

# Richardson V 3-15

Existing Features	
KB	12

## Proposed Additions for P&A

100	CIBP w/ redi mix
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300	TOC
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200'

Cement Blend: Type III + 0.2 % SPC 02 ; Density 14.2 ppg , Water Requirement = 7.32 gal/sk ; Yield = 1.46 cuft/sk ; Thickening Time = 2:49 at 80 F

1200	Casing Stub
1300	Bottom of cement

200'

4250	Top of in pipe cement
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200'

5060	Bottom Squeeze Perf
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Cement Blend: 1:2:3 'Poz:III: Gel' + 3% (BWOW) KCl +1% SMS +0.4% CR-4 +0.2% SPC-2 + 2lb/sk PS Flake ; Density = 12.5 ppg, Water Requirement = 10.52 ga/sk , Yield = 1.93 cuft/sk , Thickening Time = 3:12 at 160 F

6330	Top of in pipe cement
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400'

7150	CIBP ( 2 7/8")
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Cement Blend: 1:1:3 'Poz:G:Gel' + 20% silica flour +0.4% CFL-2 +0.1%SMS +0.05%CR-4 Density 13.5 ppg Thickening Time : 4:19 at 200 F, Yield 1.66 cuft/ sk

Legend	
	cement with CBL
	new proposed cement
	assumed cement w/ no CBL
	cast iron cement retainer
	cast iron bridge plug
	mud

API# 0512316855				
Well: Richardson V 3-15				
Equipment	Specs.	Depth	Capacity (bbl/ft)	Capacity ft <sup>3</sup> /ft
Surface Casing	8 5/8" 24#	508	0.0637	0.3576
Production Casing	2 7/8" 6.50# N-80	7625	0.00579	0.0325
Tubing String	1.50 (2.75#)	N/A	N/A	N/A
Sx/ Sh Casing Hole size	9"		0.0787	0.4418
NB/CD Casing Hole size	12"		0.1399	0.7854

Cement Calculations				
Section	Volume	Cement Sacks	approximate	Top Plug
S/C hole	74.38	50.95		
P/C annular hole	366.87	251.28		
P/C hole	3.25	2.23		
Total Top Plug	444.50	304.45	310	

In Hole	Volume	Cement Sacks	approximate	SX/ SH Plug
In pipe	26.33	13.64		
Total		219.77	225	

NB/CD Annular	Volume	Cement Sacks	approximate	NB/CD Plug
NB/CD Csg.	26.65	16.05		
Total			20	

Cement Yield	1.46	1.93	1.66	1.66
	Top Plug	SX/SH	NB/Cd Squeez	NB/Cd in pipe

Surface csg shoe at	508
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Bottom of Foxhills	1098
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TOC Cement existing	3724
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Top	4451
Sussex	No Perfs

BOC Cement existing	4820
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Shannon	Bottom	5007
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Previous Squeeze Holes	6430
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TOC Cement existing	6439
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Geologic Top	7204
Niobrara	

Geologic Top		7464
Codell	Perf Top	7466
	Perf Bottom	7482

BOC Cement existing	7625
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PBMD	7625
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