



Lease Review All - Frac Summary

Well Name: HORSETAIL 30F-3107

WPC ID 1CO0761038			Well Permit Number			Field Name DJ Horizontal Niobrara			County Weld			State CO													
Well Configuration Type Lateral/Horizontal			Orig KB Elv (ft) 4,797.40			Ground Elevation (ft) 4,780.40			Casing Flange Elevation (ft)			Tubing Head Elevation (ft)			Total Depth (ftKB) 13,071.0										
Original Spud Date 7/12/2014			Completion Date 1/22/2015			Asset Group Redtail			Responsible Engineer Charles Ohlson			N/S Dist (ft) 2,373.0			N/S Ref FNL			E/W Dist (ft) 2,039.0			E/W Ref FWL				
Lot		Quarter 1 SE		Quarter 2 NW		Quarter 3		Quarter 4		Section 30		Section Suffix		Section Type		Township 10 N		Township N/S Dir N		Range 57		Range E/W Dir W		Meridian	
Lateral/Horizontal - Original Hole, 8/19/2015 1:28:21 PM										Wellbore Sections															
MD (ftKB)		D (ft K B)		n ( C L I N E R S E C T I O N S )		Vertical schematic (actual)		Logs		Wellbore Name				Start Date		Size (in)		Act Top (ftKB)		Act Btm (ftKB)					
										Original Hole				4/23/2014		20		17.0		97.0					
										Original Hole				7/12/2014		13 1/2		97.0		1,630.0					
										Original Hole				7/14/2014		8 3/4		1,630.0		5,990.0					
										Original Hole				7/16/2014		6 1/8		5,990.0		13,071.0					
Conductor Pipe, 97.0ftKB																									
		OD (in)		Wt (lb/ft)		Grade		Top (ftKB)		Btm (ftKB)		Len (ft)		Item Des											
		16		84.00		K-55		17.0		97.0		80.00		Casing Joints											
Surface Csg, 1,610.9ftKB																									
		OD (in)		Wt (lb/ft)		Grade		Top (ftKB)		Btm (ftKB)		Len (ft)		Item Des											
97.1		97.1		97.1		J-55		17.0		17.0		0.00		Landing Joint											
1,610.9		1,610.9		1,610.9		J-55		17.0		24.0		7.00		Wellhead/ Pup											
2,658.1		2,658.1		2,658.1		J-55		24.0		1,567.3		1,543.24		Casing Joints											
3,734.3		3,734.3		3,734.3		J-55		1,567.3		1,568.8		1.50		Float Collar											
4,858.6		4,858.6		4,858.6		J-55		1,568.8		1,609.4		40.63		Casing Joints											
5,412.4		5,412.4		5,412.4		J-55		1,609.4		1,610.9		1.50		Float Shoe											
5,457.7		5,457.7		5,457.7		J-55																			
5,928.5		5,928.5		5,928.5		J-55																			
5,997.0		5,997.0		5,997.0		J-55																			
6,116.1		6,116.1		6,116.1		J-55																			
6,290.0		6,290.0		6,290.0		J-55																			
6,410.1		6,410.1		6,410.1		J-55																			
6,584.0		6,584.0		6,584.0		J-55																			
6,703.1		6,703.1		6,703.1		J-55																			
6,877.0		6,877.0		6,877.0		J-55																			
6,996.1		6,996.1		6,996.1		J-55																			
7,169.9		7,169.9		7,169.9		J-55																			
7,290.0		7,290.0		7,290.0		J-55																			
7,464.9		7,464.9		7,464.9		J-55																			
7,583.0		7,583.0		7,583.0		J-55																			
7,756.9		7,756.9		7,756.9		J-55																			
7,877.0		7,877.0		7,877.0		J-55																			
8,050.9		8,050.9		8,050.9		J-55																			
8,165.0		8,165.0		8,165.0		J-55																			
8,344.2		8,344.2		8,344.2		J-55																			
8,459.0		8,459.0		8,459.0		J-55																			
8,637.1		8,637.1		8,637.1		J-55																			
8,753.0		8,753.0		8,753.0		J-55																			
8,831.1		8,831.1		8,831.1		J-55																			
9,053.1		9,053.1		9,053.1		J-55																			
9,224.1		9,224.1		9,224.1		J-55																			
9,342.8		9,342.8		9,342.8		J-55																			
9,517.1		9,517.1		9,517.1		J-55																			
9,637.1		9,637.1		9,637.1		J-55																			
9,811.0		9,811.0		9,811.0		J-55																			
9,932.1		9,932.1		9,932.1		J-55																			
10,104.0		10,104.0		10,104.0		J-55																			
10,223.1		10,223.1		10,223.1		J-55																			
10,397.0		10,397.0		10,397.0		J-55																			
10,517.1		10,517.1		10,517.1		J-55																			
10,690.9		10,690.9		10,690.9		J-55																			
10,810.0		10,810.0		10,810.0		J-55																			
10,981.0		10,981.0		10,981.0		J-55																			
11,103.0		11,103.0		11,103.0		J-55																			
11,277.9		11,277.9		11,277.9		J-55																			
11,398.9		11,398.9		11,398.9		J-55																			
11,570.9		11,570.9		11,570.9		J-55																			
11,690.0		11,690.0		11,690.0		J-55																			
11,863.8		11,863.8		11,863.8		J-55																			
11,983.9		11,983.9		11,983.9		J-55																			
12,158.1		12,158.1		12,158.1		J-55																			
12,276.9		12,276.9		12,276.9		J-55																			
12,448.2		12,448.2		12,448.2		J-55																			
12,569.9		12,569.9		12,569.9		J-55																			
12,745.1		12,745.1		12,745.1		J-55																			
12,863.8		12,863.8		12,863.8		J-55																			
12,999.3		12,999.3		12,999.3		J-55																			
13,013.8		13,013.8		13,013.8		J-55																			
										Frac String, 4,837.0ftKB															
		OD (in)		Wt (lb/ft)		Grade		Top (ftKB)		Btm (ftKB)		Len (ft)		Item Des											
7		7		7		P-110		13.2		17.6		4.37		Casing Hanger											
5 1/4		5 1/4		5 1/4		P-110		17.6		18.6		1.00		BTC x LTC crossover											
4 1/2		4 1/2		4 1/2		P-110		18.6		61.4		42.79		4.5# P-110 BTC-TXP 11.6# casing											
4 1/2		4 1/2		4 1/2		P-110		61.4		70.4		9.00		4.5" BTC-TXP spaceout pup jt											
4 1/2		4 1/2		4 1/2		P-110		70.4		78.1		7.73		4.5" BTC-TXP spaceout pup jt											
4 1/2		4 1/2		4 1/2		P-110		78.1		4,826.5		4,748.39		4.5# P-110 BTC-TXP 11.6# casing											
4 1/2		4 1/2		4 1/2		P-110		4,826.5		4,832.6		6.12		Pup Joint											
5 1/4		5 1/4		5 1/4		P-110		4,832.6		4,837.0		4.37		Baker Hughes seal assembly											
Intermediate Csg, 5,973.8ftKB																									
		OD (in)		Wt (lb/ft)		Grade		Top (ftKB)		Btm (ftKB)		Len (ft)		Item Des											
7		7		7		L-80		17.0		17.0		0.00		landing joint											
7		7		7		L-80		17.0		22.0		5.00		Hanger/pup joint											
7		7		7		L-80		22.0		5,928.6		5,906.58		Casing Joints											
7		7		7		L-80		5,928.6		5,930.1		1.50		Float Collar											
7		7		7		L-80		5,930.1		5,972.3		42.18		Casing Joints											
7		7		7		L-80		5,972.3		5,973.8		1.50		Float Shoe											
Liner, 13,061.0ftKB																									
		OD (in)		Wt (lb/ft)		Grade		Top (ftKB)		Btm (ftKB)		Len (ft)		Item Des											
4 1/2		4 1/2		4 1/2		L-80		4,837.7		4,858.5		20.78		ZXP Packer											
4 1/2		4 1/2		4 1/2		L-80		4,858.5		4,865.1		6.65		Liner Hanger											
4 1/2		4 1/2		4 1/2		L-80		4,865.1		4,866.6		1.48		X/O Sub											
4 1/2		4 1/2		4 1/2		L-80		4,866.6		4,872.1		5.51		Lower PUP JT											
4 1/2		4 1/2		4 1/2		L-80		4,872.1		4,872.1		0.00		Marker Joint											
4 1/2		4 1/2		4 1/2		L-80		4,872.1		4,872.1		0.00		Marker Joint											
4 1/2		4 1/2		4 1/2		L-80		4,872.1		12,999.4		8,127.28		Casing Joints											
4 1/2		4 1/2		4 1/2		L-80		12,999.4		13,005.5		6.09		Upper PUP Joint											
4 1/2		4 1/2		4 1/2		L-80		13,005.5		13,009.2		3.75		Alpha Sleeve											
4 1/2		4 1/2		4 1/2		L-80		13,009.2		13,011.3		2.07		Lower PUP Joint											
4 1/2		4 1/2		4 1/2		L-80		13,011.3		13,012.9		1.60		Landing Collar											
4 1/2		4 1/2		4 1/2		L-80		13,012.9		13,013.9		1.01		Float Collar											
4 1/2		4 1/2		4 1/2		L-80		13,013.9		13,058.5		44.55		Casing Joints											
4 1/2		4 1/2		4 1/2		L-80		13,058.5		13,061.0		2.53		Float Shoe											
Cement Stages																									
Des				Pump Start Date				Drill Out Date				Top (ftKB)		Btm (ftKB)		Top Meas Meth									
Conductor Cement				4/23/2014								17.0		97.0		Returns to Surface									
Surface Casing Cement				7/13/2014								17.0		1,610.9		Returns to Surface									
Intermediate Casing Cement				7/16/2014								17.0		5,973.8		Returns to Surface									
Liner Cement				7/22/2014								4,837.7		13,061.0		Returns to Surface									
Perforations																									
Type of Hole				Date				Top (ftKB)		Btm (ftKB)		Zone													
Perforated Liner				1/21/2015				5,997.0		5,999.0		NIOBRARA, Original Hole													
Perforated Liner				1/21/2015				6,061.0		6,063.0		NIOBRARA, Original Hole													
Perforated Liner				1/21/2015				6,114.0		6,116.0		NIOBRARA, Original Hole													
Perforated Liner				1/21/2015				6,173.0		6,175.0		NIOBRARA, Original Hole													
Perforated Liner				1/21/2015				6,232.0		6,234.0		NIOBRARA, Original Hole													
Perforated Liner				1/21/2015				6,290.0		6,292.0		NIOBRARA, Original Hole													
Perforated Liner				1/21/2015				6,353.0		6,355.0		NIOBRARA, Original Hole													
Perforated Liner				1/21/2015				6,408.0		6,410.0		NIOBRARA, Original Hole													



Lease Review All - Frac Summary

Well Name: HORSETAIL 30F-3107

API Number 051233920100			WPC ID 1CO0761038			Well Permit Number			Field Name DJ Horizontal Niobrara				County Weld			State CO		
Well Configuration Type Lateral/Horizontal					Orig KB Elv (ft) 4,797.40		Ground Elevation (ft) 4,780.40		Casing Flange Elevation (ft)			Tubing Head Elevation (ft)			Total Depth (ft)KB 13,071.0			
Original Spud Date 7/12/2014		Completion Date 1/22/2015		Asset Group Redtail				Responsible Engineer Charles Ohlson			N/S Dist (ft) 2,373.0		N/S Ref FNL		E/W Dist (ft) 2,039.0		E/W Ref FWL	
Lot		Quarter 1 SE	Quarter 2 NW	Quarter 3	Quarter 4	Section 30	Section Suffix	Section Type		Township 10 N		Township N/S Dir		Range 57	Range E/W Dir W		Meridian	

Lateral/Horizontal - Original Hole, 8/19/2015 1:28:24 PM						Perforations						
MD (ft)KB	D (ft) K B	n (ft) C B	l (ft) C B	Vertical schematic (actual)	Logs	Type of Hole	Date	Top (ft)KB	Btm (ft)KB	Zone		
						Perforated Liner	1/21/2015	6,466.0	6,468.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	6,525.0	6,527.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	6,584.0	6,586.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	6,644.0	6,646.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	6,701.0	6,703.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	6,760.0	6,762.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	6,818.0	6,820.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	6,877.0	6,879.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	6,931.0	6,933.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	6,994.0	6,996.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	7,053.0	7,055.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	7,112.0	7,114.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	7,170.0	7,172.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	7,229.0	7,231.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	7,288.0	7,290.0	NIOBRARA, Original Hole		
						Perforated Liner	1/21/2015	7,349.0	7,351.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	7,405.0	7,407.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	7,465.0	7,467.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	7,522.0	7,524.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	7,581.0	7,583.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	7,640.0	7,642.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	7,698.0	7,700.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	7,757.0	7,759.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	7,821.0	7,823.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	7,875.0	7,877.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	7,933.0	7,935.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	7,992.0	7,994.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	8,051.0	8,053.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	8,109.0	8,111.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	8,163.0	8,165.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	8,227.0	8,229.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	8,285.0	8,287.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	8,344.0	8,346.0	NIOBRARA, Original Hole		
						Perforated Liner	1/20/2015	8,403.0	8,405.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	8,457.0	8,459.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	8,520.0	8,522.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	8,579.0	8,581.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	8,637.0	8,639.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	8,696.0	8,698.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	8,751.0	8,753.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	8,813.0	8,815.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	8,872.0	8,874.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	8,931.0	8,933.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	8,989.0	8,991.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,051.0	9,053.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,107.0	9,109.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,165.0	9,167.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,224.0	9,226.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,283.0	9,285.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,341.0	9,343.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,400.0	9,402.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,459.0	9,461.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,517.0	9,519.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,576.0	9,578.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,635.0	9,637.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,693.0	9,695.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,752.0	9,754.0	NIOBRARA, Original Hole		
						Perforated Liner	1/19/2015	9,811.0	9,813.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	9,869.0	9,871.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	9,930.0	9,932.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	9,987.0	9,989.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	10,045.0	10,047.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	10,104.0	10,106.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	10,163.0	10,165.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	10,221.0	10,223.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	10,280.0	10,282.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	10,339.0	10,341.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	10,397.0	10,399.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	10,456.0	10,458.0	NIOBRARA, Original Hole		
						Perforated Liner	1/18/2015	10,515.0	10,517.0	NIOBRARA, Original Hole		

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Well Name: HORSETAIL 30F-3107												
API Number		WPC ID		Well Permit Number		Field Name		County		State		
051233920100		1CO0761038				DJ Horizontal Niobrara		Weld		CO		
Well Configuration Type		Orig KB Elv (ft)		Ground Elevation (ft)		Casing Flange Elevation (ft)		Tubing Head Elevation (ft)		Total Depth (ftKB)		
Lateral/Horizontal		4,797.40		4,780.40						13,071.0		
Original Spud Date		Completion Date		Asset Group		Responsible Engineer		N/S Dist (ft)		E/W Dist (ft)		
7/12/2014		1/22/2015		Redtail		Charles Ohlson		2,373.0		2,039.0		
Lot		Quarter 1		Quarter 2		Quarter 3		Quarter 4		Section		
		SE		NW						30		
Section Suffix		Section Type		Township		Township N/S Dir		Range		Range E/W Dir		
						10 N		57		W		
Lateral/Horizontal - Original Hole, 8/19/2015 1:28:26 PM												
Perforations												





Lease Review All - Frac Summary

Well Name: HORSETAIL 30F-3107

API Number 051233920100			WPC ID 1CO0761038			Well Permit Number			Field Name DJ Horizontal Niobrara			County Weld		State CO					
Well Configuration Type Lateral/Horizontal					Orig KB Elv (ft) 4,797.40		Ground Elevation (ft) 4,780.40		Casing Flange Elevation (ft)			Tubing Head Elevation (ft)			Total Depth (ftKB) 13,071.0				
Original Spud Date 7/12/2014			Completion Date 1/22/2015		Asset Group Redtail			Responsible Engineer Charles Ohlson			N/S Dist (ft) 2,373.0		N/S Ref FNL		E/W Dist (ft) 2,039.0		E/W Ref FWL		
Lot		Quarter 1 SE	Quarter 2 NW	Quarter 3	Quarter 4	Section 30	Section Suffix	Section Type		Township 10 N		Township N/S Dir		Range 57 W	Range E/W Dir		Meridian		
Lateral/Horizontal - Original Hole, 8/19/2015 1:28:29 PM							Stim/Treat Additives												
MD (ftKB)	D (ft K B)	n (in)	c (in)	l (in)	Vertical schematic (actual)	Logs	Stg #		Add		Type		Amount		Units		Sand Size		
							2		Proppant		Ottawa 40/70		1,590.0		lb		40/70		
							Interval 3												
							Stg #	Start Date		Top (ftKB)		Btm (ftKB)		Vol Clean...		Vol Slurry...		Comment	
							3	1/15/2015		12,510.0		12,629.0		3149.83				SlickWater:817 bbl; pHaserFrac 22 XL Gel:1770 bbl;22 Linear Gel:297 bbl;15% HCl:24bbl;Fresh Water: 242 bbl	
							Stim/Treat Additives												
							Stg #	Add		Type		Amount		Units		Sand Size			
							3	Proppant		Ottawa 20/40		105,554.0		lb		20/40			
							3	Proppant		Ottawa 40/70		3,013.0		lb		40/70			
							Interval 4												
							Stg #	Start Date		Top (ftKB)		Btm (ftKB)		Vol Clean...		Vol Slurry...		Comment	
							4	1/16/2015		12,334.0		12,450.0		3432.88				SlickWater:712 bbl; pHaserFrac 22 XL Gel:2149 bbl;22 Linear Gel:298 bbl;15% HCl:12bbl;Fresh Water:262bbl	
							Stim/Treat Additives												
							Stg #	Add		Type		Amount		Units		Sand Size			
							4	Proppant		Ottawa 20/40		174,424.0		lb		20/40			
							4	Proppant		Ottawa 40/70		4,236.0		lb		40/70			
							Interval 5												
							Stg #	Start Date		Top (ftKB)		Btm (ftKB)		Vol Clean...		Vol Slurry...		Comment	
							5	1/16/2015		12,158.0		12,277.0		3403.21				SlickWater:679 bbl; pHaserFrac 22 XL Gel:2188 bbl;22 Linear Gel:298 bbl;Fresh Water:238bbl	
							Stim/Treat Additives												
							Stg #	Add		Type		Amount		Units		Sand Size			
							5	Proppant		Ottawa 20/40		186,071.0		lb		20/40			
							5	Proppant		Ottawa 40/70		2,929.0		lb		40/70			
							Interval 6												
							Stg #	Start Date		Top (ftKB)		Btm (ftKB)		Vol Clean...		Vol Slurry...		Comment	
							6	1/16/2015		11,982.0		12,096.0		3360.07				SlickWater:679 bbl; pHaserFrac 22 XL Gel:2150 bbl;22 Linear Gel:298 bbl;Fresh Water:233bbl	
							Stim/Treat Additives												
							Stg #	Add		Type		Amount		Units		Sand Size			
							6	Proppant		Ottawa 20/40		184,237.0		lb		20/40			
							6	Proppant		Ottawa 40/70		2,976.0		lb		40/70			
							Interval 7												
							Stg #	Start Date		Top (ftKB)		Btm (ftKB)		Vol Clean...		Vol Slurry...		Comment	
							7	1/16/2015		11,806.0		11,930.0		3376.93				SlickWater:706 bbl; pHaserFrac 22 XL Gel:2139 bbl;22 Linear Gel:297 bbl;Fresh Water:234bbl	
							Stim/Treat Additives												
							Stg #	Add		Type		Amount		Units		Sand Size			
							7	Proppant		Ottawa 20/40		174,357.0		lb		20/40			
							7	Proppant		Ottawa 40/70		3,059.0		lb		40/70			
							Interval 8												
							Stg #	Start Date		Top (ftKB)		Btm (ftKB)		Vol Clean...		Vol Slurry...		Comment	
							8	1/16/2015		11,630.0		11,749.0		1316.26				SlickWater:1003 bbl; pHaserFrac 22 XL Gel:100 bbl;22 Linear Gel:189 bbl;15% HCl:24bbl	
							Stim/Treat Additives												
							Stg #	Add		Type		Amount		Units		Sand Size			
							8	Proppant		Ottawa 20/40		0.0		lb		20/40			
							8	Proppant		Ottawa 40/70		2,552.0		lb		40/70			
							Interval 9												
							Stg #	Start Date		Top (ftKB)		Btm (ftKB)		Vol Clean...		Vol Slurry...		Comment	
							9	1/17/2015		11,454.0		11,573.0		3554.55				SlickWater:758 bbl; pHaserFrac 22 XL Gel:2151 bbl;22 Linear Gel:298 bbl;15% HCl:24bbl;Fresh Water:324bbl	
							Stim/Treat Additives												
							Stg #	Add		Type		Amount		Units		Sand Size			
							9	Proppant		Ottawa 20/40		184,444.0		lb		20/40			
							9	Proppant		Ottawa 40/70		3,001.0		lb		40/70			
							Interval 10												
							Stg #	Start Date		Top (ftKB)		Btm (ftKB)		Vol Clean...		Vol Slurry...		Comment	
							10	1/17/2015		11,278.0		11,399.0		3325.02				SlickWater:665 bbl; pHaserFrac 22 XL Gel:2147 bbl;22 Linear Gel:298 bbl;Fresh Water:215bbl	
							Stim/Treat Additives												
							Stg #	Add		Type		Amount		Units		Sand Size			
							10	Proppant		Ottawa 20/40		178,307.0		lb		20/40			
							10	Proppant		Ottawa 40/70		3,055.0		lb		40/70			
							Interval 11												
							Stg #	Start Date		Top (ftKB)		Btm (ftKB)		Vol Clean...		Vol Slurry...		Comment	
							11	1/17/2015		11,101.0		11,221.0		3315.24				SlickWater:667 bbl; pHaserFrac 22 XL Gel:2146 bbl;22 Linear Gel:297 bbl;Fresh Water:205bbl	
							Stim/Treat Additives												
							Stg #	Add		Type		Amount		Units		Sand Size			
							11	Proppant		Ottawa 20/40		175,825.0		lb		20/40			
							11	Proppant		Ottawa 40/70		2,541.0		lb		40/70			



Lease Review All - Frac Summary  
Well Name: HORSETAIL 30F-3107

API Number 051233920100		WPC ID 1CO0761038		Well Permit Number		Field Name DJ Horizontal Niobrara			County Weld			State CO		
Well Configuration Type Lateral/Horizontal			Orig KB Elv (ft) 4,797.40		Ground Elevation (ft) 4,780.40		Casing Flange Elevation (ft)		Tubing Head Elevation (ft)		Total Depth (ft)KB 13,071.0			
Original Spud Date 7/12/2014		Completion Date 1/22/2015		Asset Group Redtail		Responsible Engineer Charles Ohlson			N/S Dist (ft) 2,373.0		N/S Ref FNL	E/W Dist (ft) 2,039.0		E/W Ref FWL
Lot	Quarter 1 SE	Quarter 2 NW	Quarter 3	Quarter 4	Section 30	Section Suffix	Section Type	Township 10	Township N/S Dir N	Range 57	Range E/W Dir W	Meridian		

Lateral/Horizontal - Original Hole, 8/19/2015 1:28:31 PM										Stim/Treat Stages				
MD (ftKB)	D (ft K B)	n ( K B)	c ( K B)	l ( K B)	Vertical schematic (actual)	Logs	Interval 12							
							Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment	
97.1	97.1	51												



Lease Review All - Frac Summary  
Well Name: HORSETAIL 30F-3107

API Number 051233920100		WPC ID 1CO0761038		Well Permit Number		Field Name DJ Horizontal Niobrara			County Weld			State CO			
Well Configuration Type Lateral/Horizontal				Orig KB Elv (ft) 4,797.40		Ground Elevation (ft) 4,780.40		Casing Flange Elevation (ft)		Tubing Head Elevation (ft)		Total Depth (ftKB) 13,071.0			
Original Spud Date 7/12/2014		Completion Date 1/22/2015		Asset Group Redtail			Responsible Engineer Charles Ohlson			N/S Dist (ft) 2,373.0		N/S Ref FNL	E/W Dist (ft) 2,039.0		E/W Ref FWL
Lot	Quarter 1 SE	Quarter 2 NW	Quarter 3	Quarter 4	Section 30	Section Suffix	Section Type	Township 10	Township N/S Dir N	Range 57	Range E/W Dir W	Meridian			

Lateral/Horizontal - Original Hole, 8/19/2015 1:28:34 PM										Stim/Treat Stages									
MD (ftKB)	D (ft K B)	n ( C L )	Vertical schematic (actual)	Logs	Interval 21														
					Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment								
97.1	97.1	51			21	1/19/2015	9,341.0	9,461.0	3231.93		SlickWater:636 bbl; pHaserFrac 22 XL Gel:2148 bbl;22 Linear Gel:297 bbl;Fresh Water:151bbl								
1,610.9	1,606.5	52		Stim/Treat Additives															
2,658.1	2,660.9	53		Stg #	Add		Type		Amount		Units	Sand Size							
3,734.3	3,770.1	54		21	Proppant		Ottawa 20/40		175,862.0		lb	20/40							
4,858.6	4,872.2	55		21	Proppant		Ottawa 40/70		3,217.0		lb	40/70							
5,412.4	5,366.8	56		Interval 22															
5,457.7	5,370.4	56		Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment									
5,928.5	5,880.1	56.5		22	1/19/2015	9,165.0	9,285.0	3222.14		SlickWater:633 bbl; pHaserFrac 22 XL Gel:2153 bbl;22 Linear Gel:298 bbl;Fresh Water:138bbl									
5,997.0	5,960.2	56.5		Stim/Treat Additives															
6,116.1	5,983.9	56.5		Stg #	Add		Type		Amount		Units	Sand Size							
6,290.0	5,987.6	56.5		22	Proppant		Ottawa 20/40		181,195.0		lb	20/40							
6,410.1	5,982.5	56.5		22	Proppant		Ottawa 40/70		2,943.0		lb	40/70							
6,584.0	5,986.7	56.5		Interval 23															
6,703.1	5,988.9	56.5		Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment									
6,877.0	5,970.2	56.5		23	1/19/2015	8,989.0	9,109.0	3207.26		SlickWater:630 bbl; pHaserFrac 22 XL Gel:2147 bbl;22 Linear Gel:298 bbl;Fresh Water:133bbl									
6,996.1	5,975.2	56.5		Stim/Treat Additives															
7,169.9	5,979.7	56.5		Stg #	Add		Type		Amount		Units	Sand Size							
7,290.0	5,979.6	56.5		23	Proppant		Ottawa 20/40		178,293.0		lb	20/40							
7,464.9	5,978.4	56.5		23	Proppant		Ottawa 40/70		3,005.0		lb	40/70							
7,583.0	5,976.7	56.5		Interval 24															
7,756.9	5,977.2	56.5		Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment									
7,877.0	5,976.5	56.5		24	1/19/2015	8,813.0	8,933.0	3211.48		SlickWater:650 bbl; pHaserFrac 22 XL Gel:2143 bbl;22 Linear Gel:298 bbl;Fresh Water:120bbl									
8,050.9	5,983.9	56.5		Stim/Treat Additives															
8,165.0	5,986.1	56.5		Stg #	Add		Type		Amount		Units	Sand Size							
8,344.2	5,986.1	56.5		24	Proppant		Ottawa 20/40		174,138.0		lb	20/40							
8,459.0	5,977.8	56.5		24	Proppant		Ottawa 40/70		2,477.0		lb	40/70							
8,637.1	5,988.9	56.5		Interval 25															
8,753.0	5,986.5	56.5		Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment									
8,931.1	5,986.5	56.5		25	1/19/2015	8,637.0	8,753.0	3204.69		SlickWater:631 bbl; pHaserFrac 22 XL Gel:2155 bbl;22 Linear Gel:297 bbl;Fresh Water:122bbl									
9,053.1	5,986.1	56.5		Stim/Treat Additives															
9,224.1	5,986.5	56.5		Stg #	Add		Type		Amount		Units	Sand Size							
9,342.8	5,986.5	56.5		25	Proppant		Ottawa 20/40		174,482.0		lb	20/40							
9,517.1	5,982.2	56.5		25	Proppant		Ottawa 40/70		2,344.0		lb	40/70							
9,637.1	5,987.8	56.5		Interval 26															
9,811.0	5,982.7	56.5		Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment									
9,932.1	5,987.0	56.5		26	1/19/2015	8,457.0	8,581.0	3180.57		SlickWater:622 bbl; pHaserFrac 22 XL Gel:2148 bbl;22 Linear Gel:298 bbl;Fresh Water:113bbl									
10,104.0	5,982.4	56.5		Stim/Treat Additives															
10,223.1	5,982.5	56.5		Stg #	Add		Type		Amount		Units	Sand Size							
10,397.0	5,986.1	56.5		26	Proppant		Ottawa 20/40		172,082.0		lb	20/40							
10,517.1	5,982.2	56.5		26	Proppant		Ottawa 40/70		2,784.0		lb	40/70							
10,690.9	5,984.3	56.5		Interval 27															
10,810.0	5,986.0	56.5		Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment									
10,981.0	5,986.7	56.5		27	1/20/2015	8,285.0	8,405.0	3169.86		SlickWater:624 bbl; pHaserFrac 22 XL Gel:2138 bbl;22 Linear Gel:299 bbl;Fresh Water:109bbl									
11,103.0	5,986.9	56.5		Stim/Treat Additives															
11,277.9	5,986.3	56.5		Stg #	Add		Type		Amount		Units	Sand Size							
11,398.9	5,986.8	56.5		27	Proppant		Ottawa 20/40		169,416.0		lb	20/40							
11,570.9	5,987.7	56.5		27	Proppant		Ottawa 40/70		3,166.0		lb	40/70							
11,690.0	5,986.0	56.5		Interval 28															
11,863.8	5,986.5	56.5		Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment									
11,983.9	5,986.4	56.5		28	1/20/2015	8,109.0	8,229.0	3182.33		SlickWater:621 bbl; pHaserFrac 22 XL Gel:2159 bbl;22 Linear Gel:298 bbl;Fresh Water:104bbl									
12,158.1	5,986.3	56.5		Stim/Treat Additives															
12,276.9	5,986.1	56.5		Stg #	Add		Type		Amount		Units	Sand Size							
12,448.2	5,986.4	56.5		28	Proppant		Ottawa 20/40		169,502.0		lb	20/40							
12,569.9	5,986.2	56.5		28	Proppant		Ottawa 40/70		2,718.0		lb	40/70							
12,745.1	5,986.3	56.5		Interval 29															
12,863.8	5,986.3	56.5		Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment									
12,999.3	5,987.8	56.5		29	1/20/2015	7,933.0	8,053.0	3129.07		SlickWater:618 bbl; pHaserFrac 22 XL Gel:2138 bbl;22 Linear Gel:298 bbl;Fresh Water:75bbl									
13,013.8	5,987.8	56.5		Stim/Treat Additives															
				Stg #	Add		Type		Amount		Units	Sand Size							
				29	Proppant		Ottawa 20/40		166,783.0		lb	20/40							
				29	Proppant		Ottawa 40/70		2,990.0		lb	40/70							





Lease Review All - Frac Summary

Well Name: HORSETAIL 30F-3107

WPI Number 051233920100			WPC ID 1CO0761038			Well Permit Number			Field Name DJ Horizontal Niobrara			County Weld			State CO										
Well Configuration Type Lateral/Horizontal					Orig KB Elv (ft) 4,797.40			Ground Elevation (ft) 4,780.40			Casing Flange Elevation (ft)			Tubing Head Elevation (ft)			Total Depth (ftKB) 13,071.0								
Original Spud Date 7/12/2014			Completion Date 1/22/2015			Asset Group Redtail			Responsible Engineer Charles Ohlson			N/S Dist (ft) 2,373.0			N/S Ref FNL			E/W Dist (ft) 2,039.0			E/W Ref FWL				
Lot		Quarter 1 SE		Quarter 2 NW		Quarter 3		Quarter 4		Section 30		Section Suffix		Section Type		Township 10 N		Township N/S Dir		Range 57		Range E/W Dir W		Meridian	
Lateral/Horizontal - Original Hole, 8/19/2015 1:28:36 PM										Stim/Treat Stages															
<div>MD (ftKB) 97.1 1,610.9 2,658.1 3,734.3 4,858.6 5,412.4 5,457.7 5,928.5 5,997.0 6,116.1 6,290.0 6,410.1 6,584.0 6,703.1 6,877.0 6,996.1 7,169.9 7,290.0 7,464.9 7,583.0 7,756.9 7,877.0 8,050.9 8,165.0 8,344.2 8,459.0 8,637.1 8,753.0 8,931.1 9,053.1 9,224.1 9,342.8 9,517.1 9,637.1 9,811.0 9,932.1 10,104.0 10,223.1 10,397.0 10,517.1 10,690.9 10,810.0 10,981.0 11,103.0 11,277.9 11,398.9 11,570.9 11,690.0 11,863.8 11,983.9 12,158.1 12,276.9 12,448.2 12,569.9 12,745.1 12,863.8 12,999.3 13,013.8</div>	<div>D (ft K B) 97.1 1,610.9 2,658.1 3,734.3 4,858.6 5,412.4 5,457.7 5,928.5 5,997.0 6,116.1 6,290.0 6,410.1 6,584.0 6,703.1 6,877.0 6,996.1 7,169.9 7,290.0 7,464.9 7,583.0 7,756.9 7,877.0 8,050.9 8,165.0 8,344.2 8,459.0 8,637.1 8,753.0 8,931.1 9,053.1 9,224.1 9,342.8 9,517.1 9,637.1 9,811.0 9,932.1 10,104.0 10,223.1 10,397.0 10,517.1 10,690.9 10,810.0 10,981.0 11,103.0 11,277.9 11,398.9 11,570.9 11,690.0 11,863.8 11,983.9 12,158.1 12,276.9 12,448.2 12,569.9 12,745.1 12,863.8 12,999.3 13,013.8</div>	<div>Vertical schematic (actual)</div>	Logs	Interval 30																					
				Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment															
				30	1/20/2015	7,757.0	7,877.0	3152.40		SlickWater:615 bbl; pHaserFrac 22 XL Gel:2159 bbl;22 Linear Gel:298 bbl;Fresh Water:81bbl															
				Stim/Treat Additives																					
				Stg #	Add			Type		Amount	Units	Sand Size													
				30	Proppant			Ottawa 20/40		171,947.0	lb	20/40													
				30	Proppant			Ottawa 40/70		2,601.0	lb	40/70													
				Interval 31																					
				Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment															
				31	1/20/2015	7,581.0	7,700.0	3136.02		SlickWater:609 bbl; pHaserFrac 22 XL Gel:2151 bbl;22 Linear Gel:298 bbl;Fresh Water:78bbl															
				Stim/Treat Additives																					
				Stg #	Add			Type		Amount	Units	Sand Size													
				31	Proppant			Ottawa 20/40		172,729.0	lb	20/40													
				31	Proppant			Ottawa 40/70		2,028.0	lb	40/70													
				Interval 32																					
				Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment															
				32	1/20/2015	7,405.0	7,524.0	3060.74		SlickWater:605 bbl; pHaserFrac 22 XL Gel:2083 bbl;22 Linear Gel:298 bbl;Fresh Water:75bbl															
				Stim/Treat Additives																					
				Stg #	Add			Type		Amount	Units	Sand Size													
				32	Proppant			Ottawa 20/40		157,227.0	lb	20/40													
				32	Proppant			Ottawa 40/70		1,721.0	lb	40/70													
				Interval 33																					
				Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment															
				33	1/20/2015	7,229.0	7,351.0	3119.88		SlickWater:606 bbl; pHaserFrac 22 XL Gel:2148 bbl;22 Linear Gel:298 bbl;Fresh Water:68bbl															
				Stim/Treat Additives																					
				Stg #	Add			Type		Amount	Units	Sand Size													
				33	Proppant			Ottawa 20/40		174,965.0	lb	20/40													
				33	Proppant			Ottawa 40/70		2,076.0	lb	40/70													
				Interval 34																					
				Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment															
				34	1/21/2015	7,053.0	7,172.0	3107.57		SlickWater:601 bbl; pHaserFrac 22 XL Gel:2146 bbl;22 Linear Gel:298 bbl;Fresh Water:63bbl															
				Stim/Treat Additives																					
				Stg #	Add			Type		Amount	Units	Sand Size													
				34	Proppant			Ottawa 20/40		175,762.0	lb	20/40													
				34	Proppant			Ottawa 40/70		1,997.0	lb	40/70													
				Interval 35																					
Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment																			
35	1/21/2015	6,877.0	6,996.0	3095.62		SlickWater:599 bbl; pHaserFrac 22 XL Gel:2139 bbl;22 Linear Gel:298 bbl;Fresh Water:59bbl																			
Stim/Treat Additives																									
Stg #	Add			Type		Amount	Units	Sand Size																	
35	Proppant			Ottawa 20/40		173,578.0	lb	20/40																	
35	Proppant			Ottawa 40/70		3,057.0	lb	40/70																	
Interval 36																									
Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment																			
36	1/21/2015	6,701.0	6,820.0	3094.64		SlickWater:595 bbl; pHaserFrac 22 XL Gel:2155 bbl;22 Linear Gel:297 bbl;Fresh Water:48bbl																			
Stim/Treat Additives																									
Stg #	Add			Type		Amount	Units	Sand Size																	
36	Proppant			Ottawa 20/40		177,982.0	lb	20/40																	
36	Proppant			Ottawa 40/70		2,739.0	lb	40/70																	
Interval 37																									
Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment																			
37	1/21/2015	6,525.0	6,646.0	3100.55		SlickWater:594 bbl; pHaserFrac 22 XL Gel:2160 bbl;22 Linear Gel:297 bbl;Fresh Water:49bbl																			
Stim/Treat Additives																									
Stg #	Add			Type		Amount	Units	Sand Size																	
37	Proppant			Ottawa 20/40		177,811.0	lb	20/40																	
37	Proppant			Ottawa 40/70		3,283.0	lb	40/70																	
Interval 38																									
Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment																			
38	1/21/2015	6,353.0	6,468.0	3064.93		SlickWater:590 bbl; pHaserFrac 22 XL Gel:2144 bbl;22 Linear Gel:298 bbl;Fresh Water:33bbl																			
Stim/Treat Additives																									
Stg #	Add			Type		Amount	Units	Sand Size																	
38	Proppant			Ottawa 20/40		173,936.0	lb	20/40																	
38	Proppant			Ottawa 40/70		2,663.0	lb	40/70																	



Lease Review All - Frac Summary  
Well Name: HORSETAIL 30F-3107

API Number 051233920100		WPC ID 1CO0761038			Well Permit Number			Field Name DJ Horizontal Niobrara			County Weld		State CO		
Well Configuration Type Lateral/Horizontal				Orig KB Elv (ft) 4,797.40		Ground Elevation (ft) 4,780.40		Casing Flange Elevation (ft)		Tubing Head Elevation (ft)		Total Depth (ftKB) 13,071.0			
Original Spud Date 7/12/2014		Completion Date 1/22/2015		Asset Group Redtail			Responsible Engineer Charles Ohlson			N/S Dist (ft) 2,373.0		N/S Ref FNL	E/W Dist (ft) 2,039.0		E/W Ref FWL
Lot	Quarter 1 SE	Quarter 2 NW	Quarter 3	Quarter 4	Section 30	Section Suffix	Section Type	Township 10	Township N/S Dir N	Range 57	Range E/W Dir W	Meridian			

Lateral/Horizontal - Original Hole, 8/19/2015 1:28:39 PM					Stim/Treat Stages														
MD (ftKB)	D (ft K B)	n ( B)	Vertical schematic (actual)	Logs	Interval 39														
					Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment								
97.1	81.1	51			39	1/21/2015	6,173.0	6,292.0	3088.31		SlickWater:588 bbl; pHaserFrac 22 XL Gel:2172 bbl;22 Linear Gel:298 bbl;Fresh Water:30bbl								
1,610.9	1,046.5	72		Stim/Treat Additives															
2,658.1	2,049.9	44		Stg #	Add	Type	Amount	Units	Sand Size										
3,734.3	2,703.1	34		39	Proppant	Ottawa 20/40	181,037.0	lb	20/40										
4,858.6	4,032.2	34		39	Proppant	Ottawa 40/70	2,992.0	lb	40/70										
5,412.4	3,366.6	40		Interval 40															
5,457.7	3,278.4	40		Stg #	Start Date	Top (ftKB)	Btm (ftKB)	Vol Clean...	Vol Slurry...	Comment									
5,928.5	3,040.1	40		40	1/21/2015	5,997.0	6,116.0	3028.67		SlickWater:584 bbl; pHaserFrac 22 XL Gel:2124 bbl;22 Linear Gel:297 bbl;Fresh Water:23bbl									
5,997.0	3,040.2	40		Stim/Treat Additives															
6,116.1	3,040.9	40		Stg #	Add	Type	Amount	Units	Sand Size										
6,290.0	3,041.0	40		40	Proppant	Ottawa 20/40	159,563.0	lb	20/40										
6,410.1	3,042.5	40		40	Proppant	Ottawa 40/70	2,502.0	lb	40/70										
6,584.0	3,046.7	40		Tubing - Production set at 5,463.1ftKB on 3/29/2015 06:00															
6,703.1	3,048.9	40		Set Depth (ftKB)	Comment	Run Date	Pull Date												
6,877.0	3,074.2	40		5,463.1		3/29/2015		Item Des	OD (in)	ID (in)	Len (ft)	Top (ftKB)	Btm (ftKB)						
6,996.1	3,075.2	40						Tubing Hanger	7 1/16	2.375	0.50	17.0	17.5						
7,169.9	3,076.7	40						Tubing	2 3/8	1.995	1,723.92	17.5	1,741.4						
7,290.0	3,078.9	40						CM-1 2.375 #7	2 3/8	1.995	4.10	1,741.4	1,745.5						
7,464.9	3,079.4	40						Tubing	2 3/8	1.995	908.38	1,745.5	2,653.9						
7,583.0	3,079.7	40						CM-1 2.375 #6	2 3/8	1.995	4.11	2,653.9	2,658.0						
7,756.9	3,077.2	40					Tubing	2 3/8	1.995	566.27	2,658.0	3,224.3							
7,877.0	3,076.5	40					CM-1 2.375 #5	2 3/8	1.995	4.08	3,224.3	3,228.4							
8,050.9	3,080.9	40					Tubing	2 3/8	1.995	501.76	3,228.4	3,730.1							
8,165.0	3,086.1	40					CM-1 2.375 #4	2 3/8	1.995	4.11	3,730.1	3,734.2							
8,344.2	3,088.1	40					Tubing	2 3/8	1.995	593.37	3,734.2	4,327.6							
8,459.0	3,077.8	40					CM-1 2.375 #3	2 3/8	1.995	4.10	4,327.6	4,331.7							
8,637.1	3,080.9	40					Tubing	2 3/8	1.995	524.56	4,331.7	4,856.3							
8,753.0	3,086.0	40					CM-1 2.375 #2	2 3/8	1.995	4.09	4,856.3	4,860.4							
8,931.1	3,086.5	40					Tubing	2 3/8	1.995	552.17	4,860.4	5,412.5							
9,053.1	3,084.1	40					CM-1 2.375 #1	2 3/8	1.995	4.11	5,412.5	5,416.6							
9,224.1	3,082.0	40					Tubing	2 3/8	1.995	32.36	5,416.6	5,449.0							
9,342.8	3,082.0	40					On-Off Tool	3 3/4	1.875	1.35	5,449.0	5,450.3							
9,517.1	3,082.2	40					Packer	3.766	1.922	6.45	5,450.3	5,456.8							
9,637.1	3,081.8	40					Pump Off Plug	2.622	1.500	0.80	5,456.8	5,457.6							
9,811.0	3,082.7	40					Perforated Sub	2 3/8	1.995	3.13	5,457.6	5,460.7							
9,932.1	3,081.0	40					Pup Jt	2 3/8	1.995	2.09	5,460.7	5,462.8							
10,104.0	3,082.4	40					Tubing	2 7/8	2.259	0.26	5,462.8	5,463.1							
10,223.1	3,082.5	40	Rod Strings																
10,397.0	3,081.1	40	<des> on <dtmrun>																
10,517.1	3,082.0	40	Rod Description							Run Date		Pull Date							
10,690.9	3,084.3	40	Item Des							OD (in)		Len (ft)		Top (ftKB)		Btm (ftKB)			
10,810.0	3,082.0	40																	
10,981.0	3,082.7	40	Other Strings																
11,103.0	3,084.9	40	Set Depth (ftKB)							Comment		Run Date		Pull Date					
11,277.9	3,084.3	40	Item Des							OD (in)		Len (ft)		Top (ftKB)		Btm (ftKB)			
11,398.9	3,083.0	40																	
11,570.9	3,082.7	40	Other In Hole																
11,690.0	3,084.0	40	Des							OD (in)		Run Date		Pull Date		Top (ftKB)		Btm (ftKB)	
11,863.8	3,085.5	40	CFP							4		1/21/2015		3/26/2015		6,144.0		6,146.0	
11,983.9	3,084.9	40	CFP							4		1/21/2015		3/26/2015		6,320.0		6,322.0	
12,158.1	3,083.3	40	CFP							4		1/21/2015		3/26/2015		6,496.0		6,498.0	
12,276.9	3,086.1	40	CFP							4		1/21/2015		3/26/2015		6,672.0		6,674.0	
12,448.2	3,086.6	40	CFP							4		1/21/2015		3/26/2015		6,848.0		6,850.0	
12,569.9	3,082.0	40	CFP							4		1/21/2015		3/26/2015		6,848.0		6,850.0	
12,745.1	3,085.6	40	CFP							4		1/21/2015		3/26/2015		7,029.0		7,031.0	
12,863.8	3,082.0	40	CFP							4		1/21/2015		3/26/2015		7,200.0		7,202.0	
12,999.3	3,081.8	40	CFP							4		1/21/2015		3/26/2015		7,200.0		7,202.0	
13,013.8	3,081.0	40	CFP							4		1/21/2015		3/26/2015		7,376.0		7,378.0	
			CFP							4		1/20/2015		3/26/2015		7,560.0		7,562.0	
			CFP							4		1/20/2015		3/26/2015		7,728.0		7,730.0	
			CFP							4		1/20/2015		3/26/2015		7,904.0		7,906.0	
			CFP							4		1/20/2015		3/26/2015		8,079.0		8,081.0	
			CFP							4		1/20/2015		3/26/2015		8,258.0		8,260.0	
			CFP							4		1/20/2015		3/26/2015		8,432.0		8,434.0	
			CFP							4		1/19/2015		3/26/2015		8,608.0		8,610.0	
			CFP							4		1/19/2015		3/26/2015		8,784.0		8,786.0	
			CFP							4		1/19/2015		3/26/2015		8,965.0		8,967.0	
			CFP							4		1/19/2015		3/26/2015		9,136.0		9,138.0	
			CFP							4		1/19/2015		3/26/2015		9,312.0		9,314.0	





Lease Review All - Frac Summary  
Well Name: HORSETAIL 30F-3107

API Number	WPC ID	Well Permit Number	Field Name	County	State
051233920100	1CO0761038		DJ Horizontal Niobrara	Weld	CO
Well Configuration Type	Orig KB Elv (ft)	Ground Elevation (ft)	Casing Flange Elevation (ft)	Tubing Head Elevation (ft)	Total Depth (ftKB)
Lateral/Horizontal	4,797.40	4,780.40			13,071.0
Original Spud Date	Completion Date	Asset Group	Responsible Engineer	N/S Dist (ft)	N/S Ref
7/12/2014	1/22/2015	Redtail	Charles Ohlson	2,373.0	FNL
				E/W Dist (ft)	E/W Ref
				2,039.0	FWL
Lot	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Section
	SE	NW			30
					Section Suffix
					Section Type
					Township
					10 N
					Township N/S Dir
					Range
					57 W
					Range E/W Dir
					Meridian

Lateral/Horizontal - Original Hole, 8/19/2015 1:28:41 PM					Other In Hole					
MD (ftKB)	D (ft K B)	n c l (	Vertical schematic (actual)	Logs	Des	OD (in)	Run Date	Pull Date	Top (ftKB)	Btm (ftKB)
97.1	97.1	121			CFP	4	1/19/2015	3/26/2015	9,488.0	9,490.0
1,610.9	1,644.3	122			CFP	4	1/19/2015	3/26/2015	9,660.0	9,662.0
2,658.1	2,684.3	124			CFP	4	1/19/2015	3/26/2015	9,832.0	9,834.0
3,734.3	3,751.1	124			CFP	4	1/18/2015	3/26/2015	10,016.0	10,018.0
4,858.6	4,877.1	124			CFP	4	1/18/2015	3/26/2015	10,192.0	10,194.0
5,412.4	5,430.2	125			CFP	4	1/18/2015	3/26/2015	10,368.0	10,370.0
5,457.7	5,474.4	125			CFP	4	1/18/2015	3/26/2015	10,544.0	10,546.0
5,928.5	5,947.1	125			CFP	4	1/18/2015	3/26/2015	10,720.0	10,722.0
5,997.0	6,014.3	125			CFP	4	1/18/2015	3/26/2015	10,896.0	10,898.0
6,116.1	6,133.3	125			CFP	4	1/17/2015	3/26/2015	11,072.0	11,074.0
6,290.0	6,307.1	125			CFP	4	1/17/2015	3/26/2015	11,248.0	11,250.0
6,410.1	6,427.1	125			CFP	4	1/17/2015	3/26/2015	11,424.0	11,426.0
6,584.0	6,601.1	125			CFP	4	1/17/2015	3/26/2015	11,603.0	11,605.0
6,703.1	6,719.1	125			CFP	4	1/17/2015	3/26/2015	11,776.0	11,778.0
6,877.0	6,893.1	125			CFP	4	1/16/2015	3/26/2015	11,952.0	11,954.0
6,996.1	7,012.1	125			CFP	4	1/16/2015	3/26/2015	12,128.0	12,130.0
7,169.9	7,187.1	125			CFP	4	1/16/2015	3/26/2015	12,304.0	12,306.0
7,290.0	7,307.1	125			CFP	4	1/16/2015	3/26/2015	12,480.0	12,482.0
7,464.9	7,481.1	125			CFP	4	1/16/2015	3/26/2015	12,650.0	12,652.0
7,583.0	7,600.1	125			CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0
7,756.9	7,773.1	125			CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0
7,877.0	7,893.1	125			CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0
8,050.9	8,067.1	125			CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0
8,165.0	8,181.1	125			CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0
8,344.2	8,360.1	125			CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0
8,459.0	8,475.1	125			CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0
8,637.1	8,653.1	125			CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0
8,753.0	8,769.1	125			CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0
8,931.1	8,947.1	125			CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0
9,053.1	9,069.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
9,224.1	9,240.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
9,342.8	9,358.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
9,517.1	9,533.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
9,637.1	9,653.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
9,811.0	9,827.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
9,932.1	9,948.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
10,104.0	10,120.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
10,223.1	10,239.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
10,397.0	10,413.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
10,517.1	10,533.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
10,690.9	10,706.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
10,810.0	10,826.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
10,981.0	10,997.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
11,103.0	11,119.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
11,277.9	11,293.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
11,398.9	11,414.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
11,570.9	11,586.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
11,690.0	11,706.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
11,863.8	11,879.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
11,983.9	11,999.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
12,158.1	12,174.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
12,276.9	12,292.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
12,448.2	12,464.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
12,569.9	12,585.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
12,745.1	12,761.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
12,863.8	12,879.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
12,999.3	13,015.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	
13,013.8	13,029.1	125		CFP	4	1/16/2015	3/26/2015	12,836.0	12,838.0	

Bottom Hole Cores				
Date	Core #	Top (ftKB)	Btm (ftKB)	Recov (ft)

Bottom Hole Cores				
Date	Core #	Top (ftKB)	Btm (ftKB)	Recov (ft)