



## Well History

Well Name: State-Ferguson 1

API 05001072380000		Surface Legal Location SWSW 36 1S 67W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal					
Ground Elevation (ft) 5,052.00		Original KB Elevation (ft)		KB-Ground Distance (ft)		Spud Date 5/2/1977 00:00		Rig Release Date		On Production Date		Abandon Date 8/19/2023	

### Job

WBI - Abandon Well PDC, 7/26/2023 06:00

Job Category Abandon	Primary Job Type WBI - Abandon Well PDC	Start Date 7/26/2023	End Date 8/19/2023	Objective Re-enter to P&A
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### Daily Operations

Start Date	Summary	End Date
7/26/2023	CREW TO LOCATION. HELD SAFETY MEETING. MOVED IN RIG AND EQUIPMENT FROM MATTIVE AND SONS #1. NU RMOR 11" ADAPTER FLANGE, RMOR 11" x 9" 3k PORTED SPOOL W/ 3" AND 2" CONNECTIONS. FUNCTION TEST AND NU 8" BOP AND ANNULAR BAG. R/U ALL AMERICAN 3" FLOWBACK LINE, PANIC LINE, SEPERATOR AND BURNER. RAN OHMS TEST ON ALL EQUIPMENT W/ JAMMS SERVICES. OHMS TEST GOOD. R/U RMOR TO STACK TEST. PRESSURED UP AGAINST CEMENT PLUG TO 400 PSI AND FLUID SURFACED IN CELLAR NEXT TO WELL HEAD. HOLE IN 8 5/8" BELOW SURFACE. RAN IN TEST HEAD TO TEST BOP STACK. TRIED TO PRESSURE UP BUT 11" 3K FLANGE LEAKED. N/D STACK AND FOUND WRONG RING GASKET INSTALLED. REPLACED W/ CORRECT GASKET. TRIED TO RETEST MULTIPLE TIMES WITH NO LUCK. 11" FLANGE ISSUE. N/D ENTIRE BOP STACK AND WILL REPLACE WITH NEW FLANGES IN THE AM. SWI, SDFD, CREW TO THE YARD.	7/26/2023
7/27/2023	CREW TO LOCATION. HELD SAFETY MEETING. ZERO PSI ON THE WELL. STARTED EQUIPMENT AND WAITED FOR MINI EXCAVATOR. DUG DOWN TO WELDED COLLAR. R/U RIG PUMP TO WELL HEAD AND PUMPED DOWN CASING TO ENSURE WELD INTEGRITY. WELD WAS GOOD. BLED DOWN TO TANK. BACKFILLED CELLAR. INSTALLED NEW 11" 3K FLANGE AND BOPS. LANDED TEST HEAD IN WELL HEAD. TESTED BOPS TO 1500 PSI ON HIGH AND 250 PSI ON LOW. GOOD TEST. N/U ANNULAR BAG AND BIRD BATH. ESTABLISHED GOOD PRESSURE TEST ON PIPE RAMS AND ANNULAR BAG. R/D RMOR TESTING. P/U STS 7 5/8" OD PACKER AND SUB. P/U RIH W/ THREE JOINTS 2 7/8" PH6 WORKSTRING TO TAG TOC AT 80'. L/D ONE JOINT AND HOLE HUNTED. FOUND HOLES TO BE BETWEEN 38' AND 60' ( FIRST CASING CONNECTION). PULLED PACKER. RIH OUT OFF THE RACKS W/ 2 JOINTS LEAVING EOT @ 67'. R/U DUCO CEMENT SERVICES. HELD SAFETY MEETING AND PRESSURE TESTED LINES. PUMPED 5 BBLs FRESH WATER AHEAD TO ESTABLISH CIRCULATION. MIXED UP AND PUMPED 4.5 BBLs (40 SACKS) 15.8 PPG G NEAT CEMENT FROM 67' TO SURFACE. GOOD CIRCULATION THROUGHOUT AT .5 BBL/MIN RATE. .5 BBLs CEMENT TO SURFACE. R/D DUCO. L/D 2 JOINTS WORK STRING. CLEANED EQUIPMENT. R/U CEMENTERS TO BACKSIDE. SQUEEZED 1.5 BBLs CEMENT INTO HOLES AT .5 BBL/MIN TO 160 PSI. SHUT WELL IN W/ 125 PSI FOR THE NIGHT. R/D CEMENTERS TO WASH UP. SWI, SDFD.	7/27/2023
7/28/2023	CREW TO LOCATION. HELD SAFETY MEETING. ZERO PSI ON THE WELL. OPENED WELL. R/U POWER SWIVEL. P/U STS 7 7/8" BLADE BIT AND BIT SUB. P/U RIH W/ 1 JOINT 2 7/8" PH6 WORK STRING. TAGGED TOC AT 25'. DRILLED DOWN THROUGH CEMENT PLUG FALLING THROUGH AT 75'. TAGGED SHOE PLUG AT 80'. ROLLED HOLE CLEAN. CLOSED BAG AND PRESSURE TESTED CASING. PRESSURE CLIMBED TO 400 PSI AND STARTED PUMPING OUT AT 1 BBL/MIN. KILLED PUMP. PRESSURE STABILIZED AT 200 PSI. HOLES STILL PARTIALLY OPEN. PULLED BIT AND P/U PACKER. RIH TO 65' AND TESTED AGAINST SHOE PLUG A SECOND TIME TO 1000 PSI TO ENSURE SHOE PLUG HOLDING. HELD FOR 15 MIN. GOOD TEST. POOH L/D PACKER AND WORK STRING. N/D BOPS AND FLOW CROSS TO THE 11" 3K FLANGE. N/U 11" 3K X 7 1/16" 5K AND INSTALLED BLANK FLANGE ON TOP. R/U DUCO CEMENT SERVICES TO THE SURFACE VALVES. HELD SAFETY MEETING AND PRESSURE TESTED LINES TO 3000 PSI. MIXED UP AND PUMPED 20 BBLs (100 SACKS) 15.8 PPG G NEAT CEMENT FROM SURFACE INTO CASING HOLES. DISPLACED W/ 1 BBL OF FRESH WATER TO CLEAR LINES AND VALVES. SQUEEZE PUMPED AT 1 BBL/MIN AT 160-200 PSI AND SHOWED NO SIGNS OF COMMUNICATION TO SURFACE OUT SIDE OF WELL HEAD. CLOSED IN WELL W/ 150 PSI. R/D DUCO TO WASH UP. WILL LEAVE WELL SHUT IN FOR THE NIGHT AND DRILL OUT CEMENT PLUG IN THE AM.	7/28/2023
7/29/2023	CREW TRAVEL. PRE JOB SAFETY MEETING AND JSA. CHECK PRESSURE. SISP 0 PSI. ND SPOOL AND MASTER VALVE. NU RMOR 11" ADAPTER FLANGE, RMOR 11" x 9" 3k PORTED SPOOL W/ 3" AND 2" CONNECTIONS, RMOR 9" BOP, ANNULAR BAG, WASHINGTON HEAD, AND BIRD BATH. TIE ALL AMERICAN FLOW LINES BACK INTO FLOW CROSS. FUNCTION TEST BOPE. TEST GOOD. RU WORKFLOOR. RU POWER SWIVEL. PU 7 7/8" BLADE BIT, BIT SUB, AND 3 1/2" DRILL COLLAR AND TAG TOC AT 20' IN. CLOSE ANNULAR BAG. CIRCULATE CONVENTIONAL AND THE 11" FLANGE CONNECTION BEGAIN LEAKING. UNABLE TO GET CONNECTION TIGHT ENOUGH TO STOP LEAKING. PULL COLLAR OUT OF THE HOLE. ND STACK. REPLACE RX-53. TORQUE THE FLANGE BACK DOWN. SHUT BLIND RAMS AND TEST AGAINST CEMENT TO 500 PSI. GOOD TEST. RUN DRILL COLLAR BACK IN HOLE. CIRCULATE CONVENTIONAL. PUMPING 1 BPM AT 0 PSI AND RETURN 1 BPM DRILL OUT CEMENT. FELL THOUGH CEMENT AT 78' IN THE HOLE. INCREASE RATE TO 2 1/2 BPM AT 0 PSI RETURNING 2 1/2 BPM. CIRCULATE WELLBORE CLEAN OF ALL CEMENT CUTTINGS. PRESSURE TEST SURFACE CASING TO 500 PSI. BAD TEST. LD DRILL COLLARS. RD POWER SWIVEL. MU 8 5/8" TENSION PACKER AND RIH WITH 2 JOINTS. SET PACKER AT 76' AND TEST TO 500 PSI BELOW THE PACKER. TEST GOOD. TEST ABOVE THE PACKER. BAD TEST. RELEASE PACKER AND SET AT 57'. TEST BELOW THE PACKER. BAD TEST. RELEASE PACKER AND SET AT 67'. TEST BELOW THE PACKER. BAD TEST. TEST ABOVE THE PACKER. BAD TEST. RELEASE PACKER AND SET AT 66'. TEST ABOVE THE PACKER TO 500 PSI. TEST GOOD. TEST BELOW THE PACKER. TEST BAD. BAD CASING FROM 67'-76'. DECISION WAS MADE TO SQUEEZE CEMENT FROM SURFACE. LD 3 JOINTS AND PACKER. RD WORK FLOOR AND HANDLING EQUIPMENT. ND BOPE. NU 11" 3K X 7 1/16" 5K SPOOL AND MASTER VALVE. STANDBY FOR CEMENTERS. MIRU DUCO CEMETERS. TIE IN PUMP LINES. PUMP 2 BBLs OF FRESH WATER FOLLOWED BY 820 SX (173 BBLs) 15.8# G CEMENT. PUMPED 1 BBL FRESH WATER TO CLEAR LINES. DID NOT SEE ANY PRESSURE INCREASE DURING JOB. SHUT AND SECURE WELL. SDFN. CREW TRAVEL.	7/29/2023



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### Daily Operations

Start Date	Summary	End Date
7/30/2023	CREW TRAVEL. PRE JOB SAFETY MEETING AND JSA. CHECK PRESSURE. SISP 0 PSI. ND SPOOL AND MASTER VALVE. NU RMOR 11" ADAPTER FLANGE, RMOR 11" x 9" 3k PORTED SPOOL W/ 3" AND 2" CONNECTIONS, RMOR 9" BOP, ANNULAR BAG, WASHINGTON HEAD, AND BIRD BATH. TIE ALL AMERICAN FLOW LINES BACK INTO FLOW CROSS. FUNCTION TEST BOPE. TEST GOOD. RU WORKFLOOR. RU POWER SWIVEL. PU 7 7/8" BLADE BIT, BIT SUB, AND 3 1/2" DRILL COLLAR AND TAG TOC AT 17' IN. CLOSE ANNULAR BAG. CIRCULATE CONVENTIONAL. PUMPING 1 BPM AT 0 PSI RETURNING 1 BPM BEGIN DRILLING OUT CEMENT. FELL THROUGH CEMENT AT 76' IN THE HOLE. INCREASE RATE TO 2 1/2 BPM AT 0 PSI RETURNING 2 1/2 BPM. CIRCULATE WELLBORE CLEAN OF ALL CEMENT CUTTINGS. PRESSURE TEST SURFACE CASING TO 500 PSI. BAD TEST. LD DRILL COLLARS. RD POWER SWIVEL. SHUT AND SECURE WELL. SDFN. CREW TRAVEL.	7/30/2023
7/31/2023	Crew to location. Held safety meeting. 0 pressure on well. Established injection rate with rig pump pumping 5 bbls of fresh water thru holes in surface casing .6 bpm at 500 psi. Shut down pump. Pressure settled at 200 psi and then slowly bled down to 0 psi in 5 minutes. Wait for DUCO. MIRU DUCO cementers. Mixed 10 lbs of RadiLock 3mm LCM with 10 bbls of fresh water. Established injection rate of .5 bpm at 170 psi with 2 bbls of fresh water. Dropped rate and pumped LCM .3 bpm at 500 psi. With 7 bbls pumped pressure climbed to 610 psi and broke back to 550 psi before climbing back to 600 psi with the last 3 bbls. Shut down pump. Pressure immediately dropped to 35 psi. Batched up another 8 bbls of LCM. Pumped .4 bpm with pressure climbing to 800 psi. All 8 bbls pumped away. Shut down pump. Pressure dropped to 75 psi in 3 minutes. Wait 15 minutes for LCM to swell in formation. Batched up 39 sks of Class G 15.8# cement with 2% CaCl2 and 2.5 lbs of RadiLock in an 8 bbl slurry. Pumped 5 bbls of cement slurry at .6 bpm with pressure climbing to 935 psi before breaking over to 350 psi. Continued pumping remaining 3 bbls of cement at .6 bpm to 400 psi. Displaced .5 bbl of fresh water to clear lines and wellhead. Shut down pump. Pressure at 50 psi. Washed up pump and lines while hesitating 20 minutes. Pressure to 14 psi. Pumped .5 bbls to 350 psi. SD pressure dropped to 107 psi Hesitate 15 minutes. Pressure dropped to 92 psi. Pumped 1/4 bbl to 408 psi Hesitate 15 minutes. Pressure dropped to 205 psi. Pumped 1/16 bbl to 800 psi Hesitate 15 minutes. Pressure dropped to 235 psi. Pumped 1/16 bbl to 800 psi Hesitate 15 minutes. Pressure dropped to 295 psi. Rolled pump over 2 strokes to 800 psi Hesitate 15 minutes. Pressure dropped to 306 psi. Rolled pump over 1 stroke to 800 psi Bled pressure down to 100 psi and shut in casing. Drained lines. RDMO cementer. SDFD. Crew to yard.	7/31/2023
8/1/2023	Crew to location. Held safety meeting. Blow on casing. Opened to rig tank. Blew down immediately. ND 11" 3k x 7-1/16" 5k spool and master valve and NU 11" adapter flange, 11" x 9" 3k ported spool with 3" and 2" connections, 9" 3k BOP and annular bag. RU swivel. PU 7-7/8" blade bit, bit sub and 3-1/2" 32# drill collar. Tagged cement plug at 10' kb. Broke circulation conventionally pumping 1 bpm at 0 psi and drilled thru fairly green cement to 37' in 12 minutes. Cement returns grainy and contained good amount of evenly dispersed LCM. Rolled hole clean. POOH with bit. Secured well. SDFD. Crew to yard.	8/1/2023
8/2/2023	Crew to location. Held safety meeting. 0 pressure on well. PU 7-7/8" blade bit, bit sub and 1 3-1/2" 32# drill collar. Tagged 2' high at 35'. PU 2nd collar. Broke circulation conventionally pumping 1.8 bpm at 0 psi and resumed drilling cement plug. Cement still slightly green but drilling much slower with good cement flake returns to shaker. Drilled down to 67' in 1 hour. Very hard cement at squeeze depth. Increased pump rate to 2 bpm and decreased bit rotation to smoothly drill thru squeezed bad section of surface casing. Took 2 hours to drill thru at 74'. Rolled hole clean. Heavy LCM returns. Continued in hole without rotating. Felt slight tag at 80' then smooth down to 100' with 3rd collar all in. PU 4th collar and test casing. Pumped out 1/4 bpm at 200 psi. Shut down pump. Pressure bled down to 50 psi then held. Bled off pressure. LD collars and bit. PU STS 8-5/8" 32A tension packer and RIH and set packer at 76'. Test below packer good to 1300 psi. Bled off pressure. Released packer. POOH and LD packer. Established an injection rate thru holes of 1 bpm at 250 psi. ND stack and installed 11" 3K X 7 1/16" 5K spool, top flange and master valve. MIRU NexTier cementers. Held safety meeting. Prime pump and establish injection rate of 1.6 bpm at 255 psi. Batched and pumped 10 bbls of water with 350 lbs of CaCl2 1.5 bpm at 210 psi. Pumped 2 bbl fresh water spacer. Batched and pumped 10 bbls of water with 400 lbs of sodium metasilicate 1.5 bpm at 175 psi. Pumped 5 bbl fresh water spacer. Mixed and pumped 8.5 bbls of NexTier Surface AGM Blend 15.8# cement with 2% CaCl2 1.5 bpm to 240 psi. Shut down and hesitated 5 minutes. Pressure down to 43 psi. Pumped 10 more bbls at 240 psi then dropped rate to 1 bpm for the last 3 bbls with pressure climbing from 127 psi to 151 psi. Total of 100 sks (21.5 bbls) pumped. Displaced .5 bbls fresh water to clear lines. Shut down pump. Pressure dropped to 63 psi. Washed up pump and lines while hesitating 20 minutes.	8/2/2023
8/3/2023	Crew to location. Held safety meeting. Blow on casing. Opened to rig tank. Blew down immediately. ND 11" 3k x 7-1/16" 5k spool and master valve and NU 11" x 9" 3k ported spool with 3" and 2" connections, 9" 3k BOP and annular bag. RU swivel. PU 7-7/8" blade bit, bit sub and 3-1/2" 32# drill collar. Tagged cement plug at 14' kb. Broke circulation conventionally pumping 1 bpm at 0 psi and drilled thru fair cement to 37' in 18 minutes. Cement returns fine pieces but still slightly green. Rolled hole clean. PU 2nd collar and drilled down 15' to 52' kb in minutes. Cement still too green to drill thru and test. Rolled hole clean. LD collars. Secure well. SDFD. Crew to yard.	8/3/2023



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### Daily Operations

Start Date	Summary	End Date
8/4/2023	<p>Crew to location. Held safety meeting. 0 pressure on well. PU 7-7/8" blade bit, bit sub and 2 3-1/2" 32# drill collars. Tagged 1' high at 51'. Broke circulation conventionally pumping 1.8 bpm at 0 psi and resumed drilling cement plug. Cement drilling slower with good cement flake returns to shaker. Drilled down to 82' in 1 hour then fell thru. RIH to 100' with 3rd collar all in. Had a few clumps of LCM in returns. Rolled hole clean. Test casing. Pumped out 1 bpm at 300 psi. Shut down pump. Pressure bled down to 90 psi then held. Bled off pressure. LD collars and bit. ND stack and installed 11" 3K X 7 1/16" 5K spool, top flange and master valve. Wait on cementers. MIRU NexTier cementers. Held safety meeting. Prime pump and establish injection rate of 2 bpm at 300 psi. Batched and pumped 10 bbls of water with 350 lbs of CaCl2 2 bpm at 345 psi. Pumped 2 bbl fresh water spacer. Batched and pumped 10 bbls of water with 400 lbs of sodium metasilicate 2 bpm at 275 psi. Pumped 5 bbl fresh water spacer. Mixed and pumped 8.5 bbls of NexTier Surface AGM Blend 15.8# cement with 2% CaCl2 2 bpm to 310 psi. Shut down and hesitated 5 minutes. Pressure down to 40 psi. Pumped 5 more bbls 1 bpm at 300 psi. Wait 5 minutes and pumped remaining 8 bbls 1 bpm at 265 psi. Total of 100 sks (21.5 bbls) pumped.</p> <p>Displaced .5 bbls fresh water to clear lines. Shut down pump. Pressure to 265 psi. Washed up pump and lines while hesitating 30 minutes.</p> <p>Pressure down to 9 psi. Pumped .5 bbl to 163 psi. Wait 30 minutes.</p> <p>Pressure down to 29 psi. Pumped .5 bbl to 635 psi. Wait 5 minutes.</p> <p>Pressure down to 330 psi. Pumped .1 bbl to 1500 psi. Pressure dropped to 485 psi in 5 minutes. Suspect higher leak now. Casing bleeds of from 1000 psi to 95 psi in 5 minutes. Shut well in. Bled line back to cementer. Total of 1.6 bbls displaced.</p> <p>RDMO NexTier. SDFD</p>	8/4/2023
8/5/2023	<p>Crew to location. Held safety meeting. 0 pressure on well. Primed pump and pressure test plug to 500 psi. Bled down to 0 psi in 40 seconds. Repeated several times with same results. ND master valve and XO spool. RIH with 1 jnt of 2-7/8" PH6 tbng and tagged cement plug at 14'. POOH. PU STS 8-5/8" 32A tension packer and RIH and set packer at 9'. Test below packer to 500 psi. Bled off to 0 psi in 2 minutes. Repeated 3 times with same results. Very little injection. Release packer, POOH and LD.</p> <p>Removed water from 8-5/8" casing down to top of cement plug at 14' with rig pump and 2" suction hose. Cleaned wellhead valves and flange grooves. NU 11" 3k x 7-1/16" 5k spool and master valve. MIRU NexTier cementers. Primed pump. Batched up 25 sks of NexTier Surface AGM Blend 15.8# cement with 2% CaCl2 in a 5.5 bbl slurry. Filled hole with 1 bbl of cement. Set kick-outs at 1000 psi. Shut the off side casing valve. Pumped .2 bbls and kicked out on pressure. Pressure dropped to 478 after 5 minutes. Reset kick outs to 1200 psi. Bumped pump to 1300 psi. with .1 bbls. Pressure to 174 psi after 2 minutes. Pumped .1 bbls again. Kicked out at 1300 psi and dropped to 385 psi after 5 minutes. Pumped .1 bbls kicking out at 1380 psi and pressure slowly bled down to 894 after 2 minutes. Shut well in with 885 psi. Total of 7 sks (1.5 bbls) of cement pumped. Washed up pump and lines. RDMO NexTier. Cleaned up location. SDFD. Crew to yard.</p> <p>Will leave well shut in until Monday to allow cement to cure.</p>	8/5/2023
8/7/2023	<p>Crew to location. Held safety meeting. 0 pressure on well. ND 11" 3k x 7-1/16" 5k spool and master valve and NU 11" x 9" 3k ported spool with 3" and 2" connections, 9" 3k BOP and annular bag. Test stack to 500 psi. Leaked. Re-tightened bolts and test stack to 850 psi. Held good. Bled pressure of to rig tank. RU swivel. PU 7-7/8" blade bit, bit sub and 3-1/2" 32# drill collar.</p> <p>Tagged cement plug at surface. Broke circulation conventionally pumping 2 bpm at 100 psi and drilled thru hard cement to 37' in 1 hour. Rolled hole clean. Pulled bit above stack. Test top cement squeeze to 500 psi. Held good. Bled off pressure. RIH with bit and PU 2nd drill collar. Drilled thru hard cement to 69' in 51 minutes. PU 3rd collar and continued drilling hard cement. Fell thru at 91' then continued down to tag at 101'. Rolled hole clean. Test surface casing to 500 psi. Good test. Bled off pressure. PU 4th collar and continued drilling cement. Tagged at 135' with 5th collar. Heavy contaminated cement returns. Fell thru at 167'.</p> <p>Tagged hard again at 230'. Heavy torque. Reamed smooth to 319' with 10 drill collars. Rolled hole clean. Installed XO sub and started PU 2-7/8" 7.9# P-110 PH6 tbng, washing and reaming down to 912' with 19 jnts. Rolled hole clean. Heavy mud and sand in returns. RD Swivel. Pulled 9 stands in derrick. Secured well. SDFD. Crew to yard.</p>	8/7/2023
8/8/2023	<p>Crew to location. Held safety meeting. 0 pressure on well. RIH from derrick with 2-7/8" PH6 tbng. Tagged at 537' on jnt 7. Rotated thru with rig tongs. Tagged again at 631' on jnt 10. RU Kelly and circulated thru conventionally pumping 2 bpm at 500 psi. Ran remaining 4 stands in and RU swivel on jnt 20. Washed and reamed down to tag at 965' with 10' out on jnt 21. Fast drilling for 10' then drilled on very hard cement to 1141' with 10' in on jnt 27. Stopped making hole and bit is torquing up bad. Minimal solids in returns. Joint 24 drilled in 2 hours, Jnt 25 drilled in 51 minutes and Jnt 26 drilled in 34 minutes but jnt 27 took 2.25 hours to drill 10'. LD 1 jnt of 2-7/8" PH6 tbng. Stook back 13 stands and 10 drill collars. Blade bit beat up with concentric groove worn down in the middle. Approximately 2" diameter. Will clean up tonight in the shop and measure. Secured well. SDFD. Crew to yard.</p>	8/8/2023
8/9/2023	<p>Crew to location. Held safety meeting. 0 pressure on well. PU and RIH with STS 5-3/4" skirted mill with cut lip guide, xo sub, 10 - 3-1/2" 32# drill collars, xo sub and 2-7/8" PH6 tbng from derrick. Stacked out and had to rotate thru with tongs from 500'-574' and at 658' and again at 1027'. LD 3 jnts. RIH with last stand from derrick. RU swivel. Began circulating conventionally pumping 3 bpm at 500 psi and washed and reamed down to had tag at 1141' with 4' of jnt 27. Milled for 1 hour making 7". Began rotating smoothly and not making hole. Heavy mud returns and very small metal wickers on ditch magnet. Rolled hole clean. LD 1 jnt with swivel. RD swivel. LD 4 jnts. POOH to derrick with 22 jnts and 10 drill collars. LD skirted mill. Cut lip work down smooth and bent in. RIH with 5-3/4" concave mill, 10 collars and 8 jnts of 2-7/8" PH6 tbng. Stacked out at 560'. Unable to rotate thru. LD tag jnt. RU swivel. Broke circulation conventionally pumping 3 bpm at 600 psi and washed and reamed down to hard tag at 1141' with 9' of jnt 27. Milled for 2 hours and 15 minutes and made 2". Very heavy mud returns and approximately 1/2 gallon of hard brittle black plastic pieces ranging from 1/4" to 1" in diameter. Rolled hole clean. LD 1 jnt with swivel. LD 13 more jnts and pulled 12 jnts to the derrick. Secured well. SDFD. Crew to yard.</p>	8/9/2023



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### Daily Operations

Start Date	Summary	End Date
8/10/2023	Crew to location. Held safety meeting. 0 pressure on well. RIH from derrick with 25 jnts of 2-7/8" PH6 tbng. Had to work thru tight spot at 560' with tongs again. RU swivel. PU jnt 27. Broke circulation conventionally pumping 3 bpm at 600 psi and reamed down to hard tag again at 1143'. Had fair torque for 2 hours milling down 7' to 1150' on jnt 27. More brittle plastic, mud and cement returns. Rolled hole clean. LD 1 jnt with swivel RD swivel. POOH to derrick with 26 jnts and 10 drill collars. LD mill. Mill face packed off with mud but showed no signs of having been on metal. Kut-rite still in good shape. PU 7-1/2" sealed bearing cone bit and bit sub and RIH with 10 drill collars and 6 jnts of 2-3/7" PH6 tbng. Stacked out at 497' with 10' out. Worked down but unable to make hole. RU swivel. Broke circulation pumping 3 bpm at 500 psi and washed and reamed down slowly to hard tag at 1141' again. Large cement chunks and more brittle black plastic returns. Drilled slowly down to 1240' with 15' of jnt 30. Rolled hole clean. LD 1 jnt with swivel. RD swivel. LD 28 jnts. Secured well. SDFD. Crew to yard.	8/10/2023
8/11/2023	Crew to location. Held safety meeting. 0 pressure on well. PU and RIH with 26 jnts of 2-7/8" PH6 tbng. Had to work thru tags at 971' and 1121' and at 1131' on jnt 27. Unable to work down. LD tag jnt. RU swivel on jnt 27. Broke circulation conventionally pumping 3 bpm at 500 psi and resumed drilling from 1131'. Had to re-drill back down to previous depth at 1240' then drilled very slowly to 1253' with 3' out on jnt 30. Added 2 bags of SAPP to mud tank without any noticeable improvement. Suspect balled bit. Rolled hole clean. LD 1 jnt with swivel. Started swabbing back. RD swivel. Slowed pull speed down and LD 21 more jnts. SB 4 stands in derrick. SB 10 drill collars and LD bit sub and bit. Bit balled off with hard cement, green cement and dehydrated mud. Cones badly worn and teeth rounded off. Secured well. Worked on pipe wrangler. SDFD. Crew to yard.  NOTE: 120 bbls of heavy mud hauled to Republic with manifest 1.5 hydrovac loads of cuttings hauled to Republic by Brand-X	8/11/2023
8/12/2023	CREW TO LOCATION. HELD SAFETY MEETING. 0 PRESSURE ON WELL. MU 7 7/8" SEALED BEARING TRI-CONE BIT, 3 1/8" MUD MOTOR. TEST MOTOR AT SURFACE PUMPING 2 BPM AT 200 PSI. TEST GOOD. MU AND RIH MOTOR ASSEMBLY, XO, 10 X 3 1/2" DRILL COLLARS, AND 24 JOINTS OF 2 7/8" PH-6 TAGGING AT 1060'. UNABLE TO WORK THROUGH. LD 1 JOINT. RU POWER SWIVEL. BREAK CIRCULATION CONVENTIONALLY PUMPING 3 BPM AT 1200 PSI BEGIN REAMING THROUGH RE-DRILLING FROM 1060'-1259' WHERE LEFT OFF. HARD DRILLING FROM 1259'-1431'. GREEN CEMENT AND DEHYDRATED MUD IN RETURNS. CIRCULATE WELLBORE CLEAN. SWIVEL OUT 1 JOINT. RD POWER SWIVEL. LD 13 JOINTS. TOO H 24 JOINTS OF 2 7/8" PH-6 TO THE DERRICK. TOO H 10 COLLARS. LD MOTOR AND BIT. 1 CONE AND JET OF THE BIT WAS PACKED OFF WITH GREEN CEMENT AND DEHYDRATED MUD. CLEANED OFF BIT AND IN GOOD SHAPE. SHUT AND SECURE WELL. SDFN. CREW TRAVEL.	8/12/2023
8/13/2023	CREW TO LOCATION. HELD SAFETY MEETING. 0 PRESSURE ON WELL. MU 7 7/8" SEALED BEARING TRI-CONE BIT, 3 1/8" MUD MOTOR. TEST MOTOR AT SURFACE PUMPING 3 BPM AT 500 PSI. TEST GOOD. MU AND RIH MOTOR ASSEMBLY, XO, 10 X 3 1/2" DRILL COLLARS, AND 24 JOINTS OF 2 7/8" PH-6 TAGGING AT 1068'. UNABLE TO WORK THROUGH. LD 1 JOINT. RU POWER SWIVEL. BREAK CIRCULATION CONVENTIONALLY PUMPING 2.9 BPM AT 900 PSI BEGIN REAMING THROUGH RE-DRILLING FROM 1068'-1431' WHERE LEFT OFF. HARD DRILLING FROM 1431'-1437. 6' IN 2 1/2 HOURS. SOME GREEN CEMENT, DEHYDRATED MUD IN RETURNS AND WHAT LOOKS LIKE BALLS OF CLAY. CIRCULATE WELLBORE CLEAN. SWIVEL OUT 1 JOINT. RD POWER SWIVEL. LD 1 JOINT TOO H 34 JOINTS OF 2 7/8" PH-6 TO THE DERRICK. TOO H 10 COLLARS. LD MOTOR AND BIT. 2 CONES AND JETS OF THE BIT WAS PACKED OFF WITH DEHYDRATED MUD AND ROCKS. CLEANED OFF BIT AND IN GOOD SHAPE. MU 6 1/8" SEALED BEARING TRI-CONE BIT, 3 1/8" MUD MOTOR, 10 X 3 1/2" DRILL COLLARS. TIH 34 JOINTS OF 2 7/8" PH-6 TAGGING AT 1437'. BREAK CIRCULATION CONVENTIONALLY PUMPING 3 BPM AT 1000 PSI CONTINUE HARD DRILLING. DRILLED 11' IN 1 HOUR 1437'-1448'. CIRCULATE WELLBORE CLEAN. SWIVEL OUT 1 JOINT. TOO H 34 JOINTS OF 2 7/8" PH-6 TO THE DERRICK. SHUT AND SECURE WELL. SDFN. CREW TRAVEL.	8/13/2023
8/14/2023	Crew to location. Held safety meeting. 0 pressure on well. RIH from derrick with 32 jnts of 2-7/8" PH6 tbng. PU 2 jnts and RIH. RU swivel on jnt 36. Tagged at 1448' with 15' out on jnt 36. Broke circulation conventionally pumping 3 bpm at 1100 psi and resumed washing and reaming slowly down to 1711' with 44 jnts. Returned a lot of black plastic, green cement and mud to shaker tank. Rolled hole clean and flushed workstring and motor with 12 bbls of fresh water. LD 1 jnt with swivel. RD swivel. SB 42 jnts in derrick. SB 10 drill collars and LD motor and bit. Bit balled with dehydrated mud and 1 port plugged off. RIH with 5-7/8" blade bit, bit sub, 10 3-1/2" drill collars, xo and 2 jnts of 2-7/8" 7.9# P-110 PH6 tbng. Secured well. SDFD. Crew to yard.	8/14/2023
8/15/2023	Crew to location. Held safety meeting. 0 pressure on well. RIH from derrick with 40 jnts of 2-7/8" PH6 tbng. PU 2 jnts and RIH. RU swivel on jnt 45. Tagged at 1711' with 14' out on jnt 45. Broke circulation conventionally pumping 3 bpm at 600 psi and resumed drilling very slowly down to 1725' with 45 jnts. Returned a little more black plastic and dehydrated mud to shaker tank. Total of 14' in 1.5 hours with 5-7/8" blade bit. Rolled hole clean. LD 1 jnt with swivel. RD swivel. POOH to derrick with 44 jnts of 2-7/8" PH6 tbng, 10 drill collars, bit sub and bit. Bit caked with dehydrated mud but otherwise in great shape. PU 6-1/8" sealed bearing bit and 3-1/2" mud motor. Test motor in stack pumping 3 bpm at 350 psi. and RIH with 10 drill collars and 40 jnts of 2-7/8" PH6 tbng. Stacked out at 1580' with 8' out on jnt 40. Worked thru tight spot. Stacked out again at 1705' on jnt 44. LD tag jnt. RU swivel. PU jnt 44 with swivel and resumed drilling, washing and reaming from 1705'. Pump pressure 1050 psi at 3 bpm. Mixed 3 more sks of SAPP in mud tank. Very slow drilling thru heavy dehydrated mud then ROP increased after 1742' on jnt 45. Drilled down to 1899' with 50 jnts. Rolled hole clean. Last 2 jnts ROP slowed down. Suspect bit balled again. Pumped 5 bbls fresh water and 1 gallon of mud flush and displaced with 12 bbls fresh water. LD 1 jnt with swivel. RD swivel. LD 1 jnt. SB 48 jnts and 10 drill collars in derrick. Removed bit from motor and LD mud motor. Will take bit to the shop and have it cleaned for tomorrow. Secured well. SDFD. Crew to yard.	8/15/2023
8/16/2023	Crew to location. Held safety meeting. 0 pressure on well. PU STS 3-1/2" mud motor and 6-1/8" sealed bearing cone bit and test motor in stack pumping 3 bpm at 350 psi. RIH with bit, motor, 10 3-1/2" drill collars and 48 jnts of 2-7/8" PH6 tbng. PU 2 jnts and RIH. RU swivel on jnt 51. Tagged at 1899'. Broke circulation conventionally pumping 3 bpm at 1100 psi and resumed drilling. Add 1 bag of SAPP to mud tank and 5 gallons of mud flush. Only able to make 4' in 3 hours. Pulled off bottom and rolled hole for 30 minutes. Tagged again at 1903' and drilled down the next 27' to 1930' in 50 minutes. Dehydrated mud returns. Continued drilling down to 2005' with 13' of jnt 54. Rolled hole clean. LD 1 jnt with swivel. RD swivel. LD another jnt and POOH standing back 52 jnts of 2-7/8" PH6 tbng, 10 drill collars, mud motor and 6-1/8" sealed bearing cone bit. Bit caked with heavy mud. Removed bit from motor and installed 4-3/4" step blade bit. RIH with bit, 3-1/2" mud motor, dual back pressure valve, xo, 10 3-1/2" 32# drill collars, xo and 2 jnts of 2-7/8" 7.95# P-110 PH6 tbng. Secured well. SDFD. Crew to yard.	8/16/2023



## Well History

Well Name: State-Ferguson 1

API 05001072380000		Surface Legal Location SWSW 36 1S 67W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal					
Ground Elevation (ft) 5,052.00		Original KB Elevation (ft)		KB-Ground Distance (ft)		Spud Date 5/2/1977 00:00		Rig Release Date		On Production Date		Abandon Date 8/19/2023	

### Daily Operations

Start Date	Summary	End Date
8/17/2023	Crew to location. Held safety meeting. 0 pressure on well. RIH with 51 jnts of 2-7/8" PH6 tbng. RU swivel on jnt 54. Broke circulation conventionally pumping 3 bpm at 1100 psi. Tagged at 1999' with 7' of jnt 54. Add 1 bag of SAPP to mud tank. Drilled fairly smooth then slowed down significantly after 2273'. Dehydrated mud and plastic returns continued. Drilled to 2491' with 69 jnts. Rolled hole clean. LD 1 jnt with swivel. RD swivel. LD another jnt. SB 66 jnts in the derrick. Secured well. SDFD. Crew to yard.	8/17/2023
8/18/2023	Crew to location. Held safety meeting. 0 pressure on well. RIH with 67 jnts of 2-7/8" PH6 tbng. RU swivel on jnt 68. Broke circulation conventionally pumping 3 bpm at 1100 psi. Tagged at 2490' with all of jnt 69. PU jnt 70 and drilled slowly down to 2522' with 70 jnts. Rolled hole clean. COGCC approved procedure change request. LD 1 jnt with swivel. RD swivel. LD another jnt. SB 68 jnts of 2-7/8" PH6 tbng in the derrick. LD 10 3-1/2" drill collars and load on gooseneck trailer. LD mud motor and bit. RIH with mule shoe and 80 jnts of 2-7/8" 7.95# P-110 PH6 tbng to 2500'. Condition hole while MIRU DUCO cementers. Held safety meeting. Established circulation with 5 bbls of fresh water. Mixed and pumped 200 sks of class G 15.8# cement in a 41 bbl slurry 3 bpm at 200 psi. Displaced plug with 9.5 bbls of fresh water to balance plug at 1826'. Shut down pump. Flowed back 1 bbl then balanced. Washed up pump and lines. RD DUCO. LD 22 jnts of 2-7/8" PH6 tbng on pipe racks to leave EOT at 1811' with 58 jnts in the hole. Attempted to reverse circulate well. Pressured to 250 psi then pumped out 5 bbls without circulating to tank. Shut down pump. POOH to derrick with 58 jnts and mule shoe. Secured well. SDFD. Crew to yard.  NOTE: 100 bbls of heavy mud hauled to Republic with manifest. 1 hydrovac load of cuttings and mud hauled to Republic with manifest	8/18/2023
8/19/2023	CREW TRAVELED TO LOCATION, REVIEWED THE JSA AND HELD A SAFETY MEETING. CHECKED PRESSURES ICP - 0 PSI, MU MULE SHOE TO 2 7/8" 7.9# P-110 TBG, TIH FROM THE DERRICK TAG TOC AT 1360' OUT ON JNT 44. LD 16 JNTS TO PIPE RACKS, TIH W/ 7 STANDS FROM THE DERRICK PLACING EOT AT 1313'. MIRU DUCO CEMENTERS, HELD AN ADDITIONAL OPERATIONS SAFETY MEETING, PRESSURE TESTED LINES TO 3000 PSI, GOOD TEST. ESTABLISHED CIRCULATION W/ 5 BBS FRESH WATER. DUCO MIXED UP AND PUMPED 250 SXS 51 BBS 15.8# G-NEAT CEMENT AT 2 BPM 100 PSI, MAINTAINING GOOD CIRCULATION THROUGHOUT, DISPLACED 3.5 BBS AND SHUT DOWN PUMP. 1 BBL WAS PUSHED BACK TO THE TANK, CALCULATED DISPLACEMENT WAS 4.6 BBS. TOO H LAYING DOWN ALL TBG. SECURE THE WELL AND SHUT DOWN 4 HRS PER THE FORM 6. MU MULE SHOE TO 2 7/8" TBG TIH PICKING UP SINGLES, TAG TOC AT 565' ON JNT 19. LD JNT 19 PU 4' SUB RE TAG PU AND MIRU DUCO CEMENTERS. HELD AN ADDITIONAL OPS SAFETY MEETING, PRESSURE TESTED LINES TO 3K, GOOD TEST. DUCO PUMPED 5 BBS OF BLUE DYED FRESH WATER AHEAD FOLLOWED BY 361 SXS 74 BBS 15.8# G-NEAT CEMENT, MAINTAINING GOOD CIRCULATION THROUGHOUT JOB PUMPING 2 BPM 100 PSI. PLACING CEMENT PLUG FROM 565-SURFACE, 2 BBS OF CEMENT RETURNED TO CEMENT TANK. LD 18 JNTS W/ SUB, DUCO TOPPED OFF THE WELL W/ 20 SXS 4 BBS OF CEMENT. WASH UP AND RDMO DUCO, RD ENSIGN RIG 313 AND ALL SUPPORT EQUIPMENT. CREW INSTALLED NIGHT CAP CLEANED UP LOCATION AND PREPPED EQUIPMENT FOR RIG MOVE MONDAY MORNING. THE STATE- FERGUSON 1 IS P&A'D. THIS WELL IS SCHEDULED TO BE CUT AND CAPPED W/ A WELDED ON MARKER PLATE NO SOONER THAN 5 DAYS PER THE COGCC. THIS IS THE FINAL REPORT.	8/19/2023