

LITHOLOGIC LOG

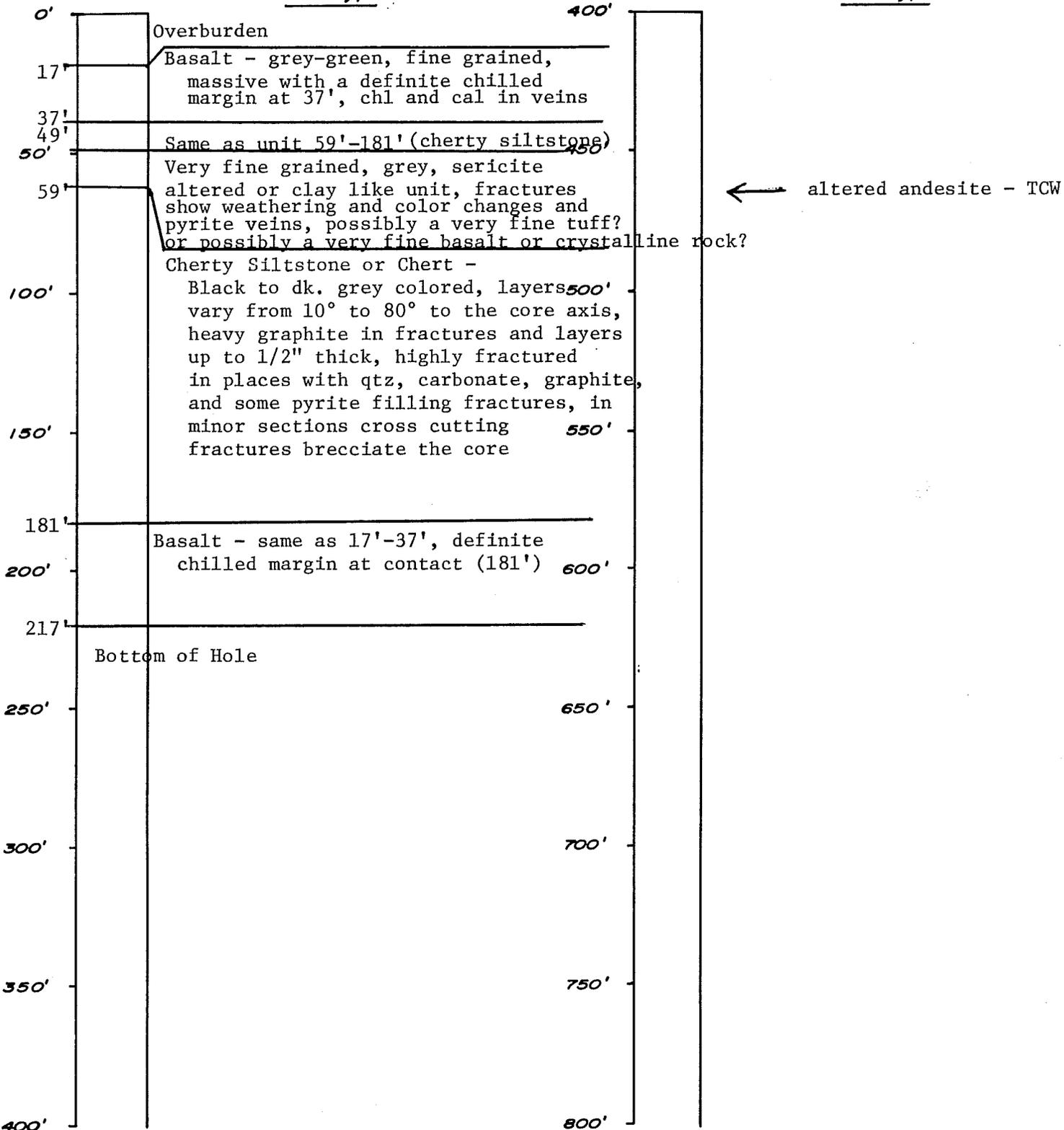
Project T9-R9 Lithologic Hole no. 99-1 Dip -45° Started 5/12/81 Elev.       

Job no. 271 Township T9-R9 See Sketch  
 Coord. 271-6 Direction 156° Mag Completed 5/13/81

NW 1/4 - near Mooseleuk Mtn.

Lithotype

Lithotype



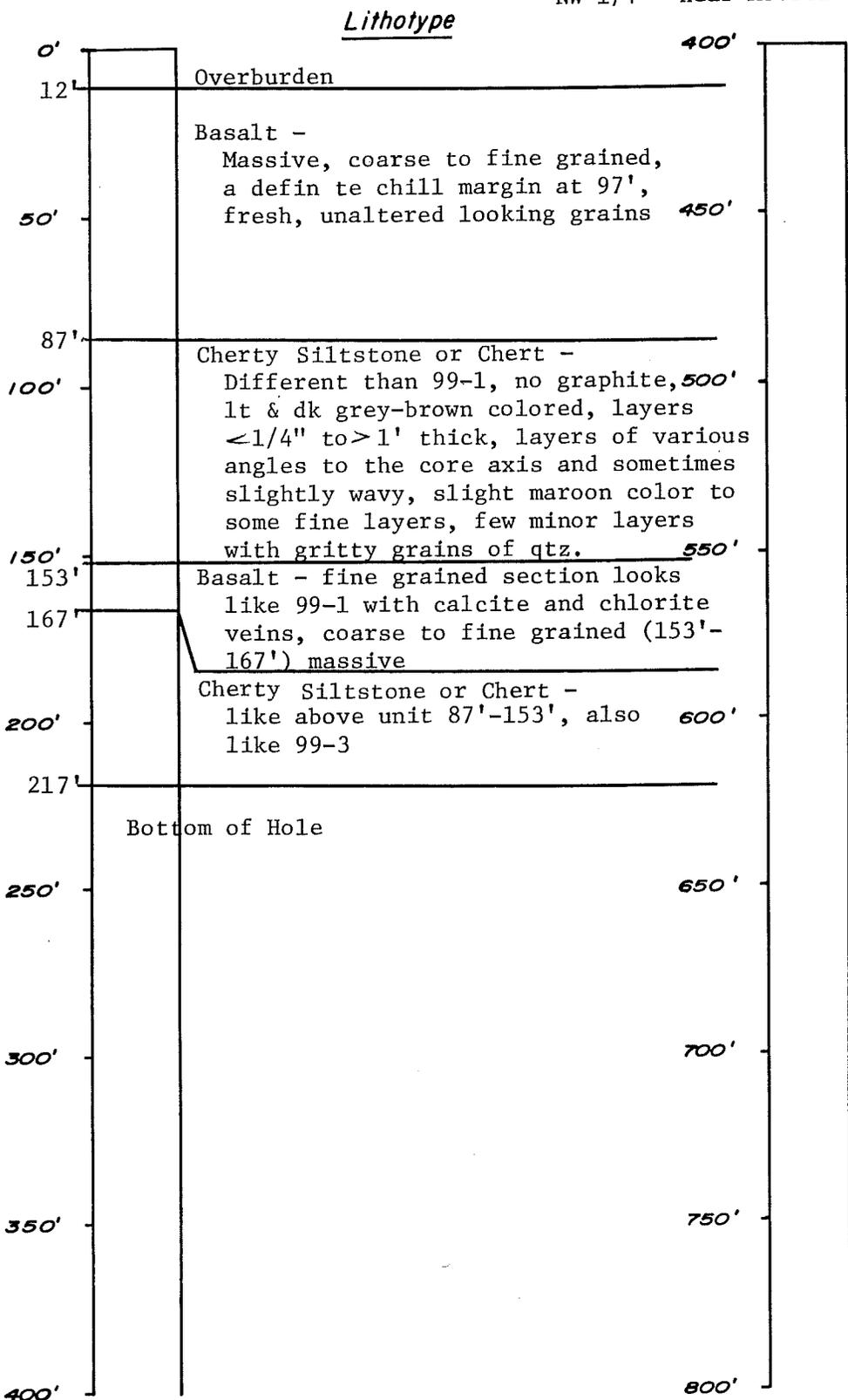


LITHOLOGIC LOG

Project T9-R9 Lithologic Hole no. 99-2 Dip -45° Started 5/14/81 Elev.         

Job no. 271 Township T9-R9 See Sketch  
 Coord. 271-6 Direction 156° Mag Completed 5/15/81

NW 1/4 - near Mooseleuk Mtn.



Lithotype

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

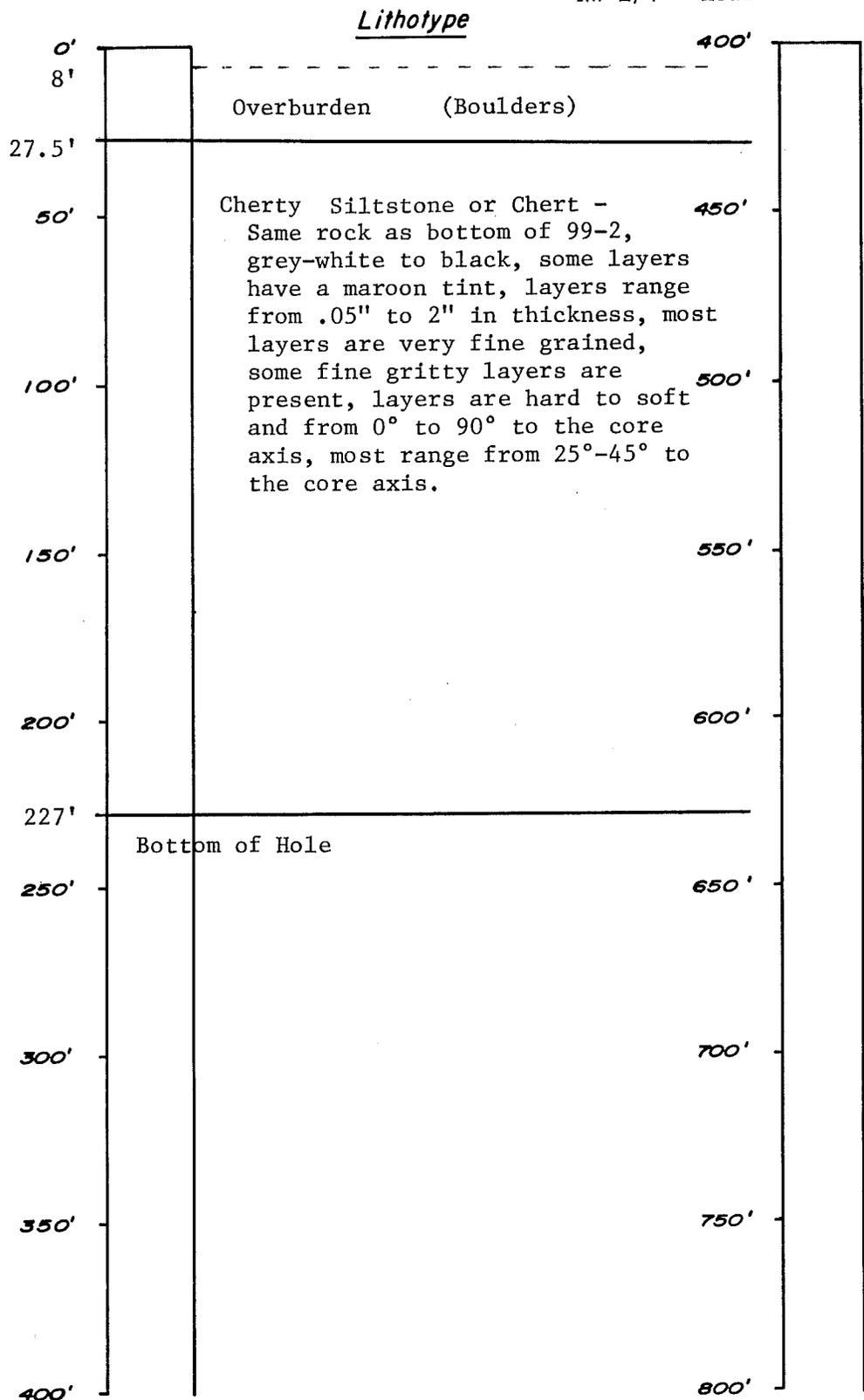


LITHOLOGIC LOG

Project T9-R9 Lithologic Hole no. 99-3 Dip -45° Started 5/16/81 Elev.       

Job no. 271 Township T9-R9 See Sketch  
Coord. 271-6 Direction 156° Mag Completed 5/18/81

NW 1/4 - near Mooseleuk Mtn.



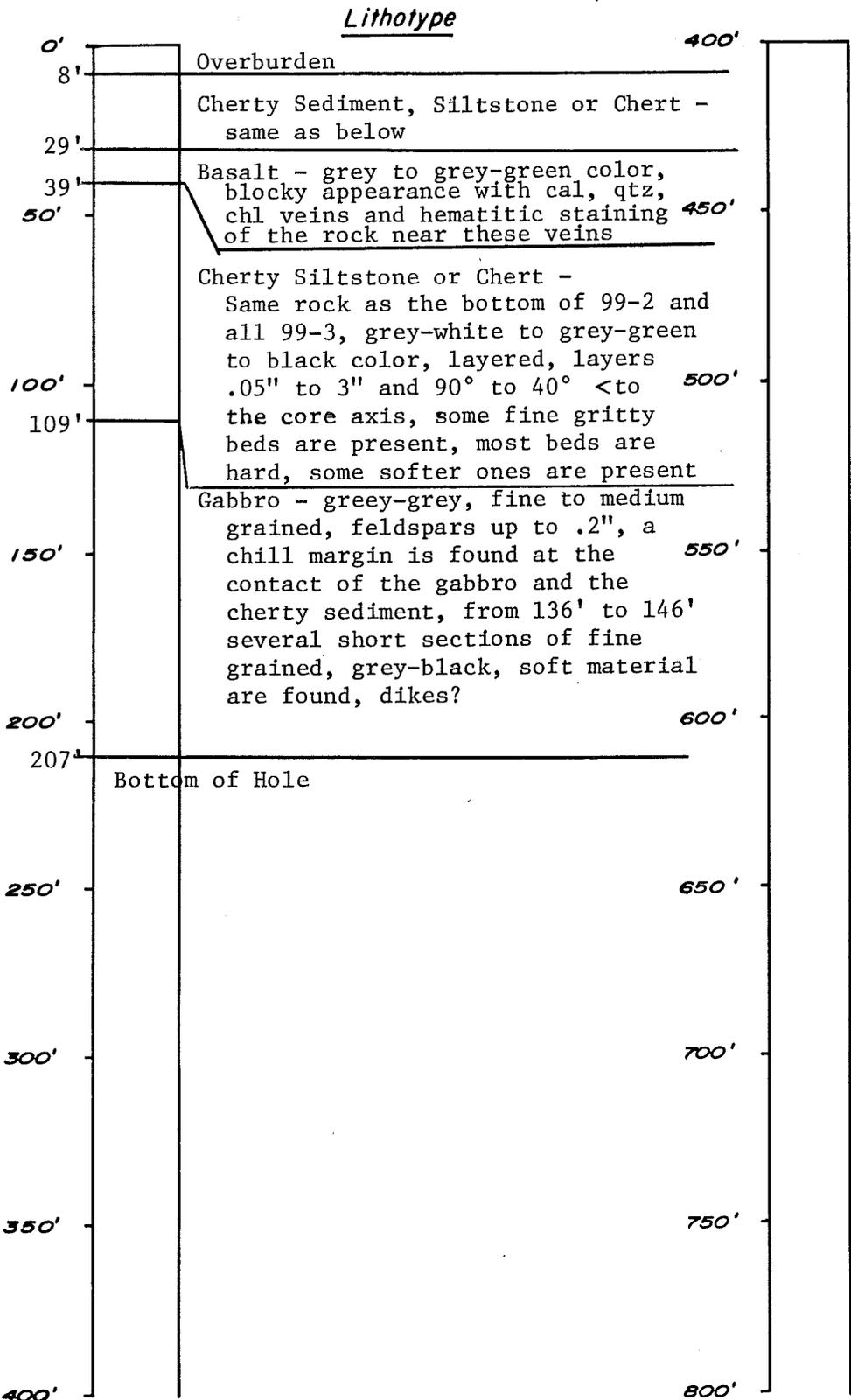
Lithotype



LITHOLOGIC LOG

Project T9-R9 Lithologic Hole no. 99-4 Dip -45° Started 5/19/81 Elev.         

Job no. 271 Township T9-R9 See Sketch  
 Coord. 271-6 Direction 4° Mag. Completed 5/27/81  
 NW 1/4 - near Mooseleuk Mtn.



Lithotype

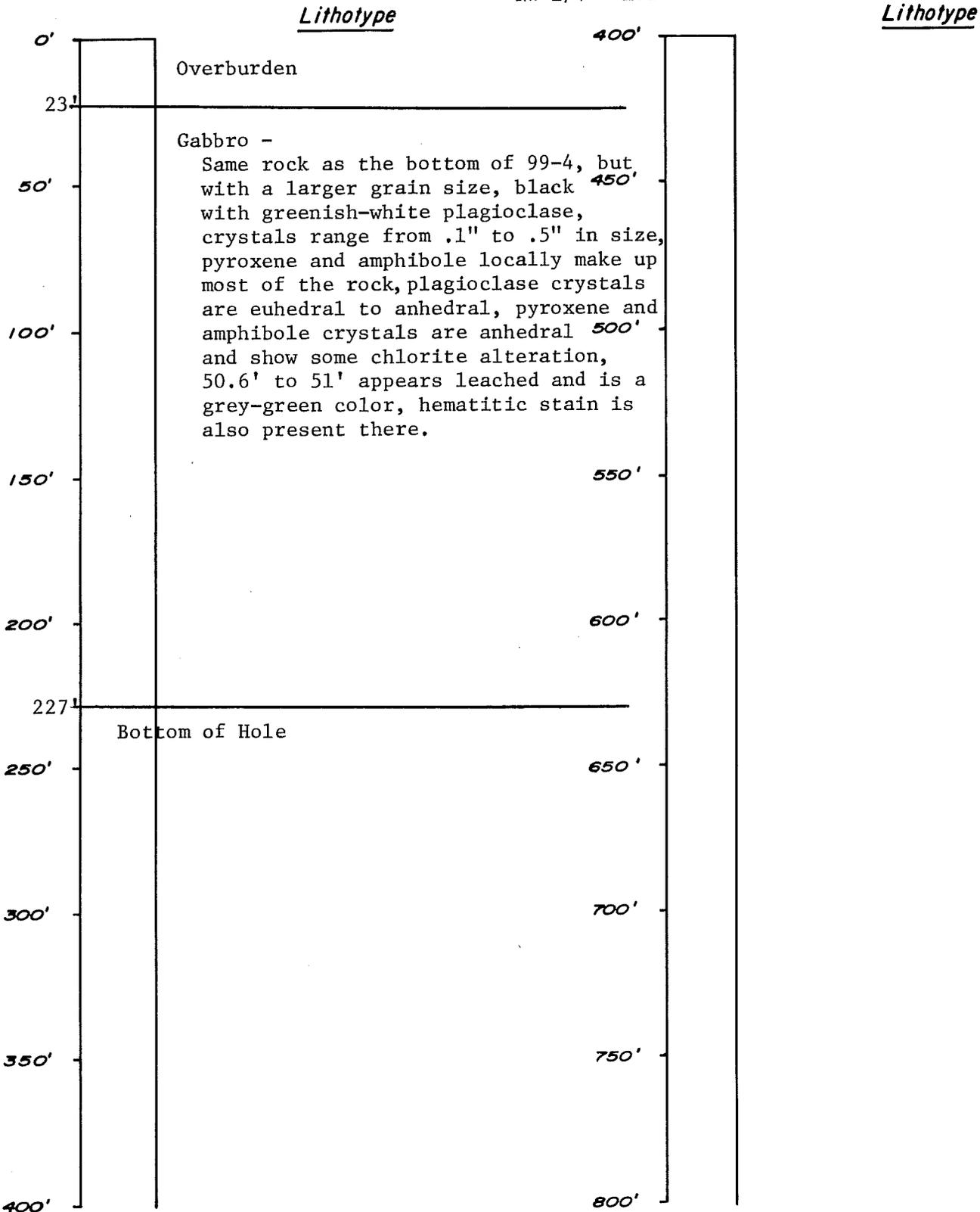


LITHOLOGIC LOG

Project T9-R9 Lithologic Hole no. 99-5 Dip -45° Started 5/27/81 Elev.       

Job no. 271 Township T9-R9 See Sketch  
 Coord. 271-6 Direction 156° Mag Completed 5/28/81

NW 1/4 - near Mooseleuk Mtn.



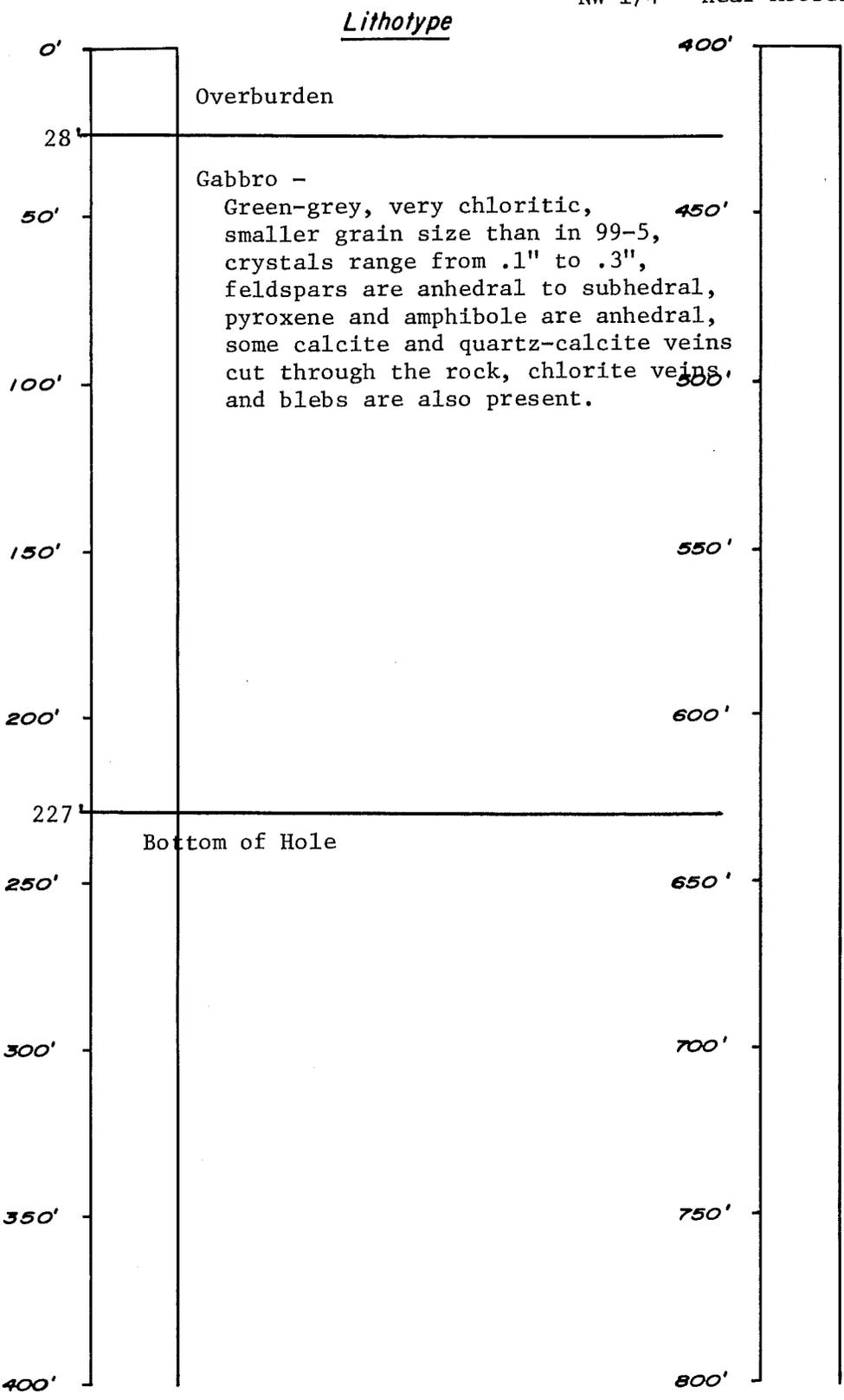


LITHOLOGIC LOG

Project T9-R9 Lithologic Hole no. 99-6 Dip -45° Started 5/29/81 Elev.         

Job no. 271 Township T9-R9 See Sketch  
Coord. 271-6 Direction 156° Mag Completed 5/31/81

NW 1/4 - near Mooseleuk Mtn.



Lithotype



J.S. Cummings Inc.

LITHOLOGIC LOG

Project T9-R9 Lithologic Hole no. 99-7 Dip -45° Started 6/1/81 Elev.       

Job no. 271 Township T9-R9 Coord. 271-6 Direction 156° Mag Completed 6/8/81

See Sketch  
NW 1/4 - near Mooseleuk Mtn.

Lithotype

0'	Overburden
10'	
23'	Cherty Siltstone and Chert - same as 54' - 186'
50'	Basalt - grey, fine grained with chill zones on both sides, calcite and quartz veins are common
54'	Tuffaceous Cherty Siltstone and Chert -
78'	Grey to grey-green color, generally fine grained but contains some fine grit and gritty sections, silicified sections are also present, good layers are present and are at 30° to 90° to the core axis
84'	
100'	78'-84' - hematitic chert and siltstone, hard with thin soft sections, maroon color
150'	These rocks are very fine grained and it is difficult to assess the amount of ash. They appear to be at least somewhat tuffaceous (TCW)
186'	
200'	Felsic Tuff w/ Lapilli Fragments or Agglomerate - grey-green to black stained, contains felsic fragments (2 colors-black and grey), plagioclase and some quartz crystals and dark chloritic grains, the matrix is fine grained and soft, lapilli sized fragments are present and become common after 208', locally weakly altered*
215'	
	Bottom of Hole
250'	
300'	
350'	
400'	

\*Two samples show about two varieties of rounded and angular lapilli, fine grained siliceous fragments with a matrix of quartz crystals, feldspar (hard) crystals with many corners rounded, and a siliceous micro matrix (TCW)

RE-EVALUATION BASED ON BINOCULAR EXAMINATION OF  
DRILL CORE IN OFFICE

99-7

- 10 - 23 - Welded Felsic Tuff? or Rhyolite -  
Drill log says this section is the same as 54'-186'.  
Based on available core in office I don't think so.  
Sample at 10.5' is mostly hard, lt. green and micro-  
crystalline, containing a few black and white specks,  
and a few round qtz crystals. Sample at 20' has a  
grey-brown siliceous, very hard microcrystalline  
groundmass or matrix containing abundant chalky white  
grains. Both samples could be either a welded felsic  
tuff or rhyolite. White qtz veins cross cut section.  
Examine core at 10.5' and 20'.
- 23 - 54 - Basalt -  
grey, fine grained, massive and fractured; continuing  
qtz, chlorite, and calcite along veins, examined core  
at 30', 40', and 50'.
- 54 - 78 - Mixed Fine Felsic Tuffs -  
mixed fine felsic tuff and granular felsic tuff -  
fine felsic tuff is lt. green, layered, very fine  
grained (microcrystalline qtz-sericite?) and varies  
from soft to mostly hard, contains abundant kaolin  
like white flecks and a few white angular feldspars  
and rounded calcite pods;  
granular (welded?) felsic tuff is coarser grained with  
equa-granular welded looking sericitic feldspars,  
minor fine dark grains and some chalky white kaolin  
like grains;  
lots of white calcite and qtz in veins criss-cross  
section, examined core at 60' and 70'
- 78 - 84 - Hematitic Cherty Siltstone -  
granular looking, fine grained, alternating hard and  
soft, weakly banded red sediment, weakly tuffaceous  
and calcareous, examined 2 core pieces at 80'
- 84 - 186 - Mixed Fine Felsic Tuffs -  
fine granular felsic tuff with some gritty tuff and  
complex broken mixed tuff (and siltstone?) sections;  
  
Sample at 90' is a lt. green layered gritty tuff with  
dark green, grey, pinkish-tan and white rock fragments.  
Grains and fragments are layered, sub-rounded, and  
rounded.

99-7 (Cont'd)

- 84 - 186 - (Cont'd)  
Samples at 100', 110', 120', and 140' are mostly soft grey-green fine granular felsic tuffs, layered with a granular or sugary texture and becoming coarser grained at 140'. At the bottom of section (samples at 160' and 180') fine granular felsic tuff is mixed with coarser gritty granular tuff and cherty siltstone (?), with layers highly fractured into complex pieces. Examined samples at 90', 100', 110', 120', 140', 160', and 180'.
- 186 - 215 - Proximal Felsic Agglomerate (with abundant dk. weakly altered felsic tuff matrix)  
dk. grey, fine grained, sericitic-qtz matrix containing abundant angular, broken, scratchable feldspars plus some qtz crystals and minor black soft rock frags, contains some sub-rounded grey siliceous (at 200') and lt. green felsic volcanic (at 215') lapilli sized rock frags (up to 3/4"); examined core at 200' and 215'.



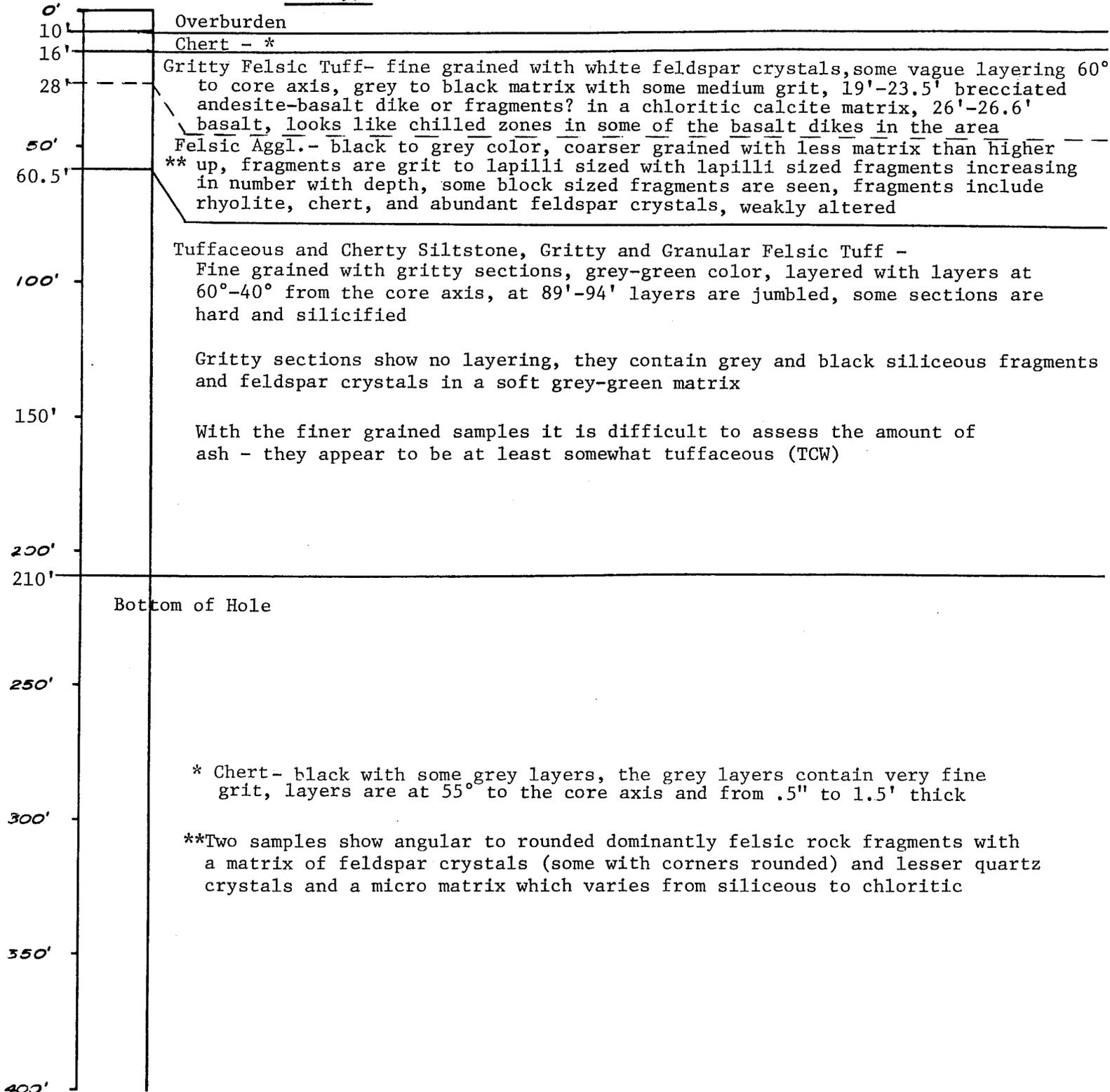
LITHOLOGIC LOG

Project T9-R9 Lithologic Hole no. 99-8 Dip -45° Started 6/8/81 Elev. \_\_\_\_\_

Job no. 271 Township T9-R9 See Sketch  
Coord. 271-6 Direction 156° Mag Completed 6/10/81

NW 1/4 - near Mooseleuk Mtn.

Lithotype



RE-EVALUATION BASED ON BINOCULAR EXAMINATION OF  
DRILL CORE IN OFFICE

99-8

- 10 - 16 - Welded Felsic Tuff (or possible chert?) -  
dk. grey with lt. grey-white bands, very hard, core  
has a very fine sugary texture and contains minor  
visible angular qtz crystals and some chalky white  
(kaolin?) grains, examined core at 10'.
- 16 - 28 - Felsic Gritty Tuff -  
fairly good looking felsic tuff with some grit, thin  
and patchy micro matrix contains abundant angular  
scratchable broken feldspars and some qtz crystals,  
plus quite abundant grey siliceous rock fragments and  
minor black siliceous rock fragments;  
drill log also notes 19'-23.5' brecciated andesite-  
basalt dike or fragments and 26'-26.6' brecciated  
basalt (no samples of this in office), examined core  
at 30'
- 28 - 60.5 - Proximal Felsic Agglomerate (with abundant felsic  
gritty tuff matrix) -  
micro matrix of lt. green sericite with dk. green  
chlorite locally and containing abundant, mostly  
hard feldspars, slightly coarser grained and slightly  
less angular than feldspars in above unit; Core also  
contains more abundant grit sized rock frags than  
in above unit. This unit contains ~ 20-50% angular  
and sub-rounded lapilli sized (mostly felsic) rock  
frags. Abundance, size, and variety of lapilli frags  
increase towards bottom of unit. Core at 50' contains  
20-25% lapilli rhyolite and other felsic volcanic  
frags, up to 1/2" in size. Core at 59' contains 30-40%,  
mostly rhyolites plus a few dacties, felsic tuffs, and  
tuffaceous siltstone frags, up to 1.0" in size.  
Examined core at 50' and 59'.
- 60.5- 200 - Mixed Fine Felsic Tuffs -  
mixed layered fine granular felsic tuff and felsic  
gritty granular tuff, some welded felsic tuff sections;  
Most samples in this section are either fine granular  
felsic tuffs (70', 90') or slightly coarser grained  
gritty and granular felsic tuff with layered fine equa-  
granular matrix containing minor grit sized rock frags  
(110', 170', and 210'). Some core samples show mixed  
layers of both (130', 150'). Drill log notes some sec-  
tions are hard and silicified. Sample at 190' is a  
probable welded felsic tuff. Examined samples at 90',  
110', 130', 150', 170', 190', and 210'.



LITHOLOGIC LOG

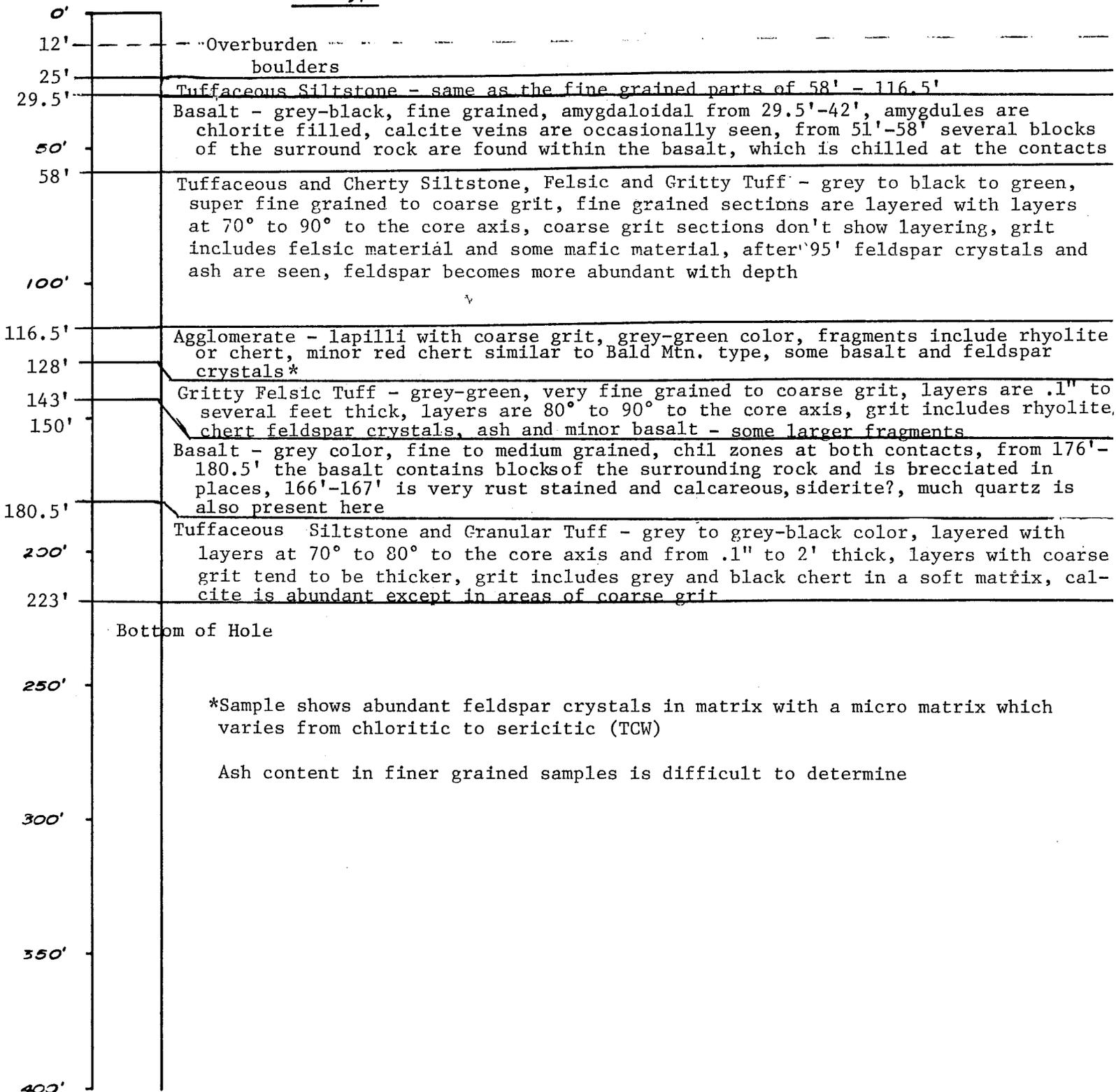
Project T9-R9 Lithologic Hole no. 99-9 Dip -45° Started 6/11/81 Elev. \_\_\_\_\_

See Sketch

Job no. 271 Township T9-R9 Coord. 271-6 Direction 156° Mag Completed 6/13/81

NW 1/4 - near Mooseleuk Mtn.

Lithotype



RE-EVALUATION BASED ON BINOCULAR EXAMINATION OF  
DRILL CORE IN OFFICE

99-9

- 25 - 29.5 - Andesite (or andesite tuff?) -  
very fine grained (interlocking?) feldspar  
and (some qtz?) some chlorite and fine visible  
magnetic grains, examined sample at 22.
- 29.5 - 58 - Basalt -  
fine grained, grey-green and massive with 5-10%  
medium grained parallel aligned chloritic amyg-  
dules, examined core at 37'.
- 58 - 116.5 - Mixed Fine Felsic Tuffs -  
fine granular felsic tuff and gritty granular fel-  
sic tuff (plus weakly altered felsic tuff?);  
Fine granular felsic tuff varies from grey to tan  
and hard to soft. Core at 77' contains some green  
slightly coarser gritty granular felsic tuff bands.  
Core at 97' contains grit sized feldspars and qtz  
crystals welded into a very fine grained soft green  
slightly granular textured matrix. This is a weak-  
ly altered felsic tuff? Examined core at 57', 77',  
and 97'.
- 116.5 - 143 - Proximal Felsic Agglomerate with Felsic Gritty Tuff  
Matrix -  
micro matrix of lt. green sericite with dk. green  
chlorite locally and containing abundant scratchable  
white angular feldspars and abundant grit sized rock  
fragments; This unit contains a variety of abundant  
(up to 60%?) lapilli sized (up to 2.0") rock frags  
including various rhyolites, dacites, and green fel-  
sic tuffs. Some of the felsic volcanics are highly  
chloritized. Note minor presence of angular Bald  
Mtn. type chert lapilli fragments.  
From 128'-143' abundance of lapilli sized frags drops  
off and feldspars contained in matrix are smaller, a  
bit more rounded, and layered. Drill log calls unit  
from 128'-143' a gritty felsic tuff and notes occur-  
rence of larger lapilli fragments. Examined core at  
120' and 137'.

99-9 (Cont'd)

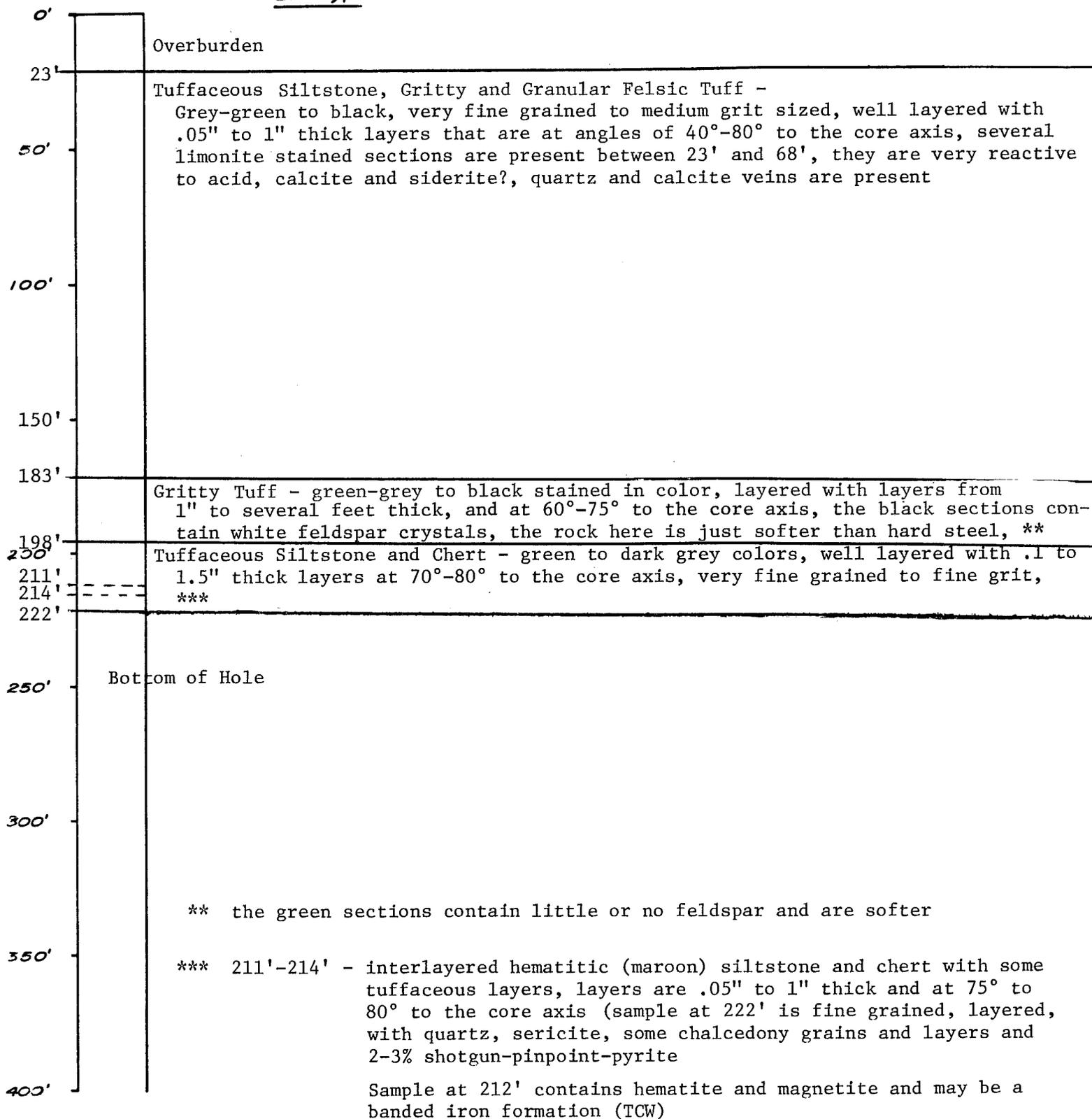
- 143 - 180.5 - Andesite? (or possible dacite?) -  
Drill log says basalt but both samples in office are something more siliceous than basalt. Sample at 157' is probably a medium grained massive andesite containing abundant soft grey plag laths plus white chalky looking calcareous grains (with possible epidote in centers?) plus lt. grey-green sericite/chlorite grains. Sample at 177' is also a probable andesite with very fine interlocking sericitically altered plag and some qtz grains. Sample at 177' could also be a dacite. This sample shows abundant limonite staining. Examined core at 157' and 177'.
- 180.5 - 223 - Mixed Felsic Tuffs -  
mixed fine granular felsic tuff and felsic gritty granular tuff;  
grey, weakly gritty and layered, fine equa-granular felsic tuff at 197', a green gritty granular slightly coarser grained felsic tuff at 217' and a mix of the two at 223'; examined core at 197', 217', and 223'.



J.S. Cummings Inc.

LITHOLOGIC LOGProject T9-R9 Lithologic Hole no. 99-10 Dip -45° Started 6/15/81 Elev.       Job no. 271 Township T9-R9 See Sketch  
Coord. 271-6 Direction 156° Mag Completed 6/16/81

NW 1/4 - near Mooseleuk Mtn.

Lithotype

CL Woodard  
March 1, 1982

RE-EVALUATION BASED ON BINOCULAR EXAMINATION OF  
DRILL CORE IN OFFICE

99-10

- 23 - 183 - Mixed Felsic Tuffs and Felsic Gritty Tuffs - mixed fine granular felsic tuff and felsic gritty granular tuff, very fine grained, grey and soft, granular felsic tuff mixed with layers of coarser grained, slightly harder lt. grey-green granular felsic tuff; some sections orange limonite stained with some calcite associated with limonite stained layers (log says from 23'-68'); examined samples at 30', 50', 70', 90', 110', 130', 150', and 170'.
- 183 - 198 - Dark Felsic Gritty Tuff - dk. grey micro matrix of qtz and minor sericite contains abundant angular and sub-rounded broken white and slightly scratchable feldspars plus some fine qtz crystals plus 5-10% black hard and a few soft grit sized rock frags, grains look weakly layered into matrix, (drill log notes also green colored sections, softer and containing little to no feldspars - no samples in office); examined sample at 190'.
- 198 - 222 - Banded Tuffaceous Siltstone (magnetic, hematitic and weakly cherty from 211'-214') and Fine Grained Felsic Tuff??
- (A) 200-211 - Banded Tuffaceous Siltstone - sample at 210' shows fine alternating very weakly hematitic maroon layers and lt. greyish-green layers, all layers very soft and sericitic and containing very minor fine feldspar and qtz crystals.
- (B) 211-214 - Banded Iron Formation? - banded tuffaceous, hematitic, magnetic, and weakly cherty siltstone containing red hematitic and cherty bands and lesser harder maroon and pale green bands, bands are .05-1.0" thick, core at 212' is quite strongly magnetic, weakly calcareous and weakly tuffaceous with visible fine qtz crystals, black magnetite, and calcite crystals layered into matrix.
- (C) 214-222 - Fine Granular Felsic Tuff? - somewhere between 214' and 222' lithology changes back to a fine granular felsic tuff (lt. grey), soft and layered, very fine equigranular grains, only very weakly gritty, could be a siltstone?.

Examined core at 210', 212', and 222'.



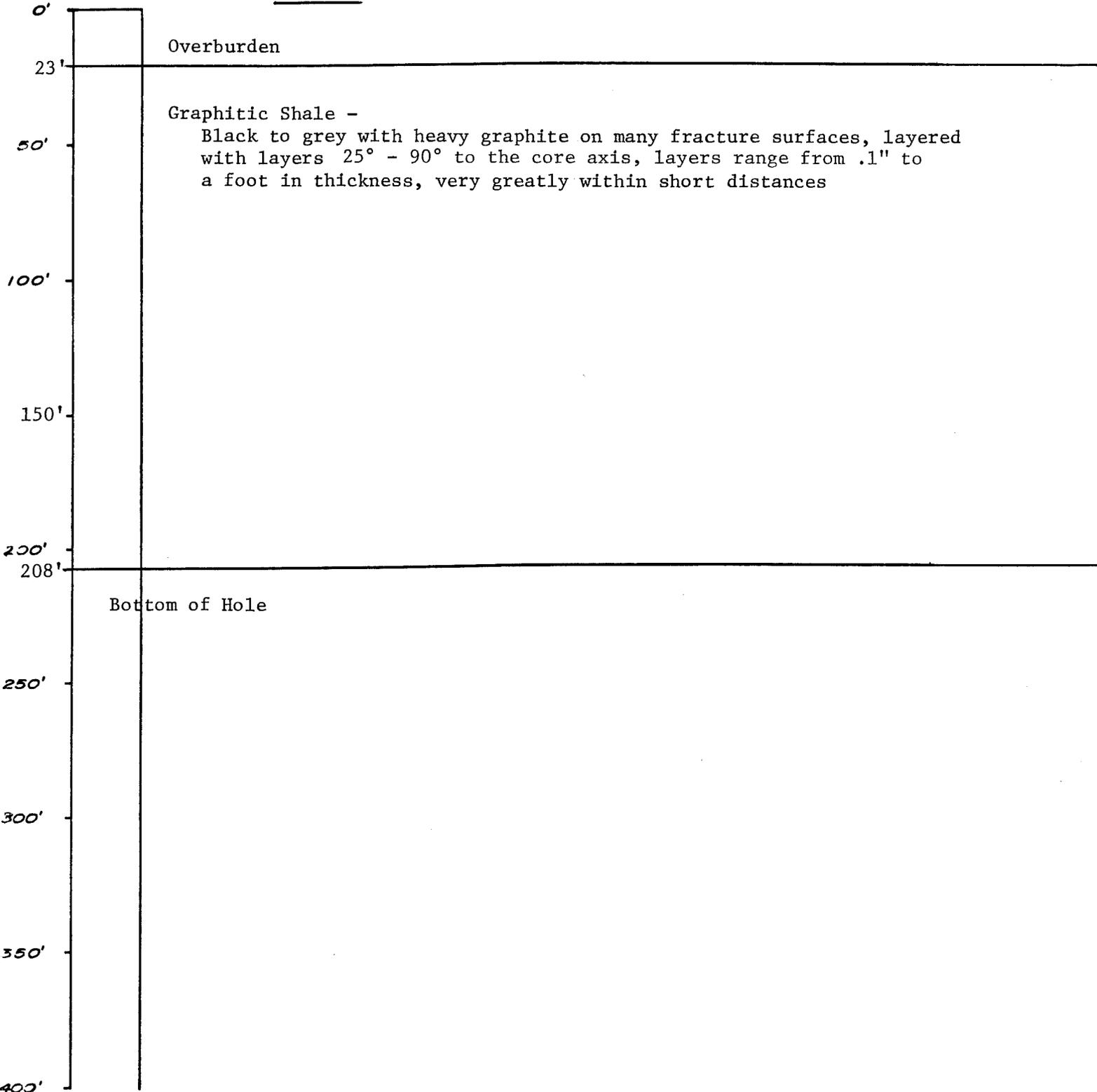
LITHOLOGIC LOG

Project T9-R9 Lithologic Hole no. 99-11 Dip -45° Started 6/22/81 Elev.       

Job no. 271 Township T9-R9 Coord. 271-6 Direction 156° Mag Completed 6/23/81

NW 1/4 - near Mooseleuk Mtn.

Lithotype





J.S. Cummings Inc.

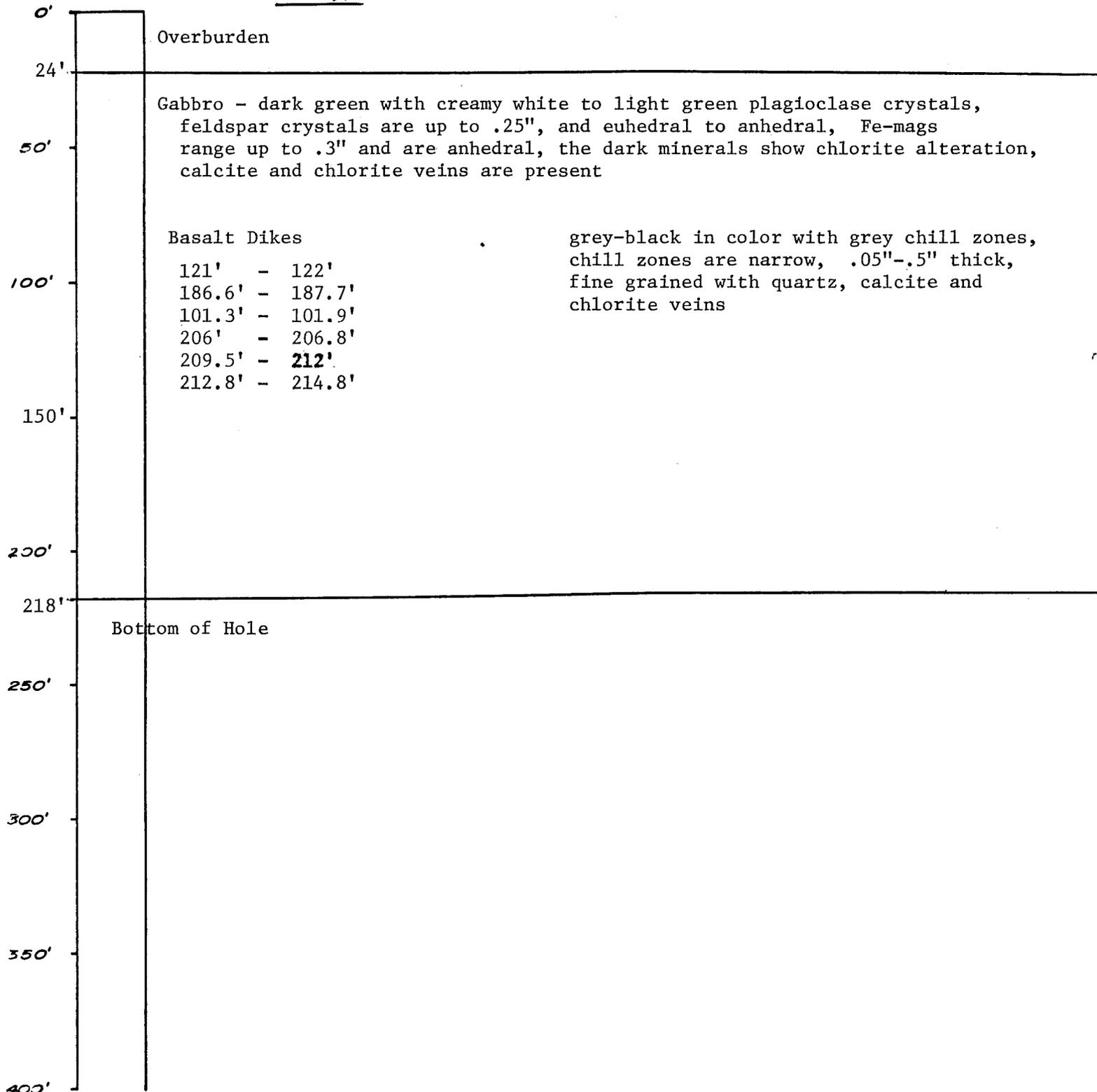
LITHOLOGIC LOG

Project T9-R9 Lithologic Hole no. 99-12 Dip -45° Started 6/24/81 Elev.       

Job no. 271 Township T9-R9 Coord. 271-6 Direction 156° Mag. See Sketch Completed 6/25/81

NW 1/4 - near Mooseleuk Mtn.

Lithotype





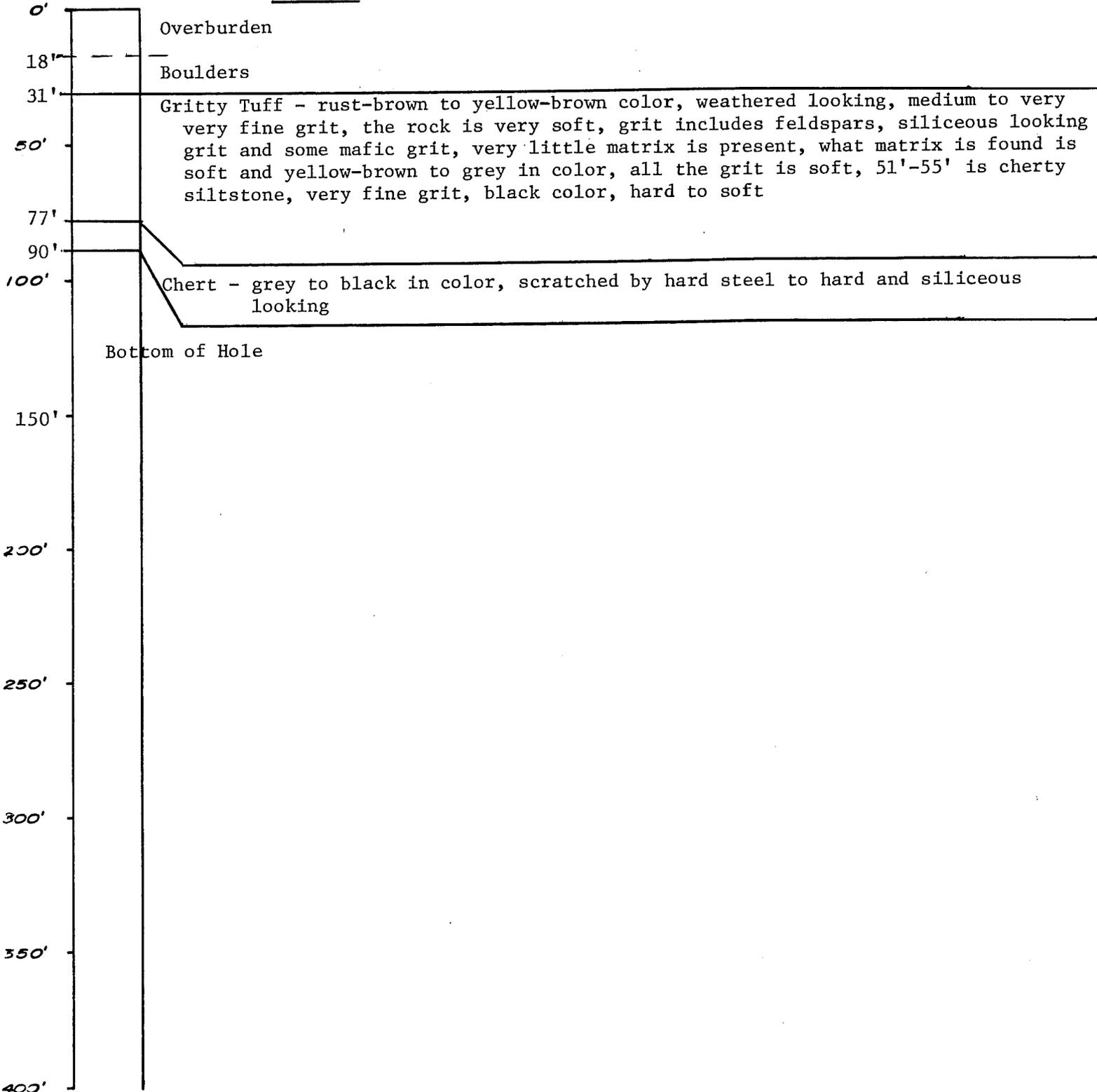
LITHOLOGIC LOG

Project T9-R9 Lithologic Hole no. 99-13 Dip -45° Started 6/27/81 Elev.       

Job no. 271 Township T9-R9 See Sketch Coord. 271-6 Direction 156° Mag Completed 6/29/81

SW 1/4 - N of Norway Bluff

Lithotype





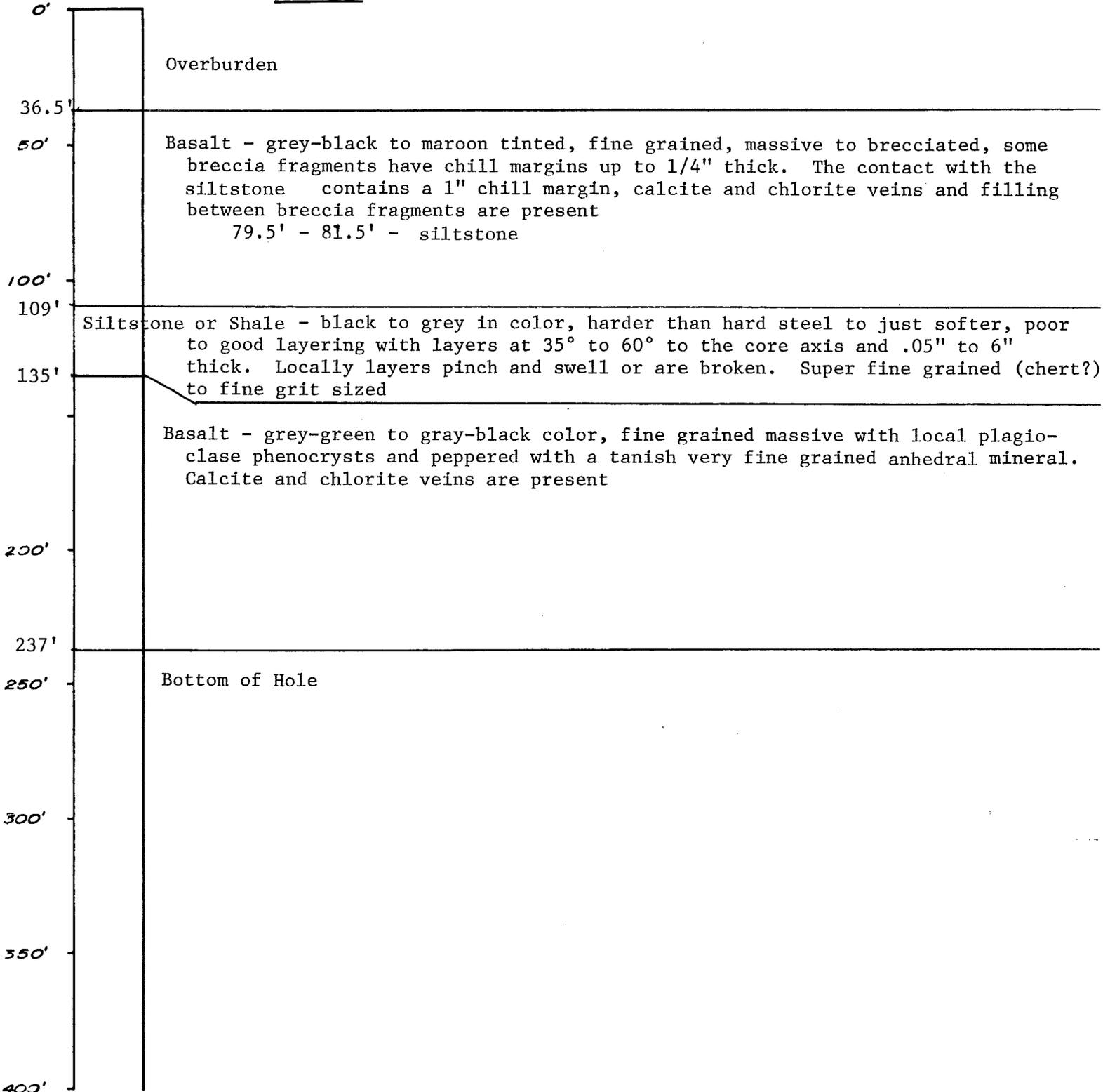
LITHOLOGIC LOG

Project 99 LITHOLOGIC DRILLING Hole no. 99-14 Dip -45° Started 6/30/81 Elev. \_\_\_\_\_

Job no. 271 Township T9-T9 See Sketch  
Coord. 271-6 Direction 156°mag Completed 7/8/81

SW 1/4 - N of Norway Bluff

Lithotype





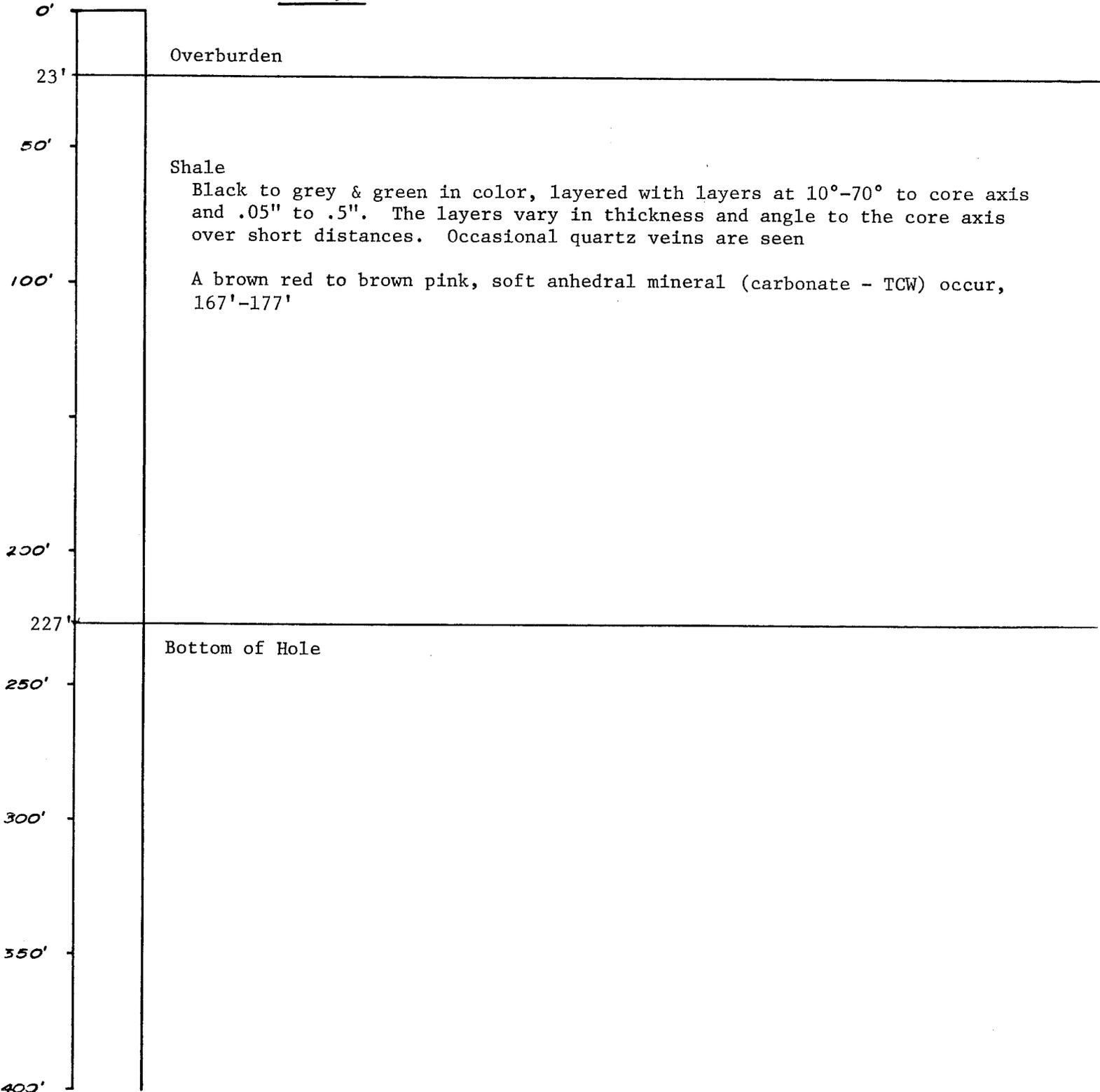
LITHOLOGIC LOG

Project 99 LITHOLOGIC DRILLING Hole no. 99-15 Dip -45° Started 7/9/81 Elev.       

Job no. 271 Township T9-R9 See Sketch  
Coord. 271-6 Direction 156° mag Completed 7/11/81

SW 1/4 - N of Norway Bluff

Lithotype





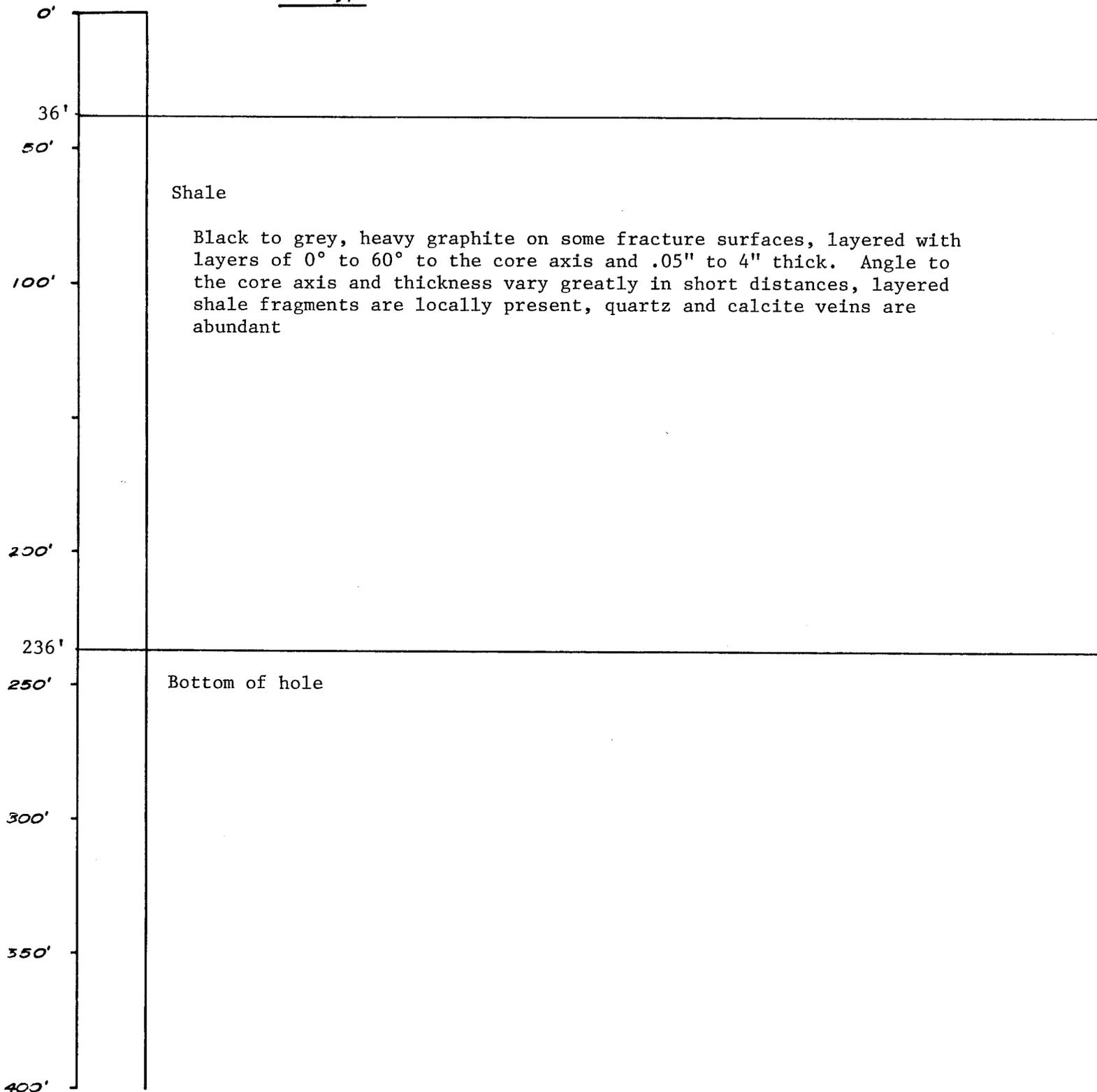
LITHOLOGIC LOG

Project 99 Lithologic Drilling Hole no. 99-16 Dip -45° Started 7/11/81 Elev. \_\_\_\_\_

Job no. 271 Township T9-R9 See Sketch  
Coord. 271-6 Direction 156°mag Completed 7/14/81

SW 1/4 - N of Norway Bluff

Lithotype





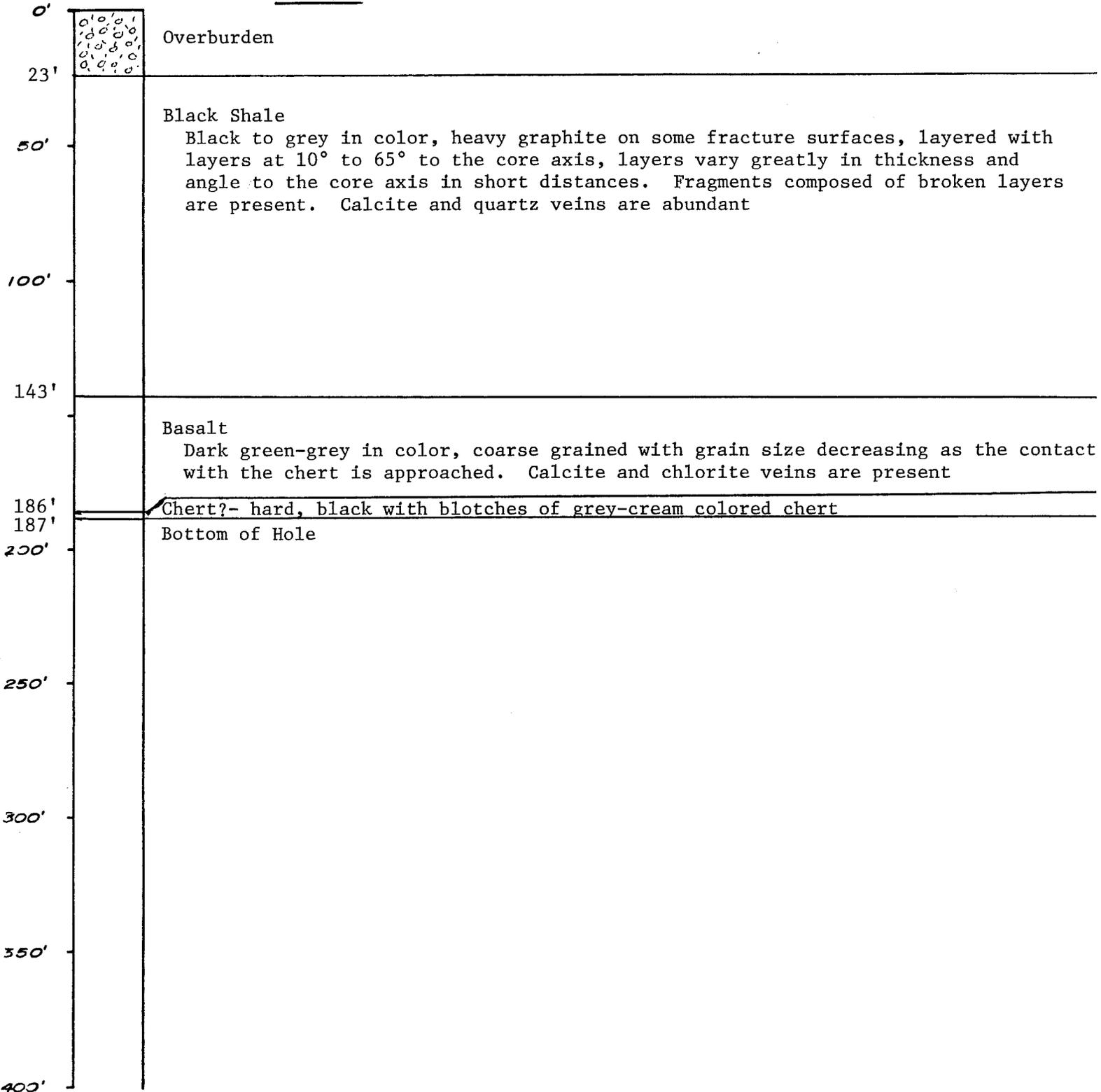
LITHOLOGIC LOG

Project 99 Hole no. 99-17 Dip -45° Started 7/14/81 Elev.       

Job no. 271 Township T9-R9 See Sketch  
Coord. 271-6 Direction 156°mag Completed 7/21/81

SW 1/4 - N of Norway Bluff

Lithotype





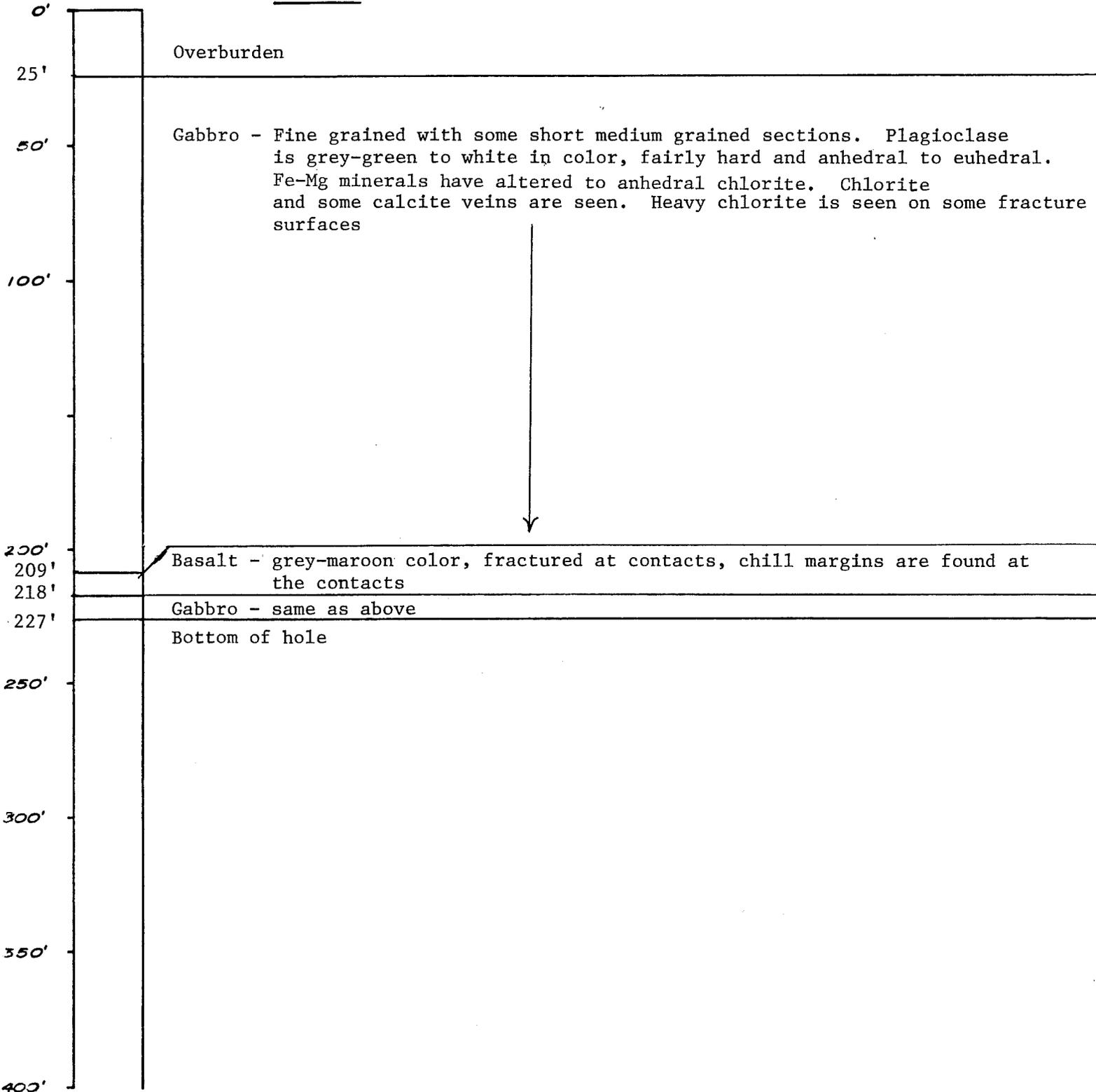
LITHOLOGIC LOG

Project 99 Lithologic Drilling Hole no. 99-18 Dip -45° Started 7/25/81 Elev.       

Job no. 271 Township T9-R9 See Sketch  
Coord. 271-6 Direction 150°mag. Completed 7/28/81

SW 1/4 - N of Norway Bluff

Lithotype





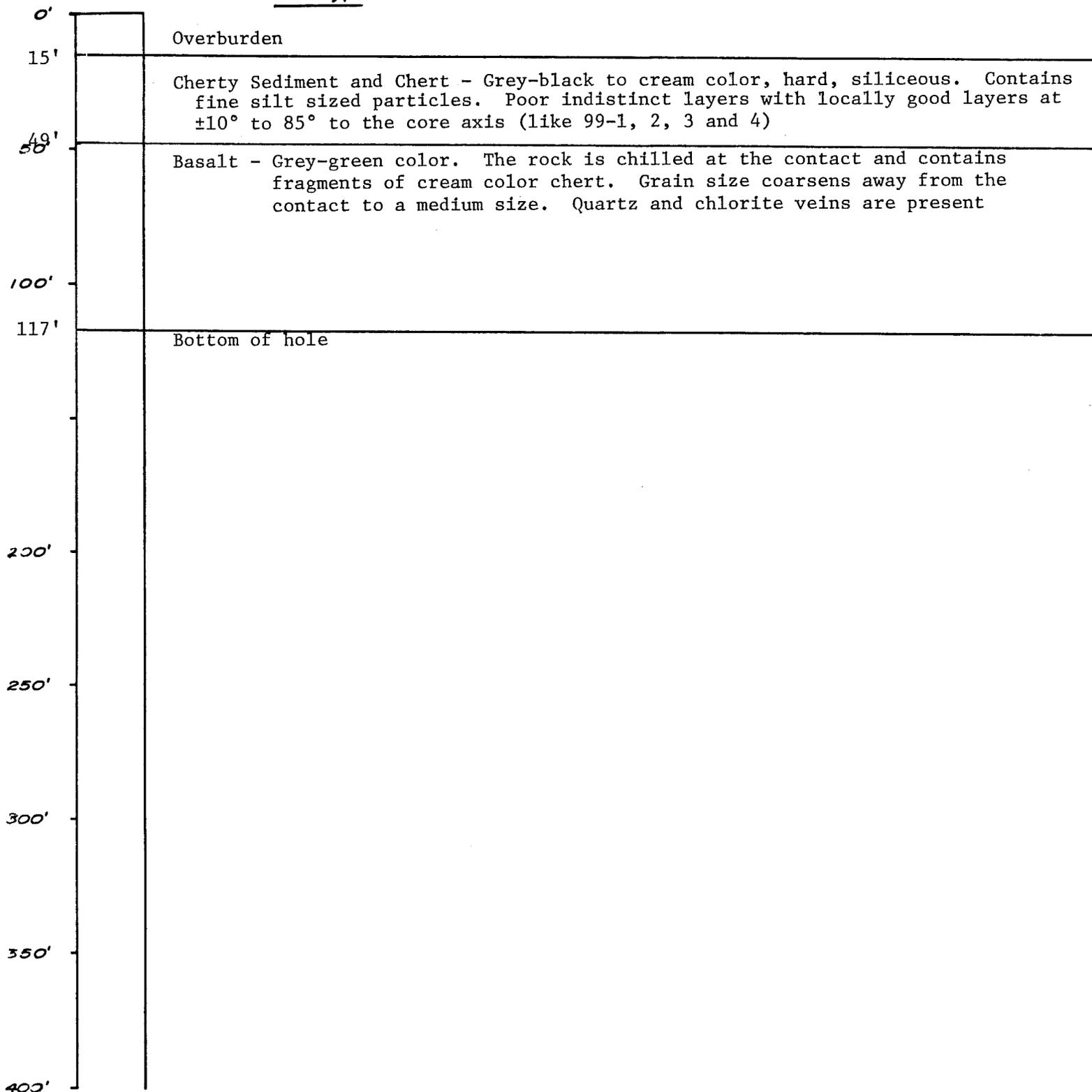
LITHOLOGIC LOG

Project 99 LITHOLOGIC DRILLING Hole no. 99-19 Dip -45° Started 8/5/81 Elev.       

Job no. 271 Township T9-R9 See Sketch  
 Coord. 271-6 Direction 156°mag Completed 8/6/81

SW 1/4 - N of Norway Bluff

Lithotype





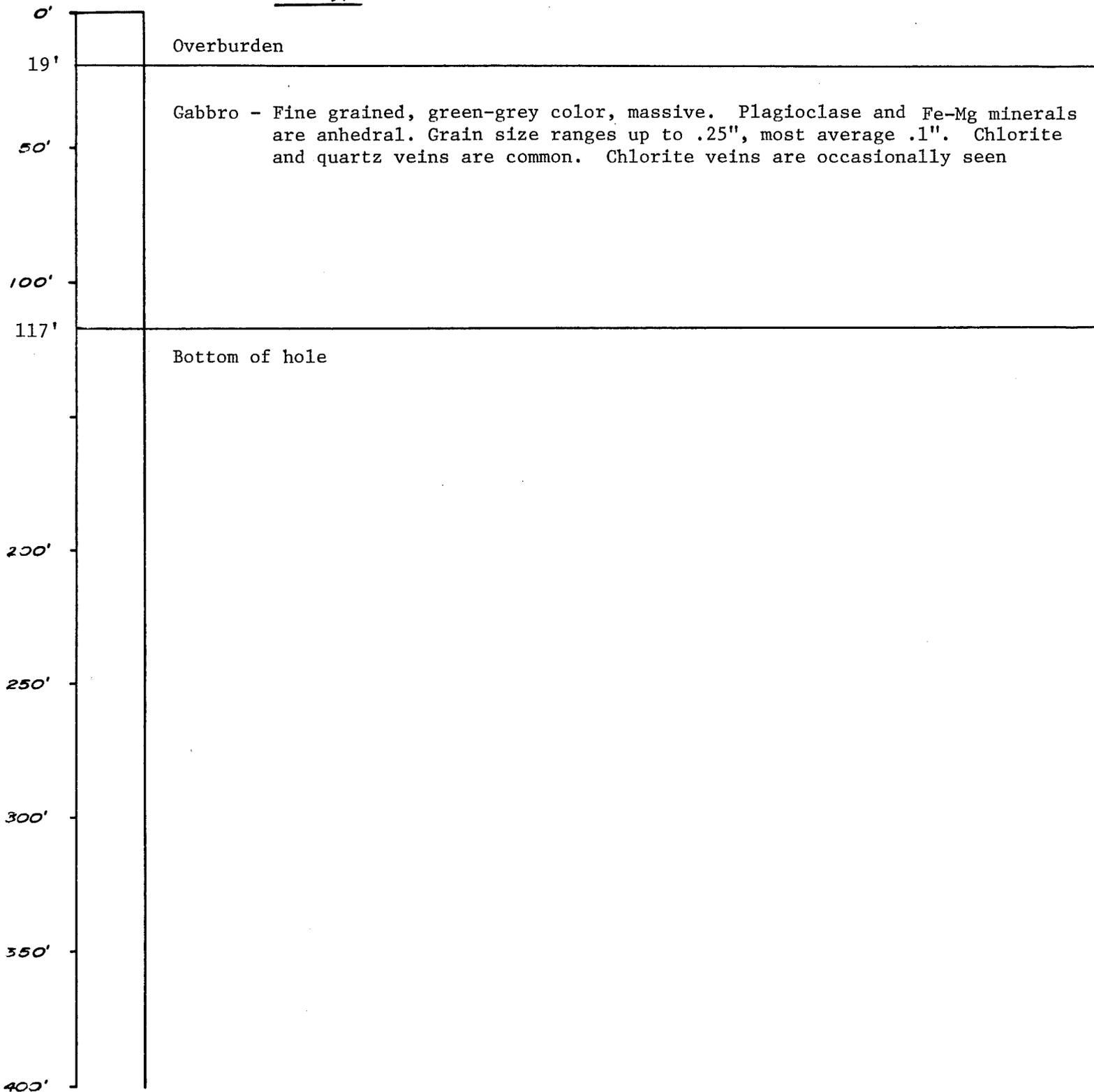
LITHOLOGIC LOG

Project 99 LITHOLOGIC DRILLING Hole no. 99-20 Dip -45° Started 8/9/81 Elev.       

Job no. 271 Township T9-R9 See Sketch  
Coord. 271-6 Direction 156 mag Completed 8/9/81

SW 1/4 - N of Norway Bluff

Lithotype





HOLE #	COORDINATES	DATE COLLARED	DATE COMPLETED	DIP	MAGNETIC BEARING	DEPTH	DRILLED BY
99-1	See Sketch 271-6	5/12/81	5/13/81	-45°	156°	217'	Kennebec II
99-2	See Sketch 271-6	5/14/81	5/15/81	-45°	156°	217'	Kennebec II
99-3	See Sketch 271-6	5/16/81	5/18/81	-45°	156°	227'	Kennebec II
99-4	See Sketch 271-6	5/19/81	5/27/81	-45°	4°	207'	Kennebec II
99-5	See Sketch 271-6	5/27/81	5/28/81	-45°	156°	227'	Kennebec II
99-6	See Sketch 271-6	5/29/81	5/31/81	-45°	156°	227'	Kennebec II
99-7	See Sketch 271-6	6/01/81	6/08/81	-45°	156°	215'	Kennebec II
99-8	See Sketch 271-6	6/08/81	6/10/81	-45°	156°	210'	Kennebec II
99-9	See Sketch 271-6	6/11/81	6/13/81	-45°	156°	223'	Kennebec II
99-10	See Sketch 271-6	6/15/81	6/16/81	-45°	156°	222'	Kennebec II
99-11	See Sketch 271-6	6/22/81	6/23/81	-45°	156°	208'	Kennebec II
99-12	See Sketch 271-6	6/24/81	6/25/81	-45°	156°	218'	Kennebec II
99-13	See Sketch 271-6	6/27/81	6/29/81	-45°	156°	90'	Kennebec II
99-14	See Sketch 271-6	6/30/81	7/8/81	-45°	156°	237'	Kennebec II
99-15	See Sketch 271-6	7/09/81	7/11/81	-45°	156°	227'	Kennebec II
99-16	See Sketch 271-6	7/11/81	7/14/81	-45°	156°	236'	Kennebec II
99-17	See Sketch 271-6	7/14/81	7/21/81	-45°	156°	187'	Kennebec II

99 LITHOLOGIC DRILLING (T9-R9)

