

COG Operating, LLC

Lea County, NM

Sec 27, T22S, R34E

Squints Federal Com #6H

Wellbore #1

Design #1

DDC Anticollision Report

17 December, 2015

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Anticollision Report

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Squints Federal Com #6H
Project:	Lea County, NM	TVD Reference:	Well @ 3438.0usft (Ensign #772)
Reference Site:	Sec 27, T22S, R34E	MD Reference:	Well @ 3438.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Squints Federal Com #6H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	6/8/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,966.6	Design #1 (Wellbore #1)	MWD default	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 27, T22S, R34E						
Sun Federal Com #1 - Wellbore #1 - Wellbore #1	10,757.1	10,406.0	242.0	211.0	7.828	CC, ES, SF

Offset Design											Offset Site Error:	0.0 usft
Sec 27, T22S, R34E - Sun Federal Com #1 - Wellbore #1 - Wellbore #1											Offset Well Error:	0.0 usft
Survey Program:	309-Good_gyro											
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	23.70	551.9	242.2	602.7			
100.0	100.0	96.0	96.0	0.1	0.0	23.70	551.9	242.2	602.7	602.6	4,863.763	
200.0	200.0	196.0	196.0	0.3	0.1	23.70	551.9	242.2	602.7	602.3	1,518.172	
300.0	300.0	296.0	296.0	0.5	0.1	23.70	551.9	242.2	602.7	602.0	899.465	
400.0	400.0	396.0	396.0	0.8	0.2	23.70	551.9	242.2	602.7	601.7	635.868	
500.0	500.0	496.0	496.0	1.0	0.3	23.70	551.9	242.2	602.7	601.5	491.472	
600.0	600.0	596.0	596.0	1.2	0.3	23.70	551.9	242.2	602.7	601.2	400.519	
700.0	700.0	696.0	696.0	1.4	0.4	23.70	551.9	242.2	602.7	600.9	337.973	
800.0	800.0	796.0	796.0	1.7	0.4	23.70	551.9	242.2	602.7	600.6	292.250	
900.0	900.0	896.0	896.0	1.9	0.5	23.70	551.9	242.2	602.7	600.3	257.422	
1,000.0	1,000.0	996.0	996.0	2.1	0.5	23.70	551.9	242.2	602.7	600.1	230.072	
1,100.0	1,100.0	1,096.0	1,096.0	2.3	0.6	23.70	551.9	242.2	602.7	599.8	208.017	
1,200.0	1,200.0	1,196.0	1,196.0	2.5	0.7	23.70	551.9	242.2	602.7	599.5	189.820	
1,300.0	1,300.0	1,296.1	1,296.0	2.8	0.7	23.70	551.9	242.2	602.7	599.2	174.556	
1,400.0	1,400.0	1,396.1	1,396.0	3.0	0.8	23.70	551.9	242.2	602.7	599.0	161.575	
1,500.0	1,500.0	1,496.1	1,496.0	3.2	0.8	23.70	551.9	242.2	602.7	598.7	150.391	
1,600.0	1,600.0	1,596.1	1,596.0	3.4	0.9	23.70	551.9	242.2	602.7	598.4	140.655	
1,700.0	1,700.0	1,696.1	1,696.0	3.7	0.9	23.70	551.9	242.2	602.7	598.1	132.103	
1,800.0	1,800.0	1,796.1	1,796.0	3.9	1.0	23.70	551.9	242.2	602.7	597.8	124.541	
1,900.0	1,900.0	1,896.1	1,896.0	4.1	1.0	23.70	551.9	242.2	602.7	597.6	117.804	
2,000.0	2,000.0	1,996.1	1,996.0	4.3	1.1	23.70	551.9	242.2	602.7	597.3	111.739	
2,100.0	2,100.0	2,096.1	2,096.0	4.6	1.1	23.70	551.9	242.2	602.7	597.0	106.266	
2,200.0	2,200.0	2,196.1	2,196.0	4.8	1.2	23.70	551.9	242.2	602.7	596.7	101.304	
2,300.0	2,300.0	2,296.1	2,296.0	5.0	1.2	23.70	551.9	242.2	602.7	596.5	96.785	
2,400.0	2,400.0	2,396.1	2,396.0	5.2	1.3	23.70	551.9	242.2	602.7	596.2	92.652	
2,500.0	2,500.0	2,496.1	2,496.0	5.5	1.4	23.70	551.9	242.2	602.7	595.9	88.857	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

DDC

Anticollision Report

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Project:	Lea County, NM	TVD Reference:	Well @ 3438.0usft (Ensign #772)
Reference Site:	Sec 27, T22S, R34E	MD Reference:	Well @ 3438.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Squints Federal Com #6H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27, T22S, R34E - Sun Federal Com #1 - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 usft
Survey Program: 309-Good: gyro											Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset		N-S (usft)	E-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
2,600.0	2,600.0	2,596.1	2,596.0	5.7	1.4	23.70	551.9	242.2	602.7	595.6	85.345	
2,700.0	2,700.0	2,696.1	2,696.0	5.9	1.5	23.70	551.9	242.2	602.7	595.3	82.094	
2,800.0	2,800.0	2,796.1	2,796.0	6.1	1.5	23.70	551.9	242.2	602.7	595.1	79.082	
2,900.0	2,900.0	2,896.1	2,896.0	6.4	1.6	23.70	551.9	242.2	602.7	594.8	76.283	
3,000.0	3,000.0	2,996.1	2,996.0	6.6	1.7	23.70	551.9	242.2	602.7	594.5	73.671	
3,100.0	3,100.0	3,096.1	3,096.0	6.8	1.7	23.70	551.9	242.2	602.7	594.2	71.231	
3,200.0	3,200.0	3,196.1	3,196.0	7.0	1.8	23.70	551.9	242.2	602.7	593.9	68.947	
3,300.0	3,300.0	3,296.1	3,296.0	7.3	1.8	23.70	551.9	242.2	602.7	593.7	66.805	
3,400.0	3,400.0	3,396.2	3,396.0	7.5	1.9	23.70	551.9	242.2	602.7	593.4	64.797	
3,500.0	3,500.0	3,496.2	3,496.0	7.7	2.0	23.70	551.9	242.2	602.7	593.1	62.906	
3,600.0	3,600.0	3,596.2	3,596.0	7.9	2.0	23.70	551.9	242.2	602.7	592.8	61.123	
3,700.0	3,700.0	3,696.3	3,696.0	8.2	2.1	23.70	551.9	242.2	602.7	592.5	59.442	
3,800.0	3,800.0	3,796.3	3,796.0	8.4	2.1	23.70	551.9	242.2	602.7	592.3	57.854	
3,900.0	3,900.0	3,896.3	3,896.0	8.6	2.2	23.70	551.9	242.2	602.7	592.0	56.350	
4,000.0	4,000.0	3,996.4	3,996.0	8.8	2.2	23.70	551.9	242.2	602.7	591.7	54.921	
4,100.0	4,100.0	4,096.4	4,096.0	9.1	2.3	23.70	551.9	242.2	602.7	591.4	53.563	
4,200.0	4,200.0	4,196.4	4,196.0	9.3	2.4	23.70	551.9	242.2	602.7	591.2	52.269	
4,300.0	4,300.0	4,296.4	4,296.0	9.5	2.4	23.70	551.9	242.2	602.7	590.9	51.036	
4,400.0	4,400.0	4,396.4	4,396.0	9.7	2.5	23.70	551.9	242.2	602.7	590.6	49.859	
4,500.0	4,500.0	4,496.4	4,496.0	10.0	2.5	23.70	551.9	242.2	602.7	590.3	48.736	
4,600.0	4,600.0	4,596.5	4,596.0	10.2	2.6	23.70	551.9	242.2	602.7	590.0	47.663	
4,700.0	4,700.0	4,696.5	4,696.0	10.4	2.6	23.70	551.9	242.2	602.7	589.8	46.639	
4,800.0	4,800.0	4,796.5	4,796.0	10.6	2.7	23.70	551.9	242.2	602.7	589.5	45.658	
4,900.0	4,900.0	4,896.5	4,896.0	10.9	2.8	23.70	551.9	242.2	602.7	589.2	44.717	
5,000.0	5,000.0	4,996.5	4,996.0	11.1	2.8	23.70	551.9	242.2	602.7	588.9	43.814	
5,100.0	5,100.0	5,096.5	5,096.0	11.3	2.9	23.70	551.9	242.2	602.7	588.6	42.947	
5,200.0	5,200.0	5,196.5	5,196.0	11.5	2.9	23.70	551.9	242.2	602.7	588.4	42.114	
5,300.0	5,300.0	5,296.5	5,296.0	11.8	3.0	23.70	551.9	242.2	602.7	588.1	41.312	
5,400.0	5,400.0	5,396.5	5,396.0	12.0	3.0	23.70	551.9	242.2	602.7	587.8	40.539	
5,500.0	5,500.0	5,496.5	5,496.0	12.2	3.1	23.70	551.9	242.2	602.7	587.5	39.793	
5,600.0	5,600.0	5,596.5	5,596.0	12.4	3.1	23.70	551.9	242.2	602.7	587.3	39.075	
5,700.0	5,700.0	5,696.5	5,696.0	12.7	3.2	23.70	551.9	242.2	602.7	587.0	38.381	
5,800.0	5,800.0	5,796.5	5,796.0	12.9	3.3	23.70	551.9	242.2	602.7	586.7	37.712	
5,900.0	5,900.0	5,896.5	5,896.0	13.1	3.3	23.70	551.9	242.2	602.7	586.4	37.067	
6,000.0	6,000.0	5,996.5	5,996.0	13.3	3.4	23.70	551.9	242.2	602.7	586.1	36.444	
6,100.0	6,100.0	6,096.5	6,096.0	13.6	3.4	23.70	551.9	242.2	602.7	585.9	35.842	
6,200.0	6,200.0	6,196.5	6,196.0	13.8	3.5	23.70	551.9	242.2	602.7	585.6	35.260	
6,300.0	6,300.0	6,296.5	6,296.0	14.0	3.5	23.70	551.9	242.2	602.7	585.3	34.696	
6,400.0	6,400.0	6,396.6	6,396.0	14.2	3.6	23.70	551.9	242.2	602.7	585.0	34.151	
6,500.0	6,500.0	6,496.6	6,496.0	14.5	3.6	23.70	551.9	242.2	602.7	584.8	33.624	
6,600.0	6,600.0	6,596.6	6,596.0	14.7	3.7	23.70	551.9	242.2	602.7	584.5	33.112	
6,700.0	6,700.0	6,696.6	6,696.0	14.9	3.7	23.70	551.9	242.2	602.7	584.2	32.616	
6,800.0	6,800.0	6,796.6	6,796.0	15.1	3.8	23.70	551.9	242.2	602.7	583.9	32.135	
6,900.0	6,900.0	6,896.6	6,896.0	15.4	3.8	23.70	551.9	242.2	602.7	583.7	31.666	
7,000.0	7,000.0	6,996.6	6,996.0	15.6	3.9	23.70	551.9	242.2	602.7	583.4	31.212	
7,100.0	7,100.0	7,096.6	7,096.0	15.8	3.9	23.70	551.9	242.2	602.7	583.1	30.770	
7,200.0	7,200.0	7,196.6	7,196.0	16.0	4.0	23.70	551.9	242.2	602.7	582.8	30.340	
7,300.0	7,300.0	7,296.6	7,296.0	16.3	4.1	23.70	551.9	242.2	602.7	582.5	29.922	
7,400.0	7,400.0	7,396.6	7,396.0	16.5	4.1	23.70	551.9	242.2	602.7	582.3	29.515	
7,500.0	7,500.0	7,496.6	7,496.0	16.7	4.2	23.70	551.9	242.2	602.7	582.0	29.119	
7,600.0	7,600.0	7,596.6	7,596.0	16.9	4.2	23.70	551.9	242.2	602.7	581.7	28.734	
7,700.0	7,700.0	7,696.6	7,696.0	17.2	4.3	23.70	551.9	242.2	602.7	581.4	28.358	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

DDC

Anticollision Report

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Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Squints Federal Com #6H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Sec 27, T22S, R34E - Sun Federal Com #1 - Wellbore #1 - Wellbore #1												Offset Well Error:	0.0 usft
Survey Program: 308-Good gyro													
Reference Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	E-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning	
7,765.0	7,765.0	7,761.7	7,761.0	17.3	4.3	23.70	551.9	242.2	602.7	581.2	28.119		
7,800.0	7,800.0	7,792.0	7,791.4	17.4	4.3	23.70	551.9	242.2	602.7	581.2	27.996		
7,900.0	7,900.0	7,896.6	7,896.0	17.6	4.4	23.70	551.9	242.2	602.7	580.9	27.635		
8,000.0	8,000.0	7,996.6	7,996.0	17.8	4.4	23.70	551.9	242.2	602.7	580.6	27.287		
8,100.0	8,100.0	8,096.6	8,096.0	18.1	4.5	23.70	551.9	242.2	602.7	580.3	26.948		
8,200.0	8,200.0	8,196.6	8,196.0	18.3	4.6	23.70	551.9	242.2	602.7	580.0	26.617		
8,300.0	8,300.0	8,296.6	8,296.0	18.5	4.6	23.70	551.9	242.2	602.7	579.8	26.294		
8,400.0	8,400.0	8,396.6	8,396.0	18.7	4.7	23.70	551.9	242.2	602.7	579.5	25.978		
8,500.0	8,500.0	8,496.6	8,496.0	19.0	4.7	23.70	551.9	242.2	602.7	579.2	25.671		
8,563.5	8,563.5	8,560.1	8,559.5	19.1	4.8	23.70	551.9	242.2	602.7	579.0	25.479		
8,600.0	8,600.0	8,588.0	8,587.3	19.2	4.8	23.70	551.9	242.2	602.7	579.0	25.377		
8,700.0	8,700.0	8,696.7	8,696.0	19.4	4.8	23.70	551.9	242.2	602.7	578.7	25.078		
8,800.0	8,800.0	8,796.7	8,796.0	19.6	4.9	23.70	551.9	242.2	602.7	578.4	24.793		
8,900.0	8,900.0	8,896.7	8,896.0	19.9	4.9	23.70	551.9	242.2	602.7	578.1	24.511		
9,000.0	9,000.0	8,996.7	8,996.0	20.1	5.0	23.70	551.9	242.2	602.7	577.8	24.236		
9,100.0	9,100.0	9,096.7	9,096.0	20.3	5.1	23.70	551.9	242.2	602.7	577.5	23.966		
9,158.0	9,158.0	9,154.6	9,154.0	20.4	5.1	23.70	551.9	242.2	602.7	577.4	23.812		
9,200.0	9,200.0	9,176.0	9,175.3	20.5	5.1	23.70	551.9	242.2	603.0	577.8	23.727		
9,285.5	9,285.5	9,282.2	9,281.5	20.7	5.2	23.70	551.9	242.2	602.7	577.0	23.483		
9,300.0	9,300.0	9,290.0	9,289.2	20.8	5.2	23.70	551.9	242.2	602.7	577.0	23.450		
9,400.0	9,400.0	9,396.8	9,396.0	21.0	5.2	23.70	551.9	242.2	602.7	576.7	23.193		
9,500.0	9,500.0	9,496.8	9,496.0	21.2	5.3	23.70	551.9	242.2	602.7	576.4	22.947		
9,600.0	9,600.0	9,596.8	9,596.0	21.4	5.4	23.70	551.9	242.2	602.7	576.1	22.706		
9,700.0	9,700.0	9,696.8	9,696.0	21.7	5.4	23.70	551.9	242.2	602.7	575.9	22.470		
9,800.0	9,800.0	9,796.8	9,796.0	21.9	5.5	23.70	551.9	242.2	602.7	575.6	22.239		
9,900.0	9,900.0	9,896.8	9,896.0	22.1	5.5	23.70	551.9	242.2	602.7	575.3	22.012		
9,932.6	9,932.6	9,929.4	9,928.6	22.2	5.5	23.70	551.9	242.2	602.7	575.2	21.939		
9,950.0	9,950.0	9,946.8	9,946.0	22.2	5.6	23.70	551.9	242.2	602.4	574.9	21.902		
9,975.0	9,974.9	9,971.8	9,970.9	22.3	5.6	23.83	551.9	242.2	601.0	573.5	21.846		
10,000.0	9,999.8	9,996.6	9,995.8	22.3	5.6	24.06	551.9	242.2	598.3	570.9	21.787		
10,025.0	10,024.4	10,021.3	10,020.4	22.4	5.6	24.42	551.9	242.2	594.5	567.2	21.723		
10,050.0	10,048.8	10,045.7	10,044.8	22.4	5.6	24.89	551.9	242.2	589.6	562.3	21.653		
10,075.0	10,072.9	10,069.7	10,068.9	22.5	5.6	25.49	551.9	242.2	583.4	556.4	21.573		
10,100.0	10,096.6	10,093.4	10,092.6	22.5	5.6	26.23	551.9	242.2	576.2	549.4	21.482		
10,125.0	10,119.8	10,107.0	10,106.1	22.6	5.7	26.93	551.9	242.2	567.9	541.4	21.385		
10,150.0	10,142.6	10,139.4	10,138.6	22.6	5.7	28.16	551.9	242.2	558.5	532.2	21.241		
10,175.0	10,164.7	10,161.6	10,160.7	22.7	5.7	29.38	551.9	242.2	548.1	522.1	21.078		
10,200.0	10,186.2	10,183.1	10,182.2	22.7	5.7	30.80	551.9	242.2	536.7	511.0	20.874		
10,225.0	10,207.1	10,203.9	10,203.1	22.8	5.7	32.44	551.9	242.2	524.4	498.9	20.617		
10,250.0	10,227.1	10,224.0	10,223.1	22.9	5.7	34.32	551.9	242.2	511.2	486.0	20.293		
10,275.0	10,246.4	10,243.3	10,242.4	22.9	5.7	36.47	551.9	242.2	497.2	472.2	19.885		
10,300.0	10,264.8	10,261.7	10,260.8	23.0	5.7	38.90	551.9	242.2	482.5	457.6	19.379		
10,325.0	10,282.3	10,279.2	10,278.3	23.1	5.8	41.65	551.9	242.2	467.2	442.3	18.764		
10,350.0	10,298.8	10,295.7	10,294.8	23.1	5.8	44.72	551.9	242.2	451.2	426.2	18.036		
10,375.0	10,314.4	10,311.2	10,310.4	23.2	5.8	48.12	551.9	242.2	434.8	409.5	17.202		
10,400.0	10,328.8	10,322.0	10,321.1	23.3	5.8	51.38	551.9	242.2	418.1	392.5	16.334		
10,425.0	10,342.2	10,339.2	10,338.2	23.4	5.8	55.82	551.9	242.2	401.0	374.8	15.315		
10,450.0	10,354.5	10,351.4	10,350.5	23.5	5.8	60.03	551.9	242.2	383.9	357.1	14.332		
10,475.0	10,365.6	10,362.6	10,361.6	23.5	5.8	64.37	551.9	242.2	366.8	339.3	13.374		
10,500.0	10,375.6	10,372.5	10,371.6	23.7	5.8	68.71	551.9	242.2	349.9	321.8	12.472		
10,525.0	10,384.3	10,381.2	10,380.3	23.8	5.8	72.93	551.9	242.2	333.3	304.7	11.645		
10,550.0	10,391.8	10,388.7	10,387.8	23.9	5.8	76.90	551.9	242.2	317.4	288.3	10.902		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

DDC Anticollision Report

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Squints Federal Com #6H
Project:	Lea County, NM	TVD Reference:	Well @ 3438.0usft (Ensign #772)
Reference Site:	Sec 27, T22S, R34E	MD Reference:	Well @ 3438.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Squints Federal Com #6H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 27, T22S, R34E - Sun Federal Com #1 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 308-Good-gyro												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
10,575.0	10,398.0	10,394.9	10,394.0	24.0	5.8	80.50	551.9	242.2	302.3	272.8	10.245		
10,600.0	10,402.9	10,399.9	10,398.9	24.1	5.8	83.64	551.9	242.2	288.3	258.5	9.671		
10,625.0	10,406.6	10,403.5	10,402.6	24.3	5.8	86.24	551.9	242.2	275.6	245.6	9.176		
10,650.0	10,409.0	10,405.9	10,405.0	24.4	5.8	88.27	551.9	242.2	264.6	234.4	8.756		
10,675.0	10,410.0	10,406.9	10,406.0	24.5	5.8	89.69	551.9	242.2	255.5	225.1	8.412		
10,689.3	10,410.0	10,406.9	10,406.0	24.6	5.8	90.23	551.9	242.2	251.3	220.8	8.250		
10,700.0	10,409.9	10,406.8	10,405.9	24.7	5.8	90.19	551.9	242.2	248.6	218.1	8.144		
10,757.1	10,409.1	10,406.0	10,405.1	25.1	5.8	90.00	551.9	242.2	242.0	211.0	7.828	CC, ES, SF	
10,800.0	10,408.5	10,405.4	10,404.5	25.4	5.8	89.86	551.9	242.2	245.7	214.5	7.876		
10,900.0	10,407.1	10,404.0	10,403.1	26.2	5.8	89.53	551.9	242.2	281.0	249.0	8.785		
11,000.0	10,405.7	10,402.6	10,401.7	27.0	5.8	89.19	551.9	242.2	342.8	309.9	10.431		
11,100.0	10,404.3	10,401.2	10,400.3	28.0	5.8	88.86	551.9	242.2	419.6	385.8	12.401		
11,200.0	10,402.9	10,399.8	10,398.9	29.1	5.8	88.53	551.9	242.2	504.6	469.7	14.463		
11,300.0	10,401.4	10,398.4	10,397.4	30.2	5.8	88.20	551.9	242.2	594.3	558.3	16.501		
11,400.0	10,400.0	10,397.0	10,396.0	31.4	5.8	87.87	551.9	242.2	686.8	649.6	18.462		
11,500.0	10,398.6	10,395.6	10,394.6	32.7	5.8	87.53	551.9	242.2	781.2	742.8	20.318		
11,600.0	10,397.2	10,394.2	10,393.2	34.0	5.8	87.20	551.9	242.2	876.8	837.1	22.062		
11,700.0	10,395.8	10,392.7	10,391.8	35.3	5.8	86.87	551.9	242.2	973.3	932.3	23.692		
11,800.0	10,394.4	10,391.3	10,390.4	36.7	5.8	86.54	551.9	242.2	1,070.5	1,028.0	25.211		
11,900.0	10,393.0	10,389.9	10,389.0	38.1	5.8	86.21	551.9	242.2	1,168.1	1,124.2	26.625		
12,000.0	10,391.6	10,388.5	10,387.6	39.6	5.8	85.88	551.9	242.2	1,266.1	1,220.8	27.940		
12,100.0	10,390.2	10,387.1	10,386.2	41.1	5.8	85.55	551.9	242.2	1,364.4	1,317.6	29.163		
12,200.0	10,388.8	10,385.7	10,384.8	42.6	5.8	85.22	551.9	242.2	1,462.9	1,414.6	30.302		
12,300.0	10,387.4	10,384.3	10,383.4	44.1	5.8	84.89	551.9	242.2	1,561.6	1,511.8	31.363		
12,400.0	10,386.0	10,382.9	10,382.0	45.7	5.8	84.56	551.9	242.2	1,660.4	1,609.1	32.353		
12,500.0	10,384.6	10,381.5	10,380.6	47.3	5.8	84.23	551.9	242.2	1,759.4	1,706.6	33.278		
12,600.0	10,383.2	10,380.1	10,379.2	48.9	5.8	83.90	551.9	242.2	1,858.5	1,804.1	34.144		
12,700.0	10,381.8	10,378.7	10,377.8	50.5	5.8	83.57	551.9	242.2	1,957.7	1,901.7	34.955		
12,800.0	10,380.4	10,377.3	10,376.4	52.1	5.8	83.24	551.9	242.2	2,057.0	1,999.4	35.717		
12,900.0	10,379.0	10,375.9	10,375.0	53.7	5.8	82.92	551.9	242.2	2,156.3	2,097.1	36.433		
13,000.0	10,377.6	10,374.5	10,373.6	55.4	5.8	82.59	551.9	242.2	2,255.7	2,194.9	37.108		
13,100.0	10,376.2	10,373.1	10,372.2	57.0	5.8	82.26	551.9	242.2	2,355.1	2,292.7	37.744		
13,200.0	10,374.8	10,371.7	10,370.8	58.7	5.8	81.94	551.9	242.2	2,454.6	2,390.6	38.346		
13,300.0	10,373.4	10,370.3	10,369.4	60.4	5.8	81.61	551.9	242.2	2,554.1	2,488.5	38.916		
13,400.0	10,372.0	10,368.9	10,368.0	62.1	5.8	81.29	551.9	242.2	2,653.7	2,586.4	39.456		
13,500.0	10,370.6	10,367.5	10,366.6	63.8	5.8	80.96	551.9	242.2	2,753.3	2,684.4	39.969		
13,600.0	10,369.2	10,366.1	10,365.2	65.5	5.8	80.64	551.9	242.2	2,852.9	2,782.4	40.458		
13,700.0	10,367.8	10,364.7	10,363.8	67.2	5.8	80.32	551.9	242.2	2,952.5	2,880.4	40.924		
13,800.0	10,366.4	10,363.3	10,362.4	68.9	5.8	79.99	551.9	242.2	3,052.2	2,978.4	41.368		
13,900.0	10,365.0	10,361.9	10,361.0	70.6	5.8	79.67	551.9	242.2	3,151.9	3,076.5	41.793		
14,000.0	10,363.6	10,360.5	10,359.6	72.3	5.8	79.35	551.9	242.2	3,251.6	3,174.5	42.200		
14,100.0	10,362.2	10,359.1	10,358.2	74.1	5.8	79.03	551.9	242.2	3,351.3	3,272.6	42.591		
14,200.0	10,360.8	10,357.7	10,356.8	75.8	5.8	78.71	551.9	242.2	3,451.0	3,370.7	42.965		
14,300.0	10,359.4	10,356.3	10,355.4	77.5	5.8	78.39	551.9	242.2	3,550.8	3,468.8	43.326		
14,400.0	10,357.9	10,354.9	10,353.9	79.3	5.8	78.07	551.9	242.2	3,650.5	3,567.0	43.673		
14,500.0	10,356.5	10,353.5	10,352.5	81.0	5.8	77.75	551.9	242.2	3,750.3	3,665.1	44.008		
14,600.0	10,355.1	10,352.1	10,351.1	82.8	5.8	77.44	551.9	242.2	3,850.1	3,763.3	44.332		
14,700.0	10,353.7	10,350.7	10,349.7	84.5	5.8	77.12	551.9	242.2	3,949.9	3,861.4	44.645		
14,800.0	10,352.3	10,349.3	10,348.3	86.3	5.8	76.81	551.9	242.2	4,049.7	3,959.6	44.948		
14,900.0	10,350.9	10,347.8	10,346.9	88.0	5.8	76.49	551.9	242.2	4,149.5	4,057.8	45.242		
14,966.6	10,350.0	10,346.9	10,346.0	89.2	5.8	76.28	551.9	242.2	4,216.0	4,123.2	45.432		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

DDC

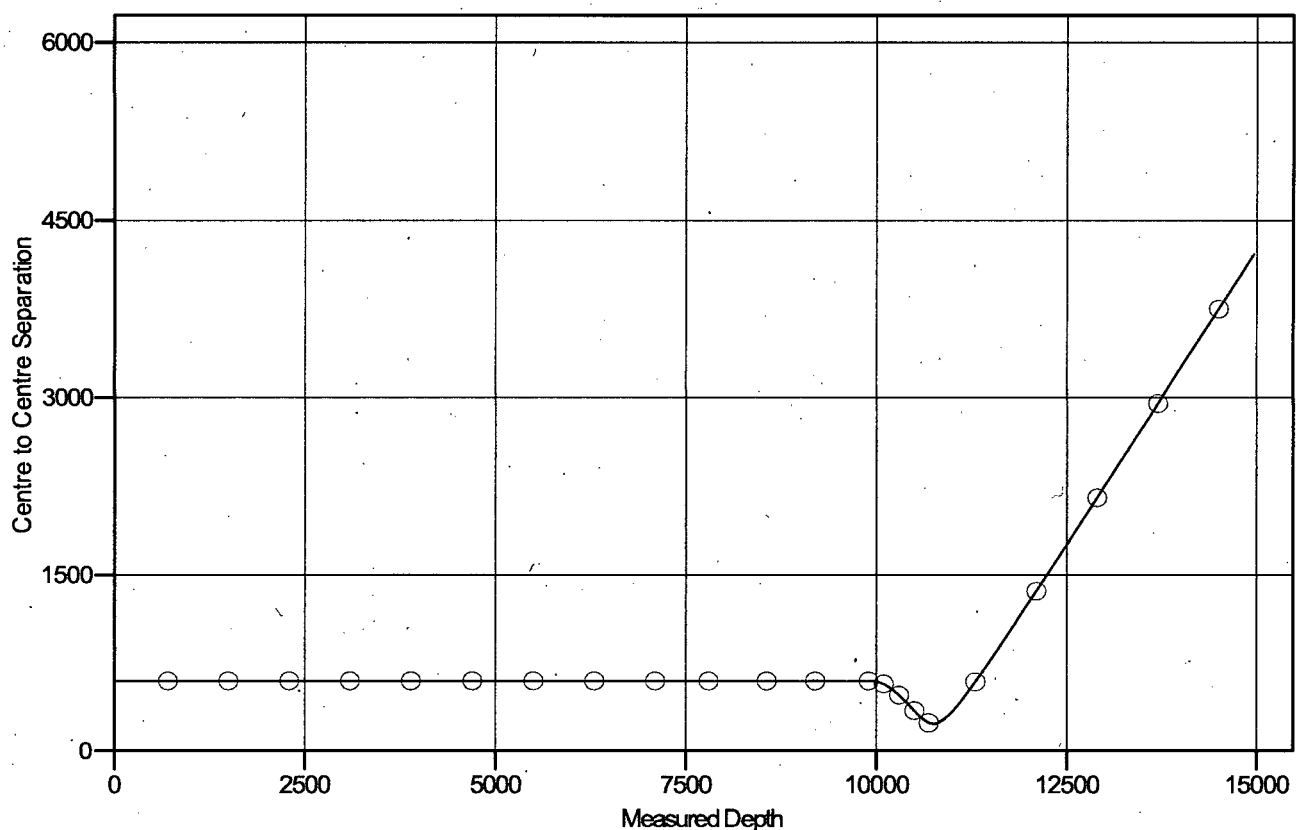
Anticollision Report

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Squints Federal Com #6H
Project:	Lea County, NM	TVD Reference:	Well @ 3438.0usft (Ensign #772)
Reference Site:	Sec 27, T22S, R34E	MD Reference:	Well @ 3438.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Squints Federal Com #6H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 3438.0usft (Ensign #772)
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Squints Federal Com #6H
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Grid Convergence at Surface is: 0.47°

Ladder Plot



LEGEND

► Sun Federal Com #1, Wellbore #1, Wellbore #1 V0

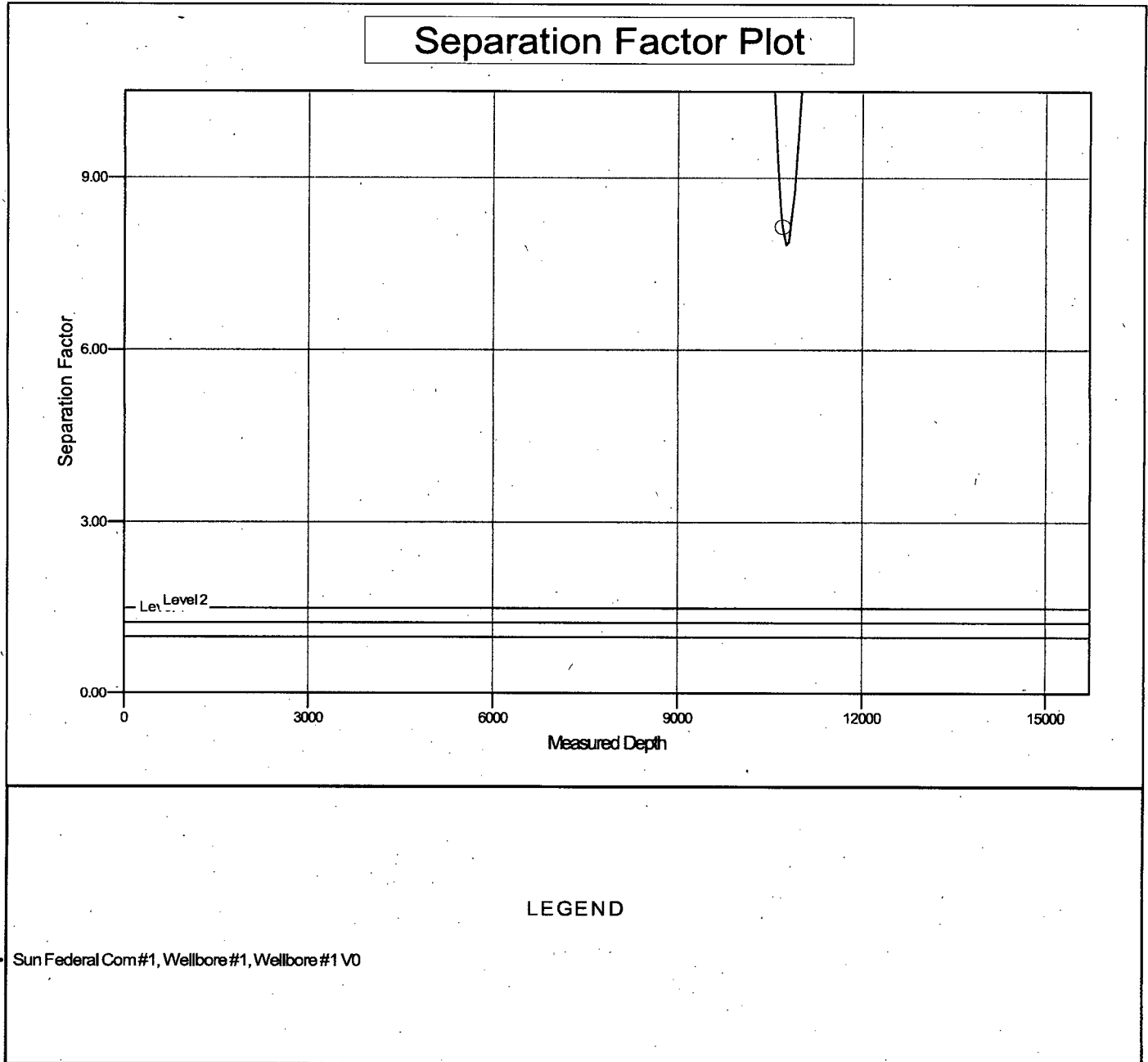
DDC

Anticollision Report

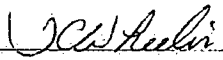
Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well: Squints Federal Com #6H
Project:	Lea County, NM	TVD Reference:	Well @ 3438.0usft (Ensign #772)
Reference Site:	Sec 27, T22S, R34E	MD Reference:	Well @ 3438.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Squints Federal Com #6H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 3438.0usft (Ensign #772)
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Squints Federal Com #6H
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Grid Convergence at Surface is: 0.47°



TechnipTECHNIP Umbilicals Inc.
COFLEXIP® Products Division**CERTIFICATE OF CONFORMITY**

SUPPLIER	COFLEXIP® Products Division 16661 Jacintoport Blvd. Houston, Texas 77015	
CUSTOMER	OFS CANADA INC	
CUSTOMER PROJECT	OFS GLOBAL RIG 772 PROJECT 59	
CONTRACT NUMBER	OFS-012060-1	
COFLEXIP REFERENCE NUMBER	K12386	
COFLEXIP LINE DESCRIPTION	3" x 30' 10K CHOKE/KILL LINE	
COFLEXIP LINE SERIAL NUMBER	K12386-202	
WORKING / TEST PRESSURE (PSI)	10000 / 15000	
COFLEXIP ID (inches)/PART NUMBER	3 / 076 60414 13 13	
COFLEXIP STRUCTURE NUMBER	076 60414	
END FITTING REFERENCE NUMBER	EM 076 65000 13	EM 076 65000 13
END FITTING DESCRIPTION	4 1/16" 10K FLG BX 155 INC. 625 RG / 4 1/16" 10K FLG BX 155 INC. 625 RG	
IRC REFERENCE		
SAFE WORKING LOADS		
NOMINAL DAMAGING PULL (STRAIGHT LINE)		
MINIMUM BENDING RADIUS		
MAXIMUM DESIGN TEMPERATURE -4 Deg. F To 212 Deg. F/B		
<i>We certify that the supply detailed above was manufactured and inspected in accordance with the technical specifications specified within the contract referenced above and any specifications checked below. This document serves as a Declaration and Confirmation from the Manufacturer, TECHNIP Umbilicals Inc., Houston, Texas, that asbestos materials are not utilized in any part(s) or sub-part(s) or component(s) during the assembly process of any of our Coflexip® flexible pipes.</i>		
Licence Number 16C-0001		(If Required)
TECHNIP QUALITY CONTROL		
 4/30/15 		
Name/ Date/ Stamp		

TechnipTECHNIP Umbilicals Inc.
COFLEXIP® Products Division

Quality Control Department

Control Report Dated 4/28/2015

COFLEXIP FLEXIBLE PIPE TEST CERTIFICATE

Customer OFS CANADA INC. Job Number K12387
Address Line/Serial Number K12387-202
Part Number 076 60414 13 13

Application 3" x 30' 10K CHOKE/KILL LINE

COFLEXIP certifies that the results of the test and controls performed on the above mentioned flexible pipe is as follows:

Internal Diameter	3	inches
Length	30.83	feet
Working Pressure	10000	psi
Test Pressure	15000	psi
As per attached recorder chart	24	hours
Test Duration		

[Signature]
TECHNIP QUALITY CONTROL

THIRD PARTY INSPECTION FIRM OR CUSTOMER REPRESENTATIVE

DOAC 1124 Rev. 2 18 Sept 09

Date Printed: 4/28/2015 11:49:43 PM

Test Configuration 12 Zone

Production Information Input

Customer ID
OFS CANADA INC.
Line S/N
K12386-202 ©K12387-202
Technician
ROY

QC Information Input

QC Insp
PAT
Witness?
Yes
Special Instructions
Third Party
BV
Test Procedure
SIC 01.60

Station Information

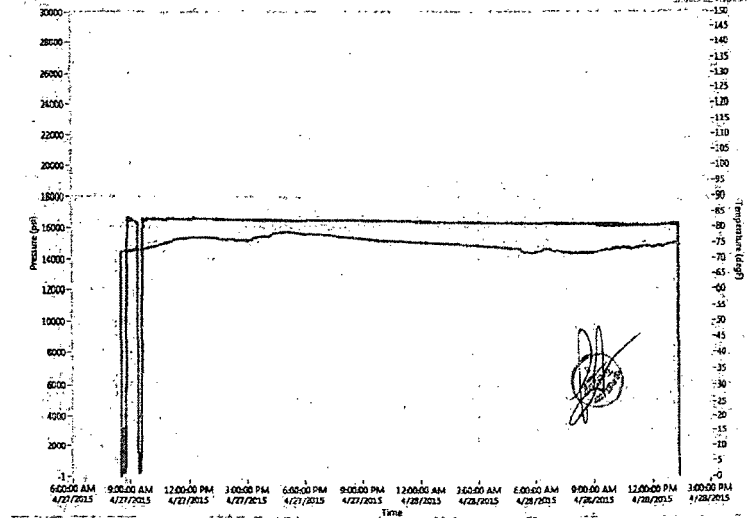
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Stable Press
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153A
Test Press
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Pressure Range
0 - 30000

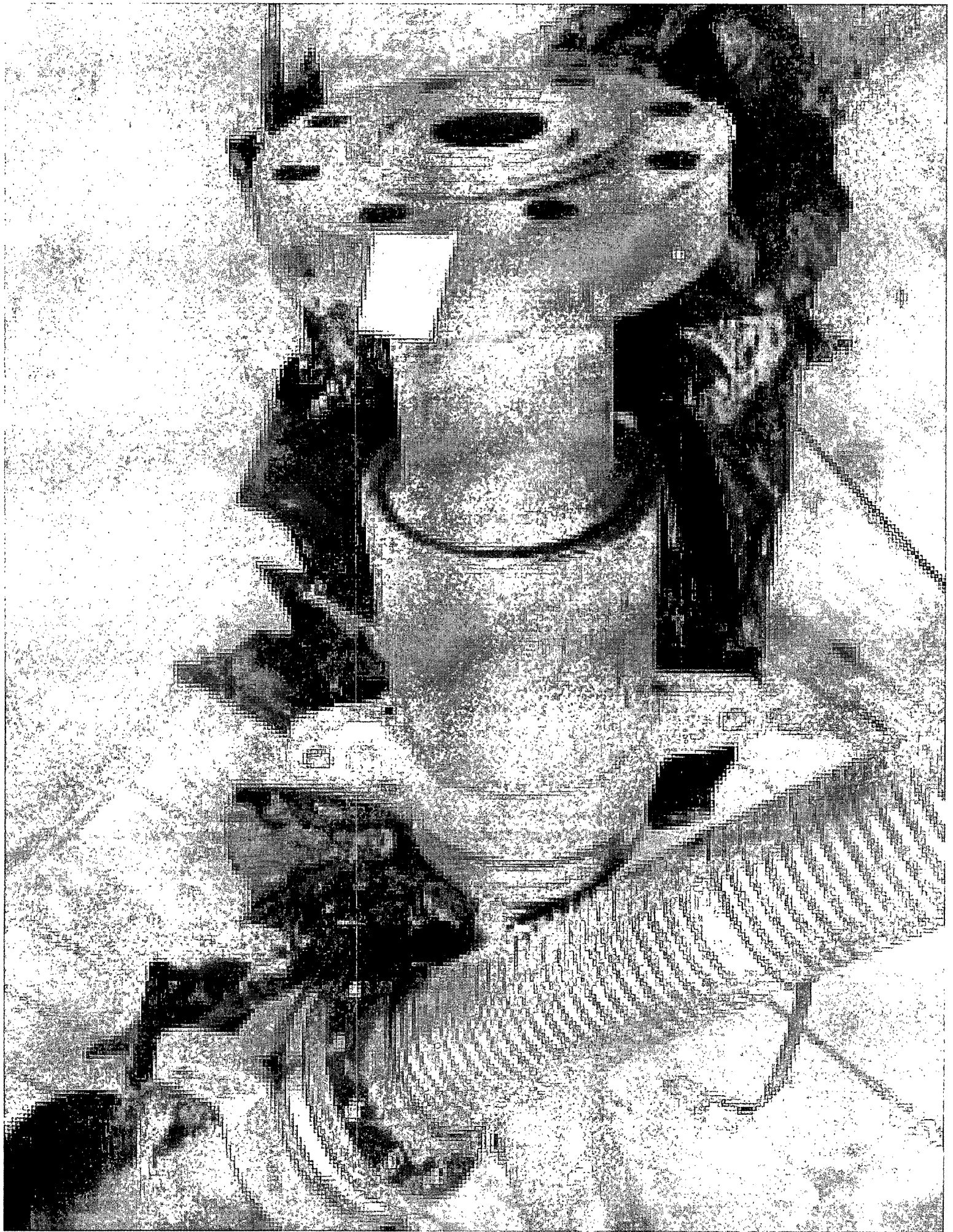
Station 04

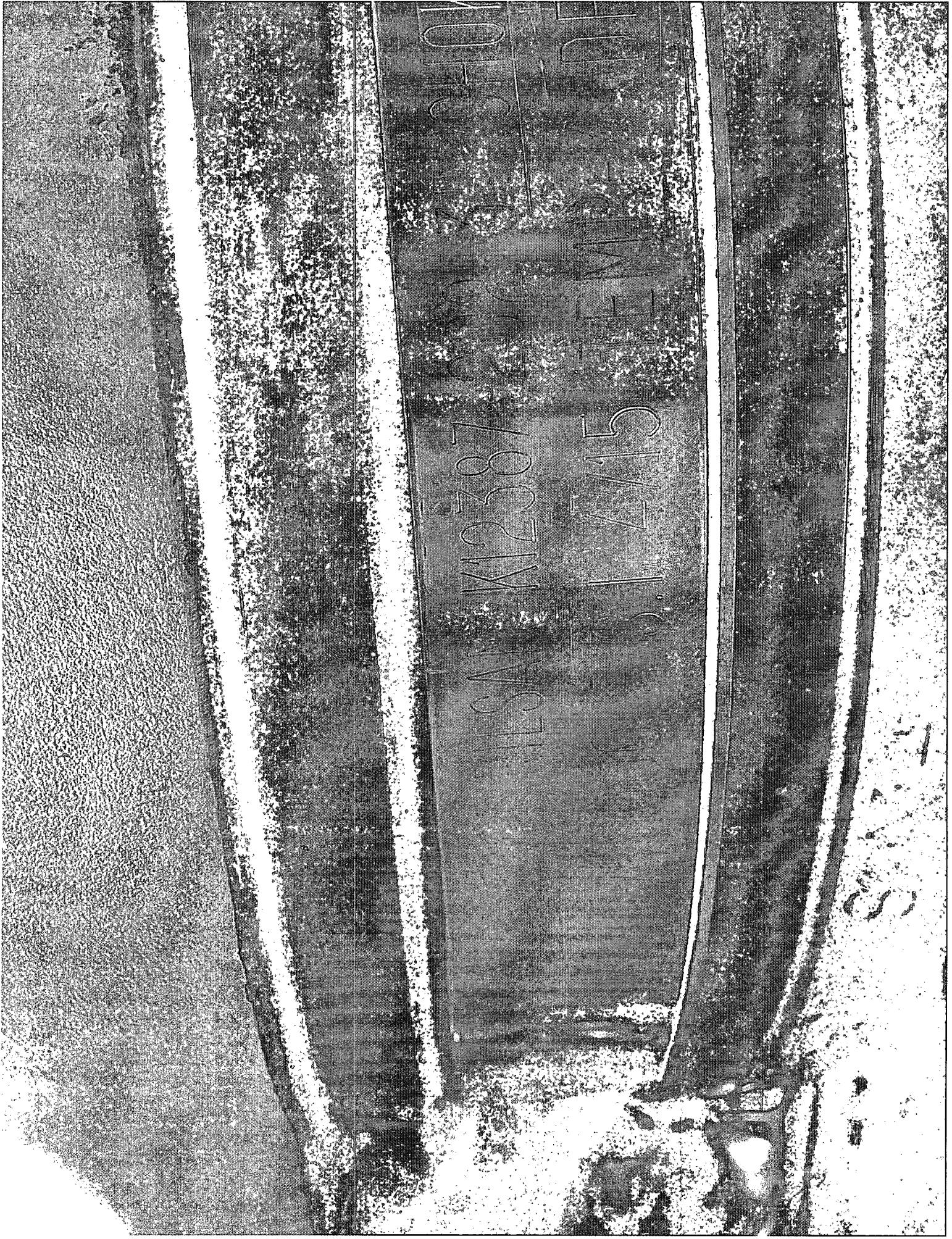
Calibration

Raw Maximum
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Raw Maximum
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Eng Maximum
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RT Graph







CHON

TEMP

7/17 7/15

LSA K12387

7/17 7/15

