

DOW DIXIE NO. 11

903-28

Dow, DIXIE No. 11

TEMPERATURE LOG

C. Klein

Loc: Intersection, NE  $\frac{1}{4}$ , Sec. 11, T23N, R35E.

Date: 10/23/76

Time: 0910

Depth | T°C, down

15

76

92

|     |       |
|-----|-------|
| 10  | 17.13 |
| 20  | 16.64 |
| 30  | 16.85 |
| 40  | 17.22 |
| 50  | 17.50 |
| 60  | 17.79 |
| 70  | 17.92 |
| 80  | 18.08 |
| 90  | 18.34 |
| 100 | 18.58 |
| 110 | 18.82 |
| 120 | 19.02 |
| 130 | 19.23 |
| 140 | 19.47 |
| 150 | 19.70 |
| 160 | -     |
| 170 | 20.16 |
| 180 | 20.40 |
| 190 | 20.62 |
| 200 | 20.83 |
| 210 | 21.09 |
| 220 | 21.35 |
| 230 | 21.60 |
| 240 | 21.81 |
| 250 | 22.06 |
| 260 | 22.33 |
| 270 | 22.64 |
| 280 | 22.88 |
| 290 | 23.11 |
| 300 | 23.32 |

$$\text{Gradient: } \frac{23.2 - 16.3}{300} = \frac{2.3^{\circ}\text{C}}{100'} \approx 43^{\circ}\text{C}$$

Finish: 1025

$$\frac{(23.9)}{237} \quad \text{②} \quad \frac{76}{2.7 @ 3.5}$$

Hole No. 11  
Operation Summary

by: C. Klern

Loc: Intersection, NE  $\frac{1}{4}$  Sec. 11, T23N, R35E

Drilling Log:

10/20/76

0900 Arrive, set-up

c.1030 Spud-in

1200 At 90 ft, smooth drilling,

1250 At 130 ft, " "

1410 At 205 ft, " "

1450 At 225 ft, pause for pump cleanout.

since c. 220-225

1500 Resume drilling. Penetration rate v. slow, drilling like hard rock.

Mud very thick & cuttings not settling. Driller believes is in series of boulders, probably large

1630 At 235 ft, penetration rate increases somewhat, still bouldery.

1645 At 240 ft, pause to dump, re-mix mud.

1710 Resumes drilling

1730 Shutdown at 250 ft.

10/21/76

c.0800 Start-up at 250 ft, in cobble.

zone? Moderate penetration rate

0930 Reach TD 300 ft.

c.1100 PVC pipe in place, move to site #13.

Geologic Setting: About two-thirds of way down fan deposits from mountain range front to basin. One mile NNE from Dixie Comstock mine.

Geologic summary: Entire section is fan deposit of angular clasts gabbro and mafic volcanics, plus brown silt and clay. In 0-80 ft. pebbles to 3 cm were recovered. From 80 to 220 ft. the coarsest returns were about 1 cm across, and most material larger than silt was sand-sized; pebbles and cobbles may be present, but ground to finer cuttings. Very slow and rough penetration from c. 215-235 probably represented a bouldery zone. Below about 235 penetration was quicker, but still

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 LITHOLOGICAL LOG

| INTERVAL | SCHEMATIC OF STRATIGRAPHY | LITHOLOGICAL DESCRIPTION   | COMMENTS, INTERPRETATION   |
|----------|---------------------------|--|--|
| 0-80'    |                           | Fan deposit: angular-subangular sand, pebbles to 3cm, brown silt and clay. Gabbro, mafic volcanics   | Most of samples taken probably represents 0 to c. 40 ft.   |
| 80-90'   |                           | similar but largest 'clasts' are coarse sand (3mm); relative amounts of silt and clay much greater than in 0-80; sand is probably <math>\frac{1}{2}</math> of section. |  |
| 90-100'  |                           | largest returns are fine pebbles ( $\leq 1$ cm)  | Lg. pebbles, cobbles + boulders may be present in (parts of?) 80-220, but ground to sand sized cuttings. Moderate penetrati- |
| 100-110' |                           | same   | rate suggests boulders probably not typical of section.  |
| 110-120' |                           | same   |  |
| 120-130' |                           | same   |  |
| 130-140' |                           | same   |  |
| 140-150' |                           | same   |  |
| 150-160' |                           | same   |  |

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LITHOLOGICAL LOG

| INTERVAL | SCHEMATIC OF STRATIGRAPHY | LITHOLOGICAL DESCRIPTION  | COMMENTS, INTERPRETATION  |
|----------|---------------------------|---|---|
| 160-170' |                           | same, clay-silt increasing relative to coarser clasts (general trend with depth, not this sample alone) | Driller's mud thickens  |
| 170-180' |                           | same  |   |
| 180-190' |                           | same  |   |
| 190-200' |                           | same  |   |
| 200-210' |                           | same  |   |
| 210-220' |                           | same  |   |
| 220-230' |                           | gradational, at c. 215-220'.<br>Bouldery zone? V. hard.   | V. slow, irregular penetration, much vibration  |
| 230-240' |                           | Boulder-cobble zone? Softer.  | All returns are of sand and smaller sizes, but drill behaves as if in cobbles & (?) boulders. Clasts larger than sand are apparently being ground to cuttings, rather than washed out whole, as in upper 80' of hole. |
| 240-250' |                           | same  |   |

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|----------|---------------------------|---|---|
| 160-170' |                           | same; clay-silt increasing relative to coarser clasts (general trend with depth, not this sample alone) | Driller's mud thickens  |
| 170-180' |                           | same  |   |
| 180-190' |                           | same  |   |
| 190-200' |                           | same  |   |
| 200-210' |                           | same  |   |
| 210-220' |                           | same  |   |
| 220-230' |                           | Bouldery zone? V. hard.   | V. slow, irregular penetration, much vibration  |
| 230-240' |                           | Boulder-cobble zone? Softer.  | All returns are of sand and smaller sizes; but drill behaves as if in cobbles & (?) boulders. Clasts larger than sand are apparently being ground to cuttings, rather than washed out whole, as in upper 80' of hole. |
| 240-250' |                           | same  |   |

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| INTERVAL | SCHEMATIC OF STRATIGRAPHY | LITHOLOGICAL DESCRIPTION     | COMMENTS, INTERPRETATION |
|----------|---------------------------|------------------------------|--------------------------|
| 250-260' |                           | Cobby (?) fan deposit, cont. |                          |
| 260-270' |                           | Same                         |                          |
| 270-280' |                           |                              |                          |
| 280-290' |                           |                              |                          |
| 290-300' |                           |                              |                          |
|          |                           |                              |                          |