

INTERVAL SHEET

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VDMR Well No: W-1718

Date rec'd: 9-28-66

Sample Interval: from 17 to 356

PROP: Preddy Creek #2

Number of samples: 83

COMP: American Metals Climax, Inc.

Total Depth: 356

COUNTY: Albemarle (Stony Point)

Oil or Gas: Water: Exploratory: X

From-To	From-To	From-To	From-To
No Sample	142.0 - 147.0	252.0 - 257.0	-
17.0 - 22.0	147.0 - 152.0	257.0 - 262.0	-
22.0 - 27.0	152.0 - 157.0	262.0 - 281.0	-
27.0 - 32.0	157.0 - 162.0	281.0 - 286.0	-
32.0 - 37.0	162.0 - 166.4	286.0 - 291.0	-
No Sample	166.4 - 166.5	291.0 - 296.0	-
42.0 - 44.0	166.4 - 171.4	296.0 - 299.0	-
44.0 - 49.0	171.4 - 176.4	299.0 - 302.5	-
49.0 - 52.8	176.4 - 181.4	302.5 - 304.6	-
52.8 - 57.8	181.4 - 183.0	304.6 - 306.0	-
57.8 - 62.8	183.0 - 188.0	306.0 - 310.0	-
62.8 - 64.0	188.0 - 193.0	310.0 - 315.0	-
64.0 - 69.0	193.0 - 196.2	315.0 - 320.0	-
69.0 - 74.0	196.2 - 200.0	320.0 - 325.0	-
74.0 - 79.0	200.0 - 205.0	325.0 - 329.0	-
79.0 - 80.8	205.0 - 209.0	329.0 - 329.9	-
80.8 - 82.0	209.0 - 213.0	329.9 - 333.2	-
82.0 - 87.0	213.0 - 215.0	333.2 - 337.6	-
87.0 - 92.0	215.0 - 220.0	337.6 - 339.0	-
92.0 - 97.0	220.0 - 221.0	339.0 - 340.0	-
97.0 - 102.0	221.0 - 222.0	340.0 - 340.3	-
102.0 - 105.0	222.0 - 223.3	340.3 - 346.5	-
105.0 - 110.0	223.3 - 225.0	346.5 - 351.5	-
110.0 - 115.0	225.0 - 230.0	351.5 - 353.8	-
115.0 - 120.0	230.0 - 235.1	353.8 - 356.0	-
120.0 - 125.0	235.1 - 240.1	-	-
125.0 - 130.0	240.1 - 245.1	-	-
130.0 - 135.0	245.1 - 246.9	-	-
135.0 - 140.0	246.9 - 249.2	-	-
140.0 - 142.0	249.2 - 252.0	-	-

INTERVAL SHEET

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VDMR Well No: **WELL NO. 1718**

Date rec'd: **9-28-66**  
 PROP: **PREDDY CREEK #2**  
 COMP: **AMERICA METALS**  
       **CLIMAX, INC.**  
 COUNTY: **ALBEMARLE**  
           **(STONY POINT)**  
 COUNTY: **VDMR WELL NO: W-1718**  
 FROM:            TO:

Sample Interval: from **17** to  
 Number of samples: **83**  
 Total Depth: **356**  
 Oil or Gas:   Water:   Exploratory: **X**

From-To	From-To	From-To	From-To
-	140. - 142.	246.9 - 249.2	-
17. - 22.	142. - 147.	249.2 - 252.0	-
22. - 27.	147. - 152.	252.0 - 257.0	-
27. - 32.	152. - 157.	257.0 - 262.0	-
32. - 37.	157. - 162.	262.0 - 281.0	-
<i>No Sample</i>			
42. - 44.	162. - 166.4	281.0 - 286.0	-
44. - 49.	166.4 - 166.5	286.0 - 291.0	-
49. - 52.8	166.4 - 171.4	291.0 - 296.0	-
52.8 - 57.8	171.4 - 176.4	296.0 - 299.0	-
		299.0 - 302.5	-
57.8 - 62.8	176.4 - 181.4	302.5 - 304.6	-
62.8 - 64.	181.4 - 183.0	304.6 - 306.0	-
64. - 69.	183.0 - 188.0	306.0 - 310.0	-
69. - 74.	188.0 - 193.0	310.0 - 315.0	-
	193.0 - 196.2	315.0 - 320.0	-
74. - 79.	196.2 - 200.0	320.0 - 325.0	-
79. - 80.8	200.0 - 205.0	325.0 - 329.0	-
80.8 - 82.	205.0 - 209.0	329.0 - 329.9	-
82. - 87.	209.0 - 213.0	329.9 - 333.2	-
87. - 92.	213.0 - 215.0	333.2 - 337.6	-
92. - 97.	215.0 - 220.0	337.6 - 339.0	-
97. - 102.	220.0 - 221.0	339.0 - 340.0	-
102. - 105.	221.0 - 222.0	340.0 - 340.3	-
105. - 110.	222.0 - 223.3	340.3 - 346.5	-
110. - 115.	223.3 - 225.0	346.5 - 351.5	-
115. - 120.	225.0 - 230.0	351.5 - 353.8	-
120. - 125.	230.0 - 235.1	353.8 - 356.0	-
125. - 130.	235.1 - 240.1	-	-
130. - 135.	240.1 - 245.1	-	-
135. - 140.	245.1 - 246.9	-	-
	27	27	



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WELL NO.: Preddy Creek Church # 2  
FARM :

COUNTY: Albemarle  
VDMR Well No.: 1718

DRILLER: American Metals, Climax, Inc.

LOCATION: 1 1/2 miles ENE of Stony Point, within several hundred feet of Preddy Creek Church, NW corner of 7 1/2 minute Keswick Quadrangle. Exact location is not known.

ANGLE DRILLED: 60°

DIRECTION DRILLED: N 35° W

ELEVATION: approximately 500'

DEPTH: 356'

SAMPLE DESCRIPTION: Richard S. Good, September 1966

### GEOLOGIC LOG

Depth (ft.)	Thickness (ft.)	Description
0-17.	17.	No core
17.0-42.0	25.0	Felsic tuff: white to light gray, soft, aphanitic with <sup>upto</sup> 0.1 mm very pale brown quartz and quartz-feldspathic (?) pyroclastic grains and <sup>very</sup> fine (.01-0.1 mm) <sup>scattered</sup> magnetite dust, some grains of which <sup>show</sup> perfect octahedral form. <sup>Occasional</sup> very thin (1 mm) quartz veins cut a faint lamination.
42.0-52.8	10.8	Andesitic lapilli tuff: altered, gray to gray-green, aphanitic, laminated, with occasional dark greenish <sup>black</sup> schlieren of chloritized, mafic lapilli or collapsed pumice. The <sup>mafic</sup> schlieren range <sup>from</sup> barely visible, isolated <sup>0.1 mm</sup> shreds <sup>up</sup> to flattened, lenticular bands <del>up to</del> 10 mm thick. The mafic schlieren are set in an <sup>altered</sup> aphanitic gray matrix. Lapilli constitute 5-25% of the tuffs between 44.4' and 49.0'. A thin band of minute (0.1 mm)



Depth, feet	Thickness	Description
52.8-59.0	11.2	pyrite crystals occurs at 43.5'. At 52.8' there is an unconformity in the bedding. The contact between the tuff falls or flows (?) is irregular. At 52.8' pyrite has replaced a <sup>6x1.5mm</sup> pisolith. <del>6x1.5'</del> The pyrite is minutely (0.1mm) crystallized as cubes and pyritohedra. The bedding angle to the core axis is 80° at 49.0' and 70° at 52.0'.
52.8-64.0	11.2	<u>Andesitic lapilli tuff</u> : gray-green, aphanitic, with discontinuous, parallel mafic lapilli schlieren which make an angle of 75° to the core axis. At 56.5' the banding is contorted and the lapilli chaotic. At 60-61.5' and 63.5' there is a pale brown laminated schistose tuff. At 64.0' there is another unconformity in the bedding angles.
64.0-72.0	8.0	<u>Andesitic tuff</u> : gray, gray-green, as above. Bedding laminae are 75° to the core axis at 67'.
72.0-74.0	2.0	<u>Andesitic lapilli tuff</u> : gray, laminated aphanite with dark green, contorted, mafic lapilli. The bedding is parallel.
74.0-79.0	5.0	<u>Tuff-breccia</u> : soft, white, fractured. Some of the fractures are healed with silica, others are open and are partly filled with drusy quartz. Most of core is missing.



79.0-80.8	1.8	Tuff: white-gray, with thin (.1 mm), parallel red laminac
80.8-82.0	1.2	<sup>Lapilli</sup> Tuff: white-gray, with greenish-black chloritized, mafic lapilli.
82.0-87.0	5.0	<sup>Lapilli</sup> Tuff: gray-green, non-laminated, aphanite with a few mafic lapilli with parallel orientation. The lapilli show microfaulting with displacements up to 15 mm.
87.0-97.0	10.0	Lapilli tuff: light gray, faintly laminated with a few dark mafic schlieren.
97.0-103.5	6.5	Lapilli tuff: gray and gray-green laminated with occasional mafic lenticles. Unconformity in bedding at 103.5'
103.5-125.0	21.5	Lapilli tuff: gray to gray-green, laminated aphanite with sparse <sup>dark green</sup> mafic, chloritized lenticles, streaky blobs up to 2" thick. Magnetite dust (1-2%) is randomly scattered throughout the matrix as minute (0.25 mm) octahedra. Rare, acicular <sup>black</sup> schorlite needles (1 mm x .05 mm) and calcite-fracture cleavage filling are present. Laminac make an angle of 75° <sup>measured at</sup> 109' and 119'. At 118' pink gray and dark green tuff bands are in sharp conformable contact showing <sup>distinctly</sup> felsic and andesitic tuff phases.
125.0-142.0	17.0	Lapilli tuff: gray to greenish gray, indistinctly laminated aphanite, with parallel, flattened <sup>dark green</sup> chloritic lapilli, <sup>bands</sup> and clots, which make an angle of 70° to the core axis (at 131') <sup>conformable to the laminac</sup>



Depth, feet	Thickness	Description
125.0-142.0	17.0	(cont.) At 135.1' crumpled, mafic lapilli, fractured and healed with siderite <sup>and calcite</sup> Magnetite dust (0.10-0.25) mm occurs as scattered octahedra, in places up to 3%.
142.0-166.4	24.4	Lapilli tuffs: <sup>light</sup> green and gray interbanded, aphanitic with <del>scattered</del> <sup>a few</sup> lapilli. Chloritic mafic lenticles are abundant from 162-166.4'. At 165.9' there is a quartz vein with epidote, pyrite (0.5 mm pyritohedra and cubes), and calcite. At 166.4' there is an unconformity with an irregular, sharp contact between dark green andesitic and rhyolitic tuffs. The bedding angle with the core changes from 65° to 90° and then to 75°.
166.4-181.4	15.0	Tuff: gray, finely and indistinctly laminated, with thin parallel mafic lenticles. At 169' contorted bedding and calcite fracture cleavage filling. "Unconformity" at 177.6' between green andesitic tuff bed (or large bomb) and gray felsic tuff.
181.4-196.2	14.8	Meta-andesite-basalt flow: massive to schistose greenstone, aphanitic with small vesicles filled with calcite and zeolites from 188.0'-193.0'; carbonate fracture cleavage filling. Under the microscope



- 181A-196.2 14.8 a sample at 185' (R 3216) showed a fine grained, hydrothermally altered basic rock consisting of interlocking .05 - 0.3 mm felted flakes and grains of chlorite (50%), sericite (23%), ~~very fine (0.1 mm and less) quartz~~ quartz (20%) with magnetite, leucoxene, and calcite as accessories. X-ray (X-478) showed chlorite (Leuchtenbergite), quartz, and muscovite.
- 196.2-200.0 3.8 Quartz vein: white, pitted, with a few disseminated chalcopyrite grains. The quartz shows evidence of crushing to a sugary texture.
- 200.0-209.0 9.0 Felsic tuff: white, soft, aphanitic with thin <sup>0.1 mm</sup> reddish brown laminae. In thin section (R 3217, at 208') the laminae appear as aligned, discontinuous, faintly anisotropic, ferruginous clots and shreds, set in a very fine grained felted matrix of altered pyroclastic material: 60% sericite and clay (up to .02 mm), 30% quartz (.02 - 0.2 mm) with accessory pyrite. A siderite vein cuts across the thin section. X-ray (X-479) examination shows ~~quartz~~ quartz, muscovite, and kaolinite.
- 209.0-213.0 4.0 Siderite: pale brown massive (X-ray at 213', X-499) with a little quartz and traces of chalcopyrite. In places the siderite is vuggy and has oxidized to limonitic boxworks. Fractures in the siderite are defined by thin (0.5 mm) hematitic cracks. About 80% of the core is missing.



213-215.	2.0	Felsic tuff with quartz veins: white, altered laminated, aphanitic tuff <sup>with</sup> and milky quartz veins cutting the bedding. The quartz is vuggy in part, with a few disseminated grains of massive chalcopyrite and small (0.2 mm) spheroidal crystals. The vugs in the quartz contain 1mm drusy quartz and siderite. Core recovery is 30%.
215-225.	10.0	Felsic tuff with quartz veins: white, soft, altered, aphanitic and cellular, milky quartz with scant (1-5%) chalcopyrite and vugs filled with siderite and 1mm drusy quartz. Core recovery about 10%.
225-226	1.0	<u>Felsic tuff</u> : gray, sheared, fractured and partially healed with 1mm veins of chalcopyrite.
226-235.1	9.1	<u>Felsic tuff</u> : light gray, massive, aphanitic to faintly laminated, with one green chloritic lenticle (from 234.0'-234.2')
235.1-252.0	16.9	<u>Andesitic tuffs</u> : green, largely massive and aphanitic. *At 239' there are dark green lapilli as clots and schlieren 5-20 mm long with white, felsitic rims and pyritic replacement in the center of one. There is contorted banding from 249'-252'. From 243'-252' 80% of the core is missing. From 246.9'-249.2' there is a felsic tuff band.

type in at star  
 \* Calcite veins cut the greenstone. Pyrite occurs as a finely disseminated accessory.



252.0-267.0

15.0

Tuffs: green, gray, and reddish-gray aphanitic, massive to banded with alternating green, gray, and reddish-gray conformable banding  $80^\circ$  to the core axis. Crystal tuff with blue quartz and feldspar in a green matrix occurs from 252.0'-253.4'. Unconformity between gray, felsic tuff, and green andesitic tuff occurs at 267'. The contact is sharp and irregular.

267.0-298.5 31.5

Andesite: green, indistinctly laminated to massive flow or tuff. At 298.5' there is a coarse, <sup>quartzose</sup> crystal tuff or tuffaceous sediment. In thin section (R 3218 at 298.5') the <sup>angular to corroded, embayed</sup> ~~megascopically~~ <sup>0.5-4.0 mm</sup> quartz grains (25%) and smaller (0.1-0.3 mm) andesine clasts (>5%) can be seen in a matrix of chlorite, sericite, and cryptocrystalline material. <sup>Although</sup> a few small, round quartz grains were noted, 95% of the grains are angular. Numerous calcite veins (5%) cut through all other mineral grains. X-ray (X-480) examination showed quartz, plagioclase, chlorite (kammerite), and muscovite.



- 298.5-302.5 4.0 Tuffaceous sediment: green to gray-green quartzose tuff (as described in thin section R3218, 298.5') grading into varved or laminated, fine grained ashy bed. Graded bedding with blue quartz and feldspar occurs. Pyrite cubes up to 2 mm appear along the bedding.
- 302.5-306.0 3.5 Felsic tuff: red brown and gray, aphanitic to fine-grained sand size. A thin section (R 3222) at a contact (302.5') between ~~the~~ red and gray beds shows very fine grained (0.1-0.2 mm) quartz (25%), sericite (65%) and 10% opaques (limonite, magnetite, pyrite, and sphene). X-ray (X-484) examination indicates quartz, muscovite, and kaolinite.
- 306.0-329.0 23.0 Arenaceous felsic tuff: cream-coloured, fine grained to conglomeratic, quartzo-feldspathic tuffaceous sediment which shows some crude graded bedding from fine-grained 0.1-0.3 mm to coarse (average 3-5 mm, maximum, 10 mm) between 323'-329'. The quartz is blue and angular to subangular. The coarse tuff resembles an altered arkose <sup>but</sup> gray green lapilli occur from 310'-314'. A thin section of a fine grained portion (R 3219) shows 65% 0.1-0.3 mm quartz and orthoclase set in a matrix (0.05-0.1 mm) of sericite (22%) ~~muscovite~~ (10%) chlorite and plagioclase with traces of sphene. X-ray examination (3%) showed quartz, muscovite, chlorite, and orthoclase.



- 329.0-329.9 0.9 Andesitic breccia with quartz veins:  
Pale green, angular andesite fragments  
healed by quartz; ~~and~~ andesite cut  
by 10 mm quartz vein with disseminated  
0.1 <sup>3mm</sup> chalcopyrite grains. 0.1 - 3mm.
- 329.9-333.2 3.3 Arenaceous felsic tuff: red-brown  
coarse, "arkosic" quartzo-feldspathic.  
Quartz (50%) and weathered feldspar (40%)  
make up 90% of the rock. The grains  
average 2 mm and are set in a matrix  
that is colored red from the oxidation  
of fine grained (0.1-1mm) pyrite.
- 333.2-337.6 5.4 Quartz vein: milky, vuggy, and  
barren of sulfides or limonite.
- 337.6-339.0 1.4 \*Arenaceous felsic tuff: red-brown,  
conglomeratic with graded bedding.  
Angular blue quartz (40%) 0.5-4 mm and  
angular, altered feldspar (30%) occur in  
a red brown matrix containing green, undulose  
mafic lapilli. A thin section at 338  
(R 3220) shows 40% quartz, 30% altered  
feldspar, 20% sericite and 10%  
opaque iron oxides, titanite, and leucosomes.  
X-ray (X-482) examination shows quartz,  
muscovite, and kaolinite. The thin section  
shows bent undulose lenticles, 2-10 mm  
thick which consist of sericite, chlorite  
and ~~indistinct~~ <sup>ferruginous</sup> ~~shale~~ opaques.

\* tuffaceous arkose?



- 339.0-340.0 1.0 Andesite dike (<sup>?)</sup> intrusive into felsic tuffs: chaotic mixture of cream coloured felsite (as in fine grained sections of 306.0-329.0') xenolithic lentils and fragments, in a banded, dark gray, <sup>matrix</sup> aphanitic matrix. Microfaulting up to 1 cm is present.
- 340.0-340.3 0.3 Felsic tuff: cream coloured fine grained with accessory pyrite.
- 340.3-346.5 6.2 Arenaceous felsic tuff: cream coloured, coarse with 35% angular blue quartz and <sup>65%</sup> white crumbly feldspar with <sup>white</sup> clayey matrix.
- 346.5-351.5 5.0 Felsic tuff and andesite: ~~tuff~~ ~~interbanded~~ alternating fine-grained (0.25-0.50 mm) light gray, quartzo-feldspathic <sup>fine grained</sup> pyroclastic and gray to gray-green andesite with accessory pyrite and chalcopyrite.
- 351.5-353.8 2.3 Tuffaceous sediment: <sup>gray to</sup> gray-green to <sup>gray to</sup> quartzitic, greywacke with graded bedding: average grain size of blue quartz is 0.25-0.5 mm and coarsens down hole to 1-2 mm where there are angular to subrounded blue quartz <sup>and altered feldspar</sup> grains in a matrix of chlorite, clay, and feldspar. Calcite fracture filling and pyrite occur as accessories.



353.8-356.0 2.2 Arenaceous felsic tuff: cream-colored, ~~to~~ greenish white, and gray green feldspathic tuffaceous sediment with 50% angular blue quartz <sup>up to 4mm</sup> altered, cream coloured feldspar 10-20% in a gray green aphanitic matrix.

356.0 End of hole

### GEOLOGIC SUMMARY

<u>Depth, feet</u>	<u>Thick.</u>	<u>Description</u>	<u>Age</u>
0-17	17.0	No core	
17.0-42.0	35.0	Swift Run formation: white to light-gray, laminated felsic tuffs	Late Precambrian
42.0-181.4	139.4	Swift Run formation: propylitized green andesitic lapilli tuffs	"
181.4-196.2	14.8	Swift Run formation: meta andesite-basalt flow	"
196.2-235.1	38.9	Swift Run formation: altered tuffs with quartz veins, siderite, and chalcopyrite, pyrite, hematite, and goethite.	"
235.1-298.5	63.4	Swift Run formation: andesitic tuffs and flows (?)	"
298.5-333.2	34.7	Swift Run formation: white and reddish brown quartzo-feldspathic tuffaceous sediments	"



GEOLOGIC SUMMARY (cont.)

<u>Depth, ft</u>	<u>Thick, ft</u>	<u>Description</u>	<u>Age</u> Late Precamb (?)
333.2-337.6	5.4	Swift Run formation: tuffaceous sediment intruded by <sup>barren</sup> quartz veins.	(?)
337.6-340.0	2.4	Swift Run formation (?): intrusive andesite dike.	
340.0-356.0	16.0	Swift Run formation: white, gray, gray green, fine to coarse grained felsic tuffs and quartz-feldspathic sediments with angular blue quartz and altered feldspars.	