Summary of the Socony-Vacuum Oil Company - Angus Kennedy F-32-24-P Well
Dunn County, North Dakota
Well No. 607- Permit No. 621

By David S. Johnson
February, 1957

Socony-Vacuum, Angus Kennedy, F-32-24-P, Dunn County, North Dakota, C SW
NE Sec. 24, Twp. 149N., R. 93W. (Well site relocated to a point 130 ft. south
and 50 ft. west of center of SW 1/4 NE 1/4 to avoid boggy conditions).
Elevation 2136 G.L., 2145 K.B.

The Socony-Vacuum Angus Kennedy F-32-24-P was spudded June 5, 1954 and
13 3/8" casing was set at 492' with 400 sacks of cement. 7" casing was set at
9433' with 750 sacks of cement (protection string). Well was completed as a
dry hole September 30, 1954, at a total depth of 11,331.

PLUGGING RECORD:

Hole filled with 10# per gallon mud; 7" casing, top at 4295', bottom
cemented at 9450'; 5" O.D. liner, top at 8686', bottom cemented at 10,698'.
Cement plug 11,331-10,700' with 130 sacks in 6 1/8" hole. Baker cement
retainer in 5" O.D. casing at 10,515' with 7 sacks of cement squeezed through
and 3 sacks left on top. Cement plug 4301'-4220' with 40 sacks to cover top of
7" casing stub at 4295'. Cement plug 500'-450' with 40 sacks across shoe of
13 3/8" casing at 492'. 10 sacks cement in top of 13 3/8" surface casing. Cut
and recovered 4295' of 7" casing.

TESTS:

DST #1 10,530 - 10,712, open 3 1/2 hours, shut in 30 minutes, weak blow
10 minutes, recovered 630' fluid, 480' possible slight gas cut water cushion
with small bubbles of rainbow oil, 60' gas cut muddy water, 90' very lightly
oil and heavily gas cut mud, 1-2% oil, 84' fill up, 546' water cushion, flow
pressure 500-560#, shut in pressure 650#, hydrostatic pressure not measured.

DST #2 10,850 - 11,061, open 3 1/2 hours, shut in 30 minutes, very weak
blow, 780' water cushion, recovered 720' water cushion, lightly gas cut, 180'
gas cut muddy water, 1950' gas cut salt water, flow pressure 625-1650#, shut
in pressure 4700#, hydrostatic pressure 6525#.

DST #3 11,175-11,249, open 45 minutes, shut in 30 minutes, recovered
234' water cushion, 910' muddy water cushion, 1980' very slightly gas cut
muddy salt water, 90' almost solid crystallized salt, flow pressure 975-1790#,
shut in pressure 5390#, hydrostatic pressure 6900#.

Perforated 10,600-10,645 with 6 per foot and acidized with 1000, flow
pressure 4125#. Flowed 15 barrels of lead water, flowed and swabbed 48 barrels
fluid in 14 hours. Swabbed brownish oil with short gas blow, recovered acid
and lead water.

Sandfract. Perforated 10,600 - 10,645. Flowed 25 barrels of lead oil,
swabbed 70 barrels of lead oil. Retainer set at 10,592.
Perforated 10,540 - 10,570 with 6 per foot. Attempted to acidize, tubing blew out. Reperforated 10,540 - 10,567 with 2 per foot. Acidized perforations at 10,540, 10,567 with 5,000. Swabbed approximately 47 barrels of oil and acid water in 14 hrs.

Sandflect at 10,540 - 10,567, shut in 8 hours. Flowed displacement oil at 9 barrels per hour, 2 barrels per hour after 13 hours.

Reset packer at 10,509'. Flowed 3 barrels lead oil per hour, for 15 hours. Swabbed 31 barrels lead oil and new oil in 10 hours.

**CORES:**
- 7518-  34
- 8927- 9492
- 10318-11062
- 11076-11331

Formation tops were picked from samples, radioactivity lateral and microlateral logs; not all formation tops called in the following list. Colors were picked from the rock color chart

**TOPS**

<table>
<thead>
<tr>
<th>System</th>
<th>Formation</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cretaceous System</td>
<td>Pierre Formation</td>
<td>1800</td>
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<tr>
<td></td>
<td>Niobrara Formation</td>
<td>3757</td>
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<td></td>
<td>Greenhorn Formation</td>
<td>4269</td>
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<td></td>
<td>Dakota Group</td>
<td>4452</td>
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<td></td>
<td>Fall River Formation</td>
<td>5047</td>
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<tr>
<td>Jurassic System</td>
<td>Jurassic sand and shales</td>
<td>5428</td>
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<td></td>
<td>Sundance Group</td>
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<td>Piper Limestone</td>
<td>6160</td>
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<tr>
<td>Triassic System</td>
<td>Spearfish Formation</td>
<td>6345</td>
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<tr>
<td>Permian System</td>
<td>Minnekahta Formation</td>
<td>6675</td>
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<td>Opeche Formation</td>
<td>6760</td>
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<tr>
<td>Pennsylvanian System</td>
<td>Minneluse Formation</td>
<td>7192</td>
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<tr>
<td>Mississippian System</td>
<td>Amsden Formation</td>
<td>7320</td>
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<td>Big Snowy Group</td>
<td>7689</td>
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<td></td>
<td>Kibbey Lime</td>
<td>8165</td>
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<td></td>
<td>Charles Formation</td>
<td>8316</td>
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<tr>
<td></td>
<td>“Base of Last Salt” (Mission Canyon)</td>
<td>8863</td>
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<tr>
<td></td>
<td>Lodgepole Formation</td>
<td>9666</td>
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<td></td>
<td>Englewood Formation</td>
<td>10,510</td>
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<tr>
<td>Devonian System</td>
<td>Lyleton Formtion</td>
<td>10,606</td>
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<td></td>
<td>Nisku Formation</td>
<td>10,845</td>
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<td></td>
<td>Duperow Formation</td>
<td>10,943</td>
</tr>
<tr>
<td></td>
<td>Souris River</td>
<td>11,286</td>
</tr>
</tbody>
</table>
520-560 Lignite.
560-580 Limestone, medium light gray, argillaceous, fine-grained, dense.
580-600 Lignite material
600-620 Limestone, medium light gray, argillaceous, fine-grained dense.
620-640 Lignite material, some medium grained, smoky, quartz grains, subangular.
640-660 Limestone, medium gray, argillaceous, fine-grained, dense, some, lignite.
660-740 Lignite material, has a slaty parting.
740-760 Lignite, contains fossil fragments.
760-800 Shale, pale reddish brown, limy, limestone, dusky brown, fossiliferous.
800-820 Limestone, light gray, argillaceous, fine-grained, fossil fragments.
820-840 Shale, light brown, calcareous, some lignite.
840-860 Lignite material.
860-880 Lignite, some argillaceous limestone, very light gray, medium-grained.
880-920 Sandstone, browns and grays, friable, medium grain size, subangular occurs in nodules, calcareous cement.
920-960 Limestone, light gray, argillaceous, dense, contains fossil fragments.
960-980 Shale, light gray, lumpy, spongy, bentonitic.
1000-1060 Sandstone, light brownish gray, friable, medium grain size, subangular, slightly calcareous cement, some lignite.
1060-1120 Sandstone, light brown, medium-grained, subangular, shale, medium light gray, highly calcareous, fossiliferous.
1120-1140 Shale, grayish orange (10YR7/4) slightly calcareous.
1140-1160 Shale, light gray, calcareous, compact.
1160-1200 Sandstone, very light gray, fine grained, tight, very calcareous cement, micaceous.
1200-1220 Same as above, shale medium light gray, calcareous.
1220-1240 Shale, medium light gray, spongy, lumpy, bentonitic, sand grains, medium grained, subangular.
1240-1260 Sandstone, medium light gray, medium grained, subangular-angular. Shale as above.
1260-1280 Shale, medium light gray, bentonitic, calcareous.
1280-1300 Sandstone, very light gray, fine-grained, subangular, calcareous.
1300-1340 Shale, medium gray, bentonitic, lumpy, spongy, some lignite.
1340-1380 Sandstone, very light gray, fine-grained, calcareous, shale medium gray, compact, very calcareous, some lignite.
1380-1420 Lignite.
1420-1480 Sandstone, very light gray, medium grained, subangular, calcareous, friable.
1480-1540 Sandstone as above but silty, some lignite.
1540-1560 Shale, light gray, bentonitic, spongy, lumpy, sand grains, medium grained, subangular, lignite.
1560-1640 Shale, silty, medium light gray, bentonitic, spongy, sand grains.
1640-1660 Sandstone, shaly, light gray, medium-coarse grained, subangular.
1660-1680 Shale, medium light gray, bentonitic, lumpy. Sand grains.
1680-1700 Shale, light gray, silty, carbonaceous, bentonitic, lumpy.
1700-1800 Sandstone, light gray, medium grained, subangular, shaly, friable.
1800-1820 Shale, medium light gray, sandy.
<table>
<thead>
<tr>
<th>Time Period</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1820-1900</td>
<td>Shale, medium light gray, lumpy, bentonitic, slightly calcareous.</td>
</tr>
<tr>
<td>1900-1920</td>
<td>Shale, as above, spongy, sand grains.</td>
</tr>
<tr>
<td>1920-1960</td>
<td>Shale, medium gray, lumpy, bentonitic, slightly calcareous.</td>
</tr>
<tr>
<td>1960-2020</td>
<td>Shale, medium light gray, silty, spongy, compact bentonitic.</td>
</tr>
<tr>
<td>2020-2040</td>
<td>Shale, medium light gray-medium gray, lumpy, fissile.</td>
</tr>
<tr>
<td>2040-2060</td>
<td>Shale, light gray-medium dark gray, fissile, compact, sand grains, medium grained.</td>
</tr>
<tr>
<td>2060-2100</td>
<td>Shale, as above, no sand grains.</td>
</tr>
<tr>
<td>2100-2140</td>
<td>Shale, medium gray, fissile, compact. Inoceramus fragments.</td>
</tr>
<tr>
<td>2140-2160</td>
<td>Shale, medium light gray, sandy, spongy, compact.</td>
</tr>
<tr>
<td>2160-2200</td>
<td>Shale, medium light gray, fissile, splintery. Inoceramus fragments.</td>
</tr>
<tr>
<td>2200-2240</td>
<td>Shale, medium light gray, silty, bentonitic, lumpy, some siltstone, pale red (10R6/2).</td>
</tr>
<tr>
<td>2240-2260</td>
<td>Shale, light gray-medium light gray, lumpy, micaceous, calcareous, some small calcite veins.</td>
</tr>
<tr>
<td>2260-2300</td>
<td>Shale, medium dark gray, medium light gray, bentonitic, flaky, white bentonite specks visible.</td>
</tr>
<tr>
<td>2300-2320</td>
<td>Shale, medium dark gray, very compact.</td>
</tr>
<tr>
<td>2320-2360</td>
<td>Shale, medium light gray, splintery to compact, small biotite crystals present, some bentonitic.</td>
</tr>
<tr>
<td>2360-2420</td>
<td>Shale, light gray, finely disseminated mica flakes, fissile, fossil fragments.</td>
</tr>
<tr>
<td>2420-2480</td>
<td>Shale, medium light gray, spongy, lumpy, bentonitic, white bentonite specks visible.</td>
</tr>
<tr>
<td>2480-2520</td>
<td>Shale, medium gray, spongy, bentonitic, inoceramus prisms present.</td>
</tr>
<tr>
<td>2520-2540</td>
<td>Shale, medium gray-medium light gray, bentonitic, spongy, fissile.</td>
</tr>
<tr>
<td>2540-2580</td>
<td>Shale, medium light gray, spongy, compact, fissile, bentonitic, inoceramus fragments.</td>
</tr>
<tr>
<td>2580-2600</td>
<td>Shale, medium gray, spongy, splintery, bentonitic, some grayish red (5R4/2) shale.</td>
</tr>
<tr>
<td>2600-2620</td>
<td>Shale, light gray, fissile, slightly calcareous.</td>
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<tr>
<td>2620-2680</td>
<td>Shale, medium light gray, spongy, bentonitic, lumpy.</td>
</tr>
<tr>
<td>2680-2720</td>
<td>Shale as above. Some pale reddish brown (10R5/4) silty shale, some lignite. Some shale is compact.</td>
</tr>
<tr>
<td>2720-2800</td>
<td>Shale, medium light gray, fissile, some lignite, some moderate reddish orange (10R6/6) shale, inoceramus prisms.</td>
</tr>
<tr>
<td>2800-2820</td>
<td>Shale as above micaceous.</td>
</tr>
<tr>
<td>2820-2860</td>
<td>Shale, medium light gray, fissile, shale, silty, moderate reddish orange (10R6/6), fossiliferous, some bentonite present.</td>
</tr>
<tr>
<td>2860-2900</td>
<td>Shale, medium light gray, bentonitic, lumpy.</td>
</tr>
<tr>
<td>2900-2960</td>
<td>Shale, medium light gray-light gray, lumpy, fissile, some bentonite.</td>
</tr>
<tr>
<td>2960-3040</td>
<td>Shale, medium light gray, lumpy, bentonitic, inoceramus prisms.</td>
</tr>
<tr>
<td>3040-3120</td>
<td>Shale, medium light gray, lumpy, bentonitic, some medium gray, fissile, some lignite.</td>
</tr>
<tr>
<td>3120-3140</td>
<td>Shale, medium light gray, spongy, bentonitic, inoceramus prisms.</td>
</tr>
<tr>
<td>3140-3180</td>
<td>Shale, light brownish gray, silty, micaceous.</td>
</tr>
<tr>
<td>3180-3220</td>
<td>Shale, light gray-medium light gray, splintery, compact, fossil fragments.</td>
</tr>
<tr>
<td>3220-3280</td>
<td>Shale, as above, some lignitic material.</td>
</tr>
<tr>
<td>3280-3300</td>
<td>Shale, medium light gray, splintery, slightly calcareous.</td>
</tr>
<tr>
<td>3300-3320</td>
<td>Shale, as above, some micaceous bentonite.</td>
</tr>
<tr>
<td>3320-3360</td>
<td>Shale, medium light gray, lumpy, bentonitic.</td>
</tr>
</tbody>
</table>
3360-3400 Shale, medium light gray, fissile to splintery, mostly compact.
3400-3420 Shale, as above, also some light brown, 5YR6/4 shale, silty, some lignite.
3420-3440 Shale, medium light gray, splintery, lumpy, spongy, compact, some bentonitic, slightly calcareous.
3440-3500 Shale, as above, some shale, medium dark gray, fissile.
3500-3540 Shale, medium light gray, lumpy, spongy, bentonitic.
3540-3580 Shale as above, inoceramus fragments, some lignite.
3580-3620 Shale, medium dark gray, platy, also some as above.
3620-3660 Shale, medium gray-medium dark gray, lumpy to fissile, spongy to compact.
3660-3680 Shale, light gray, lumpy, slightly calcareous, bentonitic.
3680-3760 Shale as above, some medium gray shale, compact.
3760-3780 Shale, medium gray, compact, some is splintery.
3780-3820 Shale, medium gray, compact, calcareous white specks.
3820-3860 Shale, medium gray-medium dark gray, lumpy to compact, some bentonitic, some white calcareous specks.
3860-3920 Shale, medium light gray, splintery, compact fossil fragments, some loose bentonite, some medium gray, white specks.
3920-3940 Shale, as above, some lignitic material.
3940-3980 Shale, medium light gray, lumpy, bentonitic, shale, medium dark gray, splintery.
3980-4000 Shale, medium light gray, splintery, compact, some dark gray shale.
4000-4020 Shale as above, some white specks.
4020-4040 Shale, light gray, platy, splintery, bentonite flakes.
4040-4080 Shale, medium light gray, compact, splintery.
4080-4120 Shale, light gray, slightly bentonitic.
4120-4140 Shale, medium light gray, splintery, slightly calcareous.
4140-4180 Shale, medium dark gray, compact, shale, pale yellowish brown (10YR6/2) compact. Also traces of dark reddish brown (10R3/4) siltstone. A poor sample.
4180-4220 Shale, medium light gray, soft, platy, some is splintery, inoceramus prisms.
4220-4230 Shale, medium light gray, medium hard, platy. Also some dark gray shale with white specks.
4230-4250 Shale, as above, some very light gray siltstone, medium dark gray shale with white specks.
4250-4260 Shale, medium light gray-medium dark gray, soft to compact, poor sample.
4260-4280 Shale, medium light gray, lumpy, silty, bentonitic, micaceous, inoceramus prisms.
4280-4300 Shale, medium dark gray, platy, white specks. Siltstone pale yellowish brown (10YR6/2), micaceous.
4300-4310 Shale, light gray, splintery-fissile, also shale and siltstone as above, probably caving.
4310-4340 Shale, medium gray, compact, white calcareous specks, sample contains a lot of caving material, some medium light gray shale, calcareous.
4340-4360 Shale, medium gray, highly calcareous, compact, inoceramus prisms, white specks.
4360-4370 Limestone, medium light gray, argillaceous, cryptocrystalline.
4370-4380 Shale, medium gray, soft, fissile, limy.
4380-4410  Shale, medium dark gray, platy, disaggregated, white specks, some medium light gray, bentonitic shale.
4410-4420  Sample missing.
4420-4430  Shale, medium gray, platy, white specks, inoceramus fragments.
4430-4450  Shale, medium gray, platy, siltstone, pale brown 5YR5/2, compact, inoceramus fragments.
4450-4460  Shale, as above, shale medium light gray, lumpy, bentonitic, calcareous.
4460-4480  Shale, medium light gray, fissile, lumpy, some Bentonitic, calcareous, siltstone, pale yellowish brown (10YR6/2).
4480-4500  Shale, medium light gray, platy, shale, medium gray, white specks, presumably because of a sample log.
4500-4510  Shale, medium light gray, platy, some is silty, sample is mixed.
4510-4520  Shale as above, siltstone, pale yellowish brown (10YR6/2) calcareous, some iron stain on part of sample.
4520-4530  Shale, medium dark gray, platy, calcareous, siltstone, as above.
4530-4540  Shale, grayish black, fissile, medium hardness, inoceramus prisms.
4540-4560  Shale, as above, shale, medium light gray, fissile, calcareous.
4560-4570  Shale, medium dark gray, fissile to splintery.
4570-4590  Shale, as above, some calcite veins, shale medium gray, compact, inoceramus fragments.
4590-4610  Shale, medium dark gray, splintery, siltstone, light olive gray.
4610-4620  Shale as above, shale, medium light gray, compact, calcareous, inoceramus prisms.
4620-4630  Shale, medium dark gray, fissile, splintery.
4630-4650  Shale, as above, some shale, medium gray, splintery.
4650-4670  Sample, as above, siltstone, light brown (5YR6/4), very slightly calcareous.
4670-4690  Shale, medium dark gray, fissile, to splintery.
4690-4720  Shale, as above, shale, light brown (5YR6/4), silty, compact. Slightly calcareous and bentonitic.
4720-4740  Shale, medium gray, splintery, shale, medium light gray, fissile to splintery, calcareous, micaceous, finely disseminated.
4740-4750  Shale, medium dark gray-medium gray, fissile, compact, some siltstone, light brown (5YR6/4).
4750-4760  Shale, medium dark gray, splintery, lignitic material, white bentonite particles.
4760-4770  Shale, medium dark gray, splintery, siltstone, light olive gray, 5Y6/1, calcareous.
4770-4780  Shale, medium gray, fissile, shale, greenish gray, very calcareous, compact, inoceramus fragments.
4780-4800  Shale, medium dark gray, fissile, siltstone, pale brown, 5YR5/2, slightly carbonaceous.
4800-4820  Shale, as above, shale, medium light gray, hard, compact, very calcareous, white calcareous nodules.
4820-4840  Shale, light brownish gray, 5YR6/1, lumpy, bentonitic, very slightly calcareous, shale, as above.
4840-4850  Shale, medium gray, slightly calcareous, platy, splintery, shale, dark gray, splintery.
4850-4870  Shale, medium dark gray, splintery, some fissile shale, medium light gray, flaky.
4870-4900  Shale, medium gray, platy, some is splintery and micaceous. Shale, medium light gray, soft, inoceramus fragments. Poor grade lignite.
4900-4910 Shale, medium gray, splintery.
4910-4920 Shale as above, sandstone, dark yellowish brown (10YR4/2). Some flakes of bentonite visible.
4920-4940 Shale, medium gray, fissile, very fine-grained, disseminated mica.
4940-4960 Shale, as above, shale, medium dark gray, platy, compact.
4960-4980 Shale, medium light gray, platy, calcareous.
4980-4990 Shale, medium dark gray, fissile, also shale as above, siltstone, sandy, light brown (5YR6/4), calcareous.
4990-5010 Shale, medium dark gray, splintery, sample is very contaminated.
5010-5030 Samples missing.
5030-5040 Shale, medium dark gray, splintery, sandstone, vitreous, medium-coarse grained, grains are subangular, rounded.
5040-5050 Shale, medium dark gray, splintery, compact, platy.
5050-5060 Shale, medium gray, compact, sandstone, silty, very light gray, fine-grained.
5060-5070 Siltstone, pale yellowish brown (10YR6/2), shale, medium light gray, splintery.
5070-5080 Siltstone, very light gray, sandy.
5080-5100 Sandstone, silty, very light gray, fine-grained, grains are frosted to vitreous, grains are subangular, sample contains a lot of shale cavings.
5100-5120 Sandstone, very light gray, medium grain size, subangular, much shale cavings.
5120-5130 Siltstone, light gray, slightly calcareous.
5130-5140 Shale, medium light gray, soft, platy.
5140-5160 Sandstone, vitreous, medium grain size, subangular to rounded, siltstone, light brownish gray, (5YR6/1).
5160-5170 Sandstone, very light gray, fine grained, well cemented, shale, medium grained, splintery.
5170-5180 Shale, medium dark gray, platy, splintery.
5180-5190 Shale, medium dark gray, fissile, some medium light gray, compact.
5190-5220 Shale, medium gray, soft, fissile, splintery.
5220-5250 Shale, medium dark gray, splintery, some shale, medium gray, very soft, fissile, bentonitic.
5250-5270 Shale, as above, sandstone, white, fine grained, sample is very contaminated, inoceramus prisms.
5270-5290 Shale, medium gray, platy, sandstone, white to very light gray, fine-grained, well indurated, calcareous cement, pyrite.
5290-5310 Sandstone, white to very light gray, fine grained, calcareous cement, a few siderite nodules.
5310-5320 Sandstone, as above, siltstone, pale yellowish brown (10YR6/2).
5320-5330 Shale, medium dark gray, splintery, siltstone and sandstone as above.
5330-5350 Shale, medium light gray, soft, fissile, shale, medium gray, splintery, some bentonite, pyrite.
5350-5370 Shale, as above, pyrite, sample is contaminated.
5370-5380 Shale as above, sandstone, vitreous, frosted, medium grain size.
5380-5390 Shale, medium dark gray, platy, splintery, unsorted sand grains, fine to medium grain, vitreous.
5390-5410 Shale, medium gray, medium dark gray, some sandstone, coarse grained, subangular, frosted, milky appearance.
5410-5430 Sandstone, very light gray, fine grained aggregates, some coarse quartz grains, subangular.
5430-5440 Sandstone, as above, shale, medium dark gray, splintery, compact.
5440-5460 Shale, medium dark gray, splintery, platy, micaceous, siltstone, pale brown, (5YR5/2).
5460-5480 Shale as above, siltstone, very light gray, slightly calcareous.
5480-5490 Shale, medium dark gray, splintery, compact.
5490-5500 Shale, medium gray, splintery, compact, siltstone, very light gray, calcareous.
5500-5520 Shale, as above, some shale is very soft, fissile.
5520-5540 Shale, as above, some very light gray siltstone.
5540-5550 Sandstone, very light gray, fine grained, tight, well cemented, calcareous.
5550-5570 Sandstone, as above, shale, medium dark gray, splintery, pyrite.
5570-5590 Siltstone, light gray, calcareous.
5590-5600 Siltstone, as above, shale, medium gray, soft, platy, much caving in sample.
5600-5610 Sandstone, very light gray, silty, lumpy, some light gray siltstone.
5610-5620 Sandstone, silty, very light gray, fine grained, calcareous, micaceous, tight.
5620-5630 Sandstone, as above, slate, greenish gray, (5GY6/1) waxy, slaty, shale are interbedded.
5630-5650 Sandstone, medium dark gray, soft, slaty, also sandstone as above.
5650-5670 Siltstone, light gray, calcareous, well cemented, shale, greenish gray, (5GY6/1), waxy, flaky.
5670-5680 Sandstone, medium dark gray, platy, flaky, some siltstone as above.
5680-5700 Sandstone, silty, very light gray, tight, well cemented, calcareous, shale as above.
5700-5710 Limestone, sandy, very light gray, fine-medium grain size.
5710-5720 Sandstone, very light, very fine grained, calcareous, firmly cemented.
5720-5730 Siltstone, sandy, light gray, calcareous, shale, medium gray, splintery, platy.
5730-5740 Sandstone, very light gray, fine grained, calcareous, well cemented, shale, as above.
5740-5760 Sandstone, as above.
5760-5770 Sandstone, as above, shale, silty, greenish gray (5GY6/1), micaceous, slightly, calcareous.
5770-5790 Shale, as above, shale, medium dark gray, splintery, compact, much caving.
5790-5810 Shale, greenish gray (5GY6/1) splintery, soft, slaty, calcareous, some medium dark gray shale, splintery.
5810-5830 Shale, greenish gray (5GY6/1) soft, platy, waxy, calcareous, shale, grayish red (5R4/2).
5830-5870 Shale, greenish gray (5GY6/1) soft, platy, waxy, calcareous, limestone, dusky red (6R3/4) very fine grained, banding.
5870-5900 Shale as above, also shale, grayish red, papery, calcareous, waxy.
5900-5920 Samples missing.
5920-5930 Shale, greenish gray, (5GY6/1) flaky, siltstone, very light gray, sandy, calcareous.
5930-5940 Shale, as above, but splintery, shale, medium light gray, compact, very calcareous.
5940-5950 Sandstone, greenish gray, conglomeratic, soft cement is bentonitic, sand grains are moderate brown with a vitreous appearance.
5950-5960 Limestone, medium light gray, argillaceous, compact.
5960-5980 Limestone, as above, greenish gray sandstone as above, possibly glauconite.
5980-5990 Siltstone, light brownish gray, (5YR6/1) very limy, lumpy.
5990-6000 Siltstone as above, siltstone grayish red (5R4/2), calcareous.
6000-6010 Siltstone as above, shale, medium dark gray, soft flaky, some is splintery.
6010-6030 Shale, greenish gray, (5GY6/1) flaky, siltstone as above.
6030-6040 Shale, as above, limestone, very light gray, lithographic, argillaceous.
6040-6050 Shale, medium dark gray, greenish gray (5GY6/1) splintery, slightly calcareous.
6050-6060 Shale, varicolored, flaky, splintery, slaty, compact.
6060-6080 Samples missing.
6080-6090 Limestone, medium light gray, silty, fine grained.
6090-6100 Shale, medium dark gray, splintery, shale, greenish gray, flaky, calcareous.
6100-6120 Shale, medium gray, splintery, compact, shale, light gray, very limy.
6120-6130 Siltstone, grayish red, (10R4/2) also light gray, limy shale, lumpy.
6130-6160 Limestone, very light gray, very fine grained, sublithographic dolomite rhombs included in the limestone.
6160-6170 Limestone, light brownish gray, very fine grained.
6170-6190 Limestone, very light gray, white, very fine grained to sub-lithographic, interbedded, medium gray shales interbedded, splintery, calcareous.
6190-6230 Samples missing.
6230-6260 Shale, medium light gray, platy, micaceous, limestone, as above, much caving material.
6260-6290 Limestone, white, very light gray, sublithographic, much caving, some shale, dark greenish gray (5GY4/1), silty, calcareous.
6290-6320 Limestone, light brownish gray, sublithographic, some greenish gray, shales (5GY6/1) calcareous, compact, some anhydrite.
6320-6340 Shale, medium light gray, sandy, lumpy, some limestone, as above, probably caving.
6340-6350 Limestone, yellowish gray (5Y8/1) sublithographic anhydrite.
6350-6370 Siltstone, pale reddish brown (10R5/4), some grayish orange pink, (10R8/2), anhydrite.
6370-6390 Shale, grayish red (10R4/2) lumpy, silty, anhydrite.
6390-6410 Siltstone, pale reddish brown (10R5/4) slightly calcareous, anhydrite, cavings, salt, from microlateral log.
6410-6440 Siltstone, as above, but with enclosed quartz grains, fine grained, anhydrite cavings, salt from microlateral log.
6440-6460 Siltstone, pale reddish brown, (10R5/4), calcareous, gypsum, vitreous, fine grain, angular.
6460-6490 Siltstone as above, also siltstone, grayish red (5R4/2) very compact, some gypsum.
6490-6510 Siltstone, shaly, grayish red (10R4/2) much caving material.
6510-6550 Siltstone, moderate reddish orange (10R6/6), some gypsum, also anhydrite which may be cavings.
6550-6620 Siltstone, same as above, some shale, silty, grayish red (10R4/2).
6620-6680 Shale, medium gray, splintery, compact, calcareous, some siltstone as above. The gray shale is probably cavings.
6680-6710 Limestone, pinkish gray (5YR8/1) fine grained, dolomitic, siltstone, as above.
6710-6740 Limestone, yellowish gray, (5Y8/1) dolomitic, sublithographic.
6740-6760  Limestone, pinkish gray, dolomitic, sublithographic, much reddish siltstone caving.
6760-6780  Shale, moderate reddish orange (10R6/6) silty, partly dolomitic, some gypsum specks.
6780-6820  Siltstone, moderate reddish orange, partly dolomitic some anhydrite.
6820-6910  Salt, samples are all caving material. Salt picked from log, they must have changed to salt base mud.
6910-6940  Siltstone, pale reddish brown (10R5/4).
6940-7010  Shale, moderate reddish orange (10R6/6) calcareous.
7010-7030  Siltstone as above, sample is mostly caving.
7030-7120  Shale as above, siltstone, moderate reddish brown, dolomitic, samples are mostly caving, some anhydrite.
7120-7150  Shale, moderate reddish orange, calcareous, very poor samples through Opeche section.
7150-7190  Salt, siltstone and shale as above.
7190-7210  Dolomite, grayish orange pink, (5YR7/2) medium grain size, interbedded with greenish gray shale.
7210-7220  Sandstone, moderate pink, (5R7/4) fine grained, subround medium cementation, slightly dolomitic.
7220-7240  Dolomite, pale red (10R6/2) crystalline, some sandstone as above, some gypsum.
7240-7295  Samples missing.
7295-7300  Dolomite, pale red (10R6/2) granular, sandstone, grayish pink, poor sorting, dolomitic.
7300-7310  Sandstone, grayish pink, poor sorting, subround, dolomitic, has some porosity.
7310-7320  Dolomite, pale red (10R6/2) crystalline.
7320-7335  Sandstone, moderate orange pink, friable, slightly dolomitic, fine to medium grained, subround-round.
7335-7340  Sandstone, as above, dolomite, pale red (10R6/2) crystalline.
7340-7350  Dolomite, moderate pink (5R7/4) sandy, granular.
7350-7360  Shale, medium light gray, slightly dolomitic, some medium gray shale, splintery.
7360-7370  Shale, as above, sandy dolomitic, pale red, crystalline.
7370-7395  Sandstone, moderate pink (5R7/4) very tight, fine grained, well cemented, shale, as above, sandstone is slightly dolomitic.
7395-7400  Sandstone, grayish orange pink (10R8/2) fine grained, well cemented, slightly dolomitic.
7400-7410  Sandstone, as above, some crystalline dolomite, grayish pink (5R8/2), some mica flakes, interbedded shales.
7410-7420  Sandstone, dolomitic grayish orange pink, pale red, (10R6/2), very fine grained, cherty, mica flakes.
7420-7425  Sandstone, as above.
7425-7435  Dolomite, pinkish gray (5YR8/1) fine grained, some anhydrite, white.
7435-7440  Dolomite, as above, sandy.
7440-7445  Shale, medium light gray, compact, dolomite, as above.
7445-7460  Sandstone, pale red, (10R6/2) very fine grained, dolomitic, much caving.
7460-7465  Sample missing.
7465-7470  Shale, medium light gray, flaky, compact.
Dolomite, pinkish gray, sandy, granular, cherty, some anhydrite, white, granular.

Shale, greenish gray, platy, dolomitic, some mica flakes.

Sandstone, pale red (10R6/2) fine grained, dolomitic.

Shale, greenish gray, (5GY6/1), dolomitic, slaty.

Sandstone, pale red, (10R6/2) poorly sorted, dolomitic.

Shale, medium light gray, platy, dolomitic.

Samples missing.

Sandstone, grayish pink (5R8/2) fine grained, dolomitic.

Shale, medium light gray, platy, sandstone, as above.

Shale, medium light gray, platy, slightly dolomitic.

Sandstone, pinkish gray, (5YR8/1) dolomitic, fine grained, shale cavings.

Shale, greenish gray, platy, dolomitic, much caving, some dolomite, grayish pink (5R8/2).

Dolomite, moderate reddish brown (10R4/6), shaly.

Dolomite, pale reddish brogan (10R5/4), granular, shale, moderate reddish brown (10R4/6).

Dolomite, pale red (10R6/2) granular, tight, also dolomite, grayish pink (5R8/2).

Dolomite, pale red (10R6/2), some is sandy.

Dolomite, grayish pink (5R8/2), some grayish pink, (5R8/2) fine grained sandstone.

Shale, medium gray, platy, sandstone, dolomite, as above.

Dolomite, grayish pink (5R8/2) granular.

Dolomite, pale red (10R6/2) some grayish pink (5R8/2) sandy.

Shale, moderate red (5R5/4) compact, dolomitic. Dolomite, as above.

Dolomite, grayish orange pink (10R8/2) some anhydrite chips.

Dolomite, as above, shale, medium gray, platy.

Shale, medium gray, splintery, slaty, much caving, some limestone, light brownish gray.

Shale, medium dark gray, splintery, samples are very poor.

Shale, variegated, splintery, massive, compact.

Shale, medium gray, splintery, platy, some variegated shales, compact, some calcarenite, pinkish gray (5YR8/1).

Shale, variegated, mostly grayish red, (5R4/2) some limestone, pale red (10R6/2).

Shale, grayish red (5R4/2) lumpy, dolomitic, variegated.

Shale, variegated, as above, splintery to platy.

Shale, grayish red (10R4/2) platy, compact, some shale is dolomitic.

Shale, variegated, massive, some is dolomitic, some medium dark gray shale.

Shale, grayish black, slaty, compact, some variegated shale.

Shale, variegated, platy, some shale is grayish olive (10Y4/2) some shale is dolomitic.

Shale, medium dark gray, splintery, dolomitic.

Shale, medium gray, splintery, some limestone, light gray, finely crystalline, some variegated shale.

Shale, greenish gray (5GY6/1), medium gray, platy.

Shale, variegated, some sandy limestone, yellowish gray (5GY8/1).

Samples missing.

Shale, medium dark gray, splintery, brittle, some very fine grained sandstone, pinkish gray (5YR8/1).
8000-8010  Sandstone, as above, some sandstone is pale red (10R6/2), slightly
dolomite.
8010-8030  Sandstone, as above, interbedded variegated shales, some mica
flakes.
8030-8065  Sandstone, pinkish gray (5YR8/1) fine grained, rest of sample as
above, small amounts of gypsum.
8065-8070  Sandstone as above, medium gray shale predominates, platy to
splintery, some variegated shales.
8070-8100  Sandstone as above, some is dusky red (5R3/4), interbedded
variegated shales.
8100-8120  Samples missing.
8120-8170  Sandstone, white-reds, very fine grained, fine grained, variegated
shales, some limestone chips, grayish, orange pink (10R8/2).
8170-8180  Limestone, very light gray-white, sublithographic, tight, sample
consists of mostly cavings.
8180-8185  Sample missing.
8185-8230  Limestone, as above, some limestone is yellowish-gray (5Y8/1)
interbedded.
8230-8265  Limestone, medium, light gray, sublithographic, samples through
Kibbey limestone section are very poor.
8265-8320  Limestone, light brownish gray, finely crystalline, also
limestone as above, some white anhydrite.
8320-8435  Salt, picked from logs. Samples consist of caving material.
8435-8450  Limestone, light brownish gray (5YR6/1) shale, variegated,
splintery, some anhydrite chips.
8450-8480  Salt, picked from logs, samples consist of caving material.
8480-8495  Shale, variegated, compact, silty, some dusky red (5R3/4)
siltstone.
8495-8530  Salt, picked from logs, samples consist of caving material.
8530-8570  Shale, medium dark gray-light gray, some variegated and silty,
splintery, sandstone, light brown (5YR6/4) medium-fine grained,
limestone, white, tight.
8570-8620  Salt, picked from logs, samples consist of caving material.
8620-8645  Shale, variegated, splintery, anhydrite, white, some brownish
limestone.
8645-8705  Limestone, pale yellowish brown (10YR6/2) with interbedded
shales, variegated some limestone, white sublithographic.
8705-8715  Salt picked from logs, samples consist of caving material.
8715-8730  Shale, variegated, limestone, white, sublithographic, moderate
red (5R5/4).
8730-8775  Limestone, white, sublithographic, shale, as above, mica flakes
interbedded with predominance of shale and limestone alternating.
8775-8830  Anhydrite, white, shale, limestone as above.
8830-8865  Salt, picked from logs, samples are caving material.
8865-8890  Shale, variegated, some limestone, grayish white, sublithographic.

CORE CHIPS DESCRIPTION:
8927-8930  Anhydrite, medium light gray, dolomite, very light gray, fine
graded.
8930-8933  Limestone, brownish gray (5YR4/1) finely crystalline, contains
some siderite crystals.
8933-8939  Limestone, grayish brown (5YR3/2).
8939-8942  Limestone, brownish gray, (5YR4/1) crystalline.
8942-8945  Limestone, grayish brown, (5YR3/2) crystalline.
8945-8948 Limestone, very light gray, anhydrite, brownish gray (5YR4/2).
8948-8967 Anhydrite, brownish gray (5YR4/1) medium dark gray.
8967-8970 Limestone, pale yellowish brown (10YR6/2) with veinlets of grayish brown dolomite (5YR3/2), limestone, brownish gray, (5YR4/1).
8970-8973 Limestone, pale yellowish brown (10YR6/2), as above.
8973-8976 Dolomite, pinkish gray, (5YR8/1), very light gray, sublithographic shale, medium dark gray, compact.
8976-8979 Limestone, yellowish gray, (5Y8/1) sublithographic, anhydrite, pale yellowish brown (10YR6/2).
8979-8982 Limestone, grayish brown, (5YR3/2) dolomitic, crystalline, anhydrite, very light gray, some yellowish gray dolomitic included.
8982-8985 Dolomite, pinkish gray (5YR8/1) sublithographic, shows banding.
8985-8990 Dolomite, as above with bands of medium light gray, anhydrite.
8990-8993 Limestone, brownish gray (5YR4/1) crystalline, medium grained.
8993-8996 Limestone, as above, with some white anhydrite.
8996-8999 Limestone, very light gray, crystalline, partly dolomitic.
8999-9002 Limestone, light brownish gray, medium grained.
9002-9005 Limestone, very light gray, fine grained, oil specks.
9005-9008 Limestone as above, limestone, dusky yellowish brown (10YR2/2) crystalline.
9008-9011 Limestone, medium light gray, fine grained, limestone, light brownish gray (5YR6/1) very fine grained.
9011-9014 Limestone, medium gray, crystalline.
9014-9017 Limestone, medium light gray, dolomitic, fossiliferous, very fine grained.
9017-9020 Dolomite, medium dark gray, fine grained, limy.
9020-9023 Dolomite, light gray, inclusions of anhydrite, shows porosity.
9023-9029 Dolomite, as above, oil stained.
9029-9032 Limestone, light gray, somewhat dolomitic, tight.
9032-9038 Limestone, medium gray, fine grained, crystalline, tight.
9038-9041 Dolomite, very light gray, contains anhydrite, white, intermixed.
9041-9044 Limestone, medium gray, fine grained, dolomite rhombs, brownish gray (5YR4/1).
9044-9047 Dolomite, light gray, porosity, shows banding.
9047-9050 Dolomite, limy, light brownish gray (5YR6/1), tight.
9050-9056 Limestone, brownish gray (5YR4/1), tight.
9056-9059 Limestone, light brownish gray dolomite rhombs, brownish gray (5YR4/1).
9059-9062 Dolomite, pale yellowish brown (10YR6/2) slight porosity.
9062-9068 Anhydrite, medium dark gray.
9068-9071 Dolomite, medium light gray, shows banding.
9071-9074 Anhydrite, light brownish gray, (5YR6/1), medium dark gray.
9074-9077 Anhydrite, medium dark gray.
9077-9080 Dolomite, light gray, dense.
9080-9083 Limestone, medium light gray, secondary dolomite rhombs.
9083-9086 Limestone, pale yellowish brown, (10YR6/2), fine grained.
9086-9089 Limestone, medium light gray, dense.
9089-9098 Limestone, medium light gray, oolitic, porosity.
9098-9101 Limestone, medium gray, oolitic, dense.
9101-9104 Limestone, medium dark gray, dense, limestone, medium light gray, fine grained.
9104-9107 Dolomite, very light gray, slight porosity.
9107-9110 Dolomite, light gray, secondary dolomite crystals, some oolites.
9111-9114 Limestone, medium grained, dense.
9114-9120 Limestone, medium light gray, oolitic.
9120-9123 Limestone, brownish gray, (5YR4/1) dense.
9123-9129 Limestone, light gray, secondary calcite crystals, fossiliferous.
9129-9132 Limestone, medium gray-brownish gray (5YR4/1), dense.
9132-9135 Limestone, medium light gray, secondary calcite, dense.
9135-9138 Limestone, light gray, oolitic, secondary calcite.
9138-9141 Limestone, pale brown (5YR5/2), slight vuggy porosity.
9141-9144 Limestone, medium light gray, dense.
9144-9147 Limestone, light gray, oolites, secondary calcite.
9147-9150 Limestone, medium light gray, dense, fossiliferous.
9150-9153 Limestone, medium light gray, oolitic.
9153-9155 Limestone, light gray, secondary calcite.
9155-9161 Limestone, medium light gray, oolites, tight.
9161-9164 Limestone, light gray, fossiliferous.
9164-9166 Limestone, medium light gray, hard, crystalline.
9166-9172 Limestone, medium light gray, oolitic.
9172-9175 Limestone, grayish brown, (5YR3/2) oolitic, secondary calcite
fillings, limestone, medium light gray, oolitic, styolites.
9175-9178 Limestone, medium light gray, oolitic, secondary calcite fillings.
9178-9181 Limestone, light olive gray, oolitic, hard, fractures filled with secondary calcite.
9181-9184 Limestone, light gray, partly oolitic, tight.
9184-9187 Limestone, pale yellowish brown, hard crystalline, secondary calcite, styolites.
9187-9196 Limestone, light gray, secondary calcite fillings, tight.
9196-9199 Limestone, medium light gray, crystalline.
9199-9202 Limestone, medium gray, very fine grained, hard, anhydrite, white.
9202-9205 Limestone, brownish gray, (5YR4/1) some fractures filled with secondary calcite, hard.
9205-9208 Limestone, medium gray, hard, crystalline.
9208-9214 Limestone, medium light gray, hard, secondary calcite.
9214-9217 Limestone, medium light gray, oolitic.
9217-9223 Limestone, medium gray, oolitic, recrystallized, dense.
9223-9232 Limestone, medium light gray, oolitic.
9232-9235 Limestone, brownish gray, recrystallized, oolites.
9235-9238 Limestone, light olive gray (5Y6/1) recrystallized oolites, secondary calcite.
9238-9241 Limestone, medium light gray, recrystallized.
9241-9244 Limestone, medium gray, dense.
9244-9247 Limestone, medium light gray, oolites, anhydrite, white.
9247-9250 Anhydrous limestone, light brownish gray (5YR6/1).
9250-9253 Anhydrite, medium gray.
9253-9256 Anhydrite, light gray, shaly.
9256-9259 Limestone, medium light gray, dense.
9259-9268 Anhydrite, very light gray, shale, light gray, calcareous.
9268-9271 Limestone, medium gray, dense.
9271-9274 Limestone, light gray, hard, crystalline.
9274-9277 Limestone, medium gray, fractured, fine grained, very slight show.
9277-9280 Limestone, medium light gray, fragmental.
9280-9283 Limestone, medium dark gray, very hard, dense.
9283-9292 Limestone, medium light gray, recrystallized.
9292-9295 Limestone, medium gray, fine grained, dense.
Limestone, medium light gray, recrystallized.

Limestone, light brownish gray (5YR6/1) recrystallized.

Limestone, light olive gray (5Y6/1) medium grained.

Limestone, medium gray, partly crystalline, dense.

Limestone, light brownish gray, crystalline.

Limestone, brownish gray, crystalline.

Limestone, medium dark gray, dense.

Limestone, medium dark gray, secondary calcite crystals.

Limestone, medium gray, partly crystalline.

Limestone, medium dark gray, very dense, irregular banding, secondary calcite crystals.

Shale, dark gray, compact, partly calcareous.

Limestone, medium dark gray, partly crystalline, medium grained, contains shale fragments.

Limestone, medium dark brownish gray, dense.

Shale, medium dark gray, intermixed with limestone, shale is calcareous, compact.

Limestone, medium dark gray, fine grained, dense, partly crystalline.

Limestone, medium gray, shaly, contains large calcite crystals.

Limestone, brownish gray, partly crystalline.

Limestone, light brownish gray, partly crystalline.

Dolomite, light brownish gray, contains crystals of calcite.

Limestone, medium light gray, partly crystalline.

Limestone, medium gray, recrystallized.

Limestone, brownish gray, contains vein fillings of anhydrite crystals.

Limestone, brownish gray, partly recrystallized, some crystals of calcite.

Limestone, light brownish gray, partly crystalline.

Limestone, medium Gray, medium grained crystalline.

Limestone, brownish gray, light brownish gray, irregularly fractured.

Limestone, light gray, partly crystalline, irregularly fractured.

Limestone, light brownish gray, fine grained, chert, light gray.

Limestone, light gray, very fine grained, limestone white, somewhat sandy, fine grained, soft.

Limestone, medium light gray, partly crystalline, fossiliferous.

Limestone, light brownish gray, partly crystalline.

Limestone, intermingled, white-brownish gray, the white is rather sandy and dolomitic.

Limestone, medium gray, fine grained, partly crystalline, fossiliferous.

Limestone, very light gray, styolites.

Same as sample 9419-9422.

Limestone, light brownish gray, fine grained-coarse crystalline, fossiliferous.

End of Cores

Sample missing.

Limestone, light gray, fine grained, some gray chert.

Limestone, medium light gray, fine grained to crystalline.

Limestone, medium gray, crystalline, dense.

Limestone, as above, some light brownish gray limestone.
9500-9515  Limestone, medium gray, shaly, dense.
9515-9520  Limestone, light gray, dense, tight.
9520-9525  Samples missing.
9525-9530  Limestone, medium gray, dense.
9530-9545  Limestone, light brownish gray, partly crystalline, some limestone, white, crystalline.
9545-9555  Limestone, light gray-brownish gray, tight.
9555-9570  Limestone, brownish gray-light brownish gray, dense, partly crystalline.
9570-9585  Limestone, light gray-brownish gray, crystalline.
9585-9595  Limestone, very light gray, tight.
9595-9605  Samples missing.
9605-9635  Limestone, brownish gray-light gray, crystalline.
9635-9640  Samples missing.
9640-9655  Limestone, as above.
9655-9670  Limestone, as above, brownish gray predominates.
9670-9680  Limestone, medium gray-medium light gray, dense.
9680-9695  Limestone, brownish gray-light gray, crystalline, some gray chert.
9695-9710  Limestone, medium gray predominates, dense, limestone, as above.
9710-9760  Limestone, medium gray-brownish gray-light gray, crystalline, fossiliferous.
9760-9765  Limestone, light brownish gray, intermixed with brownish gray, appears to have slight porosity.
9765-9770  Samples missing.
9770-9780  Limestone as above, fossiliferous.
9780-9810  Limestone, light brownish gray, very fine grained, dense.
9810-9840  Limestone, light gray, argillaceous, limestone, as above.
9840-9850  Limestone, light brownish gray, dense, very finely crystalline, fossil fragments.
9850-9880  Limestone, light gray-light brownish gray, dense, fossiliferous.
9880-9910  Limestone, medium-light gray, dense.
9910-9925  Limestone, medium dark gray predominates, fine grained, limestone as above.
9925-9940  Limestone, medium gray-light gray, dense.
9940-9950  Limestone, medium gray, tight, fossiliferous.
9950-9985  Limestone, medium gray to light gray, fine grained, the lighter limestone and as above.
9990-10,005  Limestone, medium gray-light gray, crystalline, somewhat argillaceous, fossiliferous.
10,005-10,015  Limestone, as above, some chert.
10,015-10,050  Limestone, as above, medium gray predominates, tight.
10,050-10,060  Limestone, medium gray to light gray, very fine grained, has small porosity.
10,060-10,080  Limestone, medium gray-medium light gray, dense.
10,080-10,095  Limestone, medium gray, fine grained, minute porosity.
10,095-10,105  Limestone, medium gray-brownish gray, dense, tight.
10,105-10,130  Limestone, medium gray, finely crystalline, argillaceous.
10,130-10,150  Limestone, medium gray-brownish gray, finely crystalline.
10,150-10,165  Limestone, medium gray, dense, some light brownish gray limestone.
10,165-10,175  Limestone, medium gray, dense, some black carbonaceous shale.
10,175-10,205 Limestone, medium gray, tight, also brownish gray limestone, somewhat argillaceous.
10,205-10,235 Limestone, medium gray-brownish gray, finely crystalline, dense.
10,235-10,245 Limestone, medium gray, dense, some black shale.
10,245-10,260 Limestone, medium gray-light gray, fine grained crystalline.
10,260-10,315 Limestone, medium gray-medium light gray, hard, very fine crystalline.
10,315-10,318 Samples missing.

CORES
10,318-10,333 Limestone, medium dark gray, argillaceous, very fine grained, dense.
10,333-10,338 Limestone, medium gray, argillaceous, very fine grained, dense.
10,388-10,392 Limestone, medium gray, argillaceous, very fine grained, dense.
10,402-10,430 Limestone, medium gray, argillaceous, very fine grained.
10,430-10,460 Limestone, medium gray, argillaceous, fine grained.
10,460-10,483 Shale, medium gray, very limy, compact.
10,483-10,492 Shale, medium dark gray, calcareous, slaty, compact.
10,492-10,495 Shale, medium dark gray, quite limy, compact.
10,501-10,509 Limestone, medium dark gray, fine grained, dense.
10,509-10,515 Shale, black, carbonaceous, compact.
10,515-10,522 Shale, dark gray, compact, brittle, banded.
10,522-10,528 Dolomitic limestone, medium light gray, very fine grained, dense.
10,528-10,531 Shale, dolomitic, medium gray, compact.
10,531-10,534 Limestone, medium light gray, fine grained, shows banding.
10,534-10,540 Limestone, medium gray, medium grained, pinpoint porosity.
10,540-10,549 Dolomite, medium light gray, shaly, dense.
10,549-10,552 Limestone, medium gray, dolomitic, medium grained.
10,552-10,558 Dolomite, medium gray, fine grained, locally limy.
10,558-10,561 Limestone, medium light gray, fine grained, dense.
10,561-10,574 Dolomite, medium light gray, fine grained, limy.
10,574-10,577 Shale, dark gray, compact, brittle.
10,577-10,604 Shale, grayish black, compact, pyritiferous, platy.
10,604-10,609 Dolomitic limestone, medium dark gray, crystalline.
10,609-10,643 Dolomite, medium gray with banded, shale, greenish gray (5G6/1), pyritiferous.
10,643-10,646 Dolomite, grayish orange pink, hard, crystalline.
10,646-10,649 Dolomite, as above, some greenish tint.
10,649-10,652 Dolomite, grayish orange pink, hard crystalline.
10,652-10,661 Samples missing.
10,661-10,671 Dolomite as above, shale, greenish gray, compact.
10,671-10,691 Dolomite, pale yellowish brown, (10YR6/2), shaly, crystalline, pinpoint porosity.
10,691-10,701 Shale, light gray, compact, dolomitic.
10,701-10,713 Shale, pale brown, (5YR5/2) compact, dolomitic.
10,713-10,719 Shale, light greenish gray, compact, dolomitic, some coarse grained dolomite.
10,719-10,725 Shale, greenish gray (5G6/1), grayish red (10R4/2), compact, dolomitic.  
10,725-10,731 Shale, pale brown (5YR5/2) dolomitic, interbedded anhydrite, white.  
10,731-10,743 Shale, pale brown with anhydrite, dolomite, brown with interbedded grayish green shale.  
10,743-10,749 Shale, pale brown with interbedded anhydrite, compact.  
10,749-10,783 Samples missing.  
10,783-10,801 Shale, light greenish gray, compact, dolomitic, pyritiferous, also shale, grayish brown (5YR3/2) with anhydrite.  
10,801-10,849 Samples missing.  
10,849-10,854 Anhydrite, medium dark gray.  
10,854-10,856 Dolomite, light brownish gray (5YR6/1) fine grained, dense.  
10,856-10,858 Limestone, medium dark gray, hard, finely crystalline.  
10,858-10,861 Anhydrite, medium dark gray, medium gray.  
10,861-10,866 Dolomite, light brownish gray, fine grained, sucrosic, anhydrite, brownish gray, grayish black.  
10,866-10,887 Samples missing.  
10,877-10,887 Limestone, medium dark gray-light brownish gray, hard crystalline.  
10,887-10,897 Limestone, medium gray, fossiliferous, fine grained.  
10,897-10,902 Limestone, medium light gray, sucrosic, anhydritic.  
10,902-10,907 Limestone, light brownish gray, fine grained, anhydrite.  
10,907-10,912 Limestone, brownish gray, dense, hard.  
10,912-10,927 Limestone, as above, fossiliferous, some medium gray limestone.  
10,927-10,932 Limestone, brownish gray-medium gray, fine grained, dense.  
10,932-10,942 Limestone, brownish gray, very fine grained, dense.  
10,942-10,947 Limestone, brownish gray, fossiliferous, some vuggy porosity.  
10,947-10,956 Shale, medium dark gray, very hard, compact, dolomitic.  
10,956-10,962 Anhydrite, medium light gray.  
10,962-10,965 Anhydrite, as above, limestone, brownish gray, recrystallized.  
10,965-10,968 Limestone, argillaceous, brownish gray, shows bedding.  
10,968-10,971 Limestone, medium dark gray, very fine grained, dense, recrystallized.  
10,971-10,974 Limestone, medium light gray, very fine grained, dense.  
10,974-10,977 Samples missing.  
10,977-10,980 Limestone, medium dark gray, argillaceous, dense.  
10,980-10,983 Limestone, light brownish gray, fine grained, crystalline, dense.  
10,983-10,986 Limestone, medium dark gray, argillaceous, fine grained, fossiliferous.  
10,986-10,989 Anhydrite, medium gray.  
10,989-10,992 Limestone, medium dark gray, very fine grained, dense.  
10,992-10,998 Anhydrite, medium light gray, massive.  
10,998-11,001 Anhydrite as above, intermingled light brownish gray limestone.  
11,001-11,004 Anhydrite, medium light gray.  
11,004-11,007 Anhydrite, light brownish gray, limy.  
11,007-11,010 Limestone, dark gray, crystalline, to medium light gray, crystalline.  
11,010-11,013 Limestone, medium light gray, crystalline.  
11,013-11,016 Limestone, as above, shows banding.  
11,016-11,022 Samples missing.  
11,022-11,025 Limestone, light brownish gray, recrystallized.  
11,025-11,028 Limestone, brownish gray, intermixed anhydrite, medium grain size, has some porosity.
11,028-11,031 Limestone, as above, fossiliferous, intermixed anhydrite.
11,031-11,037 Limestone, medium dark gray, very fine grained, dense, hard.
11,037-11,043 Anhydrite, light gray.
11,043-11,046 Limestone, brownish gray, fine grained, partly recrystallized.
11,046-11,049 Limestone, brownish black, very fine grained, dense, shows bedding.
11,049-11,052 Limestone, brownish gray, recrystallized.
11,052-11,055 Limestone, medium, dark gray, fine grained.
11,055-11,058 Limestone, brownish gray, very fine grained, dense.
11,058-11,061 Limestone, medium dark gray, fine grained.
11,060-11,075 Limestone, medium gray, dense, shale, medium dark gray, slightly calcareous, brittle.

CORES
11,076-11,091 Limestone, brownish gray, fine grained, partly recrystallized.
11,091-11,096 Limestone, brownish gray, very fine grained, dense.
11,096-11,101 Anhydrite, medium dark gray, massive.
11,101-11,106 Limestone, medium dark gray, very fine grained, dense.
11,106-11,111 Anhydrite, brownish gray, very limy, hard.
11,111-11,116 Limestone, light brownish gray, very fine grained, dense, some brownish gray.
11,116-11,121 Limestone, brownish gray, fine grained, partly recrystallized.
11,121-11,126 Anhydrite, medium light gray-greenish gray (5GY6/1).
11,126-11,151 Limestone, brownish gray, dense, very fine grained.
11,156-11,159 Limestone as above, interbedded with brownish black (5YR2/1) shale.
11,159-11,164 Anhydrite, brownish gray.
11,164-11,169 Limestone, medium dark gray, fine grained, dense.
11,169-11,174 Dolomite, light brownish gray, sucrosic, good porosity, anhydritic.
11,174-11,179 Limestone, medium dark gray, argillaceous, very fine grained, dense, some brownish gray limestone.
11,179-11,184 Dolomite, light brownish gray, hard crystalline.
11,184-11,194 Dolomite, as above, with intermixed anhydrite, shows porosity, crystalline.
11,194-11,199 Dolomite, as above, some shale, medium dark gray, compact, limy.
11,199-11,204 Dolomite, light brown, sucrosic, very good porosity.
11,204-11,214 Anhydrite, brownish gray, some is limy.
11,214-11,229 Dolomite, brownish gray, crystalline, medium grained, some microsucrosic.
11,229-11,234 Limestone, dark brownish gray, medium grained, banded with black shaly material
11,234-11,239 Limestone, as above, anhydrite.
11,239-11,244 Limestone, medium gray, brownish, very fine grained, dense.
11,244-11,254 Limestone, as above, some light brown, sucrosic.
11,254-11,259 Samples missing.
11,259-11,264 Limestone, medium dark gray, very fine grained, very dense, dolomite, brownish gray, very fine grained and dense.
11,264-11,267 Dolomitic, very light gray, microsucrosic.
11,267-11,272 Dolomite, as above, limestone, brownish gray, very fine grained, dense.
11,272-11,277  Limestone, light brown, medium grained, partly recrystallized.  
11,277-11,282  Sample, same as 11,267-11,272.  
11,282-11,287  Anhydrite, medium dark gray.  
11,287-11,297  Limestone, dark grayish brown, very fine grained, very dense.  
11,297-11,302  Limestone, light brownish-gray, medium grained, crystalline.  
11,302-11,307  Dolomite, very light gray, microsucrosic, anhydritic.  
11,307-11,312  Dolomite, light brownish gray, crystalline, hard.  
11,312-11,317  Limestone, medium gray, fine grained.  
11,317-11,322  Limestone, as above, shows banding, limestone, light brownish gray, very fine grained, dense.  
11,322-11,327  Limestone, brownish gray, very fine grained, dense.  
11,327-11,331  Limestone, brownish gray, medium grained.