



Well History

Well Name: Lesser 1

API 05123073260000		Surface Legal Location NENE 21 5N 66W		Field Name Wattenberg		State CO		Well Configuration Type Vertical	
Ground Elevation (ft) 4,870.00	Original KB Elevation (ft) 4,880.00	KB-Ground Distance (ft) 10.00	Spud Date 5/28/1971 00:00	Rig Release Date	On Production Date	Abandon Date 6/23/2020			

Job

Drilling - original, 5/28/1971 00:00

Job Category Drilling	Primary Job Type Drilling - original	Start Date 5/28/1971	End Date 6/8/1971	Objective
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Daily Operations

Start Date	Summary	End Date

Abandon Well LOE, 6/8/1971 00:00

Job Category Abandon	Primary Job Type Abandon Well LOE	Start Date 6/8/1971	End Date 6/8/1971	Objective
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Daily Operations

Start Date	Summary	End Date

WBI - Abandon Well PDC, 6/17/2020 06:00

Job Category Abandon	Primary Job Type WBI - Abandon Well PDC	Start Date 6/17/2020	End Date 6/23/2020	Objective Re-enter wellbore and plug and abandon well
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Daily Operations

Start Date	Summary	End Date
6/17/2020	HELD SAFETY MEETING WITH DRIVERS. MIRU ENSIGN RIG #122 MOVED IN AND RIGGED UP RIG AND SUPPORT EQUIPMENT. N/U 11" 3K BOP TO W92 WELL HEAD. OFF LOADED PIPE ONTO RACKS AND TALLIED. R/U RMOR PRESSURE TESTING. TORQUE UP BOPS. TESTED CHOKE MANIFOLD AND BOPS. 1500 PSI ON THE HIGH SIDE AND 200 PSI ON THE LOW SIDE. TESTED BLIND RAMS, PIPE RAMS, AND ANNULAR BAG. CURRENTLY TESTING AT SHIFT CHANGE. ALL STACK TEST GOOD TO 15 MIN AND CHARTED. HAD TO CHANGE OUT WELL HEAD STUDS. FINISHED UP INSTALLING FLOWLINE AND FLARE LINE. P/U 7 7/8" VAREL CONE BIT, CSG SCRAPER, AND FLOAT. RIH W/ 1 JT DRILL PIPE AND TAGGED CEMENT AT 3' BELOW GROUND LEVEL. STARTED DRILLING OUT SLOWLY DOWN TO 25' AND FELL THROUGH SURFACE PLUG. CONTINUED TO RIH W/ A TOTAL OF 3 JTS DRILL PIPE @ 142'. ROLLED HOLE CLEAN. L/D DRILL PIPE AND BIT AND SCRAPER. P/U RIH W/ RMOR 7 3/4" TENSION PACKER. RIH W/ 3 JTS DRILL PIPE. SET PACKER AT 138'. R/U RMOR TEST UNIT AND PRESSURED UP SURFACE CSG TO 900 PSI. HELD FOR 15 MIN. GOOD TEST. RELEASED PRESSURE. RELEASED PACKER AND L/D DRILL PIPE AND TOOLS. P/U 7 7/8" VAREL CONE BIT, BIT SUB, AND FLOAT. P/U RIH W/ 6 JTS HEAVY WEIGHT DRILL PIPE TO TAG AT 142'.	6/17/2020
6/18/2020	CONTINUED DRILLING AND REAMING FROM 142' TO 440' PUMPING 6 BPM AT 85 PSI, 65 RPM WITH 47' PER HOUR ROP. STARTED RETURNING HARD DRY, HEAVY MUD AND CLAY. INCREASED PUMP RATE TO 10 BPM AT 258 PSI. ROP INCREASED TO 71' PER HOUR. PUMPED 10 BBL SAPP SWEEPS AND ADDED 1 CUP OF SAPP AT EVERY CONNECTION. CONTINUED DRILLING AND REAMING TO 1405'. PUMPING 10.8 BBL/MIN RATE @ 450 PSI WITH 82' PER HOUR ROP. RETURNING HEAVY MUD AND CLAY AND INTERMITTANT CEMENT TO TANK. CONTINUED TO PUMP 1 CUP OF SAPP AT ALL CONNECTIONS AND 5 BBL PILL AT PERIODS OF HARD DRILLING. CURRENTLY PUMPING 8.7 PPG MUD IN AND RETURNING 8.9 PPG MUD. DRILLING AHEAD.	6/18/2020
6/19/2020	HELD SAFETY MEETING. CONTINUED DRILLING OUT FROM 1405' DOWN TO 2385' PUMPING 10.8 BBL/MIN RATE @ 570 PSI WITH 75' PER HOUR ROP. RETURNING HEAVY MUD AND CLAY TO TANK. CONTINUED TO PUMP 1 CUP OF SAPP AT ALL CONNECTIONS AND 5 BBL PILL AT PERIODS OF HARD DRILLING. CURRENTLY PUMPING 8.7 PPG MUD IN AND RETURNING 8.9 PPG MUD. DRILLING AHEAD. CREW CHANGE AND SAFETY MEETING. DRILLED DOWN TO A TOTAL DEPTH OF 2615' PUMPING 12 BBL/MIN RATE @ 815 PSI. 19K DOWN ON BIT WITH A CURRENT ROP OF 46'/HR. RETURNING HEAVY MUD AND CLAY TO TANK. CONTINUED TO PUMP 1 CUP OF SAPP AT ALL CONNECTIONS AND 5 BBL PILL AT PERIODS OF HARD DRILLING. CURRENTLY PUMPING 8.7 PPG MUD IN AND RETURNING 8.9 PPG MUD. DRILLING AHEAD.	6/19/2020
6/20/2020	HELD SAFETY MEETING. CONTINUED DRILLING OUT FROM 2615' DOWN TO 2710' W/ 54 JTS DRILL PIPE AND 10 JTS HEAVY WEIGHT PUMPING 12 BBL/MIN RATE @ 785 PSI WITH 40'-60' PER HOUR ROP. RETURNING HEAVY MUD AND CLAY TO TANK. CONTINUED TO PUMP 1 CUP OF SAPP AT ALL CONNECTIONS AND 5 BBL PILL AT PERIODS OF HARD DRILLING. PUMPING 9.1 PPG MUD IN AND RETURNING 9.3 PPG MUD. BIT STOPPED DRILLING AT 2710'. LOST ROP AND ALL TORQUE AND STOPPED MAKING HOLE. TRIED WORKING FOR 40 MIN WITH NO HOLE MADE. ROLLED 2 BOTTOMS UP AND CLEANED UP RETURNS. DECIDED TO BIT TRIP. POOH L/D ON RACKS 54 JTS DRILL PIPE AND 10 JTS HEAVY WEIGHT. BIT WAS BALLED UP WITH HEAVY MUD AND CHUNKS OF SHALE. ROLLER CONES SHOWED SOME SIGNS OF DAMAGE AND ONE CONE BERRING WAS LOOSE. CHANGED OUT BIT WITH A VAREL 7 7/8" ROLLER TOOTH BIT. P/U RIH W/ BHA, 10 JTS HEAVY WEIGHT, AND 54 JTS DRILL PIPE. RESUMED DRILLING FROM 2710' PUMPING 10 BPM AT 413 PSI, 67 RPM WITH ROP OF 25 FT/MIN. PUMPED SAPP, DESCO AND WALNUT SHELL SWEEPS WITH NO NOTICEABLE EFFECT. DRILLED TO 2884' MAKING 174' IN 7 HOURS. TRIPPED OUT WITH BIT. RIH WITH 7-7/8" PDC BIT, 6-1/2" MUD MOTOR, 10 SPIRAL HWDP AND 58 JNDS OF DRILL PIPE. TAGGED UP @ 2884' AND STARTED DRILLING OUT. DRILLED OUT DOWN TO 3453' PUMPING 14 BBL/MIN @ 1862 PSI AND 195 PSI DIFFERENTIAL PRESSURE. 6.5 K WEIGHT ON BIT AND CURRENT ROP OF 175'/HR. RETURNING MUD AND SHALE OVER SHAKERS. PUMPING 9.5 PPG FLUID AND RETURNING 9.6 PPG FLUID. DRILLING AHEAD.	6/20/2020
6/21/2020	HELD SAFETY MEETING. CONTINUED DRILLING OUT FROM 3453' TO 6944' PUMPING 14 BPM AT 2260 PSI WITH 310 PSI DIFF PRESSURE, 50-67 RPM MAKING 150 TO 240 FT/HOUR. PUMPED 10 BBL 50 VISC SWEEPS EVERY 3-4 HOURS. PUMPING 10.2 PPG FLUID AND RETURNING 10.3 PPG FLUID. RETURNING HEAVY SHALE AND MUD TO RETURN TANK. DRILLING AHEAD.	6/21/2020



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Daily Operations

Start Date	Summary	End Date
6/22/2020	<p>HELD SAFETY MEETING AND CONTINUED DRILLING AHEAD. TD WELL AT 7000' W/ 150 JTS DRILL PIPE AND 10 JTS HWDP. DRILLED LAST TWO JOINTS AT 14 BBL/MIN RATE AT 2600 PSI W/ 330 DIFF, 65 RPM, MAKING 200' / HR. RETURNING HEAVY SHALE AND MUD ACROSS SHAKERS. STARTED 30 BBL GEL SWEEP AT 50 VISC AT THE START OF THE LAST JOINT. SENT ANOTHER 30 BBL GEL SWEEP AT 50 VISC ONCE WELL WAS TD. CIRCULATED SWEEPS FROM SURFACE TO SURFACE AND UNTIL WELL WAS CLEAN. KILLED PUMP. POOH L/D ON RACKS W/ 150 JTS DRILL PIPE, 10 JTS HWDP, FLOAT, MUD MOTOR, AND PDC BIT. P/U RIH OPEN ENDED W/ 155 JNTS OF 4-1/2" 16.6# DP AND 1 JNT OF HWDP. EOT AT 6950'. ROLLED BOTTOMS UP WITH 10.8# MUD. SHUT DOWN PUMP. WELL REMAINED STATIC WHILE MIRU NEXTIER CEMENTERS. HELD SAFETY MEETING. TEST PUMP AND LINES TO 3000 PSI. ESTABLISHED CIRCULATION WITH 5 BBL FRESH WATER. PUMPED 100# OF SAPP IN A 10 BBL PILL. PUMPED 3 BBL FRESH WATER SPACER. MIXED AND PUMPED 126 SKS OF NIO BLEND 15.8#, 1.52 YIELD CEMENT IN A 34.1 BBL SLURRY. DISPLACED 90.6 BBL OF 10.8# MUD TO BALANCE PLUG AT 6380'. LD 6 JNTS PULLING WET. PUMPED 4 BBL MUD TO FLUSH END OF STRING. LD TOTAL OF 35 JNTS. ROLLED HOLE. STARTED GETTING VERY THICK 10.6# MUD RETURNS WITH A VISCOSITY TOO HIGH TO MEASURE. WORKED TO THIN MUD WHILE LAYING DOWN 19 MORE JNTS LEAVING 101 JNTS IN HOLE. EOT AT 4490'. HAD TO STOP CIRCULATING TO HAUL OFF THICK MUD. THINNED MUD TANKS AND ROLLED BOTTOMS UP AGAIN. SHUT DOWN PUMPS. WELL STATIC. PU AND RIH WITH 41 JTS DRILL PIPE. TAGGED W/ 142 JTS @ 6321'. GOOD PLUG. L/D ON RACKS 50 JTS DRILLPIPE AND RAN 1 JT HWDP FOR A TOTAL OF 93 JTS IN THE HOLE @ 4136'. R/U PUMP. ROLLED HOLE CLEAN. R/U NEXTIER CEMENT SERVICES. MIXED UP AND PUMPED 265 SACKS (54.2 BBL) 15.8 PPG G NEAT CEMENT FROM 4136' TO 3586'. GOOD CIRCULATION THROUGHOUT THE ENTIRE JOB AT 5 BBL/MIN RATE. DISPLACED W/ 46 BBL 8.9 PPG MUD TO BALANCE PLUG. PLUG BALANCED AT AN 8" HOLE VOLUME. TOC ESTIMATED @ 3239'. OPENED UP TO CEMENTER. WELL WAS STATIC. R/D CEMENTERS. WOT</p>	6/22/2020
6/23/2020	<p>HELD SAFETY MEETING. END OF DRILL PIPE @ 3035' W/ 68 JTS. ROLLING HOLE UNTIL TAG AT 1230 AM. KILLED PUMP. WELL WAS STATIC. P/U RIH W/ 5 JTS DRILL PIPE TO TAG AT 3217' W/ 5K DOWN ON PLUG. GOOD PLUG. POOH L/D ON RACKS 34 JTS DRILL PIPE LEAVING 39 IN THE HOLE @ 1739'. R/U NEXTIER CEMENT SERVICES. HELD SAFETY MEETING. MIXED UP AND PUMPED 230 SACKS (54.4 BBL) 14.8 PPG TYPE 3 CEMENT COVERING FROM 1739' TO APPROX. 1189'. GOOD CIRCULATION THROUGHOUT THE ENTIRE JOB AT 5 BBL/MIN RATE. DISPLACED W/ 13.9 BBL 8.9 PPG MUD TO A BALANCED POINT. OPENED WELL TO TANK AND WELL WAS STATIC. ESTIMATED TOC @ 978'. R/D CEMENTERS. POOH L/D ON RACKS 26 JTS DRILL PIPE LEAVING 13 IN THE HOLE @ 579'. R/U RIG PUMP AND ROLLED HOLE WHILE WAITING ON 4 HOUR REQUIRED CURE TIME. P/U RIH W/ 7 JTS DRILL STRING AND TAGGED PIERRE PLUG AT 879' W/ 5K WEIGHT DOWN. POOH L/D ON RACK 7 JTS DRILL STRING LEAVING 13 JTS IN THE HOLE @ 579'. R/U NEXTIER CEMENT SERVICES. HELD SAFETY MEETING. ESTABLISHED CIRCULATION WITH 10 BBL FRESH WATER. MIXED AND PUMPED 156 SKS OF TYPE III 14.8# CEMENT IN A 37 BBL SLURRY TO SURFACE. LD DP. ND BOPS. TOPPED OFF WITH 13 SKS. (3 BBL)</p> <p>TOTAL OF 169 SKS (40 BBL) PUMPED FOR SURFACE PLUG. WASHED UP PUMP AND LINES. RDMO CEMENTERS. RDMO RIG 122. ATP DUG OUT AND CUT OFF SURFACE HEAD 6' BELOW GROUND LEVEL. WELD ON CAP AND MARKER PLATE. BACKFILLED HOLE. RDMO</p> <p>FINAL REPORT</p>	6/23/2020