J.S. Cummings Inc.

LITHOLOGIC LOG

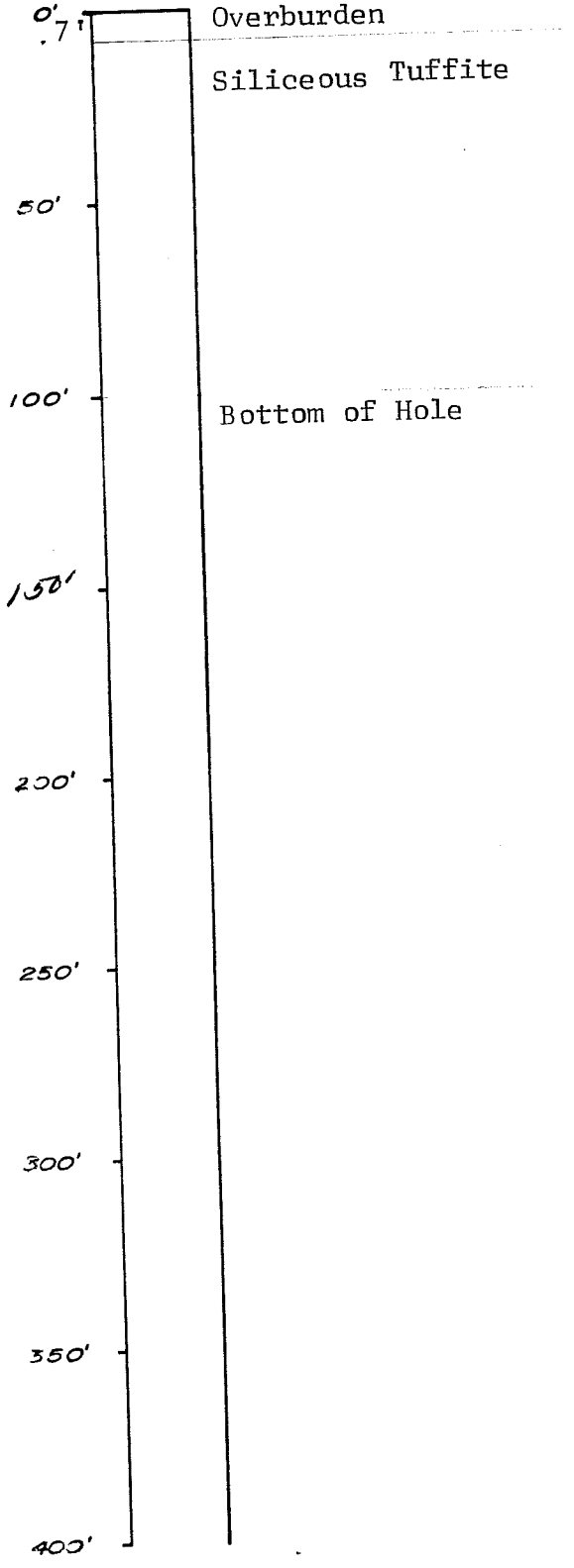
Project Chandler Mtn. Hole no. 98-1 Dip 90° Started 3/28/79 Elev. ____

See Sketch 270-16

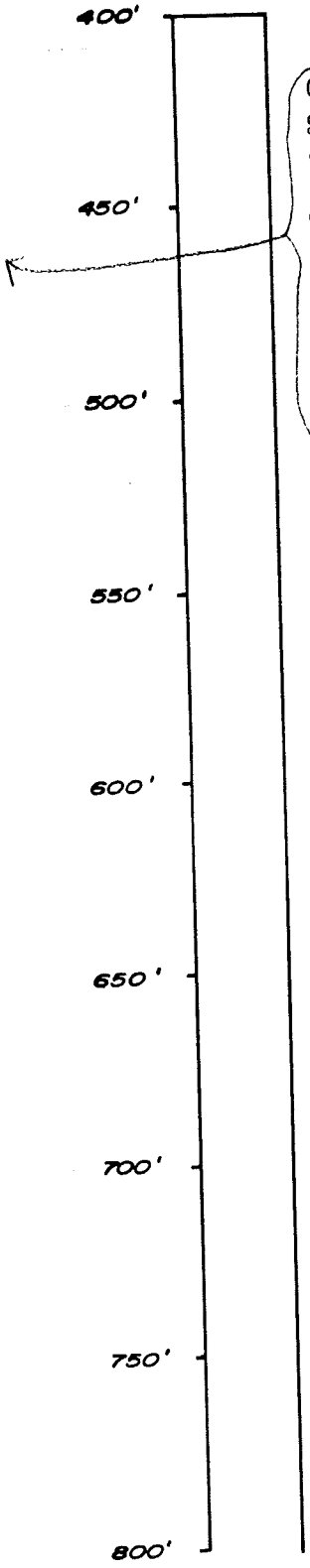
1400E

Job no. 270 Township T9-R8 Coord. 2240N Direction ____ Completed 3/29/79

Lithotype



Lithotype



Grey to dark grey, very fine grained (<gritty tuff) to aphanitic, not as siliceous as tuff unit in CH-1, 15. Layering is 40-50° to axis of core Primarily pyrrhotite mineralization. Graphitic, layers from .1" to 3" thick. As mentioned in CH-15 log, this unit could possibly be a slightly metamorphosed greywacke.

J.S. Cummings Inc.

SULPHIDE LOG

Project Chandler Mtn. Hole no. 98-1 Dip 90° Started 3/28/79 Elev. _____

See Sketch 270-16
2240N

Job no. 270 Township T9-R8 Coord. 1400E Direction _____ Completed 3/29/79

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
7'	53'	46'	2% - 3%	Trace copper	
53'	54'	1'	3% - 5%	Trace copper, arsenic	
54'	62'	8'	2% - 3%	Trace copper	
62'	65'	3'	3% - 5%	Trace copper, arsenic	
65'	100'	35'	2% - 3%	Trace copper	

J.S. Cummings Inc.

LITHOLOGIC LOG

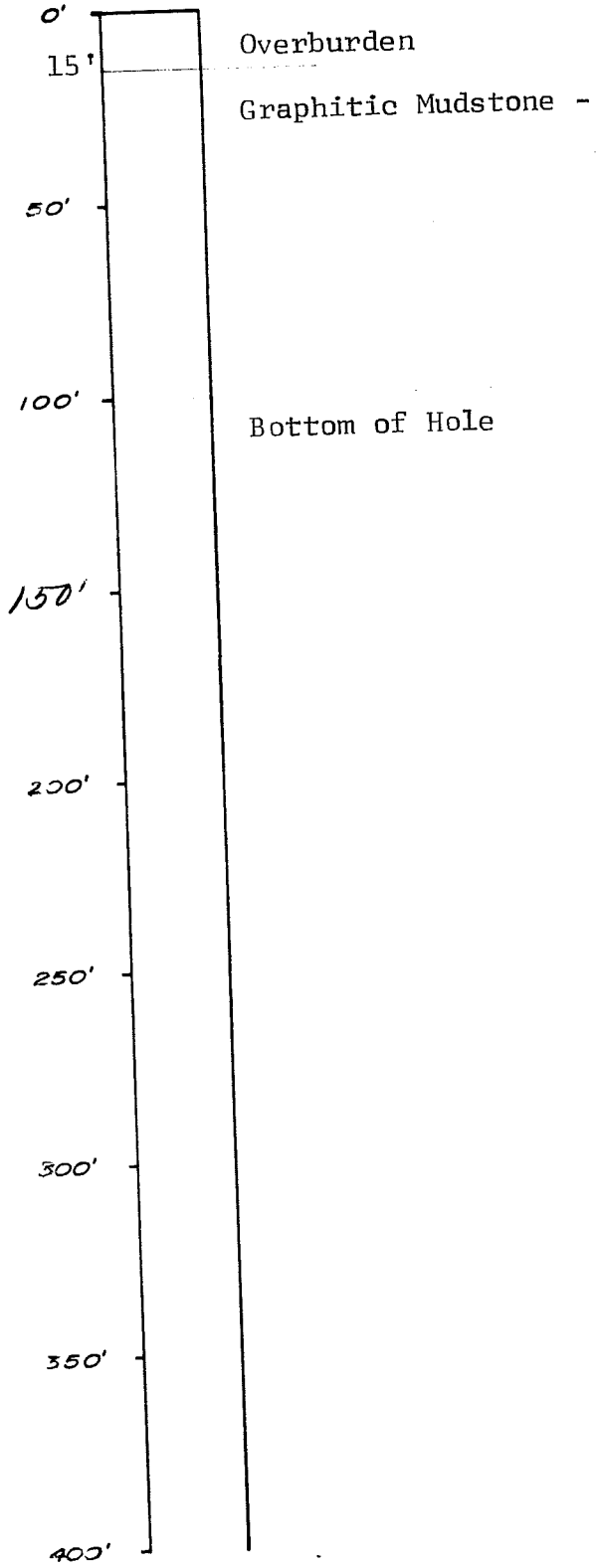
Project Chandler Mtn. Hole no. 98-2 Dip 90° Started 3/29/79 Elev. ____

See Sketch 270-16

420E

Job no. 270 Township T9-R8 Coord. 5410N Direction ____ Completed 3/30/79

Lithotype



Lithotype

Grey to black, varies from mudstone to a siltstone, layering is 20-30° to axis of core. Veins of quartz with calcite. Graphite changes from massive in the mudstone to thin beds (.1"-1") in the siltstone. Indurated more than CH-14, 16 but less siliceous than other mudstone unit within Grid B. Mineralization is thin (1mm) veins of pyrrhot and some chalcopyrite.

J.S. Cummings Inc.

SULPHIDE LOG

Project Chandler Mtn. Hole no. 98-2 Dip 90° Started 3/29/79 Elev. _____

See Sketch 270-16

5410N

Job no. 270 Township T9-R8 Coord. 420E Direction _____ Completed 3/30/79

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
15'	47'	32'	2% - 3%		
47'	49'	2'	3% - 5%	Trace copper	
49'	78'	29'	2% - 3%	Trace copper	
78'	85'	7'	3% - 5%	Trace copper	
85'	100'	15'	2% - 3%		

J.S. Cummings Inc.

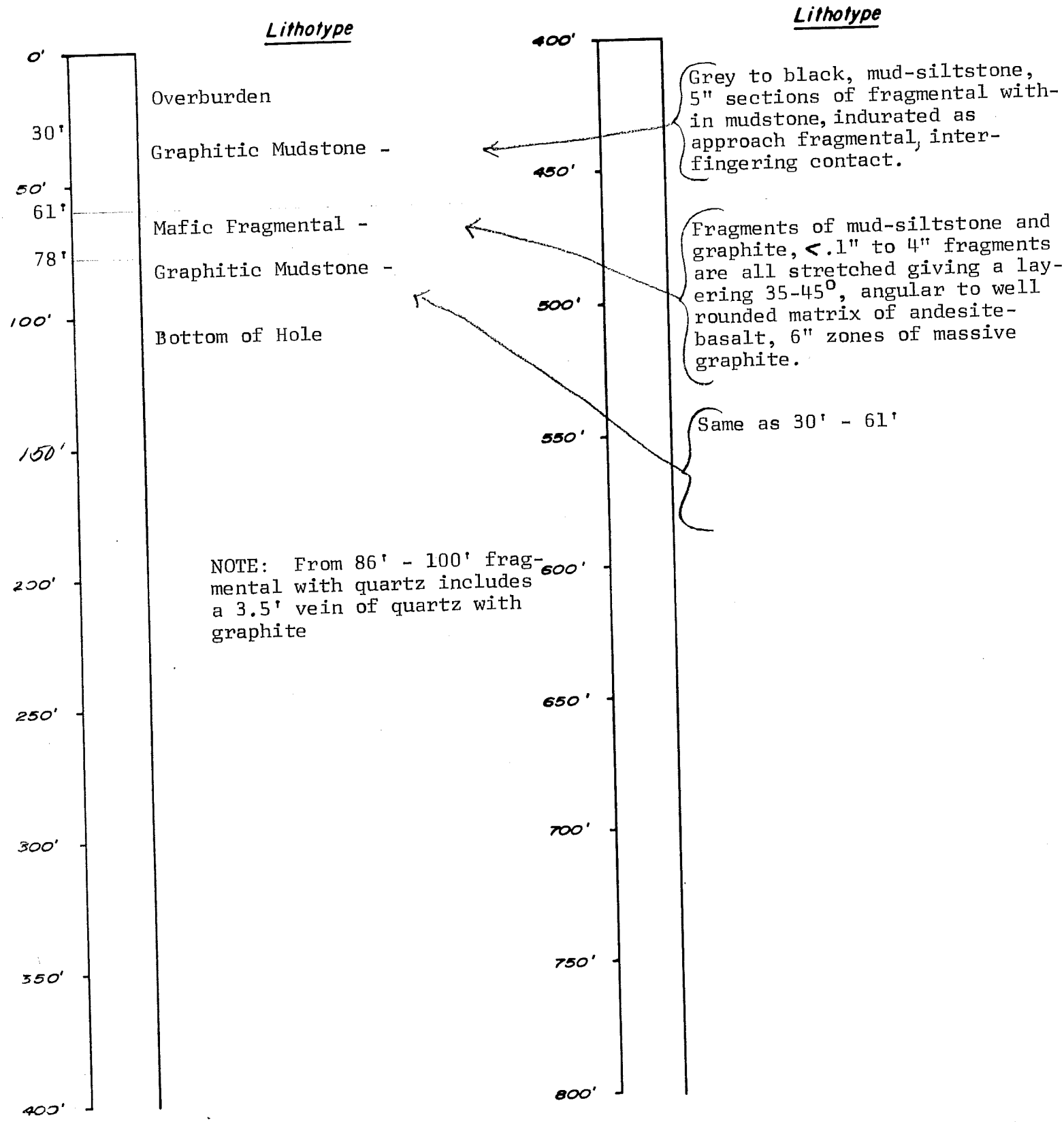
LITHOLOGIC LOG

Project Chandler Mtn. Hole no. 98-3 Dip 90° Started 3/30/79 Elev. ____

See Sketch 270-16

Grid A 870W

Job no. 270 Township T9-R8 Coord. 5780N Direction ____ Completed 4/1/79



J.S. Cummings Inc.

SULPHIDE LOG

Project Chandler Mtn. Hole no. 98-3 Dip 90° Started 3/30/79 Elev. _____

See Sketch 270-16

Job no. 270 Township T9-R8 Coord. 5780N 870W Direction _____ Completed 4/1/79

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
30'	78'	48'	1% - 2%		
78'	86'	8'	2% - 3%		
86'	100'	14'	1% - 2%		

J.S. Cummings Inc.

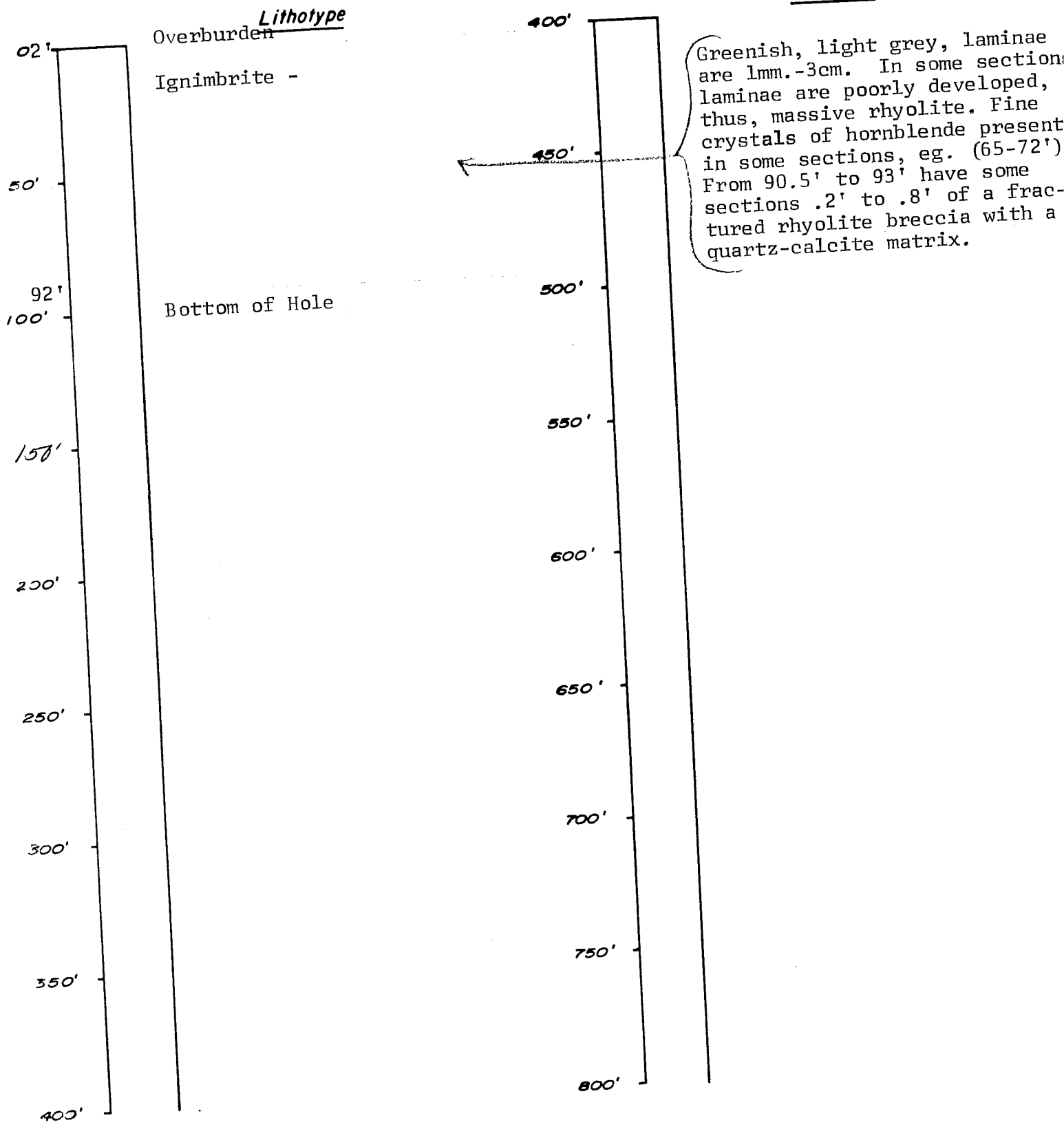
LITHOLOGIC LOG

Project Chandler Mtn. Hole no. 98-4 Dip 90° Started 4/1/79 Elev. ____

See Sketch 270-16

Grid A 2230W

Job no. 270 Township T9-R8 Coord. 6150N Direction ____ Completed Drilling done 4/3/ Stuck in hole,



J.S. Cummings Inc.

SULPHIDE LOG

Project Chandler Mtn. Hole no. 98-4 Dip 90° Started 4/1/79 Elev. _____

See Sketch 270--16
6150N

Job no. 270 Township T9-R8 Coord. 2230W Direction _____ Completed 4/3/79

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
2'	92'	90'	Trace	Trace copper	

J.S. Cummings Inc.

LITHOLOGIC LOG

Project Chandler Mtn. Hole no. 98-5 Dip 90° Started 4/10/79 Elev. ____

Job no. 270 Township T9-R8 Coord. 270-16 Direction See Sketch Completed 4/13/79

N 1/2 - on road

Lithotype

0'
11'
50'
97'
100'
150'
200'
250'
300'
350'
400'

Overburden

Rhyolite -
Green, ignimbrite to massive, very similar to 98-4 but layering is not as well developed, zones of brecciation 65' to 71'

Bottom of Hole

Lithotype

400'
450'
500'
550'
600'
650'
700'
750'
800'

J.S. Cummings Inc.

SULPHIDE LOG

Project Chandler Mtn. Hole no. 98-5 Dip 90° Started 4/10/79 Elev. _____

See Sketch

Job no. 270 Township T9-R8 Coord. 270-16 Direction _____ Completed 4/13/79

N 1/2 - on road

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
11'	97'	86'	Trace		

J.S. Cummings Inc.

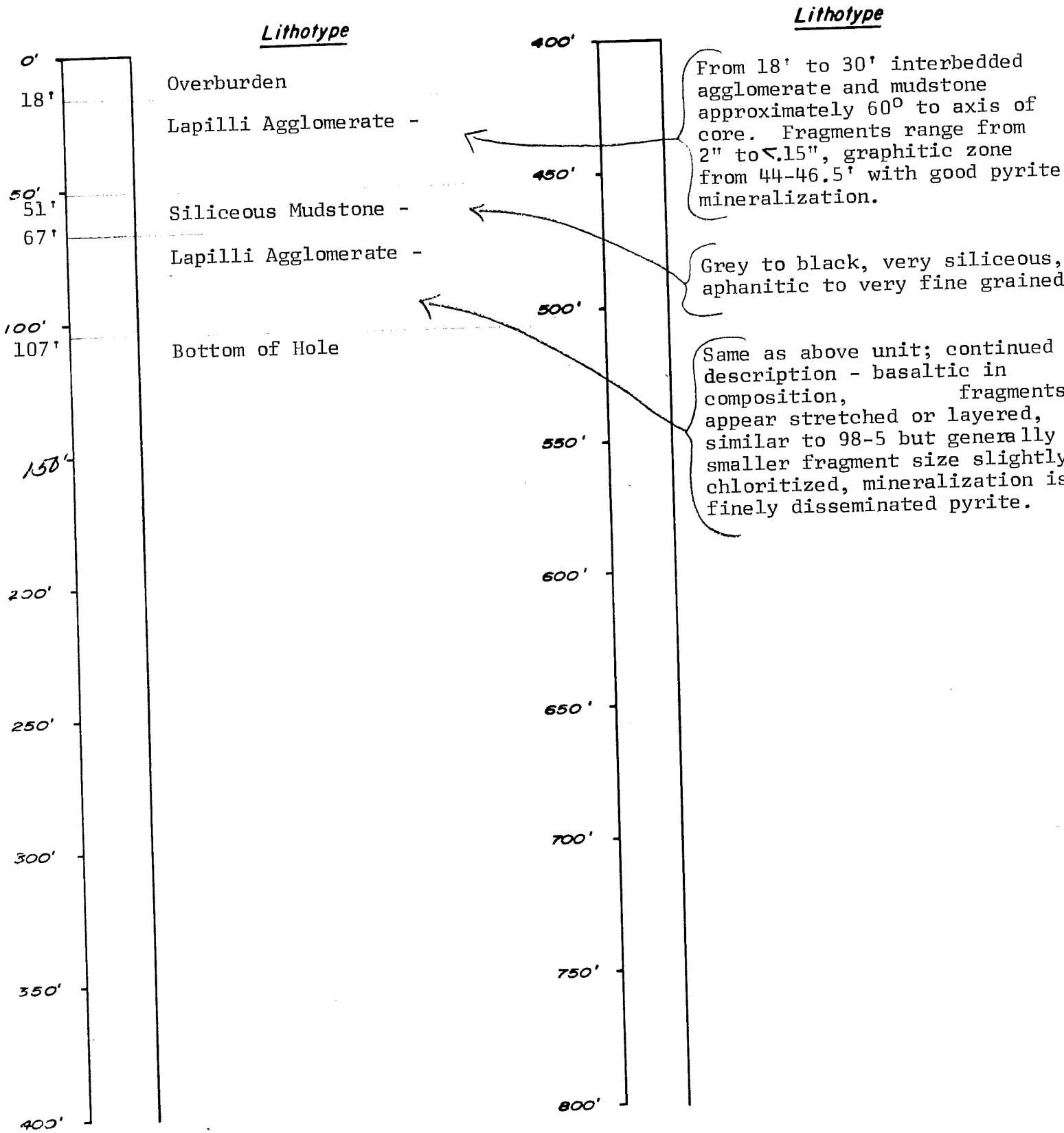
LITHOLOGIC LOG

Project Chandler Mtn. Hole no. 98-6 Dip 90° Started 4/13/79 Elev. ____

See Sketch 270-16

5720W

Job no. 270 Township T9-R8 Coord. 7790N Direction ____ Completed 4/15/79



J.S. Cummings Inc.

SULPHIDE LOG

Project Chandler Mtn. Hole no. 98-6 Dip 90° Started 4/13/79 Elev. _____

See Sketch 270-16
7790N

Job no. 270 Township T9-R8 Coord. 5720W Direction _____ Completed 4/15/79

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
18'	22'	4'	1% - 2%		
22'	44'	22'	2% - 3%	Trace copper	
44'	46.5'	2.5'	7% - 10%		Graphitic zone
46.5'	51.0'	4.5'	2% - 3%		
51.0'	67.0'	16.0'	Trace		
67.0'	107.0'	50.0'	2% - 3%		

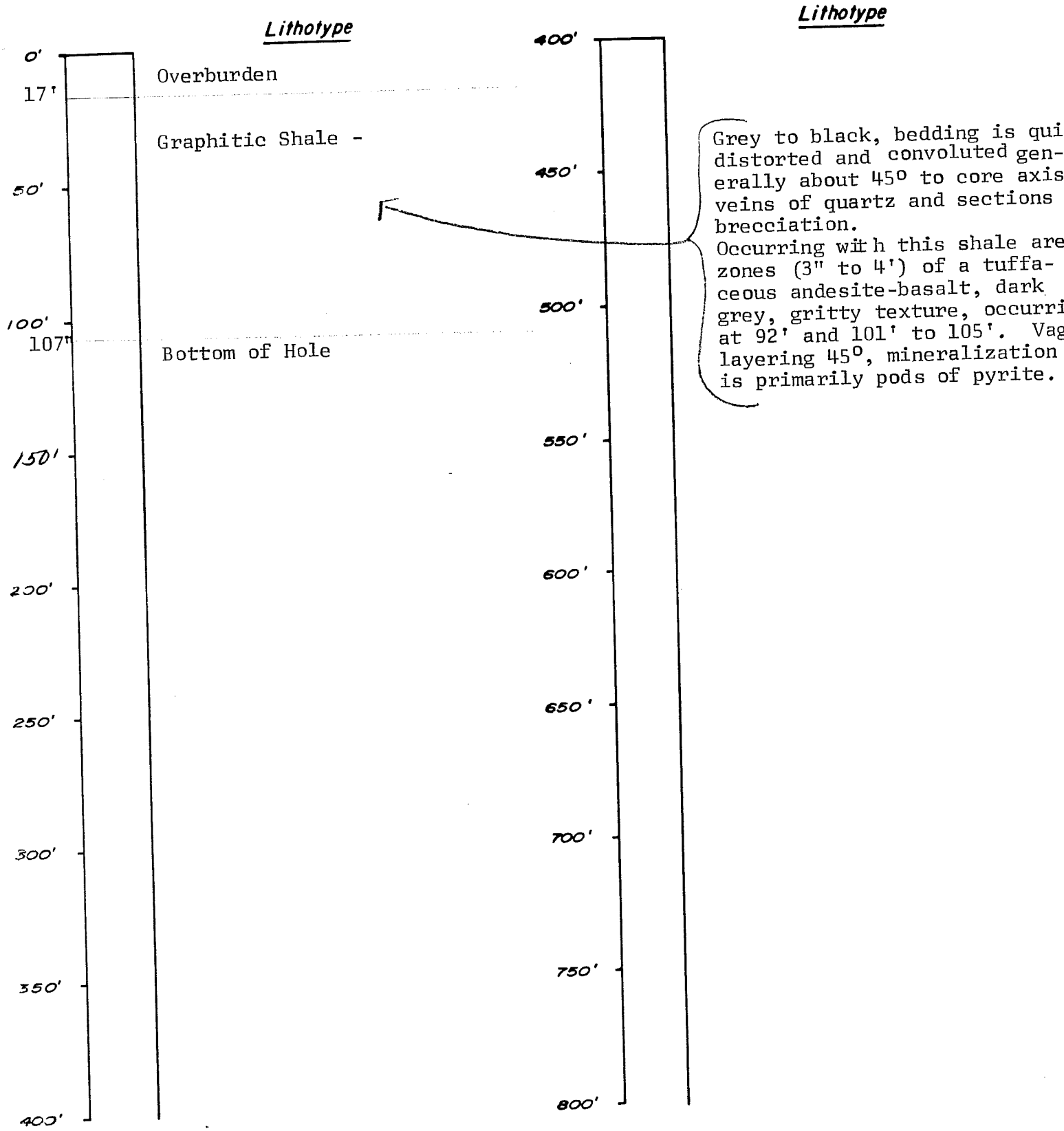
J.S. Cummings Inc.

LITHOLOGIC LOG

Project Chandler Mtn. Hole no. 98-8 Dip 90° Started 4/17/79 Elev. ____

See Sketch 270-16
13960N

Job no. 270 Township T9-R8 Coord. 9940W Direction ____ Completed 4/26/79



J.S. Cummings Inc.

SULPHIDE LOG

Project Chandler Mtn. Hole no. 98-8 Dip 90° Started 4/17/79 Elev. _____

See Sketch 270-16
13960N

Job no. 270 Township T9-R8 Coord. 9940W Direction _____ Completed 4/26/79

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
17'	40'	23'	Trace		
40'	107'	67'	1% - 2%		

J.S. Cummings Inc.

LITHOLOGIC LOG

Project T9-R8-Geology Hole no. 98-9 Dip Vert. Started 4/27/79 Elev. ____

Job no. 270 Township T9-R8 Coord. See Sketch 270-16 Direction N 1/2 - on road Completed 4/30/79

Lithotype

0'

Overburden

31'

Black Shale & Gritty Tuff - mostly composed of a fine grained black sediment (not graphitic), unit is not easily broken along layering. Layering is visible only between the black sediment and minor units (1"-2") of gritty tuff. Layering ranges from 40° to core axis to 30° to core axis.

127'

Bottom of Hole

50' 100' 150' 200' 250' 300' 350' 400'

Lithotype

400' 450' 500' 550' 600' 650' 700' 750' 800'

J.S. Cummings Inc.

SULPHIDE LOG

Project T9-R8 - Geology Hole no. 98-9 Dip Vertical Started 4/27/79 Elev. _____

Job no. 270 Township T9-R8 Coord. 270-16 Direction _____ Completed 4/30/79

See Sketch
N 1/2 - on road

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
31'	127'	96'	1%	None	
	Bottom				

J.S. Cummings Inc. D. Coles

LITHOLOGIC LOG

Project T9-R8 LITHOLOGIC Hole no. 98-10 Dip -45° Started 10/3/81 Elev. ____

Job no. 270 Township T9-R8 Coord. See Sketch 270-16 N.W. 1/4 of T9-R8 Direction 336°mag Completed 10/4/81

Lithotype

0' Overburden

9' Cherty Sediment - grey-green, just softer than hard steel to harder. A possible layer is at 15° to the core axis

20' Bottom

50'

This could be a welded felsic tuff or a chert, very fine grained and siliceous but binoc shows a suggestion of coarser grains than a chert.

100'

200'

250'

300'

350'

400'

J.S. Cummings Inc.

D. Coles

SULPHIDE LOG

Project T9-R8 LITHOLOGIC Hole no. 98-10 Dip -45° Started 10/3/81 Elev. _____

See Sketch

Job no. 270 Township T9-R8 Coord. 270-16 Direction 336°mag Completed 10/4/81

N.W. 1/4 of T9-R8

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
9'	20'	11'	Trace		

D. Coles

J.S. Cummings Inc.

LITHOLOGIC LOG

Project T9-R8 Lithologic **Hole no.** 98-11 **Dip** -45° **Started** 10/4/81 **Elev.** ____

Job no. 270 **Township** T9-R8 **Coord.** 270-16 **Direction** 336° Mag **Completed** 10/6/81

See Sketch
NW 1/4 T9-R8

Lithotype

0'
4' Overburden

Cherty Sediment*- grey to dark grey color, locally layered with layers at ±40° to the core axis and .05" to 1" thick, light green modeled spots of .05"-1/0" diameter are seen locally

39'

Rhyolite - bleached to a light green color, most of it is weathered, all of it can be scratched by hard steel, similar to MU-1 rhyolite in appearance

50'
51'

Cherty Sediment*- same as above cherty sediment, layers are at 40°-60° to the core axis, and .05" to 2" in thickness

100'

119'

Bottom of Hole

150'

* These are more likely welded felsic tuffs - TCW

200'

250'

300'

350'

400'

J.S. Cummings Inc.

D. Coles

SULPHIDE LOG

Project T9-R8 Lithologic Hole no. 98-11 Dip -45° Started 10/4/81 Elev. ____

Job no. 270 Township T9-R8 Coord. 270-16 See Sketch Direction 336° Mag Completed 10/6/81

NW 1/4 T9-R8

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
4	101	98'	Trace	Trace As @ 82.5'	
101	119	18'	<1%	Pyrite, Trace As	104.3-106.6 thi vein with As an pyrite
Bottom of Hole					

D. Coles

J.S. Cummings Inc.

LITHOLOGIC LOG

Project T9-R8 Lithologic Hole no. 98-12 Dip -45° Started 10/12/81 Elev. ____

Job no. 270 Township T9-R8 Coord. 270-16 Direction 336° Mag Completed 10/13/81

See Sketch

NW 1/4 T9-R8

Lithotype

0' Overburden

2' Felsic Tuff - green-grey color with hard white feldspar, frag boundaries are commonly indistinct, some frags have altered to chlorite, locally the rock is hard and siliceous

26.5' Felsic Exhalite with minor Siltstone and Tuff - green to grey-green with grey-purplish siltstone, layered locally with layers at 25°-75° to the core axis and .05"-4" in thickness.

@38' - 4" of felsic tuff, like the above felsic tuff

@61' - 8" of altered felsic tuff with some wispy chlorite and sericite

81'-83' - siltstone with disrupted layers, calcite veins and some hematite with calcite

86'-87' - 6" calcite vein and siltstone

100'

101' Bottom of Hole

150'

2' - 26.5' - coarse welded felsic tuff

26.5' - 101' - fine welded felsic tuffs (from binoc on samples) - TCW

200'

250'

300'

350'

400'

J.S. Cummings Inc. D. Coles

SULPHIDE LOG

Project T9-R8 Lithologic Hole no. 98-12 Dip -45° Started 10/12/81 Elev. _____

Job no. 270 Township T9-R8 Coord. 270-16 See Sketch Direction 336° Mag Completed 10/13/81

NW 1/4 T9-R8

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
2	101	99'	< 1%	Pyrite	
	Bottom of Hole				

D. Coles

J.S. Cummings Inc.

LITHOLOGIC LOG

Project T9-R8 Lithologic Hole no. 98-13 Dip -45° Started 10/13/81 Elev. ____

Job no. 270 Township T9-R8 Coord. 270-16 Direction 336° Mag Completed 10/14/81

See Sketch

NW 1/4 T9-R8

Lithotype

0'
9' Overburden

*Felsic Exhalite - Siltstone - and Felsic Tuff -
grey-green to yellow-green to black-grey, layered with layers at 10°-45° to the core axis

36' Basalt -
porphyry dike, black, medium grained with soft white subhedral to anhedral plagioclase phenocrysts up to .25", chill zones are seen at both ends, the rock coarsens towards the center of the unit

50'

67' *Felsic Tuff -
fine to medium grit sized fragments, grey-green with black modeling locally, commonly layered with layers at 55°-65° to the core axis and .05"-6" thick, minor felsic exhalite with chert and siltstone are present

100'

110' Bottom of Hole

150'

200'

250'

300'

350'

400'

*Coarse and fine welded felsic tuffs (from binoc on samples) - TCW

J.S. Cummings Inc.

D. Coles

SULPHIDE LOG

Project T9-R8 Lithologic Hole no. 98-13 Dip -45° Started 10/13/81 Elev. ____

Job no. 270 Township T9-R8 Coord. 270-16 See Sketch Direction 336° Mag Completed 10/14/81

NW 1/4 T9-R8

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
9	110	101'	<1%	Pyrite	
Bottom of Hole					

D. Coles

J.S. Cummings Inc.

LITHOLOGIC LOG

Project T9-R8 Lithologic Hole no. 98-14 Dip -45° Started 10/14/81 Elev. ____

Job no. 270 Township T9-R8 Coord. 270-16 Direction 336° Mag. Completed 10/15/81

See Sketch

NW 1/4 T9-R8

Lithotype

0'

Overburden

20'

Rhyolite (or Chert?) - grey-green superfine grained, fine grained light and lesser dark particles, looks hard and siliceous, but can be scratched as often as not,
52' - 61' - felsic tuff with gritty and some lapilli up to 1", rhyolite frags, white feldspar and altered fragments

50'

76'

Felsic Tuff - grey-green color, hard and siliceous, very fine to coarse grit sized fragments, locally layered with layers at 70° to the core axis and .4" to .3" thick

100'

115'

Bottom of Hole

150'

20' - 115' - welded felsic tuffs - TCW

200'

250'

300'

350'

400'

J.S. Cummings Inc. D. Coles

SULPHIDE LOG

Project T9-R8 Lithologic Hole no. 98-14 Dip -45° Started 10/14/81 Elev. ____

Job no. 270 Township T9-R8 Coord. 270-16 See Sketch NW 1/4 T9-R8 Direction 336° Mag Completed 10/15/81

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
20	115	95'	< 1%	Pyrite	
Bottom of Hole					

D. Coles

J.S. Cummings Inc.

LITHOLOGIC LOG

Project T9-R8 Lithologic **Hole no.** 98-15 **Dip** -45° **Started** 10/16/81 **Elev.** ____

Job no. 270 **Township** T9-R8 **Coord.** 270-16 **Direction** 336° Ma **Completed** 10/16/81

See Sketch

NW 1/4 T9-R8

Lithotype

0'

Overburden

19'

Hematitic Chert and Siltstone with minor Silty Felsic Exhalite*- the chert and siltstone are maroon in color, the felsic exhalite is tan to green to green-grey, all the rock is fine grained and layered with layers at 55°-85° to the core axis and <.05" to 2" thick

50'

56'

Bottom of Hole

100'

200'

250'

300'

350'

400'

* Sample at 52' of this rock suggests it is either a layered welded felsic tuff (ignimbrite) or a qtz rich (some feldspar?) exhalite - TCW

J.S. Cummings Inc.

D. Coles

SULPHIDE LOG

Project T9-R8 Lithologic Hole no. 98-15 Dip -45° Started 10/16/81 Elev. _____

Job no. 270 Township T9-R8 Coord. 270-16 Direction 336° Mag Completed 10/16/81

See Sketch
NW 1/4 T9-R8

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
19	56	37'	Trace		
Bottom of Hole					

D. Coles

J.S. Cummings Inc.

LITHOLOGIC LOG

Project T9-R8 Lithologic **Hole no.** 98-16 **Dip** -45° **Started** 10/17/81 **Elev.** ____

Job no. 270 **Township** T9-R8 **Coord.** 270-16 **Direction** 336° Mag **Completed** 10/18/81

See Sketch
NW 1/4 of T9-R8

Lithotype

0'

Overburden

19'

Shale -

black to grey, layered with layers at 0°-50° to the core axis and .05"-1.5" thick, qtz veins are common and graphite is seen on some fracture surfaces

50'

100'

120'

Bottom of Hole

150'

200'

250'

300'

350'

400'

J.S. Cummings Inc.

D. Coles

SULPHIDE LOG

Project T9-R8 Lithologic Hole no. 98-16 Dip -45° Started 10/17/81 Elev. ____

Job no. 270 Township T9-R8 Coord. 270-16 See Sketch Direction 336° Mag Completed 10/18/81

NW 1/4 T9-R8

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
19	120	101'	< 1%	Pyrite	
Bottom of Hole					

HOLE #	COORDINATES	DATE COLLARED	DATE COMPLETED	DIP	MAGNETIC BEARING	DEPTH	DRILLED BY
98- 1	See Sketch 270-16	3/28/79	3/29/79	90°		100'	
98- 2	See Sketch 270-16	3/29/79	3/30/79	90°		100'	
98- 3	See Sketch 270-16	3/30/79	4/01/79	90°		100'	
98- 4	See Sketch 270-16	4/01/79	4/03/79	90°		92'	
98- 5	See Sketch 270-16	4/10/79	4/13/79	90°		97'	
98- 6	See Sketch 270-16	4/13/79	4/15/79	90°		107'	
98- 7	See Sketch 270-16	4/16/79	4/17/79	90°		69'	
98- 8	See Sketch 270-16	4/17/79	4/26/79	90°		107'	
98- 9	See Sketch 270-16	4/27/81	4/30/81	Vert.		127'	
98-10	See Sketch 270-16	10/03/81	10/04/81	-45°	336°	20'	County
98-11	See Sketch 270-16	10/04/81	10/06/81	-45°	336°	119'	County
98-12	See Sketch 270-16	10/12/81	10/13/81	-45°	336°	101'	County
98-13	See Sketch 270-16	10/13/81	10/14/81	-45°	336°	110'	County
98-14	See Sketch 270-16	10/14/81	10/15/81	-45°	336°	115'	County
98-15	See Sketch 270-16	10/16/81	10/16/81	-45°	336°	56'	County
98-16	See Sketch 270-16	10/17/81	10/18/81	-45°	336°	120'	County

98 LITHOLOGIC DRILLING (T9-R8)

J. S. CUMMINGS, INC.

E. Skeffington

J.S. Cummings Inc.

LITHOLOGIC LOG

Project Chandler Mtn. North Hole no. CHN-1 Dip -45° Started 5/21/80 Elev. _____

Job no. 270.2 Township T9-R8 Coord. 59900N 29010E Direction N21Emag Completed 5/26/80

Lithotype

0' 5' Overburden

50'

Dacitic Quartz Porphyry
Dark grey, very fine grained, scratchable, speckled with tiny (1/16") white quartz phenocrysts, biotite

100'

At 111' - core exhibits color bands up to 2" wide and lying ±45° to long axis and light green in color with hazy borders

200'

250'

300'

350'

378' 390' Grey Massive Dacite

400' Interlayered Tuffaceous and Graphitic Sediment

400'

450'

469' Bottom of hole

500'

550'

600'

650'

700'

750'

800'

Lithotype

Interlayered Tuffaceous and Graphitic Sediment - Light grey t dark grey, fine grained, scratchable, but difficult. Blebs of Po ~~Porphyry~~ disseminated throughout. Sludge was black with a silvery, greasy (graphite) coating

U.S. Cummings Inc.

SULPHIDE LOG

Project Chandler Mtn. North Hole no. CHN-1 Dip -45° Started 5/21/80 Elev. _____

Job no. 270.2 Township T9-R8 Coord. 29010E, 59900N Direction N21E Completed 5/26/80

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
0	5	Overburden			
5	218	213'	<1%	Malachite bleb at 54' -	Trace Po
218	248	30'	±1%	Po (disseminated blebs, stringers) Trace Chpy	specks,
248	360	112'	<1%		
360	390	30'	±2%	Po, Trace Chpy	
390	469	79'	±5%	Po, Py, Sphalerite?	
	Bottom	of Hole			
	NOTE:	short sections - containing micro-sulphides est. at ±10%, overall est. at ±2-5% (blebs, stringers and disseminated)			

DDH CHN-1 - (Assays for Portion of Hole)

DEPTH (FEET) FROM COLLAR	LENGTH	% Zn	% Cu	% Pb	Oz/Ag	Oz/Au	Approx. % Sulphide	As	Ni	Co	Mo
398 - 400	2'	0.10	0.006		0.2	Trace	5.8	None	None	None	None
410 - 420	10'	0.05	0.012		0.4	None	5.4	None			None
420 - 430	10'	0.05	0.006		0.4	None	5.1	None			None
Sludge Sample		Trace	0.189	None			4.0	None			0.013

Bottom of Hole: 469'

J. S. CUMMINGS, INC.

J.S. Cummings Inc. E. Skeffington

LITHOLOGIC LOG

Project Chandler Mtn. North Hole no. CHN-2 Dip -45° Started 5/26/80 Elev. ____

Job no. 270.2 Township T9-R8 Coord. 60380N 29390E Direction 201° Completed 6/3/80

Lithotype

0'
5' Overburden

Massive Dacite
grey, fine grained, scratchable,
Locally exhibits the small (1/32")
rounded, euhedral quartz phenocrysts
Locally showing thin (1/4" to 1/2")
Light green colored bands or bleached
veins - Some biotite

50'

100'

150'

181' Interlayered Tuffaceous and Graphitic Sediment
light grey to black, very fine grained, graphitic, siliceous,

200'

227' Tuffaceous Sediment - Grey, layered!
238' fine grained

Bottom

250'

300'

350'

400'

Lithotype

400'

500'

550'

600'

650'

700'

750'

800'

U.S. Cummings Inc.

SULPHIDE LOG

Project Chandler Mtn. North Hole no. CHN-2 Dip -45° Started 5/26/80 Elev. _____

Job no. 270.2 Township T9-R8 Coord. 60380N 29390E Direction 201° Completed 6/3/80

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
0	5	Overburden			
5	180	175'	<1%	Po, specks and stringers	
180	227	47'	±2% - 5%	Py, Po blebs, stringers	
227	238	11'	<2%	Py, Po blebs, stringers	
	Bottom of Hole				

DDH CHN-2 - (Assays for Portion of Hole)

DEPTH (FEET) FROM COLLAR	LENGTH	% Zn	% Cu	% Pb	Oz/Ag	Oz/Au	Approx. % Sulphide	As	Ni	Co	Mo
205 - 207	2'	Trace	0.006		0.9	Trace	2.8	None	None	None	None
208 - 218	10'	None	0.006		0.2	None	3.7				

Bottom of Hole: 238'

J. S. CUMMINGS, INC.

C. Mattson

J.S. Cummings Inc.

LITHOLOGIC LOG

Project Chandler North Hole no. CHN-9 Dip Vertical Started 7/1/80 Elev. ____

Job no. 270.2 Township T9-R8 Coord. 60864N 27788E Direction ____ Completed 7/2/80

Lithotype

0' Overburden

13' Gabbro - Medium grained - visible ilmenite and magnetite throughout

31' Altered Rhyolite - Soft and bleached looking - Fine grained phenocrysts - mostly quartz
Sharp boundary at both contacts

50'

71' Gabbro - Finer grained than above.
Abundant ilmenite and magnetite throughout

100'

110' Bottom

200'

250'

300'

350'

400'

Lithotype

400'

450'

500'

550'

600'

650'

700'

750'

800'

U.S. Cummings Inc.

C. Mattson

SULPHIDE LOG

Project Chandler North Hole no. CHN-9 Dip Vertical Started _____ Elev. _____

Job no. 270.2 Township T9-R8 Coord. 60864N 27788E Direction _____ Completed 7/2/80

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
0	13'	13'	Overburden		
13'	110'	97'	<1%	Py, Aspy	
	Bottom				

C. Mattson

J.S. Cummings Inc.

LITHOLOGIC LOG

Project Chandler North Hole no. CHN-10 Dip -45° Started 7/4/80 Elev. _____

Job no. 270.2 Township T9-R8 Coord. 60430N 27789E Direction 246° Mag Completed 7/8/80

Lithotype

0' 4' Overburden

Gabbro -
Medium grained, massive, not magnetic Ilmenite visible disseminated throughout the core. Few flecks of copper in hole, also few blebs of zinc. Arsenopyrite laths visible in two distinct bleached veins at 42 feet and 83 feet

105' Bottom

50' 100' 150' 200' 250' 300' 350' 400' 450' 500' 550' 600' 650' 700' 750' 800'

Lithotype

ACID TESTS

Depth	Apparent	Actual
105'	53°	46°

U.S. Cummings Inc.

C. Mattson

SULPHIDE LOG

Project Chandler North Hole no. CHN-10 Dip -45° Started 7/4/80 Elev. ____

Job no. 270.2 Township T9-R8 Coord. 60430N 27789E Direction 246° Mag Completed 7/8/80

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
0'	4'	4'	Overburden		
4'	105'	101'	1%	Py, Po, Chpy, Aspy and Sph. - Chalcopyrite at 25' Arsenopyrite at 42' and 83'	

C. Mattson

J.S. Cummings Inc.

LITHOLOGIC LOG

Project Chandler North Hole no. CHN-11 Dip -45° Started 7/9/80 Elev. ____

Job no. 270.2 Township T9-R8 Coord. 60433N 28137E Direction North 21°mag Completed 7/16/80

Lithotype

0'
4' Overburden

Gabbro -
Medium - coarse grained, massive, grey-green colored. Minor veins which bleach gabbro contain tiny needles of arsenopyrite. Il-menite and magnetite are also present in small amounts

50'

89' Contact with Rhyolite abrupt

98.5' Rhyolite - fine grained, grey-green colored with minor phenocrysts

100'

Gabrro -
Medium - coarse grained, massive, Same as above but with no visible arsenopyrite

200'

250'

280' Bottom

300'

350'

400'

400'

450'

500'

550'

600'

650'

700'

750'

800'

Lithotype

ACID TESTS

Depth	Apparent	Actual
200'	53°	47°
280'	53°	47°

U.S. Cummings Inc.

C. Mattson

SULPHIDE LOG

Project Chandler North Hole no. CHN-11 Dip -45° Started 7/9/80 Elev. ____

Job no. 270.2 Township T9-R8 Coord. 60433N 28137E Direction North 21° mag Completed 7/16/80

FROM	TO	INTERVAL	EST. % SULPHIDES	EST. METAL (Cu, Pb, Zn)	ALTERATION
0'	4'	4'	Overburden		
4'	89'	85'	<1%	Py, Po, Chpy, Aspy	
89'	280'	191'	<1%	Py, Po, chpy	
	Bottom				