



Proposed P&A Procedure

Well Name: BILLY 22-45

API 05-123-24111	Original KB Elevation (ft) 4,650	Ground Elevation (ft) 4,634	Total Depth (ftKB) 7,172.0	Current PBTD (mKB) ORIGINAL HOLE - 7,107.5
Section 22	Township 5	Range 65	County/Parish WELD	State/Province COLORADO

Casing Strings

Csg Des	MD (ftKB)	Run Date	Prop Run?	Cut/Pull Date	Proposed Cut/Pull?	Depth Cut/Pull (ftKB)	OD (in)	ID (in)	Grade	Len (ft)
Surface	398.0	3/31/2007	No		No		8 5/8	8.10	J-55	382.00
Production	7,147.0	4/4/2007	No	7/3/2017	Yes	598.0	4 1/2	4.00	M-80	7,131.00

Tubing Strings

Des	Set Depth (ftKB)	Run Date	Prop Run?	String Location	Pull Date	Prop Pull?	Cut/Pull Date	Proposed Cut/Pull?	Depth Cut/Pull (ftKB)
Tubing - Production	6,960.7	6/19/2014	No	Tubing - Production set at 6,949.0ftKB on 10/3/2007 00:00	7/3/2017	Yes		No	

Perforations

Zone	Type	Date	Prop?	Top (ftKB)	Btm (ftKB)
	Perforated	7/3/2017	Yes	2,290.00	2,290.00
CODELL, ORIGINAL HOLE	Perforated	4/30/2007	No	6,980.00	6,996.00

Other In Hole

Des	Run Date	Prop Run?	Prop Pull?	Top (ftKB)	Btm (ftKB)
CICR	7/3/2017	Yes	No	2,188.0	2,190.0
Cast Iron Bridge Plug	7/3/2017	Yes	No	6,928.0	6,930.0

Cement Stages

Des	Type	Prop?	End Date	Top (ftKB)	Btm (ftKB)
Surface Casing Cement	Casing	No	3/31/2007	16.0	398.0
Production Casing Cement	Casing	No	4/5/2007	2,620.0	7,147.0
DUMP BAIL	Plug	Yes	7/3/2017	6,467.0	6,928.0
COURTESY PLUG	Plug	Yes	7/3/2017	2,059.0	2,188.0
COURTESY PLUG	Plug	Yes	7/3/2017	2,190.0	2,290.0
COURTESY PLUG	Casing	Yes	7/3/2017	1,790.0	2,290.0
COURTESY PLUG	Plug	Yes	7/3/2017	598.0	648.0
COURTESY PLUG	Plug	Yes	7/3/2017	16.1	598.0

P&A PROCESS

Type Abandon	Sub Type WBI Non-Op	Start Date 7/3/2017	Engineer SARAH MCDONNELL	Cell Phone 832-247-2575
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PROCESS STEPS

Type	Comment																																
1)	Perform Form 17 if not done already. If the beginning pressure is greater than 25 psi, any pressure remains at the conclusion of the test, or if liquids were present; call COGCC engineer for sampling requirements. Submit form 17 within 10 days.																																
2)	MIRU workover rig, pump, and tank.																																
3)	Blow down well and roll hole with fresh water, if possible.																																
4)	ND WH, NU BOP.																																
5)	POOH and stand back tbg.																																
6)	RU WL and RIH w/ CIBP and set @ 6,930' (50' above Codell top perf).																																
7)	RIH w/ workstring and pump 35 sx of Class G Neat cement from top of CIBP to 6467'.																																
8)	Load hole with fluid and pressure test CIBP to 1000 psi with rig pumps. Hold for 15 minutes. Test will be considered successful if lose less than 100 psi. If test is unsuccessful, contact engineer.																																
9)	RIH w/ 1' perforating gun and shoot 4-6 spf @ 2,290' (TOC is 2,620').																																
10)	RIH w/ CICR on workstring and set @ 2,190' (100' above perforations).																																
11)	Load annulus between production casing and workstring. Test to 500 psi for 15 minutes. Test is considered successful if lose less than 50 psi. If pressure test fails, contact engineer.																																
12)	Establish injection rate.																																
13)	Pump 10 bbls Mud Flush (or similar spacer) followed by 200 sx of cement.																																
	<table><tr><td>Length (ft)</td><td>OD (in)</td><td>ID (in)</td><td>ft^3/ft</td><td>Volume (ft^3)</td><td>Yield (ft^3/sk)</td><td>Cement (sk)</td><td>Nearest 5sk</td></tr><tr><td>500</td><td>10.000</td><td>4.500</td><td>0.435</td><td>217</td><td>1.150</td><td>189</td><td>190</td></tr><tr><td>100</td><td>4.000</td><td>0.000</td><td>0.087</td><td>9</td><td>1.150</td><td>8</td><td>10</td></tr><tr><td colspan="7"></td><td>TOTAL: 200</td></tr></table>	Length (ft)	OD (in)	ID (in)	ft^3/ft	Volume (ft^3)	Yield (ft^3/sk)	Cement (sk)	Nearest 5sk	500	10.000	4.500	0.435	217	1.150	189	190	100	4.000	0.000	0.087	9	1.150	8	10								TOTAL: 200
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14)	Displace cement with 6 bbls fresh water (2 bbls short of workstring volume).																																
	<table><tr><td>Tubing ID</td><td>Length (ft)</td><td>Disp. Factor (BBL/ft)</td><td>Disp (BBL)</td><td>Disp -2BBL</td></tr><tr><td>1.995</td><td>2190</td><td>0.00387</td><td>8</td><td>6</td></tr></table>	Tubing ID	Length (ft)	Disp. Factor (BBL/ft)	Disp (BBL)	Disp -2BBL	1.995	2190	0.00387	8	6																						
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1.995	2190	0.00387	8	6																													
15)	Unsting from CICR.																																
16)	Place remaining 2 bbls of cement on top of CICR. Allow to fall on CICR as pulling out. TOC inside casing: 2,059'																																
17)	POOH w/ workstring.																																
18)	RIH w/ WL and cut production casing at 598' (200' below surface shoe, Fox Hills, or deepest water well).																																
19)	Circulate a MINIMUM of 2 bottoms up volumes (66 bbls) or until well is free of oil, gas, or any large cuttings.																																

Well Name: BILLY 22-45

PROCESS STEPS

Type	Comment							
	Length (ft)	OD (in)	ID (in)	BBL/ft	Disp (BBL)	2x Disp (BBL)		
	398	8.097	4.500	0.0440	18	35		
	0	12.250	4.500	0.1261	0	0		
	200	10.000	4.500	0.0775	15	31		
	TOTAL: 66							
20)	Perform flow check for 5 minutes to ensure well is static and record current fluid weight in WellView.							
21)	Unland production casing.							
22)	POOH and LD production casing filling pipe every 6 joints.							
23)	RIH w/ workstring to 648' (50' inside cut casing).							
24)	Establish circulation.							
25)	Pump 10 bbls Mud Flush (or similar spacer) followed by 225 sx of cement as a balanced plug. TOC should be at surface.							
	Length (ft)	OD (in)	ID (in)	ft^3/ft	Volume (ft^3)	Yield (ft^3/sk)	Cement (sk)	Nearest 5sk
	398	8.097	0.000	0.358	142	1.150	124	125
	200	10.000	0.000	0.545	109	1.150	95	95
	50	4.000	0.000	0.087	4	1.150	4	5
	TOTAL: 225							
26)	POOH w/ workstring. Top off cement if needed. Cement needs to be ~10' from surface.							
27)	ND BOP.							
28)	RDMO.							