12'6" - 14'	69' - 69'3"	115'2" - 119'7" (2 spls)	-
14' - 15'	69'3" - 70'1"	119'7" - 119'9.5"	-
15' - 15'5"	70'1" - 70'7"	119'9.5" - 121'7"	-
15'5" - 16'5"	70'7" - 73'2" (2 spls)	121'7" - 123'7"	-
16'5" - 23'	73'2" - 77'6" (2 spls)	123'7" - 124'2"	-
23' - 23'5"	77'6" - 78'	124'2" - 125'11"	-
23'5" - 23'10"	78' - 79'3"	125'11" - 128'4"	-
23'10" - 31'	79'3" - 80'3"	128'4" - 130'10"	-
31' - 36'4"	80'3" - 81'	130'10" - 131'4"	-
36'4" - 41'4"	81' - 82'11"	131'4" - 131'7"	-
41'4" - 43'	82'11" - 83'7"	131'7" - 137'6"	-
43' - 44'4"	83'7" - 83'10"	137'6" - 138'5"	-
44'4" - 47'3"	83'10" - 84'2"	138'5" - 139'6"	-
47'3" - 48'8"	84'2" - 84'10"	139'6" - 139'11"	-
48'8" - 49'8"	84'10" - 86'	139'11" - 140'2"	-
49'8" - 51'	86' - 91' (3 spls)	140'2" - 144'2"	-
51' - 54'	91' - 92'	144'2" - 146'4"	-
54' - 55'5"	92' - 93'	146'4" - 149'9"	-
55'5" - 56'	93' - 94'3"	149'9" - 150'11"	-
56' - 56'7"	94'3" - 98'9" (2 spls)	150'11" - 152'8"	-
56'7" - 57'6"	98'9" - 100'3"	152'8" - 155'5"	-
57'6" - 59'1"	100'3" - 101'	-	-
59'1" - 60'2"	101' - 103'9"	-	-
60'2" - 61'	103'9" - 105'7"	-	-
61' - 62'1"	105'7" - 108' (2 spls)	-	-
62'1" - 62'5"	108' - 109'1"	-	-
62'5" - 62'8"	109'1" - 110'4"	-	-

INTERVAL SHEET

Page 1 of 1

VDMR Well No: 2120

Date rec'd:

Sample Interval: from 4' to 155'5"

PROP: BLM A-051841
Hole No. T6-12A

Number of samples: 84

COMP: Minerals Development Corp.

Total Depth: 155'5"

COUNTY: Miles

Oil or Gas: Water: Exploratory: X

From-To	From-To	From-To	From-To
4' - 6'7"	62'8" - 65'10"	110'4" - 110'9"	-
6'7" - 10'	65'10" - 67'10"	110'9" - 112'10" (2 apls)	-
10' - 12'6"	67'10" - 69'	112'10" - 115'2" (2 apls)	-
12'6" - 14'	69' - 69'3"	115'2" - 119'7" (2 apls)	-
14' - 15'	69'3" - 70'1"	119'7" - 119'9.5"	-
15' - 15'5"	70'1" - 70'7"	119'9.5" - 121'7"	-
15'5" - 16'5"	70'7" - 73'2" (2 apls)	121'7" - 123'7"	-
16'5" - 23'	73'2" - 77'6" (2 apls)	123'7" - 124'2"	-
23' - 23'5"	77'6" - 78'	124'2" - 125'11"	-
23'5" - 23'10"	78' - 79'3"	125'11" - 128'4"	-
23'10" - 31'	79'3" - 80'3"	128'4" - 130'10"	-
31' - 36'4"	80'3" - 81'	130'10" - 131'4"	-
36'4" - 41'4"	81' - 82'11"	131'4" - 131'7"	-
41'4" - 43'	82'11" - 83'7"	131'7" - 137'6"	-
43' - 44'4"	83'7" - 83'10"	137'6" - 138'5"	-
44'4" - 47'3"	83'10" - 84'2"	138'5" - 139'6"	-
47'3" - 48'8"	84'2" - 84'10"	139'6" - 139'11"	-
48'8" - 49'8"	84'10" - 86'	139'11" - 140'2"	-
49'8" - 51'	86' - 91' (3 apls)	140'2" - 144'2"	-
51' - 54'	91' - 92'	144'2" - 146'4"	-
54' - 55'5"	92' - 93'	146'4" - 149'9"	-
55'5" - 56'	93' - 94'3"	149'9" - 150'11"	-
56' - 56'7"	94'3" - 98'9" (2 apls)	150'11" - 152'8"	-
56'7" - 57'6"	98'9" - 100'3"	152'8" - 155'5"	-
57'6" - 59'1"	100'3" - 101'	-	-
59'1" - 60'2"	101' - 103'9"	-	-
60'2" - 61'	103'9" - 105'7"	-	-
61' - 62'1"	105'7" - 108' (2 apls)	-	-
62'1" - 62'5"	108' - 109'1"	-	-
62'5" - 62'8"	109'1" - 110'4"	-	-

Hole T6-12A Log of Split Core

Date: November 8, 1961

<u>Depth in feet</u>		<u>Description</u>
<u>From</u>	<u>To</u>	
0	4'	Overburden Sample 1 (4' to 14')
4'	14'	Sandstone, pale drab maroon to grayish maroon, fine to medium grained, ferruginous; contains yellowish brown clay galls and scattered quartz granules, weathered and broken. Includes 5' core loss probably shale. Sample 2 (14' - 16'5")
14'	15'	Sandstone, maroon to grayish maroon, coarse grained, conglomeratic, quartzitic, slightly ferruginous; contains quartz granules and clay galls, weathered and broken.
15'	15'5"	Shale, pale drab brown to maroon.
15'5"	16'5"	Sandstone, drab maroon to grayish maroon, fine grained, slightly ferruginous, weathered and broken.
16'5"	16'7"	Shale, pale brown to pink.
16'7"	23'	Core loss.
23'	49'8"	See log. Greenish gray shale, includes interbeds and partings of greenish gray to white fine grained sandstone. Sample 3 (49'8" - 56'5")
49'8"	50'2"	Sandstone, maroon, fine to coarse grained, ferruginous.
50'2"	51'1"	Sandstone, maroon, fine to medium grained, ferruginous contains quartz granules.
51'1"	51'2"	Shale, maroon.
51'2"	51'6"	Sandstone, maroon, fine grained, ferruginous, contains maroon shale partings.
51'6"	53'7"	Sandstone, maroon, fine grained, ferruginous, contains sporadic phosphatic fossils.
53'7"	53'8"	Sandstone, maroon, fine grained, contains maroon shale partings.

<u>Depth in feet</u>		<u>Description</u>
<u>From</u>	<u>To</u>	
53'8"	55'5"	Sandstone, maroon, coarse grained, conglomeratic highly ferruginous, contains quartz granules and clay galls.
55'5"	56'	Shale, maroon, contains 4" core loss.
56'	56'5"	Sandstone, maroon, coarse grained, conglomeratic ferruginous, contains quartz granules and clay galls, fossiliferous, contains unidentifiable ostracods.
56'5"	56'9"	Sandstone, maroon, coarse grained shaly, contains rust brown and maroon shale partings.
56'9"	57'6"	Shale, pale green to olive drab. Sample 4 (57'6" - 59'5")
57'6"	59'5"	Sandstone, maroon, fine to coarse grained, conglomeratic, ferruginous, contains scattered quartz granules and unidentifiable fossils.
59'5"	60'4"	Sandstone, drab brownish maroon, fine grained, contains abundant maroon and drab brown shale partings.
60'4"	61'	Shale, pale maroon, includes 6" core loss.
61'	61'3"	Sandstone, grayish maroon, fine grained.
61'3"	62'	Sandstone drab maroon, fine grained, contains abundant maroon shale interbeds and partings parallel to bedding planes.
62'	62'4"	Shale, pale brown. Sample 5 (62'4" - 65'10")
62'4"	65'10"	Sandstone, maroon, coarse grained, conglomeratic ferruginous, contains quartz granules and sporadic white phosphatic fossils.
65'10"	66'1"	Shale, pale brown.
66'1"	69'3"	Shale, grayish maroon, contains interbeds of grayish maroon, fine grained sandstone. Includes 11" core loss.
69'3"	70'2"	Shale, pale grayish green.
70'2"	70'8"	Sandstone, maroon, fine to coarse grained, contains interbeds of maroon shale.

<u>Depth in feet</u>		<u>Description</u>
<u>From</u>	<u>To</u>	
70'8"	72'1"	Shale, pale grayish green.
72'1"	73'3"	Shale, pale olive drab to pale brown. Sample 6 (73'3" - 77'9")
73'3"	77'6"	Sandstone, maroon, coarse grained, conglomeratic highly ferruginous, contains quartz granules and white phosphatic unidentifiable brachiopod remains.
77'6"	83'7"	See log. Sample 7 (83'7" - 83'10")
83'7"	83'10"	Sandstone, maroon, coarse grained highly ferruginous oalitic.
83'10"	125'11"	See log. Sample 8 (125'11" - 127'7")
125'11"	126'2"	Sandstone, maroon, fine grained ferruginous.
126'2"	127'3"	Shale, greenish gray.
126'3"	127'7"	Sandstone, maroon, fine grained, ferruginous.
127'7"	155'5"	See log.

HOLE NUMBER: T6-12A

<u>Depth in feet</u>			<u>Description</u>
<u>From</u>	<u>To</u>	<u>Thickness</u>	
0	4'	4'	Clinton formation Overburden, contains loose weathered blocks of ferruginous sandstone.
4'	13'	9'	Sandstone, maroon, medium to coarse grained, conglomeratic, ferruginous; broken and weathered, includes 5' core loss.
15'	15'6"	6"	Shale, maroon.
15'6"	16'5"	11"	Sandstone, maroon, coarse grained, ferruginous conglomeratic; badly broken.
16'5"	23'	6'7"	Shale, maroon, includes 6'6" core loss.
23'	23'5"	5"	Sandstone, pale grayish maroon, fine grained.
23'5"	23'10"	5"	Sandstone, pale yellowish brown to tan, fine grained.
23'10"	31'	7'2"	Shale, pale greenish gray to pale greenish yellow, weathered; includes 5' core loss.
31'	36'4"	5'4"	Shale, pale greenish gray to pale olive drab to pale brown; contains rust brown paper thin shale partings parallel to the bedding planes. Contains widely scattered intercalations of pale gray fine grained sandstone, includes 9" core loss.
36'4"	41'4"	5'	Shale, gray, unctuous; contains gray fine grained shaly sandstone partings.
41'4"	43'	1'8"	Shale, rust brown to grayish green, contains rust brown sandstone partings.
43'	44'4"	1'4"	Shale, pale grayish purple to grayish green.
44'4"	47'3"	2'11"	Shale, pale rust brown; contains partings of maroon and grayish green shale.
47'3"	47'6"	3"	Sandstone, maroon, fine grained, thin bedded, broken.
47'6"	47'8"	2"	Sandstone, gray to dull grayish maroon, fine grained.
47'8"	48'	4"	Sandstone, brown, fine grained platy.
48'	48'8"	8"	Sandstone, pale grayish maroon, fine grained.

Upper zone
13Middle
Shale
38

Depth in feet			Description
From	To	Thickness	
48'8"	49'8"	1'	Shale, grayish green, includes 8" core loss.
49'8"	51'	1'4"	Sandstone, maroon, fine to coarse grained, ferruginous; contains quartz granules.
51'	51'2"	2"	Sandstone, maroon, fine to medium grained; contains maroon shale partings.
51'2"	52'10"	1'8"	Sandstone, maroon, fine grained, highly ferruginous.
52'10"	55'5"	2'7"	Sandstone, maroon, coarse grained, conglomeratic ferruginous; contains quartz granules, clay galls and very widely scattered maroon shale partings; conglomeratic.
55'5"	56'	7"	Shale, maroon; contains scattered maroon coarse grained ferruginous sandstone partings, includes 4" core loss.
56'	56'5"	5"	Sandstone, maroon, coarse grained, conglomeratic ferruginous.
56'5"	56'7"	2"	Sandstone, maroon, fine grained.
56'7"	57'6"	11"	Shale, pale grayish green to olive drab.
57'6"	59'1"	1'7"	Sandstone, maroon, coarse grained, conglomeratic ferruginous; contains quartz granules.
59'1"	60'2"	1'1"	Sandstone and interbedded shale; sandstone maroon, fine grained, slightly ferruginous; contains abundant maroon shale partings parallel to the bedding planes.
60'2"	61'	10"	Shale, maroon, includes 6" core loss.
61'	62'1"	1'1"	Sandstone and interbedded shale; sandstone maroon, fine grained, slightly ferruginous; contains abundant maroon shale partings and intercalations.
62'1"	62'5"	4"	Shale, maroon to olive drab.
62'5"	62'8"	3"	Sandstone, maroon, fine grained ferruginous.
62'8"	65'10"	3'2"	Sandstone, maroon, coarse grained; conglomeratic contains quartz granules, highly ferruginous.
65'10"	67'10"	2'	Sandstone, maroon, fine grained, slightly ferruginous, contains abundant maroon shale partings parallel to the bedding planes.

34' 8"

Lower
Zc
20' 7" ss
8' 10" sh

<u>Depth in feet</u>			<u>Description</u>
<u>From</u>	<u>To</u>	<u>Thickness</u>	
67'10"	69'	1'10"	Shale, maroon, includes 1' core loss.
69'	69'3"	3"	Sandstone, maroon, fine grained, contains abundant maroon shale partings.
69'3"	70'1"	10"	Shale, gray to maroon to olive drab.
70'1"	70'7"	6"	Sandstone, drab maroon, fine grained, shaly.
70'7"	71'8"	1"	Shale, gray to grayish green.
71'8"	73'2"	1'6"	Shale, pale olive drab to light brown to grayish maroon; contains interbeds of maroon fine grained sandstone.
73'2"	77'6"	4'4"	Sandstone, maroon, coarse grained, ferruginous contains quartz granules and contained vugs caused by leaching of clay galls, fossiliferous, contains brachiopods and ostracods, fossils are white possibly phosphatic.
77'6"	78'	6"	Shale, gray to grayish brown.
78'	79'3"	1'3"	Shale, gray to maroon.
79'3"	80'3"	1'	Sandstone, grayish purple, fine grained.
80'3"	81'	9"	Shale, gray to grayish green; contains partings of pale gray, fine grained sandstone.
81'	82'10"	1'10"	Shale, maroon, contains partings of grayish green shale and grayish fine grained sandstone.
82'10"	82'11"	1"	Sandstone, maroon, fine grained, ferruginous.
82'11"	83'7"	8"	Shale, gray to grayish maroon, sandy, contains gray fine grained sandstone intercalations.
83'7"	83'10"	3"	Sandstone, reddish maroon, oolitic ferruginous.
83'10"	84'2"	4"	Sandstone, gray, fine grained, quartzite.
84'2"	84'10"	8"	Shale, gray to grayish green; contains irregular partings of pale gray fine grained quartzite sandstone.
84'10"	86'	1'2"	Shale, gray to grayish brown, contains 2" interbeds of gray fine grained sandstone, includes 6" core loss.

Lower
Shale

Depth in feet			Description
From	To	Thickness	
86'	91'	5'	Sandstone, gray to grayish maroon, fine grained quartzitic.
91'	91'5"	5"	Sandstone, maroon, fine to medium grained, ferruginous.
91'5"	92'	7"	Shale, gray to grayish green, unctuous.
92'	93'	1'	Sandstone, pale gray, fine grained, quartzitic.
93'	94'3"	1'3"	Shale, gray to grayish black, contains pale gray fine grained partings of quartzite.
94'3"	98'9"	4'6"	Sandstone, grayish green, fine grained, quartzitic, contains pale green irregular shale partings.
98'9"	100'3"	1'6"	Sandstone, gray to pale grayish green, fine grained, quartzitic; contains irregular pale green shale partings.
100'3"	101'	9"	Sandstone, grayish green, fine grained.
101'	103'9"	2'9"	Sandstone, grayish green; contains maroon flecks fine grained; quartzitic.
103'9"	105'7"	1'10"	Sandstone, pale grayish green, fine grained, contains irregular pale green shale partings.
105'7"	105'10"	3"	Sandstone, maroon, fine grained.
105'10"	106'3"	5"	Sandstone, pale grayish green, fine grained.
106'3"	107'	9"	Sandstone, pale grayish maroon, fine grained.
107'	107'4"	4"	Shale, grayish green, unctuous.
107'4"	107'5"	1"	Quartzite, pale gray, fine grained.
107'5"	107'6"	1"	Shale, gray.
107'6"	108'	6"	Quartzite, pale gray, fine grained.
108'	109'1"	1'1"	Shale, grayish black, contains irregular interbeds of grayish white, fine grained quartzite.
109'1"	109'5"	4"	Quartzite, pale grayish white, fine grained.
109'5"	110'4"	11"	Quartzite, pale gray to grayish green, fine grained; contains gray and grayish green shale partings.

Depth in feet			Description
From	To	Thickness	
110'4"	110'9"	5"	Shale, pale green and maroon.
110'9"	110'10"	1"	Quartzite, pale gray, fine grained.
110'10"	110'11"	1"	Shale, pale green and maroon.
110'11"	112'10"	1'11"	Quartzite, pale gray, fine grained.
112'10"	119'7"	6'9"	Shale, grayish black to grayish green; contains irregular partings, intercalations and lenses of pale gray to grayish green fine grained quartzitic sandstone. Also contains widely scattered plant fossils.
119'7"	119'9.5"	2.5"	Sandstone, maroon, fine to medium grained; contains maroon shale partings.
119'9.5"	121'7"	1'9.5"	Shale, grayish black to dull grayish green; contains scattered irregular partings and lenses of pale gray fine grained quartzitic sandstone.
121'7"	123'7"	2'	Shale, greenish gray, contains interbeds and lenses of maroon, fine grained sandstone and gray fine grained sandstone.
123'7"	124'2"	7"	Sandstone, maroon, fine grained, ferruginous, contains maroon shale partings.
124'2"	125'11"	1'9"	Shale, greenish gray; contains interbeds and lenses of maroon fine grained sandstone and gray, fine grained quartzitic sandstone.
125'11"	126'2"	3"	Sandstone, maroon, fine grained, ferruginous.
126'2"	126'3"	1"	Shale, greenish gray.
126'3"	127'7"	4"	Sandstone, maroon, fine grained, slightly ferruginous.
127'7"	128'4"	9"	Sandstone, maroon, fine grained, contains greenish gray to maroon shale partings.
128'4"	131'4"	3'	Shale, greenish gray to grayish black; contains intercalations and irregular lenses of pale gray to grayish green, fine grained quartzitic sandstone, includes 3" core gain.
131'4"	131'7"	3"	Sandstone, gray, fine grained, quartzitic.

Depth in feet			Description
From	To	Thickness	
131'7"	134'3"	2'8"	Shale, pale grayish black; contains thin lenses of pale gray quartzitic sandstone.
134'3"	134'4"	1"	Sandstone, maroon, fine to medium grained.
134'4"	137'6"	3'2"	Shale, gray to grayish black.
137'6"	137'7"	1"	Sandstone, gray, coarse grained, quartzitic.
137'7"	138'	5"	Shale, grayish black; contains a 1" interbed of gray, coarse grained sandstone.
138'	138'5"	5"	Sandstone, gray to grayish black, coarse grained, contains rounded quartz granules.
138'5"	139'6"	1'6"	Shale, grayish black, sandy.
139'6"	139'11"	5"	Sandstone, grayish white fine grained.
139'11"	140'2"	3"	Sandstone, grayish white, coarse grained conglomeratic, quartzitic; contains black limestone? granules.
140'2"	144'2"	2' 4"	Sandstone gray to pale grayish green, fine grained quartzitic, contains scattered pyrite stringers. Last 12 inches contains irregular partings of pale green shale.
144'2"	149'9"	5'7"	Sandstone, pale gray to grayish black, fine to medium grained; contains irregular partings and interbeds of grayish black shale.
149'9"	150'11"	1'2"	Shale, black.
150'11"	152'8"	1'9"	Sandstone, pale grayish black to grayish brown mottled, contains irregular pyrite stringers and scattered pyritized fossils; quartzitic.
152'8"	155'5"	2'9"	Quartzite, pale grayish white, fine grained; contains nests and irregular stringers of pyrite and parting of pale green shale at 154'10". (4" core loss, left in hole)

Bottom of hole.