



Well History

Well Name: Hungenberg 14-33

API 05123236230000		Surface Legal Location SWSW 33 6N 65W		Field Name Wattenberg		State CO		Well Configuration Type Vertical	
Ground Elevation (ft) 4,670.00	Original KB Elevation (ft) 4,681.00	KB-Ground Distance (ft) 11.00	Spud Date 3/5/2006 00:00	Rig Release Date 3/9/2006 00:00	On Production Date 4/24/2006	Abandon Date			

Job

Drilling - original, 3/5/2006 00:00

Job Category Drilling	Primary Job Type Drilling - original	Start Date 3/5/2006	End Date 3/9/2006	Objective Drill a new Codell/Niobrara well
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Daily Operations

Start Date	Summary	End Date
3/5/2006	Ensign Rig #31: MIRU. Drill rat and mouse holes and spud 12 1/4" surface hole at 10:30 AM. TD 12 1/4" surface hole at 454' at 4:30 PM. Cond & circl 15 minutes and survey (0.34 deg at 454'). Cond & circl 1/2 hour and TOOH. OOH at 7 PM and rig up casers. Ran 11 joints of new, 24#, J-55, 8 5/8" surface casing to 434'. Set at 444'. Rig up Cementer's Well Service and pump 300 sacks of Class G cement +3%CaCl2 + 1/4# flake per sack. Plug down at 11:30 PM. Wait on cement	
3/6/2006	Ensign Rig #31: Presently at 545' waiting on cement.	
3/7/2006	Ensign Rig #31: At 4213' (3759'/21hrs) and drilling 7 7/8" hole with Bit #2 at 6 AM.	
3/8/2006	Ensign Rig #31: At 6640' (2427'/24hrs) and drilling 7 7/8" hole with Bit #2 at 6 AM.	
3/9/2006	Ensign Rig #31: Day #4 at TD of 7262' (572'/6.25hrs) with 7 7/8" hole at 12:15 PM on 3/8/06. Short Trip DP, Cond mud, LDDP, Log hole, Run & cement production casing. Detailed report to follow	

Initial Completion, 3/22/2006 00:00

Job Category Completion/Workover	Primary Job Type Initial Completion	Start Date 3/22/2006	End Date 1/11/2007	Objective Produce a new Codell/Niobrara well
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Daily Operations

Start Date	Summary	End Date
3/22/2006	MIRU BJ Services. Performed a New Codell stimulation using 2597 bbls of Vistar 20# fluid system, 217000 of 20/40 white sand and 8000 lbs of Super LC 20/40 resin coated proppant. Codell perfs @ 7054-7064' (30 Shots). Pumped 1 - 4 ppg stages of 20/40 white sand, 4 ppg Super LC proppant, flush well to .5 bbl short of top Codell perforation (112 bbls), shut down, record ISDP = 3705 psi. RD BJ Services, turn well on to flowback. Transfer 20 bbls from hydration unit to flowback tank. MTP = 3938 psi, ATP = 3639 psi, AIR = 16.4 bpm. Pressure response was flat to slightly positive for entire treatment. Operationally the treatment went well. Total fluid to Recover = 2709 bbls. Turn well on to flowback on a 20/64" choke until bottoms up then on a 12/64" for the remainder of flowback.	
10/20/2006	MIRU Key Rig # 903. Spotted in pump and tank. Hook up lines to wellhead. SDFN DC/CC \$1976.00	
10/23/2006	Killed well with 40 barrels of KCL. TOH with 216 joints of 2 3/8 tubing and 14' pup joints. TOH with Nabors 4 1/2 casing scraper to 7070'. TOH with scraper. SDFN DC \$5685.00 CC \$7660.00	
10/24/2006	TIH with Nabors 4 1/2 11.6# WLTC bridge plug. Set the plug @ 7030'/216 joints of tubing. Rolled the hole. Laid down 16 joints. Spotted sand across the plug. TOH with tubing. ND BOP's. NU 5000# frac valve. Pressure tested the casing to 5000# for 5 minutes. Casing tested OK. NU JU head. TIH with 200 joints. Swabbing from 6500'. SDFN DC \$5580.00 CC \$16940.00 TIH with Nabors 4 1/2 11.6# WLTC bridge plug. Set the plug @ 7030'/216 joints of tubing. Rolled the hole. Laid down 16 joints. Spotted sand across the plug. TOH with tubing. ND BOP's. NU 5000# frac valve. Pressure tested the casing to 5000# for 5 minutes. Casing tested OK. NU JU head. TIH with 200 joints. Swabbing from 6500'. SDFN DC \$5580.00 CC \$16940.00	
10/26/2006	Finish swabbing fluid level down to 6500', LD swab, POOH laying down 94 jts, SI well, SDFD due to high winds. DC: \$3000.00 CC: \$22,940.00	
10/27/2006	Finish laying down tbg, ND BOPs, NU for frac, SI well, RDMO DC: \$2800.00 CC: \$25,740.00	
10/31/2006	MIRU Nuex Wireline, RIH w/3 1/8" slickgun & perforated Niobrara "B" 6874-6890', 3 spf & Niobrara "A" 6750-6754', 2 spf (56 holes total), 120 deg phasing, 23 gram charges, .42" entry holes w/20.45" penetration. RD e-line, SI well. (Note: found fluid level @ 6100'). DC: \$3208.00 CC: \$28,948.00	



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Daily Operations

Start Date	Summary	End Date
11/1/2006	<p>Niobrara Hybrid Recomplete: MIRU Halliburton Energy Services. Performed a Niobrara stimulation using 500 gallons of 15% HCL, 1550 bbls Slickwater pad, 144 bbls of SilverStim 24# pad, 2319 bbls of SilverStim 24# fluid system, 238540 lbs of 30/50 white sand and 12000 lbs of SB Excel 12/20 resin coated proppant. Niobrara perms @ 6750-6890' (56 shots), Pumped 01-4 ppg stages 30/50 mesh white sand and 4 ppg SB Excel proppant, flush well to .5 bbl short of top Niobrara perforation (107 bbls), shut down, record ISDP = 3672 psi. 5 min shut in psi = 3501 RD HES, turn well on to flowback. Transfer 35 bbls from hydration unit to flowback tank. MTP = 5036 psi, ATP = 4833 psi, AIR = 42.6 bpm. Pressure response was flat to slightly negative during 24# SilverStim stages.. Pumped treatment 4-1/2" casing. Turn well on to flowback on a 20/64" choke. Treatment went well.</p> <p>Daily Cost:\$ 121375 Cost to Date:\$ 147115</p>	
1/9/2007	<p>160#s csg flowing to sales, MIRU SOS rig #13, blew well down, controll well w/50 bbls 2% KCL, ND frac valve, install WH, NU BOPs, PU Nabors Oil Tools retrieving head, TIH picking up tallying production tbg, 200 jts in (6500' + or -), SI well, SDFN.</p> <p>DC: \$4045.00 CC: \$155,468.00</p>	
1/11/2007	<p>300#s tbg/200#s csg, opened tbg to FBT, tbg blew down, RIH w/swab, IFL , recovered bbls, well kicked off flowing, let well unload, SI well, RDMO. FINAL REPORT.</p> <p>DC: \$ CC: \$</p>	
1/11/2007	<p>300#s tbg/200#s csg, opened tbg to FBT, tbg blew down, RIH w/swab, IFL , recovered bbls, well kicked off flowing, let well unload, SI well, RDMO. FINAL REPORT.</p> <p>DC: \$3260.00 CC: \$163,423.00</p>	

Re-Frac, 2/27/2012 08:00

Job Category Completion/Workover	Primary Job Type Re-Frac	Start Date 2/27/2012	End Date 3/5/2012	Objective Annular fill, prep for Codell frac
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Daily Operations

Start Date	Summary	End Date									
2/27/2012	<p>STP 300 psi, SCP 200 psi, shut in due to construction on 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, TOOH w/ 6 jts, tagged @ 7,206.63' w/6, LD tag jts, RU Pick Testers, POOH w/production tbg to derrick testing to 6000 psi, all jts tested good, RD tester, (POOH w/ 216 jts 2 3/8" J-55 EUE 8rd tbg, 1-10' and 1-6' sub, sn/nc, tbg was landed at 7,038.41' KB), tag depth of 7,206.63' KB, PU RMOR's 3 7/8" blade git - 4 1/2" csg scraper, TIH w/production tbg, circulated down to 7,232.51' KB (PBSD) and tools w/222 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 6,655.55' KB and tools w/205 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.</p>	2/27/2012									
2/28/2012	<p>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 (82 K), NU annular flanges, TIH picking up tallying WS #314 1.660" 3.02# N-80 CSHD workstring, tagged original cmt top at 2,450.21' KB w/ 10' in on jt 79, LD jt 79, RU circulation equipment on jt 78, break circulation and conditioned hole for 3 hours @ 2,439.97' w/78 jts, LD 5 jts, isolate well, prepare for next days operations, SDFN.</p>	2/28/2012									
2/29/2012	<p>0 psi at WH, open well, TIH w/5 jts 1.660" workstring to 2,439.97 w/78 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 326 sks (126 bbls) Varicem slurry at 12.0 ppg, Disp. 1.5 bbl, Break HES off WH, POOH laying down 78 jts, circulated 10 bbls cmt to cmt tank spotting 12.0 ppg cmt, RDMO HES, ND annular flanges, re-land csg in WH at 45K, 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.</p>	2/29/2012									
3/1/2012	<p>0 psi at WH, open well, RU Superior Wireline, ran GR/CCL/CBL/VDL log from 2550' 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 6646.55 KB and tools w/205 jts, RU to circulate sand off RBP, broke circulation, circulated down latching onto RBP at 6655.55' 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 7053'-7061', 3 spf (24 new holes), 120 degree phasing, 19 gram charges, .41" entry holes w/21.28" penetration, all shots fired, RD e-line, RU Pick Testers, PU RMOR's 4 1/2" AS1X 10K PKR, TIH picking up tallying WS308 2 7/8" workstring testing to 8000 psi, found no collar leaks, RD tester, set PKR in WH at 6,960.60' KB (92.45' above the Codell and 70.60' below Niobrara B) and tools w/213 jts 2 7/8" N-80 install HES 3 1/2" 10K frac valve, load backside and test csg/PKR to 1500 psi, test good, load and pump down tbg at 2000 psi, had no communication on backside, isolate well, RDMO</p> <p>Tbg detail:</p> <table border="0"> <tr> <td>213 jts 2 7/8" 6.5# N-80 EUE 8rd</td> <td>0.0' adj KB</td> <td>0.0'</td> </tr> <tr> <td>4 1/2" K-10 PKR</td> <td>6953.65'</td> <td>6953.65'</td> </tr> <tr> <td></td> <td>6.95'</td> <td>6960.60'</td> </tr> </table>	213 jts 2 7/8" 6.5# N-80 EUE 8rd	0.0' adj KB	0.0'	4 1/2" K-10 PKR	6953.65'	6953.65'		6.95'	6960.60'	3/1/2012
213 jts 2 7/8" 6.5# N-80 EUE 8rd	0.0' adj KB	0.0'									
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Daily Operations

Start Date	Summary	End Date
3/3/2012	Codell ReFrac: MIRU HES. Well took 27 bbls to load. (Break 2354 psi @ 2.5 BPM), Pumped 48 bbl cla-web load and break, Pumped 119 bbls of FE-1A pad, 595 bbls of 26# pHaser pad, 190 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, 299 bbls of 4.0 ppg 20/40 slurry with 26# pHaser, 72 bbls of 4.0 ppg SB Excel slurry with 26# pHaser. Flushed well to top of the Codell perf (41.8 bbls) Shutdown (ISDP 3699 psi) (FG .96) Fluid contained the following chemicals: , .30 gpt be-7, .6 gpt CL-23, .5 gpt BA-20, 1.5 gpt GasPerm 1100, .5 gpt Cla-web, 3.0 - 5.0 gpt Vicon NF, 0.25 - .75 gpt CAT 3, 6.0 gpt LG-6 1.0 gpt Losurf-100, FE-1A @ 20 gpt (218320 lbs Preferred Rock 20/40) (8000 lbs 20/40 SB Excel). RD HES. MTP = 7215 psi, ATP = 5836 psi, AIR = 19 bpm. Pressure response was slightly positive for entire treatment.	3/3/2012
3/5/2012	ICP 0, ITP 0, blew well to rig tank, controlled well w/ 20 bbls Biocide/ Claytreat, Removed HES 3 1/2" 10K frac valve, NU BOP's, Released RMOR's 4 1/2" AS1X 10K PKR, TOOH w/ WS308 2 7/8" workstring laying down on trailer, out of hole w/ 213 jts, LD tools, PU new 2 3/8" standard seat nipple and notch collar, 216 jts 2 3/8" 4.7# J-55 EUE 8rd tbg tested tubing on ground, TIH tallying and picking up production tbg off of ground, tagging sand @ 7,116.70 w/ 219 jts tools and KB. RU circulation equipment, broke circulation, washed down tagging PBTD @ 7,241.19' KB w/223 jts . Circulate hole clean, lay down 7 jts. land tubing w/ 216 jts-7011.77' and NC/SN-1.60', 1-8' sub 1-6' sub and tubing is landed @ 7,035.37' (17.63' above Codell). ND BOP NU WH, did not dropped new PCS full port standing valve and broached to seatnipple w/1.901" broach, isolate well, RDMOL <div style="display: flex; justify-content: space-between;"> <div>Tbg detail:</div> <div>8.0' adj KB</div> <div>8.0'</div> </div> <div style="display: flex; justify-content: space-between;"> <div>216 jts 2 3/8" 4.7# J-55 EUE 8rd</div> <div>7011.77'</div> <div>7019.77'</div> </div> <div style="display: flex; justify-content: space-between;"> <div>1-8' 2 3/8" 4.7# J-55 EUE 8rd sub</div> <div>8.00'</div> <div>7027.77'</div> </div> <div style="display: flex; justify-content: space-between;"> <div>1-6' 2 3/8" 4.7# j-55 EUE 8rd sub</div> <div>6.00'</div> <div>7033.77'</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Seatnipple/notched collar</div> <div>1.60'</div> <div>7035.37 EOT</div> </div>	3/5/2012

Wellbore Integrity, 5/15/2015 06:00

Job Category Completion/Workover	Primary Job Type Wellbore Integrity	Start Date 5/15/2015	End Date 5/15/2015	Objective Pressure test Casing integrity ahead of Bayswater Horizontal fracs
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Daily Operations

Start Date	Summary	End Date
5/15/2015	MIRU Ensign 354. Spot in equipment and function test BOPs. RU. RU Pumpm and tank. ITP 1100-psi, ICP 1100-psi, ISCP 0-psi. Blow down well to flat tank. Control well w/ 30 bbls kcl on tbg and 40 bbls kcl on csg. ND WH. NU BOPs. Tag fill w/ 100'. LD tag jts. TOOH Standing back and tally 216 jts 2 3/8". LD SNNC. Tubing was landed at 7042.91' KB RU Hydrotester. PU 3 7/8" bit/scraper, TIH out of derrick hydrotesting 216 jts to 6500# psi, Had 2 bad jts. RD Tester. TOOH Standing back 214 jts 2 3/8". LD Bit/Scraper. SWI. SDFN. Crew to yard.	5/16/2015
5/18/2015	Crew to l ocation. Held safety meeting. ICP 200-psi. Blow down well to flat tank. Control well w/ 30 bbls kcl. PU 4 1/2" RBP and TIH out of derrick w/ 200 jts 2 3/8" , Set RBP at 6504.19' . Load tbg/csg Establish circulation. Circulate gas out of well. RU Hydrotester and pressure test casing to 4500# psi. Hold pressure for 15 minutes and got a good test. Bleed off pressure. RD Tester. Release RBP and TOOH Standing back 200 jts LD RBP. PU SNNC and TIH out of derrick w/ 216 jts 2 3/8", 8' sub, 6' sub. RU Lubricator, Broach tubing to SN. ND BOPs. NU top flange. Rack up pump and tank. RDMO. Clean up location. Move rig to next location. Landed tubing as follows: KB =11.0' sub=8' sub=6' 216 jts 2 3/8", 4.7#, J-55,8rd =7016.31 SNNC=1.60 Total landed depth is = 7042.91'KB _____ 11.09' above codell perfs.	5/18/2015

WBI - Plug Set Other Operator, 3/27/2018 06:00

Job Category Completion/Workover	Primary Job Type WBI - Plug Set Other Operator	Start Date 3/27/2018	End Date 3/28/2018	Objective TEST TUBING, SET PLUG ABOVE THE TOP PERFS, TEST CASING AND INSTAL 5K WELL HEAD FOR WBI.
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Daily Operations

Start Date	Summary	End Date
3/27/2018	ITP 1000 PSI, ICP 950 PSI, ISCP 0 PSI, WELL WAS SHUT IN, MIRU BRIGADE RIG 14, BLEW DOWN WELL TO RIG TANK, FUNCTION TESTED BOP, CONTROLLED WELL WITH 50 BBL OF CLAYTREAT/BIOCIDE WATER, ND PRODUCTION TREE, NU BOP, PICKED UP TAG JTS, RAN 3 JTS 96' AND DIDN'T TAG, LD TAG JTS, TALLY OUT OF THE HOLE WITH 2 3/8 J-55 4.7 PRODUCTION PIPE TO DERRICK, TUBING WAS LANDED AT 7032.72' KB WITH 216 JTS 1-8', 1-6' SUBS AND NC/SN OF 2 3/8 J-55 4.7, MIRU PICK TESTER, PU STS'S 3 7/8 BLADE BIT AND 4 1/2 SCRAPER DRESSED FOR 11.6 CASING, RIH WITH PRODUCTION PIPE DOWN TO 7128' WITH 216 JTS, RD HYDRO TESTER, ALL PIPE TESTED GOOD, LD 12 JTS ON THE GROUND, PULLED 204 JTS TO DERRICK, LD BIT AND SCRAPER AND SHUT DOWN, DRAIN PUMP AND LINES, SI AND SECURE WELL FOR THE NIGHT, SD.	3/27/2018



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Daily Operations

Start Date	Summary	End Date										
3/28/2018	<p>ICP 100 PSI, ISCP 0 PSI, BLEW DOWN WELL TO RIG TANK, MIRU C&J WIRE LINE, PU 4 1/2 10K CIBP, RIH WITH WIRE LINE, SET CIBP AT 6700' CORRELATED WITH LOGS, SPOTTED 2 SACKS OF CEMENT ON TOP OF THE PLUG, RD WIRE LINE, PU 3 7/8 CONE BIT, PUMP OFF BIT SUB AND SEAT NIPPLE, RIH WITH PRODUCTION PIPE DOWN TO 6627.78' WITH 204 JTS, RU CIRCULATING EQUIPMENT, CIRCULATED OIL AND GAS OUT PUMPING DOWN TUBING, PRESSURE TESTED CASING AND PLUG UP TO 2000 PSI, HELD GOOD FOR 15 MINUTES, RU SWAB LUBRICATOR, MADE A BROACH RUN DOWN TO SEAT NIPPLE (1.901"), LD BROACH, PU 2" SWAB CUPS, MADE A SWAB RUN DOWN TO 500', RD SWAB LUBRICATOR, LD 4 JTS, ND BOP, INSTALLED 5K TOP FLANGE AND 2 3/8 MASTER VALVE, LANDED TUBING AT 6500.79 KB WITH 200 JTS, SEAT NIPPLE, PUMP OFF BIT SUB AND 3 7/8 CONE BIT, MIRU PICK TESTERS, TORQUE AND TESTED WELL HEAD UP TO 5000 PSI, RECORDED THE TEST FOR 15 MINUTES, RACK PUMP AND TANK, RDMOL. FINAL REPORT.</p> <p>TUBING DETAILS</p> <table border="0"> <tr> <td>KB</td> <td>9.00</td> </tr> <tr> <td>200 JTS 2 3/8 J-55 4.7</td> <td>6488.59</td> </tr> <tr> <td>SEAT NIPPLE</td> <td>1.20</td> </tr> <tr> <td>PUMP OFF BIT SUB</td> <td>2.00</td> </tr> <tr> <td>TOTAL</td> <td>6500.79</td> </tr> </table> <p>NOTE: SENT 16 GOOD JTS OF 2 3/8 J-55 TO ATP'S YARD TO PDC'S INVENTORY.</p>	KB	9.00	200 JTS 2 3/8 J-55 4.7	6488.59	SEAT NIPPLE	1.20	PUMP OFF BIT SUB	2.00	TOTAL	6500.79	3/28/2018
KB	9.00											
200 JTS 2 3/8 J-55 4.7	6488.59											
SEAT NIPPLE	1.20											
PUMP OFF BIT SUB	2.00											
TOTAL	6500.79											

WBI - Return to Production Other Operator, <dtmstart>

Job Category Completion/Workover	Primary Job Type WBI - Return to Production Other Operator	Start Date	End Date	Objective
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Daily Operations

Start Date	Summary	End Date