



Well History

Well Name: Hayes 1

API 05123051780000		Surface Legal Location SENE 20 5N 66W		Field Name Wattenberg		State CO		Well Configuration Type Vertical					
Ground Elevation (ft) 4,886.00		Original KB Elevation (ft) 4,896.00		KB-Ground Distance (ft) 10.00		Spud Date		Rig Release Date		On Production Date		Abandon Date 6/20/2020	

Job

Abandon Well LOE, 9/3/1957 00:00

Job Category Abandon	Primary Job Type Abandon Well LOE	Start Date 9/3/1957	End Date 9/3/1957	Objective
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Daily Operations

Start Date	Summary	End Date

WBI - Abandon Well PDC, 6/8/2020 06:00

Job Category Abandon	Primary Job Type WBI - Abandon Well PDC	Start Date 6/8/2020	End Date 6/20/2020	Objective REENTRY/ PLUG AND ABANDON
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Daily Operations

Start Date	Summary	End Date
6/8/2020	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.	6/8/2020
6/9/2020	CONTINUED TO TEST STACK. TESTED BLIND RAMS, PIPE RAMS, AND ANNULAR BAG. TESTED ALL THREE TO 1500 PSI ON THE HIGH SIDE AND 200 PSI ON THE LOW. ALL TESTS GOOD AND CHARTED. P/U RMOR 3 7/8" 4 BLADE BIT, BIT SUB W/ FLOAT, X- OVER TO 2 7/8" REG THREAD, X- OVER FROM 2 7/8" REG TO 2 7/8" PTECH TUBING. P/U RIH W/ 1 JT TBG AND TAGGED TOC @ 25'. R/U RIG PUMP, LOADED TBG AND BACKSIDE, ESTABLISHED CIRCULATION PUMPING 3.5 BBL/MIN RATE AND RETURNING THE SAME. DRILLED SLOWLY THROUGH SURFACE PLUG DOWN TO 65' WITH NO ISSUES. BIT DRILLED THROUGH VERY SMOOTHLY. INSTALLED ROTARY HEAD. CURRENTLY HEADED SOUTH TO THE SECOND PLUG TAG AT SHIFT CHANGE. CONTINUED RIH OFF RACKS TO TAG AT 688'. DRILLED TO 890' PUMPING 3.5 BPM AT 325 PSI AVERAGING 28.85' PER HOUR. ROLLED HOLE CLEAN. PULLED AND LD TBNG ON RACKS. 4 BLADE BIT LOOKED GOOD. CHANGED OUT BIT FOR A 3-7/8" 3 BLADED STEPPED BIT AND RIH TO TAG AT 890'. BROKE CIRCULATION AND CONTINUED DRILLING TO 955' MAKING 65' IN 1 HOUR. CURRENTLY DRILLING AHEAD AT SHIFT CHANGE. SHIFT CHANGE SAFETY MEETING. CONTINUED TO DRILL DOWN TO 1650' W/ JT 54 IN THE HOLE. PUMPING 3.5 BBL/MIN RATE AND RETURNING THE SAME. 65 RPM, 2600 PSI TORQUE, AND CURRENTLY MAKING 100' PER HOUR. SEEING ONLY FINE CEMENT COME ACROSS SHAKERS. CONTINUE TO DRILL AHEAD.	6/9/2020
6/10/2020	CONTINUED DRILLING OUT CEMENT TO A DEPTH OF 1909' W/ 61 JTS PTECH TBG. PUMPING 3.5 BBL/MIN AND RETURNING 3.5 BBL/MIN. 65 RPM W/ AVERAGE OF 15K WEIGHT ON BIT. STEADY FINE CEMENT IN RETURNS. NOTE AT 1800' DRILLING SLOWED DOWN. TRIED TO WORK UP TO 4.5 BBL/MIN AND BETWEEN 10-16K WEIGHT ON BIT. BIT IS WORN ONLY MAKING 59' OF HOLE THE LAST TWO HOURS. ROLLED HOLE TWO BOTTOMS UP AND STARTED LAYING DOWN TUBING. LD 61 JNTS AND BHA. BIT IN GOOD SHAPE. RIH WITH 3-7/8" 4 BLADE BIT, 3-1/8" MUD MOTOR, 2-3/8" REG PXP XO SUB, FLOAT SUB, 2-3/8" REG BXB XO SUB, 2-7/8" PTECH X 2-3/8" REG BXP XO SUB AND 1 JNT OF TBNG. TEST MUD MOTOR. GOOD TEST. PU AND RIH WITH 60 JNTS OF 2-7/8" PTECH TBNG. BROKE CIRCULATION 3.5 BPM AT 900 PSI, TAGGED AT 1912' AND DRILLED TO 1920' IN 1.5 HRS. WORKED PUMP RATE AND WEIGHT ON BIT BUT UNABLE TO MAKE HOLE FASTER THAN 4' PER HOUR. ROLLED HOLE CLEAN. POOH LAYING DOWN TBNG AND BHA. TEST MOTOR. REPLACED 3-7/8" 4 BLADE BIT WITH 3.8" FRAC DRILL BIT AND RIH WITH SAME BHA. TAGGED AT 1920' AND CONTINUED DRILLING. AT 1950' PUMPED 50 BBL FRESH WATER SWEEP. SWEEP DIDN'T RETURN CLEAN. CONTINUED DRILLING TO 1993' AT 8 PM MAKING 6' IN THE LAST HOUR. GOT CHEMICALS ON LOCATIO FROM UNIVERSAL FLUIDS. MIXED UP 50 BBL MUD FLUSH PILL IN TANK 3. SENT MUD FLUSH PILL SITTING WITH 10K DOWN ON BIT AND 12.7/HOUR ROP. ROLLED MUD FLUSH PILL FROM SURFACE TO SURFACE WHILE CONTINUING TO DRILL. NO CHANGE IN ROP AND STILL RETURNING FINE CEMENT TO TANK. DECISION WAS MADE TO BIT TRIP. KILLED PUMP. POOH L/D ON RACK 64 JTS PTECH WORKSTRING AND BHA. R/U RANGER WIRELINE SERVICES. P/U RIH W/ COLLAR LOCATOR AND TRASH CATCHER DOWN TO 1998'. VERIFIED THAT WE WERE STILL INSIDE CASING. POOH R/D WIRELINE.	6/10/2020
6/11/2020	POOH R/D WIRELINE. P/U RIH WITH 3-7/8" FOCUS SEALED BEARING CONE BIT, 3-1/8" MUD MOTOR, 2-3/8" REG PXP XO SUB, FLOAT SUB, 2-3/8" REG BXB XO SUB, 2-7/8" PTECH X 2-3/8" REG BXP XO SUB AND 1 JNT OF TBNG. TEST MUD MOTOR. GOOD TEST. PU AND RIH WITH 64 JNTS OF 2-7/8" PTECH TBNG. BROKE CIRCULATION 3.5 BPM AT 1100 PSI, TAGGED AT 1997'. WORKED FOR 2 HOURS BEFORE STARTING TO MAKE HOLE. AT SHIFT CHANGE DEPTH WAS 2100' W/ 50 ROP. STARTED DRILLING HARD AT 2105'. ROP PROGRESSIVELY WORSE. DID A MUD CHECK. PUMPING 8.8# AND RETURNING 8.9#. PULLED BIT UP, INCREASED PUMP RATE TO 185 GPM AND WORKED TBNG TO CLEAR BIT. WORKED PUMP RATE, WEIGHT ON BIT AND ROTATION SPEED AND DRILLED TO 2390'. CHANGED SHIFT AND HELF SAFETY MEETING. CONTINUED TO FIGHT DOWN TO A TOTAL DEPTH OF 2458'. PUMPING 3.5 BBL/MIN RATE. ROP DECREASING DOWN TO SINGLE DIGITS FOR THE LAST HOUR OF DRILLING. DECISION WAS MADE TO BIT TRIP AND INSPECT BIT. POOH L/D ON RACKS 79 JTS WORKSTRING. BIT WAS IN POOR SHAPE MISSING ALL THREE ROLLER CONES. CALLED FOR WIRELINE.	6/11/2020



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Daily Operations

Start Date	Summary	End Date
6/12/2020	R/U RANGER WIRELINE. P/U RIH W/ MAGNET TO RETRIEVE ROLLER CONES. MADE 3 TRIPS AND RECOVERED 1/2 OF 1 CONE AND SOME METAL SHAVINGS. RDMO WIRELINE. PU AND RIH WITH RMOR 3.75" CUTRITE BURN SHOE WITH FINGERS, TOP SUB, XO SUB AND 79 JNTS OF 2-7/8" TBNG TO 2449'. (TD WAS 2458') REVERSE CIRCULATED 3.5 BPM AT 445 PSI AND ROTATED DOWN TO 2459' THEN PULLED UP 4'. REPEATED 2 ADDITIONAL TIMES ONLY SEEING A 20 PSI PRESSURE INCREASE WHEN SETTING DOWN 14K. INCREASED PUMP RATE TO 4 BPM AT 487 PSI AND REPEATED 2 MORE TIMES WITH SAME RESULTS. ROLLED HOLE BOTTOMS UP X2. SHUT DOWN PUMP. POOH WITH TBNG AND BURN SHOE. RECOVERED CONES AND A LARGE CORE OF HARD CEMENT. RIH WITH 3-7/8" 2-STEP BIT, NOV 3-1/8" MUD MOTOR AND 79 JNTS OF 2-7/8" TBNG. BROKE CIRCULATION PUMPING 3.5 BPM AND DRILLED FROM TAG AT 2459' TO 2746'. SLOW DRILLING. DRILLING GOT VERY HARD AT SHIFT CHANGE @ 2746'. HELD SAFETY MEETING AND CONTINUED DRILLING OUT. VERY HARD DRILLING. WORKING PUMP RATE FROM 3.5 BBL/MIN TO 4.5 BBL/MIN RATE. WORKING WEIGHT ON BIT AND DIFFERENTIAL PRESSURE. HAD THREE MOTOR STALLS AND MADE ONLY 4' OF HOLE IN TWO HOURS. DECISION WAS MADE TO BIT TRIP AND INSPECT BIT. POOH L/D ON RACKS W/ 88 JTS PTECH WORKSTRING. NOTE PIPE ARM BLEW HYDRAULIC LINE AND WAS DOWN FOR 1 HOUR WHILE TRIPPING OUT.	6/12/2020
6/13/2020	UPON GETTING TOOLS ON THE BANK. TWO STEP BIT WAS WORN AND IN POOR SHAPE. P/U RIH W/ 3.8" OD FRAC DRILL BIT, XO 2.375 REG X 2 3/8" PAC, 2.375" MUD MOTOR, NOV 3 1/8" AGITATOR, FLOAT SUB, X OVERS BACK TO PTECH WORKSTRING. OVER ALL BHA LENGTH- 22.91'. RIH OFF RACKS W/ 89 JTS WORKSTRING. CONTINUED DRILLING OUT FROM 2749' TO 4314'. PUMPING 4.3 BBL/MIN RATE W/ 3300 PSI. ROP- 94'/HR WITH 280 PSI DIFF PRESSURE. STILL SEEING GRITTY CEMENT IN RETURNS. CONTINUE TO DRILL OUT.	6/13/2020
6/14/2020	CONTINUED DRILLING OUT FROM 4314' DOWN TO 4746'. SLOW HARD DRILLING. CRACKED A LINER IN THE PUMP. LD 7 JNTS AND RECIPROCATED PIPE WHILE REPAIRING PUMP. THINNED MUD DOWN FROM 9.6# TO 8.8#. PU TBNG CIRCULATING DOWN TO TAG AT 4745'. KEPT PRESSURING OUT TO 3700 PSI. UNABLE TO MAKE HOLE. ROLLED HOLE CLEAN. PUMPED 15 BBLs OF 9.6# MUD TO ELIMINATE PULLING WET STRING. POOH LAYING DOWN ON TRAILER WITH 151 JNTS. MOTOR, AGITATOR AND FLOAT WERE ALL BAD. PU SAME 3.80" FRAC DRILL BIT, BIT SUB, NEW MUD MOTOR, NEW AGITATOR, NEW FLOAT SUB AND TEST AGITATOR AND MUD MOTOR ON THE RIG FLOOR. PU AND RIH WITH 152 JNTS OF TBNG. TAGGED W/ 152 JTS @ 4746'. CONTINUED DRILLING OUT DOWN TO 4852'. STILL HARD DRILLING. FINE CEMENT IN RETURNS. PUMPING 4.5 BBL/MIN RATE @ 3274 PSI W/ 233 PSI DIFFERENTIAL PRESSURE AND 400 FT/LBS TORQUE. PUMPING 8.8 PPG FLUID AND RETURNING 8.8 PPG. DRILLING AHEAD.	6/14/2020
6/15/2020	HELD SAFETY MEETING. CONTINUED DRILLING OUT FROM 4852' TO 5617' PUMPING 4.5 BBL/MIN RATE @ 3300 PSI W/ 700 FT/LBS TORQUE AND 350 PSI DIFFERENTIAL PRESSURE. AVERAGING FROM 25-80 ROP. MAKING 40' HOLE ON HOUR AVERAGE. GRITTY CEMENT IN RETURNS. HAULED OFF 165 BBLs OF MUD AND REPLACED WITH 165 BBLs FRESH WATER TO THIN MUD DOWN FROM 9.3# TO 9.0#. HAD TO SHUT DOWN FOR 2.5 HOURS TO REPLACE LINER ON PUMP 2 FROM 830-11 PM. DRILLING AHEAD @ 1130 PM.	6/15/2020
6/16/2020	HELD SAFETY MEETING AND CONTINUED DRILLING OUT FROM 5617' DOWN TO 5760'. VERY HARD DRILLING THE WHOLE WAY. PUMPING 4.5 BBL/MIN RATE @ 3400 PSI W/ 450 PSI DIFFERENTIAL PRESSURE AND 550 FT/LBS TORQUE. PUMPING 9.1 PPG FLUID AND RETURNING 9.2 PPG. GRITTY CEMENT IN RETURNS. DRILLING HAS SLOWED DOWN TO 20' PER HOUR RATE. ONLY 177' MADE IN THE LAST 6 HOURS. CONTINUED TO DRILL TO 5895' WITH 188 JNTS. ROLLED HOLE CLEAN. POOH LAYING DOWN. MIRU RANGER WIRELINE. RAN BOND TOOL AND STACKED OUT AT 638'. POOH. RAN GAUGE RING/JUNK BASKET AND WORKED THRU TIGHT SPOT AT 638'. POOH. GRITTY CEMENT IN JUNK BASKET. RAN BOND TOOL FROM TAG AT 5895' TO SURFACE. LOG SHOWS GOOD CEMENT BOND FROM 5895' TO SURFACE. RIH WITH GAUGE RING/JUNK BASKET TO 5895' PRIOR TO RUNNING CIBP. P/U RIH W/ STS 4 1/2" 10K CIBP. TAGGED AT 2800' AND COULD NOT WORK PLUG THROUGH. WILL NEED TO MAKE A 3 7/8" BIT RUN BEFORE SETTING THE PLUG. POOH R/D WIRELINE. STARTED TO RIG DOWN RIG. WILL MOVE OFF LOCATION IN THE AM AND BRING IN WORKOVER RIG TO MAKE BIT RUN AND PUMP CEMENT.	6/16/2020
6/17/2020	FINISHED RIGGING DOWN ENSIGN RIG 122 AND MOVED OFF LOCATION. MIRU ENSIGN RIG 354. HELD SAFETY MEETING. RIGGED UP PUMP AND TANKS. PU 3-7/8" CONE BIT, BIT SUB AND TALLIED IN HOLE FROM FLOAT WITH 2-3/8" 4.7# J-55 8RD EUE TBNG TO TAG AT 2814'. RU POWER SWIVEL, BROKE CIRCULATION AND REAMED DOWN TO TD AT 5895' WITH 188 JNTS. ROLLED HOLE CLEAN. LD 44 JNTS ON TRAILER. SECURED WELL. SDFD. CREW TO YARD.	6/17/2020
6/18/2020	CREW TO LOCATION. HELD SAFETY MEETING. 0 PRESSURES ON WELL. LOAD HOLE WITH 3 BBLs WATER AND ROLLED HOLE FOR 30 MINUTES. POOH TO DERRICK WITH 142 JNTS, LD BIT. MIRU RANGER WIRELINE. RIH WITH STS 4-1/2" 10K CIBP. STACKED OUT AT 650'. ADDED WEIGHT BAR AND WORKED THRU TO 660'. STACKED AGAIN. UNABLE TO WORK THRU. POOH. RIH WITH 3-7/8" BIT, BIT SUB AND 22 JNTS TO 700'. ROLLED HOLE FOR 10 MINUTES. PULLED OUT BIT SLOWLY. WIRELINE RAN CIBP AND SET AT 5895'. RIH WITH DUMP BAILER AND SPOT 2 SKS OF CEMENT ON TOP OF PLUG. RDMO WIRELINE. ATTEMPT TO PRESSURE TEST CASING. INJECTED AT 200 PSI. PU STS TENSION PACKER AND ATTEMPT TO HUNT HOLES. UNABLE TO SET PACKER FOR A GOOD TEST. PULLED PACKER. ELEMENTS WERE SHOT. RAN CASING SCRAPER DRESSED FOR 4-1/2" 11.6# CASING AND WORKED TO 1000'. POOH. RAN IN HOLE WITH 2ND TENSION PACKER. UNABLE TO SET PACKER. POOH. SOME CEMENT ON PACKER SLIPS. RIH WITH COMPRESSION PACKER AND FOUND CASING LEAK ABOVE 900'. POOH WITH PKR. RIH WITH MULE SHOE AND 141 JNTS TO 4451'. SECURED WELL. SDFD. CREW TO YARD.	6/18/2020



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Daily Operations

Start Date	Summary	End Date
6/19/2020	CREW TO LOCATION. HELD SAFETY MEETING. 0 PRESSURE ON WELL. EOT AT 4446'. ROLLED HOLE. SHUT DOWN PUMP. WELL REMAINED STATIC WHILE MIRU NEXTIER CEMENTERS. HELD SAFETY MEETING. TEST PUMP AND LINES TO 2200 PSI. ESTABLISHED CIRCULATION WITH 5 BBLS FRESH WATER. MIXED AND PUMPED 40 SKS OF CLASS G 15.8# CEMENT IN A 8.2 BBL SLURRY. DISPLACED 15 BBLS FRESH WATER TO BALANCE PLUG AT 3917'. LD 78 JNTS. EOT AT 2007'. PUMPED 336 SKS OF CLASS G 15.8# CEMENT IN A 69 BBL SLURRY. WATERED DOWN CEMENT RETURNS TO TANK. RD CEMENTERS. ATTEMPT TO PULL TBNG. STUCK IN HOLE. WORKED 2 JNTS OUT. PARTED TOP OF 3RD JNT FROM SURFACE AT SURFACE. LATCHED ONTO TBNG TOP WITH OVERSHOT GRAPPLE AND WORKED TBNG UP 1'. DRESSED UP FISH TOP. MIRU RANGER WIRELINE. RIH WITH 1.680" CUTTER. STACKED OUT AT 650'. CUT TBNG. RDMO WIRELINE. LD TBNG. CEMENT ON COLLARS 238' FROM SURFACE. PICKED UP REPLACEMENT 2-3/8" JNTS AND RIH TO HARD TAG AT 318'. LD TAG JNT. EOT AT 315'. PUMPED 49 SKS (10 BBLS) WITH ONLY WATER RETURNS. PUMPED AND ADDITIONAL 49 SKS (10 BBLS) WITH ONLY WATER RETRURNS. TOTAL OF 439 SKS (91 BBLS) PUMPED FROM 2007' WITH NO CEMENT RETURNS TO SURFACE. LD TBNG. WASHED UP PUMP AND LINES. RDMO CEMENTERS. SECURED WELL. SDFD. CREW TO YARD.	6/19/2020
6/20/2020	CREW TO LOCATION. HELD SAFETY MEETING. 0 PRESSURES ON WELL. PU AND RIH WITH 3 JNTS OF 2-3/8" TBNG AND TAGGED CEMENT AT 96'. LD TAG JNTS. LOAD HOLE AND TEST CASING TO 1000 PSI. HELD GOOD. BLED OFF PRESSURE. RIH WITH TBNG TO 94'. MIRU NEXTIER CEMENTERS. HELD SAFETY MEETING. TEST PUMP AND LINES TO 2300 PSI. ESTABLISHED CIRCULATION WITH 5 BBLS FRESH WATER. MIXED AND PUMPED 48 SKS OF CLASS G 15.8# CEMENT IN A 9.5 BBL SLURRY TO SURFACE. 1 BBL OF CEMENT RETURNED TO TANK. LD TBNG. ND BOPS. CEMENT AT SURFACE. WASHED UP PUMP AND LINES. RDMO CEMENTERS. ATP DUG OUT AND CUT OFF SURFACE HEAD 6' BELOW GROUND LEVEL. WELD ON CAP AND MARKER PLATE. BACKFILLED HOLE. RDMO. TOTAL OF 487 SKS (100.5 BBLS) PUMPED FROM 2007' TO SURFACE. FINAL REPORT.	6/20/2020