

Material	From	To
Top soil, brown	0	2
Clay, brown	2	21
Clay, gray	21	30
Clay, blue gray	30	44
Clay, brown	44	50
Gravel & sand, cemented, brown, rusty	50	56
Sand, brown, fine, medium	56	61
Clay, brown	61	64
Sand, brown, medium coarse	64	68
Sand & gravel cemented, brown, rusty	68	70
Sand, brown, medium coarse	70	72
Clay, brown,	72	74
Gravel & sand cemented, brown	74	76
Sand, brown, fine-medium	76	79
Gravel up to 2" and sand, cemented, brown, rusty	79	83
Clay, brown	83	89
Clay, light gray	89	92
Clay, brown	92	98
Sand, brown, fine cemented	98	101
Sand, brown, fine	101	107
Clay, brown	107	110
Clay, blue gray	110	117
Clay, green hard flakey	117	125
Sand, black fine medium	125	131
Gravel & sand, medium-coarse	131	142
Clay, dark green, fine, sandy	142	150
Clay, dark green, medium sandy	150	152
Clay, dark green	152	159
Clay, dark gray, fine sandy	159	161
Sand, black fine with some clay, gray fine sandy	161	167
Clay, dark green, fine sandy	167	177
Clay, blue green	177	189
Clay, dark gray	189	192
Clay, gray and blue streaks	192	215
Clay, blue-green, flakey	215	238
Clay, blue	238	253
Clay, blue gray, soft	253	263
Clay, blue, flakey	263	265
Clay, green, soft	265	273
Clay, gray, medium soft	273	303
Clay, gray, soft	303	317
Shale, gray, hard	317	319
Clay, gray, soft	318	342
Clay, blue, medium soft	342	346
Clay, blue-gray	346	361
Clay, blue-green, sticky	361	368
Clay, gray with brown streaks, sticky	368	371
Clay, gray, hard	371	372
Clay, blue	372	377
Clay, gray	377	379
Clay, blue	379	388
Clay, dark blue-green, dry, soft	388	395
Clay, gray, soft, dry	395	416
Clay, dark gray, soft	416	427
Clay, dark brown, medium, soft	427	433

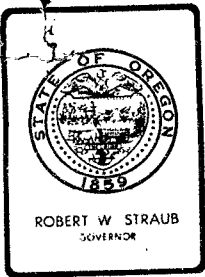
(5) Casing Installed:

12" Diameter from	+2'2"	to 92'3"	Gage .330
12" Diameter from	92'3"	109'9"	Gage .375
12" Diameter from	109'9"	119'9"	Gage .330
12" Diameter from	159'11"	181'	Gage .330
6" Diameter from	+1'1"	21'4"	Gage .250

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MINES DEPT
OREGON



Water Resources Department

MILL CREEK OFFICE PARK

555 13th STREET N.E., SALEM, OREGON 97310

PHONE 378-8455

May 24, 1978

Milo Schneider
Schneider Equipment, Inc.
21881 River Road N.E.
St. Paul, Oregon 97137

Dear Mr. Schneider:

Please accept my apologies for the delay in responding to your recent letter requesting special standards for the use of concrete instead of cement grout as a sealing material in large diameter wells that provide excessive space between the drill hole wall and the outside casing of the well. You are hereby granted special permission to use concrete instead of neat cement with the following provisions and conditions:

- 1) Concrete shall consist of clean, hard, durable aggregate, and not less than five sacks of Portland cement per cubic yard of concrete. Maximum diameter of the aggregate shall not exceed $\frac{3}{4}$ of an inch in diameter.
- 2) If the well bore hole to be sealed is not dry, concrete shall be pumped from the bottom of the seal zone upward in one continuous operation to land surface.
- 3) In the event that the well bore annular space to be sealed is dry, concrete shall be placed through a tremie pipe to prevent segregation of the aggregate and cement mixture and to prevent bridging.
- 4) The space between the sealing surfaces of all casings and between all casings and the bore hole shall exceed 3-inches or more.

Special standards to construct a well as described above shall be considered to apply to all wells constructed in such a manner. Please refer to these special standards on the well reports of all well constructed in this manner.

Sincerely,

WILLIAM B. MCCALL
Hydrogeologist

WATER RESOURCES DEPT
SALEM, OREGON

WBM:clh

cc: Clifton R. King, Watermaster, District #16