



## Well History

Well Name: State 6524 21-28

API 05123208770000		Surface Legal Location NENW 28 6N 63W		Field Name Wattenberg		State CO		Well Configuration Type Vertical					
Ground Elevation (ft) 4,720.00		Original KB Elevation (ft) 4,730.00		KB-Ground Distance (ft) 10.00		Spud Date 5/8/2003 18:00		Rig Release Date 5/12/2003 00:00		On Production Date 7/11/2003		Abandon Date	

### Job

#### Drilling - original, 5/8/2003 00:00

Job Category Drilling	Primary Job Type Drilling - original	Start Date 5/8/2003	End Date 5/12/2003	Objective Drill a Codell Well
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#### Daily Operations

Start Date	Summary	End Date
5/8/2003	Caza Rig #1: MIRU. Drill rat and mouse holes and spud 12 1/4" hole at 6 PM. TD 12 1/4" hole at 376' at 10 PM. Survey at 223' was 1/2 degree. Circulate hole and short trip.	
5/9/2003	Caza Rig #1: Wait on cement, trip in hole, and test BOP at 2 PM. Drill 100 feet of cement and plug and began drilling 7 7/8" open hole at 7 PM.	
5/9/2003	Caza Rig #1: Condition hole and begin trip out at 12:30 AM. Began running casing at 1 AM and ran 8 joints of new, 24#, J-55, 8 5/8" casing to 352'. Set at 362'. Rig up Cementer's Well Service and pump 225 sacks of Class G cement + 3% CaCl2 + 1/4# flake/sack. Plug down at 4:15 AM. Presently waiting on cement.	
5/10/2003	Caza Rig #1: At 2435' and drilling 7 7/8" hole. Last survey: 1/2 degree at 1933'.	
5/11/2003	Caza Rig #1: At 5188' and drilling 7 7/8" hole. Last survey: 3 degrees at 5188'.	
5/12/2003	Caza Rig #1: At 6686' and drilling 7 7/8" hole. Last survey: 3/4 degree at 6441'.	
5/12/2003	Caza Rig #1: TD 7 7/8" hole at 6974' at 10:15 AM. Short trip, condition mud and circulate hole. Began tripping out and laying down drill string at 1:15 PM. Out of the hole. MIRU PSI and ran GR/Comp Density/Comp Neutron/Dual Induction finding a TD of 6988'. RU casing crew. Ran Topco Auto Fill Guide Shoe, 14' shoe joint, 161 joints of 10.5 #/ft, M-65, 4 1/2" casing and 1 joint of 11.6 #/ft, N-80 on top of casing string. Casing set @ 6942.05'. RU Halliburton and cemented using 12 bbl mud flush, 10 bbl spacer, 6 bbl (20 sx) 50/50 poz, 159 bbl (220 sx) of HLC + additives and 39 bbl (140 sx) of 50/50 poz G + additives. Released wiper plug and displaced with 110 bbl treated water. Plug down OK @ 2:06 pm. ECT @ 3200' KB. Released rig @ 3:00 pm.	

#### Initial Completion, 5/20/2003 00:00

Job Category Completion/Workover	Primary Job Type Initial Completion	Start Date 5/20/2003	End Date 5/20/2003	Objective Complete a Codell Well
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#### Daily Operations

Start Date	Summary	End Date
5/20/2003	MIRU BJ Services. Frac'd the Codell with 2688 bbl of Vistar 20# fluid system, 217960# of 20/40 mesh white sand and 8000# of 20/40 mesh Super LC resin coated sand. Breakdown @ 3605 psig; MTP - 3575 psig; ATP - 3483 psig; AIR - 16.5 bpm; 4 ppa sand; ISIP - 3575 psig; Flushed with 107 bbl. Open well to tank on 12/64 choke.	

#### Workover, 8/19/2003 00:00

Job Category Completion/Workover	Primary Job Type Workover	Start Date 8/19/2003	End Date 8/22/2003	Objective
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#### Daily Operations

Start Date	Summary	End Date
8/19/2003	MIRV key energy service rig 30, kill well, NU wellhead & BOP. Tally in hole with NCSN 221jts, Tag sand at 6775. RU to circ. Clean out sand from 6775 to 6920. Land tubing with NCSN 220jts of 2 3/8 + 8' sub at 6769kb. ND BOP, Flange up wellhead, SWIFN	
8/20/2003	Road rig to loc. MIRV. NU requisite swab equip. CKWP blow/vac. Drop new PCS bumper spring. RIH w/sinker bar. Seat bumper spring. Swab well. SFL at 1810' +G.C., FFL at 5270' +V.G.C., Rec. 63 BBLS TTL fluid. FP Blow/120. SI Well.	
8/21/2003	CKWP 740/620. Put well down line. Quickly died down to LP. By-pass sep, cont. blow down well. Swab well. SFL at 1440'. Stand by for H2O to be hauled. Unload well. Went to gas. Drop mini "L" plunger, 210/300. Let plunger fall 1 hr, 380/420. Attempt to cycle plunger. Plunger did not surf. Cont swab well. FFL scat., Rec. 75 BBLS TTL fluid, FP blow/300. SI Well.	
8/22/2003	CKWP. 1060/960. Put well down line. Died down to LP. Back off press on back press valve. Plunger surf 1 hr 2 min, 300/840. Excessive fluid aft plunger. Let plunger fall, 380/920 (1hr). Attempt to cycle plunger. Plunger surf 54 min. Went to gas. Drop plunger. FP 520/660. Rec 12 BBLS oil. 6 BBLS H2O. ND swab equip. RDMO	

#### Recompletion, 4/17/2012 06:00

Job Category Completion/Workover	Primary Job Type Recompletion	Start Date 4/17/2012	End Date 4/20/2012	Objective Annular fill, Prep Codell Refrac/ Niobrara Recomplete
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#### Daily Operations

Start Date	Summary	End Date
4/17/2012	STP 350 psi, SCP 300 psi, on blow down through production equipment, SSCP 0 psi, MIRU Bayou rig #004, blew well down to rig tank, control well w/40 bbls Claytreat/Biocide water, ND WH, NU BOP, PU tag jts, TIH w/ 3 jts, tagged @ 6,822.58' w/3, LD tag jts, RU Pick Testers, POOH w/production tbg to derrick testing to 6000 psi, all jts tested good, RD tester, (POOH w/ 219 jts 2 3/8" J-55 EUE 8rd tbg, 1-8' subs, sn/nc, tbg was landed at 6,738.58' KB), tag depth of 6,822.58' KB, PU RMOR's 3 7/8" blade git - 4 1/2" csg scraper, TIH w/production tbg, circulated down to 6,942.61' KB (PBD) and tools w/227 jts, rolled hole clean, POOH w/tbg to derrick, LD tools, PU RMOR's 4 1/2" WLTC RBP, TIH w/production tbg, set RBP at 6,698.90' KB and tools w/218 jts, LD 1 jt, circulated oil and gas out, pressure tested csg/RBP to 2000 psi, test good, POOH w/20 jts to derrick, spotted 2 sks sand across RBP isolate well, prepare for next days operations, SDFN.	4/17/2012
4/18/2012	SCP 0, SSCP 0 psi, finished TOOH w/ tubing, ND BOP, remove tbg head, install PDC's 4 1/2" 5K frac valve, pressured tested csg/RBP to 5000 psi using Pick Testers, held 20 minutes, test good, released tester, removed frac valve, un-pack csg head, un-land csg (80 K), NU annular flanges, TIH picking up tallying WS #315 1.660" 3.02# N-80 CSHD workstring, tagged original cmt top at 3,009.15' KB w/ 6' in on jt 98, LD jt 98, RU circulation equipment on jt 97, break circulation and conditioned hole for 5 hours @ 3,003.13' w/97 jts, LD 5 jts, isolate well, prepare for next days operations, SDFN.	4/18/2012



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### Daily Operations

Start Date	Summary	End Date
4/19/2012	0 psi at WH, open well, TIH w/5 jts 1.660" workstring to 3,003.13' w/97 jts, MIRU HES, held safety meeting, tested pump and lines to 3500 psi, pumped 10 bbls water ahead establishing circulation and rate, pumped 12 bbls Mud Flush, pumped 10 bbl water spacer, mixed and pumped 450 sks (175 bbls) Varicem slurry at 12.0 ppg, Disp. 1.5 bbl, Break HES off WH, POOH laying down 97 jts, circulated 6 bbls cmt to cmt tank spotting 12.0 ppg cmt, RDMO HES, ND annular flanges, re-land csg in WH at 50K, pack off csg head, install original tbg head, NU BOP, isolate well, prepare for next days operations, clean up location, SDFD. Note COGCC was advised prior to operation and was not present during operations.	4/19/2012
4/20/2012	0 psi at WH, open well, RU Superior Wireline, ran GR/CCL/CBL/VDL log from 3100' to surface, had acceptable bonding on 12.0 ppg Varicem cmt from original cmt top to 1000' and acceptable bonding on 12.0 ppg Varicem cmt from 1000' to surface, RD e-line, PU RMOR's retrieving head, TIH w/production tbg, tagged sand across RBP at 6989.21' KB and tools w/218 jts, RU to circulate sand off RBP, broke circulation, circulated down latching onto RBP at 6698.90' KB and tools w/same jt, rolled hole clean, released RBP, POOH laying down production tbg on seals and tools, RU e-line, RIH w/3 1/8" slickgun, correlated cased/open logs getting on correct depth, re-perforated Codell 6776'-6784', 3 spf (24 new holes), 120 degree phasing, 19 gram charges, .41" entry holes w/21.28" penetration, all shots fired, RD e-line, SI and isolate well, drained lines, RDMOL	4/20/2012
4/25/2012	Codell ReFrac: MIRU HES. Well took 70 bbls to load. (Break 3610 psi @ 4.9 BPM) Pumped 119 bbls of FE-1A pad, 595 bbls of 26# pHaser pad, 191 bbls of 1.0 ppg 20/40 slurry with 26# pHaser, 524 bbls of 2.0 ppg 20/40 slurry with 26# pHaser, 928 bbls of 3.0 ppg 20/40 slurry with 26# pHaser, 303 bbls of 4.0 ppg 20/40 slurry with 26# pHaser, 90 bbls of 4.0 ppg 20/40 SBXL slurry with 26# pHaser, Flush to top Codell perf (108) bbl. Shutdown (ISIP- 3276 psi) (FG .92) Fluid contained the following chemicals: .30 gpt, be-7, .6 gpt CL-23, .5 gpt BA-20, 1.5 gpt GasPerm 1100, .25 gpt Cla-web, 3.0 - 5.0 gpt Vicon NF, 0.25 - .75 gpt CAT 3, 6.0 gpt wg-28 dry gel 1.0 gpt Losurf-100, FE-1A @ 20 gpt (217310 lbs Preferred Rock) (8000 lbs SBXL 20/40). RD HES. MTP = 3750 psi, ATP = 3386 psi, AIR = 19.5 bpm. Pressure response was slightly positive for entire treatment.	4/25/2012
4/25/2012	Niobrara Hybrid: RIH with PSI wireline using High pressure control unit and grease head. Set RMOR Cast Iron Flowthrou 10k frac plug @ 6700' with a Baker #10. Duel fire 3 1/8" slick gun and EXT charges (22.7 gram, .42 entry hole, 35.1" penetration, 120 degree phasing). Niobrara "B" Bench @ 6605'-6613' (2 SPF) Niobrara "A" Bench @ 6501' - 6503' (2 SPF) (28 New holes). POOH and RDMO PSI Wireline.  MIRU HES. Well was loaded @ open. (Break 3105 psi @ 2.7 BPM) Pumped 119 bbl active pad, Pumped 1549 bbls of Slickwater pad, 144 bbls of 20# pHaser pad, 166 bbls of 1.0 ppg 20/40 slurry with 20# pHaser, 786 bbls of 2.0 ppg 20/40 slurry with 20# pHaser, 836 bbls of 3.0 ppg 20/40 slurry with 20# pHaser, 376 bbls of 4.0 ppg 20/40 slurry with 20# pHaser, 120 bbls of 4.0 ppg SB Excel 20/40 slurry with 20# pHaser. Flushed well to top of "B" bench (105.3 bbls) Shutdown (ISDP - 4034 psi) (FG 1.05). Fluid contained the following chemicals: .6 gpt CL-23, 1.0 gpt BA-20, 2.0 gpt GasPerm 1100, 1.25 gpt Clayfix III, 0.5 - 3.0 gpt Vicon NF, 0.15 - .75 gpt CAT 3, 2.0 gpt FR-66, 22 ppt WG-18 1.0 gpt Losurf-100, .30 gpt be-7. (238310 lbs Preferred Rock 20/40) (12000 20/40 SB Excel. RD HES. MTP = 4979 psi, ATP = 4436 psi, AIR = 54.7 bpm. Pressure response was slightly positive for entire treatment.	4/25/2012
5/3/2012	SCP 400 psi, open flowing to flow back tank, SSCP 0 psi, MIRU Bayou rig 008, 219 jts used tested 2 3/8" 4.7# J-55 EUE 8rd tbg layed down on location, blew well down to flow back tank, controlled well w 40 bbls Claytreat/ Biocide water, ND WH, remove 4 1/2" frac valve, install new 3K Well Head Inc mandrel style tbg head, NU BOP, PU RMOR's 3 7/8" x 6' waved bttm burn shoe, TIH picking up tallying production tbg, in hole w/ 153 jts well kicked off started flowing, flowing to rig tank, pressure down, controlled w/ 20 bbls, continued TIH tagging sand fill at 6,672.64' w/ 217 jts, RU circulation equipment, broke circulation, circulated down, tagging plug at 6,704.22' KB and tools w/218 jts, drilled up plug and chased to 6,856.63' KB and tools w/ 223 jts tagging fill again, continue circulating down to 6,932.54' KB (PBDT) w/225 jts, rolled hole clean, LD 5 jts, POOH to derrick standing back w/30 jts, leaving 190 jts @ 5,985.67 (515.33' above Niobrara A), SI and isolated well, drained lines, prepared for next days operations, SDFN.	5/3/2012
5/3/2012	SCP 0 psi, STP 0 psi, SSCP 0 psi, blew well down to rig tank, broke circulation, rolled hole clean, POOH to derrick standing back w/ remaining 190 jts, LD tools, PU new 2 3/8" standard sn/nc, TIH w/production tbg, ND BOP, land tbg in WH 6,760.16' ( 15.84' above the Codell) KB, NU WH, did not dropped new PCS full port standing valve and broached to seatnipple w/1.901" broach, isolate well, RU swab equipment.  ITP-0 psi ICP-0 psi IFL-3400' FFL-unknown Swabed back 60 bbls water FTP-100 FCP-50 psi Made 3 swab runs  RDMO.  Tbg detail: 219 jts 2 3/8" 4.7# J-55 EUE 8rd 7.0' adj KB 7.0' 1-10' 2 3/8" 4.7# J-55 EUE 8rd sub 6727.56' 6734.56' 1-8' 2 3/8" 4.7# J-55 EUE 8rd sub 10.00 6744.56 1-6' 2 3/8" 4.7# J-55 EUE 8rd sub 8.00 6752.56 Seatnipple/notched collar 6.00 6758.56 1.60' 6760.16' EOT	5/4/2012
5/7/2012	MIRU Clark Swabbing, RIH w/swab, STP 540 psi, SCP 900 psi, SFL 260 , recovered 56 bbls, FFL 300 , ETP 350, ECP 800 , isolate well, SDFD.	5/7/2012
5/8/2012	MIRU Clark Swabbing, RIH w/swab, STP 500 psi, SCP 1100 psi, SFL n/a , recovered 109 bbls, FFL flow , ETP 480, ECP 1100 , isolate well, SDFD.	5/8/2012
5/8/2012		5/9/2012



## Well History

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### Daily Operations

Start Date	Summary	End Date
5/9/2012	MIRU Clark Swabbing, RIH w/swab, STP 800 psi, SCP 1650 psi, SFL n/a , recovered n/a bbls, FFL n/a, ETP n/a psi, ECP n/a psi, isolate well, SDFD	5/9/2012