



00272351

From	T	Total Feet	Form
500	650	150	Sandy shale
650	770	120	Gray sandstone
770	1760	990	Gray shale with thin sandstone
1760	1910	150	Grayish brown sandstone
1910	4040	2130	Gray shale and shaly sandstone
4040	4310	270	Gray shale
4310	4400	90	Shaly limestone
4400	5180	780	Gray shale and thin sandstone
5180	5225	45	Sandstone (Muddy)
5225	5269	44	Gray shale and sandy shale
5269	5293	24	Sandstone (First Dakota)
5293	5298	5	Bluish gray siltstone
5298	5319	21	Sandstone (Second Dakota)
5319	5330	11	Shale and siltstone
5330	5411	81	Sandstone (Lakota)
5411	5414	3	Shale (Morrison)

Drilled 9 7/8" hole to 5250. Stuck 4 1/2" Hughes modified drill pipe coming out of hole, leaving 10 stands, 1 single and a 6 1/4" x 30' drill collar in hole. Backed off drill pipe 290' from rotary table. Cleaned out and washed over drill pipe to 3350'. Stuck pipe 14 stands from RT, drove back and loosened. Cleaned out to top of fish at 4132'. Cleaned out to top of fish at 4590'. Cleaned out and washed to top of fish at 4595'. Washed over fish to 4745'. Had trouble getting out of hole. Reamed hole and cleaned out to 4574' at which depth found top of fish. Washed over fish to 4970'. Tried to cut drill pipe, broke cutters. Cut drill pipe at 4755 and pulled out. Washed down side of fish to 5029'. Washed over fish to 4988. Tried to make a cut and broke off cutters. Drilled by fish from 4758 to 5077' with a 9" bit. Cemented fish to 4743' with 200 sacks of cement and 2% calcium chloride. Cleaned out cavings and cement to 4898'. Recemented fish from 4898' to 4773' with 150 sacks cement and 2% calcium chloride. Found top of cement at 4804'. Drilled by fish with 9 7/8" OD bit to 4854', shale and cement, junk 4854-4858, cement back 4854-4719 with 150 sacks cement and 2% calcium chloride. Spotted cement plug from 4719 back to 4608'. Directional survey at 4712'. Oriented whipstock at 4713'. Pulled whipstock, depth of hole 4725'. Reamed hole to 4738' with 9 7/8" bit. Ran Eastman directional surveys - 2 3/4° South, 4° West at 4738', 4 3/4° South, 5° West at 4538', 5 3/4° South, 6° East at 4338' and 4° 05" South and 15 East at 4138'. Drilled shale and cement with 9 7/8" bit from 4738 to 4765. Set whipstock at 4765' and drilled by whipstock to 4775, then pulled whipstock. Drilled 9 7/8" hole 4775-4780 shale. Set whipstock at 4780'. Drilled 9 7/8" hole 4780-4840, set whipstock at 4840. Drilled to 4883'. Set whipstock at 4883', drilled 9 7/8" hole to 4944, set whipstock at 4944', hole caving. Drilled 9 7/8" hole to 4994', stuck drill pipe 24 stands off bottom. Spotted 50 barrels crude around stuck pipe, worked pipe, spotted 20 more barrel crude around stuck pipe. Spotted 65 more barrels crude, pipe still stuck. Worked pipe loose. Put on reamer to ream key seated hole at 2740'. Drilled 9 7/8" hole to 5102'. Ran 7 5/8" casing at this depth.

Drilled 6 3/4" hole from 5102 to 5414'. Ran 5 1/2" liner with bottom at 5413' and top at 5002', making 99' of liner lapping up into the 7 5/8" casing.