

DIRECTIONAL SURVEY CALCULATION

MINIMUM CURVATURE METHOD

Well Name		Target Direction	Slot Coordinate	N / S	E / W	Hole Size	Calculation by	Date			
Tasset 2722 1-34H		182.48						12/28/12			
Job Number		Type of Survey	Tie-in Point				Directional Co.				
0											
Measured Depth	Hole Angle	Hole Direction	Course Length	True Vertical Depth	Vertical Section	Total Coordinate		Dogleg Severity	Build Up %/100 ft	Walk/ %/100 ft	
						N + / S -	E + / W -				
0	0	0	0	0.00	0.00						
0	0	0		0.00	0.00	0.00	0.00				
250	1	0	250	249.99	-1.74	1.75	0.00	0.32	0.32	0.00	
524	1	0	274	523.97	-5.33	5.33	0.00	0.04	-0.04	0.00	
734	1	0	210	733.95	-7.71	7.71	0.00	0.05	-0.05	0.00	
1000	0	0	266	999.95	-9.56	9.57	0.00	0.15	-0.15	0.00	
1311	1	13	311	1,310.94	-11.71	11.70	0.36	0.13	0.13	4.12	
1585	1	316	274	1,584.93	-14.10	14.13	-0.32	0.21	0.00	110.55	
2042	1	288	457	2,041.90	-16.38	16.58	-4.27	0.06	0.00	-6.08	
2499	0	340	457	2,498.89	-18.11	18.43	-6.97	0.10	-0.07	11.29	
2956	0	325	457	2,955.88	-20.47	20.85	-8.31	0.03	0.02	-3.24	
3412	0	282	456	3,411.87	-22.00	22.49	-10.78	0.06	0.00	-9.34	
3869	1	203	457	3,868.85	-19.27	19.88	-13.57	0.18	0.09	-17.40	
3961	1	190	92	3,960.84	-18.03	18.65	-13.93	0.19	0.00	-13.80	
3990	1	187	29	3,989.84	-17.63	18.25	-13.99	0.16	0.00	-11.72	
4020	2	182	30	4,019.83	-16.97	17.60	-14.02	3.02	3.00	-15.67	
4050	4	178	30	4,049.80	-15.54	16.16	-14.00	7.03	7.00	-13.67	
4081	6	185	31	4,080.68	-12.92	13.54	-14.09	7.03	6.77	22.90	
4111	8	187	30	4,110.47	-9.40	10.04	-14.47	5.74	5.67	8.00	
4142	9	185	31	4,141.15	-4.91	5.56	-14.95	4.93	4.84	-6.45	
4172	12	185	30	4,170.66	0.45	0.22	-15.41	8.01	8.00	-1.67	
4203	13	185	31	4,200.95	7.05	-6.36	-15.96	5.16	5.16	0.65	
4233	14	186	30	4,230.11	14.06	-13.36	-16.64	3.17	3.00	4.33	
4264	16	186	31	4,260.06	22.04	-21.31	-17.51	6.13	6.13	0.00	
4294	19	184	30	4,288.70	30.95	-30.19	-18.30	9.54	9.33	-6.67	
4325	22	183	31	4,317.80	41.63	-40.85	-18.92	9.52	9.35	-5.16	
4355	24	181	30	4,345.45	53.25	-52.47	-19.30	8.20	8.00	-4.67	
4386	26	180	31	4,373.60	66.24	-65.47	-19.38	5.65	5.16	-5.48	
4416	27	179	30	4,400.55	79.40	-78.64	-19.18	3.17	3.00	-2.33	
4446	28	180	30	4,427.28	92.99	-92.26	-19.00	3.60	3.33	3.00	
4477	29	181	31	4,454.57	107.68	-106.95	-19.10	5.53	5.16	4.19	
4507	32	183	30	4,480.46	122.83	-122.10	-19.58	8.76	8.33	5.33	
4538	34	185	31	4,506.52	139.62	-138.86	-20.63	8.42	7.74	6.13	
4568	36	186	30	4,531.10	156.78	-155.97	-22.24	7.12	6.33	5.67	
4599	37	186	31	4,556.06	175.14	-174.25	-24.26	3.25	3.23	0.65	
4629	39	184	30	4,579.78	193.48	-192.54	-25.91	7.49	5.67	-8.00	
4659	41	181	30	4,602.88	212.62	-211.66	-26.74	9.47	7.00	-10.00	
4690	43	178	31	4,626.02	233.21	-232.27	-26.62	8.53	6.45	-8.39	
4720	45	177	30	4,647.68	253.89	-253.02	-25.69	8.54	7.33	-6.33	
4751	47	175	31	4,669.19	276.06	-275.27	-24.07	8.01	7.42	-4.19	
4781	49	177	30	4,689.18	298.27	-297.58	-22.48	7.52	6.67	4.67	
4812	50	177	31	4,709.38	321.68	-321.06	-21.16	1.38	0.97	1.29	
4842	49	177	30	4,728.96	344.29	-343.75	-19.93	1.74	-1.67	-0.67	
4872	49	177	30	4,748.68	366.79	-366.32	-18.65	0.71	-0.67	-0.33	
4903	49	176	31	4,769.12	389.97	-389.59	-17.25	0.80	-0.32	-0.97	
4933	48	176	30	4,788.98	412.33	-412.03	-15.80	1.12	-1.00	-0.67	
4964	48	176	31	4,809.58	435.35	-435.14	-14.24	0.40	-0.32	-0.32	
4994	50	177	30	4,829.29	457.86	-457.73	-12.94	5.28	4.33	4.00	
5025	53	179	31	4,848.73	481.93	-481.85	-12.26	11.31	10.00	6.77	
5055	56	180	30	4,866.28	506.24	-506.18	-12.22	10.36	10.00	3.33	
5086	59	182	31	4,882.91	532.38	-532.33	-12.71	12.45	11.94	4.19	
5116	62	183	30	4,897.61	558.53	-558.46	-13.67	8.65	8.33	2.67	
5146	66	183	30	4,910.88	585.43	-585.33	-14.98	12.46	12.33	2.00	
5177	68	184	31	4,923.04	613.94	-613.78	-16.77	8.90	8.39	3.23	
5207	72	184	30	4,933.27	642.12	-641.91	-18.82	12.34	12.33	0.33	
5238	75	183	31	4,942.05	671.84	-671.57	-20.78	10.93	10.65	-2.58	
5268	79	183	30	4,948.70	701.08	-700.77	-22.34	13.53	13.33	-2.33	
5299	82	184	31	4,953.76	731.66	-731.30	-24.07	9.69	9.03	3.55	

DIRECTIONAL SURVEY CALCULATION

MINIMUM CURVATURE METHOD

Well Name		Target Direction		Slot	N / S	E / W	Hole Size	Calculation by		Date
Tasset 2722 1-34H		182.48		Coordinate						12/28/12
Job Number		Type of Survey		Tie-in Point			Directional Co.			
0										
Measured Depth	Hole Angle	Hole Direction	Course Length	True Vertical Depth	Vertical Section	Total Coordinate		Dogleg Severity	Build Up %/100 ft	Walk/ %/100 ft
						N + / S -	E + / W -			
0	0	0	0	0.00	0.00			<< TIE-IN POINT >>		
5326	84	185	27	4,957.12	758.44	-758.02	-26.04	6.95	6.30	2.96
5390	87	185	64	4,962.20	822.18	-821.60	-31.15	5.47	5.47	0.00
5422	87	184	32	4,963.70	854.13	-853.47	-33.60	1.40	0.63	-1.25
5453	88	184	31	4,964.87	885.09	-884.37	-35.90	2.92	2.90	0.32
5485	89	184	32	4,965.51	917.07	-916.27	-38.33	3.45	3.44	0.31
5516	91	184	31	4,965.51	948.05	-947.18	-40.62	3.99	3.87	-0.97
5548	91	184	32	4,965.15	980.04	-979.10	-42.91	0.31	0.31	0.00
5579	90	184	31	4,964.90	1,011.03	-1,010.03	-44.97	2.52	-1.61	-1.94
5611	90	184	32	4,964.73	1,043.02	-1,041.97	-46.95	0.70	0.63	0.31
5642	91	184	31	4,964.36	1,074.02	-1,072.91	-48.87	1.96	1.94	-0.32
5674	91	184	32	4,963.74	1,106.00	-1,104.83	-50.96	1.68	0.63	1.56
5768	92	183	94	4,960.87	1,199.94	-1,198.60	-56.86	1.45	1.17	-0.85
5862	92	182	94	4,957.26	1,293.87	-1,292.44	-60.87	1.61	-0.21	-1.60
5957	91	180	95	4,954.44	1,388.79	-1,387.38	-62.53	1.70	-0.84	-1.47
5988	91	180	31	4,953.79	1,419.76	-1,418.38	-62.64	0.91	-0.65	-0.65
6020	91	180	32	4,953.12	1,451.72	-1,450.37	-62.58	1.40	0.63	-1.25
6051	92	180	31	4,952.20	1,482.67	-1,481.35	-62.47	2.66	2.58	0.65
6083	92	179	32	4,951.20	1,514.61	-1,513.34	-62.28	2.44	-1.87	-1.56
6114	91	181	31	4,950.52	1,545.58	-1,544.33	-62.25	3.90	-1.61	3.55
6146	90	181	32	4,950.30	1,577.56	-1,576.33	-62.67	4.06	-3.75	1.56
6177	88	181	31	4,950.84	1,608.54	-1,607.32	-63.19	5.17	-5.16	-0.32
6209	88	181	32	4,951.90	1,640.51	-1,639.29	-63.60	1.13	-0.63	-0.94
6240	88	180	31	4,952.98	1,671.47	-1,670.27	-63.82	1.29	0.00	-1.29
6272	88	180	32	4,954.10	1,703.42	-1,702.26	-63.85	0.94	0.00	-0.94
6303	88	180	31	4,955.16	1,734.38	-1,733.24	-63.82	0.46	0.32	0.32
6335	88	180	32	4,956.22	1,766.33	-1,765.22	-63.85	0.31	0.00	0.31
6366	88	180	31	4,957.19	1,797.29	-1,796.20	-63.88	0.72	0.65	-0.32
6398	88	180	32	4,958.14	1,829.24	-1,828.19	-63.85	0.31	0.00	-0.31
6429	88	180	31	4,959.03	1,860.20	-1,859.18	-63.79	0.32	0.32	0.00
6461	89	180	32	4,959.90	1,892.15	-1,891.17	-63.77	0.44	0.31	0.31
6492	89	180	31	4,960.71	1,923.11	-1,922.16	-63.77	0.00	0.00	0.00
6524	89	180	32	4,961.52	1,955.07	-1,954.14	-63.68	0.99	0.31	-0.94
6555	89	180	31	4,962.28	1,986.03	-1,985.14	-63.57	0.64	0.00	0.65
6587	89	180	32	4,962.97	2,017.98	-2,017.13	-63.43	1.33	0.94	-0.94
6618	89	180	31	4,963.57	2,048.94	-2,048.12	-63.27	0.65	0.00	0.65
6649	89	180	31	4,964.11	2,079.90	-2,079.12	-63.19	0.72	0.65	0.32
6681	89	180	32	4,964.61	2,111.86	-2,111.11	-63.08	0.62	0.00	-0.63
6712	89	180	31	4,965.15	2,142.82	-2,142.11	-62.89	0.72	-0.65	-0.32
6744	89	179	32	4,965.80	2,174.77	-2,174.10	-62.58	0.99	-0.31	-0.94
6775	88	179	31	4,966.55	2,205.71	-2,205.09	-62.23	1.33	-1.29	0.32
6807	88	179	32	4,967.45	2,237.65	-2,237.07	-61.76	1.56	0.00	-1.56
6838	89	179	31	4,968.15	2,268.59	-2,268.06	-61.30	2.52	1.94	1.61
6870	89	181	32	4,968.79	2,300.55	-2,300.05	-61.30	3.86	-0.94	3.75
6901	89	181	31	4,969.47	2,331.53	-2,331.04	-61.70	1.02	0.32	0.97
6933	89	181	32	4,970.20	2,363.51	-2,363.03	-62.29	1.13	-0.63	0.94
6964	88	181	31	4,971.06	2,394.49	-2,394.01	-62.88	1.44	-1.29	-0.65
6996	89	182	32	4,971.98	2,426.47	-2,425.98	-63.80	4.17	0.94	4.06
7027	88	182	31	4,972.82	2,457.46	-2,456.95	-65.05	0.32	-0.32	0.00
7059	89	183	32	4,973.52	2,489.45	-2,488.91	-66.44	2.52	2.19	1.25
7090	90	183	31	4,973.82	2,520.45	-2,519.87	-67.96	2.35	2.26	0.65
7122	90	183	32	4,973.90	2,552.45	-2,551.83	-69.47	1.29	0.31	-1.25
7153	90	183	31	4,973.95	2,583.45	-2,582.80	-70.98	1.94	0.00	1.94
7185	90	183	32	4,973.95	2,615.45	-2,614.75	-72.65	0.88	0.62	-0.62
7216	90	183	31	4,973.87	2,646.45	-2,645.72	-74.17	0.72	0.32	-0.65
7248	90	183	32	4,973.76	2,678.45	-2,677.68	-75.65	0.31	0.00	-0.31
7279	90	183	31	4,973.68	2,709.45	-2,708.65	-77.03	0.46	-0.32	-0.32
7311	90	182	32	4,973.54	2,741.45	-2,740.62	-78.40	0.99	0.94	-0.31

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Job Number		Type of Survey		Tie-in Point				Directional Co.		
0										
Measured Depth	Hole Angle	Hole Direction	Course Length	True Vertical Depth	Vertical Section	Total Coordinate		Dogleg Severity	Build Up %/100 ft	Walk/ %/100 ft
						N + / S -	E + / W -			
0	0	0	0	0.00	0.00			<< TIE-IN POINT >>		
7342	90	182	31	4,973.32	2,772.44	-2,771.60	-79.64	0.65	0.00	-0.65
7374	89	183	32	4,973.38	2,804.44	-2,803.56	-81.12	4.20	-3.13	2.81
7405	90	183	31	4,973.68	2,835.44	-2,834.52	-82.71	1.02	0.32	-0.97
7436	89	183	31	4,974.00	2,866.44	-2,865.48	-84.17	0.91	-0.65	-0.65
7468	90	182	32	4,974.34	2,898.44	-2,897.45	-85.57	0.88	0.63	-0.62
7499	90	183	31	4,974.61	2,929.44	-2,928.42	-86.95	0.97	0.00	0.97
7531	90	183	32	4,974.89	2,961.43	-2,960.38	-88.46	0.00	0.00	0.00
7562	89	183	31	4,975.18	2,992.43	-2,991.35	-89.92	0.32	-0.32	0.00
7594	89	183	32	4,975.52	3,024.43	-3,023.31	-91.42	0.00	0.00	0.00
7625	90	183	31	4,975.79	3,055.43	-3,054.27	-92.86	0.72	0.65	-0.32
7657	90	183	32	4,975.99	3,087.43	-3,086.24	-94.34	0.44	0.31	0.31
7688	90	183	31	4,976.20	3,118.43	-3,117.21	-95.74	0.91	-0.65	-0.65
7720	90	182	32	4,976.45	3,150.43	-3,149.18	-97.00	1.59	0.31	-1.56
7751	90	182	31	4,976.67	3,181.42	-3,180.16	-98.00	0.97	0.00	-0.97
7783	90	181	32	4,976.87	3,213.42	-3,212.15	-98.87	0.99	0.31	-0.94
7814	90	182	31	4,977.03	3,244.41	-3,243.14	-99.65	0.32	0.00	0.32
7846	90	182	32	4,977.22	3,276.41	-3,275.13	-100.52	0.44	-0.31	0.31
7877	89	182	31	4,977.57	3,307.40	-3,306.11	-101.38	1.61	-1.61	0.00
7909	89	181	32	4,978.05	3,339.39	-3,338.10	-102.16	1.29	0.31	-1.25
7940	90	181	31	4,978.40	3,370.38	-3,369.09	-102.73	1.37	0.97	-0.97
7972	90	181	32	4,978.62	3,402.37	-3,401.09	-103.23	0.62	0.63	0.00
8004	90	181	32	4,978.74	3,434.35	-3,433.09	-103.62	1.40	0.63	-1.25
8035	90	181	31	4,978.74	3,465.34	-3,464.09	-103.95	0.91	0.65	0.65
8067	90	181	32	4,978.60	3,497.32	-3,496.08	-104.31	0.99	0.94	-0.31
8098	90	181	31	4,978.38	3,528.30	-3,527.08	-104.61	0.32	0.00	-0.32
8130	91	181	32	4,978.07	3,560.28	-3,559.08	-104.89	0.94	0.94	0.00
8161	91	181	31	4,977.69	3,591.26	-3,590.07	-105.24	0.97	0.00	0.97
8193	91	181	32	4,977.22	3,623.24	-3,622.07	-105.60	1.33	0.94	-0.94
8224	89	182	31	4,977.14	3,654.23	-3,653.06	-106.17	6.53	-5.48	3.55
8256	89	181	32	4,977.67	3,686.22	-3,685.05	-106.90	2.44	-1.56	-1.87
8288	89	181	32	4,978.34	3,718.20	-3,717.04	-107.46	0.00	0.00	0.00
8319	89	181	31	4,978.93	3,749.18	-3,748.03	-107.92	1.16	0.65	-0.97
8351	89	180	32	4,979.60	3,781.16	-3,780.02	-108.14	2.25	-1.25	-1.87
8382	89	180	31	4,980.36	3,812.11	-3,811.01	-108.09	1.29	0.00	-1.29
8414	89	180	32	4,981.14	3,844.06	-3,843.00	-107.86	0.62	0.00	-0.62
8445	88	179	31	4,981.98	3,875.00	-3,873.98	-107.40	2.46	-0.97	-2.26
8477	88	178	32	4,983.02	3,906.91	-3,905.96	-106.57	2.10	-0.94	-1.88
8509	88	178	32	4,984.16	3,938.79	-3,937.92	-105.48	0.99	-0.31	-0.94
8540	88	179	31	4,985.32	3,969.69	-3,968.88	-104.61	3.24	-0.32	3.23
8572	89	180	32	4,986.33	4,001.63	-4,000.87	-104.36	4.77	2.50	4.06
8603	89	182	31	4,986.90	4,032.62	-4,031.85	-104.98	6.53	2.26	6.13
8635	89	184	32	4,987.26	4,064.61	-4,063.80	-106.71	6.26	0.31	6.25
8666	90	185	31	4,987.53	4,095.59	-4,094.71	-109.06	1.74	0.65	1.61
8698	90	185	32	4,987.67	4,127.57	-4,126.61	-111.66	0.99	0.94	0.31
8729	90	185	31	4,987.72	4,158.55	-4,157.50	-114.20	0.00	0.00	0.00
8761	90	185	32	4,987.84	4,190.52	-4,189.40	-116.77	0.88	-0.63	-0.62
8793	90	185	32	4,987.95	4,222.50	-4,221.30	-119.28	0.62	0.63	0.00
8824	91	185	31	4,987.81	4,253.48	-4,252.20	-121.73	2.28	2.26	0.32
8855	91	185	31	4,987.38	4,284.46	-4,283.09	-124.30	1.61	1.29	0.97
8887	90	186	32	4,986.99	4,316.41	-4,314.95	-127.26	3.12	-1.87	2.50
8918	90	187	31	4,986.99	4,347.35	-4,345.77	-130.63	4.39	-2.58	3.55
8950	89	187	32	4,987.32	4,379.25	-4,377.53	-134.48	1.40	-1.25	0.62
8981	89	186	31	4,987.92	4,410.17	-4,408.33	-137.98	3.76	-1.94	-3.23
9013	89	186	32	4,988.70	4,442.10	-4,440.14	-141.33	0.00	0.00	0.00
9044	89	186	31	4,989.48	4,473.03	-4,470.97	-144.49	1.02	-0.32	-0.97
9075	89	187	31	4,990.21	4,503.96	-4,501.79	-147.78	2.76	0.97	2.58
9107	89	186	32	4,990.86	4,535.89	-4,533.59	-151.26	1.59	0.31	-1.56

