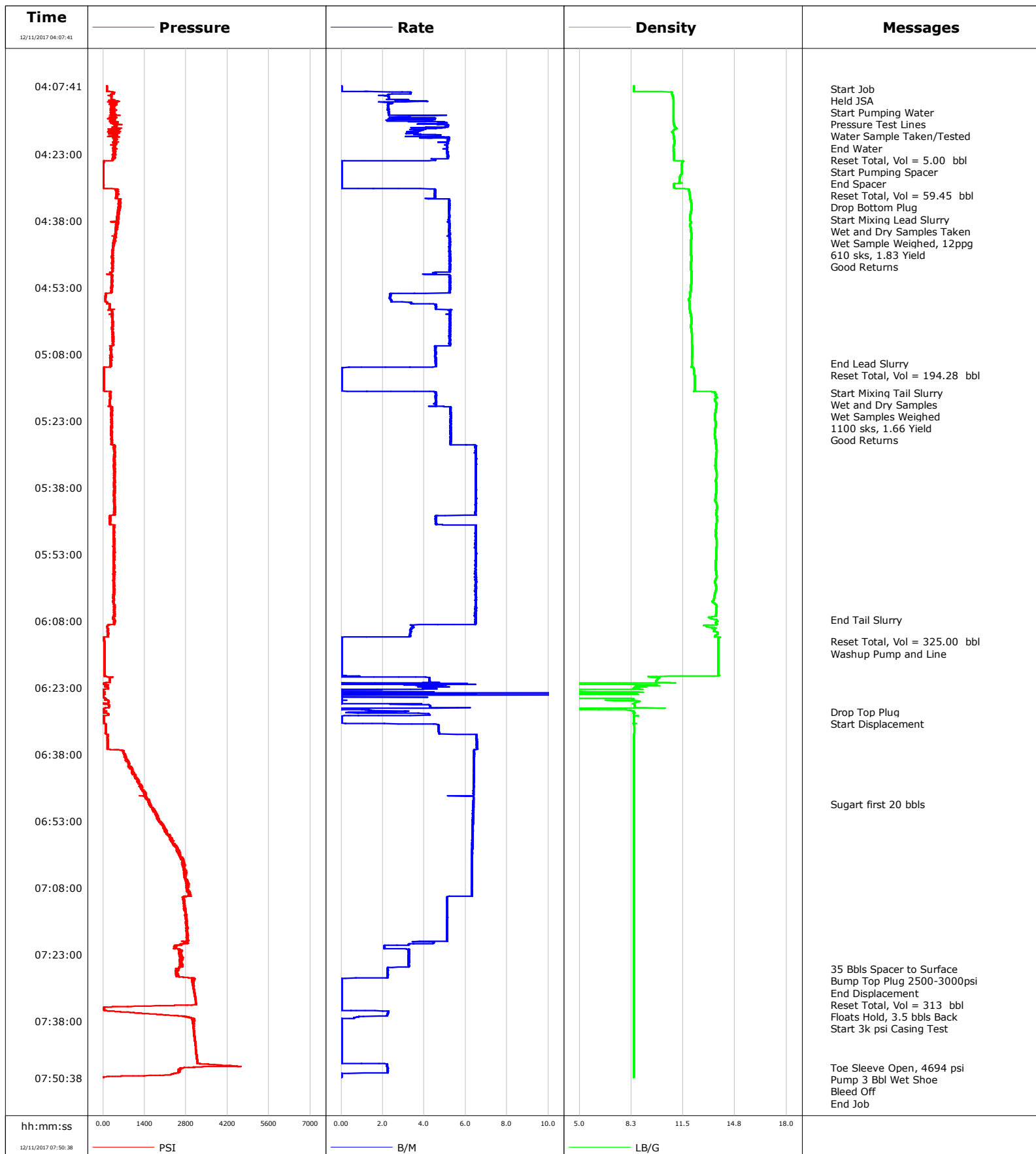


**Well** Yellowhammer 30N2-8HZ  
**Field** Wattenberg  
**Engineer** Ryan Drilling/Ken Sovereign  
**Country** United States

**Client** Anadarko  
**SIR No.** DUNZ-00067  
**Job Type** 5.5" Production  
**Job Date** 12-11-2017



# Cementing Service Report

				Customer Anadarko			Job Number DUNZ-00067										
Well Yellowhammer			Location (legal) CWY			Schlumberger Location CWY			Job Start Dec/11/2017								
Field Wattenberg		Formation Name/Type			Deviation 90 deg		Bit Size 8.5 in		Well MD 13507.0 ft		Well TVD 7601.0 ft						
County Weld		State/Province Colorado			BHP psi		BHST 227 degF		BHCT 214 degF		Pore Press. Gradient lb/gal						
Well Master 06317337950		API/UWI															
Rig Name Xtreme 24		Drilled For Oil & Gas		Service Via Land		Casing/ Liner											
						Depth, ft		Size, in		Weight, lb/ft		Grade		Thread			
Offshore Zone		Well Class New		Well Type Development		1880.0		9.6		36.0		j55		lrc			
						13507.0		5.5		17.0		p110		lrc			
Drilling Fluid Type OBM		Max. Density 9.50 lb/gal		Plastic Viscosity 12.000 cP		Tubing/Drill Pipe											
						T/D		Depth, ft		Size, in		Weight, lb/ft		Grade		Thread	
Service Line Cementing		Job Type 5.5" Production															
Max. Allowed Tub. Press psi		Max. Allowed Ann. Press psi		WH Connection Double Cement head		Perforations/Open Hole											
						Top, ft		Bottom, ft		shot/ft		No. of Shots		Total Interval			
						ft		ft						ft			
						ft		ft						Diameter		in	
						ft		ft									
						Treat Down Casing		Displacement 313.0 bbl		Packer Type		Packer Depth ft					
						Tubing Vol. bbl		Casing Vol. bbl		Annular Vol. bbl		Openhole Vol. bbl					
Casing/Tubing Secured <input checked="" type="checkbox"/>		1 Hole Vol. Circulated prior to Cement <input checked="" type="checkbox"/>				Casing Tools				Squeeze Job							
Lift Pressure 2500 psi						Shoe Type Float				Squeeze Type							
Pipe Rotated <input type="checkbox"/>		Pipe Reciprocated <input type="checkbox"/>				Shoe Depth 13507.0 ft				Tool Type							
No. Centralizers		Top Plugs 1		Bottom Plugs 1		Stage Tool Type				Tool Depth ft							
Cement Head Type Double						Stage Tool Depth ft				Tail Pipe Size in							
Job Scheduled For Dec/10/2017 22:30		Arrived on Location Dec/10/2017 22:30		Leave Location Dec/11/2017 09:00		Collar Type Float				Tail Pipe Depth ft							
						Collar Depth 13498.8 ft				Sqz. Total Vol. bbl							
Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message											
12/11/2017	04:07:41	133	0.0	8.39	0.0	Stopped Acquisition											
12/11/2017	04:08:19	133	0.0	8.39	0.0	Start Job											
12/11/2017	04:08:20	133	0.0	8.39	0.0	Held JSA											
12/11/2017	04:08:23	133	0.0	8.39	0.0	Start Pumping Water											
12/11/2017	04:08:24	133	0.0	8.39	0.0	Pressure Test Lines											
12/11/2017	04:08:25	134	0.0	8.39	0.0	Water Sample Taken/Tested											
12/11/2017	04:08:28	134	0.0	8.39	0.0	End Water											
12/11/2017	04:08:29	133	0.0	8.39	0.0	Reset Total, Vol = 5.00 bbl											
12/11/2017	04:08:31	133	0.0	8.39	0.0	Start Pumping Spacer											
12/11/2017	04:08:41	134	0.0	8.39	0.0												
12/11/2017	04:09:41	267	2.3	10.81	2.1												
12/11/2017	04:10:41	286	2.3	10.89	4.3												
12/11/2017	04:11:41	224	2.5	10.90	7.1												
12/11/2017	04:12:41	309	2.3	10.90	9.4												
12/11/2017	04:13:41	402	2.3	10.89	11.7												
12/11/2017	04:14:41	312	2.8	10.90	14.4												
12/11/2017	04:15:41	322	4.1	10.90	17.5												
12/11/2017	04:16:41	461	5.1	10.95	22.3												
12/11/2017	04:17:41	362	3.9	10.91	26.7												
12/11/2017	04:18:41	388	4.6	10.90	30.2												
12/11/2017	04:19:41	441	5.2	10.94	35.0												

Well			Field	Job Start		Customer		Job Number	
Yellowhammer			Wattenberg		Dec/11/2017		Anadarko		DUNZ-00067
Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message			
12/11/2017	04:21:41	385	5.1	10.90	45.2				
12/11/2017	04:22:41	378	5.1	10.92	50.3				
12/11/2017	04:23:41	380	5.2	10.91	55.4				
12/11/2017	04:24:35	29	0.0	11.51	59.4	End Spacer			
12/11/2017	04:24:37	24	0.0	11.52	59.4	Reset Total, Vol = 59.45 bbl			
12/11/2017	04:24:40	22	0.0	11.50	59.4	Drop Bottom Plug			
12/11/2017	04:24:41	21	0.0	11.49	59.4				
12/11/2017	04:25:41	15	0.0	11.41	0.0				
12/11/2017	04:26:41	15	0.0	11.42	0.0				
12/11/2017	04:27:41	15	0.0	11.36	0.0				
12/11/2017	04:28:41	15	0.0	11.28	0.0				
12/11/2017	04:29:41	17	0.0	10.94	0.0				
12/11/2017	04:30:41	19	0.0	11.00	0.0				
12/11/2017	04:31:41	475	4.5	11.89	4.0				
12/11/2017	04:32:41	480	4.5	11.93	8.5				
12/11/2017	04:33:41	583	5.2	11.98	13.4				
12/11/2017	04:34:15	583	5.2	12.01	16.3	Start Mixing Lead Slurry			
12/11/2017	04:34:16	583	5.2	12.01	16.4	Wet and Dry Samples Taken			
12/11/2017	04:34:17	511	5.2	12.01	16.5	610 sks, 1.83 Yield			
12/11/2017	04:34:41	545	5.2	12.02	18.6				
12/11/2017	04:35:41	576	5.2	12.00	23.8				
12/11/2017	04:36:41	516	5.2	11.96	29.0				
12/11/2017	04:37:41	531	5.2	11.97	34.2				
12/11/2017	04:38:41	461	5.2	11.96	39.4				
12/11/2017	04:39:41	455	5.2	11.97	44.6				
12/11/2017	04:40:41	422	5.2	12.00	49.8				
12/11/2017	04:41:41	423	5.2	12.01	55.1				
12/11/2017	04:42:41	370	5.2	11.99	60.3				
12/11/2017	04:43:41	366	5.2	11.98	65.5				
12/11/2017	04:44:41	343	5.2	11.99	70.7				
12/11/2017	04:45:41	311	5.2	12.00	76.0				
12/11/2017	04:46:41	322	5.3	12.01	81.2				
12/11/2017	04:47:41	300	5.2	11.99	86.4				
12/11/2017	04:48:41	292	5.2	11.99	91.7				
12/11/2017	04:49:41	249	4.5	12.01	96.8				
12/11/2017	04:50:41	294	5.2	12.02	101.8				
12/11/2017	04:51:41	324	5.2	12.01	107.0				
12/11/2017	04:52:41	275	5.2	12.00	112.2				
12/11/2017	04:53:41	269	5.2	11.99	117.5				
12/11/2017	04:54:41	85	2.4	11.95	121.7				
12/11/2017	04:55:41	81	2.4	11.87	124.1				
12/11/2017	04:56:41	132	3.5	11.88	126.8				
12/11/2017	04:57:41	215	4.6	11.89	131.3				
12/11/2017	04:58:41	308	5.3	11.97	136.4				
12/11/2017	04:59:41	312	5.2	12.01	141.6				
12/11/2017	05:00:41	342	5.3	12.02	146.8				
12/11/2017	05:01:41	305	5.2	11.99	152.1				
12/11/2017	05:02:41	322	5.2	12.00	157.3				
12/11/2017	05:03:41	320	5.2	12.05	162.5				
12/11/2017	05:04:41	332	5.3	12.05	167.8				
12/11/2017	05:05:41	333	5.3	12.05	173.0				
12/11/2017	05:06:41	248	4.6	12.07	177.9				
12/11/2017	05:07:41	256	4.6	12.07	182.4				
12/11/2017	05:08:41	269	4.6	12.06	187.0				

Well			Field	Job Start		Customer	Job Number	
Yellowhammer			Wattenberg		Dec/11/2017		Anadarko	DUNZ-00067
Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message		
12/11/2017	05:10:01	278	4.6	12.06	193.0	End Lead Slurry		
12/11/2017	05:10:41	280	4.6	12.05	196.1			
12/11/2017	05:11:05	24	0.0	12.14	197.3	Reset Total, Vol = 194.28 bbl		
12/11/2017	05:11:41	22	0.0	12.18	0.0			
12/11/2017	05:12:41	23	0.0	12.21	0.0			
12/11/2017	05:13:41	23	0.0	12.23	0.0			
12/11/2017	05:14:41	24	0.0	12.24	0.0			
12/11/2017	05:15:41	24	0.0	12.24	0.0			
12/11/2017	05:16:34	264	4.6	13.50	0.8	Start Mixing Tail Slurry		
12/11/2017	05:16:37	251	4.5	13.51	1.0	Wet and Dry Samples		
12/11/2017	05:16:39	243	4.5	13.51	1.2	Wet Samples Weighed		
12/11/2017	05:16:40	237	4.5	13.51	1.2	1100 sks, 1.66 Yield		
12/11/2017	05:16:41	246	4.6	13.50	1.3			
12/11/2017	05:16:43	244	4.6	13.51	1.5	Good Returns		
12/11/2017	05:17:41	242	4.5	13.61	5.9			
12/11/2017	05:18:41	223	4.6	13.54	10.4			
12/11/2017	05:19:41	221	4.6	13.56	15.0			
12/11/2017	05:20:41	302	5.3	13.54	20.2			
12/11/2017	05:21:41	306	5.3	13.49	25.5			
12/11/2017	05:22:41	309	5.3	13.51	30.7			
12/11/2017	05:23:41	275	5.3	13.53	36.0			
12/11/2017	05:24:41	281	5.3	13.52	41.3			
12/11/2017	05:25:41	266	5.3	13.49	46.6			
12/11/2017	05:26:41	278	5.3	13.51	51.8			
12/11/2017	05:27:41	285	5.3	13.54	57.1			
12/11/2017	05:28:41	371	6.5	13.57	62.7			
12/11/2017	05:29:41	370	6.5	13.61	69.2			
12/11/2017	05:30:41	380	6.5	13.57	75.7			
12/11/2017	05:31:41	358	6.5	13.55	82.2			
12/11/2017	05:32:41	385	6.5	13.54	88.7			
12/11/2017	05:33:41	396	6.5	13.54	95.2			
12/11/2017	05:34:41	396	6.5	13.61	101.6			
12/11/2017	05:35:41	384	6.5	13.59	108.1			
12/11/2017	05:36:41	378	6.5	13.55	114.6			
12/11/2017	05:37:41	359	6.5	13.59	121.1			
12/11/2017	05:38:41	391	6.5	13.58	127.6			
12/11/2017	05:39:41	364	6.5	13.55	134.1			
12/11/2017	05:40:41	389	6.5	13.52	140.6			
12/11/2017	05:41:41	380	6.5	13.60	147.1			
12/11/2017	05:42:41	373	6.5	13.64	153.6			
12/11/2017	05:43:41	374	6.5	13.58	160.0			
12/11/2017	05:44:41	223	4.6	13.59	165.7			
12/11/2017	05:45:41	237	4.6	13.61	170.3			
12/11/2017	05:46:41	364	6.5	13.57	175.4			
12/11/2017	05:47:41	386	6.5	13.55	181.9			
12/11/2017	05:48:41	369	6.5	13.54	188.4			
12/11/2017	05:49:41	393	6.5	13.59	194.9			
12/11/2017	05:50:41	357	6.4	13.61	201.4			
12/11/2017	05:51:41	370	6.5	13.56	207.8			
12/11/2017	05:52:41	365	6.5	13.58	214.3			
12/11/2017	05:53:41	370	6.5	13.57	220.8			
12/11/2017	05:54:41	363	6.5	13.53	227.3			
12/11/2017	05:55:41	368	6.5	13.53	233.8			
12/11/2017	05:56:41	365	6.5	13.55	240.2			

Well			Field	Job Start		Customer		Job Number	
Yellowhammer			Wattenberg		Dec/11/2017		Anadarko		DUNZ-00067
Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message			
12/11/2017	05:58:41	369	6.5	13.55	253.2				
12/11/2017	05:59:41	383	6.5	13.53	259.7				
12/11/2017	06:00:41	374	6.5	13.58	266.2				
12/11/2017	06:02:41	362	6.5	13.43	279.2				
12/11/2017	06:03:41	349	6.5	13.34	285.6				
12/11/2017	06:04:41	355	6.5	13.60	292.1				
12/11/2017	06:05:41	378	6.5	13.57	298.6				
12/11/2017	06:06:41	376	6.5	13.54	305.1				
12/11/2017	06:07:41	373	6.5	13.59	311.6				
12/11/2017	06:07:43	383	6.5	13.60	311.8	End Tail Slurry			
12/11/2017	06:08:41	382	6.5	13.62	318.0				
12/11/2017	06:09:41	153	3.4	13.41	321.9				
12/11/2017	06:10:41	169	3.3	13.67	325.2				
12/11/2017	06:11:41	29	0.0	13.77	328.2				
12/11/2017	06:12:36	34	0.0	13.69	0.0	Reset Total, Vol = 325.00 bbl			
12/11/2017	06:12:41	34	0.0	13.69	0.0				
12/11/2017	06:13:41	35	0.0	13.69	0.0				
12/11/2017	06:14:41	36	0.0	13.69	0.0				
12/11/2017	06:15:20	37	0.0	13.69	0.0	Washup Pump and Line			
12/11/2017	06:15:41	36	0.0	13.69	0.0				
12/11/2017	06:16:41	36	0.0	13.69	0.0				
12/11/2017	06:17:41	37	0.0	13.69	0.0				
12/11/2017	06:18:41	36	0.0	13.69	0.0				
12/11/2017	06:19:41	36	0.0	13.70	0.0				
12/11/2017	06:20:41	243	4.2	9.87	0.6				
12/11/2017	06:21:41	226	4.3	9.81	4.9				
12/11/2017	06:22:41	127	4.4	8.63	8.2				
12/11/2017	06:23:41	8	0.0	3.44	11.1				
12/11/2017	06:24:41	5	0.0	3.46	13.9				
12/11/2017	06:25:41	118	0.0	8.37	14.0				
12/11/2017	06:26:41	60	2.4	8.43	14.2				
12/11/2017	06:27:41	23	0.0	3.90	17.9				
12/11/2017	06:28:21	94	3.1	8.42	18.7	Drop Top Plug			
12/11/2017	06:28:23	91	3.1	8.39	18.8	Start Displacement			
12/11/2017	06:28:41	25	1.3	8.44	19.2				
12/11/2017	06:29:41	18	0.0	8.40	0.0				
12/11/2017	06:30:41	23	0.0	8.40	0.0				
12/11/2017	06:31:41	86	4.7	8.43	2.7				
12/11/2017	06:32:41	91	4.7	8.43	7.4				
12/11/2017	06:33:41	149	6.5	8.40	12.6				
12/11/2017	06:34:41	151	6.5	8.40	19.1				
12/11/2017	06:35:41	159	6.5	8.41	25.6				
12/11/2017	06:36:41	153	6.6	8.40	32.2				
12/11/2017	06:37:41	680	6.4	8.40	38.6				
12/11/2017	06:38:41	758	6.4	8.41	45.0				
12/11/2017	06:39:41	865	6.4	8.40	51.4				
12/11/2017	06:40:41	953	6.4	8.40	57.8				
12/11/2017	06:41:41	1007	6.4	8.41	64.2				
12/11/2017	06:42:41	1057	6.4	8.41	70.6				
12/11/2017	06:43:41	1186	6.4	8.40	77.0				
12/11/2017	06:44:41	1268	6.4	8.40	83.4				
12/11/2017	06:45:41	1280	6.4	8.40	89.8				
12/11/2017	06:46:41	1409	6.4	8.40	96.1				
12/11/2017	06:47:41	1462	6.4	8.40	102.4				

Well Yellowhammer			Field Wattenberg		Job Start Dec/11/2017	Customer Anadarko	Job Number DUNZ-00067
Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message	
12/11/2017	06:49:00	1605	6.4	8.40	110.8	Sugart first 20 bbls	
12/11/2017	06:49:41	1629	6.4	8.40	115.2		
12/11/2017	06:50:41	1756	6.4	8.40	121.5		
12/11/2017	06:51:41	1822	6.3	8.40	127.9		
12/11/2017	06:52:41	1886	6.3	8.40	134.2		
12/11/2017	06:53:41	2013	6.3	8.40	140.6		
12/11/2017	06:54:41	2089	6.3	8.40	146.9		
12/11/2017	06:55:41	2165	6.3	8.40	153.3		
12/11/2017	06:56:41	2311	6.3	8.40	159.6		
12/11/2017	06:57:41	2354	6.3	8.40	165.9		
12/11/2017	06:58:41	2481	6.3	8.40	172.2		
12/11/2017	06:59:41	2544	6.3	8.40	178.5		
12/11/2017	07:00:41	2574	6.3	8.40	184.9		
12/11/2017	07:01:41	2722	6.3	8.40	191.2		
12/11/2017	07:02:41	2712	6.3	8.40	197.5		
12/11/2017	07:03:41	2709	6.3	8.40	203.8		
12/11/2017	07:04:41	2774	6.3	8.40	210.1		
12/11/2017	07:05:41	2761	6.3	8.40	216.4		
12/11/2017	07:06:41	2864	6.3	8.40	222.7		
12/11/2017	07:07:41	2847	6.3	8.40	229.0		
12/11/2017	07:08:41	2834	6.3	8.40	235.2		
12/11/2017	07:09:41	2905	6.3	8.40	241.5		
12/11/2017	07:10:41	2733	5.1	8.40	246.9		
12/11/2017	07:11:41	2736	5.1	8.40	252.0		
12/11/2017	07:12:41	2725	5.1	8.40	257.1		
12/11/2017	07:13:41	2788	5.1	8.40	262.2		
12/11/2017	07:14:41	2802	5.1	8.40	267.3		
12/11/2017	07:15:41	2803	5.1	8.40	272.4		
12/11/2017	07:16:41	2817	5.1	8.40	277.5		
12/11/2017	07:17:41	2798	5.1	8.40	282.6		
12/11/2017	07:18:41	2872	5.1	8.40	287.8		
12/11/2017	07:19:41	2863	5.1	8.40	292.9		
12/11/2017	07:20:41	2604	3.3	8.40	297.3		
12/11/2017	07:21:41	2541	2.9	8.40	299.6		
12/11/2017	07:22:41	2601	3.3	8.40	302.9		
12/11/2017	07:23:41	2704	3.3	8.40	306.1		
12/11/2017	07:24:41	2626	3.3	8.40	309.4		
12/11/2017	07:25:41	2690	3.2	8.40	312.6		
12/11/2017	07:26:11	2466	2.2	8.40	313.9	35 Bbls Spacer to Surface	
12/11/2017	07:26:41	2532	2.2	8.40	315.0		
12/11/2017	07:27:41	2532	2.2	8.40	317.3		
12/11/2017	07:28:41	2999	0.0	8.40	318.6		
12/11/2017	07:28:50	3015	0.0	8.40	318.6	Bump Top Plug 2500-3000psi	
12/11/2017	07:28:52	3003	0.0	8.40	318.6	Reset Total, Vol = 313 bbl	
12/11/2017	07:29:41	3027	0.0	8.40	318.6		
12/11/2017	07:30:41	3064	0.0	8.40	318.6		
12/11/2017	07:31:41	3082	0.0	8.40	318.6		
12/11/2017	07:32:41	3108	0.0	8.40	318.6		
12/11/2017	07:33:41	3129	0.0	8.40	318.6		
12/11/2017	07:34:41	415	0.0	8.40	318.6		
12/11/2017	07:35:09	24	0.0	8.40	318.6	Floats Hold, 3.5 bbls Back	
12/11/2017	07:35:41	292	2.3	8.40	318.8		
12/11/2017	07:36:41	2471	2.2	8.40	321.0		
12/11/2017	07:37:41	3016	0.0	8.40	321.7		

Well			Field		Job Start	Customer		Job Number
Yellowhammer			Wattenberg		Dec/11/2017	Anadarko		DUNZ-00067
Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message		
12/11/2017	07:38:41	3058	0.0	8.40	321.7			
12/11/2017	07:39:41	3049	0.0	8.40	321.7			
12/11/2017	07:40:41	3076	0.0	8.40	321.7			
12/11/2017	07:41:41	3085	0.0	8.40	321.7			
12/11/2017	07:42:41	3104	0.0	8.40	321.7			
12/11/2017	07:43:41	3121	0.0	8.40	321.7			
12/11/2017	07:44:41	3135	0.0	8.40	321.7			
12/11/2017	07:45:41	3153	0.0	8.40	321.7			
12/11/2017	07:46:41	3168	0.0	8.40	321.7			
12/11/2017	07:47:41	3732	2.2	8.40	0.4			
12/11/2017	07:48:21	2897	2.2	8.40	1.9	Toe Sleeve Open, 4694 psi		
12/11/2017	07:48:41	2644	2.2	8.40	2.6			
12/11/2017	07:48:59	2616	2.2	8.40	3.3	Pump 3 Bbl Wet Shoe		
12/11/2017	07:49:41	2430	0.0	8.40	4.8			
12/11/2017	07:50:13	1386	0.0	8.40	4.8	Bleed Off		

### Post Job Summary

Average Pump Rates, bbl/min					Volume of Fluid Injected, bbl						
Slurry 5.2	N2	Mud	Maximum Rate 22.0	Total Slurry 519.0	Mud 0.0	Spacer 60.0	N2				
Treating Pressure Summary, psi					Breakdown Fluid						
Maximum 4665	Final 21	Average 965	Bump Plug to 3000	Breakdown	Type	Volume bbl	Density lb/gal				
Avg. N2 Percent %		Designed Slurry Volume 515.0 bbl		Displacement 313.0 bbl		Mix Water Temp 63 degF		Cement Circulated to Surface? <input type="checkbox"/>	Volume bbl		
								Washed Thru Perfs <input type="checkbox"/>	To ft		
Customer or Authorized Representative Terry Hackford			Schlumberger Supervisor Ryan Drilling/Ken Sovereign			Circulation Lost <input type="checkbox"/>	Job Completed <input checked="" type="checkbox"/>				
						-	-				