

## Fort Saint Vrain 19

Existing Features	
KB	12

Surface csg shoe at	512
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Bottom of Foxhills (FHM)	653
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Sussex Top	3908
Not producing Sussex w/in 1 mile	
Sussex Bottom	4191

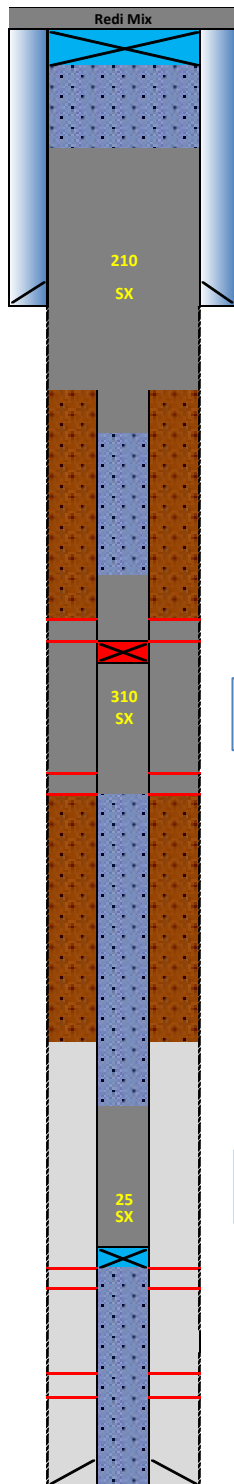
Shannon Base	4545
Not producing Shannon w/in 1 mile	

TOC (CBL)	6250
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Niobrara Top	6811
Perf Top	6883
Perf Bottom	6889

Codell Top	7086
Perf Top	7086
Perf Bottom	7098

PBMD	7153
4 1/2" 12.6# CSG	7200



Proposed Additions for P&A	
80	CIBP 8 5/8" 24#

412	TOC
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Cement Blend: Type III w/cello flake and CaCl<sub>2</sub> as necessary, mixed at 14.8 ppg and 1.33 cuft/sk yield.

760	Casing Stub
860	BOC

3500	TOC
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3700	Top Squeeze Holes
3730	CICR 4 1/2" 12.6#

Cement Blend: "G" w/ 0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301, mixed at 15.8 ppg and 1.15 cuft/sk yield.

4250	BOC/Bottom Squeeze Holes
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6410	TOC
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Cement Blend: "G" w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 to achieve 2:30 pump time, mixed at 15.8 ppg and 1.38 cuft/sk yield.

6810	CIBP 4 1/2" 12.6#
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API#	05-123-15645			
WINS:	75650			
Equipment	Specs.	Depth	Capacity (bbl/ft)	Capacity ft <sup>3</sup> /ft
Surface Casing	8 5/8" (24#)	512	0.0637	0.3575
Production Casing	4 1/2" (12.6#)	7200	0.0152	0.0854
Production Tubing	2 3/8" (4.7#)	7037	0.0039	0.0217
Hole Size (TOP)	10	N/A	0.0971	0.5454
Hole Size (SU/SH)	10	N/A	0.0971	0.5454
OH X CSG Annulus (SU/SH)	N/A	N/A	0.0775	0.4350

Cement Calculations				
Section	Volume cu-ft	Cement Sacks	Excess	
Open Hole	189.37	142.38	40%	Foxhills Plug 10 in. hole
Surface Casing	35.75	26.88		
Production Casing	8.54	6.42		
FX Total	225.12	175.68	210	
OH X CSG Annulus	287.10	249.6522	20%	Sussex Squeeze 10 in. hole
Production Casing	64.05	55.69565		
SU Total	351.15	305.3478	310	
OH X CSG Annulus				
Production Casing	34.16	24.75		
NB/CD Total	34.16	24.75	25	

Cement Yield	1.33	1.15	1.38
	FX	SX/SH	NB

Legend	
	Existing cement with CBL
	New cement
	Assumed cement w/ no CBL
	Cast Iron Cement Retainer
	Cast Iron Bridge Plug
	Mud
	Water + Biocide