LITHOLOGIC LOG CT

Project: Mt. Princeton

Hole 640-30

Elevation: 8,350 Date Drilled: 10/17-10/21/79

Location: NENE25, T15S, R79W Method: Mud

Gamma: 120 cps

Depth (m)	Description
0- 9	Quartz-monzonitic debris, with quartz, biotite, plagioclase, some chlorite and k-spar. Size distribution is 70% granules, 20% sand and 10% fines. Unit is a sandy gravely boulder till.
9- 12	Unit is probably a glacial lacustrine clay.
12- 33	Unit is boulder till similar to 0-9m, with sand lenses and clay scattered throughout.
33- 64	Composition unchanged. Size distribution is 80% medium to coarse sand, 15% granules, 5% fines. Unit is a slightly gravely alluvial sand.
64-124	Unit is a variably sandy boulder till.

Comments: Hole 30 was drilled upstream of a terminal moraine across Chalk Creek. Most of the section is boulder till, with some sand and clay layers that probably represent formation of a glacial lake behind a moraine dam.

CT

LITHOLOGIC LOG

Project: Mt. Princeton

Hole 640-29

Elevation: 8,400

Date Drilled: 10/24/79

Location: NENE 24, T15S

Method: Mud

Gamma: 85 cps

Depth (m)	Description
27	Slightly decomposed quartz-monzonitic debris with quartz, biotite, plagioclase, some limonite, epidote and chlorite. Size distribution is 45% granules, 35% medium to coarse sand and 20% fines. Grains are subangular to subrounded. Unit is a sandy outwash gravel.
27-87	Composition unchanged. Size distribution is 50% medium to coarse sand, 30% fines, 20% granules. Granules vary to 5% @45m. 0.5-1m gravel layers were encountered from 78-87m. Unit is gravely alluvial sand.

Comments: Hole 29 was drilled on Chaffee County Road 322 right-of-way. The entire section is sandy outwash and alluvium.

Hall

LITHOLOGIC LOG (640-28)
Mt. Princeton Project

SE¼NW¼ Sec 13 T15S R79W

ELEVATION: 8,880'

DATE DRILLED: 10/14/77

Depth (m)	DESCRIPTION
0 - 3	Qal-clayey/silty gravel (reworked glacial till) - brownish red; very poorly indurated orthobreccia; range (diam.)<.1 mm->32 mm, ave. 2-3 mm; very poorly sorted; 25% pebbles and/or boulders of quartz monzonite and feldspar, ave. size .5-1 mm, very angular-subangular; 35% clay/silt.
3 - 104	Qal-clayey/silty gravel (reworked glacial till) - consists of gray, light gray, and buff colored layers of reworked glacial till whose thickness range from six inches to>six feet. Poorly indurated with the amt. of lithification increasing with depth, it may be considered an orthobreccia. As is characteristic with glacial till, all layers are very poorly sorted to poorly sorted. The matrix consists of clay/silt varying in content from 5% to 45% in the various layers with the framework consisting of varying amts. of sand, pebbles, and boulders. The boulders and pebbles vary in content from 5-40%. They consist mostly of quartz monzonite with minor amts. of a white welded crystalline tuff. Their sizes range from 3 mm->30 mm and they range in angularity from very angular to subrounded. The sand varies from 20-50% of the unit. Quartz monzonite and feldspar are the major constituents with qtz, bio and hb as minor constituents. The plagioclase in many cases shows strong hydrothermal alteration to kaolinite. The bio also shows alteration to limonite/hematite as well as clay. Hornblende, if present, shows strong chloritization. The texture may range from very fine to very coarse with an ave. diam. of .5-1 mm. Usually, the grains are subangular but range from very angular to subangular. Theave. layer usually consists of 20-30% qtz. monzonite boulders and pebbles, 60% sandconsisting mostly of qtz. monz and feldspar with minor amts. of qtz, bio and hb. The matrix usually consists of 20-30% clay/silt.
104 - 116	Qal-clayey/silty gravel (reworked galcial till) - except interfingering with thin layers of red, buff, and gray clay.
116 - 168	Qal-clayey/silty gravel (reworked glacial till) - repeat except interfingered with buff-reddish buff clay layers.
168 - 216	Qal-clay-buff-reddish brown interfingered with Qal clayey/silty gravel.

Lange
Deymonaz
Caywood

LITHOLOGIC LOG

Mt. Princeton Project

SW¼NW¼ Sec 13 T15S R79W

ELEVATION: 8,880'

DATE DRILLED: 10/14/77

Depth (m)	DESCRIPTION
216 - 247	Dry Union Formation - sandy gravel; buff to light gray; angular to subangular; fine grained sand to fine grained pebbles; poorly sorted; consists mostly of qtz monzonite with feldspar, qtz, and bio as minor constituents; sand comprises ≃ 10-15% of the samples and consists mostly of feldspar.
247 - 253	Dry Union Formation - gravely sand; light gray to buff; fine grained sand to cobbles; poorly sorted. The sand consists mostly of kspar and plagioclase with 20-30% qtz monzonite and minor amts of bio and qtz. Much of the qtz monzonite shows hematitic and limonitic alteration of the mafic constituents. The pebbles and cobbles are mostly qtz monzonite and are probably subangular to subrounded. Thepebbles comprise 15-20% of the samples.
253 - 366	Dry Union Formation - sandy gravel; repeat except consists mostly of qtz monzonite pebbles and cobbles with the last 12' (4 m) having a calcareous cement.
366 - 372	Dry Union Formation - sandy gravel; light gray-buff; angular to subangular; poorly sorted. The gravel is angular to subangular and consists of pebbles and cobbles. Limonitic and hematitic stained qtz monzonite is the main constituent with some gray and cream colored quartzite. The sand comprises ≃10% of the whole, is subangular, and has an ave. diam. of 1 mm. Feldspar and qtz monzonite are the major components with bio, qtz, and chert as minor.
1220 - 1280 372 - 427	Dry Union Formation - gravely sand; light gray to buff; angular to subangular; silt to pebbles; poorly sorted; calcareous cement. The sand is angular to subangular with an ave. diam. of .5 mm-1 mm. It consists mainly of feldspar with minor amts of qtz, bio, chert and gray qtzite. The pebbles make up ≃10-15% of the whole, are probably subangular, and consist mostly of qtz monzonite with some gray qtzite. Calcareous cement from 390-402 m.
427 - 463	Dry Union Formation - repeat, an increase in the amt. of cream and gray quartzite pebbles, probably as intercalated conglomerate layers.
463 - 491	Dry Union Formation - conglomerate with 35% qtzite fragments, some of which have very brilliant hematitic staining.
491 - 521	Dry Union Formation - conglomerate, cream, gray and red quartzite make up approximately 50% of the pebbles and cobbles.

Loup
Peyton
Caywood

LITHOLOGIC LOG
Mt. Princeton Project

ELEVATION: 8,880'

SW¼NW¼ Sec 13 T15S R79W

DATE DRILLED: 10/14/77

Depth (m)	DESCRIPTION
521 - 610	Dry Union Formation - silicified siltstone; gray; microcrystalline; hematitic and limonitic staining prominant; contains embayed qtz grains.

AMAX EXPLORATION, INC.

Sample Number	Depth (feet)	Bulk Conductivity ($\frac{\text{millicalories}}{\text{cm-sec-}^\circ\text{C}}$)
844-15 (K)	220	6.14
844-27 (K)	275	3.24
844-35 (K)	220	4.34
844-37 (K)	150	3.70
844-38 (K)	200	4.37
844-58 (TiVK)	370 = 11	2.04
640-28	370 = 113 m	5.09
640-28	440 = 134 m	8.06
640-28	1030 = 314 m	5.65
640-28	1550 = 473 m	7.16
640-28	1860 = 567 m	6.96
844- 2 (K)	170	5.37
844-18 (K)	220	5.25
844-21 (K)	310	3.60
844-30 (K)	250	4.42
844-33 (K)	220	3.42
844-51 (K)	470	5.43
844-59 (K)	490	8.10
640-28	260 = 79 m	10.29
640-28	630 = 192 m	6.40
640-28	1370 = 418 m	6.22
640-28	1730 = 527 m	7.39