

## HSR-Redmond 12-21

Existing Features	
KB	10

8-5/8" 24# Surface csg shoe	583
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Bottom of Foxhills (FHM)	716
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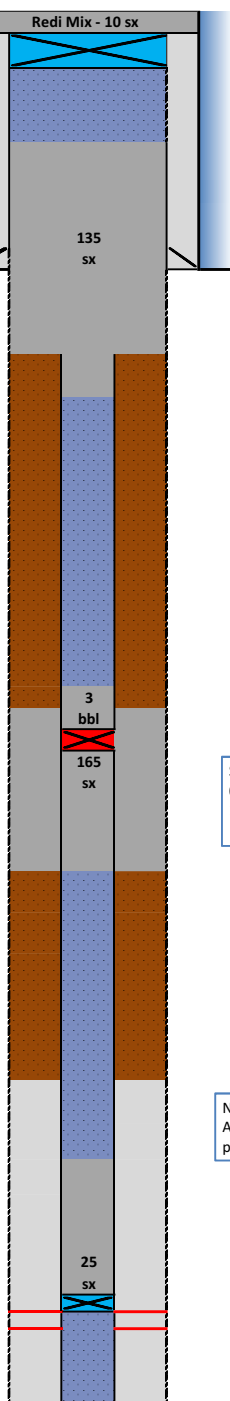
Sussex	Top	4023
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SX & SH non productive within 1 mile

TOC Primary existing (CBL)	6000
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Nibrara	Top	6840
Nio	Perf Top	6832
	Perf Bottom	6966
Codell	Perf Top	7094
	Perf Bottom	7114

PBMD	7203
4-1/2" CSG 11.6#	7239



### Proposed Additions for P&A

80	CIBP (8-5/8")
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483	TOC
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Cement Blend: Type III w/ cello flake and CaCl<sub>2</sub>, mixed at 14.8 ppg and 1.33 cuft/sk. with 20%

816	Csg Stub
916	Bottom of Cement

3660	TOC in csg
3820	TOC in annulus
3850	CICR

Sussex 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, with 20% excess and 8.5" hole size.

4230	BOC
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6400	TOC in csg
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NB 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

6790	BOC in csg
6790	CIBP

API# 05-123-17197				
Well: HSR-Redmond 12-21				
Equipment	Specs.	Depth	Capacity (bbl/ft)	Capacity ft <sup>3</sup> /ft
Surface Casing	8 5/8"	712	0.0637	0.3576
Production Casing	24#			
	4.50 (11.6#)	7400	0.0155	0.0872
Tubing Size				
Bit Size	7 7/8		0.0602	0.3382
Hole Size	8		0.0622	0.3491
Hole Size	8.5		0.0702	0.3941
Hole Size	12		0.1399	0.7854

Cement Calculations				
Section	Volume cu-ft	Cement Sacks	Excess	Top Plug
8-5/8" csg	35.76	26.89		8" Caliper to 7200'
OH	97.60	73.38	20%	
4-1/2" csg	8.72	6.56		
Total Top Plug	142.08	106.83	135	
179.55		cu-ft		

top CICR	16.57	14.41		SX/ SH Plug 8.5" Caliper
annulus	139.54	121.34	20%	
Casing	33.14	28.81		
Total	189.24	164.56	165	
189.75		cu-ft		

NB/CD Csg	34.01	24.64		NB/CD Plug
Total	34.01	24.64	25	

Cement Yield	1.33	1.15	1.71	1.38
Top Plug	SX/SH	NB/Cd Squeeze	NB/Cd in pipe	

Legend	
	New cement
	Existing cement with CBL
	assumed cement w/ no CBL
	cast iron cement retainer
	cast iron bridge plug
	mud
	2% KCL Water