

Well Name: ROSA UNIT	Well Location: T31N / R5W / SEC 17 / SWNW / 36.900676 / -107.392797	County or Parish/State: RIO ARRIBA / NM
Well Number: 724H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMSF078769	Unit or CA Name: ROSA UNIT	Unit or CA Number: NMNM78407E
US Well Number:	Operator: LOGOS OPERATING LLC	

Notice of Intent

Sundry ID: 2814064

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 09/26/2024	Time Sundry Submitted: 02:32
Date proposed operation will begin: 09/26/2024	

Procedure Description: LOGOS Operating request a change in plans for the following: Change to 4-string design. Original SHL: Sec 17, T31N, R5W 2224' FNL, 562' FWL to Sec 17, T31N, R5W 2233' FNL, 565' FWL Original BHL: Sec 15, T31N, R5W 2254' FSL, 1311' FEL to Sec 15, T31N, R5W 876' FSL, 1314' FEL Original TD @ 20,608' (MD) 6,935' (TVD) to new TD @ 20,790' (MD) 6,935' (TVD) Geology tops have been updated per changes. Original KOP @ 6,423'(MD) 6,384' (TVD) to new KOP @ 6,491' (MD) 6,336' (TVD) Original Landing point @ 7,315' (MD) 6,945' (TVD) to new Landing point @ 7,482' (MD) 6,945' (TVD) Add Conductor: 20" casing, set @ 320' or greater casing. Casing shall be set at ~ 320'(GL) Original surface depth 320' to 3,469' Original intermediate depth 6,305' to 6,388' Original production depth 20,608' to 20,790' All cementing bbls and sacks have been updated per casing depth changes Attached: New C102, Operation and Directional Drill plans. Attached: New C102, Operation and Directional Drill plans.

NOI Attachments

Procedure Description

- 724H_ROSA_UNIT_CIP_1_20240926_signed_20240926143159.PDF
- Logos___Rosa_Unit_724H_5_Wall_Prelim_1_20240926143159.pdf
- Logos___Rosa_Unit_724H_5_AC_Report_Prelim_1_20240926143159.pdf
- Rosa_Unit_724H_Operations_Plan_4_string_Prelim_WP1._9.25.2024_RH_20240926143159.pdf
- Logos___Rosa_Unit_724H_5_Plan_Data_Prelim_1_20240926143159.pdf

Well Name: ROSA UNIT	Well Location: T31N / R5W / SEC 17 / SWNW / 36.900676 / -107.392797	County or Parish/State: RIO ARRIBA / NM
Well Number: 724H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMSF078769	Unit or CA Name: ROSA UNIT	Unit or CA Number: NMNM78407E
US Well Number:	Operator: LOGOS OPERATING LLC	

Operator

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: LACEY GRANILLO

Signed on: SEP 26, 2024 02:32 PM

Name: LOGOS OPERATING LLC

Title: REGULATORY SPECIALIST

Street Address: 2010 AFTON PLACE

City: FARMINGTONState: NM

Phone: (505) 324-4145

Email address: LGRANILLO@LOGOSRESOURCESLLC.COM

Field

Representative Name:

Street Address:

City:State:Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: KENNETH G RENNICK

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5055647742

BLM POC Email Address: krennick@blm.gov

Disposition: Approved

Disposition Date: 09/27/2024

Signature: Kenneth Rennick

C-102 Submit Electronically Via OCD Permitting	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION	Revised July 9, 2024	
		Submittal Type	☐ Initial Submittal
			☒ Amended Report
		☐ As Drilled	

WELL LOCATION INFORMATION

API Number 30-039-31471	Pool Code 97232	Pool Name BASIN MANCOS
Property Code 320608	Property Name ROSA UNIT	Well Number 724H
OGRID No. 289408	Operator Name LOGOS OPERATING, LLC	Ground Level Elevation 6300'
Surface Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal		Mineral Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal

Surface Location

UL E	Section 17	Township 31N	Range 5W	Lot	Feet from N/S Line 2233' NORTH	Feet from E/W Line 565' WEST	Latitude 36.900649 °N	Longitude -107.392788 °W	County RIO ARRIBA
---------	---------------	-----------------	-------------	-----	-----------------------------------	---------------------------------	--------------------------	-----------------------------	----------------------

Bottom Hole Location

UL P	Section 15	Township 31N	Range 5W	Lot	Feet from N/S Line 876' SOUTH	Feet from E/W Line 1314' EAST	Latitude 36.894699 °N	Longitude -107.345112 °W	County RIO ARRIBA
---------	---------------	-----------------	-------------	-----	----------------------------------	----------------------------------	--------------------------	-----------------------------	----------------------

Penetrated Spacing Unit:

Dedicated Acres 960.00	S/2 - Section 15, T31N, R5W S/2 - Section 16, T31N, R5W S/2 - Section 17, T31N, R5W	Infill or Defining Well Infill	Defining Well API	Overlapping Spacing Unit ☐ Yes ☒ No	Consolidation Code Unitization
Order Numbers R-13457			Well setbacks are under Common Ownership: ☐ Yes ☒ No		

Kick Off Point (KOP)

UL L	Section 17	Township 31N	Range 5W	Lot	Feet from N/S Line 1715' SOUTH	Feet from E/W Line 584' WEST	Latitude 36.896998 °N	Longitude -107.392719 °W	County RIO ARRIBA
---------	---------------	-----------------	-------------	-----	-----------------------------------	---------------------------------	--------------------------	-----------------------------	----------------------

First Take Point (FTP)

UL L	Section 17	Township 31N	Range 5W	Lot	Feet from N/S Line 1538' SOUTH	Feet from E/W Line 1213' WEST	Latitude 36.896508 °N	Longitude -107.390568 °W	County RIO ARRIBA
---------	---------------	-----------------	-------------	-----	-----------------------------------	----------------------------------	--------------------------	-----------------------------	----------------------

Last Take Point (LTP)

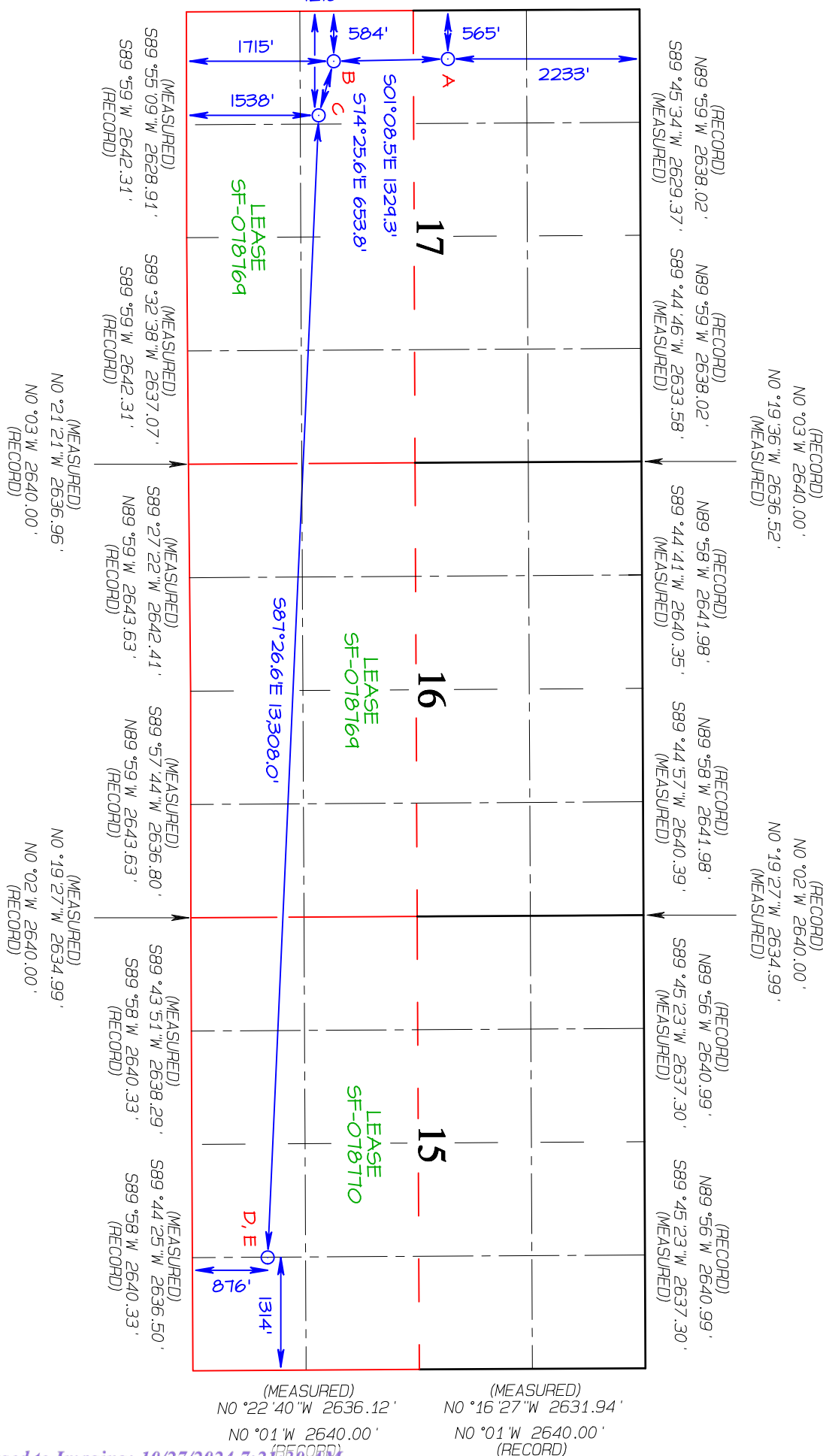
UL P	Section 15	Township 31N	Range 5W	Lot	Feet from N/S Line 876' SOUTH	Feet from E/W Line 1314' EAST	Latitude 36.894699 °N	Longitude -107.345112 °W	County RIO ARRIBA
---------	---------------	-----------------	-------------	-----	----------------------------------	----------------------------------	--------------------------	-----------------------------	----------------------

Unitized Area or Area of Uniform Interest ROSA UNIT	Spacing Unit Type ☒ Horizontal ☐ Vertical ☐ Directional	Ground Floor Elevation
--	--	------------------------

OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division. <u>Lacey Granillo</u> 9/26/24 Signature Date Lacey Granillo Printed Name <u>lgranillo@logosresourcesllc.com</u> E-mail Address	SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.  JASON C. EDWARDS Signature and Seal of Professional Surveyor Certificate Number 15269 Date of Survey JUNE 22, 2022
---	---

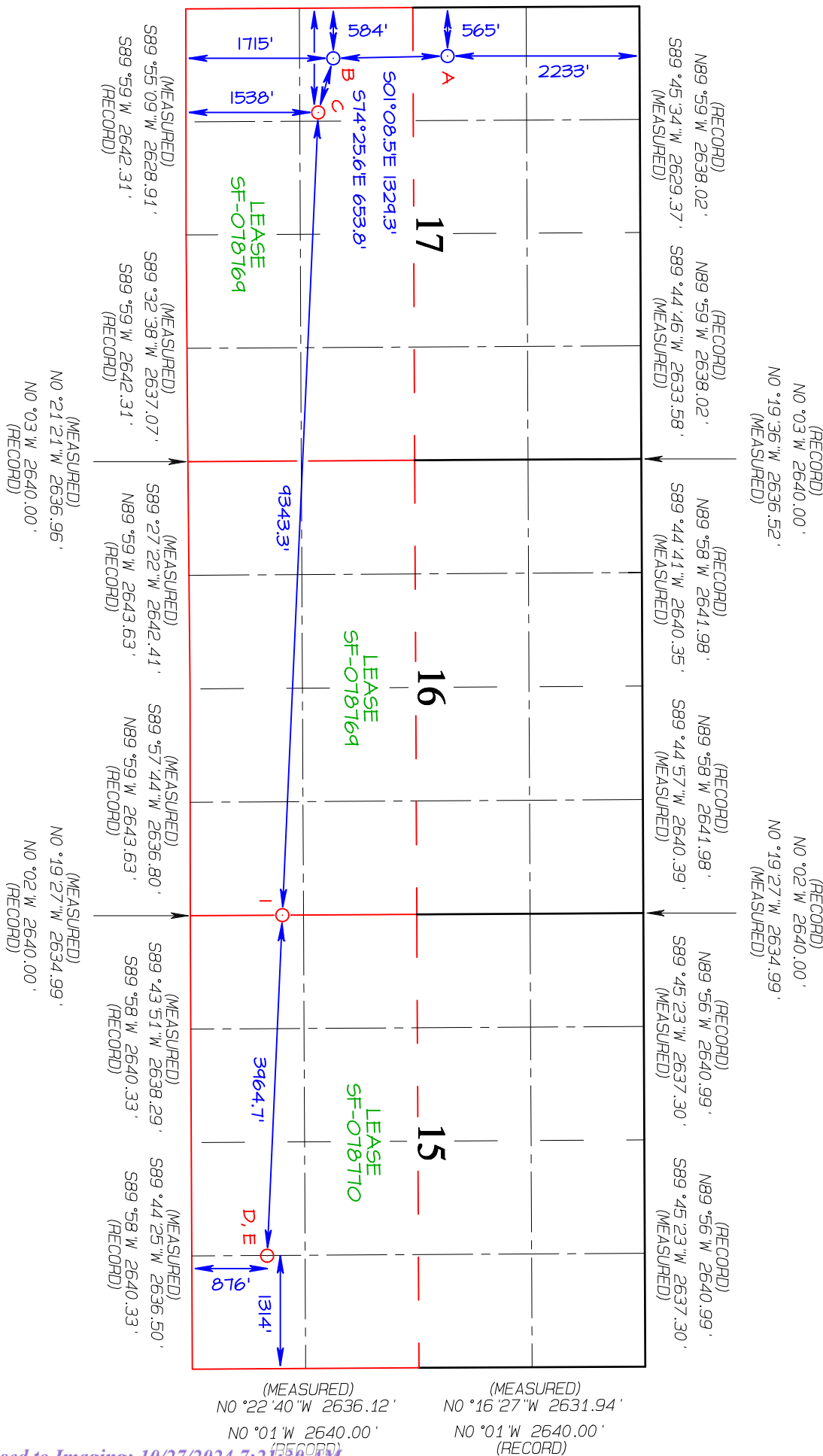
4 11:24:20 AM (RECORD)
 NO *03' W 2640.00' NO *03' W 2640.00'
 NO *18' 19" W 2640.84' NO *18' 43" W 2634.63'
 (MEASURED) 123' (MEASURED)

SURFACE LOCATION (A)		KICK OFF POINT (B)		FIRST TAKE POINT (C)		LAST TAKE POINT (D)		BOTTOM HOLE LOCATION (E)	
2233' FNL	565' FWL	1715' FSL	584' FWL	1338' FSL	1213' FWL	876' FSL	1314' FEL	876' FSL	1314' FEL
SECTION 17, T34N R5W		SECTION 17, T34N R5W		SECTION 17, T34N R5W		SECTION 15, T34N R5W		SECTION 15, T34N R5W	
LAT 36.900643 °N		LAT 36.896992 °N		LAT 36.896502 °N		LAT 36.894693 °N		LAT 36.894693 °N	
LONG -107.392186 °W		LONG -107.392146 °W		LONG -107.389665 °W		LONG -107.344511 °W		LONG -107.344511 °W	
DATE: NAD1927		DATE: NAD1927		DATE: NAD1927		DATE: NAD1927		DATE: NAD1927	
LAT 36.900649 °N		LAT 36.896998 °N		LAT 36.896508 °N		LAT 36.894699 °N		LAT 36.894699 °N	
LONG -107.392788 °W		LONG -107.392719 °W		LONG -107.390568 °W		LONG -107.345112 °W		LONG -107.345112 °W	
DATE: NAD1983		DATE: NAD1983		DATE: NAD1983		DATE: NAD1983		DATE: NAD1983	



4 11:24:20 AM (RECORD)
 NO °03'W 2640.00' NO °03'W 2640.00'
 NO °18'19"W 2640.84' NO °18'43"W 2634.63'
 (MEASURED) 1213' (MEASURED)

SURFACE LOCATION (A)	KICK OFF POINT (B)	FIRST TAKE POINT (C)	LEASE X-ING (1)	LAST TAKE POINT (D)	BOTTOM HOLE LOCATION (E)
2233' FNL 565' FWL SECTION 17, T31N, R5W	1715' FSL 584' FWL SECTION 17, T31N, R5W	1538' FSL 1213' FWL SECTION 17, T31N, R5W	1071' FSL 0' FEL SECTION 16, T31N, R5W	876' FSL 1314' FEL SECTION 15, T31N, R5W	876' FSL 1314' FEL SECTION 15, T31N, R5W
LAT 36.900643 °N LONG -107.392186 °W DATUM: NAD1927	LAT 36.896992 °N LONG -107.392116 °W DATUM: NAD1927	LAT 36.896502 °N LONG -107.389965 °W DATUM: NAD1927	LAT 36.895234 °N LONG -107.358052 °W DATUM: NAD1927	LAT 36.894693 °N LONG -107.344511 °W DATUM: NAD1927	LAT 36.894693 °N LONG -107.344511 °W DATUM: NAD1927
LAT 36.900649 °N LONG -107.392788 °W DATUM: NAD1983	LAT 36.896998 °N LONG -107.392719 °W DATUM: NAD1983	LAT 36.896508 °N LONG -107.390568 °W DATUM: NAD1983	LAT 36.895240 °N LONG -107.358654 °W DATUM: NAD1983	LAT 36.894699 °N LONG -107.345112 °W DATUM: NAD1983	LAT 36.894699 °N LONG -107.345112 °W DATUM: NAD1983



Logos Operating LLC

Rio Arriba, NM (NAD83)

Rosa Pad 26 - 5 Well

Rosa Unit #724H

OH

Prelim #1

Anticollision Report

30 August, 2024

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Reference	Prelim #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:	Max. Cent. Dist. of 99,999.00usft or Max. SF of 100	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	8/30/2024		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	20,789.49	Prelim #1 (OH)	MWD+HRGM+MS	MWD + HRGM + Multi-Station Correction	

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						
Rosa Pad 26						
(O) RU 009C - OH - OH-SVY+INC	0.00	0.00	13,304.98			
(O) RU 009C - OH - OH-SVY+INC	400.00	300.03	13,307.65	13,303.18	2,979.968	ES
(O) RU 009C - OH - OH-SVY+INC	7,250.00	6,990.23	14,841.46	14,704.48	108.351	SF
(O) RU 012D - OH - OH-SVY	558.70	540.00	14,756.41	14,753.22	4,632.244	CC
(O) RU 012D - OH - OH-SVY	600.00	568.00	14,756.45	14,753.02	4,302.090	ES
(O) RU 012D - OH - OH-SVY	7,150.00	7,100.91	15,185.06	15,127.85	265.439	SF
(O) RU 016D - OH - OH-SVY	4,768.42	4,959.19	12,197.62	12,025.24	70.759	CC
(O) RU 016D - OH - OH-SVY	6,550.00	6,684.08	12,208.52	11,807.50	30.443	ES
(O) RU 016D - OH - OH-SVY	7,300.00	7,209.67	12,660.14	12,189.60	26.905	SF
(O) RU 020D - OH - OH-SVY	4,597.09	5,036.35	9,475.00	9,432.26	221.709	CC
(O) RU 020D - OH - OH-SVY	4,600.00	5,037.13	9,475.00	9,432.25	221.634	ES
(O) RU 020D - OH - OH-SVY	6,800.00	6,735.51	9,632.04	9,580.02	185.187	SF
(O) RU 020D - ST01 - ST01-SVY	4,577.50	5,022.00	9,476.65	9,436.67	237.040	CC
(O) RU 020D - ST01 - ST01-SVY	5,900.00	6,228.66	9,489.85	9,433.72	169.066	ES
(O) RU 020D - ST01 - ST01-SVY	6,900.00	7,074.18	9,638.85	9,574.91	150.729	SF
(O) RU 022B - OH - OH-SVY	0.00	127.47	2,263.51			
(O) RU 022B - OH - OH-SVY	200.00	316.28	2,264.67	2,260.84	591.684	ES
(O) RU 022B - OH - OH-SVY	7,050.00	7,020.02	4,201.94	3,776.11	9.868	SF
(O) RU 030B - OH - OH-INC	500.00	656.01	6,908.23	6,899.25	769.259	CC
(O) RU 030B - OH - OH-INC	700.00	859.88	6,910.78	6,897.25	510.689	ES
(O) RU 030B - OH - OH-INC	7,000.00	6,933.88	7,698.12	7,513.16	41.621	SF
(O) RU 031 - OH - OH-TD	500.00	371.00	1,678.55	1,660.67	93.916	CC
(O) RU 031 - OH - OH-TD	700.00	570.84	1,683.26	1,655.99	61.731	ES
(O) RU 031 - OH - OH-TD	6,300.00	5,973.00	2,716.31	2,431.27	9.530	SF
(O) RU 031A - OH - OH-INC	5,050.56	4,917.21	630.59	509.11	5.191	CC
(O) RU 031A - OH - OH-INC	5,300.00	5,159.65	633.31	505.53	4.956	ES
(O) RU 031A - OH - OH-INC	6,200.00	6,034.41	686.08	536.07	4.573	SF
(O) RU 031B - OH - OH-INC	500.00	485.00	1,667.60	1,659.24	199.349	CC
(O) RU 031B - OH - OH-INC	600.00	585.06	1,669.35	1,658.54	154.416	ES
(O) RU 031B - OH - OH-INC	7,050.00	6,794.57	3,136.57	2,966.64	18.458	SF
(O) RU 046A - OH - OH-SVY	147.69	8.41	3,161.22	3,160.71	6,142.996	CC
(O) RU 046A - OH - OH-SVY	500.00	321.00	3,162.01	3,156.80	606.136	ES
(O) RU 046A - OH - OH-SVY	11,300.00	7,190.57	5,166.72	5,055.80	46.583	SF
(O) RU 065 - OH - OH-INC	10,537.93	6,913.96	2,768.72	2,510.03	10.703	CC, ES
(O) RU 065 - OH - OH-INC	10,800.00	6,913.76	2,781.09	2,520.14	10.658	SF
(O) RU 066 - OH - OH-INC	4,957.85	4,862.84	8,081.45	7,951.78	62.321	CC
(O) RU 066 - OH - OH-INC	6,500.00	6,371.65	8,090.33	7,887.16	39.819	ES

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

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						
Rosa Pad 26						
(O) RU 066 - OH - OH-INC	7,100.00	6,872.00	8,366.59	8,135.84	36.259	SF
(O) RU 066M - OH - OH-SVY	0.00	0.00	6,537.15			
(O) RU 066M - OH - OH-SVY	2,500.00	2,424.77	6,551.63	6,512.24	166.315	ES
(O) RU 066M - OH - OH-SVY	6,700.00	5,147.00	7,091.26	6,868.85	31.884	SF
(O) RU 067 - OH - OH-INC	500.00	535.01	10,409.63	10,400.63	1,157.456	CC
(O) RU 067 - OH - OH-INC	1,300.00	1,325.35	10,419.49	10,392.31	383.373	ES
(O) RU 067 - OH - OH-INC	7,100.00	6,872.87	10,899.19	10,734.28	66.090	SF
(O) RU 068 - OH - OH-INC	5,956.48	5,797.74	202.72	63.74	1.459	Level 3, CC
(O) RU 068 - OH - OH-INC	6,000.00	5,840.03	202.98	62.90	1.449	Level 3, ES
(O) RU 068 - OH - OH-INC	6,100.00	5,937.26	205.72	63.21	1.444	Level 3, SF
(O) RU 119 - OH - OH-INC	6,517.95	6,359.57	3,453.44	3,249.45	16.929	CC
(O) RU 119 - OH - OH-INC	6,550.00	6,403.69	3,454.22	3,248.11	16.759	ES
(O) RU 119 - OH - OH-INC	6,900.00	6,709.80	3,561.65	3,340.41	16.099	SF
(O) RU 125 - OH - OH-INC	504.90	674.89	5,742.55	5,729.54	441.242	CC
(O) RU 125 - OH - OH-INC	800.00	961.39	5,746.50	5,726.84	292.363	ES
(O) RU 125 - OH - OH-INC	7,100.00	7,044.15	6,498.47	6,256.94	26.905	SF
(O) RU 125E - OH - OH-INC	6,154.14	6,025.39	5,435.05	5,261.83	31.375	CC
(O) RU 125E - OH - OH-INC	6,500.00	6,361.97	5,435.75	5,249.19	29.138	ES
(O) RU 125E - OH - OH-INC	7,000.00	6,796.03	5,631.16	5,428.72	27.817	SF
(O) RU 153B - OH - OH-INC	10,921.10	6,946.35	1,252.32	922.88	3.801	CC, ES, SF
(O) RU 153C - OH - OH-SVY	565.71	483.03	1,621.31	1,615.45	276.771	CC, ES
(O) RU 153C - OH - OH-SVY	9,400.00	7,210.68	2,176.97	2,016.98	13.606	SF
(O) RU 181D - OH - OH-SVY	444.99	383.00	14,927.49	14,925.30	6,815.953	CC
(O) RU 181D - OH - OH-SVY	500.00	414.00	14,927.54	14,925.04	5,974.891	ES
(O) RU 181D - OH - OH-SVY	7,050.00	6,867.26	16,374.45	16,313.54	268.833	SF
(O) RU 207 - OH - OH-INC	3,200.00	3,038.00	728.77	659.68	10.548	SF
(O) RU 207 - OH - OH-INC	3,240.78	3,038.00	727.63	658.73	10.561	CC, ES
(O) RU 207A - OH - OH-INC	500.00	486.00	910.36	902.59	117.256	CC
(O) RU 207A - OH - OH-INC	600.00	585.98	912.08	901.94	89.953	ES
(O) RU 207A - OH - OH-INC	2,900.00	2,809.00	1,390.93	1,325.18	21.154	SF
(O) RU 251 - OH - OH-TD	10,339.41	6,914.85	1,978.87	1,615.01	5.439	CC, ES
(O) RU 251 - OH - OH-TD	10,400.00	6,914.81	1,979.79	1,615.51	5.435	SF
(O) RU 374 - OH - OH-INC	14,370.62	3,574.00	4,703.89	4,534.51	27.772	CC
(O) RU 374 - OH - OH-INC	14,400.00	3,574.00	4,703.98	4,534.35	27.731	ES
(O) RU 374 - OH - OH-INC	15,700.00	3,574.00	4,888.13	4,706.00	26.838	SF
Rosa Pad 26 - 5 Well						
Rosa Unit #712H - OH - Prelim #1	500.00	500.00	79.92	76.55	23.718	CC, ES
Rosa Unit #712H - OH - Prelim #1	700.00	693.72	93.41	88.67	19.684	SF
Rosa Unit #714H - OH - Prelim 1	500.00	500.00	60.00	56.63	17.806	CC, ES
Rosa Unit #714H - OH - Prelim 1	800.00	800.89	70.40	64.98	13.001	SF
Rosa Unit #720H - OH - Prelim #1	500.00	500.00	40.00	36.63	11.870	CC, ES
Rosa Unit #720H - OH - Prelim #1	20,789.75	20,808.89	3,597.34	3,148.39	8.013	SF
Rosa Unit #722H - OH - Prelim #1	500.00	500.00	20.00	16.63	5.935	CC, ES
Rosa Unit #722H - OH - Prelim #1	20,789.75	20,626.08	1,804.46	1,355.51	4.019	SF

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 009C - OH - OH-SVY+INC													Offset Site Error:	0.00 usft
Survey Program: 300-MWD OWSG Rev5, 8115-A027Ua, INC-ONLY													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis	Rule Assigned:											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	-78.49	2,655.65	-13,037.13	13,304.98					
100.00	100.00	100.42	100.42	0.25	1.06	-78.49	2,656.01	-13,037.27	13,305.19	13,303.88	1.30	N/A		
200.00	200.00	164.79	164.79	0.61	1.73	-78.48	2,656.62	-13,037.51	13,305.74	13,303.40	2.33	5,701.222		
300.00	300.00	229.15	229.14	0.97	2.41	-78.48	2,657.53	-13,037.86	13,306.56	13,303.19	3.37	3,953.576		
400.00	400.00	300.03	300.00	1.33	3.16	-78.47	2,658.87	-13,038.39	13,307.65	13,303.18	4.47	2,979.968 ES		
500.00	500.00	364.00	363.95	1.68	3.33	-78.47	2,660.39	-13,038.98	13,309.00	13,304.02	4.98	2,672.084		
600.00	599.98	421.00	420.93	2.03	3.39	102.38	2,661.67	-13,039.70	13,311.03	13,305.66	5.37	2,480.581		
700.00	699.84	452.00	451.93	2.36	3.43	102.32	2,662.10	-13,040.18	13,314.11	13,308.38	5.73	2,325.070		
800.00	799.45	482.00	481.92	2.71	3.46	102.25	2,662.36	-13,040.86	13,318.47	13,312.37	6.10	2,183.132		
900.00	898.70	512.00	511.90	3.06	3.50	102.15	2,662.49	-13,041.83	13,324.21	13,317.72	6.49	2,052.613		
1,000.00	997.47	525.24	525.13	3.43	3.51	102.02	2,662.50	-13,042.33	13,331.22	13,324.34	6.88	1,938.450		
1,100.00	1,095.62	542.00	541.88	3.82	3.53	101.87	2,662.51	-13,043.06	13,339.57	13,332.29	7.28	1,831.326		
1,180.06	1,173.69	556.10	555.96	4.14	3.55	101.73	2,662.49	-13,043.75	13,347.22	13,339.59	7.63	1,749.960		
1,200.00	1,193.07	559.15	559.00	4.22	3.55	101.74	2,662.49	-13,043.91	13,349.24	13,341.53	7.71	1,730.597		
1,300.00	1,290.27	572.00	571.83	4.65	3.57	101.75	2,662.45	-13,044.63	13,359.77	13,351.62	8.15	1,639.280		
1,400.00	1,387.46	602.00	601.77	5.08	3.61	101.78	2,662.27	-13,046.58	13,370.96	13,362.33	8.63	1,550.205		
1,500.00	1,484.66	602.00	601.77	5.52	3.61	101.78	2,662.27	-13,046.58	13,382.71	13,373.65	9.06	1,477.797		
1,600.00	1,581.85	633.00	632.68	5.97	3.66	101.80	2,662.02	-13,048.95	13,395.10	13,385.55	9.55	1,403.254		
1,700.00	1,679.05	633.00	632.68	6.42	3.66	101.80	2,662.02	-13,048.95	13,408.09	13,398.11	9.98	1,342.990		
1,800.00	1,776.25	663.00	662.57	6.87	3.70	101.83	2,661.76	-13,051.54	13,421.65	13,411.17	10.48	1,280.814		
1,900.00	1,873.44	679.38	678.87	7.33	3.73	101.84	2,661.60	-13,053.08	13,435.83	13,424.87	10.95	1,226.602		
2,000.00	1,970.64	693.00	692.42	7.78	3.76	101.86	2,661.46	-13,054.45	13,450.63	13,439.20	11.42	1,177.401		
2,100.00	2,067.83	722.00	721.26	8.24	3.81	101.88	2,661.26	-13,057.52	13,466.01	13,454.08	11.93	1,128.959		
2,200.00	2,165.03	722.00	721.26	8.71	3.81	101.88	2,661.26	-13,057.52	13,482.01	13,469.63	12.37	1,089.752		
2,300.00	2,262.22	753.00	752.05	9.17	3.88	101.91	2,661.26	-13,061.15	13,498.63	13,485.74	12.89	1,047.304		
2,400.00	2,359.42	753.00	752.05	9.63	3.88	101.91	2,661.26	-13,061.15	13,515.85	13,502.51	13.33	1,013.759		
2,500.00	2,456.61	783.00	781.79	10.10	3.96	101.94	2,661.50	-13,065.00	13,533.73	13,519.87	13.85	976.994		
2,600.00	2,553.81	783.00	781.79	10.57	3.96	101.94	2,661.50	-13,065.00	13,552.16	13,537.87	14.29	948.055		
2,700.00	2,651.01	814.00	812.49	11.03	4.04	101.97	2,661.96	-13,069.31	13,571.25	13,556.43	14.82	915.724		
2,800.00	2,748.20	814.00	812.49	11.50	4.04	101.97	2,661.96	-13,069.31	13,590.88	13,575.62	15.26	890.578		
2,900.00	2,845.40	844.00	842.14	11.97	4.12	101.99	2,662.32	-13,073.88	13,611.18	13,595.39	15.79	862.116		
3,000.00	2,942.59	844.00	842.14	12.44	4.12	101.99	2,662.32	-13,073.88	13,632.02	13,615.79	16.23	840.116		
3,100.00	3,039.79	875.00	872.71	12.91	4.21	102.02	2,662.44	-13,079.03	13,653.51	13,636.75	16.76	814.655		
3,200.00	3,136.98	875.00	872.71	13.38	4.21	102.02	2,662.44	-13,079.03	13,675.53	13,658.33	17.20	795.298		
3,300.00	3,234.18	875.00	872.71	13.85	4.21	102.02	2,662.44	-13,079.03	13,698.24	13,680.61	17.63	777.009		
3,400.00	3,331.38	905.00	902.18	14.32	4.31	102.04	2,662.35	-13,084.64	13,721.60	13,703.43	18.17	755.116		
3,500.00	3,428.57	905.00	902.18	14.79	4.31	102.04	2,662.35	-13,084.64	13,745.49	13,726.89	18.60	738.912		
3,600.00	3,525.77	905.00	902.18	15.26	4.31	102.04	2,662.35	-13,084.64	13,770.06	13,751.03	19.03	723.547		
3,700.00	3,622.96	936.00	932.51	15.73	4.41	102.07	2,661.93	-13,091.01	13,795.19	13,775.62	19.57	704.752		
3,800.00	3,720.16	950.78	946.94	16.20	4.46	102.08	2,661.61	-13,094.18	13,820.86	13,800.81	20.05	689.249		
3,900.00	3,817.35	967.00	962.76	16.68	4.51	102.09	2,661.19	-13,097.74	13,847.09	13,826.55	20.53	674.388		
4,000.00	3,914.55	997.00	991.97	17.15	4.60	102.11	2,660.48	-13,104.55	13,873.89	13,852.83	21.06	658.721		
4,100.00	4,011.74	997.00	991.97	17.62	4.60	102.11	2,660.48	-13,104.55	13,901.20	13,879.72	21.48	647.104		
4,200.00	4,108.94	1,027.00	1,021.11	18.09	4.70	102.13	2,659.88	-13,111.64	13,929.10	13,907.09	22.01	632.808		
4,300.00	4,206.14	1,027.00	1,021.11	18.57	4.70	102.13	2,659.88	-13,111.64	13,957.53	13,935.10	22.43	622.324		
4,400.00	4,303.33	1,043.21	1,036.81	19.04	4.76	102.14	2,659.51	-13,115.64	13,986.53	13,963.62	22.91	610.537		
4,500.00	4,400.53	1,058.00	1,051.11	19.51	4.82	102.15	2,659.08	-13,119.44	14,016.13	13,992.75	23.38	599.438		
4,600.00	4,497.72	1,058.00	1,051.11	19.99	4.82	102.15	2,659.08	-13,119.44	14,046.31	14,022.52	23.79	590.368		
4,700.00	4,594.92	1,089.00	1,080.96	20.46	4.93	102.17	2,658.00	-13,127.71	14,076.99	14,052.65	24.33	578.490		
4,800.00	4,692.11	1,089.00	1,080.96	20.93	4.93	102.17	2,658.00	-13,127.71	14,108.25	14,083.51	24.74	570.254		
4,900.00	4,789.31	1,119.00	1,109.73	21.41	5.05	102.18	2,656.92	-13,136.17	14,140.10	14,114.83	25.28	559.442		
5,000.00	4,886.51	1,119.00	1,109.73	21.88	5.05	102.18	2,656.92	-13,136.17	14,172.43	14,146.76	25.68	551.941		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 009C - OH - OH-SVY+INC											Offset Site Error:	0.00 usft
Survey Program: 300-MWD OWSG Rev5, 8115-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
5,100.00	4,983.70	1,119.00	1,109.73	22.35	5.05	102.18	2,656.92	-13,136.17	14,205.40	14,179.32	26.08	544.744
5,200.00	5,080.90	1,150.00	1,139.30	22.83	5.17	102.20	2,655.93	-13,145.40	14,238.94	14,212.32	26.62	534.928
5,300.00	5,178.09	1,150.00	1,139.30	23.30	5.17	102.20	2,655.93	-13,145.40	14,272.94	14,245.93	27.01	528.354
5,400.00	5,275.29	1,199.11	1,186.00	23.77	5.35	102.23	2,654.33	-13,160.51	14,307.46	14,279.82	27.63	517.802
5,500.00	5,372.48	1,245.00	1,229.56	24.25	5.53	102.25	2,652.46	-13,174.82	14,342.22	14,313.98	28.24	507.938
5,600.00	5,469.68	1,245.00	1,229.56	24.72	5.53	102.25	2,652.46	-13,174.82	14,377.46	14,348.83	28.63	502.244
5,700.00	5,566.87	1,277.00	1,259.84	25.20	5.66	102.26	2,651.24	-13,185.11	14,413.21	14,384.04	29.17	494.094
5,800.00	5,664.07	1,277.00	1,259.84	25.67	5.66	102.26	2,651.24	-13,185.11	14,449.45	14,419.90	29.56	488.867
5,900.00	5,761.27	1,277.00	1,259.84	26.14	5.66	102.26	2,651.24	-13,185.11	14,486.30	14,456.35	29.94	483.833
6,000.00	5,858.46	1,308.00	1,289.03	26.62	5.79	102.28	2,650.32	-13,195.51	14,523.62	14,493.14	30.48	476.445
6,043.74	5,900.97	6,073.83	5,947.13	26.83	80.31	106.11	2,663.73	-13,822.18	14,376.48	14,269.83	106.65	134.798
6,100.00	5,955.66	6,123.88	5,997.18	27.09	81.75	106.16	2,663.73	-13,822.22	14,380.30	14,271.96	108.35	132.724
6,200.00	6,052.85	6,212.86	6,086.14	27.57	84.30	106.24	2,663.71	-13,822.35	14,387.17	14,275.81	111.36	129.195
6,300.00	6,150.05	6,301.83	6,175.11	28.04	86.85	106.32	2,663.68	-13,822.53	14,394.13	14,279.75	114.37	125.853
6,400.00	6,247.24	6,390.82	6,264.08	28.52	89.40	106.40	2,663.64	-13,822.76	14,401.17	14,283.79	117.39	122.683
6,490.87	6,335.57	6,471.69	6,344.94	28.95	91.72	106.47	2,663.60	-13,823.02	14,407.66	14,287.53	120.12	119.940
6,500.00	6,344.44	6,479.81	6,353.06	28.99	91.95	109.86	2,663.59	-13,823.05	14,408.37	14,287.98	120.40	119.672
6,550.00	6,392.91	6,524.18	6,397.43	29.23	93.23	127.13	2,663.57	-13,823.22	14,414.57	14,292.68	121.90	118.251
6,600.00	6,440.98	6,568.17	6,441.41	29.46	94.49	140.84	2,663.54	-13,823.39	14,424.57	14,301.19	123.38	116.913
6,650.00	6,488.34	6,611.49	6,484.72	29.70	95.73	150.97	2,663.51	-13,823.58	14,438.29	14,313.46	124.83	115.664
6,700.00	6,534.69	6,653.87	6,527.10	29.92	96.94	158.43	2,663.48	-13,823.78	14,455.66	14,329.42	126.24	114.508
6,750.00	6,579.76	6,695.05	6,568.27	30.15	98.13	164.09	2,663.44	-13,823.98	14,476.56	14,348.95	127.61	113.447
6,800.00	6,623.27	6,734.78	6,607.99	30.36	99.27	168.56	2,663.41	-13,824.19	14,500.86	14,371.94	128.92	112.484
6,850.00	6,664.95	6,772.80	6,646.01	30.57	100.36	172.28	2,663.38	-13,824.40	14,528.40	14,398.24	130.16	111.620
6,900.00	6,704.53	6,808.88	6,682.08	30.78	101.39	175.54	2,663.34	-13,824.61	14,559.03	14,427.70	131.33	110.858
6,950.00	6,741.79	6,842.80	6,715.99	30.98	102.36	178.55	2,663.31	-13,824.81	14,592.54	14,460.11	132.42	110.196
7,000.00	6,776.48	6,874.34	6,747.53	31.17	103.27	-178.48	2,663.28	-13,825.01	14,628.72	14,495.29	133.43	109.637
7,050.00	6,808.39	6,903.32	6,776.50	31.36	104.10	-175.40	2,663.25	-13,825.20	14,667.36	14,533.02	134.34	109.179
7,100.00	6,837.34	6,929.54	6,802.72	31.54	104.85	-171.99	2,663.22	-13,825.37	14,708.21	14,573.06	135.16	108.822
7,150.00	6,863.13	6,952.86	6,826.04	31.73	105.52	-168.01	2,663.20	-13,825.53	14,751.02	14,615.15	135.87	108.566
7,200.00	6,885.61	6,973.13	6,846.31	31.91	106.10	-163.10	2,663.17	-13,825.67	14,795.53	14,659.05	136.48	108.410
7,250.00	6,904.64	6,990.23	6,863.40	32.10	106.59	-156.70	2,663.15	-13,825.79	14,841.46	14,704.48	136.98	108.351 SF
7,300.00	6,920.10	7,004.05	6,877.22	32.29	106.99	-148.01	2,663.14	-13,825.89	14,888.52	14,751.16	137.36	108.390
7,350.00	6,931.91	7,014.51	6,887.67	32.48	107.29	-135.95	2,663.13	-13,825.97	14,936.44	14,798.81	137.63	108.524
7,400.00	6,939.97	7,021.55	6,894.71	32.68	107.49	-119.68	2,663.12	-13,826.02	14,984.91	14,847.11	137.79	108.750
7,450.00	6,944.26	7,025.12	6,898.29	32.89	107.59	-100.31	2,663.11	-13,826.05	15,033.63	14,895.79	137.84	109.067
7,481.69	6,945.00	7,025.59	6,898.75	33.03	107.61	-88.12	2,663.11	-13,826.05	15,064.51	14,926.70	137.81	109.314
7,500.00	6,944.99	7,025.45	6,898.62	33.12	107.60	-88.12	2,663.11	-13,826.05	15,082.33	14,944.55	137.78	109.467
7,600.00	6,944.91	7,024.71	6,897.88	33.60	107.58	-88.11	2,663.11	-13,826.05	15,179.69	15,042.07	137.62	110.299
7,700.00	6,944.84	7,023.98	6,897.14	34.17	107.56	-88.09	2,663.11	-13,826.04	15,277.08	15,139.61	137.47	111.128
7,800.00	6,944.76	7,023.24	6,896.40	34.80	107.54	-88.08	2,663.12	-13,826.04	15,374.51	15,237.18	137.33	111.954
7,900.00	6,944.69	7,022.51	6,895.67	35.49	107.52	-88.07	2,663.12	-13,826.03	15,471.97	15,334.78	137.19	112.778
8,000.00	6,944.61	7,021.77	6,894.93	36.25	107.50	-88.06	2,663.12	-13,826.02	15,569.46	15,432.40	137.06	113.599
8,100.00	6,944.54	7,021.04	6,894.20	37.07	107.48	-88.05	2,663.12	-13,826.02	15,666.98	15,530.05	136.93	114.418
8,200.00	6,944.46	7,020.30	6,893.47	37.94	107.45	-88.03	2,663.12	-13,826.01	15,764.54	15,627.73	136.81	115.233
8,300.00	6,944.39	7,019.57	6,892.74	38.86	107.43	-88.02	2,663.12	-13,826.01	15,862.12	15,725.43	136.69	116.046
8,400.00	6,944.31	7,018.84	6,892.01	39.83	107.41	-88.01	2,663.12	-13,826.00	15,959.73	15,823.16	136.58	116.856
8,500.00	6,944.23	7,018.11	6,891.28	40.84	107.39	-88.00	2,663.12	-13,826.00	16,057.38	15,920.91	136.47	117.664
8,600.00	6,944.16	7,017.38	6,890.55	41.89	107.37	-87.99	2,663.12	-13,825.99	16,155.05	16,018.68	136.37	118.468
8,700.00	6,944.08	7,016.65	6,889.82	42.98	107.35	-87.97	2,663.12	-13,825.99	16,252.75	16,116.48	136.27	119.270
8,800.00	6,944.01	7,015.93	6,889.09	44.10	107.33	-87.96	2,663.12	-13,825.98	16,350.48	16,214.30	136.18	120.069
8,900.00	6,943.93	7,015.20	6,888.37	45.25	107.31	-87.95	2,663.12	-13,825.98	16,448.23	16,312.14	136.09	120.865

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 009C - OH - OH-SVY+INC											Offset Site Error:	0.00 usft
Survey Program: 300-MWD OWSG Rev5, 8115-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
9,000.00	6,943.86	7,014.47	6,887.64	46.43	107.29	-87.94	2,663.13	-13,825.97	16,546.01	16,410.01	136.00	121.658
9,100.00	6,943.78	7,013.75	6,886.92	47.63	107.27	-87.93	2,663.13	-13,825.97	16,643.82	16,507.90	135.93	122.448
9,200.00	6,943.71	7,013.03	6,886.19	48.86	107.25	-87.91	2,663.13	-13,825.96	16,741.66	16,605.80	135.85	123.235
9,300.00	6,943.63	7,012.30	6,885.47	50.11	107.23	-87.90	2,663.13	-13,825.95	16,839.51	16,703.73	135.78	124.020
9,400.00	6,943.56	7,011.58	6,884.75	51.38	107.20	-87.89	2,663.13	-13,825.95	16,937.40	16,801.68	135.72	124.801
9,500.00	6,943.48	7,010.86	6,884.03	52.66	107.18	-87.88	2,663.13	-13,825.94	17,035.31	16,899.65	135.65	125.580
9,600.00	6,943.41	7,010.14	6,883.31	53.97	107.16	-87.87	2,663.13	-13,825.94	17,133.24	16,997.65	135.60	126.355
9,700.00	6,943.33	7,009.42	6,882.59	55.29	107.14	-87.85	2,663.13	-13,825.93	17,231.20	17,095.66	135.54	127.128
9,800.00	6,943.26	7,008.70	6,881.87	56.63	107.12	-87.84	2,663.13	-13,825.93	17,329.18	17,193.69	135.49	127.898
9,900.00	6,943.18	7,007.99	6,881.15	57.98	107.10	-87.83	2,663.13	-13,825.92	17,427.18	17,291.74	135.45	128.665
10,000.00	6,943.11	7,007.27	6,880.44	59.34	107.08	-87.82	2,663.13	-13,825.92	17,525.21	17,389.80	135.40	129.429
10,100.00	6,943.03	7,006.56	6,879.72	60.72	107.06	-87.81	2,663.13	-13,825.91	17,623.26	17,487.89	135.37	130.190
10,200.00	6,942.96	7,005.84	6,879.01	62.11	107.04	-87.79	2,663.14	-13,825.91	17,721.32	17,585.99	135.33	130.948
10,300.00	6,942.88	7,005.13	6,878.29	63.50	107.02	-87.78	2,663.14	-13,825.90	17,819.42	17,684.12	135.30	131.704
10,400.00	6,942.81	7,004.41	6,877.58	64.91	107.00	-87.77	2,663.14	-13,825.90	17,917.53	17,782.26	135.27	132.457
10,500.00	6,942.73	7,003.70	6,876.87	66.33	106.98	-87.76	2,663.14	-13,825.89	18,015.66	17,880.41	135.25	133.206
10,600.00	6,942.66	7,002.99	6,876.16	67.75	106.96	-87.75	2,663.14	-13,825.89	18,113.81	17,978.59	135.22	133.953
10,700.00	6,942.58	7,002.28	6,875.45	69.18	106.94	-87.74	2,663.14	-13,825.88	18,211.99	18,076.78	135.21	134.697
10,800.00	6,942.51	7,001.57	6,874.74	70.62	106.92	-87.72	2,663.14	-13,825.88	18,310.18	18,174.99	135.19	135.439
10,900.00	6,942.43	7,000.86	6,874.03	72.07	106.90	-87.71	2,663.14	-13,825.87	18,408.39	18,273.21	135.18	136.177
11,000.00	6,942.36	7,000.16	6,873.32	73.52	106.88	-87.70	2,663.14	-13,825.87	18,506.62	18,371.45	135.17	136.913
11,100.00	6,942.28	6,999.45	6,872.62	74.98	106.86	-87.69	2,663.14	-13,825.86	18,604.87	18,469.71	135.16	137.646
11,200.00	6,942.21	6,998.74	6,871.91	76.45	106.84	-87.68	2,663.14	-13,825.86	18,703.14	18,567.98	135.16	138.376
11,300.00	6,942.13	6,998.04	6,871.21	77.92	106.82	-87.66	2,663.14	-13,825.85	18,801.43	18,666.27	135.16	139.104
11,400.00	6,942.06	6,997.33	6,870.50	79.40	106.80	-87.65	2,663.15	-13,825.85	18,899.74	18,764.57	135.16	139.828
11,500.00	6,941.98	6,996.63	6,869.80	80.88	106.78	-87.64	2,663.15	-13,825.84	18,998.06	18,862.89	135.17	140.551
11,600.00	6,941.91	6,995.93	6,869.10	82.36	106.76	-87.63	2,663.15	-13,825.84	19,096.40	18,961.22	135.18	141.270
11,700.00	6,941.83	6,995.23	6,868.40	83.85	106.74	-87.62	2,663.15	-13,825.83	19,194.76	19,059.57	135.19	141.987
11,800.00	6,941.76	6,994.53	6,867.70	85.35	106.72	-87.61	2,663.15	-13,825.83	19,293.13	19,157.93	135.20	142.701
11,900.00	6,941.68	6,993.83	6,867.00	86.85	106.70	-87.60	2,663.15	-13,825.82	19,391.52	19,256.31	135.21	143.413
12,000.00	6,941.60	6,993.13	6,866.30	88.35	106.68	-87.58	2,663.15	-13,825.82	19,489.93	19,354.69	135.23	144.122
12,100.00	6,941.53	6,992.43	6,865.60	89.85	106.66	-87.57	2,663.15	-13,825.81	19,588.35	19,453.10	135.25	144.828
12,200.00	6,941.45	6,991.73	6,864.90	91.36	106.64	-87.56	2,663.15	-13,825.81	19,686.79	19,551.51	135.27	145.532
12,300.00	6,941.38	6,991.04	6,864.21	92.88	106.62	-87.55	2,663.15	-13,825.80	19,785.24	19,649.95	135.30	146.233
12,400.00	6,941.30	6,990.34	6,863.51	94.39	106.60	-87.54	2,663.15	-13,825.80	19,883.71	19,748.39	135.33	146.932
12,500.00	6,941.23	6,989.65	6,862.82	95.91	106.58	-87.53	2,663.15	-13,825.79	19,982.20	19,846.84	135.35	147.629
12,600.00	6,941.15	6,988.95	6,862.12	97.43	106.56	-87.51	2,663.16	-13,825.79	20,080.70	19,945.31	135.39	148.323
12,700.00	6,941.08	6,988.26	6,861.43	98.95	106.54	-87.50	2,663.16	-13,825.78	20,179.21	20,043.80	135.42	149.014
12,800.00	6,941.00	6,987.57	6,860.74	100.48	106.52	-87.49	2,663.16	-13,825.78	20,277.74	20,142.29	135.45	149.703
12,900.00	6,940.93	6,986.88	6,860.05	102.01	106.50	-87.48	2,663.16	-13,825.77	20,376.29	20,240.80	135.49	150.390
13,000.00	6,940.85	6,986.19	6,859.36	103.54	106.48	-87.47	2,663.16	-13,825.77	20,474.85	20,339.32	135.53	151.074
13,100.00	6,940.78	6,985.50	6,858.67	105.07	106.46	-87.46	2,663.16	-13,825.76	20,573.42	20,437.85	135.57	151.756
13,200.00	6,940.70	6,984.81	6,857.98	106.61	106.44	-87.45	2,663.16	-13,825.76	20,672.00	20,536.39	135.61	152.436
13,300.00	6,940.63	6,984.12	6,857.29	108.14	106.42	-87.43	2,663.16	-13,825.75	20,770.60	20,634.95	135.65	153.113
13,400.00	6,940.55	6,983.44	6,856.61	109.68	106.40	-87.42	2,663.16	-13,825.75	20,869.21	20,733.51	135.70	153.789
13,500.00	6,940.48	6,982.75	6,855.92	111.22	106.38	-87.41	2,663.16	-13,825.74	20,967.84	20,832.09	135.75	154.461
13,600.00	6,940.40	6,982.06	6,855.24	112.77	106.36	-87.40	2,663.16	-13,825.74	21,066.48	20,930.68	135.80	155.132
13,700.00	6,940.33	6,981.38	6,854.55	114.31	106.34	-87.39	2,663.16	-13,825.73	21,165.13	21,029.28	135.85	155.801
13,800.00	6,940.25	6,980.70	6,853.87	115.86	106.32	-87.38	2,663.16	-13,825.73	21,263.79	21,127.89	135.90	156.467
13,900.00	6,940.18	6,980.01	6,853.19	117.41	106.30	-87.37	2,663.17	-13,825.72	21,362.47	21,226.51	135.95	157.131
14,000.00	6,940.10	6,979.33	6,852.50	118.95	106.28	-87.36	2,663.17	-13,825.72	21,461.16	21,325.15	136.01	157.793
14,100.00	6,940.03	6,978.65	6,851.82	120.51	106.26	-87.34	2,663.17	-13,825.71	21,559.86	21,423.79	136.06	158.453

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 009C - OH - OH-SVY+INC											Offset Site Error:	0.00 usft
Survey Program: 300-MWD OWSG Rev5, 8115-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
14,200.00	6,939.95	6,977.97	6,851.14	122.06	106.24	-87.33	2,663.17	-13,825.71	21,658.57	21,522.45	136.12	159.111
14,300.00	6,939.88	6,977.29	6,850.46	123.61	106.22	-87.32	2,663.17	-13,825.70	21,757.29	21,621.11	136.18	159.766
14,400.00	6,939.80	6,976.61	6,849.79	125.17	106.20	-87.31	2,663.17	-13,825.70	21,856.03	21,719.79	136.24	160.420
14,500.00	6,939.73	6,975.94	6,849.11	126.72	106.18	-87.30	2,663.17	-13,825.69	21,954.77	21,818.47	136.30	161.072
14,600.00	6,939.65	6,975.26	6,848.43	128.28	106.16	-87.29	2,663.17	-13,825.69	22,053.53	21,917.17	136.37	161.721
14,700.00	6,939.58	6,974.58	6,847.75	129.84	106.14	-87.28	2,663.17	-13,825.68	22,152.30	22,015.87	136.43	162.369
14,800.00	6,939.50	6,973.91	6,847.08	131.40	106.12	-87.27	2,663.17	-13,825.68	22,251.08	22,114.58	136.50	163.014
14,900.00	6,939.43	6,973.23	6,846.41	132.96	106.10	-87.25	2,663.17	-13,825.67	22,349.87	22,213.31	136.56	163.658
15,000.00	6,939.35	6,972.56	6,845.73	134.52	106.09	-87.24	2,663.17	-13,825.67	22,448.68	22,312.04	136.63	164.300
15,100.00	6,939.28	6,971.89	6,845.06	136.08	106.07	-87.23	2,663.17	-13,825.66	22,547.49	22,410.79	136.70	164.940
15,200.00	6,939.20	6,971.21	6,844.39	137.64	106.05	-87.22	2,663.18	-13,825.66	22,646.31	22,509.54	136.77	165.577
15,300.00	6,939.13	6,970.54	6,843.72	139.21	106.03	-87.21	2,663.18	-13,825.65	22,745.14	22,608.30	136.84	166.214
15,400.00	6,939.05	6,969.87	6,843.05	140.77	106.01	-87.20	2,663.18	-13,825.65	22,843.99	22,707.07	136.92	166.848
15,500.00	6,938.98	6,969.20	6,842.38	142.34	105.99	-87.19	2,663.18	-13,825.65	22,942.84	22,805.85	136.99	167.480
15,600.00	6,938.90	6,968.53	6,841.71	143.91	105.97	-87.18	2,663.18	-13,825.64	23,041.70	22,904.64	137.06	168.111
15,700.00	6,938.82	6,967.87	6,841.04	145.47	105.95	-87.17	2,663.18	-13,825.64	23,140.58	23,003.44	137.14	168.739
15,800.00	6,938.75	6,967.20	6,840.37	147.04	105.93	-87.15	2,663.18	-13,825.63	23,239.46	23,102.24	137.21	169.366
15,900.00	6,938.67	6,966.53	6,839.71	148.61	105.91	-87.14	2,663.18	-13,825.63	23,338.35	23,201.06	137.29	169.991
16,000.00	6,938.60	6,965.87	6,839.04	150.18	105.89	-87.13	2,663.18	-13,825.62	23,437.25	23,299.88	137.37	170.615
16,100.00	6,938.52	6,965.20	6,838.38	151.75	105.87	-87.12	2,663.18	-13,825.62	23,536.16	23,398.71	137.45	171.237
16,200.00	6,938.45	6,964.54	6,837.71	153.32	105.86	-87.11	2,663.18	-13,825.61	23,635.08	23,497.55	137.53	171.857
16,300.00	6,938.37	6,963.88	6,837.05	154.90	105.84	-87.10	2,663.18	-13,825.61	23,734.01	23,596.40	137.61	172.475
16,400.00	6,938.30	6,963.21	6,836.39	156.47	105.82	-87.09	2,663.18	-13,825.60	23,832.95	23,695.26	137.69	173.091
16,500.00	6,938.22	6,962.55	6,835.73	158.04	105.80	-87.08	2,663.18	-13,825.60	23,931.89	23,794.12	137.77	173.706
16,600.00	6,938.15	6,961.89	6,835.07	159.62	105.78	-87.07	2,663.19	-13,825.59	24,030.85	23,892.99	137.86	174.320
16,700.00	6,938.07	6,961.23	6,834.41	161.19	105.76	-87.06	2,663.19	-13,825.59	24,129.81	23,991.87	137.94	174.931
16,800.00	6,938.00	6,960.57	6,833.75	162.77	105.74	-87.04	2,663.19	-13,825.59	24,228.78	24,090.76	138.02	175.541
16,900.00	6,937.92	6,959.91	6,833.09	164.34	105.72	-87.03	2,663.19	-13,825.58	24,327.77	24,189.66	138.11	176.150
17,000.00	6,937.85	6,959.26	6,832.43	165.92	105.70	-87.02	2,663.19	-13,825.58	24,426.75	24,288.56	138.19	176.756
17,100.00	6,937.77	6,958.60	6,831.78	167.50	105.68	-87.01	2,663.19	-13,825.57	24,525.75	24,387.47	138.28	177.362
17,200.00	6,937.70	6,957.94	6,831.12	169.07	105.67	-87.00	2,663.19	-13,825.57	24,624.76	24,486.39	138.37	177.965
17,300.00	6,937.62	1,027.00	1,021.11	170.65	4.70	-30.19	2,659.88	-13,111.64	24,753.15	24,711.79	41.36	598.468
17,400.00	6,937.55	1,027.00	1,021.11	172.23	4.70	-30.19	2,659.88	-13,111.64	24,849.16	24,807.64	41.52	598.460
17,500.00	6,937.47	1,027.00	1,021.11	173.81	4.70	-30.19	2,659.88	-13,111.64	24,945.21	24,903.53	41.68	598.452
17,600.00	6,937.40	1,027.00	1,021.11	175.39	4.70	-30.19	2,659.88	-13,111.64	25,041.29	24,999.45	41.84	598.446
17,700.00	6,937.32	1,027.00	1,021.11	176.97	4.70	-30.19	2,659.88	-13,111.64	25,137.40	25,095.39	42.00	598.440
17,800.00	6,937.25	1,027.00	1,021.11	178.55	4.70	-30.19	2,659.88	-13,111.64	25,233.54	25,191.37	42.17	598.435
17,900.00	6,937.17	1,027.00	1,021.11	180.13	4.70	-30.19	2,659.88	-13,111.64	25,329.71	25,287.38	42.33	598.432
18,000.00	6,937.10	1,027.00	1,021.11	181.71	4.70	-30.19	2,659.88	-13,111.64	25,425.91	25,383.42	42.49	598.430
18,100.00	6,937.02	1,027.00	1,021.11	183.29	4.70	-30.19	2,659.88	-13,111.64	25,522.13	25,479.49	42.65	598.429
18,200.00	6,936.95	1,027.00	1,021.11	184.87	4.70	-30.19	2,659.88	-13,111.64	25,618.39	25,575.58	42.81	598.430
18,300.00	6,936.87	1,027.00	1,021.11	186.46	4.70	-30.19	2,659.88	-13,111.64	25,714.68	25,671.71	42.97	598.432
18,400.00	6,936.80	1,027.00	1,021.11	188.04	4.70	-30.19	2,659.88	-13,111.64	25,810.99	25,767.86	43.13	598.436
18,500.00	6,936.72	1,027.00	1,021.11	189.62	4.70	-30.19	2,659.88	-13,111.64	25,907.33	25,864.04	43.29	598.442
18,600.00	6,936.65	1,027.00	1,021.11	191.21	4.70	-30.19	2,659.88	-13,111.64	26,003.70	25,960.25	43.45	598.449
18,700.00	6,936.57	1,012.92	1,007.44	192.79	4.66	-30.14	2,660.16	-13,108.28	26,100.06	26,056.47	43.59	598.825
18,800.00	6,936.50	1,010.60	1,005.19	194.37	4.65	-30.13	2,660.21	-13,107.73	26,196.47	26,152.73	43.74	598.887
18,900.00	6,936.42	997.00	991.97	195.96	4.60	-30.08	2,660.48	-13,104.55	26,292.93	26,249.05	43.88	599.204
19,000.00	6,936.35	997.00	991.97	197.54	4.60	-30.08	2,660.48	-13,104.55	26,389.38	26,345.34	44.04	599.210
19,100.00	6,936.27	997.00	991.97	199.13	4.60	-30.08	2,660.48	-13,104.55	26,485.86	26,441.66	44.20	599.219
19,200.00	6,936.19	997.00	991.97	200.71	4.60	-30.08	2,660.48	-13,104.55	26,582.36	26,538.00	44.36	599.229
19,300.00	6,936.12	997.00	991.97	202.30	4.60	-30.08	2,660.48	-13,104.55	26,678.89	26,634.37	44.52	599.242

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 009C - OH - OH-SVY+INC													Offset Site Error: 0.00 usft
Survey Program: 300-MWD OWSG Rev5, 8115-A027Ua_INC-ONLY													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,400.00	6,936.04	997.00	991.97	203.88	4.60	-30.08	2,660.48	-13,104.55	26,775.44	26,730.76	44.68	599.258	
19,500.00	6,935.97	997.00	991.97	205.47	4.60	-30.08	2,660.48	-13,104.55	26,872.02	26,827.18	44.84	599.275	
19,600.00	6,935.89	997.00	991.97	207.06	4.60	-30.08	2,660.48	-13,104.55	26,968.62	26,923.62	45.00	599.295	
19,700.00	6,935.82	997.00	991.97	208.64	4.60	-30.08	2,660.48	-13,104.55	27,065.25	27,020.09	45.16	599.316	
19,800.00	6,935.74	997.00	991.97	210.23	4.60	-30.08	2,660.48	-13,104.55	27,161.91	27,116.59	45.32	599.341	
19,900.00	6,935.67	997.00	991.97	211.82	4.60	-30.08	2,660.48	-13,104.55	27,258.58	27,213.10	45.48	599.367	
20,000.00	6,935.59	982.98	978.32	213.41	4.56	-30.02	2,660.78	-13,101.34	27,355.25	27,309.63	45.62	599.668	
20,100.00	6,935.52	980.68	976.09	214.99	4.55	-30.01	2,660.83	-13,100.82	27,451.96	27,406.19	45.77	599.741	
20,200.00	6,935.44	967.00	962.76	216.58	4.51	-29.96	2,661.19	-13,097.74	27,548.72	27,502.81	45.91	600.044	
20,300.00	6,935.37	967.00	962.76	218.17	4.51	-29.96	2,661.19	-13,097.74	27,645.47	27,599.40	46.07	600.072	
20,400.00	6,935.29	967.00	962.76	219.76	4.51	-29.96	2,661.19	-13,097.74	27,742.24	27,696.01	46.23	600.104	
20,500.00	6,935.22	967.00	962.76	221.35	4.51	-29.96	2,661.19	-13,097.74	27,839.03	27,792.64	46.39	600.137	
20,600.00	6,935.14	967.00	962.76	222.94	4.51	-29.96	2,661.19	-13,097.74	27,935.84	27,889.30	46.55	600.173	
20,700.00	6,935.07	967.00	962.76	224.53	4.51	-29.96	2,661.19	-13,097.74	28,032.68	27,985.98	46.70	600.212	
20,789.75	6,935.00	967.00	962.76	225.95	4.51	-29.96	2,661.19	-13,097.74	28,119.61	28,072.76	46.85	600.248	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 012D - OH - OH-SVY													Offset Site Error: 0.00 usft
Survey Program: 360-B001Mb_MWD+HRGM													Offset Well Error: 0.00 usft
Reference													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	-88.55	373.95	-14,754.09	14,758.86				
100.00	100.00	95.31	95.31	0.25	0.17	-88.55	373.80	-14,754.01	14,758.76	14,758.34	0.42	N/A	
200.00	200.00	233.44	233.44	0.61	0.42	-88.55	373.04	-14,753.60	14,758.46	14,757.43	1.03	N/A	
300.00	300.00	371.77	371.76	0.97	0.69	-88.56	371.63	-14,752.85	14,757.89	14,756.23	1.66	8,904.989	
400.00	400.00	478.00	477.92	1.33	1.08	-88.57	368.09	-14,752.14	14,757.13	14,754.73	2.40	6,150.025	
500.00	500.00	525.80	525.61	1.68	1.25	-88.58	364.99	-14,751.90	14,756.52	14,753.59	2.93	5,030.924	
558.70	558.70	540.00	539.78	1.89	1.30	92.29	363.93	-14,751.89	14,756.41	14,753.22	3.19	4,632.244	CC
600.00	599.98	568.00	567.69	2.03	1.41	92.28	361.69	-14,751.95	14,756.45	14,753.02	3.43	4,302.090	ES
700.00	699.84	597.56	597.13	2.36	1.52	92.27	359.07	-14,752.10	14,756.92	14,753.05	3.87	3,809.941	
800.00	799.45	626.00	625.43	2.71	1.62	92.25	356.24	-14,752.36	14,757.98	14,753.66	4.32	3,413.581	
900.00	898.70	672.83	671.95	3.06	1.80	92.22	350.86	-14,752.99	14,759.57	14,754.72	4.86	3,037.914	
1,000.00	997.47	720.00	718.63	3.43	1.99	92.18	344.20	-14,753.89	14,761.73	14,756.31	5.41	2,726.561	
1,100.00	1,095.62	763.16	761.17	3.82	2.16	92.13	336.96	-14,754.86	14,764.34	14,758.36	5.98	2,469.938	
1,180.06	1,173.69	788.71	786.24	4.14	2.27	92.08	332.09	-14,755.56	14,766.85	14,760.44	6.41	2,304.106	
1,200.00	1,193.07	817.02	813.94	4.22	2.39	92.08	326.31	-14,756.39	14,767.52	14,760.91	6.61	2,233.390	
1,300.00	1,290.27	899.93	894.67	4.65	2.76	92.09	307.63	-14,758.96	14,770.98	14,763.57	7.40	1,994.749	
1,400.00	1,387.46	975.94	968.36	5.08	3.11	92.08	289.14	-14,761.31	14,774.43	14,766.24	8.19	1,803.814	
1,500.00	1,484.66	1,149.35	1,136.30	5.52	3.94	92.08	246.27	-14,766.54	14,777.79	14,768.33	9.46	1,561.841	
1,600.00	1,581.85	1,185.40	1,171.22	5.97	4.12	92.07	237.38	-14,767.60	14,781.07	14,770.99	10.08	1,466.210	
1,700.00	1,679.05	1,224.00	1,208.63	6.42	4.31	92.07	227.95	-14,768.94	14,784.83	14,774.12	10.72	1,379.521	
1,800.00	1,776.25	1,255.00	1,238.71	6.87	4.46	92.07	220.53	-14,770.18	14,789.05	14,777.73	11.32	1,306.596	
1,900.00	1,873.44	1,393.23	1,373.29	7.33	5.12	92.08	189.45	-14,775.43	14,793.20	14,780.77	12.43	1,189.801	
2,000.00	1,970.64	1,508.29	1,485.45	7.78	5.67	92.08	164.09	-14,779.61	14,797.22	14,783.78	13.44	1,101.074	
2,100.00	2,067.83	1,791.00	1,760.45	8.24	7.04	92.09	99.26	-14,788.89	14,801.29	14,786.02	15.27	969.280	
2,200.00	2,165.03	1,824.06	1,792.56	8.71	7.20	92.09	91.40	-14,789.74	14,804.29	14,788.39	15.89	931.412	
2,300.00	2,262.22	1,854.00	1,821.59	9.17	7.35	92.09	84.15	-14,790.70	14,807.80	14,791.29	16.50	897.227	
2,400.00	2,359.42	1,897.46	1,863.65	9.63	7.57	92.08	73.37	-14,792.29	14,811.74	14,794.55	17.19	861.886	
2,500.00	2,456.61	2,011.61	1,974.06	10.10	8.15	92.08	44.67	-14,796.68	14,815.92	14,797.70	18.23	812.869	
2,600.00	2,553.81	2,293.00	2,247.71	10.57	9.52	92.08	-20.30	-14,804.61	14,818.72	14,798.65	20.07	738.282	
2,700.00	2,651.01	2,355.00	2,308.09	11.03	9.82	92.08	-34.31	-14,806.26	14,821.71	14,800.87	20.84	711.252	
2,800.00	2,748.20	2,365.46	2,318.27	11.50	9.88	92.08	-36.69	-14,806.60	14,825.09	14,803.74	21.36	694.215	
2,900.00	2,845.40	2,481.00	2,430.76	11.97	10.44	92.09	-62.81	-14,810.30	14,828.66	14,806.28	22.38	662.444	
3,000.00	2,942.59	2,543.00	2,491.13	12.44	10.74	92.09	-76.78	-14,812.31	14,832.31	14,809.15	23.15	640.620	
3,100.00	3,039.79	2,821.56	2,762.86	12.91	12.07	92.11	-137.55	-14,819.95	14,835.34	14,810.38	24.96	594.357	
3,200.00	3,136.98	3,170.00	3,105.86	13.38	13.60	92.19	-197.85	-14,824.92	14,837.70	14,810.74	26.96	550.407	
3,300.00	3,234.18	3,209.80	3,145.32	13.85	13.76	92.21	-203.08	-14,825.14	14,838.84	14,811.25	27.59	537.887	
3,400.00	3,331.38	3,261.86	3,196.99	14.32	13.96	92.23	-209.42	-14,825.60	14,840.35	14,812.08	28.26	525.092	
3,500.00	3,428.57	3,319.58	3,254.35	14.79	14.18	92.26	-215.72	-14,826.24	14,842.15	14,813.19	28.95	512.616	
3,600.00	3,525.77	3,624.17	3,558.43	15.26	15.16	92.48	-229.19	-14,827.64	14,843.63	14,813.23	30.40	488.207	
3,700.00	3,622.96	3,707.10	3,641.36	15.73	15.39	92.56	-229.09	-14,827.36	14,844.34	14,813.24	31.10	477.250	
3,800.00	3,720.16	3,808.86	3,743.12	16.20	15.70	92.65	-228.97	-14,827.00	14,845.08	14,813.19	31.89	465.489	
3,900.00	3,817.35	3,910.61	3,844.87	16.68	16.02	92.74	-228.84	-14,826.61	14,845.83	14,813.15	32.68	454.294	
4,000.00	3,914.55	4,012.36	3,946.62	17.15	16.33	92.84	-228.70	-14,826.19	14,846.59	14,813.12	33.47	443.624	
4,100.00	4,011.74	4,114.11	4,048.36	17.62	16.65	92.93	-228.55	-14,825.74	14,847.35	14,813.10	34.25	433.443	
4,200.00	4,108.94	4,215.84	4,150.10	18.09	16.96	93.02	-228.39	-14,825.25	14,848.13	14,813.08	35.04	423.720	
4,300.00	4,206.14	4,317.58	4,251.83	18.57	17.28	93.12	-228.22	-14,824.74	14,848.91	14,813.08	35.83	414.423	
4,400.00	4,303.33	4,419.31	4,353.56	19.04	17.59	93.21	-228.03	-14,824.19	14,849.69	14,813.08	36.62	405.527	
4,500.00	4,400.53	4,521.03	4,455.28	19.51	17.91	93.30	-227.84	-14,823.61	14,850.49	14,813.08	37.41	397.004	
4,600.00	4,497.72	4,622.75	4,556.99	19.99	18.22	93.40	-227.63	-14,822.99	14,851.29	14,813.10	38.19	388.833	
4,700.00	4,594.92	4,724.46	4,658.70	20.46	18.54	93.49	-227.42	-14,822.35	14,852.10	14,813.12	38.98	380.992	
4,800.00	4,692.11	4,826.16	4,760.41	20.93	18.85	93.58	-227.19	-14,821.67	14,852.92	14,813.15	39.77	373.462	
4,900.00	4,789.31	4,927.86	4,862.10	21.41	19.17	93.67	-226.95	-14,820.97	14,853.75	14,813.19	40.56	366.225	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 012D - OH - OH-SVY											Offset Site Error:	0.00 usft	
Survey Program: 360-B001Mb_MWD+HRGM											Offset Well Error:	0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,000.00	4,886.51	5,029.56	4,963.80	21.88	19.48	93.77	-226.71	-14,820.23	14,854.59	14,813.24	41.35	359.263	
5,100.00	4,983.70	5,131.25	5,065.48	22.35	19.80	93.86	-226.45	-14,819.46	14,855.43	14,813.30	42.14	352.562	
5,200.00	5,080.90	5,232.94	5,167.16	22.83	20.11	93.95	-226.18	-14,818.65	14,856.28	14,813.36	42.92	346.107	
5,300.00	5,178.09	5,334.62	5,268.84	23.30	20.43	94.05	-225.90	-14,817.82	14,857.14	14,813.43	43.71	339.886	
5,400.00	5,275.29	5,436.29	5,370.51	23.77	20.74	94.14	-225.61	-14,816.95	14,858.01	14,813.51	44.50	333.885	
5,500.00	5,372.48	5,537.96	5,472.17	24.25	21.06	94.23	-225.31	-14,816.06	14,858.89	14,813.60	45.29	328.093	
5,600.00	5,469.68	5,639.62	5,573.83	24.72	21.37	94.33	-225.00	-14,815.13	14,859.77	14,813.70	46.08	322.499	
5,700.00	5,566.87	5,741.28	5,675.48	25.20	21.69	94.42	-224.68	-14,814.17	14,860.67	14,813.80	46.87	317.094	
5,800.00	5,664.07	5,842.93	5,777.13	25.67	22.00	94.51	-224.35	-14,813.17	14,861.57	14,813.92	47.65	311.868	
5,900.00	5,761.27	5,944.58	5,878.77	26.14	22.32	94.61	-224.00	-14,812.15	14,862.48	14,814.04	48.44	306.812	
6,000.00	5,858.46	6,046.22	5,980.40	26.62	22.63	94.70	-223.65	-14,811.09	14,863.40	14,814.17	49.23	301.919	
6,100.00	5,955.66	6,147.85	6,082.03	27.09	22.95	94.79	-223.28	-14,810.00	14,864.33	14,814.31	50.02	297.180	
6,200.00	6,052.85	6,249.48	6,183.66	27.57	23.26	94.89	-222.91	-14,808.88	14,865.27	14,814.46	50.81	292.589	
6,300.00	6,150.05	6,351.10	6,285.27	28.04	23.58	94.98	-222.52	-14,807.73	14,866.21	14,814.62	51.59	288.138	
6,400.00	6,247.24	6,452.72	6,386.88	28.52	23.89	95.07	-222.13	-14,806.55	14,867.17	14,814.78	52.38	283.822	
6,490.87	6,335.57	6,545.06	6,479.21	28.95	24.18	95.16	-221.76	-14,805.45	14,868.04	14,814.94	53.10	280.011	
6,500.00	6,344.44	6,554.33	6,488.48	28.99	24.21	98.54	-221.72	-14,805.34	14,868.20	14,815.03	53.17	279.635	
6,550.00	6,392.91	6,605.04	6,539.19	29.23	24.37	115.69	-221.52	-14,804.72	14,871.36	14,817.79	53.56	277.644	
6,600.00	6,440.98	6,655.37	6,589.52	29.46	24.52	129.23	-221.31	-14,804.10	14,878.42	14,824.47	53.95	275.776	
6,650.00	6,488.34	6,705.01	6,639.15	29.70	24.68	139.11	-221.10	-14,803.48	14,889.35	14,835.02	54.33	274.046	
6,700.00	6,534.69	6,753.66	6,687.79	29.92	24.83	146.23	-220.89	-14,802.86	14,904.07	14,849.37	54.70	272.462	
6,750.00	6,579.76	6,801.01	6,735.14	30.15	24.97	151.45	-220.69	-14,802.25	14,922.49	14,867.43	55.06	271.031	
6,800.00	6,623.27	6,846.78	6,780.91	30.36	25.12	155.38	-220.49	-14,801.66	14,944.50	14,889.10	55.40	269.757	
6,850.00	6,664.95	6,890.69	6,824.82	30.57	25.25	158.42	-220.30	-14,801.09	14,969.97	14,914.24	55.72	268.643	
6,900.00	6,704.53	6,932.47	6,866.59	30.78	25.38	160.84	-220.12	-14,800.54	14,998.72	14,942.69	56.03	267.694	
6,950.00	6,741.79	6,971.86	6,905.97	30.98	25.50	162.82	-219.94	-14,800.01	15,030.60	14,974.28	56.31	266.910	
7,000.00	6,776.48	7,008.61	6,942.72	31.17	25.62	164.48	-219.77	-14,799.52	15,065.39	15,008.81	56.57	266.293	
7,050.00	6,808.39	7,042.51	6,976.62	31.36	25.72	165.93	-219.62	-14,799.06	15,102.89	15,046.08	56.81	265.843	
7,100.00	6,837.34	7,073.34	7,007.44	31.54	25.82	167.24	-219.48	-14,798.64	15,142.86	15,085.84	57.02	265.559	
7,150.00	6,863.13	7,100.91	7,035.01	31.73	25.91	168.49	-219.35	-14,798.26	15,185.06	15,127.85	57.21	265.439 SF	
7,200.00	6,885.61	7,125.05	7,059.15	31.91	25.98	169.77	-219.24	-14,797.92	15,229.23	15,171.86	57.36	265.480	
7,250.00	6,904.64	7,145.62	7,079.72	32.10	26.04	171.21	-219.15	-14,797.64	15,275.09	15,217.59	57.49	265.679	
7,300.00	6,920.10	7,162.48	7,096.57	32.29	26.10	173.07	-219.07	-14,797.40	15,322.36	15,264.77	57.60	266.029	
7,350.00	6,931.91	7,175.53	7,109.62	32.48	26.14	175.92	-219.01	-14,797.22	15,370.76	15,313.09	57.67	266.525	
7,400.00	6,939.97	7,184.68	7,118.78	32.68	26.17	-178.41	-218.96	-14,797.09	15,419.97	15,362.26	57.72	267.158	
7,450.00	6,944.26	7,189.89	7,123.98	32.89	26.18	-159.94	-218.94	-14,797.02	15,469.71	15,411.97	57.74	267.919	
7,481.69	6,945.00	7,191.12	7,125.21	33.03	26.19	-110.75	-218.93	-14,797.00	15,501.36	15,443.62	57.74	268.463	
7,500.00	6,944.99	7,191.37	7,125.47	33.12	26.19	-110.78	-218.93	-14,797.00	15,519.66	15,461.92	57.74	268.791	
7,600.00	6,944.91	7,192.74	7,126.84	33.60	26.19	-110.91	-218.93	-14,796.98	15,619.60	15,561.87	57.73	270.582	
7,700.00	6,944.84	7,194.11	7,128.21	34.17	26.19	-111.04	-218.92	-14,796.96	15,719.53	15,661.82	57.71	272.369	
7,800.00	6,944.76	7,195.49	7,129.58	34.80	26.20	-111.17	-218.91	-14,796.94	15,819.47	15,761.76	57.70	274.151	
7,900.00	6,944.69	7,196.86	7,130.95	35.49	26.20	-111.30	-218.91	-14,796.92	15,919.40	15,861.71	57.69	275.929	
8,000.00	6,944.61	7,198.23	7,132.33	36.25	26.21	-111.42	-218.90	-14,796.90	16,019.34	15,961.65	57.69	277.702	
8,100.00	6,944.54	7,199.61	7,133.70	37.07	26.21	-111.55	-218.89	-14,796.88	16,119.28	16,061.60	57.68	279.469	
8,200.00	6,944.46	7,200.98	7,135.07	37.94	26.22	-111.68	-218.89	-14,796.86	16,219.22	16,161.54	57.67	281.232	
8,300.00	6,944.39	7,202.36	7,136.45	38.86	26.22	-111.81	-218.88	-14,796.84	16,319.16	16,261.49	57.67	282.990	
8,400.00	6,944.31	7,203.74	7,137.83	39.83	26.22	-111.94	-218.87	-14,796.82	16,419.10	16,361.43	57.66	284.743	
8,500.00	6,944.23	7,205.12	7,139.21	40.84	26.23	-112.07	-218.87	-14,796.80	16,519.04	16,461.38	57.66	286.491	
8,600.00	6,944.16	7,206.49	7,140.59	41.89	26.23	-112.20	-218.86	-14,796.78	16,618.98	16,561.32	57.66	288.233	
8,700.00	6,944.08	7,207.87	7,141.96	42.98	26.24	-112.33	-218.85	-14,796.77	16,718.92	16,661.26	57.66	289.970	
8,800.00	6,944.01	7,209.26	7,143.35	44.10	26.24	-112.45	-218.85	-14,796.75	16,818.86	16,761.20	57.66	291.702	
8,900.00	6,943.93	7,210.64	7,144.73	45.25	26.25	-112.58	-218.84	-14,796.73	16,918.80	16,861.14	57.66	293.429	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 012D - OH - OH-SVY											Offset Site Error:	0.00 usft
Survey Program: 360-B001Mb_MWD+HRGM											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
9,000.00	6,943.86	7,212.02	7,146.11	46.43	26.25	-112.71	-218.83	-14,796.71	17,018.75	16,961.09	57.66	295.150
9,100.00	6,943.78	7,213.40	7,147.49	47.63	26.25	-112.84	-218.83	-14,796.69	17,118.69	17,061.03	57.66	296.865
9,200.00	6,943.71	7,214.79	7,148.88	48.86	26.26	-112.96	-218.82	-14,796.67	17,218.64	17,160.97	57.67	298.575
9,300.00	6,943.63	7,216.17	7,150.26	50.11	26.26	-113.09	-218.81	-14,796.65	17,318.58	17,260.91	57.68	300.279
9,400.00	6,943.56	7,217.56	7,151.65	51.38	26.27	-113.22	-218.81	-14,796.63	17,418.53	17,360.84	57.68	301.977
9,500.00	6,943.48	7,218.95	7,153.03	52.66	26.27	-113.35	-218.80	-14,796.61	17,518.47	17,460.78	57.69	303.670
9,600.00	6,943.41	7,220.33	7,154.42	53.97	26.28	-113.47	-218.79	-14,796.59	17,618.42	17,560.72	57.70	305.356
9,700.00	6,943.33	7,221.72	7,155.81	55.29	26.28	-113.60	-218.79	-14,796.57	17,718.37	17,660.66	57.71	307.037
9,800.00	6,943.26	7,223.11	7,157.20	56.63	26.28	-113.73	-218.78	-14,796.55	17,818.31	17,760.60	57.72	308.712
9,900.00	6,943.18	7,224.50	7,158.59	57.98	26.29	-113.85	-218.78	-14,796.53	17,918.26	17,860.53	57.73	310.381
10,000.00	6,943.11	7,225.89	7,159.98	59.34	26.29	-113.98	-218.77	-14,796.51	18,018.21	17,960.47	57.74	312.044
10,100.00	6,943.03	7,227.29	7,161.37	60.72	26.30	-114.10	-218.76	-14,796.49	18,118.16	18,060.40	57.76	313.701
10,200.00	6,942.96	7,228.68	7,162.77	62.11	26.30	-114.23	-218.76	-14,796.47	18,218.11	18,160.34	57.77	315.351
10,300.00	6,942.88	7,230.07	7,164.16	63.50	26.31	-114.36	-218.75	-14,796.45	18,318.06	18,260.27	57.79	316.996
10,400.00	6,942.81	7,231.47	7,165.56	64.91	26.31	-114.48	-218.74	-14,796.43	18,418.01	18,360.21	57.80	318.634
10,500.00	6,942.73	7,232.86	7,166.95	66.33	26.31	-114.61	-218.74	-14,796.41	18,517.96	18,460.14	57.82	320.265
10,600.00	6,942.66	7,234.26	7,168.35	67.75	26.32	-114.73	-218.73	-14,796.39	18,617.91	18,560.07	57.84	321.891
10,700.00	6,942.58	7,235.66	7,169.74	69.18	26.32	-114.86	-218.72	-14,796.37	18,717.86	18,660.00	57.86	323.510
10,800.00	6,942.51	7,237.06	7,171.14	70.62	26.33	-114.98	-218.72	-14,796.35	18,817.81	18,759.94	57.88	325.122
10,900.00	6,942.43	7,238.46	7,172.54	72.07	26.33	-115.11	-218.71	-14,796.33	18,917.77	18,859.87	57.90	326.728
11,000.00	6,942.36	7,239.86	7,173.94	73.52	26.34	-115.23	-218.70	-14,796.31	19,017.72	18,959.80	57.92	328.328
11,100.00	6,942.28	7,241.26	7,175.34	74.98	26.34	-115.35	-218.70	-14,796.29	19,117.67	19,059.73	57.95	329.921
11,200.00	6,942.21	7,242.66	7,176.75	76.45	26.35	-115.48	-218.69	-14,796.27	19,217.63	19,159.66	57.97	331.507
11,300.00	6,942.13	7,244.06	7,178.15	77.92	26.35	-115.60	-218.68	-14,796.25	19,317.58	19,259.59	58.00	333.087
11,400.00	6,942.06	7,245.47	7,179.55	79.40	26.35	-115.73	-218.68	-14,796.23	19,417.54	19,359.51	58.02	334.660
11,500.00	6,941.98	7,246.87	7,180.96	80.88	26.36	-115.85	-218.67	-14,796.21	19,517.49	19,459.44	58.05	336.226
11,600.00	6,941.91	7,248.28	7,182.36	82.36	26.36	-115.97	-218.66	-14,796.19	19,617.45	19,559.37	58.08	337.786
11,700.00	6,941.83	7,249.68	7,183.77	83.85	26.37	-116.10	-218.66	-14,796.17	19,717.40	19,659.30	58.11	339.338
11,800.00	6,941.76	7,251.09	7,185.18	85.35	26.37	-116.22	-218.65	-14,796.15	19,817.36	19,759.22	58.14	340.884
11,900.00	6,941.68	7,252.50	7,186.58	86.85	26.38	-116.34	-218.64	-14,796.13	19,917.31	19,859.15	58.17	342.423
12,000.00	6,941.60	7,253.91	7,187.99	88.35	26.38	-116.46	-218.64	-14,796.11	20,017.27	19,959.07	58.20	343.955
12,100.00	6,941.53	7,255.32	7,189.40	89.85	26.38	-116.59	-218.63	-14,796.09	20,117.23	20,059.00	58.23	345.481
12,200.00	6,941.45	7,256.73	7,190.81	91.36	26.39	-116.71	-218.62	-14,796.07	20,217.18	20,158.92	58.26	346.999
12,300.00	6,941.38	7,258.14	7,192.23	92.88	26.39	-116.83	-218.62	-14,796.05	20,317.14	20,258.84	58.30	348.510
12,400.00	6,941.30	7,259.55	7,193.64	94.39	26.40	-116.95	-218.61	-14,796.03	20,417.10	20,358.77	58.33	350.014
12,500.00	6,941.23	7,260.97	7,195.05	95.91	26.40	-117.07	-218.60	-14,796.01	20,517.06	20,458.69	58.37	351.512
12,600.00	6,941.15	7,262.38	7,196.47	97.43	26.41	-117.20	-218.59	-14,795.99	20,617.02	20,558.61	58.40	353.002
12,700.00	6,941.08	7,263.80	7,197.88	98.95	26.41	-117.32	-218.59	-14,795.97	20,716.98	20,658.53	58.44	354.485
12,800.00	6,941.00	7,265.21	7,199.30	100.48	26.42	-117.44	-218.58	-14,795.95	20,816.93	20,758.45	58.48	355.961
12,900.00	6,940.93	7,266.63	7,200.72	102.01	26.42	-117.56	-218.57	-14,795.93	20,916.89	20,858.37	58.52	357.430
13,000.00	6,940.85	7,268.05	7,202.13	103.54	26.42	-117.68	-218.57	-14,795.91	21,016.85	20,958.29	58.56	358.892
13,100.00	6,940.78	7,269.47	7,203.55	105.07	26.43	-117.80	-218.56	-14,795.89	21,116.81	21,058.21	58.60	360.347
13,200.00	6,940.70	7,270.89	7,204.97	106.61	26.43	-117.92	-218.55	-14,795.87	21,216.77	21,158.13	58.64	361.795
13,300.00	6,940.63	7,272.31	7,206.39	108.14	26.44	-118.04	-218.55	-14,795.85	21,316.73	21,258.05	58.69	363.235
13,400.00	6,940.55	7,273.73	7,207.82	109.68	26.44	-118.16	-218.54	-14,795.83	21,416.70	21,357.97	58.73	364.668
13,500.00	6,940.48	7,275.16	7,209.24	111.22	26.45	-118.28	-218.53	-14,795.81	21,516.66	21,457.88	58.77	366.094
13,600.00	6,940.40	7,276.58	7,210.66	112.77	26.45	-118.40	-218.53	-14,795.79	21,616.62	21,557.80	58.82	367.513
13,700.00	6,940.33	7,278.00	7,212.09	114.31	26.45	-118.52	-218.52	-14,795.77	21,716.58	21,657.72	58.86	368.925
13,800.00	6,940.25	7,279.43	7,213.51	115.86	26.46	-118.64	-218.51	-14,795.75	21,816.54	21,757.63	58.91	370.329
13,900.00	6,940.18	7,280.86	7,214.94	117.41	26.46	-118.76	-218.51	-14,795.73	21,916.50	21,857.55	58.96	371.727
14,000.00	6,940.10	7,282.28	7,216.37	118.95	26.47	-118.88	-218.50	-14,795.71	22,016.47	21,957.46	59.01	373.117
14,100.00	6,940.03	7,283.71	7,217.79	120.51	26.47	-118.99	-218.49	-14,795.69	22,116.43	22,057.37	59.06	374.499

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 012D - OH - OH-SVY											Offset Site Error: 0.00 usft		
Survey Program: 360-B001Mb_MWD+HRGM											Offset Well Error: 0.00 usft		
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,200.00	6,939.95	7,285.14	7,219.22	122.06	26.48	-119.11	-218.49	-14,795.67	22,216.39	22,157.29	59.11	375.875	
14,300.00	6,939.88	7,286.57	7,220.65	123.61	26.48	-119.23	-218.48	-14,795.64	22,316.36	22,257.20	59.16	377.243	
14,400.00	6,939.80	7,288.00	7,222.09	125.17	26.49	-119.35	-218.47	-14,795.62	22,416.32	22,357.11	59.21	378.604	
14,500.00	6,939.73	7,289.44	7,223.52	126.72	26.49	-119.47	-218.47	-14,795.60	22,516.28	22,457.02	59.26	379.957	
14,600.00	6,939.65	7,290.87	7,224.95	128.28	26.49	-119.58	-218.46	-14,795.58	22,616.25	22,556.93	59.31	381.304	
14,700.00	6,939.58	7,292.30	7,226.38	129.84	26.50	-119.70	-218.45	-14,795.56	22,716.21	22,656.84	59.37	382.643	
14,800.00	6,939.50	7,293.74	7,227.82	131.40	26.50	-119.82	-218.44	-14,795.54	22,816.18	22,756.75	59.42	383.975	
14,900.00	6,939.43	7,295.17	7,229.25	132.96	26.51	-119.94	-218.44	-14,795.52	22,916.14	22,856.66	59.48	385.299	
15,000.00	6,939.35	7,296.61	7,230.69	134.52	26.51	-120.05	-218.43	-14,795.50	23,016.10	22,956.57	59.53	386.617	
15,100.00	6,939.28	7,298.05	7,232.13	136.08	26.52	-120.17	-218.42	-14,795.48	23,116.07	23,056.48	59.59	387.927	
15,200.00	6,939.20	7,299.49	7,233.57	137.64	26.52	-120.28	-218.42	-14,795.46	23,216.03	23,156.39	59.65	389.230	
15,300.00	6,939.13	7,300.93	7,235.01	139.21	26.53	-120.40	-218.41	-14,795.44	23,316.00	23,256.30	59.70	390.525	
15,400.00	6,939.05	7,302.37	7,236.45	140.77	26.53	-120.52	-218.40	-14,795.42	23,415.97	23,356.20	59.76	391.813	
15,500.00	6,938.98	7,303.81	7,237.89	142.34	26.53	-120.63	-218.40	-14,795.40	23,515.93	23,456.11	59.82	393.094	
15,600.00	6,938.90	7,305.25	7,239.33	143.91	26.54	-120.75	-218.39	-14,795.38	23,615.90	23,556.02	59.88	394.368	
15,700.00	6,938.82	7,306.69	7,240.77	145.47	26.54	-120.86	-218.38	-14,795.36	23,715.86	23,655.92	59.94	395.635	
15,800.00	6,938.75	7,308.14	7,242.22	147.04	26.55	-120.98	-218.37	-14,795.33	23,815.83	23,755.83	60.01	396.894	
15,900.00	6,938.67	7,309.58	7,243.66	148.61	26.55	-121.09	-218.37	-14,795.31	23,915.80	23,855.73	60.07	398.147	
16,000.00	6,938.60	7,311.03	7,245.11	150.18	26.56	-121.21	-218.36	-14,795.29	24,015.76	23,955.63	60.13	399.392	
16,100.00	6,938.52	7,312.48	7,246.56	151.75	26.56	-121.32	-218.35	-14,795.27	24,115.73	24,055.54	60.19	400.629	
16,200.00	6,938.45	7,313.93	7,248.00	153.32	26.57	-121.44	-218.35	-14,795.25	24,215.70	24,155.44	60.26	401.860	
16,300.00	6,938.37	7,315.37	7,249.45	154.90	26.57	-121.55	-218.34	-14,795.23	24,315.67	24,255.34	60.32	403.084	
16,400.00	6,938.30	7,316.82	7,250.90	156.47	26.58	-121.66	-218.33	-14,795.21	24,415.63	24,355.24	60.39	404.300	
16,500.00	6,938.22	7,318.28	7,252.35	158.04	26.58	-121.78	-218.33	-14,795.19	24,515.60	24,455.15	60.46	405.509	
16,600.00	6,938.15	7,319.73	7,253.80	159.62	26.58	-121.89	-218.32	-14,795.17	24,615.57	24,555.05	60.52	406.711	
16,700.00	6,938.07	7,321.18	7,255.26	161.19	26.59	-122.00	-218.31	-14,795.15	24,715.54	24,654.95	60.59	407.906	
16,800.00	6,938.00	7,322.63	7,256.71	162.77	26.59	-122.12	-218.30	-14,795.13	24,815.51	24,754.85	60.66	409.094	
16,900.00	6,937.92	7,324.09	7,258.17	164.34	26.60	-122.23	-218.30	-14,795.10	24,915.48	24,854.75	60.73	410.275	
17,000.00	6,937.85	7,325.54	7,259.62	165.92	26.60	-122.34	-218.29	-14,795.08	25,015.44	24,954.65	60.80	411.449	
17,100.00	6,937.77	7,327.00	7,261.08	167.50	26.61	-122.46	-218.28	-14,795.06	25,115.41	25,054.54	60.87	412.616	
17,200.00	6,937.70	7,328.46	7,262.53	169.07	26.61	-122.57	-218.28	-14,795.04	25,215.38	25,154.44	60.94	413.776	
17,300.00	6,937.62	7,329.92	7,263.99	170.65	26.62	-122.68	-218.27	-14,795.02	25,315.35	25,254.34	61.01	414.929	
17,400.00	6,937.55	7,331.38	7,265.45	172.23	26.62	-122.79	-218.26	-14,795.00	25,415.32	25,354.24	61.08	416.074	
17,500.00	6,937.47	7,332.84	7,266.91	173.81	26.62	-122.90	-218.26	-14,794.98	25,515.29	25,454.13	61.16	417.213	
17,600.00	6,937.40	7,334.30	7,268.37	175.39	26.63	-123.01	-218.25	-14,794.96	25,615.26	25,554.03	61.23	418.345	
17,700.00	6,937.32	7,335.76	7,269.84	176.97	26.63	-123.13	-218.24	-14,794.93	25,715.23	25,653.93	61.30	419.470	
17,800.00	6,937.25	7,337.22	7,271.30	178.55	26.64	-123.24	-218.23	-14,794.91	25,815.20	25,753.82	61.38	420.588	
17,900.00	6,937.17	7,338.69	7,272.76	180.13	26.64	-123.35	-218.23	-14,794.89	25,915.17	25,853.72	61.45	421.700	
18,000.00	6,937.10	7,340.15	7,274.23	181.71	26.65	-123.46	-218.22	-14,794.87	26,015.14	25,953.61	61.53	422.804	
18,100.00	6,937.02	7,341.62	7,275.69	183.29	26.65	-123.57	-218.21	-14,794.85	26,115.11	26,053.51	61.61	423.902	
18,200.00	6,936.95	7,343.09	7,277.16	184.87	26.66	-123.68	-218.21	-14,794.83	26,215.08	26,153.40	61.68	424.993	
18,300.00	6,936.87	7,344.55	7,278.63	186.46	26.66	-123.79	-218.20	-14,794.81	26,315.05	26,253.29	61.76	426.077	
18,400.00	6,936.80	7,346.02	7,280.10	188.04	26.67	-123.90	-218.19	-14,794.79	26,415.02	26,353.18	61.84	427.154	
18,500.00	6,936.72	7,347.49	7,281.57	189.62	26.67	-124.01	-218.18	-14,794.76	26,515.00	26,453.08	61.92	428.225	
18,600.00	6,936.65	7,348.96	7,283.04	191.21	26.67	-124.12	-218.18	-14,794.74	26,614.97	26,552.97	62.00	429.289	
18,700.00	6,936.57	7,350.43	7,284.51	192.79	26.68	-124.23	-218.17	-14,794.72	26,714.94	26,652.86	62.08	430.346	
18,800.00	6,936.50	7,351.91	7,285.98	194.37	26.68	-124.33	-218.16	-14,794.70	26,814.91	26,752.75	62.16	431.397	
18,900.00	6,936.42	7,353.38	7,287.46	195.96	26.69	-124.44	-218.16	-14,794.68	26,914.88	26,852.64	62.24	432.441	
19,000.00	6,936.35	7,354.86	7,288.93	197.54	26.69	-124.55	-218.15	-14,794.66	27,014.85	26,952.53	62.32	433.478	
19,100.00	6,936.27	7,356.33	7,290.41	199.13	26.70	-124.66	-218.14	-14,794.64	27,114.83	27,052.42	62.40	434.509	
19,200.00	6,936.19	7,357.81	7,291.88	200.71	26.70	-124.77	-218.13	-14,794.61	27,214.80	27,152.31	62.49	435.534	
19,300.00	6,936.12	7,359.29	7,293.36	202.30	26.71	-124.87	-218.13	-14,794.59	27,314.77	27,252.20	62.57	436.552	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 012D - OH - OH-SVY												Offset Site Error:	0.00 usft
Survey Program: 360-B001Mb_MWD+HRGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Minimum Separation (usft)	Separation Factor
19,400.00	6,936.04	7,360.77	7,294.84	203.88	26.71	-124.98	-218.12	-14,794.57	27,414.74	27,352.09		62.65	437.563
19,500.00	6,935.97	7,362.24	7,296.32	205.47	26.72	-125.09	-218.11	-14,794.55	27,514.71	27,451.98		62.74	438.568
19,600.00	6,935.89	7,363.73	7,297.80	207.06	26.72	-125.20	-218.11	-14,794.53	27,614.69	27,551.86		62.82	439.567
19,700.00	6,935.82	7,365.21	7,299.28	208.64	26.73	-125.30	-218.10	-14,794.51	27,714.66	27,651.75		62.91	440.559
19,800.00	6,935.74	7,366.69	7,300.76	210.23	26.73	-125.41	-218.09	-14,794.48	27,814.63	27,751.64		62.99	441.545
19,900.00	6,935.67	7,368.17	7,302.25	211.82	26.73	-125.52	-218.08	-14,794.46	27,914.61	27,851.52		63.08	442.524
20,000.00	6,935.59	7,369.66	7,303.73	213.41	26.74	-125.62	-218.08	-14,794.44	28,014.58	27,951.41		63.17	443.497
20,100.00	6,935.52	7,371.14	7,305.21	214.99	26.74	-125.73	-218.07	-14,794.42	28,114.55	28,051.30		63.25	444.464
20,200.00	6,935.44	7,372.63	7,306.70	216.58	26.75	-125.83	-218.06	-14,794.40	28,214.53	28,151.18		63.34	445.425
20,300.00	6,935.37	7,374.12	7,308.19	218.17	26.75	-125.94	-218.05	-14,794.38	28,314.50	28,251.07		63.43	446.379
20,400.00	6,935.29	7,375.61	7,309.68	219.76	26.76	-126.05	-218.05	-14,794.35	28,414.47	28,350.95		63.52	447.328
20,500.00	6,935.22	7,377.09	7,311.17	221.35	26.76	-126.15	-218.04	-14,794.33	28,514.45	28,450.84		63.61	448.270
20,600.00	6,935.14	7,378.59	7,312.66	222.94	26.77	-126.26	-218.03	-14,794.31	28,614.42	28,550.72		63.70	449.206
20,700.00	6,935.07	7,380.08	7,314.15	224.53	26.77	-126.36	-218.03	-14,794.29	28,714.39	28,650.60		63.79	450.136
20,789.75	6,935.00	7,381.42	7,315.49	225.95	26.78	-126.45	-218.02	-14,794.27	28,804.12	28,740.25		63.87	450.966

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 016D - OH - OH-SVY												Offset Site Error:	0.00 usft
Survey Program: 380-MWD OWSG Rev5												Offset Well Error:	0.00 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	2,830.00	2,604.62	0.00	17.62	-95.47	-1,176.83	-12,292.29	12,615.06				
100.00	100.00	3,021.00	2,785.43	0.25	18.62	-95.25	-1,125.47	-12,258.99	12,594.74	12,576.41	18.33	686.991	
200.00	200.00	3,052.00	2,814.99	0.61	18.78	-95.21	-1,118.01	-12,253.42	12,573.95	12,555.25	18.71	672.212	
300.00	300.00	3,052.00	2,814.99	0.97	18.78	-95.21	-1,118.01	-12,253.42	12,553.73	12,534.74	19.00	660.871	
400.00	400.00	3,083.00	2,844.59	1.33	18.93	-95.18	-1,110.45	-12,248.15	12,534.14	12,514.67	19.47	643.755	
500.00	500.00	3,101.07	2,861.88	1.68	19.01	-95.16	-1,106.09	-12,245.19	12,515.15	12,495.26	19.89	629.197	
600.00	599.98	3,129.36	2,889.02	2.03	19.14	86.12	-1,099.51	-12,240.70	12,496.66	12,476.31	20.35	614.101	
700.00	699.84	3,179.00	2,936.92	2.36	19.35	86.55	-1,089.11	-12,232.88	12,478.39	12,457.49	20.90	597.088	
800.00	799.45	3,179.00	2,936.92	2.71	19.35	86.91	-1,089.11	-12,232.88	12,460.50	12,439.27	21.23	586.921	
900.00	898.70	3,211.00	2,967.96	3.06	19.48	87.31	-1,082.87	-12,228.19	12,443.11	12,421.40	21.72	572.955	
1,000.00	997.47	3,211.00	2,967.96	3.43	19.48	87.65	-1,082.87	-12,228.19	12,426.19	12,404.11	22.08	562.803	
1,100.00	1,095.62	3,211.00	2,967.96	3.82	19.48	87.98	-1,082.87	-12,228.19	12,409.90	12,387.44	22.46	552.548	
1,180.06	1,173.69	3,225.07	2,981.64	4.14	19.53	88.26	-1,080.13	-12,226.35	12,397.26	12,374.42	22.84	542.813	
1,200.00	1,193.07	3,226.86	2,983.38	4.22	19.54	88.27	-1,079.78	-12,226.13	12,394.18	12,371.25	22.93	540.571	
1,300.00	1,290.27	3,241.00	2,997.14	4.65	19.59	88.29	-1,077.01	-12,224.44	12,379.18	12,355.77	23.40	528.913	
1,400.00	1,387.46	3,241.00	2,997.14	5.08	19.59	88.29	-1,077.01	-12,224.44	12,364.88	12,341.05	23.83	518.858	
1,500.00	1,484.66	3,272.00	3,027.37	5.52	19.71	88.35	-1,071.00	-12,221.09	12,351.30	12,326.91	24.39	506.391	
1,600.00	1,581.85	3,282.62	3,037.75	5.97	19.74	88.37	-1,069.02	-12,220.01	12,338.35	12,313.48	24.87	496.097	
1,700.00	1,679.05	3,366.00	3,119.79	6.42	19.99	88.52	-1,057.11	-12,211.37	12,325.89	12,300.27	25.62	481.069	
1,800.00	1,776.25	3,407.29	3,160.63	6.87	20.09	88.58	-1,052.90	-12,207.00	12,313.67	12,287.47	26.20	469.914	
1,900.00	1,873.44	3,442.35	3,195.34	7.33	20.17	88.63	-1,049.49	-12,203.44	12,301.98	12,275.21	26.77	459.628	
2,000.00	1,970.64	3,473.37	3,226.07	7.78	20.24	88.68	-1,046.44	-12,200.46	12,290.84	12,263.53	27.31	449.983	
2,100.00	2,067.83	3,493.00	3,245.52	8.24	20.29	88.71	-1,044.49	-12,198.65	12,280.29	12,252.46	27.83	441.290	
2,200.00	2,165.03	3,510.44	3,262.81	8.71	20.32	88.74	-1,042.80	-12,197.15	12,270.40	12,242.06	28.33	433.056	
2,300.00	2,262.22	3,524.00	3,276.27	9.17	20.35	88.76	-1,041.55	-12,196.09	12,261.23	12,232.40	28.83	425.297	
2,400.00	2,359.42	3,538.06	3,290.24	9.63	20.38	88.78	-1,040.33	-12,195.07	12,252.76	12,223.44	29.32	417.836	
2,500.00	2,456.61	3,556.00	3,308.08	10.10	20.41	88.80	-1,038.86	-12,193.90	12,244.99	12,215.16	29.83	410.492	
2,600.00	2,553.81	3,569.34	3,321.36	10.57	20.43	88.82	-1,037.84	-12,193.11	12,237.90	12,207.58	30.32	403.631	
2,700.00	2,651.01	3,587.00	3,338.95	11.03	20.46	88.85	-1,036.56	-12,192.17	12,231.51	12,200.69	30.82	396.869	
2,800.00	2,748.20	3,601.52	3,353.42	11.50	20.48	88.87	-1,035.57	-12,191.48	12,225.81	12,194.50	31.31	390.495	
2,900.00	2,845.40	3,619.00	3,370.85	11.97	20.50	88.89	-1,034.49	-12,190.76	12,220.79	12,188.99	31.80	384.261	
3,000.00	2,942.59	3,637.57	3,389.38	12.44	20.52	88.92	-1,033.48	-12,190.11	12,216.45	12,184.16	32.30	378.272	
3,100.00	3,039.79	3,666.87	3,418.64	12.91	20.55	88.96	-1,032.17	-12,189.26	12,212.76	12,179.96	32.81	372.268	
3,200.00	3,136.98	3,746.00	3,497.69	13.38	20.62	89.05	-1,029.66	-12,186.92	12,209.23	12,175.82	33.41	365.398	
3,300.00	3,234.18	3,778.00	3,529.67	13.85	20.65	89.09	-1,028.95	-12,186.08	12,206.21	12,172.28	33.93	359.786	
3,400.00	3,331.38	3,796.51	3,548.18	14.32	20.66	89.12	-1,028.62	-12,185.73	12,203.88	12,169.47	34.41	354.694	
3,500.00	3,428.57	3,810.00	3,561.67	14.79	20.66	89.13	-1,028.41	-12,185.56	12,202.23	12,167.35	34.88	349.853	
3,600.00	3,525.77	3,852.94	3,604.60	15.26	20.68	89.18	-1,027.75	-12,185.28	12,201.17	12,165.80	35.37	344.910	
3,700.00	3,622.96	3,924.48	3,676.13	15.73	20.70	89.27	-1,026.61	-12,185.12	12,200.55	12,164.66	35.89	339.985	
3,800.00	3,720.16	4,021.33	3,772.97	16.20	32.06	89.38	-1,025.04	-12,184.94	12,200.03	12,151.98	48.04	253.932	
3,900.00	3,817.35	4,118.18	3,869.81	16.68	44.32	89.49	-1,023.48	-12,184.76	12,199.55	12,138.66	60.89	200.347	
4,000.00	3,914.55	4,215.03	3,966.64	17.15	56.64	89.61	-1,021.91	-12,184.59	12,199.13	12,125.40	73.73	165.447	
4,100.00	4,011.74	4,311.88	4,063.48	17.62	68.98	89.72	-1,020.34	-12,184.41	12,198.77	12,112.19	86.57	140.905	
4,200.00	4,108.94	4,408.72	4,160.31	18.09	81.34	89.84	-1,018.76	-12,184.23	12,198.45	12,099.04	99.41	122.704	
4,300.00	4,206.14	4,505.57	4,257.14	18.57	93.69	89.95	-1,017.19	-12,184.05	12,198.18	12,085.93	112.25	108.668	
4,400.00	4,303.33	4,602.41	4,353.97	19.04	106.05	90.06	-1,015.61	-12,183.87	12,197.97	12,072.88	125.09	97.514	
4,500.00	4,400.53	4,699.25	4,450.80	19.51	118.42	90.18	-1,014.03	-12,183.69	12,197.80	12,059.88	137.93	88.437	
4,600.00	4,497.72	4,796.09	4,547.63	19.99	130.78	90.29	-1,012.44	-12,183.50	12,197.69	12,046.93	150.76	80.907	
4,700.00	4,594.92	4,892.93	4,644.45	20.46	143.14	90.41	-1,010.86	-12,183.32	12,197.63	12,034.03	163.60	74.558	
4,768.42	4,661.42	4,959.19	4,710.70	20.78	151.60	90.48	-1,009.77	-12,183.20	12,197.62	12,025.24	172.38	70.759 CC	
4,800.00	4,692.11	4,989.77	4,741.28	20.93	155.50	90.52	-1,009.27	-12,183.14	12,197.62	12,021.19	176.44	69.134	
4,900.00	4,789.31	5,086.60	4,838.10	21.41	167.86	90.64	-1,007.68	-12,182.96	12,197.66	12,008.39	189.27	64.445	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 016D - OH - OH-SVY											Offset Site Error: 0.00 usft		
Survey Program: 380-MWD OWSG Rev5											Offset Well Error: 0.00 usft		
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre	Distance	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.00	4,886.51	5,183.44	4,934.92	21.88	180.23	90.75	-1,006.08	-12,182.78	12,197.76	11,995.65	202.11	60.353	
5,100.00	4,983.70	5,280.27	5,031.74	22.35	192.59	90.86	-1,004.49	-12,182.60	12,197.90	11,982.96	214.94	56.749	
5,200.00	5,080.90	5,377.10	5,128.56	22.83	204.95	90.98	-1,002.89	-12,182.41	12,198.10	11,970.32	227.78	53.552	
5,300.00	5,178.09	5,473.94	5,225.38	23.30	217.31	91.09	-1,001.29	-12,182.23	12,198.35	11,957.73	240.61	50.697	
5,400.00	5,275.29	5,570.76	5,322.19	23.77	229.68	91.21	-999.68	-12,182.05	12,198.64	11,945.19	253.45	48.130	
5,500.00	5,372.48	5,667.59	5,419.01	24.25	242.04	91.32	-998.07	-12,181.86	12,198.99	11,932.71	266.29	45.812	
5,600.00	5,469.68	5,764.42	5,515.82	24.72	254.40	91.43	-996.46	-12,181.68	12,199.40	11,920.28	279.12	43.707	
5,700.00	5,566.87	5,861.24	5,612.63	25.20	266.76	91.55	-994.85	-12,181.49	12,199.85	11,907.89	291.95	41.787	
5,800.00	5,664.07	5,958.07	5,709.44	25.67	279.12	91.66	-993.24	-12,181.31	12,200.35	11,895.57	304.79	40.029	
5,900.00	5,761.27	6,054.89	5,806.25	26.14	291.48	91.78	-991.62	-12,181.13	12,200.91	11,883.29	317.62	38.413	
6,000.00	5,858.46	6,151.71	5,903.06	26.62	303.84	91.89	-990.00	-12,180.94	12,201.52	11,871.06	330.46	36.923	
6,100.00	5,955.66	6,248.53	5,999.86	27.09	316.20	92.01	-988.38	-12,180.75	12,202.18	11,858.89	343.29	35.545	
6,200.00	6,052.85	6,345.35	6,096.67	27.57	328.56	92.12	-986.75	-12,180.57	12,202.89	11,846.76	356.13	34.266	
6,300.00	6,150.05	6,442.17	6,193.47	28.04	340.92	92.23	-985.12	-12,180.38	12,203.65	11,834.69	368.96	33.076	
6,400.00	6,247.24	6,538.98	6,290.27	28.52	353.28	92.35	-983.49	-12,180.20	12,204.47	11,822.67	381.79	31.966	
6,490.87	6,335.57	6,626.96	6,378.24	28.95	364.52	92.45	-982.01	-12,180.03	12,205.25	11,811.79	393.46	31.021	
6,500.00	6,344.44	6,635.80	6,387.07	28.99	365.64	95.83	-981.86	-12,180.01	12,205.40	11,810.77	394.63	30.929	
6,550.00	6,392.91	6,684.08	6,435.35	29.23	371.81	112.99	-981.04	-12,179.92	12,208.52	11,807.50	401.03	30.443	ES
6,600.00	6,440.98	6,731.97	6,483.23	29.46	377.92	126.50	-980.23	-12,179.82	12,215.57	11,808.20	407.38	29.986	
6,650.00	6,488.34	6,779.15	6,530.40	29.70	383.95	136.34	-979.43	-12,179.73	12,226.49	11,812.86	413.63	29.559	
6,700.00	6,534.69	6,825.34	6,576.58	29.92	389.84	143.41	-978.65	-12,179.64	12,241.21	11,821.47	419.75	29.163	
6,750.00	6,579.76	6,870.25	6,621.49	30.15	395.58	148.56	-977.89	-12,179.56	12,259.65	11,833.96	425.70	28.799	
6,800.00	6,623.27	6,913.61	6,664.84	30.36	401.11	152.39	-977.16	-12,179.47	12,281.69	11,850.25	431.44	28.467	
6,850.00	6,664.95	6,955.14	6,706.37	30.57	406.41	155.30	-976.45	-12,179.39	12,307.19	11,870.25	436.93	28.167	
6,900.00	6,704.53	6,994.60	6,745.83	30.78	411.45	157.56	-975.78	-12,179.32	12,335.99	11,893.84	442.15	27.900	
6,950.00	6,741.79	7,031.75	6,782.96	30.98	416.19	159.34	-975.15	-12,179.24	12,367.92	11,920.85	447.06	27.665	
7,000.00	6,776.48	7,066.34	6,817.55	31.17	420.61	160.74	-974.56	-12,179.18	12,402.77	11,951.14	451.64	27.462	
7,050.00	6,808.39	7,098.17	6,849.37	31.36	424.67	161.86	-974.02	-12,179.12	12,440.34	11,984.49	455.84	27.291	
7,100.00	6,837.34	7,127.04	6,878.24	31.54	428.36	162.74	-973.53	-12,179.06	12,480.38	12,020.72	459.65	27.152	
7,150.00	6,863.13	7,152.77	6,903.97	31.73	431.65	163.42	-973.09	-12,179.01	12,522.64	12,059.60	463.05	27.044	
7,200.00	6,885.61	7,175.21	6,926.41	31.91	434.51	163.91	-972.71	-12,178.97	12,566.88	12,100.87	466.01	26.967	
7,250.00	6,904.64	7,194.21	6,945.41	32.10	436.94	164.22	-972.39	-12,178.93	12,612.81	12,144.30	468.51	26.921	
7,300.00	6,920.10	7,209.67	6,960.86	32.29	438.91	164.31	-972.12	-12,178.90	12,660.14	12,189.60	470.55	26.905	SF
7,350.00	6,931.91	7,221.48	6,972.67	32.48	440.42	164.07	-971.92	-12,178.88	12,708.59	12,236.49	472.10	26.919	
7,400.00	6,939.97	7,229.57	6,980.76	32.68	441.45	163.10	-971.78	-12,178.86	12,757.86	12,284.69	473.17	26.963	
7,450.00	6,944.26	7,233.89	6,985.08	32.89	442.00	158.52	-971.71	-12,178.85	12,807.64	12,333.90	473.74	27.035	
7,481.69	6,945.00	7,234.66	6,985.85	33.03	442.10	93.69	-971.70	-12,178.85	12,839.31	12,365.46	473.85	27.096	
7,500.00	6,944.99	7,234.67	6,985.86	33.12	442.10	93.69	-971.70	-12,178.85	12,857.62	12,383.77	473.85	27.134	
7,600.00	6,944.91	7,234.70	6,985.89	33.60	442.11	93.71	-971.70	-12,178.85	12,957.62	12,483.75	473.87	27.345	
7,700.00	6,944.84	7,234.74	6,985.93	34.17	442.11	93.73	-971.70	-12,178.85	13,057.62	12,583.73	473.88	27.555	
7,800.00	6,944.76	7,234.78	6,985.96	34.80	442.12	93.75	-971.69	-12,178.85	13,157.61	12,683.71	473.90	27.764	
7,900.00	6,944.69	7,234.81	6,986.00	35.49	442.12	93.77	-971.69	-12,178.85	13,257.61	12,783.69	473.92	27.974	
8,000.00	6,944.61	7,234.85	6,986.04	36.25	442.13	93.80	-971.69	-12,178.85	13,357.61	12,883.67	473.94	28.184	
8,100.00	6,944.54	7,234.88	6,986.07	37.07	442.13	93.82	-971.69	-12,178.85	13,457.60	12,983.64	473.96	28.394	
8,200.00	6,944.46	7,234.92	6,986.11	37.94	442.13	93.84	-971.69	-12,178.85	13,557.60	13,083.62	473.98	28.604	
8,300.00	6,944.39	7,234.95	6,986.14	38.86	442.14	93.86	-971.69	-12,178.85	13,657.60	13,183.60	474.00	28.813	
8,400.00	6,944.31	7,234.99	6,986.18	39.83	442.14	93.88	-971.69	-12,178.85	13,757.60	13,283.57	474.03	29.023	
8,500.00	6,944.23	7,235.02	6,986.21	40.84	442.15	93.90	-971.69	-12,178.85	13,857.59	13,383.55	474.05	29.232	
8,600.00	6,944.16	7,235.06	6,986.25	41.89	442.15	93.92	-971.69	-12,178.85	13,957.59	13,483.52	474.07	29.442	
8,700.00	6,944.08	7,235.09	6,986.28	42.98	442.16	93.94	-971.69	-12,178.85	14,057.59	13,583.49	474.10	29.651	
8,800.00	6,944.01	7,235.13	6,986.32	44.10	442.16	93.96	-971.69	-12,178.85	14,157.59	13,683.47	474.12	29.861	
8,900.00	6,943.93	7,235.17	6,986.35	45.25	442.17	93.98	-971.69	-12,178.85	14,257.59	13,783.44	474.15	30.070	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 016D - OH - OH-SVY											Offset Site Error:	0.00 usft
Survey Program: 380-MWD OWSG Rev5											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
				Reference	Offset		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
9,000.00	6,943.86	7,235.20	6,986.39	46.43	442.17	94.01	-971.69	-12,178.85	14,357.58	13,883.41	474.17	30.279
9,100.00	6,943.78	7,235.24	6,986.43	47.63	442.18	94.03	-971.69	-12,178.85	14,457.58	13,983.38	474.20	30.488
9,200.00	6,943.71	7,235.27	6,986.46	48.86	442.18	94.05	-971.69	-12,178.85	14,557.58	14,083.35	474.23	30.697
9,300.00	6,943.63	7,235.31	6,986.50	50.11	442.18	94.07	-971.69	-12,178.85	14,657.58	14,183.32	474.26	30.906
9,400.00	6,943.56	7,235.34	6,986.53	51.38	442.19	94.09	-971.68	-12,178.85	14,757.57	14,283.29	474.29	31.115
9,500.00	6,943.48	7,235.38	6,986.57	52.66	442.19	94.11	-971.68	-12,178.85	14,857.57	14,383.26	474.31	31.324
9,600.00	6,943.41	7,235.41	6,986.60	53.97	442.20	94.13	-971.68	-12,178.85	14,957.57	14,483.22	474.34	31.533
9,700.00	6,943.33	7,235.45	6,986.64	55.29	442.20	94.15	-971.68	-12,178.85	15,057.57	14,583.19	474.38	31.742
9,800.00	6,943.26	7,235.49	6,986.67	56.63	442.21	94.17	-971.68	-12,178.85	15,157.57	14,683.16	474.41	31.951
9,900.00	6,943.18	7,235.52	6,986.71	57.98	442.21	94.19	-971.68	-12,178.85	15,257.56	14,783.12	474.44	32.159
10,000.00	6,943.11	7,235.56	6,986.74	59.34	442.22	94.22	-971.68	-12,178.85	15,357.56	14,883.09	474.47	32.368
10,100.00	6,943.03	7,235.59	6,986.78	60.72	442.22	94.24	-971.68	-12,178.85	15,457.56	14,983.05	474.51	32.576
10,200.00	6,942.96	7,235.63	6,986.82	62.11	442.23	94.26	-971.68	-12,178.85	15,557.56	15,083.02	474.54	32.784
10,300.00	6,942.88	7,235.66	6,986.85	63.50	442.23	94.28	-971.68	-12,178.85	15,657.56	15,182.98	474.58	32.993
10,400.00	6,942.81	7,235.70	6,986.89	64.91	442.23	94.30	-971.68	-12,178.85	15,757.55	15,282.94	474.61	33.201
10,500.00	6,942.73	7,235.73	6,986.92	66.33	442.24	94.32	-971.68	-12,178.85	15,857.55	15,382.90	474.65	33.409
10,600.00	6,942.66	7,235.77	6,986.96	67.75	442.24	94.34	-971.68	-12,178.85	15,957.55	15,482.87	474.68	33.617
10,700.00	6,942.58	7,235.80	6,986.99	69.18	442.25	94.36	-971.68	-12,178.85	16,057.55	15,582.83	474.72	33.825
10,800.00	6,942.51	7,235.84	6,987.03	70.62	442.25	94.38	-971.68	-12,178.85	16,157.55	15,682.79	474.76	34.033
10,900.00	6,942.43	7,235.88	6,987.06	72.07	442.26	94.41	-971.68	-12,178.85	16,257.54	15,782.75	474.80	34.241
11,000.00	6,942.36	7,235.91	6,987.10	73.52	442.26	94.43	-971.68	-12,178.85	16,357.54	15,882.70	474.84	34.449
11,100.00	6,942.28	7,235.95	6,987.13	74.98	442.27	94.45	-971.67	-12,178.85	16,457.54	15,982.66	474.88	34.656
11,200.00	6,942.21	7,235.98	6,987.17	76.45	442.27	94.47	-971.67	-12,178.85	16,557.54	16,082.62	474.92	34.864
11,300.00	6,942.13	7,236.02	6,987.21	77.92	442.28	94.49	-971.67	-12,178.85	16,657.54	16,182.58	474.96	35.071
11,400.00	6,942.06	7,236.05	6,987.24	79.40	442.28	94.51	-971.67	-12,178.85	16,757.54	16,282.53	475.00	35.279
11,500.00	6,941.98	7,236.09	6,987.28	80.88	442.28	94.53	-971.67	-12,178.85	16,857.53	16,382.49	475.05	35.486
11,600.00	6,941.91	7,236.12	6,987.31	82.36	442.29	94.55	-971.67	-12,178.85	16,957.53	16,482.44	475.09	35.693
11,700.00	6,941.83	7,236.16	6,987.35	83.85	442.29	94.57	-971.67	-12,178.85	17,057.53	16,582.40	475.13	35.901
11,800.00	6,941.76	7,236.19	6,987.38	85.35	442.30	94.59	-971.67	-12,178.85	17,157.53	16,682.35	475.18	36.108
11,900.00	6,941.68	7,236.23	6,987.42	86.85	442.30	94.62	-971.67	-12,178.85	17,257.53	16,782.31	475.22	36.315
12,000.00	6,941.60	7,236.27	6,987.45	88.35	442.31	94.64	-971.67	-12,178.85	17,357.53	16,882.26	475.27	36.521
12,100.00	6,941.53	7,236.30	6,987.49	89.85	442.31	94.66	-971.67	-12,178.85	17,457.53	16,982.21	475.32	36.728
12,200.00	6,941.45	7,236.34	6,987.52	91.36	442.32	94.68	-971.67	-12,178.85	17,557.52	17,082.16	475.36	36.935
12,300.00	6,941.38	7,236.37	6,987.56	92.88	442.32	94.70	-971.67	-12,178.85	17,657.52	17,182.11	475.41	37.142
12,400.00	6,941.30	7,236.41	6,987.60	94.39	442.33	94.72	-971.67	-12,178.85	17,757.52	17,282.06	475.46	37.348
12,500.00	6,941.23	7,236.44	6,987.63	95.91	442.33	94.74	-971.67	-12,178.85	17,857.52	17,382.01	475.51	37.555
12,600.00	6,941.15	7,236.48	6,987.67	97.43	442.33	94.76	-971.67	-12,178.85	17,957.52	17,481.96	475.56	37.761
12,700.00	6,941.08	7,236.51	6,987.70	98.95	442.34	94.78	-971.67	-12,178.85	18,057.52	17,581.91	475.61	37.967
12,800.00	6,941.00	7,236.55	6,987.74	100.48	442.34	94.80	-971.66	-12,178.85	18,157.51	17,681.86	475.66	38.173
12,900.00	6,940.93	7,236.59	6,987.77	102.01	442.35	94.83	-971.66	-12,178.85	18,257.51	17,781.80	475.71	38.379
13,000.00	6,940.85	7,236.62	6,987.81	103.54	442.35	94.85	-971.66	-12,178.85	18,357.51	17,881.75	475.76	38.585
13,100.00	6,940.78	7,236.66	6,987.84	105.07	442.36	94.87	-971.66	-12,178.85	18,457.51	17,981.70	475.82	38.791
13,200.00	6,940.70	7,236.69	6,987.88	106.61	442.36	94.89	-971.66	-12,178.85	18,557.51	18,081.64	475.87	38.997
13,300.00	6,940.63	7,236.73	6,987.92	108.14	442.37	94.91	-971.66	-12,178.85	18,657.51	18,181.59	475.92	39.203
13,400.00	6,940.55	7,236.76	6,987.95	109.68	442.37	94.93	-971.66	-12,178.85	18,757.51	18,281.53	475.98	39.408
13,500.00	6,940.48	7,236.80	6,987.99	111.22	442.37	94.95	-971.66	-12,178.85	18,857.51	18,381.47	476.03	39.614
13,600.00	6,940.40	7,236.83	6,988.02	112.77	442.38	94.97	-971.66	-12,178.85	18,957.50	18,481.42	476.09	39.819
13,700.00	6,940.33	7,236.87	6,988.06	114.31	442.38	94.99	-971.66	-12,178.85	19,057.50	18,581.36	476.14	40.025
13,800.00	6,940.25	7,236.90	6,988.09	115.86	442.39	95.01	-971.66	-12,178.85	19,157.50	18,681.30	476.20	40.230
13,900.00	6,940.18	7,236.94	6,988.13	117.41	442.39	95.04	-971.66	-12,178.85	19,257.50	18,781.24	476.26	40.435
14,000.00	6,940.10	7,236.98	6,988.16	118.95	442.40	95.06	-971.66	-12,178.85	19,357.50	18,881.18	476.32	40.640
14,100.00	6,940.03	7,237.01	6,988.20	120.51	442.40	95.08	-971.66	-12,178.85	19,457.50	18,981.12	476.38	40.845

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 016D - OH - OH-SVY											Offset Site Error:	0.00 usft	
Survey Program: 380-MWD OWSG Rev5											Offset Well Error:	0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,200.00	6,939.95	7,237.05	6,988.23	122.06	442.41	95.10	-971.66	-12,178.85	19,557.50	19,081.06	476.44	41.050	
14,300.00	6,939.88	7,237.08	6,988.27	123.61	442.41	95.12	-971.66	-12,178.85	19,657.50	19,181.00	476.50	41.254	
14,400.00	6,939.80	7,237.12	6,988.31	125.17	442.42	95.14	-971.65	-12,178.84	19,757.49	19,280.94	476.56	41.459	
14,500.00	6,939.73	7,237.15	6,988.34	126.72	442.42	95.16	-971.65	-12,178.84	19,857.49	19,380.88	476.62	41.663	
14,600.00	6,939.65	7,237.19	6,988.38	128.28	442.42	95.18	-971.65	-12,178.84	19,957.49	19,480.81	476.68	41.868	
14,700.00	6,939.58	7,237.22	6,988.41	129.84	442.43	95.20	-971.65	-12,178.84	20,057.49	19,580.75	476.74	42.072	
14,800.00	6,939.50	7,237.26	6,988.45	131.40	442.43	95.22	-971.65	-12,178.84	20,157.49	19,680.69	476.80	42.276	
14,900.00	6,939.43	7,237.29	6,988.48	132.96	442.44	95.25	-971.65	-12,178.84	20,257.49	19,780.62	476.87	42.480	
15,000.00	6,939.35	7,237.33	6,988.52	134.52	442.44	95.27	-971.65	-12,178.84	20,357.49	19,880.56	476.93	42.684	
15,100.00	6,939.28	7,237.37	6,988.55	136.08	442.45	95.29	-971.65	-12,178.84	20,457.49	19,980.49	477.00	42.888	
15,200.00	6,939.20	7,237.40	6,988.59	137.64	442.45	95.31	-971.65	-12,178.84	20,557.49	20,080.42	477.06	43.092	
15,300.00	6,939.13	7,237.44	6,988.62	139.21	442.46	95.33	-971.65	-12,178.84	20,657.48	20,180.36	477.13	43.296	
15,400.00	6,939.05	7,237.47	6,988.66	140.77	442.46	95.35	-971.65	-12,178.84	20,757.48	20,280.29	477.19	43.499	
15,500.00	6,938.98	7,237.51	6,988.70	142.34	442.47	95.37	-971.65	-12,178.84	20,857.48	20,380.22	477.26	43.703	
15,600.00	6,938.90	7,237.54	6,988.73	143.91	442.47	95.39	-971.65	-12,178.84	20,957.48	20,480.15	477.33	43.906	
15,700.00	6,938.82	7,237.58	6,988.77	145.47	442.47	95.41	-971.65	-12,178.84	21,057.48	20,580.09	477.39	44.109	
15,800.00	6,938.75	7,237.61	6,988.80	147.04	442.48	95.43	-971.65	-12,178.84	21,157.48	20,680.02	477.46	44.312	
15,900.00	6,938.67	7,237.65	6,988.84	148.61	442.48	95.45	-971.65	-12,178.84	21,257.48	20,779.95	477.53	44.515	
16,000.00	6,938.60	7,237.69	6,988.87	150.18	442.49	95.48	-971.65	-12,178.84	21,357.48	20,879.88	477.60	44.718	
16,100.00	6,938.52	7,237.72	6,988.91	151.75	442.49	95.50	-971.64	-12,178.84	21,457.48	20,979.80	477.67	44.921	
16,200.00	6,938.45	7,237.76	6,988.94	153.32	442.50	95.52	-971.64	-12,178.84	21,557.47	21,079.73	477.74	45.124	
16,300.00	6,938.37	7,237.79	6,988.98	154.90	442.50	95.54	-971.64	-12,178.84	21,657.47	21,179.66	477.81	45.326	
16,400.00	6,938.30	7,237.83	6,989.02	156.47	442.51	95.56	-971.64	-12,178.84	21,757.47	21,279.59	477.88	45.529	
16,500.00	6,938.22	7,237.86	6,989.05	158.04	442.51	95.58	-971.64	-12,178.84	21,857.47	21,379.52	477.96	45.731	
16,600.00	6,938.15	7,237.90	6,989.09	159.62	442.52	95.60	-971.64	-12,178.84	21,957.47	21,479.44	478.03	45.933	
16,700.00	6,938.07	7,237.93	6,989.12	161.19	442.52	95.62	-971.64	-12,178.84	22,057.47	21,579.37	478.10	46.136	
16,800.00	6,938.00	7,237.97	6,989.16	162.77	442.52	95.64	-971.64	-12,178.84	22,157.47	21,679.29	478.18	46.338	
16,900.00	6,937.92	7,238.00	6,989.19	164.34	442.53	95.66	-971.64	-12,178.84	22,257.47	21,779.22	478.25	46.539	
17,000.00	6,937.85	7,238.04	6,989.23	165.92	442.53	95.69	-971.64	-12,178.84	22,357.47	21,879.14	478.32	46.741	
17,100.00	6,937.77	7,238.08	6,989.26	167.50	442.54	95.71	-971.64	-12,178.84	22,457.47	21,979.07	478.40	46.943	
17,200.00	6,937.70	7,238.11	6,989.30	169.07	442.54	95.73	-971.64	-12,178.84	22,557.46	22,078.99	478.47	47.144	
17,300.00	6,937.62	7,238.15	6,989.33	170.65	442.55	95.75	-971.64	-12,178.84	22,657.46	22,178.91	478.55	47.346	
17,400.00	6,937.55	7,238.18	6,989.37	172.23	442.55	95.77	-971.64	-12,178.84	22,757.46	22,278.84	478.63	47.547	
17,500.00	6,937.47	7,238.22	6,989.41	173.81	442.56	95.79	-971.64	-12,178.84	22,857.46	22,378.76	478.71	47.749	
17,600.00	6,937.40	7,238.25	6,989.44	175.39	442.56	95.81	-971.64	-12,178.84	22,957.46	22,478.68	478.78	47.950	
17,700.00	6,937.32	7,238.29	6,989.48	176.97	442.57	95.83	-971.63	-12,178.84	23,057.46	22,578.60	478.86	48.151	
17,800.00	6,937.25	7,238.32	6,989.51	178.55	442.57	95.85	-971.63	-12,178.84	23,157.46	22,678.52	478.94	48.352	
17,900.00	6,937.17	7,238.36	6,989.55	180.13	442.57	95.87	-971.63	-12,178.84	23,257.46	22,778.44	479.02	48.552	
18,000.00	6,937.10	7,238.39	6,989.58	181.71	442.58	95.89	-971.63	-12,178.84	23,357.46	22,878.36	479.10	48.753	
18,100.00	6,937.02	7,238.43	6,989.62	183.29	442.58	95.92	-971.63	-12,178.84	23,457.46	22,978.28	479.18	48.953	
18,200.00	6,936.95	7,238.47	6,989.65	184.87	442.59	95.94	-971.63	-12,178.84	23,557.46	23,078.20	479.26	49.154	
18,300.00	6,936.87	7,238.50	6,989.69	186.46	442.59	95.96	-971.63	-12,178.84	23,657.46	23,178.12	479.34	49.354	
18,400.00	6,936.80	7,238.54	6,989.72	188.04	442.60	95.98	-971.63	-12,178.84	23,757.45	23,278.03	479.42	49.554	
18,500.00	6,936.72	7,238.57	6,989.76	189.62	442.60	96.00	-971.63	-12,178.84	23,857.45	23,377.95	479.50	49.754	
18,600.00	6,936.65	7,238.61	6,989.80	191.21	442.61	96.02	-971.63	-12,178.84	23,957.45	23,477.87	479.59	49.954	
18,700.00	6,936.57	7,238.64	6,989.83	192.79	442.61	96.04	-971.63	-12,178.84	24,057.45	23,577.78	479.67	50.154	
18,800.00	6,936.50	7,238.68	6,989.87	194.37	442.62	96.06	-971.63	-12,178.84	24,157.45	23,677.70	479.75	50.354	
18,900.00	6,936.42	7,238.71	6,989.90	195.96	442.62	96.08	-971.63	-12,178.84	24,257.45	23,777.61	479.84	50.554	
19,000.00	6,936.35	7,238.75	6,989.94	197.54	442.62	96.10	-971.63	-12,178.84	24,357.45	23,877.53	479.92	50.753	
19,100.00	6,936.27	7,238.79	6,989.97	199.13	442.63	96.13	-971.63	-12,178.84	24,457.45	23,977.44	480.01	50.952	
19,200.00	6,936.19	7,238.82	6,990.01	200.71	442.63	96.15	-971.63	-12,178.84	24,557.45	24,077.36	480.09	51.152	
19,300.00	6,936.12	7,238.86	6,990.04	202.30	442.64	96.17	-971.63	-12,178.84	24,657.45	24,177.27	480.18	51.351	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 016D - OH - OH-SVY											Offset Site Error:	0.00 usft
Survey Program: 380-MWD OWSG Rev5											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
19,400.00	6,936.04	7,238.89	6,990.08	203.88	442.64	96.19	-971.62	-12,178.84	24,757.45	24,277.18	480.26	51.550
19,500.00	6,935.97	7,238.93	6,990.12	205.47	442.65	96.21	-971.62	-12,178.84	24,857.45	24,377.10	480.35	51.749
19,600.00	6,935.89	7,238.96	6,990.15	207.06	442.65	96.23	-971.62	-12,178.84	24,957.45	24,477.01	480.44	51.948
19,700.00	6,935.82	7,239.00	6,990.19	208.64	442.66	96.25	-971.62	-12,178.84	25,057.44	24,576.92	480.52	52.146
19,800.00	6,935.74	7,239.03	6,990.22	210.23	442.66	96.27	-971.62	-12,178.84	25,157.44	24,676.83	480.61	52.345
19,900.00	6,935.67	7,239.07	6,990.26	211.82	442.66	96.29	-971.62	-12,178.84	25,257.44	24,776.74	480.70	52.543
20,000.00	6,935.59	7,239.10	6,990.29	213.41	442.67	96.31	-971.62	-12,178.84	25,357.44	24,876.65	480.79	52.741
20,100.00	6,935.52	7,239.14	6,990.33	214.99	442.67	96.33	-971.62	-12,178.84	25,457.44	24,976.56	480.88	52.940
20,200.00	6,935.44	7,239.18	6,990.36	216.58	442.68	96.36	-971.62	-12,178.84	25,557.44	25,076.47	480.97	53.138
20,300.00	6,935.37	7,239.21	6,990.40	218.17	442.68	96.38	-971.62	-12,178.84	25,657.44	25,176.38	481.06	53.336
20,400.00	6,935.29	7,239.25	6,990.43	219.76	442.69	96.40	-971.62	-12,178.84	25,757.44	25,276.29	481.15	53.533
20,500.00	6,935.22	7,239.28	6,990.47	221.35	442.69	96.42	-971.62	-12,178.84	25,857.44	25,376.20	481.24	53.731
20,600.00	6,935.14	7,239.32	6,990.51	222.94	442.70	96.44	-971.62	-12,178.84	25,957.44	25,476.11	481.33	53.929
20,700.00	6,935.07	7,239.35	6,990.54	224.53	442.70	96.46	-971.62	-12,178.84	26,057.44	25,576.02	481.42	54.126
20,789.75	6,935.00	7,239.38	6,990.57	225.95	442.71	96.48	-971.62	-12,178.84	26,147.18	25,665.68	481.50	54.303

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - OH - OH-SVY													Offset Site Error:	0.00 usft
Survey Program: 100-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	3,000.00	2,822.02	0.00	19.26	-87.82	365.93	-9,595.58	9,997.99					
100.00	100.00	3,000.00	2,822.02	0.25	19.26	-87.82	365.93	-9,595.58	9,970.61	9,953.48	17.13	582.070		
200.00	200.00	3,095.40	2,913.08	0.61	19.74	-87.89	352.04	-9,570.76	9,943.81	9,926.01	17.80	558.616		
300.00	300.00	3,100.00	2,917.47	0.97	19.76	-87.90	351.35	-9,569.56	9,917.34	9,899.26	18.08	548.620		
400.00	400.00	3,100.00	2,917.47	1.33	19.76	-87.90	351.35	-9,569.56	9,891.80	9,873.43	18.37	538.514		
500.00	500.00	3,152.62	2,967.85	1.68	20.00	-87.94	343.87	-9,556.38	9,866.45	9,847.47	18.98	519.859		
600.00	599.98	3,200.00	3,013.57	2.03	20.22	93.41	337.87	-9,545.49	9,842.54	9,822.99	19.55	503.416		
700.00	699.84	3,200.00	3,013.57	2.36	20.22	93.89	337.87	-9,545.49	9,819.18	9,799.33	19.85	494.632		
800.00	799.45	3,200.00	3,013.57	2.71	20.22	94.34	337.87	-9,545.49	9,797.01	9,776.85	20.16	485.850		
900.00	898.70	3,200.00	3,013.57	3.06	20.22	94.77	337.87	-9,545.49	9,776.07	9,755.58	20.49	477.085		
1,000.00	997.47	3,200.00	3,013.57	3.43	20.22	95.17	337.87	-9,545.49	9,756.40	9,735.57	20.83	468.319		
1,100.00	1,095.62	3,251.25	3,063.38	3.82	20.42	95.57	332.11	-9,534.90	9,737.16	9,715.69	21.47	453.488		
1,180.06	1,173.69	3,300.00	3,111.09	4.14	20.60	95.90	327.27	-9,526.12	9,723.38	9,701.34	22.04	441.186		
1,200.00	1,193.07	3,300.00	3,111.09	4.22	20.60	95.90	327.27	-9,526.12	9,719.88	9,697.77	22.12	439.498		
1,300.00	1,290.27	3,300.00	3,111.09	4.65	20.60	95.90	327.27	-9,526.12	9,702.93	9,680.42	22.51	431.040		
1,400.00	1,387.46	3,300.00	3,111.09	5.08	20.60	95.90	327.27	-9,526.12	9,686.98	9,664.07	22.91	422.752		
1,500.00	1,484.66	3,300.00	3,111.09	5.52	20.60	95.90	327.27	-9,526.12	9,672.04	9,648.72	23.32	414.679		
1,600.00	1,581.85	3,339.78	3,150.20	5.97	20.71	95.94	323.75	-9,519.74	9,657.76	9,633.83	23.92	403.723		
1,700.00	1,679.05	3,400.00	3,209.60	6.42	20.89	96.00	319.06	-9,511.09	9,644.65	9,620.04	24.62	391.783		
1,800.00	1,776.25	3,400.00	3,209.60	6.87	20.89	96.00	319.06	-9,511.09	9,631.75	9,606.71	25.04	384.657		
1,900.00	1,873.44	3,423.39	3,232.73	7.33	20.95	96.02	317.42	-9,507.96	9,619.83	9,594.27	25.56	376.351		
2,000.00	1,970.64	3,500.00	3,308.50	7.78	21.15	96.11	312.44	-9,497.81	9,608.34	9,582.03	26.30	365.284		
2,100.00	2,067.83	3,500.00	3,308.50	8.24	21.15	96.11	312.44	-9,497.81	9,597.49	9,570.76	26.73	359.034		
2,200.00	2,165.03	3,544.20	3,352.28	8.71	21.25	96.16	309.81	-9,492.33	9,587.22	9,559.87	27.35	350.596		
2,300.00	2,262.22	3,600.00	3,407.67	9.17	21.38	96.22	306.69	-9,486.40	9,578.14	9,550.13	28.01	341.959		
2,400.00	2,359.42	3,600.00	3,407.67	9.63	21.38	96.22	306.69	-9,486.40	9,569.37	9,540.93	28.44	336.490		
2,500.00	2,456.61	3,600.00	3,407.67	10.10	21.38	96.22	306.69	-9,486.40	9,561.64	9,532.77	28.87	331.232		
2,600.00	2,553.81	3,639.41	3,446.87	10.57	21.45	96.27	304.72	-9,482.81	9,554.66	9,525.21	29.45	324.443		
2,700.00	2,651.01	3,700.00	3,507.22	11.03	21.56	96.34	302.32	-9,478.06	9,548.68	9,518.56	30.12	317.068		
2,800.00	2,748.20	3,700.00	3,507.22	11.50	21.56	96.34	302.32	-9,478.06	9,543.05	9,512.51	30.54	312.457		
2,900.00	2,845.40	3,700.00	3,507.22	11.97	21.56	96.34	302.32	-9,478.06	9,538.47	9,507.50	30.97	308.026		
3,000.00	2,942.59	3,749.26	3,556.36	12.44	21.62	96.40	300.74	-9,474.89	9,534.49	9,502.92	31.57	302.055		
3,100.00	3,039.79	3,800.00	3,607.01	12.91	21.69	96.46	299.26	-9,472.28	9,531.45	9,499.28	32.17	296.288		
3,200.00	3,136.98	3,800.00	3,607.01	13.38	21.69	96.46	299.26	-9,472.28	9,528.98	9,496.39	32.59	292.388		
3,300.00	3,234.18	3,800.00	3,607.01	13.85	21.69	96.46	299.26	-9,472.28	9,527.56	9,494.56	33.01	288.642		
3,400.00	3,331.38	3,845.06	3,652.02	14.32	21.73	96.52	298.17	-9,470.64	9,526.69	9,493.14	33.55	283.923		
3,500.00	3,428.57	4,661.02	4,463.28	14.79	23.51	97.51	266.48	-9,416.33	9,520.33	9,483.73	36.60	260.123		
3,600.00	3,525.77	4,723.26	4,525.11	15.26	23.64	97.58	262.54	-9,410.37	9,513.00	9,475.72	37.28	255.170		
3,700.00	3,622.96	4,800.00	4,601.36	15.73	23.79	97.67	258.36	-9,402.81	9,505.66	9,467.64	38.02	250.036		
3,800.00	3,720.16	4,800.00	4,601.36	16.20	23.79	97.67	258.36	-9,402.81	9,499.22	9,460.77	38.46	247.014		
3,900.00	3,817.35	4,851.77	4,652.85	16.68	23.88	97.73	255.98	-9,398.12	9,493.13	9,454.03	39.10	242.770		
4,000.00	3,914.55	4,900.00	4,700.94	17.15	23.96	97.79	254.19	-9,394.73	9,488.38	9,448.65	39.74	238.788		
4,100.00	4,011.74	4,900.00	4,700.94	17.62	23.96	97.79	254.19	-9,394.73	9,484.07	9,443.90	40.17	236.104		
4,200.00	4,108.94	4,900.00	4,700.94	18.09	23.96	97.79	254.19	-9,394.73	9,480.81	9,440.21	40.60	233.523		
4,300.00	4,206.14	4,948.69	4,749.53	18.57	24.02	97.85	252.68	-9,392.03	9,478.22	9,437.03	41.19	230.083		
4,400.00	4,303.33	5,000.00	4,800.77	19.04	24.09	97.92	251.29	-9,389.72	9,476.47	9,434.67	41.80	226.717		
4,500.00	4,400.53	5,000.00	4,800.77	19.51	24.09	97.92	251.29	-9,389.72	9,475.34	9,433.12	42.22	224.419		
4,597.09	4,494.90	5,036.35	4,837.09	19.97	24.12	97.97	250.43	-9,388.47	9,475.00	9,432.26	42.74	221.709 CC		
4,600.00	4,497.72	5,037.13	4,837.86	19.99	24.12	97.97	250.41	-9,388.44	9,475.00	9,432.25	42.75	221.634 ES		
4,700.00	4,594.92	5,100.00	4,900.71	20.46	24.18	98.05	249.21	-9,387.13	9,475.72	9,432.36	43.35	218.563		
4,800.00	4,692.11	5,100.00	4,900.71	20.93	24.18	98.05	249.21	-9,387.13	9,476.73	9,432.96	43.77	216.513		
4,900.00	4,789.31	5,178.44	4,979.13	21.41	24.24	98.15	248.02	-9,386.08	9,478.53	9,434.14	44.39	213.526		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - OH - OH-SVY											Offset Site Error:	0.00 usft
Survey Program: 100-MWD											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
5,000.00	4,886.51	5,263.89	5,064.56	21.88	24.31	98.27	246.71	-9,384.89	9,480.37	9,435.34	45.02	210.564
5,100.00	4,983.70	5,348.39	5,149.04	22.35	24.39	98.38	244.96	-9,383.93	9,482.43	9,436.79	45.64	207.757
5,200.00	5,080.90	5,400.00	5,200.63	22.83	24.45	98.44	243.90	-9,383.39	9,484.72	9,438.55	46.17	205.414
5,300.00	5,178.09	5,445.72	5,246.35	23.30	24.48	98.50	243.12	-9,383.12	9,487.58	9,440.95	46.63	203.481
5,400.00	5,275.29	5,500.00	5,300.62	23.77	24.53	98.58	242.59	-9,383.34	9,491.27	9,444.18	47.09	201.573
5,500.00	5,372.48	5,519.84	5,320.46	24.25	24.54	98.60	242.48	-9,383.54	9,495.51	9,448.03	47.48	200.004
5,600.00	5,469.68	5,600.00	5,400.62	24.72	24.57	98.71	242.21	-9,384.50	9,500.30	9,452.47	47.83	198.635
5,700.00	5,566.87	5,687.34	5,487.94	25.20	24.61	98.83	241.93	-9,385.67	9,505.29	9,457.12	48.16	197.356
5,800.00	5,664.07	5,842.78	5,643.37	25.67	24.72	99.04	240.20	-9,387.02	9,509.63	9,461.06	48.57	195.787
5,900.00	5,761.27	5,900.00	5,700.59	26.14	24.77	99.12	239.71	-9,387.59	9,514.32	9,465.33	48.98	194.243
6,000.00	5,858.46	6,028.26	5,828.84	26.62	24.80	99.30	239.71	-9,388.72	9,519.09	9,469.78	49.31	193.044
6,100.00	5,955.66	6,137.21	5,937.78	27.09	24.82	99.45	239.62	-9,389.46	9,523.69	9,474.03	49.66	191.781
6,200.00	6,052.85	6,223.45	6,024.02	27.57	24.84	99.57	239.63	-9,389.95	9,528.28	9,478.26	50.02	190.494
6,300.00	6,150.05	6,277.52	6,078.09	28.04	24.86	99.64	239.56	-9,390.47	9,533.26	9,482.87	50.39	189.199
6,400.00	6,247.24	6,353.55	6,154.11	28.52	24.87	99.75	239.41	-9,391.51	9,538.68	9,487.94	50.73	188.021
6,490.87	6,335.57	6,475.63	6,276.19	28.95	24.89	99.92	239.64	-9,392.91	9,543.50	9,492.49	51.01	187.081
6,500.00	6,344.44	6,484.50	6,285.05	28.99	24.89	103.31	239.65	-9,393.00	9,544.04	9,493.00	51.04	186.977
6,550.00	6,392.91	6,543.80	6,344.36	29.23	24.91	120.54	239.57	-9,393.52	9,549.21	9,498.00	51.21	186.474
6,600.00	6,440.98	6,573.95	6,374.50	29.46	24.93	134.14	239.51	-9,393.83	9,558.34	9,506.95	51.39	186.007
6,650.00	6,488.34	6,616.28	6,416.83	29.70	24.95	144.14	239.43	-9,394.35	9,571.36	9,519.81	51.55	185.656
6,700.00	6,534.69	6,684.38	6,484.92	29.92	24.98	151.45	239.08	-9,395.00	9,587.93	9,536.22	51.71	185.412
6,750.00	6,579.76	6,700.00	6,500.54	30.15	24.99	156.83	239.01	-9,395.16	9,608.24	9,556.36	51.87	185.224
6,800.00	6,623.27	6,735.51	6,536.05	30.36	25.01	161.00	238.78	-9,395.53	9,632.04	9,580.02	52.01	185.187 SF
6,850.00	6,664.95	6,749.44	6,549.98	30.57	25.02	164.32	238.72	-9,395.75	9,659.37	9,607.22	52.15	185.228
6,900.00	6,704.53	6,762.59	6,563.13	30.78	25.03	167.09	238.66	-9,395.99	9,689.99	9,637.72	52.27	185.380
6,950.00	6,741.79	6,822.23	6,622.76	30.98	25.04	169.57	238.61	-9,397.21	9,723.74	9,671.39	52.36	185.724
7,000.00	6,776.48	6,994.89	6,795.40	31.17	25.06	171.96	239.02	-9,398.60	9,759.70	9,707.21	52.50	185.913
7,050.00	6,808.39	7,000.00	6,800.51	31.36	25.06	174.12	239.03	-9,398.61	9,798.16	9,745.57	52.59	186.321
7,100.00	6,837.34	7,039.40	6,839.91	31.54	25.08	176.40	239.07	-9,398.63	9,838.85	9,786.15	52.70	186.709
7,150.00	6,863.13	7,049.79	6,850.30	31.73	25.08	178.92	239.11	-9,398.67	9,881.77	9,829.01	52.76	187.293
7,200.00	6,885.61	7,058.78	6,859.30	31.91	25.08	-178.03	239.16	-9,398.71	9,926.55	9,873.74	52.81	187.972
7,250.00	6,904.64	7,277.63	7,078.04	32.10	25.31	-174.40	234.66	-9,398.67	9,972.65	9,919.25	53.39	186.772
7,300.00	6,920.10	7,291.42	7,091.82	32.29	25.33	-169.05	234.13	-9,398.57	10,019.92	9,966.49	53.43	187.519
7,350.00	6,931.91	7,300.00	7,100.39	32.48	25.35	-160.59	233.81	-9,398.51	10,068.23	10,014.78	53.45	188.370
7,400.00	6,939.97	7,300.00	7,100.39	32.68	25.35	-145.51	233.81	-9,398.51	10,117.29	10,063.85	53.43	189.342
7,450.00	6,944.26	7,300.00	7,100.39	32.89	25.35	-118.01	233.81	-9,398.51	10,166.78	10,113.37	53.41	190.362
7,481.69	6,945.00	7,300.00	7,100.39	33.03	25.35	-95.04	233.81	-9,398.51	10,198.23	10,144.84	53.39	191.029
7,500.00	6,944.99	7,300.00	7,100.39	33.12	25.35	-95.04	233.81	-9,398.51	10,216.40	10,163.03	53.37	191.419
7,600.00	6,944.91	7,300.00	7,100.39	33.60	25.35	-95.04	233.81	-9,398.51	10,315.66	10,262.36	53.30	193.544
7,700.00	6,944.84	7,300.00	7,100.39	34.17	25.35	-95.04	233.81	-9,398.51	10,414.93	10,361.70	53.23	195.664
7,800.00	6,944.76	7,300.00	7,100.39	34.80	25.35	-95.04	233.81	-9,398.51	10,514.21	10,461.05	53.16	197.779
7,900.00	6,944.69	7,300.00	7,100.39	35.49	25.35	-95.04	233.81	-9,398.51	10,613.51	10,560.41	53.10	199.888
8,000.00	6,944.61	7,300.00	7,100.39	36.25	25.35	-95.04	233.81	-9,398.51	10,712.82	10,659.79	53.04	201.991
8,100.00	6,944.54	7,300.00	7,100.39	37.07	25.35	-95.04	233.81	-9,398.51	10,812.15	10,759.17	52.98	204.088
8,200.00	6,944.46	7,300.00	7,100.39	37.94	25.35	-95.04	233.81	-9,398.51	10,911.48	10,858.56	52.92	206.180
8,300.00	6,944.39	7,300.00	7,100.39	38.86	25.35	-95.04	233.81	-9,398.51	11,010.83	10,957.96	52.87	208.265
8,400.00	6,944.31	7,300.00	7,100.39	39.83	25.35	-95.04	233.81	-9,398.51	11,110.19	11,057.37	52.82	210.345
8,500.00	6,944.23	7,300.00	7,100.39	40.84	25.35	-95.04	233.81	-9,398.51	11,209.56	11,156.79	52.77	212.418
8,600.00	6,944.16	7,300.00	7,100.39	41.89	25.35	-95.04	233.81	-9,398.51	11,308.94	11,256.22	52.73	214.485
8,700.00	6,944.08	7,300.00	7,100.39	42.98	25.35	-95.04	233.81	-9,398.51	11,408.34	11,355.65	52.68	216.546
8,800.00	6,944.01	7,300.00	7,100.39	44.10	25.35	-95.04	233.81	-9,398.51	11,507.74	11,455.10	52.64	218.600
8,900.00	6,943.93	7,300.00	7,100.39	45.25	25.35	-95.04	233.81	-9,398.51	11,607.16	11,554.55	52.61	220.647

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - OH - OH-SVY												Offset Site Error:	0.00 usft	
Survey Program: 100-MWD												Offset Well Error:	0.00 usft	
Rule Assigned:												Warning		
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor		
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
9,000.00	6,943.86	7,300.00	7,100.39	46.43	25.35	-95.04	233.81	-9,398.51	11,706.58	11,654.01	52.57	222.688		
9,100.00	6,943.78	7,300.00	7,100.39	47.63	25.35	-95.04	233.81	-9,398.51	11,806.01	11,753.48	52.54	224.722		
9,200.00	6,943.71	7,300.00	7,100.39	48.86	25.35	-95.04	233.81	-9,398.51	11,905.46	11,852.95	52.50	226.750		
9,300.00	6,943.63	7,300.00	7,100.39	50.11	25.35	-95.04	233.81	-9,398.51	12,004.91	11,952.43	52.48	228.770		
9,400.00	6,943.56	7,300.00	7,100.39	51.38	25.35	-95.04	233.81	-9,398.51	12,104.37	12,051.92	52.45	230.784		
9,500.00	6,943.48	7,300.00	7,100.39	52.66	25.35	-95.04	233.81	-9,398.51	12,203.84	12,151.42	52.42	232.790		
9,600.00	6,943.41	7,300.00	7,100.39	53.97	25.35	-95.04	233.81	-9,398.51	12,303.32	12,250.92	52.40	234.789		
9,700.00	6,943.33	7,300.00	7,100.39	55.29	25.35	-95.04	233.81	-9,398.51	12,402.81	12,350.42	52.38	236.781		
9,800.00	6,943.26	7,300.00	7,100.39	56.63	25.35	-95.04	233.81	-9,398.51	12,502.30	12,449.94	52.36	238.766		
9,900.00	6,943.18	7,300.00	7,100.39	57.98	25.35	-95.04	233.81	-9,398.51	12,601.80	12,549.46	52.35	240.744		
10,000.00	6,943.11	7,300.00	7,100.39	59.34	25.35	-95.04	233.81	-9,398.51	12,701.32	12,648.98	52.33	242.714		
10,100.00	6,943.03	7,300.00	7,100.39	60.72	25.35	-95.04	233.81	-9,398.51	12,800.83	12,748.52	52.32	244.676		
10,200.00	6,942.96	7,321.68	7,122.06	62.11	25.38	-96.03	233.05	-9,398.37	12,900.33	12,847.98	52.35	246.431		
10,300.00	6,942.88	7,322.08	7,122.46	63.50	25.38	-96.05	233.04	-9,398.37	12,999.86	12,947.52	52.34	248.373		
10,400.00	6,942.81	7,322.48	7,122.86	64.91	25.38	-96.07	233.02	-9,398.37	13,099.40	13,047.07	52.33	250.307		
10,500.00	6,942.73	7,322.88	7,123.26	66.33	25.38	-96.09	233.01	-9,398.36	13,198.95	13,146.62	52.33	252.234		
10,600.00	6,942.66	7,323.27	7,123.65	67.75	25.38	-96.11	233.00	-9,398.36	13,298.50	13,246.18	52.32	254.153		
10,700.00	6,942.58	7,323.67	7,124.05	69.18	25.38	-96.12	232.99	-9,398.36	13,398.06	13,345.74	52.32	256.064		
10,800.00	6,942.51	7,324.06	7,124.44	70.62	25.38	-96.14	232.97	-9,398.36	13,497.63	13,445.30	52.32	257.967		
10,900.00	6,942.43	7,324.45	7,124.83	72.07	25.38	-96.16	232.96	-9,398.35	13,597.20	13,544.87	52.32	259.863		
11,000.00	6,942.36	7,324.84	7,125.22	73.52	25.38	-96.18	232.95	-9,398.35	13,696.78	13,644.45	52.33	261.750		
11,100.00	6,942.28	7,325.23	7,125.61	74.98	25.38	-96.19	232.94	-9,398.35	13,796.36	13,744.03	52.33	263.629		
11,200.00	6,942.21	7,325.61	7,125.99	76.45	25.38	-96.21	232.92	-9,398.35	13,895.95	13,843.62	52.34	265.500		
11,300.00	6,942.13	7,326.00	7,126.38	77.92	25.38	-96.23	232.91	-9,398.34	13,995.55	13,943.20	52.35	267.363		
11,400.00	6,942.06	7,326.38	7,126.76	79.40	25.38	-96.25	232.90	-9,398.34	14,095.15	14,042.80	52.36	269.218		
11,500.00	6,941.98	7,326.76	7,127.14	80.88	25.38	-96.26	232.89	-9,398.34	14,194.76	14,142.39	52.37	271.065		
11,600.00	6,941.91	7,327.14	7,127.52	82.36	25.38	-96.28	232.87	-9,398.34	14,294.37	14,242.00	52.38	272.903		
11,700.00	6,941.83	7,327.52	7,127.90	83.85	25.38	-96.30	232.86	-9,398.34	14,393.99	14,341.60	52.39	274.733		
11,800.00	6,941.76	7,327.90	7,128.27	85.35	25.38	-96.32	232.85	-9,398.33	14,493.62	14,441.21	52.41	276.555		
11,900.00	6,941.68	7,328.27	7,128.65	86.85	25.38	-96.33	232.84	-9,398.33	14,593.25	14,540.82	52.42	278.368		
12,000.00	6,941.60	7,328.64	7,129.02	88.35	25.39	-96.35	232.83	-9,398.33	14,692.88	14,640.44	52.44	280.173		
12,100.00	6,941.53	7,329.01	7,129.39	89.85	25.39	-96.37	232.82	-9,398.33	14,792.52	14,740.06	52.46	281.970		
12,200.00	6,941.45	7,329.38	7,129.76	91.36	25.39	-96.38	232.80	-9,398.32	14,892.16	14,839.68	52.48	283.758		
12,300.00	6,941.38	7,329.75	7,130.13	92.88	25.39	-96.40	232.79	-9,398.32	14,991.81	14,939.31	52.50	285.537		
12,400.00	6,941.30	7,330.12	7,130.49	94.39	25.39	-96.42	232.78	-9,398.32	15,091.47	15,038.94	52.53	287.308		
12,500.00	6,941.23	7,330.48	7,130.86	95.91	25.39	-96.43	232.77	-9,398.32	15,191.12	15,138.57	52.55	289.071		
12,600.00	6,941.15	7,330.85	7,131.22	97.43	25.39	-96.45	232.76	-9,398.31	15,290.79	15,238.21	52.58	290.825		
12,700.00	6,941.08	7,331.21	7,131.58	98.95	25.39	-96.47	232.75	-9,398.31	15,390.45	15,337.85	52.60	292.570		
12,800.00	6,941.00	7,331.57	7,131.94	100.48	25.39	-96.48	232.74	-9,398.31	15,490.12	15,437.49	52.63	294.307		
12,900.00	6,940.93	7,331.93	7,132.30	102.01	25.39	-96.50	232.73	-9,398.31	15,589.80	15,537.14	52.66	296.036		
13,000.00	6,940.85	7,332.29	7,132.66	103.54	25.39	-96.52	232.72	-9,398.31	15,689.48	15,636.79	52.69	297.755		
13,100.00	6,940.78	7,332.64	7,133.02	105.07	25.39	-96.53	232.70	-9,398.30	15,789.16	15,736.44	52.72	299.466		
13,200.00	6,940.70	7,333.00	7,133.37	106.61	25.39	-96.55	232.69	-9,398.30	15,888.85	15,836.09	52.76	301.169		
13,300.00	6,940.63	7,333.35	7,133.72	108.14	25.39	-96.57	232.68	-9,398.30	15,988.54	15,935.75	52.79	302.862		
13,400.00	6,940.55	7,333.70	7,134.08	109.68	25.39	-96.58	232.67	-9,398.30	16,088.23	16,035.41	52.83	304.547		
13,500.00	6,940.48	7,334.05	7,134.43	111.22	25.39	-96.60	232.66	-9,398.30	16,187.93	16,135.07	52.86	306.224		
13,600.00	6,940.40	7,334.40	7,134.78	112.77	25.39	-96.61	232.65	-9,398.29	16,287.64	16,234.74	52.90	307.891		
13,700.00	6,940.33	7,334.75	7,135.12	114.31	25.39	-96.63	232.64	-9,398.29	16,387.34	16,334.40	52.94	309.550		
13,800.00	6,940.25	7,335.10	7,135.47	115.86	25.39	-96.65	232.63	-9,398.29	16,487.05	16,434.07	52.98	311.201		
13,900.00	6,940.18	7,335.44	7,135.81	117.41	25.39	-96.66	232.62	-9,398.29	16,586.76	16,533.75	53.02	312.842		
14,000.00	6,940.10	7,335.78	7,136.16	118.95	25.39	-96.68	232.61	-9,398.29	16,686.48	16,633.42	53.06	314.475		
14,100.00	6,940.03	7,336.13	7,136.50	120.51	25.40	-96.69	232.60	-9,398.28	16,786.20	16,733.10	53.10	316.099		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - OH - OH-SVY											Offset Site Error: 0.00 usft		
Survey Program: 100-MWD											Offset Well Error: 0.00 usft		
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,200.00	6,939.95	7,336.47	7,136.84	122.06	25.40	-96.71	232.59	-9,398.28	16,885.92	16,832.78	53.15	317.715	
14,300.00	6,939.88	7,336.80	7,137.18	123.61	25.40	-96.72	232.58	-9,398.28	16,985.65	16,932.46	53.19	319.321	
14,400.00	6,939.80	7,337.14	7,137.52	125.17	25.40	-96.74	232.57	-9,398.28	17,085.38	17,032.14	53.24	320.920	
14,500.00	6,939.73	7,337.48	7,137.85	126.72	25.40	-96.75	232.56	-9,398.28	17,185.11	17,131.83	53.29	322.509	
14,600.00	6,939.65	7,337.81	7,138.19	128.28	25.40	-96.77	232.55	-9,398.27	17,284.85	17,231.51	53.33	324.090	
14,700.00	6,939.58	7,338.15	7,138.52	129.84	25.40	-96.78	232.54	-9,398.27	17,384.59	17,331.20	53.38	325.662	
14,800.00	6,939.50	7,338.48	7,138.85	131.40	25.40	-96.80	232.53	-9,398.27	17,484.33	17,430.90	53.43	327.225	
14,900.00	6,939.43	7,338.81	7,139.18	132.96	25.40	-96.81	232.52	-9,398.27	17,584.07	17,530.59	53.48	328.780	
15,000.00	6,939.35	7,339.14	7,139.51	134.52	25.40	-96.83	232.51	-9,398.27	17,683.82	17,630.29	53.53	330.326	
15,100.00	6,939.28	7,339.47	7,139.84	136.08	25.40	-96.84	232.50	-9,398.26	17,783.57	17,729.98	53.59	331.863	
15,200.00	6,939.20	7,339.80	7,140.17	137.64	25.40	-96.86	232.49	-9,398.26	17,883.32	17,829.68	53.64	333.392	
15,300.00	6,939.13	7,340.12	7,140.49	139.21	25.40	-96.87	232.48	-9,398.26	17,983.08	17,929.39	53.69	334.912	
15,400.00	6,939.05	7,340.45	7,140.82	140.77	25.40	-96.89	232.47	-9,398.26	18,082.84	18,029.09	53.75	336.423	
15,500.00	6,938.98	7,340.77	7,141.14	142.34	25.40	-96.90	232.46	-9,398.26	18,182.60	18,128.79	53.81	337.926	
15,600.00	6,938.90	7,341.09	7,141.46	143.91	25.40	-96.92	232.46	-9,398.26	18,282.36	18,228.50	53.86	339.421	
15,700.00	6,938.82	7,341.41	7,141.78	145.47	25.40	-96.93	232.45	-9,398.25	18,382.13	18,328.21	53.92	340.907	
15,800.00	6,938.75	7,341.73	7,142.10	147.04	25.40	-96.95	232.44	-9,398.25	18,481.90	18,427.92	53.98	342.384	
15,900.00	6,938.67	7,342.05	7,142.42	148.61	25.40	-96.96	232.43	-9,398.25	18,581.67	18,527.63	54.04	343.853	
16,000.00	6,938.60	7,342.37	7,142.74	150.18	25.40	-96.98	232.42	-9,398.25	18,681.44	18,627.34	54.10	345.313	
16,100.00	6,938.52	7,342.68	7,143.05	151.75	25.40	-96.99	232.41	-9,398.25	18,781.22	18,727.06	54.16	346.765	
16,200.00	6,938.45	7,343.00	7,143.37	153.32	25.40	-97.01	232.40	-9,398.24	18,881.00	18,826.78	54.22	348.208	
16,300.00	6,938.37	7,343.31	7,143.68	154.90	25.40	-97.02	232.39	-9,398.24	18,980.78	18,926.49	54.29	349.643	
16,400.00	6,938.30	7,343.63	7,143.99	156.47	25.41	-97.03	232.38	-9,398.24	19,080.56	19,026.21	54.35	351.069	
16,500.00	6,938.22	7,343.94	7,144.31	158.04	25.41	-97.05	232.38	-9,398.24	19,180.35	19,125.93	54.41	352.487	
16,600.00	6,938.15	7,344.25	7,144.62	159.62	25.41	-97.06	232.37	-9,398.24	19,280.14	19,225.66	54.48	353.897	
16,700.00	6,938.07	7,344.55	7,144.92	161.19	25.41	-97.08	232.36	-9,398.24	19,379.93	19,325.38	54.55	355.298	
16,800.00	6,938.00	7,344.86	7,145.23	162.77	25.41	-97.09	232.35	-9,398.23	19,479.72	19,425.11	54.61	356.691	
16,900.00	6,937.92	7,345.17	7,145.54	164.34	25.41	-97.10	232.34	-9,398.23	19,579.51	19,524.83	54.68	358.076	
17,000.00	6,937.85	8,054.64	7,854.33	165.92	25.91	-124.67	237.14	-9,378.68	19,679.31	19,623.09	56.22	350.034	
17,100.00	6,937.77	8,056.93	7,856.62	167.50	25.91	-124.74	237.19	-9,378.58	19,779.01	19,722.72	56.30	351.333	
17,200.00	6,937.70	8,059.21	7,858.90	169.07	25.91	-124.81	237.24	-9,378.47	19,878.72	19,822.34	56.37	352.624	
17,300.00	6,937.62	8,061.48	7,861.17	170.65	25.91	-124.88	237.29	-9,378.36	19,978.43	19,921.97	56.45	353.907	
17,400.00	6,937.55	8,063.75	7,863.43	172.23	25.91	-124.94	237.33	-9,378.25	20,078.14	20,021.61	56.53	355.183	
17,500.00	6,937.47	8,066.00	7,865.68	173.81	25.91	-125.01	237.38	-9,378.15	20,177.85	20,121.24	56.61	356.451	
17,600.00	6,937.40	8,068.23	7,867.91	175.39	25.91	-125.08	237.43	-9,378.04	20,277.56	20,220.88	56.69	357.711	
17,700.00	6,937.32	8,070.46	7,870.14	176.97	25.91	-125.15	237.48	-9,377.94	20,377.28	20,320.51	56.77	358.964	
17,800.00	6,937.25	8,072.68	7,872.35	178.55	25.91	-125.21	237.53	-9,377.84	20,477.00	20,420.15	56.85	360.209	
17,900.00	6,937.17	8,100.00	7,899.64	180.13	25.92	-126.03	238.13	-9,376.59	20,576.75	20,519.75	57.01	360.944	
18,000.00	6,937.10	8,100.00	7,899.64	181.71	25.92	-126.03	238.13	-9,376.59	20,676.47	20,619.39	57.08	362.217	
18,100.00	6,937.02	8,100.00	7,899.64	183.29	25.92	-126.03	238.13	-9,376.59	20,776.19	20,719.04	57.16	363.482	
18,200.00	6,936.95	8,100.00	7,899.64	184.87	25.92	-126.03	238.13	-9,376.59	20,875.92	20,818.68	57.23	364.741	
18,300.00	6,936.87	8,100.00	7,899.64	186.46	25.92	-126.03	238.13	-9,376.59	20,975.65	20,918.33	57.31	365.991	
18,400.00	6,936.80	8,100.00	7,899.64	188.04	25.92	-126.03	238.13	-9,376.59	21,075.38	21,017.99	57.39	367.235	
18,500.00	6,936.72	8,100.00	7,899.64	189.62	25.92	-126.03	238.13	-9,376.59	21,175.11	21,117.64	57.47	368.471	
18,600.00	6,936.65	8,100.00	7,899.64	191.21	25.92	-126.03	238.13	-9,376.59	21,274.84	21,217.30	57.55	369.700	
18,700.00	6,936.57	8,100.00	7,899.64	192.79	25.92	-126.03	238.13	-9,376.59	21,374.58	21,316.95	57.63	370.922	
18,800.00	6,936.50	8,100.00	7,899.64	194.37	25.92	-126.03	238.13	-9,376.59	21,474.32	21,416.61	57.71	372.136	
18,900.00	6,936.42	8,100.00	7,899.64	195.96	25.92	-126.03	238.13	-9,376.59	21,574.06	21,516.27	57.79	373.344	
19,000.00	6,936.35	8,100.00	7,899.64	197.54	25.92	-126.03	238.13	-9,376.59	21,673.80	21,615.94	57.87	374.544	
19,100.00	6,936.27	8,100.00	7,899.64	199.13	25.92	-126.03	238.13	-9,376.59	21,773.55	21,715.60	57.95	375.737	
19,200.00	6,936.19	8,100.00	7,899.64	200.71	25.92	-126.03	238.13	-9,376.59	21,873.30	21,815.27	58.03	376.924	
19,300.00	6,936.12	8,100.00	7,899.64	202.30	25.92	-126.03	238.13	-9,376.59	21,973.05	21,914.94	58.11	378.103	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - OH - OH-SVY												Offset Site Error:	0.00 usft
Survey Program: 100-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,400.00	6,936.04	8,100.00	7,899.64	203.88	25.92	-126.03	238.13	-9,376.59	22,072.80	22,014.61	58.20	379.275	
19,500.00	6,935.97	8,100.00	7,899.64	205.47	25.92	-126.03	238.13	-9,376.59	22,172.56	22,114.28	58.28	380.440	
19,600.00	6,935.89	8,100.00	7,899.64	207.06	25.92	-126.03	238.13	-9,376.59	22,272.32	22,213.95	58.37	381.599	
19,700.00	6,935.82	8,100.00	7,899.64	208.64	25.92	-126.03	238.13	-9,376.59	22,372.08	22,313.63	58.45	382.750	
19,800.00	6,935.74	8,100.00	7,899.64	210.23	25.92	-126.03	238.13	-9,376.59	22,471.84	22,413.30	58.54	383.895	
19,900.00	6,935.67	8,100.00	7,899.64	211.82	25.92	-126.03	238.13	-9,376.59	22,571.60	22,512.98	58.62	385.033	
20,000.00	6,935.59	8,100.00	7,899.64	213.41	25.92	-126.03	238.13	-9,376.59	22,671.37	22,612.66	58.71	386.164	
20,100.00	6,935.52	8,100.00	7,899.64	214.99	25.92	-126.03	238.13	-9,376.59	22,771.14	22,712.34	58.80	387.288	
20,200.00	6,935.44	8,100.00	7,899.64	216.58	25.92	-126.03	238.13	-9,376.59	22,870.91	22,812.02	58.88	388.406	
20,300.00	6,935.37	8,100.00	7,899.64	218.17	25.92	-126.03	238.13	-9,376.59	22,970.68	22,911.71	58.97	389.517	
20,400.00	6,935.29	8,100.00	7,899.64	219.76	25.92	-126.03	238.13	-9,376.59	23,070.46	23,011.39	59.06	390.621	
20,500.00	6,935.22	8,100.00	7,899.64	221.35	25.92	-126.03	238.13	-9,376.59	23,170.23	23,111.08	59.15	391.719	
20,600.00	6,935.14	8,100.00	7,899.64	222.94	25.92	-126.03	238.13	-9,376.59	23,270.01	23,210.77	59.24	392.810	
20,700.00	6,935.07	8,100.00	7,899.64	224.53	25.92	-126.03	238.13	-9,376.59	23,369.79	23,310.46	59.33	393.894	
20,789.75	6,935.00	8,100.00	7,899.64	225.95	25.92	-126.03	238.13	-9,376.59	23,459.34	23,399.93	59.41	394.862	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - ST01 - ST01-SVY													Offset Site Error: 0.00 usft
Survey Program: 100-MWD, 3901-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	3,000.00	2,822.02	0.00	19.26	-87.82	365.93	-9,595.58	9,997.99				
100.00	100.00	3,000.00	2,822.02	0.25	19.26	-87.82	365.93	-9,595.58	9,970.61	9,953.48	17.13	582.070	
200.00	200.00	3,095.40	2,913.08	0.61	19.74	-87.89	352.04	-9,570.76	9,943.81	9,926.01	17.80	558.616	
300.00	300.00	3,100.00	2,917.47	0.97	19.76	-87.90	351.35	-9,569.56	9,917.34	9,899.26	18.08	548.620	
400.00	400.00	3,100.00	2,917.47	1.33	19.76	-87.90	351.35	-9,569.56	9,891.80	9,873.43	18.37	538.514	
500.00	500.00	3,152.62	2,967.85	1.68	20.00	-87.94	343.87	-9,556.38	9,866.45	9,847.47	18.98	519.859	
600.00	599.98	3,200.00	3,013.57	2.03	20.22	93.41	337.87	-9,545.49	9,842.54	9,822.99	19.55	503.416	
700.00	699.84	3,200.00	3,013.57	2.36	20.22	93.89	337.87	-9,545.49	9,819.18	9,799.33	19.85	494.632	
800.00	799.45	3,200.00	3,013.57	2.71	20.22	94.34	337.87	-9,545.49	9,797.01	9,776.85	20.16	485.850	
900.00	898.70	3,200.00	3,013.57	3.06	20.22	94.77	337.87	-9,545.49	9,776.07	9,755.58	20.49	477.085	
1,000.00	997.47	3,200.00	3,013.57	3.43	20.22	95.17	337.87	-9,545.49	9,756.40	9,735.57	20.83	468.319	
1,100.00	1,095.62	3,251.25	3,063.38	3.82	20.42	95.57	332.11	-9,534.90	9,737.16	9,715.69	21.47	453.488	
1,180.06	1,173.69	3,300.00	3,111.09	4.14	20.60	95.90	327.27	-9,526.12	9,723.38	9,701.34	22.04	441.186	
1,200.00	1,193.07	3,300.00	3,111.09	4.22	20.60	95.90	327.27	-9,526.12	9,719.88	9,697.77	22.12	439.498	
1,300.00	1,290.27	3,300.00	3,111.09	4.65	20.60	95.90	327.27	-9,526.12	9,702.93	9,680.42	22.51	431.040	
1,400.00	1,387.46	3,300.00	3,111.09	5.08	20.60	95.90	327.27	-9,526.12	9,686.98	9,664.07	22.91	422.752	
1,500.00	1,484.66	3,300.00	3,111.09	5.52	20.60	95.90	327.27	-9,526.12	9,672.04	9,648.72	23.32	414.679	
1,600.00	1,581.85	3,339.78	3,150.20	5.97	20.71	95.94	323.75	-9,519.74	9,657.76	9,633.83	23.92	403.723	
1,700.00	1,679.05	3,400.00	3,209.60	6.42	20.89	96.00	319.06	-9,511.09	9,644.65	9,620.04	24.62	391.783	
1,800.00	1,776.25	3,400.00	3,209.60	6.87	20.89	96.00	319.06	-9,511.09	9,631.75	9,606.71	25.04	384.657	
1,900.00	1,873.44	3,423.39	3,232.73	7.33	20.95	96.02	317.42	-9,507.96	9,619.83	9,594.27	25.56	376.351	
2,000.00	1,970.64	3,500.00	3,308.50	7.78	21.15	96.11	312.44	-9,497.81	9,608.34	9,582.03	26.30	365.284	
2,100.00	2,067.83	3,500.00	3,308.50	8.24	21.15	96.11	312.44	-9,497.81	9,597.49	9,570.76	26.73	359.034	
2,200.00	2,165.03	3,544.20	3,352.28	8.71	21.25	96.16	309.81	-9,492.33	9,587.22	9,559.87	27.35	350.596	
2,300.00	2,262.22	3,600.00	3,407.67	9.17	21.38	96.22	306.69	-9,486.40	9,578.14	9,550.13	28.01	341.959	
2,400.00	2,359.42	3,600.00	3,407.67	9.63	21.38	96.22	306.69	-9,486.40	9,569.37	9,540.93	28.44	336.490	
2,500.00	2,456.61	3,600.00	3,407.67	10.10	21.38	96.22	306.69	-9,486.40	9,561.64	9,532.77	28.87	331.232	
2,600.00	2,553.81	3,639.41	3,446.87	10.57	21.45	96.27	304.72	-9,482.81	9,554.66	9,525.21	29.45	324.443	
2,700.00	2,651.01	3,700.00	3,507.22	11.03	21.56	96.34	302.32	-9,478.06	9,548.68	9,518.56	30.12	317.068	
2,800.00	2,748.20	3,700.00	3,507.22	11.50	21.56	96.34	302.32	-9,478.06	9,543.05	9,512.51	30.54	312.457	
2,900.00	2,845.40	3,700.00	3,507.22	11.97	21.56	96.34	302.32	-9,478.06	9,538.47	9,507.50	30.97	308.026	
3,000.00	2,942.59	3,749.26	3,556.36	12.44	21.62	96.40	300.74	-9,474.89	9,534.49	9,502.92	31.57	302.055	
3,100.00	3,039.79	3,800.00	3,607.01	12.91	21.69	96.46	299.26	-9,472.28	9,531.45	9,499.28	32.17	296.288	
3,200.00	3,136.98	3,800.00	3,607.01	13.38	21.69	96.46	299.26	-9,472.28	9,528.98	9,496.39	32.59	292.388	
3,300.00	3,234.18	3,800.00	3,607.01	13.85	21.69	96.46	299.26	-9,472.28	9,527.56	9,494.56	33.01	288.642	
3,400.00	3,331.38	3,845.06	3,652.02	14.32	21.73	96.52	298.17	-9,470.64	9,526.69	9,493.14	33.55	283.923	
3,500.00	3,428.57	4,672.00	4,474.15	14.79	22.76	97.54	268.09	-9,417.78	9,523.07	9,488.06	35.00	272.052	
3,600.00	3,525.77	4,735.00	4,536.74	15.26	22.84	97.61	264.41	-9,411.56	9,515.54	9,480.04	35.50	268.048	
3,700.00	3,622.96	4,830.00	4,631.15	15.73	22.97	97.72	259.32	-9,402.33	9,508.27	9,472.24	36.03	263.922	
3,800.00	3,720.16	4,862.00	4,662.97	16.20	23.01	97.76	258.15	-9,399.19	9,501.29	9,464.79	36.49	260.352	
3,900.00	3,817.35	4,876.65	4,677.56	16.68	23.02	97.78	257.67	-9,397.92	9,495.22	9,458.27	36.94	257.026	
4,000.00	3,914.55	4,894.00	4,694.84	17.15	23.04	97.80	257.10	-9,396.54	9,490.00	9,452.61	37.39	253.798	
4,100.00	4,011.74	4,909.98	4,710.78	17.62	23.06	97.82	256.61	-9,395.39	9,485.67	9,447.83	37.84	250.692	
4,200.00	4,108.94	4,926.00	4,726.76	18.09	23.07	97.84	256.16	-9,394.40	9,482.24	9,443.96	38.28	247.696	
4,300.00	4,206.14	4,946.00	4,746.72	18.57	23.08	97.87	255.58	-9,393.37	9,479.72	9,441.00	38.73	244.787	
4,400.00	4,303.33	4,973.95	4,774.63	19.04	23.11	97.90	254.77	-9,392.13	9,478.02	9,438.84	39.18	241.902	
4,500.00	4,400.53	5,012.70	4,813.34	19.51	23.13	97.95	253.90	-9,390.54	9,476.94	9,437.30	39.65	239.039	
4,577.50	4,475.86	5,022.00	4,822.63	19.88	23.14	97.96	253.75	-9,390.20	9,476.65	9,436.67	39.98	237.040 CC	
4,600.00	4,497.72	5,022.00	4,822.63	19.99	23.14	97.96	253.75	-9,390.20	9,476.67	9,436.60	40.07	236.488	
4,700.00	4,594.92	5,064.00	4,864.61	20.46	23.16	98.02	253.07	-9,389.15	9,477.24	9,436.71	40.53	233.808	
4,800.00	4,692.11	5,100.41	4,901.01	20.93	23.37	98.07	252.43	-9,388.58	9,478.57	9,437.37	41.20	230.035	
4,900.00	4,789.31	5,225.44	5,026.00	21.41	24.08	98.23	250.01	-9,386.43	9,480.00	9,437.49	42.50	223.033	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - ST01 - ST01-SVY												Offset Site Error:	0.00 usft
Survey Program: 100-MWD, 3901-MWD												Offset Well Error:	0.00 usft
Reference												Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,000.00	4,886.51	5,350.62	5,151.12	21.88	24.80	98.39	247.23	-9,383.96	9,481.19	9,437.38	43.80	216.445	
5,100.00	4,983.70	5,475.94	5,276.37	22.35	25.52	98.55	244.08	-9,381.17	9,482.14	9,437.04	45.10	210.234	
5,200.00	5,080.90	5,577.87	5,378.24	22.83	26.28	98.68	241.37	-9,378.76	9,483.00	9,436.57	46.43	204.252	
5,300.00	5,178.09	5,683.06	5,483.36	23.30	27.04	98.82	238.48	-9,376.21	9,483.82	9,436.07	47.75	198.618	
5,400.00	5,275.29	5,788.27	5,588.50	23.77	27.81	98.95	235.52	-9,373.58	9,484.61	9,435.54	49.07	193.288	
5,500.00	5,372.48	5,893.52	5,693.67	24.25	28.58	99.08	232.48	-9,370.88	9,485.38	9,434.99	50.39	188.239	
5,600.00	5,469.68	5,978.70	5,778.78	24.72	29.46	99.19	230.03	-9,368.71	9,486.20	9,434.38	51.82	183.063	
5,700.00	5,566.87	6,062.07	5,862.10	25.20	30.35	99.29	227.76	-9,366.69	9,487.22	9,433.96	53.26	178.138	
5,800.00	5,664.07	6,145.39	5,945.37	25.67	31.25	99.40	225.61	-9,364.79	9,488.44	9,433.74	54.69	173.480	
5,900.00	5,761.27	6,228.66	6,028.60	26.14	32.15	99.51	223.59	-9,363.00	9,489.85	9,433.72	56.13	169.066 ES	
6,000.00	5,858.46	6,311.88	6,111.78	26.62	33.05	99.61	221.69	-9,361.31	9,491.45	9,433.89	57.57	164.878	
6,100.00	5,955.66	6,395.05	6,194.92	27.09	33.95	99.72	219.91	-9,359.74	9,493.26	9,434.26	59.00	160.900	
6,200.00	6,052.85	6,482.92	6,282.76	27.57	34.59	99.83	218.17	-9,358.19	9,495.25	9,435.09	60.16	157.832	
6,300.00	6,150.05	6,580.55	6,380.35	28.04	34.69	99.96	216.25	-9,356.49	9,497.33	9,436.57	60.75	156.322	
6,400.00	6,247.24	6,652.00	6,451.77	28.52	34.77	100.05	214.85	-9,355.25	9,499.49	9,438.18	61.31	154.953	
6,490.87	6,335.57	6,726.79	6,526.54	28.95	34.81	100.15	213.54	-9,354.09	9,501.67	9,439.89	61.79	153.786	
6,500.00	6,344.44	6,732.58	6,532.33	28.99	34.81	103.53	213.45	-9,354.01	9,501.98	9,440.14	61.83	153.676	
6,550.00	6,392.91	6,772.00	6,571.75	29.23	34.84	120.73	212.90	-9,353.51	9,506.01	9,443.92	62.09	153.098	
6,600.00	6,440.98	6,808.38	6,608.12	29.46	34.88	134.32	212.42	-9,353.09	9,513.98	9,451.61	62.37	152.545	
6,650.00	6,488.34	6,856.01	6,655.74	29.70	34.94	144.32	211.80	-9,352.54	9,525.78	9,463.12	62.66	152.023	
6,700.00	6,534.69	6,902.68	6,702.41	29.92	35.00	151.59	211.19	-9,352.00	9,541.34	9,478.40	62.94	151.592	
6,750.00	6,579.76	6,948.11	6,747.83	30.15	35.05	157.00	210.60	-9,351.48	9,560.56	9,497.35	63.21	151.253	
6,800.00	6,623.27	6,992.01	6,791.73	30.36	35.11	161.16	210.02	-9,350.97	9,583.32	9,519.86	63.46	151.006	
6,850.00	6,664.95	7,034.12	6,833.83	30.57	35.17	164.49	209.47	-9,350.48	9,609.47	9,545.76	63.71	150.824	
6,900.00	6,704.53	7,074.18	6,873.88	30.78	35.23	167.27	208.95	-9,350.02	9,638.85	9,574.91	63.95	150.729 SF	
6,950.00	6,741.79	7,111.93	6,911.62	30.98	35.29	169.69	208.46	-9,349.58	9,671.29	9,607.12	64.16	150.729	
7,000.00	6,776.48	7,147.15	6,946.84	31.17	35.35	171.91	208.00	-9,349.17	9,706.57	9,642.21	64.36	150.823	
7,050.00	6,808.39	7,179.61	6,979.30	31.36	35.40	174.05	207.57	-9,348.79	9,744.48	9,679.95	64.53	151.009	
7,100.00	6,837.34	7,209.13	7,008.81	31.54	35.45	176.26	207.19	-9,348.45	9,784.79	9,720.11	64.68	151.285	
7,150.00	6,863.13	7,235.51	7,035.19	31.73	35.49	178.68	206.84	-9,348.15	9,827.24	9,762.44	64.80	151.648	
7,200.00	6,885.61	7,258.60	7,058.27	31.91	35.53	-178.43	206.54	-9,347.88	9,871.58	9,806.67	64.90	152.095	
7,250.00	6,904.64	7,295.87	7,095.53	32.10	35.60	-174.73	206.02	-9,347.42	9,917.51	9,852.47	65.04	152.490	
7,300.00	6,920.10	7,326.97	7,126.63	32.29	35.66	-169.55	205.54	-9,346.99	9,964.74	9,899.60	65.14	152.979	
7,350.00	6,931.91	7,351.27	7,150.93	32.48	35.71	-161.47	205.14	-9,346.63	10,013.00	9,947.80	65.21	153.560	
7,400.00	6,939.97	7,368.53	7,168.18	32.68	35.74	-147.36	204.83	-9,346.36	10,062.01	9,996.77	65.24	154.229	
7,450.00	6,944.26	7,378.56	7,178.20	32.89	35.76	-121.49	204.65	-9,346.20	10,111.48	10,046.23	65.24	154.979	
7,481.69	6,945.00	7,381.09	7,180.73	33.03	35.77	-98.87	204.60	-9,346.16	10,142.92	10,077.69	65.23	155.494	
7,500.00	6,944.99	7,381.69	7,181.33	33.12	35.77	-98.90	204.59	-9,346.15	10,161.10	10,095.88	65.22	155.801	
7,600.00	6,944.91	7,384.99	7,184.64	33.60	35.77	-99.05	204.53	-9,346.09	10,260.37	10,195.21	65.16	157.472	
7,700.00	6,944.84	7,388.36	7,188.00	34.17	35.78	-99.21	204.46	-9,346.04	10,359.65	10,294.55	65.10	159.140	
7,800.00	6,944.76	7,391.78	7,191.42	34.80	35.79	-99.37	204.40	-9,345.98	10,458.94	10,393.90	65.04	160.802	
7,900.00	6,944.69	7,395.26	7,194.89	35.49	35.79	-99.52	204.33	-9,345.92	10,558.25	10,493.26	64.99	162.460	
8,000.00	6,944.61	7,398.80	7,198.44	36.25	35.80	-99.69	204.26	-9,345.86	10,657.57	10,592.63	64.94	164.113	
8,100.00	6,944.54	7,402.40	7,202.04	37.07	35.81	-99.85	204.19	-9,345.79	10,756.90	10,692.01	64.89	165.761	
8,200.00	6,944.46	7,406.07	7,205.71	37.94	35.81	-100.02	204.12	-9,345.73	10,856.25	10,791.40	64.85	167.404	
8,300.00	6,944.39	7,409.81	7,209.44	38.86	35.82	-100.19	204.04	-9,345.66	10,955.60	10,890.79	64.81	169.043	
8,400.00	6,944.31	7,413.61	7,213.24	39.83	35.83	-100.37	203.97	-9,345.60	11,054.97	10,990.20	64.77	170.676	
8,500.00	6,944.23	7,417.48	7,217.12	40.84	35.84	-100.54	203.89	-9,345.53	11,154.34	11,089.61	64.74	172.304	
8,600.00	6,944.16	7,421.43	7,221.06	41.89	35.84	-100.72	203.81	-9,345.45	11,253.73	11,189.03	64.70	173.927	
8,700.00	6,944.08	7,425.45	7,225.08	42.98	35.85	-100.91	203.72	-9,345.38	11,353.13	11,288.45	64.67	175.544	
8,800.00	6,944.01	7,429.55	7,229.17	44.10	35.86	-101.09	203.64	-9,345.31	11,452.54	11,387.89	64.65	177.156	
8,900.00	6,943.93	7,433.72	7,233.35	45.25	35.87	-101.28	203.55	-9,345.23	11,551.95	11,487.33	64.62	178.763	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - ST01 - ST01-SVY												Offset Site Error:	0.00 usft
Survey Program: 100-MWD, 3901-MWD												Offset Well Error:	0.00 usft
Reference												Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,000.00	6,943.86	7,437.98	7,237.60	46.43	35.88	-101.47	203.46	-9,345.15	11,651.38	11,586.78	64.60	180.363	
9,100.00	6,943.78	7,442.31	7,241.94	47.63	35.89	-101.67	203.37	-9,345.07	11,750.81	11,686.23	64.58	181.959	
9,200.00	6,943.71	7,446.74	7,246.36	48.86	35.89	-101.87	203.27	-9,344.98	11,850.26	11,785.69	64.56	183.548	
9,300.00	6,943.63	7,451.25	7,250.87	50.11	35.90	-102.08	203.17	-9,344.89	11,949.71	11,885.16	64.55	185.132	
9,400.00	6,943.56	7,455.85	7,255.47	51.38	35.91	-102.28	203.07	-9,344.80	12,049.17	11,984.64	64.53	186.709	
9,500.00	6,943.48	7,460.55	7,260.16	52.66	35.92	-102.50	202.97	-9,344.71	12,148.64	12,084.11	64.52	188.281	
9,600.00	6,943.41	7,465.34	7,264.95	53.97	35.93	-102.71	202.86	-9,344.62	12,248.12	12,183.60	64.52	189.846	
9,700.00	6,943.33	7,470.23	7,269.84	55.29	35.94	-102.93	202.75	-9,344.52	12,347.60	12,283.09	64.51	191.405	
9,800.00	6,943.26	7,475.23	7,274.83	56.63	35.95	-103.16	202.63	-9,344.42	12,447.09	12,382.58	64.51	192.958	
9,900.00	6,943.18	7,480.33	7,279.93	57.98	35.96	-103.39	202.52	-9,344.31	12,546.59	12,482.08	64.51	194.505	
10,000.00	6,943.11	7,485.54	7,285.14	59.34	35.97	-103.62	202.39	-9,344.20	12,646.10	12,581.59	64.51	196.045	
10,100.00	6,943.03	7,490.86	7,290.46	60.72	35.98	-103.86	202.27	-9,344.09	12,745.61	12,681.10	64.51	197.579	
10,200.00	6,942.96	7,496.30	7,295.89	62.11	35.99	-104.10	202.14	-9,343.98	12,845.13	12,780.61	64.51	199.106	
10,300.00	6,942.88	7,501.85	7,301.45	63.50	36.00	-104.35	202.01	-9,343.86	12,944.65	12,880.13	64.52	200.626	
10,400.00	6,942.81	7,507.54	7,307.13	64.91	36.01	-104.60	201.87	-9,343.73	13,044.19	12,979.66	64.53	202.139	
10,500.00	6,942.73	7,513.35	7,312.93	66.33	36.03	-104.86	201.72	-9,343.61	13,143.73	13,079.18	64.54	203.646	
10,600.00	6,942.66	7,519.29	7,318.87	67.75	36.04	-105.12	201.58	-9,343.48	13,243.27	13,178.71	64.56	205.145	
10,700.00	6,942.58	7,525.37	7,324.95	69.18	36.05	-105.39	201.42	-9,343.34	13,342.82	13,278.25	64.57	206.637	
10,800.00	6,942.51	7,531.59	7,331.17	70.62	36.06	-105.66	201.26	-9,343.20	13,442.38	13,377.79	64.59	208.122	
10,900.00	6,942.43	7,537.96	7,337.54	72.07	36.07	-105.94	201.10	-9,343.05	13,541.94	13,477.33	64.61	209.600	
11,000.00	6,942.36	7,544.49	7,344.05	73.52	36.09	-106.23	200.93	-9,342.90	13,641.50	13,576.87	64.63	211.071	
11,100.00	6,942.28	7,551.17	7,350.73	74.98	36.10	-106.52	200.75	-9,342.75	13,741.07	13,676.42	64.65	212.533	
11,200.00	6,942.21	7,558.01	7,357.57	76.45	36.11	-106.82	200.57	-9,342.58	13,840.65	13,775.97	64.68	213.989	
11,300.00	6,942.13	7,565.03	7,364.58	77.92	36.13	-107.12	200.38	-9,342.42	13,940.23	13,875.53	64.71	215.436	
11,400.00	6,942.06	7,572.22	7,371.77	79.40	36.14	-107.44	200.18	-9,342.24	14,039.82	13,975.08	64.74	216.875	
11,500.00	6,941.98	7,579.59	7,379.14	80.88	36.16	-107.75	199.98	-9,342.06	14,139.41	14,074.64	64.77	218.307	
11,600.00	6,941.91	7,587.16	7,386.70	82.36	36.17	-108.08	199.77	-9,341.87	14,239.01	14,174.20	64.80	219.730	
11,700.00	6,941.83	7,594.92	7,394.45	83.85	36.19	-108.41	199.55	-9,341.68	14,338.61	14,273.77	64.84	221.146	
11,800.00	6,941.76	7,466.40	7,266.00	85.35	35.93	-102.76	202.47	-9,344.27	14,438.05	14,373.56	64.49	223.871	
11,900.00	6,941.68	7,468.15	7,267.75	86.85	35.94	-102.84	202.44	-9,344.24	14,537.68	14,473.17	64.51	225.342	
12,000.00	6,941.60	7,469.91	7,269.51	88.35	35.94	-102.92	202.41	-9,344.21	14,637.32	14,572.78	64.54	226.806	
12,100.00	6,941.53	7,471.67	7,271.26	89.85	35.94	-103.00	202.37	-9,344.18	14,736.95	14,672.39	64.56	228.265	
12,200.00	6,941.45	7,473.42	7,273.02	91.36	35.95	-103.08	202.34	-9,344.15	14,836.60	14,772.01	64.59	229.718	
12,300.00	6,941.38	7,475.18	7,274.77	92.88	35.95	-103.16	202.30	-9,344.12	14,936.24	14,871.63	64.61	231.165	
12,400.00	6,941.30	7,476.93	7,276.53	94.39	35.95	-103.24	202.27	-9,344.09	15,035.90	14,971.26	64.64	232.607	
12,500.00	6,941.23	7,478.69	7,278.28	95.91	35.96	-103.31	202.23	-9,344.06	15,135.55	15,070.88	64.67	234.043	
12,600.00	6,941.15	7,480.45	7,280.04	97.43	35.96	-103.39	202.20	-9,344.03	15,235.21	15,170.51	64.70	235.473	
12,700.00	6,941.08	7,482.20	7,281.79	98.95	35.96	-103.47	202.17	-9,344.00	15,334.88	15,270.15	64.73	236.897	
12,800.00	6,941.00	7,483.96	7,283.55	100.48	35.97	-103.55	202.13	-9,343.97	15,434.55	15,369.78	64.77	238.315	
12,900.00	6,940.93	7,485.72	7,285.31	102.01	35.97	-103.63	202.10	-9,343.94	15,534.22	15,469.42	64.80	239.728	
13,000.00	6,940.85	7,487.47	7,287.06	103.54	35.97	-103.71	202.06	-9,343.91	15,633.90	15,569.06	64.83	241.135	
13,100.00	6,940.78	7,489.23	7,288.82	105.07	35.98	-103.79	202.03	-9,343.88	15,733.58	15,668.71	64.87	242.536	
13,200.00	6,940.70	7,490.98	7,290.57	106.61	35.98	-103.86	201.99	-9,343.85	15,833.27	15,768.36	64.91	243.931	
13,300.00	6,940.63	7,492.74	7,292.33	108.14	35.98	-103.94	201.96	-9,343.82	15,932.95	15,868.01	64.95	245.320	
13,400.00	6,940.55	7,494.50	7,294.08	109.68	35.99	-104.02	201.92	-9,343.79	16,032.65	15,967.66	64.99	246.703	
13,500.00	6,940.48	7,496.25	7,295.84	111.22	35.99	-104.10	201.89	-9,343.75	16,132.34	16,067.31	65.03	248.081	
13,600.00	6,940.40	7,498.01	7,297.59	112.77	36.00	-104.18	201.86	-9,343.72	16,232.04	16,166.97	65.07	249.452	
13,700.00	6,940.33	7,499.76	7,299.35	114.31	36.00	-104.26	201.82	-9,343.69	16,331.75	16,266.63	65.11	250.818	
13,800.00	6,940.25	7,501.52	7,301.10	115.86	36.00	-104.33	201.79	-9,343.66	16,431.45	16,366.29	65.16	252.178	
13,900.00	6,940.18	7,503.28	7,302.86	117.41	36.01	-104.41	201.75	-9,343.63	16,531.16	16,465.96	65.20	253.531	
14,000.00	6,940.10	7,505.03	7,304.62	118.95	36.01	-104.49	201.72	-9,343.60	16,630.87	16,565.62	65.25	254.879	
14,100.00	6,940.03	7,506.79	7,306.37	120.51	36.01	-104.57	201.68	-9,343.57	16,730.59	16,665.29	65.30	256.221	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - ST01 - ST01-SVY											Offset Site Error: 0.00 usft		
Survey Program: 100-MWD, 3901-MWD											Offset Well Error: 0.00 usft		
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,200.00	6,939.95	7,508.54	7,308.13	122.06	36.02	-104.65	201.65	-9,343.54	16,830.31	16,764.96	65.35	257.557	
14,300.00	6,939.88	7,510.30	7,309.88	123.61	36.02	-104.72	201.61	-9,343.51	16,930.03	16,864.64	65.40	258.888	
14,400.00	6,939.80	7,512.06	7,311.64	125.17	36.02	-104.80	201.58	-9,343.48	17,029.76	16,964.31	65.45	260.212	
14,500.00	6,939.73	7,513.81	7,313.39	126.72	36.03	-104.88	201.55	-9,343.45	17,129.49	17,063.99	65.50	261.530	
14,600.00	6,939.65	7,515.57	7,315.15	128.28	36.03	-104.96	201.51	-9,343.42	17,229.22	17,163.67	65.55	262.843	
14,700.00	6,939.58	7,517.32	7,316.90	129.84	36.03	-105.03	201.48	-9,343.39	17,328.95	17,263.35	65.60	264.149	
14,800.00	6,939.50	7,519.08	7,318.66	131.40	36.04	-105.11	201.44	-9,343.36	17,428.69	17,363.03	65.66	265.450	
14,900.00	6,939.43	7,520.84	7,320.41	132.96	36.04	-105.19	201.41	-9,343.33	17,528.43	17,462.72	65.71	266.744	
15,000.00	6,939.35	7,522.59	7,322.17	134.52	36.04	-105.27	201.37	-9,343.30	17,628.18	17,562.41	65.77	268.033	
15,100.00	6,939.28	7,524.35	7,323.93	136.08	36.05	-105.34	201.34	-9,343.27	17,727.92	17,662.10	65.83	269.316	
15,200.00	6,939.20	7,526.11	7,325.68	137.64	36.05	-105.42	201.31	-9,343.24	17,827.67	17,761.79	65.88	270.593	
15,300.00	6,939.13	7,527.86	7,327.44	139.21	36.05	-105.50	201.27	-9,343.21	17,927.42	17,861.48	65.94	271.864	
15,400.00	6,939.05	7,529.62	7,329.19	140.77	36.06	-105.58	201.24	-9,343.18	18,027.17	17,961.17	66.00	273.129	
15,500.00	6,938.98	7,531.37	7,330.95	142.34	36.06	-105.65	201.20	-9,343.14	18,126.93	18,060.87	66.06	274.388	
15,600.00	6,938.90	7,533.13	7,332.70	143.91	36.06	-105.73	201.17	-9,343.11	18,226.69	18,160.56	66.12	275.641	
15,700.00	6,938.82	7,534.89	7,334.46	145.47	36.07	-105.81	201.13	-9,343.08	18,326.45	18,260.26	66.19	276.889	
15,800.00	6,938.75	7,536.64	7,336.21	147.04	36.07	-105.88	201.10	-9,343.05	18,426.21	18,359.96	66.25	278.131	
15,900.00	6,938.67	7,538.40	7,337.97	148.61	36.07	-105.96	201.06	-9,343.02	18,525.98	18,459.67	66.31	279.366	
16,000.00	6,938.60	7,540.15	7,339.72	150.18	36.08	-106.04	201.03	-9,342.99	18,625.75	18,559.37	66.38	280.596	
16,100.00	6,938.52	7,541.91	7,341.48	151.75	36.08	-106.12	201.00	-9,342.96	18,725.52	18,659.07	66.44	281.820	
16,200.00	6,938.45	7,525.72	7,425.24	153.32	36.70	-109.72	198.90	-9,341.10	18,825.02	18,757.80	67.22	280.047	
16,300.00	6,938.37	7,627.18	7,426.70	154.90	36.71	-109.78	198.86	-9,341.07	18,924.78	18,857.49	67.30	281.218	
16,400.00	6,938.30	7,628.64	7,428.16	156.47	36.72	-109.84	198.83	-9,341.04	19,024.55	18,957.18	67.37	282.383	
16,500.00	6,938.22	7,630.09	7,429.61	158.04	36.73	-109.91	198.79	-9,341.01	19,124.32	19,056.88	67.45	283.543	
16,600.00	6,938.15	7,631.53	7,431.05	159.62	36.74	-109.97	198.76	-9,340.98	19,224.10	19,156.57	67.52	284.697	
16,700.00	6,938.07	7,632.97	7,432.49	161.19	36.75	-110.03	198.72	-9,340.95	19,323.87	19,256.27	67.60	285.845	
16,800.00	6,938.00	7,634.41	7,433.93	162.77	36.76	-110.09	198.69	-9,340.92	19,423.65	19,355.97	67.68	286.988	
16,900.00	6,937.92	7,635.84	7,435.36	164.34	36.77	-110.15	198.66	-9,340.89	19,523.43	19,455.67	67.76	288.125	
17,000.00	6,937.85	7,637.27	7,436.79	165.92	36.79	-110.21	198.62	-9,340.86	19,623.21	19,555.37	67.84	289.257	
17,100.00	6,937.77	7,638.69	7,438.21	167.50	36.80	-110.27	198.59	-9,340.83	19,723.00	19,655.08	67.92	290.383	
17,200.00	6,937.70	7,640.11	7,439.63	169.07	36.81	-110.33	198.56	-9,340.80	19,822.78	19,754.78	68.00	291.503	
17,300.00	6,937.62	7,641.53	7,441.04	170.65	36.82	-110.39	198.52	-9,340.77	19,922.57	19,854.49	68.08	292.618	
17,400.00	6,937.55	7,642.94	7,442.45	172.23	36.83	-110.44	198.49	-9,340.74	20,022.36	19,954.20	68.17	293.727	
17,500.00	6,937.47	7,644.34	7,443.86	173.81	36.84	-110.50	198.46	-9,340.71	20,122.15	20,053.90	68.25	294.831	
17,600.00	6,937.40	7,645.74	7,445.26	175.39	36.85	-110.56	198.42	-9,340.68	20,221.95	20,153.61	68.33	295.929	
17,700.00	6,937.32	7,647.14	7,446.65	176.97	36.86	-110.62	198.39	-9,340.65	20,321.74	20,253.33	68.42	297.022	
17,800.00	6,937.25	7,648.53	7,448.04	178.55	36.87	-110.68	198.36	-9,340.62	20,421.54	20,353.04	68.50	298.110	
17,900.00	6,937.17	7,649.92	7,449.43	180.13	36.88	-110.74	198.33	-9,340.59	20,521.34	20,452.75	68.59	299.192	
18,000.00	6,937.10	7,651.30	7,450.81	181.71	36.89	-110.79	198.29	-9,340.56	20,621.14	20,552.47	68.68	300.268	
18,100.00	6,937.02	7,652.68	7,452.19	183.29	36.90	-110.85	198.26	-9,340.54	20,720.94	20,652.18	68.76	301.339	
18,200.00	6,936.95	7,654.06	7,453.57	184.87	36.91	-110.91	198.23	-9,340.51	20,820.75	20,751.90	68.85	302.405	
18,300.00	6,936.87	7,655.43	7,454.94	186.46	36.92	-110.97	198.20	-9,340.48	20,920.56	20,851.62	68.94	303.465	
18,400.00	6,936.80	7,656.79	7,456.30	188.04	36.93	-111.02	198.17	-9,340.45	21,020.36	20,951.34	69.03	304.520	
18,500.00	6,936.72	7,658.15	7,457.66	189.62	36.94	-111.08	198.13	-9,340.42	21,120.17	21,051.06	69.12	305.570	
18,600.00	6,936.65	7,659.51	7,459.02	191.21	36.95	-111.14	198.10	-9,340.40	21,219.99	21,150.78	69.21	306.615	
18,700.00	6,936.57	7,660.87	7,460.37	192.79	36.96	-111.19	198.07	-9,340.37	21,319.80	21,250.50	69.30	307.654	
18,800.00	6,936.50	7,662.21	7,461.72	194.37	36.97	-111.25	198.04	-9,340.34	21,419.61	21,350.22	69.39	308.688	
18,900.00	6,936.42	7,663.56	7,463.06	195.96	36.98	-111.30	198.01	-9,340.31	21,519.43	21,449.95	69.48	309.717	
19,000.00	6,936.35	7,664.90	7,464.40	197.54	36.99	-111.36	197.98	-9,340.29	21,619.25	21,549.67	69.57	310.740	
19,100.00	6,936.27	7,666.24	7,465.74	199.13	37.00	-111.41	197.95	-9,340.26	21,719.07	21,649.40	69.67	311.759	
19,200.00	6,936.19	7,667.57	7,467.07	200.71	37.01	-111.47	197.92	-9,340.23	21,818.89	21,749.13	69.76	312.772	
19,300.00	6,936.12	7,668.90	7,468.40	202.30	37.02	-111.52	197.89	-9,340.20	21,918.71	21,848.86	69.85	313.780	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - ST01 - ST01-SVY													Offset Site Error: 0.00 usft
Survey Program: 100-MWD, 3901-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,400.00	6,936.04	7,670.22	7,469.72	203.88	37.03	-111.58	197.86	-9,340.18	22,018.54	21,948.59	69.95	314.783	
19,500.00	6,935.97	7,671.54	7,471.04	205.47	37.04	-111.63	197.83	-9,340.15	22,118.36	22,048.32	70.04	315.781	
19,600.00	6,935.89	7,672.86	7,472.36	207.06	37.05	-111.69	197.80	-9,340.12	22,218.19	22,148.05	70.14	316.774	
19,700.00	6,935.82	7,674.17	7,473.67	208.64	37.06	-111.74	197.77	-9,340.10	22,318.02	22,247.78	70.24	317.761	
19,800.00	6,935.74	7,675.48	7,474.98	210.23	37.07	-111.79	197.74	-9,340.07	22,417.85	22,347.51	70.33	318.744	
19,900.00	6,935.67	7,676.78	7,476.28	211.82	37.08	-111.85	197.71	-9,340.05	22,517.68	22,447.25	70.43	319.722	
20,000.00	6,935.59	7,678.08	7,477.58	213.41	37.09	-111.90	197.68	-9,340.02	22,617.51	22,546.98	70.53	320.695	
20,100.00	6,935.52	7,679.38	7,478.88	214.99	37.10	-111.95	197.65	-9,339.99	22,717.34	22,646.72	70.62	321.663	
20,200.00	6,935.44	7,680.67	7,480.17	216.58	37.11	-112.01	197.62	-9,339.97	22,817.18	22,746.46	70.72	322.626	
20,300.00	6,935.37	7,681.96	7,481.45	218.17	37.12	-112.06	197.59	-9,339.94	22,917.02	22,846.19	70.82	323.584	
20,400.00	6,935.29	7,683.24	7,482.74	219.76	37.13	-112.11	197.56	-9,339.92	23,016.85	22,945.93	70.92	324.537	
20,500.00	6,935.22	7,684.52	7,484.02	221.35	37.13	-112.17	197.53	-9,339.89	23,116.69	23,045.67	71.02	325.485	
20,600.00	6,935.14	7,685.80	7,485.29	222.94	37.14	-112.22	197.50	-9,339.87	23,216.53	23,145.41	71.12	326.429	
20,700.00	6,935.07	7,687.07	7,486.57	224.53	37.15	-112.27	197.48	-9,339.84	23,316.37	23,245.15	71.22	327.368	
20,789.75	6,935.00	7,688.21	7,487.70	225.95	37.16	-112.32	197.45	-9,339.82	23,405.98	23,334.67	71.31	328.206	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 022B - OH - OH-SVY													Offset Site Error:	0.00 usft	
Survey Program: 300-MWD OWSG Rev5													Offset Well Error:	0.00 usft	
Reference													Rule Assigned:		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
0.00	0.00	127.47	127.47	0.00	1.34	-56.69	1,243.15	-1,891.56	2,263.51						
100.00	100.00	221.89	221.89	0.25	2.33	-56.68	1,243.47	-1,891.86	2,263.96	2,261.39	2.58	878.218			
200.00	200.00	316.28	316.28	0.61	3.22	-56.68	1,243.96	-1,892.34	2,264.67	2,260.84	3.83	591.684	ES		
300.00	300.00	410.38	410.37	0.97	3.63	-56.68	1,244.62	-1,892.97	2,265.62	2,261.02	4.60	492.884			
400.00	400.00	482.22	482.21	1.33	3.70	-56.67	1,245.48	-1,893.66	2,267.15	2,262.13	5.02	451.185			
500.00	500.00	530.00	529.95	1.68	3.77	-56.68	1,245.81	-1,895.35	2,270.56	2,265.11	5.45	416.799			
600.00	599.98	571.38	571.24	2.03	3.85	124.06	1,245.92	-1,898.10	2,277.36	2,271.50	5.87	388.279			
700.00	699.84	621.00	620.57	2.36	3.97	123.85	1,245.75	-1,903.40	2,288.79	2,282.49	6.31	362.989			
800.00	799.45	659.55	658.75	2.71	4.06	123.58	1,245.48	-1,908.69	2,304.47	2,297.75	6.72	343.144			
900.00	898.70	712.00	710.48	3.06	4.19	123.24	1,244.73	-1,917.30	2,324.15	2,316.98	7.17	324.356			
1,000.00	997.47	755.98	753.67	3.43	4.30	122.85	1,244.18	-1,925.60	2,347.79	2,340.19	7.61	308.697			
1,100.00	1,095.62	802.00	798.69	3.82	4.42	122.42	1,243.97	-1,935.14	2,375.32	2,367.25	8.06	294.569			
1,180.06	1,173.69	843.13	838.75	4.14	4.53	122.05	1,243.89	-1,944.43	2,399.99	2,391.53	8.46	283.708			
1,200.00	1,193.07	853.01	848.35	4.22	4.56	122.07	1,243.87	-1,946.78	2,406.47	2,397.91	8.56	281.130			
1,300.00	1,290.27	902.34	896.10	4.65	4.71	122.14	1,243.75	-1,959.17	2,439.98	2,430.92	9.06	269.390			
1,400.00	1,387.46	954.00	945.84	5.08	4.88	122.21	1,244.04	-1,973.11	2,475.32	2,465.75	9.58	258.506			
1,500.00	1,484.66	1,004.39	994.05	5.52	5.05	122.26	1,244.19	-1,987.75	2,512.22	2,502.12	10.10	248.625			
1,600.00	1,581.85	1,049.00	1,036.48	5.97	5.21	122.29	1,244.15	-2,001.54	2,550.60	2,539.99	10.62	240.246			
1,700.00	1,679.05	1,101.10	1,086.69	6.42	5.41	122.31	1,244.17	-2,018.65	2,590.57	2,579.40	11.17	231.827			
1,800.00	1,776.25	1,153.45	1,134.76	6.87	5.61	122.32	1,244.15	-2,036.90	2,632.03	2,620.29	11.74	224.129			
1,900.00	1,873.44	1,241.50	1,216.78	7.33	5.96	122.30	1,243.62	-2,068.91	2,674.44	2,661.92	12.52	213.625			
2,000.00	1,970.64	1,374.04	1,340.65	7.78	6.50	122.28	1,242.69	-2,116.03	2,716.28	2,702.70	13.58	200.077			
2,100.00	2,067.83	1,452.63	1,414.32	8.24	6.83	122.27	1,241.82	-2,143.38	2,757.20	2,742.86	14.34	192.291			
2,200.00	2,165.03	1,557.00	1,511.91	8.71	7.30	122.24	1,239.90	-2,180.33	2,798.22	2,782.94	15.28	183.151			
2,300.00	2,262.22	1,648.00	1,597.35	9.17	7.72	122.24	1,238.95	-2,211.65	2,838.85	2,822.71	16.14	175.882			
2,400.00	2,359.42	1,711.00	1,656.53	9.63	8.02	122.25	1,239.05	-2,233.25	2,880.02	2,863.19	16.83	171.106			
2,500.00	2,456.61	1,775.00	1,716.48	10.10	8.33	122.27	1,239.52	-2,255.65	2,922.04	2,904.51	17.53	166.649			
2,600.00	2,553.81	1,851.33	1,787.79	10.57	8.72	122.29	1,240.59	-2,282.84	2,964.87	2,946.55	18.33	161.789			
2,700.00	2,651.01	1,968.86	1,897.54	11.03	9.33	122.30	1,241.70	-2,324.87	3,007.65	2,988.24	19.41	154.966			
2,800.00	2,748.20	2,048.68	1,972.17	11.50	9.76	122.32	1,242.45	-2,353.18	3,050.11	3,029.87	20.23	150.736			
2,900.00	2,845.40	2,124.00	2,042.71	11.97	10.18	122.35	1,243.89	-2,379.54	3,092.72	3,071.69	21.03	147.069			
3,000.00	2,942.59	2,218.00	2,130.70	12.44	10.71	122.39	1,246.06	-2,412.54	3,135.61	3,113.65	21.96	142.797			
3,100.00	3,039.79	2,358.34	2,262.32	12.91	11.51	122.44	1,248.28	-2,461.17	3,177.82	3,154.61	23.22	136.866			
3,200.00	3,136.98	2,448.58	2,347.03	13.38	12.04	122.45	1,248.60	-2,492.28	3,219.20	3,195.08	24.13	133.419			
3,300.00	3,234.18	2,538.04	2,430.88	13.85	12.57	122.46	1,248.47	-2,523.46	3,260.65	3,235.61	25.04	130.225			
3,400.00	3,331.38	2,623.51	2,511.00	14.32	13.08	122.46	1,248.02	-2,553.21	3,301.87	3,275.95	25.92	127.375			
3,500.00	3,428.57	2,746.65	2,626.44	14.79	13.82	122.46	1,247.69	-2,596.07	3,343.28	3,316.20	27.08	123.447			
3,600.00	3,525.77	2,824.59	2,699.55	15.26	14.30	122.46	1,246.99	-2,623.08	3,384.17	3,356.26	27.92	121.227			
3,700.00	3,622.96	2,914.00	2,783.34	15.73	14.84	122.45	1,246.21	-2,654.27	3,425.26	3,396.43	28.84	118.784			
3,800.00	3,720.16	3,007.58	2,871.16	16.20	15.41	122.46	1,246.25	-2,686.58	3,466.55	3,436.76	29.79	116.384			
3,900.00	3,817.35	4,026.71	3,865.22	16.68	22.37	123.90	1,240.09	-2,887.68	3,500.18	3,461.91	38.27	91.455			
4,000.00	3,914.55	4,124.28	3,962.73	17.15	34.50	124.17	1,239.37	-2,891.09	3,516.10	3,465.28	50.82	69.183			
4,100.00	4,011.74	4,221.85	4,060.24	17.62	46.69	124.44	1,238.66	-2,894.48	3,532.09	3,468.66	63.44	55.680			
4,200.00	4,108.94	4,319.41	4,157.74	18.09	58.89	124.71	1,237.97	-2,897.86	3,548.16	3,472.09	76.07	46.644			
4,300.00	4,206.14	4,416.97	4,255.24	18.57	71.11	124.98	1,237.30	-2,901.21	3,564.29	3,475.58	88.71	40.177			
4,400.00	4,303.33	4,514.52	4,352.73	19.04	83.33	125.25	1,236.64	-2,904.55	3,580.49	3,479.13	101.36	35.323			
4,500.00	4,400.53	4,612.06	4,450.21	19.51	95.54	125.51	1,236.00	-2,907.86	3,596.76	3,482.75	114.02	31.546			
4,600.00	4,497.72	4,709.60	4,547.69	19.99	107.76	125.77	1,235.37	-2,911.15	3,613.10	3,486.43	126.67	28.524			
4,700.00	4,594.92	4,807.13	4,645.16	20.46	119.98	126.03	1,234.76	-2,914.42	3,629.51	3,490.19	139.32	26.051			
4,800.00	4,692.11	4,904.65	4,742.63	20.93	132.20	126.29	1,234.16	-2,917.68	3,645.98	3,494.01	151.98	23.990			
4,900.00	4,789.31	5,002.17	4,840.10	21.41	144.42	126.54	1,233.59	-2,920.91	3,662.52	3,497.89	164.63	22.247			
5,000.00	4,886.51	5,099.69	4,937.56	21.88	156.64	126.80	1,233.02	-2,924.12	3,679.13	3,501.85	177.28	20.753			

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 022B - OH - OH-SVY											Offset Site Error:	0.00 usft		
Survey Program: 300-MWD OWSG Rev5											Offset Well Error:	0.00 usft		
Rule Assigned:														
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	4,983.70	5,197.19	5,035.01	22.35	168.85	127.05	1,232.47	-2,927.31	3,695.80	3,505.87	189.93	19.458		
5,200.00	5,080.90	5,294.70	5,132.46	22.83	181.07	127.30	1,231.94	-2,930.48	3,712.54	3,509.95	202.58	18.326		
5,300.00	5,178.09	5,392.19	5,229.90	23.30	193.28	127.55	1,231.43	-2,933.63	3,729.33	3,514.10	215.23	17.327		
5,400.00	5,275.29	5,489.68	5,327.34	23.77	205.50	127.80	1,230.93	-2,936.76	3,746.20	3,518.31	227.88	16.439		
5,500.00	5,372.48	5,587.17	5,424.77	24.25	217.71	128.04	1,230.44	-2,939.87	3,763.12	3,522.59	240.53	15.645		
5,600.00	5,469.68	5,684.64	5,522.20	24.72	229.93	128.29	1,229.97	-2,942.96	3,780.11	3,526.93	253.18	14.931		
5,700.00	5,566.87	5,782.11	5,619.62	25.20	242.14	128.53	1,229.52	-2,946.03	3,797.15	3,531.33	265.82	14.285		
5,800.00	5,664.07	5,879.58	5,717.04	25.67	254.35	128.77	1,229.08	-2,949.08	3,814.26	3,535.80	278.46	13.698		
5,900.00	5,761.27	5,977.04	5,814.45	26.14	266.56	129.00	1,228.66	-2,952.11	3,831.43	3,540.32	291.11	13.162		
6,000.00	5,858.46	6,074.49	5,911.86	26.62	278.77	129.24	1,228.26	-2,955.12	3,848.66	3,544.91	303.75	12.671		
6,100.00	5,955.66	6,171.94	6,009.26	27.09	290.98	129.48	1,227.87	-2,958.11	3,865.94	3,549.56	316.39	12.219		
6,200.00	6,052.85	6,269.38	6,106.65	27.57	303.20	129.71	1,227.49	-2,961.08	3,883.29	3,554.26	329.03	11.802		
6,300.00	6,150.05	6,366.82	6,204.04	28.04	315.42	129.94	1,227.13	-2,964.03	3,900.69	3,559.03	341.66	11.417		
6,400.00	6,247.24	6,464.24	6,301.43	28.52	327.63	130.17	1,226.79	-2,966.96	3,918.15	3,563.85	354.30	11.059		
6,490.87	6,335.57	6,552.78	6,389.92	28.95	338.74	130.38	1,226.50	-2,969.60	3,934.06	3,568.29	365.78	10.755		
6,500.00	6,344.44	6,561.66	6,398.80	28.99	339.85	133.86	1,226.47	-2,969.87	3,935.72	3,568.79	366.93	10.726		
6,550.00	6,392.91	6,610.17	6,447.29	29.23	345.94	151.66	1,226.31	-2,971.31	3,946.59	3,573.37	373.22	10.575		
6,600.00	6,440.98	6,658.15	6,495.25	29.46	351.95	165.98	1,226.16	-2,972.73	3,960.48	3,581.06	379.43	10.438		
6,650.00	6,488.34	6,705.31	6,542.38	29.70	357.87	176.81	1,226.01	-2,974.12	3,977.30	3,591.78	385.52	10.317		
6,700.00	6,534.69	6,751.35	6,588.41	29.92	363.64	-174.94	1,225.88	-2,975.47	3,996.94	3,605.48	391.46	10.210		
6,750.00	6,579.76	6,796.00	6,633.04	30.15	369.24	-168.40	1,225.74	-2,976.78	4,019.28	3,622.07	397.20	10.119		
6,800.00	6,623.27	6,838.98	6,675.99	30.36	374.63	-162.93	1,225.62	-2,978.04	4,044.19	3,641.46	402.73	10.042		
6,850.00	6,664.95	6,880.02	6,717.02	30.57	379.78	-158.10	1,225.51	-2,979.23	4,071.53	3,663.54	407.99	9.980		
6,900.00	6,704.53	6,918.88	6,755.86	30.78	384.65	-153.62	1,225.40	-2,980.36	4,101.14	3,688.18	412.96	9.931		
6,950.00	6,741.79	6,955.31	6,792.28	30.98	389.22	-149.27	1,225.31	-2,981.42	4,132.87	3,715.26	417.61	9.897		
7,000.00	6,776.48	6,989.09	6,826.05	31.17	393.46	-144.88	1,225.22	-2,982.39	4,166.53	3,744.62	421.91	9.875		
7,050.00	6,808.39	7,020.02	6,856.96	31.36	397.34	-140.32	1,225.14	-2,983.28	4,201.94	3,776.11	425.83	9.868 SF		
7,100.00	6,837.34	7,047.90	6,884.82	31.54	400.83	-135.49	1,225.07	-2,984.09	4,238.91	3,809.55	429.36	9.873		
7,150.00	6,863.13	7,072.55	6,909.47	31.73	403.93	-130.29	1,225.01	-2,984.79	4,277.22	3,844.76	432.46	9.890		
7,200.00	6,885.61	7,093.83	6,930.74	31.91	406.59	-124.68	1,224.96	-2,985.40	4,316.68	3,881.55	435.12	9.921		
7,250.00	6,904.64	7,111.61	6,948.52	32.10	408.82	-118.64	1,224.92	-2,985.91	4,357.05	3,919.72	437.33	9.963		
7,300.00	6,920.10	7,125.78	6,962.67	32.29	410.60	-112.20	1,224.88	-2,986.32	4,398.11	3,959.04	439.07	10.017		
7,350.00	6,931.91	7,136.24	6,973.13	32.48	411.91	-105.49	1,224.86	-2,986.62	4,439.63	3,999.29	440.34	10.082		
7,400.00	6,939.97	7,142.93	6,979.82	32.68	412.75	-98.65	1,224.84	-2,986.81	4,481.36	4,040.25	441.12	10.159		
7,450.00	6,944.26	7,145.81	6,982.70	32.89	413.11	-91.89	1,224.84	-2,986.89	4,523.07	4,081.66	441.41	10.247		
7,481.69	6,945.00	7,145.66	6,982.54	33.03	413.09	-87.75	1,224.84	-2,986.88	4,549.38	4,108.04	441.34	10.308		
7,500.00	6,944.99	7,145.12	6,982.01	33.12	413.03	-87.74	1,224.84	-2,986.87	4,564.55	4,123.31	441.25	10.345		
7,600.00	6,944.91	7,142.20	6,979.09	33.60	412.66	-87.67	1,224.85	-2,986.79	4,647.80	4,207.06	440.74	10.545		
7,700.00	6,944.84	7,139.27	6,976.17	34.17	412.29	-87.60	1,224.85	-2,986.70	4,731.69	4,291.44	440.25	10.748		
7,800.00	6,944.76	7,136.35	6,973.24	34.80	411.93	-87.54	1,224.86	-2,986.62	4,816.19	4,376.41	439.79	10.951		
7,900.00	6,944.69	7,133.42	6,970.32	35.49	411.56	-87.47	1,224.87	-2,986.54	4,901.28	4,461.95	439.34	11.156		
8,000.00	6,944.61	7,130.50	6,967.39	36.25	411.19	-87.41	1,224.87	-2,986.45	4,986.92	4,548.02	438.90	11.362		
8,100.00	6,944.54	7,127.57	6,964.46	37.07	410.83	-87.34	1,224.88	-2,986.37	5,073.08	4,634.60	438.48	11.570		
8,200.00	6,944.46	7,124.64	6,961.54	37.94	410.46	-87.28	1,224.89	-2,986.28	5,159.74	4,721.67	438.08	11.778		
8,300.00	6,944.39	7,121.71	6,958.61	38.86	410.09	-87.21	1,224.89	-2,986.20	5,246.88	4,809.20	437.68	11.988		
8,400.00	6,944.31	7,118.78	6,955.68	39.83	409.72	-87.15	1,224.90	-2,986.12	5,334.46	4,897.16	437.30	12.199		
8,500.00	6,944.23	7,115.84	6,952.74	40.84	409.35	-87.08	1,224.91	-2,986.03	5,422.47	4,985.54	436.93	12.410		
8,600.00	6,944.16	7,112.91	6,949.81	41.89	408.99	-87.01	1,224.91	-2,985.95	5,510.89	5,074.33	436.57	12.623		
8,700.00	6,944.08	7,109.97	6,946.88	42.98	408.62	-86.95	1,224.92	-2,985.87	5,599.70	5,163.49	436.21	12.837		
8,800.00	6,944.01	7,107.04	6,943.94	44.10	408.25	-86.88	1,224.93	-2,985.78	5,688.87	5,253.01	435.87	13.052		
8,900.00	6,943.93	7,104.10	6,941.00	45.25	407.88	-86.82	1,224.94	-2,985.70	5,778.40	5,342.87	435.53	13.268		
9,000.00	6,943.86	7,101.16	6,938.07	46.43	407.51	-86.75	1,224.94	-2,985.61	5,868.27	5,433.07	435.20	13.484		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 022B - OH - OH-SVY											Offset Site Error:	0.00 usft
Survey Program: 300-MWD OWSG Rev5											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
9,100.00	6,943.78	7,098.22	6,935.13	47.63	407.14	-86.69	1,224.95	-2,985.53	5,958.46	5,523.59	434.87	13.702
9,200.00	6,943.71	7,095.28	6,932.19	48.86	406.78	-86.62	1,224.96	-2,985.45	6,048.95	5,614.40	434.55	13.920
9,300.00	6,943.63	7,092.33	6,929.24	50.11	406.41	-86.55	1,224.96	-2,985.36	6,139.74	5,705.50	434.24	14.139
9,400.00	6,943.56	7,089.39	6,926.30	51.38	406.04	-86.49	1,224.97	-2,985.28	6,230.81	5,796.88	433.93	14.359
9,500.00	6,943.48	7,086.44	6,923.36	52.66	405.67	-86.42	1,224.98	-2,985.19	6,322.15	5,888.52	433.62	14.580
9,600.00	6,943.41	7,083.50	6,920.41	53.97	405.30	-86.36	1,224.98	-2,985.11	6,413.74	5,980.42	433.32	14.801
9,700.00	6,943.33	7,080.55	6,917.47	55.29	404.93	-86.29	1,224.99	-2,985.02	6,505.58	6,072.56	433.02	15.024
9,800.00	6,943.26	7,077.60	6,914.52	56.63	404.56	-86.22	1,225.00	-2,984.94	6,597.66	6,164.93	432.73	15.247
9,900.00	6,943.18	7,074.65	6,911.57	57.98	404.19	-86.16	1,225.01	-2,984.85	6,689.96	6,257.53	432.44	15.470
10,000.00	6,943.11	7,071.70	6,908.62	59.34	403.82	-86.09	1,225.01	-2,984.77	6,782.48	6,350.34	432.15	15.695
10,100.00	6,943.03	7,068.75	6,905.67	60.72	403.45	-86.03	1,225.02	-2,984.68	6,875.21	6,443.35	431.86	15.920
10,200.00	6,942.96	7,065.79	6,902.72	62.11	403.08	-85.96	1,225.03	-2,984.60	6,968.14	6,536.57	431.58	16.146
10,300.00	6,942.88	7,062.84	6,899.76	63.50	402.71	-85.89	1,225.03	-2,984.52	7,061.26	6,629.97	431.29	16.372
10,400.00	6,942.81	7,059.88	6,896.81	64.91	402.34	-85.83	1,225.04	-2,984.43	7,154.57	6,723.56	431.01	16.600
10,500.00	6,942.73	7,056.93	6,893.85	66.33	401.97	-85.76	1,225.05	-2,984.35	7,248.05	6,817.32	430.73	16.827
10,600.00	6,942.66	7,053.97	6,890.90	67.75	401.59	-85.70	1,225.06	-2,984.26	7,341.70	6,911.25	430.45	17.056
10,700.00	6,942.58	7,051.01	6,887.94	69.18	401.22	-85.63	1,225.06	-2,984.18	7,435.52	7,005.34	430.17	17.285
10,800.00	6,942.51	7,048.05	6,884.98	70.62	400.85	-85.56	1,225.07	-2,984.09	7,529.49	7,099.60	429.90	17.515
10,900.00	6,942.43	7,045.09	6,882.02	72.07	400.48	-85.50	1,225.08	-2,984.01	7,623.62	7,194.00	429.62	17.745
11,000.00	6,942.36	7,042.12	6,879.05	73.52	400.11	-85.43	1,225.09	-2,983.92	7,717.89	7,288.55	429.35	17.976
11,100.00	6,942.28	7,039.16	6,876.09	74.98	399.74	-85.37	1,225.09	-2,983.84	7,812.31	7,383.23	429.07	18.207
11,200.00	6,942.21	7,036.19	6,873.13	76.45	399.37	-85.30	1,225.10	-2,983.75	7,906.86	7,478.06	428.80	18.440
11,300.00	6,942.13	7,033.23	6,870.16	77.92	398.99	-85.23	1,225.11	-2,983.66	8,001.54	7,573.01	428.53	18.672
11,400.00	6,942.06	7,030.26	6,867.19	79.40	398.62	-85.17	1,225.11	-2,983.58	8,096.35	7,668.10	428.25	18.905
11,500.00	6,941.98	7,027.29	6,864.23	80.88	398.25	-85.10	1,225.12	-2,983.49	8,191.28	7,763.30	427.98	19.139
11,600.00	6,941.91	7,024.32	6,861.26	82.36	397.88	-85.04	1,225.13	-2,983.41	8,286.33	7,858.62	427.71	19.374
11,700.00	6,941.83	7,021.35	6,858.29	83.85	397.50	-84.97	1,225.14	-2,983.32	8,381.50	7,954.06	427.44	19.609
11,800.00	6,941.76	7,018.37	6,855.31	85.35	397.13	-84.90	1,225.14	-2,983.24	8,476.77	8,049.60	427.17	19.844
11,900.00	6,941.68	7,015.40	6,852.34	86.85	396.76	-84.84	1,225.15	-2,983.15	8,572.15	8,145.25	426.90	20.080
12,000.00	6,941.60	7,012.42	6,849.37	88.35	396.38	-84.77	1,225.16	-2,983.07	8,667.64	8,241.01	426.63	20.317
12,100.00	6,941.53	7,009.45	6,846.39	89.85	396.01	-84.70	1,225.17	-2,982.98	8,763.22	8,336.86	426.36	20.554
12,200.00	6,941.45	7,006.47	6,843.42	91.36	395.64	-84.64	1,225.17	-2,982.89	8,858.90	8,432.82	426.08	20.791
12,300.00	6,941.38	7,003.49	6,840.44	92.88	395.26	-84.57	1,225.18	-2,982.81	8,954.67	8,528.86	425.81	21.030
12,400.00	6,941.30	7,000.51	6,837.46	94.39	394.89	-84.51	1,225.19	-2,982.72	9,050.54	8,624.99	425.54	21.268
12,500.00	6,941.23	6,997.53	6,834.48	95.91	394.52	-84.44	1,225.20	-2,982.64	9,146.49	8,721.22	425.27	21.507
12,600.00	6,941.15	6,994.55	6,831.50	97.43	394.14	-84.37	1,225.20	-2,982.55	9,242.53	8,817.52	425.00	21.747
12,700.00	6,941.08	6,991.56	6,828.53	98.95	393.77	-84.31	1,225.21	-2,982.46	9,338.64	8,913.91	424.73	21.987
12,800.00	6,941.00	6,988.58	6,825.55	100.48	393.39	-84.24	1,225.22	-2,982.38	9,434.84	9,010.38	424.46	22.228
12,900.00	6,940.93	6,985.59	6,822.55	102.01	393.02	-84.17	1,225.23	-2,982.29	9,531.12	9,106.93	424.19	22.469
13,000.00	6,940.85	6,982.60	6,819.56	103.54	392.64	-84.11	1,225.24	-2,982.21	9,627.47	9,203.55	423.92	22.711
13,100.00	6,940.78	6,979.61	6,816.57	105.07	392.27	-84.04	1,225.24	-2,982.12	9,723.89	9,300.25	423.65	22.953
13,200.00	6,940.70	6,976.62	6,813.58	106.61	391.89	-83.97	1,225.25	-2,982.03	9,820.39	9,397.01	423.38	23.195
13,300.00	6,940.63	6,973.63	6,810.59	108.14	391.52	-83.91	1,225.26	-2,981.95	9,916.95	9,493.85	423.10	23.439
13,400.00	6,940.55	6,970.64	6,807.60	109.68	391.14	-83.84	1,225.27	-2,981.86	10,013.58	9,590.75	422.83	23.682
13,500.00	6,940.48	6,967.65	6,804.61	111.22	390.77	-83.78	1,225.27	-2,981.77	10,110.28	9,687.72	422.56	23.926
13,600.00	6,940.40	6,964.65	6,801.62	112.77	390.39	-83.71	1,225.28	-2,981.69	10,207.03	9,784.74	422.29	24.171
13,700.00	6,940.33	6,961.66	6,798.62	114.31	390.02	-83.64	1,225.29	-2,981.60	10,303.85	9,881.83	422.02	24.416
13,800.00	6,940.25	6,958.66	6,795.63	115.86	389.64	-83.58	1,225.30	-2,981.51	10,400.73	9,978.98	421.74	24.661
13,900.00	6,940.18	6,955.66	6,792.63	117.41	389.27	-83.51	1,225.31	-2,981.43	10,497.66	10,076.19	421.47	24.907
14,000.00	6,940.10	6,952.66	6,789.63	118.95	388.89	-83.44	1,225.31	-2,981.34	10,594.65	10,173.46	421.20	25.154
14,100.00	6,940.03	6,949.66	6,786.63	120.51	388.51	-83.38	1,225.32	-2,981.25	10,691.70	10,270.78	420.93	25.400
14,200.00	6,939.95	6,946.66	6,783.63	122.06	388.14	-83.31	1,225.33	-2,981.17	10,788.80	10,368.15	420.65	25.648

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 022B - OH - OH-SVY											Offset Site Error:	0.00 usft	
Survey Program: 300-MWD OWSG Rev5											Offset Well Error:	0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,300.00	6,939.88	6,943.65	6,780.62	123.61	387.76	-83.24	1,225.34	-2,981.08	10,885.95	10,465.57	420.38	25.896	
14,400.00	6,939.80	6,940.65	6,777.62	125.17	387.38	-83.18	1,225.35	-2,980.99	10,983.15	10,563.05	420.11	26.144	
14,500.00	6,939.73	6,937.64	6,774.62	126.72	387.01	-83.11	1,225.35	-2,980.91	11,080.40	10,660.57	419.83	26.392	
14,600.00	6,939.65	6,934.63	6,771.61	128.28	386.63	-83.04	1,225.36	-2,980.82	11,177.70	10,758.14	419.56	26.642	
14,700.00	6,939.58	6,931.63	6,768.60	129.84	386.25	-82.98	1,225.37	-2,980.73	11,275.04	10,855.76	419.28	26.891	
14,800.00	6,939.50	6,928.62	6,765.59	131.40	385.87	-82.91	1,225.38	-2,980.64	11,372.43	10,953.42	419.01	27.141	
14,900.00	6,939.43	6,925.60	6,762.58	132.96	385.50	-82.84	1,225.38	-2,980.56	11,469.87	11,051.13	418.74	27.392	
15,000.00	6,939.35	6,922.59	6,759.57	134.52	385.12	-82.78	1,225.39	-2,980.47	11,567.34	11,148.88	418.46	27.643	
15,100.00	6,939.28	6,919.58	6,756.56	136.08	384.74	-82.71	1,225.40	-2,980.38	11,664.86	11,246.68	418.19	27.894	
15,200.00	6,939.20	6,916.56	6,753.55	137.64	384.36	-82.64	1,225.41	-2,980.30	11,762.42	11,344.51	417.91	28.146	
15,300.00	6,939.13	6,913.55	6,750.53	139.21	383.98	-82.58	1,225.42	-2,980.21	11,860.02	11,442.39	417.64	28.398	
15,400.00	6,939.05	6,910.53	6,747.52	140.77	383.61	-82.51	1,225.43	-2,980.12	11,957.66	11,540.30	417.36	28.651	
15,500.00	6,938.98	6,907.51	6,744.50	142.34	383.23	-82.45	1,225.43	-2,980.03	12,055.34	11,638.25	417.09	28.904	
15,600.00	6,938.90	6,904.49	6,741.48	143.91	382.85	-82.38	1,225.44	-2,979.94	12,153.05	11,736.24	416.81	29.157	
15,700.00	6,938.82	6,901.47	6,738.46	145.47	382.47	-82.31	1,225.45	-2,979.86	12,250.80	11,834.27	416.54	29.411	
15,800.00	6,938.75	6,898.45	6,735.44	147.04	382.09	-82.25	1,225.46	-2,979.77	12,348.59	11,932.33	416.26	29.666	
15,900.00	6,938.67	6,895.43	6,732.42	148.61	381.71	-82.18	1,225.47	-2,979.68	12,446.41	12,030.42	415.98	29.920	
16,000.00	6,938.60	6,892.40	6,729.40	150.18	381.33	-82.11	1,225.47	-2,979.59	12,544.26	12,128.55	415.71	30.176	
16,100.00	6,938.52	6,889.37	6,726.37	151.75	380.95	-82.05	1,225.48	-2,979.51	12,642.15	12,226.71	415.43	30.431	
16,200.00	6,938.45	6,886.35	6,723.34	153.32	380.57	-81.98	1,225.49	-2,979.42	12,740.06	12,324.91	415.16	30.687	
16,300.00	6,938.37	6,883.32	6,720.32	154.90	380.19	-81.91	1,225.50	-2,979.33	12,838.01	12,423.13	414.88	30.944	
16,400.00	6,938.30	6,880.29	6,717.29	156.47	379.81	-81.85	1,225.51	-2,979.24	12,935.99	12,521.39	414.60	31.201	
16,500.00	6,938.22	6,877.26	6,714.26	158.04	379.43	-81.78	1,225.52	-2,979.15	13,034.00	12,619.68	414.33	31.458	
16,600.00	6,938.15	6,874.23	6,711.23	159.62	379.05	-81.71	1,225.52	-2,979.07	13,132.04	12,717.99	414.05	31.716	
16,700.00	6,938.07	6,871.19	6,708.20	161.19	378.67	-81.65	1,225.53	-2,978.98	13,230.11	12,816.34	413.77	31.974	
16,800.00	6,938.00	6,868.16	6,705.16	162.77	378.29	-81.58	1,225.54	-2,978.89	13,328.21	12,914.71	413.49	32.233	
16,900.00	6,937.92	6,865.12	6,702.13	164.34	377.91	-81.51	1,225.55	-2,978.80	13,426.33	13,013.11	413.22	32.492	
17,000.00	6,937.85	6,862.08	6,699.09	165.92	377.53	-81.45	1,225.56	-2,978.71	13,524.48	13,111.54	412.94	32.752	
17,100.00	6,937.77	6,859.05	6,696.05	167.50	377.15	-81.38	1,225.57	-2,978.62	13,622.66	13,210.00	412.66	33.012	
17,200.00	6,937.70	6,856.01	6,693.02	169.07	376.77	-81.31	1,225.57	-2,978.53	13,720.86	13,308.48	412.39	33.272	
17,300.00	6,937.62	6,852.96	6,689.98	170.65	376.39	-81.25	1,225.58	-2,978.45	13,819.09	13,406.98	412.11	33.533	
17,400.00	6,937.55	6,849.92	6,686.94	172.23	376.00	-81.18	1,225.59	-2,978.36	13,917.34	13,505.51	411.83	33.794	
17,500.00	6,937.47	6,846.88	6,683.89	173.81	375.62	-81.11	1,225.60	-2,978.27	14,015.62	13,604.07	411.55	34.056	
17,600.00	6,937.40	6,843.83	6,680.85	175.39	375.24	-81.05	1,225.61	-2,978.18	14,113.92	13,702.64	411.27	34.318	
17,700.00	6,937.32	6,840.79	6,677.80	176.97	374.86	-80.98	1,225.62	-2,978.09	14,212.24	13,801.24	411.00	34.580	
17,800.00	6,937.25	6,837.74	6,674.76	178.55	374.48	-80.91	1,225.63	-2,978.00	14,310.59	13,899.87	410.72	34.843	
17,900.00	6,937.17	6,834.69	6,671.71	180.13	374.09	-80.85	1,225.63	-2,977.91	14,408.95	13,998.51	410.44	35.106	
18,000.00	6,937.10	6,831.64	6,668.66	181.71	373.71	-80.78	1,225.64	-2,977.82	14,507.34	14,097.18	410.16	35.370	
18,100.00	6,937.02	6,828.59	6,665.61	183.29	373.33	-80.71	1,225.65	-2,977.74	14,605.75	14,195.87	409.88	35.634	
18,200.00	6,936.95	6,825.54	6,662.56	184.87	372.95	-80.65	1,225.66	-2,977.65	14,704.18	14,294.58	409.60	35.898	
18,300.00	6,936.87	6,822.48	6,659.51	186.46	372.56	-80.58	1,225.67	-2,977.56	14,802.64	14,393.31	409.33	36.163	
18,400.00	6,936.80	6,819.43	6,656.46	188.04	372.18	-80.51	1,225.68	-2,977.47	14,901.11	14,492.06	409.05	36.429	
18,500.00	6,936.72	6,816.37	6,653.40	189.62	371.80	-80.45	1,225.69	-2,977.38	14,999.60	14,590.83	408.77	36.695	
18,600.00	6,936.65	6,813.32	6,650.34	191.21	371.41	-80.38	1,225.70	-2,977.29	15,098.11	14,689.62	408.49	36.961	
18,700.00	6,936.57	6,810.26	6,647.29	192.79	371.03	-80.31	1,225.70	-2,977.20	15,196.64	14,788.43	408.21	37.227	
18,800.00	6,936.50	6,807.20	6,644.23	194.37	370.65	-80.25	1,225.71	-2,977.11	15,295.19	14,887.26	407.93	37.494	
18,900.00	6,936.42	6,804.14	6,641.17	195.96	370.26	-80.18	1,225.72	-2,977.02	15,393.75	14,986.10	407.65	37.762	
19,000.00	6,936.35	6,801.07	6,638.11	197.54	369.88	-80.11	1,225.73	-2,976.93	15,492.34	15,084.96	407.37	38.030	
19,100.00	6,936.27	6,798.01	6,635.04	199.13	369.49	-80.05	1,225.74	-2,976.84	15,590.94	15,183.84	407.10	38.298	
19,200.00	6,936.19	6,794.94	6,631.98	200.71	369.11	-79.98	1,225.75	-2,976.75	15,689.56	15,282.74	406.82	38.567	
19,300.00	6,936.12	6,791.88	6,628.92	202.30	368.72	-79.91	1,225.76	-2,976.66	15,788.19	15,381.66	406.54	38.836	
19,400.00	6,936.04	6,788.81	6,625.85	203.88	368.34	-79.85	1,225.77	-2,976.57	15,886.85	15,480.59	406.26	39.105	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 022B - OH - OH-SVY													Offset Site Error: 0.00 usft		
Survey Program: Reference		300-MWD OWSG Rev5 Offset					Semi Major Axis		Offset Wellbore Centre		Rule Assigned: Distance			Offset Well Error: 0.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
19,500.00	6,935.97	6,785.74	6,622.78	205.47	367.96	-79.78	1,225.77	-2,976.48	15,985.51	15,579.53	405.98	39.375			
19,600.00	6,935.89	6,782.67	6,619.71	207.06	367.57	-79.71	1,225.78	-2,976.39	16,084.20	15,678.50	405.70	39.646			
19,700.00	6,935.82	6,779.60	6,616.64	208.64	367.18	-79.65	1,225.79	-2,976.30	16,182.90	15,777.48	405.42	39.916			
19,800.00	6,935.74	6,776.53	6,613.57	210.23	366.80	-79.58	1,225.80	-2,976.21	16,281.61	15,876.47	405.14	40.187			
19,900.00	6,935.67	6,773.45	6,610.50	211.82	366.41	-79.51	1,225.81	-2,976.12	16,380.34	15,975.48	404.86	40.459			
20,000.00	6,935.59	6,770.38	6,607.42	213.41	366.03	-79.45	1,225.82	-2,976.03	16,479.09	16,074.50	404.58	40.731			
20,100.00	6,935.52	6,767.30	6,604.35	214.99	365.64	-79.38	1,225.83	-2,975.94	16,577.85	16,173.54	404.30	41.003			
20,200.00	6,935.44	6,764.22	6,601.27	216.58	365.26	-79.31	1,225.84	-2,975.85	16,676.62	16,272.59	404.02	41.276			
20,300.00	6,935.37	6,761.14	6,598.19	218.17	364.87	-79.25	1,225.85	-2,975.76	16,775.41	16,371.66	403.74	41.550			
20,400.00	6,935.29	6,758.06	6,595.12	219.76	364.48	-79.18	1,225.86	-2,975.67	16,874.21	16,470.74	403.46	41.823			
20,500.00	6,935.22	6,754.98	6,592.04	221.35	364.10	-79.11	1,225.86	-2,975.58	16,973.02	16,569.84	403.19	42.097			
20,600.00	6,935.14	6,751.90	6,588.95	222.94	363.71	-79.05	1,225.87	-2,975.49	17,071.85	16,668.94	402.91	42.372			
20,700.00	6,935.07	6,748.81	6,585.87	224.53	363.32	-78.98	1,225.88	-2,975.40	17,170.69	16,768.06	402.63	42.647			
20,789.75	6,935.00	6,746.04	6,583.10	225.95	362.98	-78.92	1,225.89	-2,975.32	17,259.41	16,857.03	402.37	42.894			

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 030B - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program: 530-A027Ua_INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	156.00	156.00	0.00	1.44	-70.69	2,284.57	-6,519.54	6,908.23					
100.00	100.00	256.00	256.00	0.25	2.37	-70.69	2,284.57	-6,519.54	6,908.23	6,905.61	2.62	2,639.583		
200.00	200.00	356.00	356.00	0.61	3.29	-70.69	2,284.57	-6,519.54	6,908.23	6,904.33	3.90	1,771.399		
300.00	300.00	456.00	456.00	0.97	4.21	-70.69	2,284.57	-6,519.54	6,908.23	6,903.04	5.18	1,332.972		
400.00	400.00	556.01	556.00	1.33	5.39	-70.69	2,284.57	-6,519.54	6,908.23	6,901.51	6.72	1,028.059		
500.00	500.00	656.01	656.00	1.68	7.30	-70.69	2,284.57	-6,519.54	6,908.23	6,899.25	8.98	769.259 CC		
600.00	599.98	755.99	755.98	2.03	9.20	110.19	2,284.57	-6,519.54	6,908.83	6,897.60	11.22	615.580		
700.00	699.84	859.88	859.87	2.36	11.17	110.20	2,284.99	-6,519.54	6,910.78	6,897.25	13.53	510.689 ES		
800.00	799.45	963.96	963.95	2.71	13.15	110.21	2,284.71	-6,519.54	6,913.71	6,897.85	15.86	436.046		
900.00	898.70	1,054.74	1,054.70	3.06	14.91	110.22	2,284.57	-6,519.54	6,917.90	6,899.92	17.97	384.940		
1,000.00	997.47	1,153.50	1,153.47	3.43	16.85	110.24	2,284.57	-6,519.54	6,923.36	6,903.08	20.28	341.384		
1,100.00	1,095.62	1,252.11	1,252.06	3.82	18.79	110.26	2,285.37	-6,519.54	6,930.35	6,907.75	22.60	306.624		
1,180.06	1,173.69	1,335.45	1,335.40	4.14	20.43	110.29	2,285.26	-6,519.54	6,936.60	6,912.04	24.56	282.432		
1,200.00	1,193.07	1,356.15	1,356.11	4.22	20.84	110.33	2,285.20	-6,519.54	6,938.25	6,913.20	25.05	276.990		
1,300.00	1,290.27	1,460.07	1,460.03	4.65	22.88	110.51	2,284.75	-6,519.54	6,946.50	6,919.00	27.51	252.551		
1,400.00	1,387.46	1,543.54	1,543.46	5.08	24.63	110.66	2,284.57	-6,519.54	6,954.90	6,925.22	29.68	234.318		
1,500.00	1,484.66	1,640.74	1,640.66	5.52	26.74	110.84	2,284.57	-6,519.54	6,963.44	6,931.21	32.23	216.084		
1,600.00	1,581.85	1,737.93	1,737.85	5.97	28.86	111.02	2,284.57	-6,519.54	6,972.05	6,937.27	34.77	200.491		
1,700.00	1,679.05	1,841.76	1,841.68	6.42	31.12	111.21	2,285.25	-6,519.54	6,980.97	6,943.50	37.47	186.297		
1,800.00	1,776.25	1,945.88	1,945.79	6.87	33.38	111.39	2,284.83	-6,519.54	6,989.58	6,949.40	40.18	173.961		
1,900.00	1,873.44	2,029.62	2,029.44	7.33	35.31	111.54	2,284.57	-6,519.54	6,998.29	6,955.74	42.55	164.473		
2,000.00	1,970.64	2,126.81	2,126.64	7.78	37.68	111.72	2,284.57	-6,519.54	7,007.17	6,961.80	45.37	154.450		
2,100.00	2,067.83	2,224.01	2,223.83	8.24	40.05	111.89	2,284.57	-6,519.54	7,016.12	6,967.93	48.19	145.597		
2,200.00	2,165.03	2,331.60	2,331.40	8.71	42.68	112.09	2,286.12	-6,519.54	7,025.72	6,974.46	51.26	137.048		
2,300.00	2,262.22	2,443.66	2,443.44	9.17	45.42	112.29	2,285.36	-6,519.54	7,034.57	6,980.12	54.45	129.192		
2,400.00	2,359.42	2,515.78	2,515.42	9.63	47.18	112.41	2,284.57	-6,519.54	7,043.38	6,986.72	56.66	124.307		
2,500.00	2,456.61	2,612.97	2,612.61	10.10	49.58	112.58	2,284.57	-6,519.54	7,052.59	6,993.07	59.52	118.491		
2,600.00	2,553.81	2,710.17	2,709.81	10.57	51.99	112.75	2,284.57	-6,519.54	7,061.88	6,999.50	62.38	113.209		
2,700.00	2,651.01	2,818.42	2,818.04	11.03	54.67	112.96	2,285.94	-6,519.54	7,071.77	7,006.25	65.51	107.944		
2,800.00	2,748.20	2,933.57	2,933.17	11.50	57.53	113.15	2,285.10	-6,519.54	7,080.91	7,012.09	68.82	102.891		
2,900.00	2,845.40	3,001.91	3,001.40	11.97	59.18	113.27	2,284.57	-6,519.54	7,090.13	7,019.20	70.92	99.967		
3,000.00	2,942.59	3,099.11	3,098.59	12.44	61.42	113.44	2,284.57	-6,519.54	7,099.67	7,026.05	73.62	96.435		
3,100.00	3,039.79	3,196.30	3,195.79	12.91	63.67	113.61	2,284.57	-6,519.54	7,109.29	7,032.97	76.32	93.153		
3,200.00	3,136.98	3,305.04	3,304.49	13.38	66.18	113.81	2,286.04	-6,519.54	7,119.56	7,040.28	79.28	89.800		
3,300.00	3,234.18	3,419.63	3,419.07	13.85	68.82	114.00	2,285.23	-6,519.54	7,129.03	7,046.65	82.38	86.536		
3,400.00	3,331.38	3,488.01	3,487.38	14.32	70.38	114.11	2,284.57	-6,519.54	7,138.51	7,054.12	84.39	84.588		
3,500.00	3,428.57	3,585.21	3,584.57	14.79	72.45	114.28	2,284.57	-6,519.54	7,148.38	7,061.47	86.91	82.248		
3,600.00	3,525.77	3,686.72	3,686.08	15.26	74.61	114.46	2,285.33	-6,519.54	7,158.62	7,069.10	89.52	79.963		
3,700.00	3,622.96	3,800.30	3,799.65	15.73	77.03	114.65	2,284.85	-6,519.54	7,168.45	7,076.06	92.39	77.585		
3,800.00	3,720.16	3,876.85	3,876.16	16.20	78.81	114.78	2,284.57	-6,519.54	7,178.37	7,083.74	94.63	75.859		
3,900.00	3,817.35	3,974.04	3,973.35	16.68	81.24	114.95	2,284.57	-6,519.54	7,188.49	7,090.97	97.51	73.717		
4,000.00	3,914.55	4,071.24	4,070.55	17.15	83.68	115.12	2,284.57	-6,519.54	7,198.67	7,098.27	100.40	71.699		
4,100.00	4,011.74	4,168.44	4,167.74	17.62	86.11	115.28	2,284.57	-6,519.54	7,208.92	7,105.63	103.29	69.794		
4,200.00	4,108.94	4,265.63	4,264.94	18.09	88.55	115.45	2,284.57	-6,519.54	7,219.23	7,113.05	106.18	67.994		
4,300.00	4,206.14	4,362.83	4,362.14	18.57	90.98	115.61	2,284.57	-6,519.54	7,229.60	7,120.54	109.06	66.289		
4,400.00	4,303.33	4,460.02	4,459.33	19.04	93.42	115.77	2,284.57	-6,519.54	7,240.03	7,128.08	111.95	64.673		
4,500.00	4,400.53	4,557.22	4,556.53	19.51	95.85	115.94	2,284.57	-6,519.54	7,250.52	7,135.69	114.83	63.139		
4,600.00	4,497.72	4,654.41	4,653.72	19.99	98.29	116.10	2,284.57	-6,519.54	7,261.08	7,143.36	117.72	61.681		
4,700.00	4,594.92	4,751.61	4,750.92	20.46	100.72	116.26	2,284.57	-6,519.54	7,271.69	7,151.09	120.60	60.294		
4,800.00	4,692.11	4,849.13	4,848.40	20.93	103.17	116.46	2,288.93	-6,519.53	7,284.30	7,160.80	123.50	58.984		
4,900.00	4,789.31	4,949.16	4,948.43	21.41	105.67	116.62	2,288.88	-6,519.53	7,295.02	7,168.57	126.45	57.690		
5,000.00	4,886.51	5,049.25	5,048.51	21.88	108.18	116.79	2,288.74	-6,519.53	7,305.77	7,176.36	129.41	56.455		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 030B - OH - OH-INC											Offset Site Error: 0.00 usft	
Survey Program: 530-A027Ua_INC-ONLY											Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
5,100.00	4,983.70	5,149.37	5,148.63	22.35	110.69	116.95	2,288.51	-6,519.53	7,316.54	7,184.17	132.37	55.274
5,200.00	5,080.90	5,249.54	5,248.79	22.83	113.20	117.12	2,288.20	-6,519.53	7,327.32	7,192.00	135.33	54.145
5,300.00	5,178.09	5,349.76	5,349.00	23.30	115.71	117.28	2,287.79	-6,519.53	7,338.13	7,199.84	138.29	53.065
5,400.00	5,275.29	5,450.01	5,449.25	23.77	118.22	117.44	2,287.30	-6,519.53	7,348.95	7,207.70	141.25	52.029
5,500.00	5,372.48	5,550.32	5,549.55	24.25	120.73	117.60	2,286.72	-6,519.53	7,359.79	7,215.58	144.21	51.036
5,600.00	5,469.68	5,650.66	5,649.89	24.72	123.25	117.76	2,286.06	-6,519.54	7,370.65	7,223.48	147.17	50.082
5,700.00	5,566.87	5,751.05	5,750.27	25.20	125.76	117.92	2,285.30	-6,519.54	7,381.52	7,231.39	150.13	49.166
5,800.00	5,664.07	5,851.48	5,850.69	25.67	128.28	118.07	2,284.46	-6,519.54	7,392.41	7,239.31	153.10	48.286
5,900.00	5,761.27	5,918.67	5,917.27	26.14	129.97	118.18	2,284.57	-6,519.54	7,403.72	7,248.49	155.23	47.695
6,000.00	5,858.46	6,015.86	6,014.46	26.62	132.42	118.34	2,284.57	-6,519.54	7,415.10	7,256.97	158.12	46.894
6,100.00	5,955.66	6,113.06	6,111.66	27.09	134.86	118.49	2,284.57	-6,519.54	7,426.54	7,265.52	161.02	46.123
6,200.00	6,052.85	6,210.26	6,208.85	27.57	137.31	118.65	2,284.57	-6,519.54	7,438.03	7,274.12	163.91	45.379
6,300.00	6,150.05	6,307.45	6,306.05	28.04	139.76	118.80	2,284.57	-6,519.54	7,449.58	7,282.78	166.80	44.662
6,400.00	6,247.24	6,404.65	6,403.24	28.52	142.20	118.96	2,284.57	-6,519.54	7,461.19	7,291.50	169.69	43.969
6,490.87	6,335.57	6,492.97	6,491.57	28.95	144.43	119.10	2,284.57	-6,519.54	7,471.79	7,299.47	172.32	43.360
6,500.00	6,344.44	6,501.84	6,500.44	28.99	144.65	122.53	2,284.57	-6,519.54	7,472.91	7,300.33	172.58	43.300
6,550.00	6,392.91	6,550.32	6,548.91	29.23	145.87	140.02	2,284.57	-6,519.54	7,481.15	7,307.13	174.02	42.990
6,600.00	6,440.98	6,598.38	6,596.98	29.46	147.08	154.03	2,284.57	-6,519.54	7,492.86	7,317.42	175.44	42.710
6,650.00	6,488.34	6,645.74	6,644.34	29.70	148.27	164.52	2,284.57	-6,519.54	7,507.96	7,331.14	176.82	42.461
6,700.00	6,534.69	6,692.09	6,690.69	29.92	149.44	172.40	2,284.57	-6,519.54	7,526.35	7,348.18	178.17	42.244
6,750.00	6,579.76	6,737.17	6,735.76	30.15	150.57	178.56	2,284.57	-6,519.54	7,547.92	7,368.45	179.46	42.059
6,800.00	6,623.27	6,780.67	6,779.27	30.36	151.67	-176.37	2,284.57	-6,519.54	7,572.53	7,391.82	180.70	41.906
6,850.00	6,664.95	6,822.35	6,820.95	30.57	152.72	-171.97	2,284.57	-6,519.54	7,600.03	7,418.15	181.88	41.786
6,900.00	6,704.53	6,861.94	6,860.53	30.78	153.72	-167.91	2,284.57	-6,519.54	7,630.25	7,447.26	182.98	41.699
6,950.00	6,741.79	6,899.19	6,897.79	30.98	154.65	-163.97	2,284.57	-6,519.54	7,663.01	7,479.00	184.01	41.644
7,000.00	6,776.48	6,933.88	6,932.48	31.17	155.53	-159.95	2,284.57	-6,519.54	7,698.12	7,513.16	184.96	41.621 SF
7,050.00	6,808.39	6,965.80	6,964.39	31.36	156.33	-155.69	2,284.57	-6,519.54	7,735.35	7,549.54	185.81	41.630
7,100.00	6,837.34	6,994.74	6,993.34	31.54	157.06	-151.00	2,284.57	-6,519.54	7,774.50	7,587.93	186.57	41.671
7,150.00	6,863.13	7,020.53	7,019.13	31.73	157.71	-145.70	2,284.57	-6,519.54	7,815.32	7,628.09	187.23	41.741
7,200.00	6,885.61	7,043.01	7,041.61	31.91	158.27	-139.63	2,284.57	-6,519.54	7,857.57	7,669.78	187.79	41.842
7,250.00	6,904.64	7,062.04	7,060.64	32.10	158.75	-132.60	2,284.57	-6,519.54	7,901.00	7,712.75	188.25	41.972
7,300.00	6,920.10	7,077.51	7,076.10	32.29	159.14	-124.55	2,284.57	-6,519.54	7,945.34	7,756.75	188.59	42.129
7,350.00	6,931.91	7,089.31	7,087.91	32.48	159.44	-115.53	2,284.57	-6,519.54	7,990.34	7,801.50	188.83	42.314
7,400.00	6,939.97	7,097.38	7,095.97	32.68	159.64	-105.83	2,284.57	-6,519.54	8,035.72	7,846.75	188.97	42.525
7,450.00	6,944.26	7,101.66	7,100.26	32.89	159.75	-95.97	2,284.57	-6,519.54	8,081.21	7,892.22	188.99	42.760
7,481.69	6,945.00	7,102.40	7,101.00	33.03	159.77	-89.91	2,284.57	-6,519.54	8,109.97	7,921.02	188.95	42.921
7,500.00	6,944.99	7,102.39	7,100.99	33.12	159.77	-89.91	2,284.57	-6,519.54	8,126.56	7,937.64	188.92	43.017
7,600.00	6,944.91	7,102.31	7,100.91	33.60	159.77	-89.91	2,284.57	-6,519.54	8,217.30	8,028.56	188.74	43.538
7,700.00	6,944.84	7,102.24	7,100.84	34.17	159.76	-89.91	2,284.57	-6,519.54	8,308.25	8,119.68	188.58	44.058
7,800.00	6,944.76	7,102.16	7,100.76	34.80	159.76	-89.90	2,284.57	-6,519.54	8,399.41	8,210.98	188.43	44.576
7,900.00	6,944.69	7,102.09	7,100.69	35.49	159.76	-89.90	2,284.57	-6,519.54	8,490.76	8,302.47	188.29	45.093
8,000.00	6,944.61	7,102.01	7,100.61	36.25	159.76	-89.90	2,284.57	-6,519.54	8,582.31	8,394.14	188.17	45.609
8,100.00	6,944.54	7,101.94	7,100.54	37.07	159.76	-89.90	2,284.57	-6,519.54	8,674.05	8,485.98	188.07	46.123
8,200.00	6,944.46	7,101.86	7,100.46	37.94	159.76	-89.90	2,284.57	-6,519.54	8,765.96	8,577.99	187.97	46.635
8,300.00	6,944.39	7,101.79	7,100.39	38.86	159.75	-89.90	2,284.57	-6,519.54	8,858.06	8,670.17	187.89	47.146
8,400.00	6,944.31	7,101.71	7,100.31	39.83	159.75	-89.90	2,284.57	-6,519.54	8,950.32	8,762.50	187.81	47.655
8,500.00	6,944.23	7,101.64	7,100.23	40.84	159.75	-89.90	2,284.57	-6,519.54	9,042.74	8,854.99	187.75	48.163
8,600.00	6,944.16	7,101.56	7,100.16	41.89	159.75	-89.89	2,284.57	-6,519.54	9,135.33	8,947.63	187.70	48.670
8,700.00	6,944.08	7,101.49	7,100.08	42.98	159.75	-89.89	2,284.57	-6,519.54	9,228.07	9,040.41	187.66	49.175
8,800.00	6,944.01	7,101.41	7,100.01	44.10	159.74	-89.89	2,284.57	-6,519.54	9,320.96	9,133.33	187.63	49.678
8,900.00	6,943.93	7,101.34	7,099.93	45.25	159.74	-89.89	2,284.57	-6,519.54	9,413.99	9,226.39	187.60	50.180
9,000.00	6,943.86	7,101.26	7,099.86	46.43	159.74	-89.89	2,284.57	-6,519.54	9,507.17	9,319.58	187.59	50.681

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 030B - OH - OH-INC											Offset Site Error: 0.00 usft	
Survey Program: 530-A027Ua_INC-ONLY											Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
9,100.00	6,943.78	7,101.19	7,099.78	47.63	159.74	-89.89	2,284.57	-6,519.54	9,600.48	9,412.90	187.58	51.180
9,200.00	6,943.71	7,101.11	7,099.71	48.86	159.74	-89.89	2,284.57	-6,519.54	9,693.93	9,506.35	187.58	51.678
9,300.00	6,943.63	7,101.04	7,099.63	50.11	159.73	-89.89	2,284.57	-6,519.54	9,787.51	9,599.91	187.59	52.174
9,400.00	6,943.56	7,100.96	7,099.56	51.38	159.73	-89.88	2,284.57	-6,519.54	9,881.21	9,693.60	187.61	52.669
9,500.00	6,943.48	7,100.89	7,099.48	52.66	159.73	-89.88	2,284.57	-6,519.54	9,975.04	9,787.40	187.63	53.163
9,600.00	6,943.41	7,100.81	7,099.41	53.97	159.73	-89.88	2,284.57	-6,519.54	10,068.98	9,881.32	187.66	53.655
9,700.00	6,943.33	7,100.74	7,099.33	55.29	159.73	-89.88	2,284.57	-6,519.54	10,163.04	9,975.34	187.69	54.147
9,800.00	6,943.26	7,100.66	7,099.26	56.63	159.73	-89.88	2,284.57	-6,519.54	10,257.21	10,069.48	187.74	54.637
9,900.00	6,943.18	7,100.59	7,099.18	57.98	159.72	-89.88	2,284.57	-6,519.54	10,351.49	10,163.71	187.78	55.125
10,000.00	6,943.11	7,100.51	7,099.11	59.34	159.72	-89.88	2,284.57	-6,519.54	10,445.88	10,258.05	187.83	55.613
10,100.00	6,943.03	7,100.44	7,099.03	60.72	159.72	-89.88	2,284.57	-6,519.54	10,540.37	10,352.48	187.89	56.099
10,200.00	6,942.96	7,100.36	7,098.96	62.11	159.72	-89.87	2,284.57	-6,519.54	10,634.96	10,447.02	187.95	56.585
10,300.00	6,942.88	7,100.29	7,098.88	63.50	159.72	-89.87	2,284.57	-6,519.54	10,729.65	10,541.64	188.01	57.069
10,400.00	6,942.81	7,100.21	7,098.81	64.91	159.71	-89.87	2,284.57	-6,519.54	10,824.44	10,636.36	188.08	57.552
10,500.00	6,942.73	7,100.13	7,098.73	66.33	159.71	-89.87	2,284.57	-6,519.54	10,919.32	10,731.17	188.15	58.034
10,600.00	6,942.66	7,100.06	7,098.66	67.75	159.71	-89.87	2,284.57	-6,519.54	11,014.29	10,826.06	188.23	58.515
10,700.00	6,942.58	7,099.98	7,098.58	69.18	159.71	-89.87	2,284.57	-6,519.54	11,109.34	10,921.04	188.31	58.996
10,800.00	6,942.51	7,099.91	7,098.51	70.62	159.71	-89.87	2,284.57	-6,519.54	11,204.49	11,016.10	188.39	59.475
10,900.00	6,942.43	7,099.83	7,098.43	72.07	159.70	-89.87	2,284.57	-6,519.54	11,299.72	11,111.24	188.48	59.953
11,000.00	6,942.36	7,099.76	7,098.36	73.52	159.70	-89.86	2,284.57	-6,519.54	11,395.02	11,206.46	188.57	60.430
11,100.00	6,942.28	7,099.68	7,098.28	74.98	159.70	-89.86	2,284.57	-6,519.54	11,490.41	11,301.76	188.66	60.906
11,200.00	6,942.21	7,099.61	7,098.21	76.45	159.70	-89.86	2,284.57	-6,519.54	11,585.88	11,397.13	188.75	61.382
11,300.00	6,942.13	7,099.53	7,098.13	77.92	159.70	-89.86	2,284.57	-6,519.54	11,681.42	11,492.58	188.85	61.857
11,400.00	6,942.06	7,099.46	7,098.06	79.40	159.69	-89.86	2,284.57	-6,519.54	11,777.04	11,588.09	188.95	62.330
11,500.00	6,941.98	7,099.38	7,097.98	80.88	159.69	-89.86	2,284.57	-6,519.54	11,872.73	11,683.68	189.05	62.803
11,600.00	6,941.91	7,099.31	7,097.91	82.36	159.69	-89.86	2,284.57	-6,519.54	11,968.49	11,779.34	189.15	63.275
11,700.00	6,941.83	7,099.23	7,097.83	83.85	159.69	-89.86	2,284.57	-6,519.54	12,064.32	11,875.06	189.25	63.747
11,800.00	6,941.76	7,099.16	7,097.76	85.35	159.69	-89.85	2,284.57	-6,519.54	12,160.21	11,970.85	189.36	64.217
11,900.00	6,941.68	7,099.08	7,097.68	86.85	159.69	-89.85	2,284.57	-6,519.54	12,256.17	12,066.70	189.47	64.687
12,000.00	6,941.60	7,099.01	7,097.60	88.35	159.68	-89.85	2,284.57	-6,519.54	12,352.20	12,162.62	189.58	65.156
12,100.00	6,941.53	7,098.93	7,097.53	89.85	159.68	-89.85	2,284.57	-6,519.54	12,448.28	12,258.59	189.69	65.625
12,200.00	6,941.45	7,098.86	7,097.45	91.36	159.68	-89.85	2,284.57	-6,519.54	12,544.43	12,354.63	189.80	66.092
12,300.00	6,941.38	7,098.78	7,097.38	92.88	159.68	-89.85	2,284.57	-6,519.54	12,640.64	12,450.73	189.92	66.559
12,400.00	6,941.30	7,098.71	7,097.30	94.39	159.68	-89.85	2,284.57	-6,519.54	12,736.91	12,546.88	190.03	67.026
12,500.00	6,941.23	7,098.63	7,097.23	95.91	159.67	-89.85	2,284.57	-6,519.54	12,833.23	12,643.09	190.15	67.491
12,600.00	6,941.15	7,098.56	7,097.15	97.43	159.67	-89.84	2,284.57	-6,519.54	12,929.61	12,739.35	190.26	67.956
12,700.00	6,941.08	7,098.48	7,097.08	98.95	159.67	-89.84	2,284.57	-6,519.54	13,026.05	12,835.66	190.38	68.421
12,800.00	6,941.00	7,098.41	7,097.00	100.48	159.67	-89.84	2,284.57	-6,519.54	13,122.53	12,932.03	190.50	68.884
12,900.00	6,940.93	7,098.33	7,096.93	102.01	159.67	-89.84	2,284.57	-6,519.54	13,219.07	13,028.45	190.62	69.348
13,000.00	6,940.85	7,098.26	7,096.85	103.54	159.66	-89.84	2,284.57	-6,519.54	13,315.66	13,124.92	190.74	69.810
13,100.00	6,940.78	7,098.18	7,096.78	105.07	159.66	-89.84	2,284.57	-6,519.54	13,412.31	13,221.44	190.86	70.272
13,200.00	6,940.70	7,098.11	7,096.70	106.61	159.66	-89.84	2,284.57	-6,519.54	13,509.00	13,318.01	190.98	70.733
13,300.00	6,940.63	7,098.03	7,096.63	108.14	159.66	-89.83	2,284.57	-6,519.54	13,605.73	13,414.63	191.11	71.194
13,400.00	6,940.55	7,097.96	7,096.55	109.68	159.66	-89.83	2,284.57	-6,519.54	13,702.52	13,511.29	191.23	71.654
13,500.00	6,940.48	7,097.88	7,096.48	111.22	159.66	-89.83	2,284.57	-6,519.54	13,799.35	13,607.99	191.35	72.114
13,600.00	6,940.40	7,097.81	7,096.40	112.77	159.65	-89.83	2,284.57	-6,519.54	13,896.22	13,704.74	191.48	72.573
13,700.00	6,940.33	7,097.73	7,096.33	114.31	159.65	-89.83	2,284.57	-6,519.54	13,993.14	13,801.54	191.60	73.032
13,800.00	6,940.25	7,097.66	7,096.25	115.86	159.65	-89.83	2,284.57	-6,519.54	14,090.10	13,898.38	191.73	73.490
13,900.00	6,940.18	7,097.58	7,096.18	117.41	159.65	-89.83	2,284.57	-6,519.54	14,187.11	13,995.25	191.85	73.947
14,000.00	6,940.10	7,097.50	7,096.10	118.95	159.65	-89.83	2,284.57	-6,519.54	14,284.15	14,092.17	191.98	74.404
14,100.00	6,940.03	7,097.43	7,096.03	120.51	159.64	-89.82	2,284.57	-6,519.54	14,381.24	14,189.13	192.11	74.861
14,200.00	6,939.95	7,097.35	7,095.95	122.06	159.64	-89.82	2,284.57	-6,519.54	14,478.37	14,286.13	192.23	75.316

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 030B - OH - OH-INC											Offset Site Error: 0.00 usft	
Survey Program: 530-A027Ua_INC-ONLY											Offset Well Error: 0.00 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 (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
14,300.00	6,939.88	7,097.28	7,095.88	123.61	159.64	-89.82	2,284.57	-6,519.54	14,575.53	14,383.17	192.36	75.772
14,400.00	6,939.80	7,097.20	7,095.80	125.17	159.64	-89.82	2,284.57	-6,519.54	14,672.73	14,480.25	192.49	76.227
14,500.00	6,939.73	7,097.13	7,095.73	126.72	159.64	-89.82	2,284.57	-6,519.54	14,769.98	14,577.36	192.62	76.681
14,600.00	6,939.65	7,097.05	7,095.65	128.28	159.63	-89.82	2,284.57	-6,519.54	14,867.25	14,674.51	192.74	77.135
14,700.00	6,939.58	7,096.98	7,095.58	129.84	159.63	-89.82	2,284.57	-6,519.54	14,964.56	14,771.69	192.87	77.589
14,800.00	6,939.50	7,096.90	7,095.50	131.40	159.63	-89.82	2,284.57	-6,519.54	15,061.91	14,868.91	193.00	78.042
14,900.00	6,939.43	7,096.83	7,095.43	132.96	159.63	-89.81	2,284.57	-6,519.54	15,159.30	14,966.17	193.13	78.494
15,000.00	6,939.35	7,096.75	7,095.35	134.52	159.63	-89.81	2,284.57	-6,519.54	15,256.71	15,063.46	193.25	78.946
15,100.00	6,939.28	7,096.68	7,095.28	136.08	159.62	-89.81	2,284.57	-6,519.54	15,354.16	15,160.78	193.38	79.398
15,200.00	6,939.20	7,096.60	7,095.20	137.64	159.62	-89.81	2,284.57	-6,519.54	15,451.64	15,258.13	193.51	79.849
15,300.00	6,939.13	7,096.53	7,095.13	139.21	159.62	-89.81	2,284.57	-6,519.54	15,549.16	15,355.52	193.64	80.299
15,400.00	6,939.05	7,096.45	7,095.05	140.77	159.62	-89.81	2,284.57	-6,519.54	15,646.70	15,452.93	193.77	80.750
15,500.00	6,938.98	7,096.38	7,094.98	142.34	159.62	-89.81	2,284.57	-6,519.54	15,744.28	15,550.38	193.90	81.199
15,600.00	6,938.90	7,096.30	7,094.90	143.91	159.62	-89.81	2,284.57	-6,519.54	15,841.89	15,647.86	194.03	81.649
15,700.00	6,938.82	7,096.23	7,094.82	145.47	159.61	-89.80	2,284.57	-6,519.54	15,939.52	15,745.37	194.15	82.097
15,800.00	6,938.75	7,096.15	7,094.75	147.04	159.61	-89.80	2,284.57	-6,519.54	16,037.19	15,842.90	194.28	82.546
15,900.00	6,938.67	7,096.08	7,094.67	148.61	159.61	-89.80	2,284.57	-6,519.54	16,134.88	15,940.47	194.41	82.994
16,000.00	6,938.60	7,096.00	7,094.60	150.18	159.61	-89.80	2,284.57	-6,519.54	16,232.60	16,038.06	194.54	83.441
16,100.00	6,938.52	7,095.93	7,094.52	151.75	159.61	-89.80	2,284.57	-6,519.54	16,330.35	16,135.68	194.67	83.888
16,200.00	6,938.45	7,095.85	7,094.45	153.32	159.60	-89.80	2,284.57	-6,519.54	16,428.13	16,233.33	194.80	84.335
16,300.00	6,938.37	7,095.78	7,094.37	154.90	159.60	-89.80	2,284.57	-6,519.54	16,525.93	16,331.01	194.93	84.781
16,400.00	6,938.30	7,095.70	7,094.30	156.47	159.60	-89.80	2,284.57	-6,519.54	16,623.76	16,428.71	195.05	85.226
16,500.00	6,938.22	7,095.63	7,094.22	158.04	159.60	-89.79	2,284.57	-6,519.54	16,721.62	16,526.43	195.18	85.672
16,600.00	6,938.15	7,095.55	7,094.15	159.62	159.60	-89.79	2,284.57	-6,519.54	16,819.50	16,624.19	195.31	86.116
16,700.00	6,938.07	7,095.48	7,094.07	161.19	159.59	-89.79	2,284.57	-6,519.54	16,917.40	16,721.96	195.44	86.561
16,800.00	6,938.00	7,095.40	7,094.00	162.77	159.59	-89.79	2,284.57	-6,519.54	17,015.33	16,819.76	195.57	87.005
16,900.00	6,937.92	7,095.33	7,093.92	164.34	159.59	-89.79	2,284.57	-6,519.54	17,113.29	16,917.59	195.70	87.448
17,000.00	6,937.85	7,095.25	7,093.85	165.92	159.59	-89.79	2,284.57	-6,519.54	17,211.26	17,015.44	195.82	87.891
17,100.00	6,937.77	7,095.18	7,093.77	167.50	159.59	-89.79	2,284.57	-6,519.54	17,309.26	17,113.31	195.95	88.334
17,200.00	6,937.70	7,095.10	7,093.70	169.07	159.59	-89.79	2,284.57	-6,519.54	17,407.29	17,211.20	196.08	88.776
17,300.00	6,937.62	7,095.03	7,093.62	170.65	159.58	-89.78	2,284.57	-6,519.54	17,505.33	17,309.12	196.21	89.218
17,400.00	6,937.55	7,094.95	7,093.55	172.23	159.58	-89.78	2,284.57	-6,519.54	17,603.40	17,407.06	196.34	89.659
17,500.00	6,937.47	7,094.87	7,093.47	173.81	159.58	-89.78	2,284.57	-6,519.54	17,701.49	17,505.02	196.46	90.100
17,600.00	6,937.40	7,094.80	7,093.40	175.39	159.58	-89.78	2,284.57	-6,519.54	17,799.60	17,603.00	196.59	90.541
17,700.00	6,937.32	7,094.72	7,093.32	176.97	159.58	-89.78	2,284.57	-6,519.54	17,897.73	17,701.01	196.72	90.981
17,800.00	6,937.25	7,094.65	7,093.25	178.55	159.57	-89.78	2,284.57	-6,519.54	17,995.88	17,799.03	196.85	91.420
17,900.00	6,937.17	7,094.57	7,093.17	180.13	159.57	-89.78	2,284.57	-6,519.54	18,094.05	17,897.08	196.98	91.859
18,000.00	6,937.10	7,094.50	7,093.10	181.71	159.57	-89.78	2,284.57	-6,519.54	18,192.24	17,995.14	197.10	92.298
18,100.00	6,937.02	7,094.42	7,093.02	183.29	159.57	-89.77	2,284.57	-6,519.54	18,290.45	18,093.22	197.23	92.737
18,200.00	6,936.95	7,094.35	7,092.95	184.87	159.57	-89.77	2,284.57	-6,519.54	18,388.69	18,191.33	197.36	93.174
18,300.00	6,936.87	7,094.27	7,092.87	186.46	159.56	-89.77	2,284.57	-6,519.54	18,486.94	18,289.45	197.48	93.612
18,400.00	6,936.80	7,094.20	7,092.80	188.04	159.56	-89.77	2,284.57	-6,519.54	18,585.20	18,387.59	197.61	94.049
18,500.00	6,936.72	7,094.12	7,092.72	189.62	159.56	-89.77	2,284.57	-6,519.54	18,683.49	18,485.75	197.74	94.486
18,600.00	6,936.65	7,094.05	7,092.65	191.21	159.56	-89.77	2,284.57	-6,519.54	18,781.79	18,583.93	197.87	94.922
18,700.00	6,936.57	7,093.97	7,092.57	192.79	159.56	-89.77	2,284.57	-6,519.54	18,880.12	18,682.12	197.99	95.358
18,800.00	6,936.50	7,093.90	7,092.50	194.37	159.55	-89.77	2,284.57	-6,519.54	18,978.46	18,780.34	198.12	95.793
18,900.00	6,936.42	7,093.82	7,092.42	195.96	159.55	-89.76	2,284.57	-6,519.54	19,076.81	18,878.57	198.25	96.228
19,000.00	6,936.35	7,093.75	7,092.35	197.54	159.55	-89.76	2,284.57	-6,519.54	19,175.19	18,976.82	198.37	96.662
19,100.00	6,936.27	7,093.67	7,092.27	199.13	159.55	-89.76	2,284.57	-6,519.54	19,273.58	19,075.08	198.50	97.096
19,200.00	6,936.19	7,093.60	7,092.19	200.71	159.55	-89.76	2,284.57	-6,519.54	19,371.99	19,173.36	198.63	97.530
19,300.00	6,936.12	7,093.52	7,092.12	202.30	159.55	-89.76	2,284.57	-6,519.54	19,470.41	19,271.66	198.75	97.963
19,400.00	6,936.04	7,093.45	7,092.04	203.88	159.54	-89.76	2,284.57	-6,519.54	19,568.85	19,369.97	198.88	98.396

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 030B - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 530-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,500.00	6,935.97	7,093.37	7,091.97	205.47	159.54	-89.76	2,284.57	-6,519.54	19,667.31	19,468.30	199.00	98.828	
19,600.00	6,935.89	7,093.30	7,091.89	207.06	159.54	-89.76	2,284.57	-6,519.54	19,765.78	19,566.65	199.13	99.260	
19,700.00	6,935.82	7,093.22	7,091.82	208.64	159.54	-89.75	2,284.57	-6,519.54	19,864.26	19,665.01	199.26	99.692	
19,800.00	6,935.74	7,093.15	7,091.74	210.23	159.54	-89.75	2,284.57	-6,519.54	19,962.77	19,763.38	199.38	100.123	
19,900.00	6,935.67	7,093.07	7,091.67	211.82	159.53	-89.75	2,284.57	-6,519.54	20,061.28	19,861.77	199.51	100.553	
20,000.00	6,935.59	7,093.00	7,091.59	213.41	159.53	-89.75	2,284.57	-6,519.54	20,159.81	19,960.18	199.63	100.983	
20,100.00	6,935.52	7,092.92	7,091.52	214.99	159.53	-89.75	2,284.57	-6,519.54	20,258.36	20,058.60	199.76	101.413	
20,200.00	6,935.44	7,092.85	7,091.44	216.58	159.53	-89.75	2,284.57	-6,519.54	20,356.92	20,157.03	199.89	101.843	
20,300.00	6,935.37	7,092.77	7,091.37	218.17	159.53	-89.75	2,284.57	-6,519.54	20,455.49	20,255.48	200.01	102.271	
20,400.00	6,935.29	7,092.70	7,091.29	219.76	159.52	-89.75	2,284.57	-6,519.54	20,554.08	20,353.94	200.14	102.700	
20,500.00	6,935.22	7,092.62	7,091.22	221.35	159.52	-89.74	2,284.57	-6,519.54	20,652.68	20,452.42	200.26	103.128	
20,600.00	6,935.14	7,092.55	7,091.14	222.94	159.52	-89.74	2,284.57	-6,519.54	20,751.29	20,550.90	200.39	103.556	
20,700.00	6,935.07	7,092.47	7,091.07	224.53	159.52	-89.74	2,284.57	-6,519.54	20,849.92	20,649.41	200.51	103.983	
20,789.75	6,935.00	7,092.40	7,091.00	225.95	159.52	-89.74	2,284.57	-6,519.54	20,938.45	20,737.82	200.63	104.366	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031 - OH - OH-TD													Offset Site Error:	0.00 usft
Survey Program: 5973-A028Ua_INC-ONLY_PLANNED_5_DEG													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	46.70	1,151.21	1,221.57	1,683.50					
100.00	100.00	0.00	0.00	0.25	0.00	46.70	1,151.21	1,221.57	1,678.80	1,678.54	0.25	6,603.780		
146.95	146.95	17.95	17.95	0.42	0.78	46.70	1,151.21	1,221.57	1,678.55	1,677.34	1.20	1,395.771		
200.00	200.00	71.00	71.00	0.61	3.10	46.70	1,151.21	1,221.57	1,678.55	1,674.84	3.71	452.736		
300.00	300.00	171.00	171.00	0.97	7.46	46.70	1,151.21	1,221.57	1,678.55	1,670.12	8.43	199.131		
400.00	400.00	271.00	271.00	1.33	11.82	46.70	1,151.21	1,221.57	1,678.55	1,665.39	13.15	127.635		
500.00	500.00	371.00	371.00	1.68	16.19	46.70	1,151.21	1,221.57	1,678.55	1,660.67	17.87	93.916 CC		
600.00	599.98	470.98	470.98	2.03	20.55	-132.45	1,151.21	1,221.57	1,679.72	1,657.15	22.58	74.400		
700.00	699.84	570.84	570.84	2.36	24.91	-132.53	1,151.21	1,221.57	1,683.26	1,655.99	27.27	61.731 ES		
800.00	799.45	670.45	670.45	2.71	29.25	-132.66	1,151.21	1,221.57	1,689.17	1,657.22	31.96	52.856		
900.00	898.70	769.70	769.70	3.06	33.58	-132.84	1,151.21	1,221.57	1,697.48	1,660.84	36.64	46.327		
1,000.00	997.47	868.47	868.47	3.43	37.89	-133.07	1,151.21	1,221.57	1,708.21	1,666.90	41.31	41.347		
1,100.00	1,095.62	966.62	966.62	3.82	42.18	-133.33	1,151.21	1,221.57	1,721.40	1,675.43	45.97	37.446		
1,180.06	1,173.69	1,044.69	1,044.69	4.14	45.58	-133.57	1,151.21	1,221.57	1,733.76	1,684.08	49.68	34.896		
1,200.00	1,193.07	1,064.07	1,064.07	4.22	46.43	-133.68	1,151.21	1,221.57	1,737.05	1,686.44	50.61	34.323		
1,300.00	1,290.27	1,161.27	1,161.27	4.65	50.67	-134.23	1,151.21	1,221.57	1,753.61	1,698.37	55.24	31.746		
1,400.00	1,387.46	1,258.46	1,258.46	5.08	54.91	-134.77	1,151.21	1,221.57	1,770.33	1,710.45	59.87	29.567		
1,500.00	1,484.66	1,355.66	1,355.66	5.52	59.15	-135.30	1,151.21	1,221.57	1,787.20	1,722.69	64.51	27.702		
1,600.00	1,581.85	1,452.85	1,452.85	5.97	63.39	-135.82	1,151.21	1,221.57	1,804.22	1,735.07	69.16	26.089		
1,700.00	1,679.05	1,550.05	1,550.05	6.42	67.63	-136.32	1,151.21	1,221.57	1,821.39	1,747.59	73.80	24.679		
1,800.00	1,776.25	1,647.25	1,647.25	6.87	71.87	-136.82	1,151.21	1,221.57	1,838.70	1,760.25	78.45	23.438		
1,900.00	1,873.44	1,744.44	1,744.44	7.33	76.12	-137.31	1,151.21	1,221.57	1,856.14	1,773.04	83.10	22.337		
2,000.00	1,970.64	1,841.64	1,841.64	7.78	80.36	-137.80	1,151.21	1,221.57	1,873.71	1,785.97	87.74	21.355		
2,100.00	2,067.83	1,938.83	1,938.83	8.24	84.60	-138.27	1,151.21	1,221.57	1,891.42	1,799.03	92.39	20.472		
2,200.00	2,165.03	2,036.03	2,036.03	8.71	88.84	-138.73	1,151.21	1,221.57	1,909.25	1,812.21	97.04	19.675		
2,300.00	2,262.22	2,133.22	2,133.22	9.17	93.08	-139.19	1,151.21	1,221.57	1,927.20	1,825.52	101.69	18.952		
2,400.00	2,359.42	2,230.42	2,230.42	9.63	97.32	-139.64	1,151.21	1,221.57	1,945.27	1,838.94	106.33	18.294		
2,500.00	2,456.61	2,327.61	2,327.61	10.10	101.56	-140.07	1,151.21	1,221.57	1,963.46	1,852.48	110.98	17.692		
2,600.00	2,553.81	2,424.81	2,424.81	10.57	105.80	-140.51	1,151.21	1,221.57	1,981.76	1,866.13	115.63	17.139		
2,700.00	2,651.01	2,522.01	2,522.01	11.03	110.04	-140.93	1,151.21	1,221.57	2,000.17	1,879.89	120.28	16.630		
2,800.00	2,748.20	2,619.20	2,619.20	11.50	114.28	-141.35	1,151.21	1,221.57	2,018.68	1,893.76	124.92	16.160		
2,900.00	2,845.40	2,716.40	2,716.40	11.97	118.53	-141.75	1,151.21	1,221.57	2,037.30	1,907.73	129.57	15.724		
3,000.00	2,942.59	2,813.59	2,813.59	12.44	122.77	-142.16	1,151.21	1,221.57	2,056.01	1,921.80	134.21	15.319		
3,100.00	3,039.79	2,910.79	2,910.79	12.91	127.01	-142.55	1,151.21	1,221.57	2,074.83	1,935.97	138.86	14.942		
3,200.00	3,136.98	3,007.98	3,007.98	13.38	131.25	-142.94	1,151.21	1,221.57	2,093.74	1,950.24	143.50	14.590		
3,300.00	3,234.18	3,105.18	3,105.18	13.85	135.49	-143.32	1,151.21	1,221.57	2,112.74	1,964.60	148.14	14.261		
3,400.00	3,331.38	3,202.38	3,202.38	14.32	139.73	-143.69	1,151.21	1,221.57	2,131.84	1,979.05	152.79	13.953		
3,500.00	3,428.57	3,299.57	3,299.57	14.79	143.97	-144.06	1,151.21	1,221.57	2,151.02	1,993.59	157.43	13.663		
3,600.00	3,525.77	3,396.77	3,396.77	15.26	148.21	-144.42	1,151.21	1,221.57	2,170.28	2,008.21	162.07	13.391		
3,700.00	3,622.96	3,493.96	3,493.96	15.73	152.45	-144.78	1,151.21	1,221.57	2,189.63	2,022.92	166.71	13.134		
3,800.00	3,720.16	3,591.16	3,591.16	16.20	156.69	-145.12	1,151.21	1,221.57	2,209.06	2,037.71	171.35	12.892		
3,900.00	3,817.35	3,688.35	3,688.35	16.68	160.93	-145.47	1,151.21	1,221.57	2,228.57	2,052.57	175.99	12.663		
4,000.00	3,914.55	3,785.55	3,785.55	17.15	165.18	-145.80	1,151.21	1,221.57	2,248.15	2,067.52	180.63	12.446		
4,100.00	4,011.74	3,882.74	3,882.74	17.62	169.42	-146.13	1,151.21	1,221.57	2,267.81	2,082.54	185.27	12.240		
4,200.00	4,108.94	3,979.94	3,979.94	18.09	173.66	-146.46	1,151.21	1,221.57	2,287.54	2,097.63	189.91	12.045		
4,300.00	4,206.14	4,077.14	4,077.14	18.57	177.90	-146.78	1,151.21	1,221.57	2,307.35	2,112.80	194.55	11.860		
4,400.00	4,303.33	4,174.33	4,174.33	19.04	182.14	-147.09	1,151.21	1,221.57	2,327.22	2,128.03	199.19	11.684		
4,500.00	4,400.53	4,271.53	4,271.53	19.51	186.38	-147.40	1,151.21	1,221.57	2,347.16	2,143.34	203.82	11.516		
4,600.00	4,497.72	4,368.72	4,368.72	19.99	190.62	-147.71	1,151.21	1,221.57	2,367.17	2,158.70	208.46	11.355		
4,700.00	4,594.92	4,465.92	4,465.92	20.46	194.86	-148.01	1,151.21	1,221.57	2,387.24	2,174.14	213.10	11.203		
4,800.00	4,692.11	4,563.11	4,563.11	20.93	199.10	-148.30	1,151.21	1,221.57	2,407.37	2,189.63	217.73	11.056		
4,900.00	4,789.31	4,660.31	4,660.31	21.41	203.34	-148.59	1,151.21	1,221.57	2,427.56	2,205.19	222.37	10.917		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031 - OH - OH-TD													Offset Site Error: 0.00 usft
Survey Program: 5973-A028Ua_INC-ONLY_PLANNED_5_DEG													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,000.00	4,886.51	4,757.51	4,757.51	21.88	207.59	-148.88	1,151.21	1,221.57	2,447.81	2,220.81	227.00	10.783	
5,100.00	4,983.70	4,854.70	4,854.70	22.35	211.83	-149.16	1,151.21	1,221.57	2,468.12	2,236.48	231.64	10.655	
5,200.00	5,080.90	4,951.90	4,951.90	22.83	216.07	-149.43	1,151.21	1,221.57	2,488.49	2,252.21	236.27	10.532	
5,300.00	5,178.09	5,049.09	5,049.09	23.30	220.31	-149.70	1,151.21	1,221.57	2,508.91	2,268.00	240.91	10.414	
5,400.00	5,275.29	5,146.29	5,146.29	23.77	224.55	-149.97	1,151.21	1,221.57	2,529.39	2,283.84	245.54	10.301	
5,500.00	5,372.48	5,243.48	5,243.48	24.25	228.79	-150.23	1,151.21	1,221.57	2,549.91	2,299.74	250.18	10.192	
5,600.00	5,469.68	5,340.68	5,340.68	24.72	233.03	-150.49	1,151.21	1,221.57	2,570.49	2,315.68	254.81	10.088	
5,700.00	5,566.87	5,437.87	5,437.87	25.20	237.27	-150.74	1,151.21	1,221.57	2,591.12	2,331.68	259.44	9.987	
5,800.00	5,664.07	5,535.07	5,535.07	25.67	241.51	-151.00	1,151.21	1,221.57	2,611.80	2,347.72	264.07	9.890	
5,900.00	5,761.27	5,632.27	5,632.27	26.14	245.75	-151.24	1,151.21	1,221.57	2,632.52	2,363.82	268.71	9.797	
6,000.00	5,858.46	5,729.46	5,729.46	26.62	249.99	-151.48	1,151.21	1,221.57	2,653.30	2,379.96	273.34	9.707	
6,100.00	5,955.66	5,826.66	5,826.66	27.09	254.24	-151.72	1,151.21	1,221.57	2,674.11	2,396.14	277.97	9.620	
6,200.00	6,052.85	5,923.85	5,923.85	27.57	258.48	-151.96	1,151.21	1,221.57	2,694.98	2,412.37	282.60	9.536	
6,300.00	6,150.05	5,973.00	5,973.00	28.04	260.62	-152.08	1,151.21	1,221.57	2,716.31	2,431.27	285.03	9.530 SF	
6,400.00	6,247.24	5,973.00	5,973.00	28.52	260.62	-152.08	1,151.21	1,221.57	2,740.68	2,455.74	284.94	9.618	
6,490.87	6,335.57	5,973.00	5,973.00	28.95	260.62	-152.08	1,151.21	1,221.57	2,765.78	2,481.22	284.56	9.719	
6,500.00	6,344.44	5,973.00	5,973.00	28.99	260.62	-148.48	1,151.21	1,221.57	2,768.43	2,483.92	284.51	9.730	
6,550.00	6,392.91	5,973.00	5,973.00	29.23	260.62	-130.19	1,151.21	1,221.57	2,782.48	2,498.31	284.18	9.791	
6,600.00	6,440.98	5,973.00	5,973.00	29.46	260.62	-115.61	1,151.21	1,221.57	2,795.73	2,511.96	283.78	9.852	
6,650.00	6,488.34	5,973.00	5,973.00	29.70	260.62	-104.78	1,151.21	1,221.57	2,808.10	2,524.79	283.31	9.912	
6,700.00	6,534.69	5,973.00	5,973.00	29.92	260.62	-96.82	1,151.21	1,221.57	2,819.53	2,536.75	282.78	9.971	
6,750.00	6,579.76	5,973.00	5,973.00	30.15	260.62	-90.87	1,151.21	1,221.57	2,829.95	2,547.75	282.21	10.028	
6,800.00	6,623.27	5,973.00	5,973.00	30.36	260.62	-86.32	1,151.21	1,221.57	2,839.33	2,557.73	281.59	10.083	
6,850.00	6,664.95	5,973.00	5,973.00	30.57	260.62	-82.77	1,151.21	1,221.57	2,847.60	2,566.64	280.95	10.136	
6,900.00	6,704.53	5,973.00	5,973.00	30.78	260.62	-79.96	1,151.21	1,221.57	2,854.72	2,574.43	280.29	10.185	
6,950.00	6,741.79	5,973.00	5,973.00	30.98	260.62	-77.73	1,151.21	1,221.57	2,860.67	2,581.04	279.63	10.230	
7,000.00	6,776.48	5,973.00	5,973.00	31.17	260.62	-75.95	1,151.21	1,221.57	2,865.41	2,586.44	278.98	10.271	
7,050.00	6,808.39	5,973.00	5,973.00	31.36	260.62	-74.54	1,151.21	1,221.57	2,868.93	2,590.58	278.35	10.307	
7,100.00	6,837.34	5,973.00	5,973.00	31.54	260.62	-73.45	1,151.21	1,221.57	2,871.19	2,593.43	277.76	10.337	
7,150.00	6,863.13	5,973.00	5,973.00	31.73	260.62	-72.63	1,151.21	1,221.57	2,872.20	2,594.98	277.22	10.361	
7,200.00	6,885.61	5,973.00	5,973.00	31.91	260.62	-72.05	1,151.21	1,221.57	2,871.94	2,595.20	276.74	10.378	
7,250.00	6,904.64	5,973.00	5,973.00	32.10	260.62	-71.70	1,151.21	1,221.57	2,870.42	2,594.09	276.33	10.388	
7,300.00	6,920.10	5,973.00	5,973.00	32.29	260.62	-71.55	1,151.21	1,221.57	2,867.65	2,591.63	276.02	10.389	
7,350.00	6,931.91	5,973.00	5,973.00	32.48	260.62	-71.59	1,151.21	1,221.57	2,863.64	2,587.84	275.79	10.383	
7,400.00	6,939.97	5,973.00	5,973.00	32.68	260.62	-71.81	1,151.21	1,221.57	2,858.40	2,582.73	275.67	10.369	
7,450.00	6,944.26	5,973.00	5,973.00	32.89	260.62	-72.22	1,151.21	1,221.57	2,851.97	2,576.31	275.65	10.346	
7,481.69	6,945.00	5,973.00	5,973.00	33.03	260.62	-72.57	1,151.21	1,221.57	2,847.29	2,571.59	275.70	10.327	
7,500.00	6,944.99	5,973.00	5,973.00	33.12	260.62	-72.57	1,151.21	1,221.57	2,844.51	2,568.76	275.74	10.316	
7,600.00	6,944.91	5,973.00	5,973.00	33.60	260.62	-72.57	1,151.21	1,221.57	2,831.36	2,555.35	276.01	10.258	
7,700.00	6,944.84	5,973.00	5,973.00	34.17	260.62	-72.57	1,151.21	1,221.57	2,821.70	2,545.35	276.35	10.211	
7,800.00	6,944.76	5,973.00	5,973.00	34.80	260.62	-72.57	1,151.21	1,221.57	2,815.56	2,538.81	276.75	10.174	
7,900.00	6,944.69	5,973.00	5,973.00	35.49	260.62	-72.57	1,151.21	1,221.57	2,812.96	2,535.76	277.21	10.147	
7,923.06	6,944.67	5,973.00	5,973.00	35.66	260.62	-72.57	1,151.21	1,221.57	2,812.87	2,535.54	277.33	10.143	
8,000.00	6,944.61	5,973.00	5,973.00	36.25	260.62	-72.57	1,151.21	1,221.57	2,813.92	2,536.20	277.72	10.132	
8,100.00	6,944.54	5,973.00	5,973.00	37.07	260.62	-72.57	1,151.21	1,221.57	2,818.43	2,540.14	278.29	10.128	
8,200.00	6,944.46	5,973.00	5,973.00	37.94	260.62	-72.57	1,151.21	1,221.57	2,826.47	2,547.56	278.91	10.134	
8,300.00	6,944.39	5,973.00	5,973.00	38.86	260.62	-72.57	1,151.21	1,221.57	2,838.01	2,558.45	279.56	10.152	
8,400.00	6,944.31	5,973.00	5,973.00	39.83	260.62	-72.57	1,151.21	1,221.57	2,853.02	2,572.77	280.24	10.180	
8,500.00	6,944.23	5,973.00	5,973.00	40.84	260.62	-72.57	1,151.21	1,221.57	2,871.43	2,590.47	280.96	10.220	
8,600.00	6,944.16	5,973.00	5,973.00	41.89	260.62	-72.57	1,151.21	1,221.57	2,893.18	2,611.49	281.69	10.271	
8,700.00	6,944.08	5,973.00	5,973.00	42.98	260.62	-72.57	1,151.21	1,221.57	2,918.20	2,635.76	282.44	10.332	
8,800.00	6,944.01	5,973.00	5,973.00	44.10	260.62	-72.57	1,151.21	1,221.57	2,946.40	2,663.21	283.19	10.404	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031 - OH - OH-TD											Offset Site Error:	0.00 usft
Survey Program: 5973-A028Ua_INC-ONLY_PLANNED_5_DEG											Offset Well Error:	0.00 usft
Reference											Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
8,900.00	6,943.93	5,973.00	5,973.00	45.25	260.62	-72.57	1,151.21	1,221.57	2,977.69	2,693.75	283.95	10.487
9,000.00	6,943.86	5,973.00	5,973.00	46.43	260.62	-72.57	1,151.21	1,221.57	3,011.98	2,727.28	284.70	10.579
9,100.00	6,943.78	5,973.00	5,973.00	47.63	260.62	-72.57	1,151.21	1,221.57	3,049.17	2,763.72	285.45	10.682
9,200.00	6,943.71	5,973.00	5,973.00	48.86	260.62	-72.57	1,151.21	1,221.57	3,089.15	2,802.95	286.19	10.794
9,300.00	6,943.63	5,973.00	5,973.00	50.11	260.62	-72.57	1,151.21	1,221.57	3,131.81	2,844.89	286.92	10.915
9,400.00	6,943.56	5,973.00	5,973.00	51.38	260.62	-72.57	1,151.21	1,221.57	3,177.04	2,889.42	287.62	11.046
9,500.00	6,943.48	5,973.00	5,973.00	52.66	260.62	-72.57	1,151.21	1,221.57	3,224.75	2,936.43	288.31	11.185
9,600.00	6,943.41	5,973.00	5,973.00	53.97	260.62	-72.57	1,151.21	1,221.57	3,274.81	2,985.83	288.98	11.332
9,700.00	6,943.33	5,973.00	5,973.00	55.29	260.62	-72.57	1,151.21	1,221.57	3,327.13	3,037.50	289.63	11.488
9,800.00	6,943.26	5,973.00	5,973.00	56.63	260.62	-72.57	1,151.21	1,221.57	3,381.59	3,091.34	290.25	11.650
9,900.00	6,943.18	5,973.00	5,973.00	57.98	260.62	-72.57	1,151.21	1,221.57	3,438.10	3,147.25	290.85	11.821
10,000.00	6,943.11	5,973.00	5,973.00	59.34	260.62	-72.57	1,151.21	1,221.57	3,496.56	3,205.13	291.43	11.998
10,100.00	6,943.03	5,973.00	5,973.00	60.72	260.62	-72.57	1,151.21	1,221.57	3,556.87	3,264.89	291.98	12.182
10,200.00	6,942.96	5,973.00	5,973.00	62.11	260.62	-72.57	1,151.21	1,221.57	3,618.94	3,326.43	292.51	12.372
10,300.00	6,942.88	5,973.00	5,973.00	63.50	260.62	-72.57	1,151.21	1,221.57	3,682.68	3,389.66	293.01	12.568
10,400.00	6,942.81	5,973.00	5,973.00	64.91	260.62	-72.57	1,151.21	1,221.57	3,748.00	3,454.50	293.49	12.770
10,500.00	6,942.73	5,973.00	5,973.00	66.33	260.62	-72.57	1,151.21	1,221.57	3,814.82	3,520.87	293.95	12.978
10,600.00	6,942.66	5,973.00	5,973.00	67.75	260.62	-72.57	1,151.21	1,221.57	3,883.07	3,588.69	294.39	13.190
10,700.00	6,942.58	5,973.00	5,973.00	69.18	260.62	-72.57	1,151.21	1,221.57	3,952.68	3,657.87	294.80	13.408
10,800.00	6,942.51	5,973.00	5,973.00	70.62	260.62	-72.57	1,151.21	1,221.57	4,023.56	3,728.36	295.20	13.630
10,900.00	6,942.43	5,973.00	5,973.00	72.07	260.62	-72.57	1,151.21	1,221.57	4,095.66	3,800.09	295.57	13.857
11,000.00	6,942.36	5,973.00	5,973.00	73.52	260.62	-72.57	1,151.21	1,221.57	4,168.91	3,872.98	295.93	14.087
11,100.00	6,942.28	5,973.00	5,973.00	74.98	260.62	-72.57	1,151.21	1,221.57	4,243.25	3,946.98	296.27	14.322
11,200.00	6,942.21	5,973.00	5,973.00	76.45	260.62	-72.57	1,151.21	1,221.57	4,318.63	4,022.04	296.59	14.561
11,300.00	6,942.13	5,973.00	5,973.00	77.92	260.62	-72.57	1,151.21	1,221.57	4,395.00	4,098.10	296.90	14.803
11,400.00	6,942.06	5,973.00	5,973.00	79.40	260.62	-72.57	1,151.21	1,221.57	4,472.29	4,175.10	297.19	15.049
11,500.00	6,941.98	5,973.00	5,973.00	80.88	260.62	-72.57	1,151.21	1,221.57	4,550.47	4,253.00	297.47	15.297
11,600.00	6,941.91	5,973.00	5,973.00	82.36	260.62	-72.57	1,151.21	1,221.57	4,629.49	4,331.75	297.73	15.549
11,700.00	6,941.83	5,973.00	5,973.00	83.85	260.62	-72.57	1,151.21	1,221.57	4,709.30	4,411.32	297.98	15.804
11,800.00	6,941.76	5,973.00	5,973.00	85.35	260.62	-72.57	1,151.21	1,221.57	4,789.88	4,491.65	298.22	16.061
11,900.00	6,941.68	5,973.00	5,973.00	86.85	260.62	-72.57	1,151.21	1,221.57	4,871.17	4,572.72	298.45	16.321
12,000.00	6,941.60	5,973.00	5,973.00	88.35	260.62	-72.57	1,151.21	1,221.57	4,953.15	4,654.48	298.67	16.584
12,100.00	6,941.53	5,973.00	5,973.00	89.85	260.62	-72.57	1,151.21	1,221.57	5,035.78	4,736.91	298.88	16.849
12,200.00	6,941.45	5,973.00	5,973.00	91.36	260.62	-72.57	1,151.21	1,221.57	5,119.03	4,819.96	299.07	17.116
12,300.00	6,941.38	5,973.00	5,973.00	92.88	260.62	-72.57	1,151.21	1,221.57	5,202.87	4,903.61	299.26	17.386
12,400.00	6,941.30	5,973.00	5,973.00	94.39	260.62	-72.57	1,151.21	1,221.57	5,287.27	4,987.83	299.44	17.657
12,500.00	6,941.23	5,973.00	5,973.00	95.91	260.62	-72.57	1,151.21	1,221.57	5,372.21	5,072.59	299.62	17.930
12,600.00	6,941.15	5,973.00	5,973.00	97.43	260.62	-72.57	1,151.21	1,221.57	5,457.66	5,157.87	299.78	18.205
12,700.00	6,941.08	5,973.00	5,973.00	98.95	260.62	-72.57	1,151.21	1,221.57	5,543.59	5,243.65	299.94	18.482
12,800.00	6,941.00	5,973.00	5,973.00	100.48	260.62	-72.57	1,151.21	1,221.57	5,629.99	5,329.90	300.10	18.761
12,900.00	6,940.93	5,973.00	5,973.00	102.01	260.62	-72.57	1,151.21	1,221.57	5,716.84	5,416.59	300.24	19.041
13,000.00	6,940.85	5,973.00	5,973.00	103.54	260.62	-72.57	1,151.21	1,221.57	5,804.10	5,503.72	300.38	19.322
13,100.00	6,940.78	5,973.00	5,973.00	105.07	260.62	-72.57	1,151.21	1,221.57	5,891.77	5,591.25	300.52	19.605
13,200.00	6,940.70	5,973.00	5,973.00	106.61	260.62	-72.57	1,151.21	1,221.57	5,979.83	5,679.18	300.65	19.890
13,300.00	6,940.63	5,973.00	5,973.00	108.14	260.62	-72.57	1,151.21	1,221.57	6,068.26	5,767.48	300.78	20.175
13,400.00	6,940.55	5,973.00	5,973.00	109.68	260.62	-72.57	1,151.21	1,221.57	6,157.04	5,856.14	300.90	20.462
13,500.00	6,940.48	5,973.00	5,973.00	111.22	260.62	-72.57	1,151.21	1,221.57	6,246.16	5,945.14	301.02	20.750
13,600.00	6,940.40	5,973.00	5,973.00	112.77	260.62	-72.57	1,151.21	1,221.57	6,335.61	6,034.48	301.13	21.039
13,700.00	6,940.33	5,973.00	5,973.00	114.31	260.62	-72.57	1,151.21	1,221.57	6,425.37	6,124.12	301.24	21.330
13,800.00	6,940.25	5,973.00	5,973.00	115.86	260.62	-72.57	1,151.21	1,221.57	6,515.42	6,214.07	301.35	21.621
13,900.00	6,940.18	5,973.00	5,973.00	117.41	260.62	-72.57	1,151.21	1,221.57	6,605.76	6,304.31	301.45	21.913
14,000.00	6,940.10	5,973.00	5,973.00	118.95	260.62	-72.57	1,151.21	1,221.57	6,696.38	6,394.82	301.56	22.206

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031 - OH - OH-TD												Offset Site Error:	0.00 usft
Survey Program: 5973-A028Ua_INC-ONLY_PLANNED_5_DEG												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.00	6,940.03	5,973.00	5,973.00	120.51	260.62	-72.57	1,151.21	1,221.57	6,787.26	6,485.60	301.65	22.500	
14,200.00	6,939.95	5,973.00	5,973.00	122.06	260.62	-72.57	1,151.21	1,221.57	6,878.39	6,576.64	301.75	22.795	
14,300.00	6,939.88	5,973.00	5,973.00	123.61	260.62	-72.57	1,151.21	1,221.57	6,969.77	6,667.92	301.84	23.091	
14,400.00	6,939.80	5,973.00	5,973.00	125.17	260.62	-72.57	1,151.21	1,221.57	7,061.38	6,759.44	301.94	23.387	
14,500.00	6,939.73	5,973.00	5,973.00	126.72	260.62	-72.57	1,151.21	1,221.57	7,153.21	6,851.19	302.03	23.684	
14,600.00	6,939.65	5,973.00	5,973.00	128.28	260.62	-72.57	1,151.21	1,221.57	7,245.26	6,943.15	302.11	23.982	
14,700.00	6,939.58	5,973.00	5,973.00	129.84	260.62	-72.57	1,151.21	1,221.57	7,337.52	7,035.32	302.20	24.280	
14,800.00	6,939.50	5,973.00	5,973.00	131.40	260.62	-72.57	1,151.21	1,221.57	7,429.98	7,127.70	302.28	24.580	
14,900.00	6,939.43	5,973.00	5,973.00	132.96	260.62	-72.57	1,151.21	1,221.57	7,522.63	7,220.27	302.37	24.879	
15,000.00	6,939.35	5,973.00	5,973.00	134.52	260.62	-72.57	1,151.21	1,221.57	7,615.47	7,313.02	302.45	25.179	
15,100.00	6,939.28	5,973.00	5,973.00	136.08	260.62	-72.57	1,151.21	1,221.57	7,708.49	7,405.96	302.53	25.480	
15,200.00	6,939.20	5,973.00	5,973.00	137.64	260.62	-72.57	1,151.21	1,221.57	7,801.68	7,499.07	302.61	25.782	
15,300.00	6,939.13	5,973.00	5,973.00	139.21	260.62	-72.57	1,151.21	1,221.57	7,895.03	7,592.35	302.68	26.083	
15,400.00	6,939.05	5,973.00	5,973.00	140.77	260.62	-72.57	1,151.21	1,221.57	7,988.55	7,685.79	302.76	26.386	
15,500.00	6,938.98	5,973.00	5,973.00	142.34	260.62	-72.57	1,151.21	1,221.57	8,082.22	7,779.39	302.84	26.689	
15,600.00	6,938.90	5,973.00	5,973.00	143.91	260.62	-72.57	1,151.21	1,221.57	8,176.04	7,873.13	302.91	26.992	
15,700.00	6,938.82	5,973.00	5,973.00	145.47	260.62	-72.57	1,151.21	1,221.57	8,270.01	7,967.03	302.98	27.295	
15,800.00	6,938.75	5,973.00	5,973.00	147.04	260.62	-72.57	1,151.21	1,221.57	8,364.12	8,061.06	303.06	27.599	
15,900.00	6,938.67	5,973.00	5,973.00	148.61	260.62	-72.57	1,151.21	1,221.57	8,458.36	8,155.23	303.13	27.904	
16,000.00	6,938.60	5,973.00	5,973.00	150.18	260.62	-72.57	1,151.21	1,221.57	8,552.73	8,249.53	303.20	28.208	
16,100.00	6,938.52	5,973.00	5,973.00	151.75	260.62	-72.57	1,151.21	1,221.57	8,647.23	8,343.96	303.27	28.513	
16,200.00	6,938.45	5,973.00	5,973.00	153.32	260.62	-72.57	1,151.21	1,221.57	8,741.86	8,438.51	303.34	28.818	
16,300.00	6,938.37	5,973.00	5,973.00	154.90	260.62	-72.57	1,151.21	1,221.57	8,836.60	8,533.18	303.41	29.124	
16,400.00	6,938.30	5,973.00	5,973.00	156.47	260.62	-72.57	1,151.21	1,221.57	8,931.45	8,627.97	303.48	29.430	
16,500.00	6,938.22	5,973.00	5,973.00	158.04	260.62	-72.57	1,151.21	1,221.57	9,026.42	8,722.87	303.55	29.736	
16,600.00	6,938.15	5,973.00	5,973.00	159.62	260.62	-72.57	1,151.21	1,221.57	9,121.49	8,817.87	303.62	30.043	
16,700.00	6,938.07	5,973.00	5,973.00	161.19	260.62	-72.57	1,151.21	1,221.57	9,216.67	8,912.98	303.69	30.349	
16,800.00	6,938.00	5,973.00	5,973.00	162.77	260.62	-72.57	1,151.21	1,221.57	9,311.95	9,008.19	303.76	30.656	
16,900.00	6,937.92	5,973.00	5,973.00	164.34	260.62	-72.57	1,151.21	1,221.57	9,407.32	9,103.50	303.82	30.963	
17,000.00	6,937.85	5,973.00	5,973.00	165.92	260.62	-72.57	1,151.21	1,221.57	9,502.80	9,198.91	303.89	31.270	
17,100.00	6,937.77	5,973.00	5,973.00	167.50	260.62	-72.57	1,151.21	1,221.57	9,598.36	9,294.40	303.96	31.578	
17,200.00	6,937.70	5,973.00	5,973.00	169.07	260.62	-72.57	1,151.21	1,221.57	9,694.02	9,389.99	304.03	31.885	
17,300.00	6,937.62	5,973.00	5,973.00	170.65	260.62	-72.57	1,151.21	1,221.57	9,789.76	9,485.66	304.09	32.193	
17,400.00	6,937.55	5,973.00	5,973.00	172.23	260.62	-72.57	1,151.21	1,221.57	9,885.58	9,581.42	304.16	32.501	
17,500.00	6,937.47	5,973.00	5,973.00	173.81	260.62	-72.57	1,151.21	1,221.57	9,981.49	9,677.26	304.23	32.809	
17,600.00	6,937.40	5,973.00	5,973.00	175.39	260.62	-72.57	1,151.21	1,221.57	10,077.47	9,773.18	304.30	33.117	
17,700.00	6,937.32	5,973.00	5,973.00	176.97	260.62	-72.57	1,151.21	1,221.57	10,173.54	9,869.18	304.36	33.426	
17,800.00	6,937.25	5,973.00	5,973.00	178.55	260.62	-72.57	1,151.21	1,221.57	10,269.68	9,965.25	304.43	33.734	
17,900.00	6,937.17	5,973.00	5,973.00	180.13	260.62	-72.57	1,151.21	1,221.57	10,365.89	10,061.39	304.50	34.043	
18,000.00	6,937.10	5,973.00	5,973.00	181.71	260.62	-72.57	1,151.21	1,221.57	10,462.17	10,157.61	304.56	34.351	
18,100.00	6,937.02	5,973.00	5,973.00	183.29	260.62	-72.57	1,151.21	1,221.57	10,558.52	10,253.89	304.63	34.660	
18,200.00	6,936.95	5,973.00	5,973.00	184.87	260.62	-72.57	1,151.21	1,221.57	10,654.94	10,350.25	304.70	34.969	
18,300.00	6,936.87	5,973.00	5,973.00	186.46	260.62	-72.57	1,151.21	1,221.57	10,751.43	10,446.66	304.77	35.278	
18,400.00	6,936.80	5,973.00	5,973.00	188.04	260.62	-72.57	1,151.21	1,221.57	10,847.98	10,543.14	304.83	35.587	
18,500.00	6,936.72	5,973.00	5,973.00	189.62	260.62	-72.57	1,151.21	1,221.57	10,944.59	10,639.69	304.90	35.896	
18,600.00	6,936.65	5,973.00	5,973.00	191.21	260.62	-72.57	1,151.21	1,221.57	11,041.26	10,736.29	304.97	36.205	
18,700.00	6,936.57	5,973.00	5,973.00	192.79	260.62	-72.57	1,151.21	1,221.57	11,137.99	10,832.95	305.04	36.514	
18,800.00	6,936.50	5,973.00	5,973.00	194.37	260.62	-72.57	1,151.21	1,221.57	11,234.77	10,929.67	305.10	36.823	
18,900.00	6,936.42	5,973.00	5,973.00	195.96	260.62	-72.57	1,151.21	1,221.57	11,331.61	11,026.44	305.17	37.132	
19,000.00	6,936.35	5,973.00	5,973.00	197.54	260.62	-72.57	1,151.21	1,221.57	11,428.51	11,123.27	305.24	37.441	
19,100.00	6,936.27	5,973.00	5,973.00	199.13	260.62	-72.57	1,151.21	1,221.57	11,525.46	11,220.15	305.31	37.750	
19,200.00	6,936.19	5,973.00	5,973.00	200.71	260.62	-72.57	1,151.21	1,221.57	11,622.47	11,317.09	305.38	38.059	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031 - OH - OH-TD												Offset Site Error:	0.00 usft
Survey Program: 5973-A028Ua_INC-ONLY_PLANNED_5_DEG												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,300.00	6,936.12	5,973.00	5,973.00	202.30	260.62	-72.57	1,151.21	1,221.57	11,719.52	11,414.07	305.45	38.368	
19,400.00	6,936.04	5,973.00	5,973.00	203.88	260.62	-72.57	1,151.21	1,221.57	11,816.62	11,511.10	305.52	38.678	
19,500.00	6,935.97	5,973.00	5,973.00	205.47	260.62	-72.57	1,151.21	1,221.57	11,913.77	11,608.18	305.58	38.987	
19,600.00	6,935.89	5,973.00	5,973.00	207.06	260.62	-72.57	1,151.21	1,221.57	12,010.96	11,705.31	305.65	39.296	
19,700.00	6,935.82	5,973.00	5,973.00	208.64	260.62	-72.57	1,151.21	1,221.57	12,108.21	11,802.48	305.72	39.605	
19,800.00	6,935.74	5,973.00	5,973.00	210.23	260.62	-72.57	1,151.21	1,221.57	12,205.49	11,899.70	305.79	39.914	
19,900.00	6,935.67	5,973.00	5,973.00	211.82	260.62	-72.57	1,151.21	1,221.57	12,302.82	11,996.96	305.86	40.223	
20,000.00	6,935.59	5,973.00	5,973.00	213.41	260.62	-72.57	1,151.21	1,221.57	12,400.19	12,094.26	305.94	40.532	
20,100.00	6,935.52	5,973.00	5,973.00	214.99	260.62	-72.57	1,151.21	1,221.57	12,497.61	12,191.60	306.01	40.841	
20,200.00	6,935.44	5,973.00	5,973.00	216.58	260.62	-72.57	1,151.21	1,221.57	12,595.06	12,288.99	306.08	41.150	
20,300.00	6,935.37	5,973.00	5,973.00	218.17	260.62	-72.57	1,151.21	1,221.57	12,692.56	12,386.41	306.15	41.459	
20,400.00	6,935.29	5,973.00	5,973.00	219.76	260.62	-72.57	1,151.21	1,221.57	12,790.09	12,483.87	306.22	41.768	
20,500.00	6,935.22	5,973.00	5,973.00	221.35	260.62	-72.57	1,151.21	1,221.57	12,887.66	12,581.37	306.29	42.076	
20,600.00	6,935.14	5,973.00	5,973.00	222.94	260.62	-72.57	1,151.21	1,221.57	12,985.27	12,678.90	306.36	42.385	
20,700.00	6,935.07	5,973.00	5,973.00	224.53	260.62	-72.57	1,151.21	1,221.57	13,082.91	12,776.47	306.44	42.694	
20,789.75	6,935.00	5,973.00	5,973.00	225.95	260.62	-72.57	1,151.21	1,221.57	13,170.57	12,864.07	306.50	42.971	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031A - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program: 94-A027Ua_INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	146.64	-980.80	645.63	1,174.38					
100.00	100.00	81.00	81.00	0.25	0.75	146.64	-980.80	645.63	1,174.22	1,173.22	1.00	1,174.633		
200.00	200.00	181.00	181.00	0.61	2.52	146.64	-980.80	645.63	1,174.22	1,171.09	3.13	374.681		
300.00	300.00	281.01	281.00	0.97	4.43	146.64	-980.80	645.63	1,174.22	1,168.82	5.40	217.441		
400.00	400.00	381.01	381.00	1.33	6.40	146.64	-980.80	645.63	1,174.22	1,166.50	7.73	151.977		
500.00	500.00	481.01	481.00	1.68	8.37	146.64	-980.80	645.63	1,174.22	1,164.17	10.05	116.809		
600.00	599.98	579.30	579.29	2.03	10.30	-32.56	-980.07	645.63	1,172.14	1,159.81	12.33	95.077		
700.00	699.84	676.62	676.60	2.36	12.22	-32.73	-980.36	645.63	1,167.99	1,153.41	14.58	80.124		
800.00	799.45	780.51	780.45	2.71	14.28	-33.04	-980.80	645.63	1,161.02	1,144.03	16.98	68.367		
900.00	898.70	879.76	879.70	3.06	16.30	-33.48	-980.80	645.63	1,150.80	1,131.45	19.36	59.448		
1,000.00	997.47	978.52	978.47	3.43	18.32	-34.06	-980.80	645.63	1,137.75	1,116.02	21.73	52.353		
1,100.00	1,095.62	1,075.03	1,074.97	3.82	20.29	-34.80	-980.05	645.63	1,121.30	1,097.23	24.07	46.587		
1,180.06	1,173.69	1,151.34	1,151.28	4.14	21.84	-35.47	-980.26	645.63	1,106.86	1,080.93	25.93	42.689		
1,200.00	1,193.07	1,170.30	1,170.23	4.22	22.23	-35.61	-980.34	645.63	1,103.07	1,076.68	26.39	41.795		
1,300.00	1,290.27	1,271.38	1,271.27	4.65	24.29	-36.34	-980.80	645.63	1,084.23	1,055.39	28.84	37.600		
1,400.00	1,387.46	1,368.57	1,368.46	5.08	26.28	-37.08	-980.80	645.63	1,065.19	1,033.98	31.21	34.129		
1,500.00	1,484.66	1,465.77	1,465.66	5.52	28.26	-37.85	-980.80	645.63	1,046.33	1,012.73	33.59	31.148		
1,600.00	1,581.85	1,561.73	1,561.60	5.97	30.22	-38.67	-979.70	645.63	1,026.80	990.85	35.96	28.558		
1,700.00	1,679.05	1,656.50	1,656.37	6.42	32.16	-39.47	-980.00	645.63	1,008.58	970.28	38.30	26.334		
1,800.00	1,776.25	1,751.43	1,751.29	6.87	34.10	-40.28	-980.60	645.63	990.81	950.16	40.65	24.372		
1,900.00	1,873.44	1,854.61	1,854.44	7.33	36.15	-41.21	-980.80	645.63	972.92	929.80	43.12	22.564		
2,000.00	1,970.64	1,951.81	1,951.64	7.78	38.06	-42.13	-980.80	645.63	955.13	909.67	45.46	21.012		
2,100.00	2,067.83	2,048.36	2,048.19	8.24	39.96	-43.10	-980.03	645.63	937.04	889.25	47.79	19.609		
2,200.00	2,165.03	2,143.87	2,143.68	8.71	41.84	-44.06	-980.25	645.63	919.94	869.84	50.10	18.362		
2,300.00	2,262.22	2,239.49	2,239.31	9.17	43.73	-45.05	-980.71	645.63	903.29	850.87	52.42	17.231		
2,400.00	2,359.42	2,340.63	2,340.42	9.63	45.72	-46.15	-980.80	645.63	886.66	831.80	54.85	16.164		
2,500.00	2,456.61	2,437.83	2,437.61	10.10	47.63	-47.25	-980.80	645.63	870.29	813.07	57.21	15.211		
2,600.00	2,553.81	2,534.52	2,534.30	10.57	49.54	-48.42	-980.01	645.63	853.72	794.15	59.57	14.331		
2,700.00	2,651.01	2,630.37	2,630.15	11.03	51.43	-49.58	-980.21	645.63	838.19	776.27	61.92	13.537		
2,800.00	2,748.20	2,726.34	2,726.12	11.50	53.32	-50.76	-980.67	645.63	823.17	758.90	64.27	12.808		
2,900.00	2,845.40	2,826.65	2,826.40	11.97	55.35	-52.06	-980.80	645.63	808.34	741.57	66.77	12.107		
3,000.00	2,942.59	2,923.85	2,923.59	12.44	57.34	-53.38	-980.80	645.63	793.84	724.61	69.22	11.468		
3,100.00	3,039.79	3,020.78	3,020.52	12.91	59.32	-54.78	-979.99	645.63	779.31	707.62	71.68	10.872		
3,200.00	3,136.98	3,116.93	3,116.66	13.38	61.28	-56.17	-980.17	645.63	765.83	691.70	74.13	10.331		
3,300.00	3,234.18	3,213.20	3,212.93	13.85	63.25	-57.58	-980.59	645.63	752.96	676.38	76.58	9.832		
3,400.00	3,331.38	3,312.69	3,312.38	14.32	65.33	-59.11	-980.80	645.63	740.48	661.32	79.15	9.355		
3,500.00	3,428.57	3,409.89	3,409.57	14.79	67.39	-60.66	-980.80	645.63	728.43	646.72	81.71	8.915		
3,600.00	3,525.77	3,505.92	3,505.60	15.26	69.42	-62.29	-980.13	645.63	716.63	632.39	84.25	8.506		
3,700.00	3,622.96	3,601.82	3,601.49	15.73	71.46	-63.88	-980.69	645.63	706.01	619.23	86.78	8.135		
3,800.00	3,720.16	3,701.53	3,701.16	16.20	73.57	-65.62	-980.80	645.63	695.80	606.39	89.40	7.783		
3,900.00	3,817.35	3,798.72	3,798.35	16.68	75.63	-67.36	-980.80	645.63	686.19	594.21	91.97	7.461		
4,000.00	3,914.55	3,895.92	3,895.55	17.15	77.70	-69.15	-980.80	645.63	677.26	582.71	94.55	7.163		
4,100.00	4,011.74	3,993.12	3,992.74	17.62	79.76	-70.99	-980.80	645.63	669.04	571.92	97.12	6.889		
4,200.00	4,108.94	4,090.31	4,089.94	18.09	81.82	-72.87	-980.80	645.63	661.55	561.86	99.70	6.636		
4,300.00	4,206.14	4,187.51	4,187.14	18.57	83.88	-74.78	-980.80	645.63	654.83	552.55	102.27	6.403		
4,400.00	4,303.33	4,284.62	4,284.23	19.04	85.94	-76.96	-978.08	645.63	648.29	543.44	104.85	6.183		
4,500.00	4,400.53	4,381.69	4,381.29	19.51	88.00	-78.93	-978.21	645.63	643.27	535.85	107.42	5.988		
4,600.00	4,497.72	4,478.82	4,478.42	19.99	90.06	-80.92	-978.46	645.63	639.08	529.10	109.98	5.811		
4,700.00	4,594.92	4,576.02	4,575.61	20.46	92.13	-82.92	-978.85	645.63	635.74	523.19	112.55	5.649		
4,800.00	4,692.11	4,673.29	4,672.87	20.93	94.19	-84.93	-979.37	645.63	633.23	518.13	115.10	5.501		
4,900.00	4,789.31	4,770.62	4,770.19	21.41	96.26	-86.94	-980.03	645.63	631.55	513.90	117.66	5.368		
5,000.00	4,886.51	4,868.07	4,867.51	21.88	98.33	-88.95	-980.80	645.63	630.70	510.50	120.20	5.247		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031A - OH - OH-INC											Offset Site Error: 0.00 usft		
Survey Program: 94-A027Ua_INC-ONLY											Offset Well Error: 0.00 usft		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,050.56	4,935.65	4,917.21	4,916.65	22.12	99.37	-90.00	-980.80	645.63	630.59	509.11	121.49	5.191	CC
5,100.00	4,983.70	4,965.26	4,964.70	22.35	100.39	-91.03	-980.80	645.63	630.70	507.96	122.74	5.138	
5,200.00	5,080.90	5,062.46	5,061.90	22.83	102.46	-93.10	-980.80	645.63	631.57	506.30	125.27	5.042	
5,300.00	5,178.09	5,159.65	5,159.09	23.30	104.52	-95.17	-980.80	645.63	633.31	505.53	127.79	4.956	ES
5,400.00	5,275.29	5,256.85	5,256.29	23.77	106.59	-97.22	-980.80	645.63	635.92	505.63	130.30	4.881	
5,500.00	5,372.48	5,354.05	5,353.48	24.25	108.65	-99.25	-980.80	645.63	639.39	506.59	132.79	4.815	
5,600.00	5,469.68	5,451.24	5,450.68	24.72	110.72	-101.26	-980.80	645.63	643.69	508.41	135.28	4.758	
5,700.00	5,566.87	5,548.44	5,547.87	25.20	112.78	-103.25	-980.80	645.63	648.82	511.06	137.76	4.710	
5,800.00	5,664.07	5,645.63	5,645.07	25.67	114.85	-105.20	-980.80	645.63	654.76	514.53	140.23	4.669	
5,900.00	5,761.27	5,742.83	5,742.27	26.14	116.91	-107.11	-980.80	645.63	661.47	518.79	142.69	4.636	
6,000.00	5,858.46	5,840.02	5,839.46	26.62	118.98	-108.99	-980.80	645.63	668.95	523.81	145.14	4.609	
6,100.00	5,955.66	5,937.22	5,936.66	27.09	121.04	-110.83	-980.80	645.63	677.16	529.58	147.58	4.588	
6,200.00	6,052.85	6,034.41	6,033.85	27.57	123.11	-112.62	-980.80	645.63	686.08	536.07	150.01	4.573	SF
6,300.00	6,150.05	6,058.00	6,057.26	28.04	123.61	-113.04	-980.80	645.63	699.59	549.68	149.91	4.667	
6,400.00	6,247.24	6,058.00	6,057.26	28.52	123.61	-113.04	-980.80	645.63	726.35	579.56	146.79	4.948	
6,490.87	6,335.57	6,058.00	6,057.26	28.95	123.61	-113.04	-980.80	645.63	761.32	619.00	142.32	5.349	
6,500.00	6,344.44	6,058.00	6,057.26	28.99	123.61	-109.49	-980.80	645.63	765.29	623.48	141.81	5.397	
6,550.00	6,392.91	6,058.00	6,057.26	29.23	123.61	-91.46	-980.80	645.63	786.71	647.91	138.80	5.668	
6,600.00	6,440.98	6,058.00	6,057.26	29.46	123.61	-77.12	-980.80	645.63	807.53	672.03	135.49	5.960	
6,650.00	6,488.34	6,058.00	6,057.26	29.70	123.61	-66.50	-980.80	645.63	827.67	695.74	131.93	6.274	
6,700.00	6,534.69	6,058.00	6,057.26	29.92	123.61	-58.71	-980.80	645.63	847.06	718.90	128.15	6.610	
6,750.00	6,579.76	6,058.00	6,057.26	30.15	123.61	-52.90	-980.80	645.63	865.63	741.42	124.21	6.969	
6,800.00	6,623.27	6,058.00	6,057.26	30.36	123.61	-48.45	-980.80	645.63	883.33	763.19	120.14	7.353	
6,850.00	6,664.95	6,058.00	6,057.26	30.57	123.61	-44.97	-980.80	645.63	900.10	784.11	115.99	7.760	
6,900.00	6,704.53	6,058.00	6,057.26	30.78	123.61	-42.18	-980.80	645.63	915.89	804.08	111.81	8.192	
6,950.00	6,741.79	6,058.00	6,057.26	30.98	123.61	-39.92	-980.80	645.63	930.65	823.00	107.65	8.645	
7,000.00	6,776.48	6,058.00	6,057.26	31.17	123.61	-38.07	-980.80	645.63	944.35	840.79	103.56	9.119	
7,050.00	6,808.39	6,058.00	6,057.26	31.36	123.61	-36.54	-980.80	645.63	956.95	857.35	99.60	9.608	
7,100.00	6,837.34	6,058.00	6,057.26	31.54	123.61	-35.27	-980.80	645.63	968.41	872.58	95.83	10.105	
7,150.00	6,863.13	6,058.00	6,057.26	31.73	123.61	-34.22	-980.80	645.63	978.71	886.39	92.32	10.602	
7,200.00	6,885.61	6,058.00	6,057.26	31.91	123.61	-33.36	-980.80	645.63	987.81	898.69	89.12	11.084	
7,250.00	6,904.64	6,058.00	6,057.26	32.10	123.61	-32.66	-980.80	645.63	995.71	909.39	86.32	11.535	
7,300.00	6,920.10	6,058.00	6,057.26	32.29	123.61	-32.11	-980.80	645.63	1,002.37	918.39	83.97	11.937	
7,350.00	6,931.91	6,058.00	6,057.26	32.48	123.61	-31.70	-980.80	645.63	1,007.77	925.63	82.15	12.268	
7,400.00	6,939.97	6,058.00	6,057.26	32.68	123.61	-31.41	-980.80	645.63	1,011.92	931.03	80.89	12.510	
7,450.00	6,944.26	6,058.00	6,057.26	32.89	123.61	-31.24	-980.80	645.63	1,014.80	934.56	80.24	12.647	
7,481.69	6,945.00	6,058.00	6,057.26	33.03	123.61	-31.19	-980.80	645.63	1,015.95	935.80	80.15	12.675	
7,500.00	6,944.99	6,058.00	6,057.26	33.12	123.61	-31.19	-980.80	645.63	1,016.64	936.43	80.21	12.675	
7,600.00	6,944.91	6,058.00	6,057.26	33.60	123.61	-31.19	-980.80	645.63	1,026.16	944.47	81.69	12.562	
7,700.00	6,944.84	6,058.00	6,057.26	34.17	123.61	-31.19	-980.80	645.63	1,045.20	960.32	84.88	12.314	
7,800.00	6,944.76	6,058.00	6,057.26	34.80	123.61	-31.19	-980.80	645.63	1,073.26	983.97	89.29	12.020	
7,900.00	6,944.69	6,058.00	6,057.26	35.49	123.61	-31.19	-980.80	645.63	1,109.65	1,015.29	94.37	11.759	
8,000.00	6,944.61	6,058.00	6,057.26	36.25	123.61	-31.19	-980.80	645.63	1,153.59	1,053.94	99.66	11.576	
8,100.00	6,944.54	6,058.00	6,057.26	37.07	123.61	-31.19	-980.80	645.63	1,204.25	1,099.42	104.83	11.488	
8,200.00	6,944.46	6,058.00	6,057.26	37.94	123.61	-31.19	-980.80	645.63	1,260.82	1,151.14	109.68	11.495	
8,300.00	6,944.39	6,058.00	6,057.26	38.86	123.61	-31.19	-980.80	645.63	1,322.54	1,208.41	114.13	11.588	
8,400.00	6,944.31	6,058.00	6,057.26	39.83	123.61	-31.19	-980.80	645.63	1,388.72	1,270.60	118.12	11.757	
8,500.00	6,944.23	6,058.00	6,057.26	40.84	123.61	-31.19	-980.80	645.63	1,458.77	1,337.09	121.68	11.989	
8,600.00	6,944.16	6,058.00	6,057.26	41.89	123.61	-31.19	-980.80	645.63	1,532.14	1,407.32	124.82	12.275	
8,700.00	6,944.08	6,058.00	6,057.26	42.98	123.61	-31.19	-980.80	645.63	1,608.38	1,480.80	127.58	12.607	
8,800.00	6,944.01	6,058.00	6,057.26	44.10	123.61	-31.19	-980.80	645.63	1,687.11	1,557.09	130.01	12.976	
8,900.00	6,943.93	6,058.00	6,057.26	45.25	123.61	-31.19	-980.80	645.63	1,767.99	1,635.83	132.15	13.378	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031A - OH - OH-INC											Offset Site Error: 0.00 usft
Survey Program: 94-A027Ua_INC-ONLY											Offset Well Error: 0.00 usft
Reference											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning
				(usft)	(usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	
9,000.00	6,943.86	6,058.00	6,057.26	46.43	123.61	-31.19	-980.80	645.63	1,850.73	1,716.69	134.04 13.807
9,100.00	6,943.78	6,058.00	6,057.26	47.63	123.61	-31.19	-980.80	645.63	1,935.11	1,799.41	135.71 14.260
9,200.00	6,943.71	6,058.00	6,057.26	48.86	123.61	-31.19	-980.80	645.63	2,020.92	1,883.74	137.18 14.732
9,300.00	6,943.63	6,058.00	6,057.26	50.11	123.61	-31.19	-980.80	645.63	2,107.97	1,969.48	138.49 15.221
9,400.00	6,943.56	6,058.00	6,057.26	51.38	123.61	-31.19	-980.80	645.63	2,196.13	2,056.48	139.66 15.725
9,500.00	6,943.48	6,058.00	6,057.26	52.66	123.61	-31.19	-980.80	645.63	2,285.27	2,144.57	140.70 16.242
9,600.00	6,943.41	6,058.00	6,057.26	53.97	123.61	-31.19	-980.80	645.63	2,375.26	2,233.63	141.63 16.770
9,700.00	6,943.33	6,058.00	6,057.26	55.29	123.61	-31.19	-980.80	645.63	2,466.03	2,323.56	142.48 17.309
9,800.00	6,943.26	6,058.00	6,057.26	56.63	123.61	-31.19	-980.80	645.63	2,557.49	2,414.26	143.23 17.855
9,900.00	6,943.18	6,058.00	6,057.26	57.98	123.61	-31.19	-980.80	645.63	2,649.57	2,505.65	143.92 18.410
10,000.00	6,943.11	6,058.00	6,057.26	59.34	123.61	-31.19	-980.80	645.63	2,742.20	2,597.65	144.55 18.971
10,100.00	6,943.03	6,058.00	6,057.26	60.72	123.61	-31.19	-980.80	645.63	2,835.33	2,690.21	145.12 19.538
10,200.00	6,942.96	6,058.00	6,057.26	62.11	123.61	-31.19	-980.80	645.63	2,928.92	2,783.27	145.64 20.111
10,300.00	6,942.88	6,058.00	6,057.26	63.50	123.61	-31.19	-980.80	645.63	3,022.91	2,876.79	146.12 20.688
10,400.00	6,942.81	6,058.00	6,057.26	64.91	123.61	-31.19	-980.80	645.63	3,117.28	2,970.72	146.56 21.269
10,500.00	6,942.73	6,058.00	6,057.26	66.33	123.61	-31.19	-980.80	645.63	3,211.99	3,065.02	146.97 21.855
10,600.00	6,942.66	6,058.00	6,057.26	67.75	123.61	-31.19	-980.80	645.63	3,307.01	3,159.67	147.35 22.444
10,700.00	6,942.58	6,058.00	6,057.26	69.18	123.61	-31.19	-980.80	645.63	3,402.32	3,254.62	147.70 23.036
10,800.00	6,942.51	6,058.00	6,057.26	70.62	123.61	-31.19	-980.80	645.63	3,497.89	3,349.87	148.02 23.631
10,900.00	6,942.43	6,058.00	6,057.26	72.07	123.61	-31.19	-980.80	645.63	3,593.70	3,445.37	148.33 24.228
11,000.00	6,942.36	6,058.00	6,057.26	73.52	123.61	-31.19	-980.80	645.63	3,689.73	3,541.12	148.61 24.828
11,100.00	6,942.28	6,058.00	6,057.26	74.98	123.61	-31.19	-980.80	645.63	3,785.97	3,637.09	148.88 25.430
11,200.00	6,942.21	6,058.00	6,057.26	76.45	123.61	-31.19	-980.80	645.63	3,882.39	3,733.26	149.13 26.034
11,300.00	6,942.13	6,058.00	6,057.26	77.92	123.61	-31.19	-980.80	645.63	3,979.00	3,829.63	149.37 26.639
11,400.00	6,942.06	6,058.00	6,057.26	79.40	123.61	-31.19	-980.80	645.63	4,075.77	3,926.17	149.59 27.246
11,500.00	6,941.98	6,058.00	6,057.26	80.88	123.61	-31.19	-980.80	645.63	4,172.69	4,022.88	149.81 27.854
11,600.00	6,941.91	6,058.00	6,057.26	82.36	123.61	-31.19	-980.80	645.63	4,269.75	4,119.74	150.01 28.464
11,700.00	6,941.83	6,058.00	6,057.26	83.85	123.61	-31.19	-980.80	645.63	4,366.94	4,216.74	150.20 29.074
11,800.00	6,941.76	6,058.00	6,057.26	85.35	123.61	-31.19	-980.80	645.63	4,464.26	4,313.88	150.38 29.686
11,900.00	6,941.68	6,058.00	6,057.26	86.85	123.61	-31.19	-980.80	645.63	4,561.70	4,411.14	150.56 30.298
12,000.00	6,941.60	6,058.00	6,057.26	88.35	123.61	-31.19	-980.80	645.63	4,659.24	4,508.51	150.73 30.912
12,100.00	6,941.53	6,058.00	6,057.26	89.85	123.61	-31.19	-980.80	645.63	4,756.89	4,606.00	150.89 31.526
12,200.00	6,941.45	6,058.00	6,057.26	91.36	123.61	-31.19	-980.80	645.63	4,854.63	4,703.58	151.05 32.140
12,300.00	6,941.38	6,058.00	6,057.26	92.88	123.61	-31.19	-980.80	645.63	4,952.46	4,801.27	151.20 32.755
12,400.00	6,941.30	6,058.00	6,057.26	94.39	123.61	-31.19	-980.80	645.63	5,050.38	4,899.04	151.34 33.371
12,500.00	6,941.23	6,058.00	6,057.26	95.91	123.61	-31.19	-980.80	645.63	5,148.37	4,996.89	151.48 33.987
12,600.00	6,941.15	6,058.00	6,057.26	97.43	123.61	-31.19	-980.80	645.63	5,246.45	5,094.83	151.62 34.604
12,700.00	6,941.08	6,058.00	6,057.26	98.95	123.61	-31.19	-980.80	645.63	5,344.59	5,192.84	151.75 35.220
12,800.00	6,941.00	6,058.00	6,057.26	100.48	123.61	-31.19	-980.80	645.63	5,442.80	5,290.93	151.88 35.837
12,900.00	6,940.93	6,058.00	6,057.26	102.01	123.61	-31.19	-980.80	645.63	5,541.08	5,389.08	152.00 36.455
13,000.00	6,940.85	6,058.00	6,057.26	103.54	123.61	-31.19	-980.80	645.63	5,639.41	5,487.29	152.12 37.072
13,100.00	6,940.78	6,058.00	6,057.26	105.07	123.61	-31.19	-980.80	645.63	5,737.81	5,585.57	152.24 37.689
13,200.00	6,940.70	6,058.00	6,057.26	106.61	123.61	-31.19	-980.80	645.63	5,836.25	5,683.90	152.36 38.307
13,300.00	6,940.63	6,058.00	6,057.26	108.14	123.61	-31.19	-980.80	645.63	5,934.75	5,782.29	152.47 38.924
13,400.00	6,940.55	6,058.00	6,057.26	109.68	123.61	-31.19	-980.80	645.63	6,033.30	5,880.72	152.58 39.542
13,500.00	6,940.48	6,058.00	6,057.26	111.22	123.61	-31.19	-980.80	645.63	6,131.90	5,979.21	152.69 40.159
13,600.00	6,940.40	6,058.00	6,057.26	112.77	123.61	-31.19	-980.80	645.63	6,230.54	6,077.74	152.80 40.776
13,700.00	6,940.33	6,058.00	6,057.26	114.31	123.61	-31.19	-980.80	645.63	6,329.23	6,176.32	152.90 41.394
13,800.00	6,940.25	6,058.00	6,057.26	115.86	123.61	-31.19	-980.80	645.63	6,427.95	6,274.94	153.01 42.011
13,900.00	6,940.18	6,058.00	6,057.26	117.41	123.61	-31.19	-980.80	645.63	6,526.71	6,373.60	153.11 42.628
14,000.00	6,940.10	6,058.00	6,057.26	118.95	123.61	-31.19	-980.80	645.63	6,625.51	6,472.30	153.21 43.244
14,100.00	6,940.03	6,058.00	6,057.26	120.51	123.61	-31.19	-980.80	645.63	6,724.35	6,571.04	153.31 43.861

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031A - OH - OH-INC											Offset Site Error:	0.00 usft	
Survey Program: 94-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,200.00	6,939.95	6,058.00	6,057.26	122.06	123.61	-31.19	-980.80	645.63	6,823.22	6,669.81	153.41	44.477	
14,300.00	6,939.88	6,058.00	6,057.26	123.61	123.61	-31.19	-980.80	645.63	6,922.12	6,768.61	153.51	45.093	
14,400.00	6,939.80	6,058.00	6,057.26	125.17	123.61	-31.19	-980.80	645.63	7,021.05	6,867.45	153.60	45.709	
14,500.00	6,939.73	6,058.00	6,057.26	126.72	123.61	-31.19	-980.80	645.63	7,120.02	6,966.32	153.70	46.324	
14,600.00	6,939.65	6,058.00	6,057.26	128.28	123.61	-31.19	-980.80	645.63	7,219.01	7,065.21	153.80	46.939	
14,700.00	6,939.58	6,058.00	6,057.26	129.84	123.61	-31.19	-980.80	645.63	7,318.03	7,164.14	153.89	47.554	
14,800.00	6,939.50	6,058.00	6,057.26	131.40	123.61	-31.19	-980.80	645.63	7,417.07	7,263.09	153.98	48.168	
14,900.00	6,939.43	6,058.00	6,057.26	132.96	123.61	-31.19	-980.80	645.63	7,516.14	7,362.07	154.08	48.782	
15,000.00	6,939.35	6,058.00	6,057.26	134.52	123.61	-31.19	-980.80	645.63	7,615.24	7,461.07	154.17	49.395	
15,100.00	6,939.28	6,058.00	6,057.26	136.08	123.61	-31.19	-980.80	645.63	7,714.36	7,560.10	154.26	50.008	
15,200.00	6,939.20	6,058.00	6,057.26	137.64	123.61	-31.19	-980.80	645.63	7,813.50	7,659.14	154.35	50.621	
15,300.00	6,939.13	6,058.00	6,057.26	139.21	123.61	-31.19	-980.80	645.63	7,912.66	7,758.22	154.44	51.233	
15,400.00	6,939.05	6,058.00	6,057.26	140.77	123.61	-31.19	-980.80	645.63	8,011.84	7,857.31	154.54	51.845	
15,500.00	6,938.98	6,058.00	6,057.26	142.34	123.61	-31.19	-980.80	645.63	8,111.05	7,956.42	154.63	52.456	
15,600.00	6,938.90	6,058.00	6,057.26	143.91	123.61	-31.19	-980.80	645.63	8,210.27	8,055.55	154.72	53.067	
15,700.00	6,938.82	6,058.00	6,057.26	145.47	123.61	-31.19	-980.80	645.63	8,309.51	8,154.70	154.81	53.677	
15,800.00	6,938.75	6,058.00	6,057.26	147.04	123.61	-31.19	-980.80	645.63	8,408.77	8,253.87	154.90	54.286	
15,900.00	6,938.67	6,058.00	6,057.26	148.61	123.61	-31.19	-980.80	645.63	8,508.05	8,353.06	154.99	54.895	
16,000.00	6,938.60	6,058.00	6,057.26	150.18	123.61	-31.19	-980.80	645.63	8,607.34	8,452.26	155.08	55.504	
16,100.00	6,938.52	6,058.00	6,057.26	151.75	123.61	-31.19	-980.80	645.63	8,706.65	8,551.48	155.17	56.112	
16,200.00	6,938.45	6,058.00	6,057.26	153.32	123.61	-31.19	-980.80	645.63	8,805.97	8,650.72	155.26	56.719	
16,300.00	6,938.37	6,058.00	6,057.26	154.90	123.61	-31.19	-980.80	645.63	8,905.32	8,749.97	155.34	57.326	
16,400.00	6,938.30	6,058.00	6,057.26	156.47	123.61	-31.19	-980.80	645.63	9,004.67	8,849.24	155.43	57.932	
16,500.00	6,938.22	6,058.00	6,057.26	158.04	123.61	-31.19	-980.80	645.63	9,104.04	8,948.52	155.52	58.538	
16,600.00	6,938.15	6,058.00	6,057.26	159.62	123.61	-31.19	-980.80	645.63	9,203.42	9,047.81	155.61	59.143	
16,700.00	6,938.07	6,058.00	6,057.26	161.19	123.61	-31.19	-980.80	645.63	9,302.82	9,147.12	155.70	59.748	
16,800.00	6,938.00	6,058.00	6,057.26	162.77	123.61	-31.19	-980.80	645.63	9,402.23	9,246.43	155.79	60.351	
16,900.00	6,937.92	6,058.00	6,057.26	164.34	123.61	-31.19	-980.80	645.63	9,501.65	9,345.77	155.88	60.954	
17,000.00	6,937.85	6,058.00	6,057.26	165.92	123.61	-31.19	-980.80	645.63	9,601.08	9,445.11	155.97	61.557	
17,100.00	6,937.77	6,058.00	6,057.26	167.50	123.61	-31.19	-980.80	645.63	9,700.53	9,544.47	156.06	62.159	
17,200.00	6,937.70	6,058.00	6,057.26	169.07	123.61	-31.19	-980.80	645.63	9,799.98	9,643.83	156.15	62.760	
17,300.00	6,937.62	6,058.00	6,057.26	170.65	123.61	-31.19	-980.80	645.63	9,899.45	9,743.21	156.24	63.361	
17,400.00	6,937.55	6,058.00	6,057.26	172.23	123.61	-31.19	-980.80	645.63	9,998.93	9,842.60	156.33	63.960	
17,500.00	6,937.47	6,058.00	6,057.26	173.81	123.61	-31.19	-980.80	645.63	10,098.41	9,941.99	156.42	64.560	
17,600.00	6,937.40	6,058.00	6,057.26	175.39	123.61	-31.19	-980.80	645.63	10,197.91	10,041.40	156.51	65.158	
17,700.00	6,937.32	6,058.00	6,057.26	176.97	123.61	-31.19	-980.80	645.63	10,297.42	10,140.82	156.60	65.756	
17,800.00	6,937.25	6,058.00	6,057.26	178.55	123.61	-31.19	-980.80	645.63	10,396.94	10,240.25	156.69	66.353	
17,900.00	6,937.17	6,058.00	6,057.26	180.13	123.61	-31.19	-980.80	645.63	10,496.46	10,339.68	156.78	66.949	
18,000.00	6,937.10	6,058.00	6,057.26	181.71	123.61	-31.19	-980.80	645.63	10,596.00	10,439.13	156.87	67.545	
18,100.00	6,937.02	6,058.00	6,057.26	183.29	123.61	-31.19	-980.80	645.63	10,695.54	10,538.58	156.96	68.140	
18,200.00	6,936.95	6,058.00	6,057.26	184.87	123.61	-31.19	-980.80	645.63	10,795.10	10,638.04	157.06	68.734	
18,300.00	6,936.87	6,058.00	6,057.26	186.46	123.61	-31.19	-980.80	645.63	10,894.66	10,737.51	157.15	69.327	
18,400.00	6,936.80	6,058.00	6,057.26	188.04	123.61	-31.19	-980.80	645.63	10,994.22	10,836.98	157.24	69.920	
18,500.00	6,936.72	6,058.00	6,057.26	189.62	123.61	-31.19	-980.80	645.63	11,093.80	10,936.47	157.33	70.512	
18,600.00	6,936.65	6,058.00	6,057.26	191.21	123.61	-31.19	-980.80	645.63	11,193.38	11,035.96	157.42	71.103	
18,700.00	6,936.57	6,058.00	6,057.26	192.79	123.61	-31.19	-980.80	645.63	11,292.98	11,135.46	157.52	71.694	
18,800.00	6,936.50	6,058.00	6,057.26	194.37	123.61	-31.19	-980.80	645.63	11,392.57	11,234.96	157.61	72.283	
18,900.00	6,936.42	6,058.00	6,057.26	195.96	123.61	-31.19	-980.80	645.63	11,492.18	11,334.48	157.70	72.872	
19,000.00	6,936.35	6,058.00	6,057.26	197.54	123.61	-31.19	-980.80	645.63	11,591.79	11,434.00	157.80	73.461	
19,100.00	6,936.27	6,058.00	6,057.26	199.13	123.61	-31.19	-980.80	645.63	11,691.41	11,533.52	157.89	74.048	
19,200.00	6,936.19	6,058.00	6,057.26	200.71	123.61	-31.19	-980.80	645.63	11,791.04	11,633.05	157.98	74.635	
19,300.00	6,936.12	6,058.00	6,057.26	202.30	123.61	-31.19	-980.80	645.63	11,890.67	11,732.59	158.08	75.220	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031A - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 94-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,400.00	6,936.04	6,058.00	6,057.26	203.88	123.61	-31.19	-980.80	645.63	11,990.30	11,832.13	158.17	75.805	
19,500.00	6,935.97	6,058.00	6,057.26	205.47	123.61	-31.19	-980.80	645.63	12,089.95	11,931.68	158.27	76.390	
19,600.00	6,935.89	6,058.00	6,057.26	207.06	123.61	-31.19	-980.80	645.63	12,189.60	12,031.24	158.36	76.973	
19,700.00	6,935.82	6,058.00	6,057.26	208.64	123.61	-31.19	-980.80	645.63	12,289.25	12,130.80	158.46	77.556	
19,800.00	6,935.74	6,058.00	6,057.26	210.23	123.61	-31.19	-980.80	645.63	12,388.91	12,230.36	158.55	78.138	
19,900.00	6,935.67	6,058.00	6,057.26	211.82	123.61	-31.19	-980.80	645.63	12,488.58	12,329.93	158.65	78.719	
20,000.00	6,935.59	6,058.00	6,057.26	213.41	123.61	-31.19	-980.80	645.63	12,588.25	12,429.51	158.74	79.299	
20,100.00	6,935.52	6,058.00	6,057.26	214.99	123.61	-31.19	-980.80	645.63	12,687.93	12,529.09	158.84	79.878	
20,200.00	6,935.44	6,058.00	6,057.26	216.58	123.61	-31.19	-980.80	645.63	12,787.61	12,628.67	158.94	80.457	
20,300.00	6,935.37	6,058.00	6,057.26	218.17	123.61	-31.19	-980.80	645.63	12,887.30	12,728.26	159.03	81.035	
20,400.00	6,935.29	6,058.00	6,057.26	219.76	123.61	-31.19	-980.80	645.63	12,986.99	12,827.86	159.13	81.612	
20,500.00	6,935.22	6,058.00	6,057.26	221.35	123.61	-31.19	-980.80	645.63	13,086.68	12,927.46	159.23	82.188	
20,600.00	6,935.14	6,058.00	6,057.26	222.94	123.61	-31.19	-980.80	645.63	13,186.38	13,027.06	159.33	82.763	
20,700.00	6,935.07	6,058.00	6,057.26	224.53	123.61	-31.19	-980.80	645.63	13,286.09	13,126.67	159.42	83.338	
20,789.75	6,935.00	6,058.00	6,057.26	225.95	123.61	-31.19	-980.80	645.63	13,375.58	13,216.06	159.51	83.853	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031B - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program: 515-A027Ua_INC-ONLY													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-1.88	1,666.71	-54.67	1,667.67					
100.00	100.00	85.00	85.00	0.25	1.17	-1.88	1,666.71	-54.67	1,667.60	1,666.18	1.42	1,172.806		
200.00	200.00	185.00	185.00	0.61	2.55	-1.88	1,666.71	-54.67	1,667.60	1,664.45	3.16	528.102		
300.00	300.00	285.00	285.00	0.97	3.93	-1.88	1,666.71	-54.67	1,667.60	1,662.71	4.89	340.774		
400.00	400.00	385.00	385.00	1.33	5.30	-1.88	1,666.71	-54.67	1,667.60	1,660.97	6.63	251.546		
500.00	500.00	485.00	485.00	1.68	6.68	-1.88	1,666.71	-54.67	1,667.60	1,659.24	8.37	199.349 CC		
600.00	599.98	585.06	584.98	2.03	8.78	179.00	1,666.71	-54.67	1,669.35	1,658.54	10.81	154.416 ES		
700.00	699.84	684.92	684.84	2.36	11.19	179.00	1,666.71	-54.67	1,674.58	1,661.03	13.56	123.538		
800.00	799.45	786.24	786.13	2.71	13.64	179.00	1,668.64	-54.67	1,685.23	1,668.89	16.34	103.117		
900.00	898.70	896.82	896.69	3.06	16.30	179.00	1,668.16	-54.67	1,696.98	1,677.63	19.36	87.660		
1,000.00	997.47	1,007.11	1,006.96	3.43	18.97	179.01	1,666.96	-54.67	1,711.54	1,689.17	22.37	76.505		
1,100.00	1,095.62	1,080.85	1,080.62	3.82	20.63	179.01	1,666.71	-54.67	1,730.20	1,705.80	24.39	70.928		
1,180.06	1,173.69	1,158.92	1,158.69	4.14	22.35	179.01	1,666.71	-54.67	1,747.93	1,721.53	26.41	66.197		
1,200.00	1,193.07	1,178.30	1,178.07	4.22	22.77	179.02	1,666.71	-54.67	1,752.62	1,725.71	26.91	65.136		
1,300.00	1,290.27	1,276.74	1,276.50	4.65	24.94	179.03	1,667.72	-54.67	1,777.15	1,747.71	29.43	60.379		
1,400.00	1,387.46	1,380.97	1,380.73	5.08	27.24	179.04	1,667.45	-54.67	1,800.40	1,768.31	32.09	56.101		
1,500.00	1,484.66	1,485.40	1,485.15	5.52	29.54	179.06	1,666.76	-54.67	1,823.28	1,788.52	34.76	52.455		
1,600.00	1,581.85	1,567.18	1,566.85	5.97	31.43	179.07	1,666.71	-54.67	1,846.67	1,809.66	37.01	49.896		
1,700.00	1,679.05	1,664.37	1,664.05	6.42	33.68	179.08	1,666.71	-54.67	1,870.19	1,830.56	39.63	47.192		
1,800.00	1,776.25	1,762.95	1,762.62	6.87	35.96	179.09	1,668.09	-54.67	1,895.08	1,852.79	42.28	44.819		
1,900.00	1,873.44	1,868.92	1,868.58	7.33	38.41	179.10	1,667.77	-54.67	1,918.30	1,873.19	45.11	42.523		
2,000.00	1,970.64	1,975.14	1,974.78	7.78	40.87	179.11	1,666.96	-54.67	1,941.08	1,893.13	47.95	40.484		
2,100.00	2,067.83	2,053.27	2,052.83	8.24	42.74	179.12	1,666.71	-54.67	1,964.24	1,914.06	50.18	39.143		
2,200.00	2,165.03	2,150.47	2,150.03	8.71	45.09	179.13	1,666.71	-54.67	1,987.75	1,934.85	52.91	37.570		
2,300.00	2,262.22	2,247.94	2,247.48	9.17	47.44	179.14	1,668.04	-54.67	2,012.60	1,956.96	55.64	36.170		
2,400.00	2,359.42	2,354.85	2,354.39	9.63	50.03	179.15	1,667.77	-54.67	2,035.87	1,977.26	58.61	34.735		
2,500.00	2,456.61	2,462.03	2,461.55	10.10	52.62	179.16	1,666.99	-54.67	2,058.68	1,997.09	61.59	33.427		
2,600.00	2,553.81	2,539.39	2,538.81	10.57	54.54	179.17	1,666.71	-54.67	2,081.81	2,017.93	63.88	32.589		
2,700.00	2,651.01	2,636.59	2,636.01	11.03	57.00	179.18	1,666.71	-54.67	2,105.32	2,038.61	66.71	31.558		
2,800.00	2,748.20	2,733.78	2,733.20	11.50	59.45	179.19	1,666.71	-54.67	2,128.84	2,059.29	69.55	30.611		
2,900.00	2,845.40	2,840.07	2,839.45	11.97	62.13	179.20	1,668.26	-54.67	2,153.92	2,081.31	72.61	29.663		
3,000.00	2,942.59	2,949.14	2,948.51	12.44	64.88	179.21	1,667.51	-54.67	2,176.77	2,101.01	75.75	28.735		
3,100.00	3,039.79	3,025.55	3,024.79	12.91	66.80	179.22	1,666.71	-54.67	2,199.38	2,121.34	78.04	28.183		
3,200.00	3,136.98	3,122.75	3,121.98	13.38	69.05	179.22	1,666.71	-54.67	2,222.89	2,142.22	80.67	27.555		
3,300.00	3,234.18	3,219.94	3,219.18	13.85	71.30	179.23	1,666.71	-54.67	2,246.41	2,163.11	83.30	26.967		
3,400.00	3,331.38	3,317.14	3,316.38	14.32	73.55	179.24	1,666.71	-54.67	2,269.92	2,183.99	85.93	26.415		
3,500.00	3,428.57	3,421.69	3,420.89	14.79	75.97	179.25	1,668.69	-54.67	2,295.43	2,206.69	88.74	25.867		
3,600.00	3,525.77	3,529.09	3,528.28	15.26	78.45	179.26	1,668.12	-54.67	2,318.43	2,226.81	91.62	25.306		
3,700.00	3,622.96	3,636.74	3,635.91	15.73	80.94	179.27	1,667.07	-54.67	2,340.99	2,246.50	94.50	24.773		
3,800.00	3,720.16	3,706.08	3,705.16	16.20	82.47	179.27	1,666.71	-54.67	2,363.98	2,267.59	96.38	24.527		
3,900.00	3,817.35	3,803.27	3,802.35	16.68	84.52	179.28	1,666.71	-54.67	2,387.49	2,288.67	98.82	24.160		
4,000.00	3,914.55	3,900.47	3,899.55	17.15	86.57	179.28	1,666.71	-54.67	2,411.01	2,309.75	101.26	23.811		
4,100.00	4,011.74	3,997.67	3,996.74	17.62	88.63	179.29	1,666.71	-54.67	2,434.52	2,330.83	103.70	23.478		
4,200.00	4,108.94	4,094.86	4,093.94	18.09	90.68	179.30	1,666.71	-54.67	2,458.04	2,351.90	106.13	23.160		
4,300.00	4,206.14	4,192.06	4,191.14	18.57	92.74	179.31	1,666.71	-54.67	2,481.55	2,372.98	108.57	22.857		
4,400.00	4,303.33	4,289.25	4,288.33	19.04	94.79	179.31	1,666.71	-54.67	2,505.06	2,394.06	111.01	22.567		
4,500.00	4,400.53	4,386.45	4,385.53	19.51	96.84	179.32	1,666.71	-54.67	2,528.58	2,415.13	113.45	22.289		
4,600.00	4,497.72	4,483.64	4,482.72	19.99	98.90	179.32	1,666.71	-54.67	2,552.09	2,436.21	115.88	22.023		
4,700.00	4,594.92	4,583.14	4,582.19	20.46	101.00	179.33	1,670.30	-54.67	2,579.20	2,460.83	118.37	21.789		
4,800.00	4,692.11	4,683.10	4,682.14	20.93	103.11	179.34	1,670.16	-54.67	2,602.58	2,481.71	120.87	21.532		
4,900.00	4,789.31	4,783.11	4,782.15	21.41	105.22	179.34	1,669.91	-54.67	2,625.86	2,502.48	123.37	21.284		
5,000.00	4,886.51	4,883.18	4,882.20	21.88	107.34	179.35	1,669.56	-54.67	2,649.03	2,523.15	125.88	21.045		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031B - OH - OH-INC											Offset Site Error: 0.00 usft		
Survey Program: 515-A027Ua_INC-ONLY											Offset Well Error: 0.00 usft		
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre	+N/-S (usft)	+E/-W (usft)	Distance	Minimum Separation (usft)	Separation Factor	Warning
				(usft)	(usft)					Centres (usft)	Ellipses (usft)		
5,100.00	4,983.70	4,983.29	4,982.32	22.35	109.45	179.36	1,669.11	-54.67	2,672.10	2,543.72	128.38	20.814	
5,200.00	5,080.90	5,083.46	5,082.48	22.83	111.57	179.36	1,668.54	-54.67	2,695.07	2,564.19	130.88	20.591	
5,300.00	5,178.09	5,183.69	5,182.69	23.30	113.69	179.37	1,667.88	-54.67	2,717.94	2,584.55	133.39	20.376	
5,400.00	5,275.29	5,283.96	5,282.96	23.77	115.80	179.37	1,667.10	-54.67	2,740.70	2,604.81	135.90	20.167	
5,500.00	5,372.48	5,358.66	5,357.48	24.25	117.31	179.38	1,666.71	-54.67	2,763.73	2,625.97	137.76	20.062	
5,600.00	5,469.68	5,455.85	5,454.68	24.72	119.10	179.38	1,666.71	-54.67	2,787.24	2,647.30	139.94	19.918	
5,700.00	5,566.87	5,553.05	5,551.87	25.20	120.89	179.39	1,666.71	-54.67	2,810.76	2,668.64	142.11	19.778	
5,800.00	5,664.07	5,650.24	5,649.07	25.67	122.68	179.39	1,666.71	-54.67	2,834.27	2,689.98	144.29	19.643	
5,900.00	5,761.27	5,747.44	5,746.27	26.14	124.47	179.40	1,666.71	-54.67	2,857.79	2,711.32	146.47	19.511	
6,000.00	5,858.46	5,844.64	5,843.46	26.62	126.26	179.40	1,666.71	-54.67	2,881.30	2,732.66	148.65	19.384	
6,100.00	5,955.66	5,941.83	5,940.66	27.09	128.05	179.41	1,666.71	-54.67	2,904.82	2,753.99	150.82	19.260	
6,200.00	6,052.85	6,039.03	6,037.85	27.57	129.85	179.41	1,666.71	-54.67	2,928.33	2,775.33	153.00	19.139	
6,300.00	6,150.05	6,136.22	6,135.05	28.04	131.64	179.42	1,666.71	-54.67	2,951.85	2,796.67	155.18	19.022	
6,400.00	6,247.24	6,233.42	6,232.24	28.52	133.43	179.42	1,666.71	-54.67	2,975.36	2,818.01	157.35	18.909	
6,490.87	6,335.57	6,321.74	6,320.57	28.95	135.06	179.42	1,666.71	-54.67	2,996.73	2,837.40	159.33	18.808	
6,500.00	6,344.44	6,330.61	6,329.44	28.99	135.22	-177.01	1,666.71	-54.67	2,998.88	2,839.35	159.53	18.798	
6,550.00	6,392.91	6,379.09	6,377.91	29.23	136.11	-158.85	1,666.71	-54.67	3,010.81	2,850.19	160.62	18.745	
6,600.00	6,440.98	6,427.15	6,425.98	29.46	137.00	-144.39	1,666.71	-54.67	3,022.94	2,861.25	161.69	18.696	
6,650.00	6,488.34	6,474.51	6,473.34	29.70	137.87	-133.64	1,666.71	-54.67	3,035.22	2,872.47	162.75	18.649	
6,700.00	6,534.69	6,520.87	6,519.69	29.92	138.73	-125.71	1,666.71	-54.67	3,047.62	2,883.84	163.79	18.607	
6,750.00	6,579.76	6,565.94	6,564.76	30.15	139.56	-119.75	1,666.71	-54.67	3,060.11	2,895.32	164.79	18.570	
6,800.00	6,623.27	6,609.44	6,608.27	30.36	140.36	-115.15	1,666.71	-54.67	3,072.67	2,906.91	165.76	18.537	
6,850.00	6,664.95	6,651.12	6,649.95	30.57	141.13	-111.48	1,666.71	-54.67	3,085.30	2,918.61	166.69	18.509	
6,900.00	6,704.53	6,690.71	6,689.53	30.78	141.86	-108.48	1,666.71	-54.67	3,098.00	2,930.42	167.58	18.487	
6,950.00	6,741.79	6,727.96	6,726.79	30.98	142.54	-105.97	1,666.71	-54.67	3,110.77	2,942.35	168.42	18.471	
7,000.00	6,776.48	6,762.65	6,761.48	31.17	143.18	-103.82	1,666.71	-54.67	3,123.62	2,954.42	169.20	18.461	
7,050.00	6,808.39	6,794.57	6,793.39	31.36	143.77	-101.93	1,666.71	-54.67	3,136.57	2,966.64	169.93	18.458 SF	
7,100.00	6,837.34	6,823.51	6,822.34	31.54	144.30	-100.24	1,666.71	-54.67	3,149.61	2,979.01	170.61	18.461	
7,150.00	6,863.13	6,849.30	6,848.13	31.73	144.78	-98.68	1,666.71	-54.67	3,162.76	2,991.54	171.22	18.472	
7,200.00	6,885.61	6,871.78	6,870.61	31.91	145.19	-97.24	1,666.71	-54.67	3,176.00	3,004.23	171.77	18.490	
7,250.00	6,904.64	6,890.81	6,889.64	32.10	145.54	-95.86	1,666.71	-54.67	3,189.33	3,017.08	172.25	18.515	
7,300.00	6,920.10	6,906.28	6,905.10	32.29	145.83	-94.53	1,666.71	-54.67	3,202.73	3,030.06	172.67	18.548	
7,350.00	6,931.91	6,918.08	6,916.91	32.48	146.05	-93.25	1,666.71	-54.67	3,216.16	3,043.14	173.02	18.589	
7,400.00	6,939.97	6,926.15	6,924.97	32.68	146.19	-91.99	1,666.71	-54.67	3,229.58	3,056.29	173.29	18.637	
7,450.00	6,944.26	6,930.43	6,929.26	32.89	146.27	-90.75	1,666.71	-54.67	3,242.94	3,069.45	173.49	18.692	
7,481.69	6,945.00	6,931.17	6,930.00	33.03	146.29	-89.99	1,666.71	-54.67	3,251.35	3,077.76	173.58	18.731	
7,500.00	6,944.99	6,931.16	6,929.99	33.12	146.29	-89.99	1,666.71	-54.67	3,256.23	3,082.61	173.63	18.754	
7,600.00	6,944.91	6,931.09	6,929.91	33.60	146.29	-89.99	1,666.71	-54.67	3,284.60	3,110.71	173.89	18.889	
7,700.00	6,944.84	6,931.01	6,929.84	34.17	146.28	-89.99	1,666.71	-54.67	3,315.74	3,141.56	174.18	19.036	
7,800.00	6,944.76	6,930.94	6,929.76	34.80	146.28	-89.98	1,666.71	-54.67	3,349.58	3,175.08	174.50	19.195	
7,900.00	6,944.69	6,930.86	6,929.69	35.49	146.28	-89.98	1,666.71	-54.67	3,386.03	3,211.19	174.84	19.367	
8,000.00	6,944.61	6,930.78	6,929.61	36.25	146.28	-89.98	1,666.71	-54.67	3,425.01	3,249.82	175.19	19.550	
8,100.00	6,944.54	6,930.71	6,929.54	37.07	146.28	-89.98	1,666.71	-54.67	3,466.45	3,290.89	175.56	19.745	
8,200.00	6,944.46	6,930.63	6,929.46	37.94	146.28	-89.98	1,666.71	-54.67	3,510.24	3,334.31	175.93	19.952	
8,300.00	6,944.39	6,930.56	6,929.39	38.86	146.28	-89.98	1,666.71	-54.67	3,556.30	3,379.99	176.32	20.170	
8,400.00	6,944.31	6,930.48	6,929.31	39.83	146.27	-89.98	1,666.71	-54.67	3,604.56	3,427.85	176.70	20.399	
8,500.00	6,944.23	6,930.41	6,929.23	40.84	146.27	-89.97	1,666.71	-54.67	3,654.91	3,477.82	177.09	20.639	
8,600.00	6,944.16	6,930.33	6,929.16	41.89	146.27	-89.97	1,666.71	-54.67	3,707.28	3,529.80	177.48	20.888	
8,700.00	6,944.08	6,930.26	6,929.08	42.98	146.27	-89.97	1,666.71	-54.67	3,761.57	3,583.71	177.87	21.148	
8,800.00	6,944.01	6,930.18	6,929.01	44.10	146.27	-89.97	1,666.71	-54.67	3,817.72	3,639.47	178.25	21.418	
8,900.00	6,943.93	6,930.11	6,928.93	45.25	146.27	-89.97	1,666.71	-54.67	3,875.63	3,697.00	178.62	21.697	
9,000.00	6,943.86	6,930.03	6,928.86	46.43	146.27	-89.97	1,666.71	-54.67	3,935.23	3,756.23	178.99	21.985	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031B - OH - OH-INC											Offset Site Error: 0.00 usft	
Survey Program: 515-A027Ua_INC-ONLY											Offset Well Error: 0.00 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 (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
9,100.00	6,943.78	6,929.96	6,928.78	47.63	146.26	-89.97	1,666.71	-54.67	3,996.44	3,817.08	179.36	22.282
9,200.00	6,943.71	6,929.88	6,928.71	48.86	146.26	-89.96	1,666.71	-54.67	4,059.20	3,879.48	179.71	22.587
9,300.00	6,943.63	6,929.81	6,928.63	50.11	146.26	-89.96	1,666.71	-54.67	4,123.42	3,943.36	180.06	22.900
9,400.00	6,943.56	6,929.73	6,928.56	51.38	146.26	-89.96	1,666.71	-54.67	4,189.05	4,008.65	180.40	23.221
9,500.00	6,943.48	6,929.66	6,928.48	52.66	146.26	-89.96	1,666.71	-54.67	4,256.01	4,075.29	180.73	23.550
9,600.00	6,943.41	6,929.58	6,928.41	53.97	146.26	-89.96	1,666.71	-54.67	4,324.26	4,143.21	181.05	23.885
9,700.00	6,943.33	6,929.51	6,928.33	55.29	146.26	-89.96	1,666.71	-54.67	4,393.71	4,212.36	181.36	24.227
9,800.00	6,943.26	6,929.43	6,928.26	56.63	146.25	-89.96	1,666.71	-54.67	4,464.33	4,282.67	181.66	24.576
9,900.00	6,943.18	6,929.36	6,928.18	57.98	146.25	-89.96	1,666.71	-54.67	4,536.05	4,354.10	181.95	24.930
10,000.00	6,943.11	6,929.28	6,928.11	59.34	146.25	-89.95	1,666.71	-54.67	4,608.83	4,426.60	182.23	25.291
10,100.00	6,943.03	6,929.21	6,928.03	60.72	146.25	-89.95	1,666.71	-54.67	4,682.61	4,500.10	182.51	25.657
10,200.00	6,942.96	6,929.13	6,927.96	62.11	146.25	-89.95	1,666.71	-54.67	4,757.35	4,574.58	182.77	26.029
10,300.00	6,942.88	6,929.06	6,927.88	63.50	146.25	-89.95	1,666.71	-54.67	4,833.00	4,649.97	183.03	26.406
10,400.00	6,942.81	6,928.98	6,927.81	64.91	146.25	-89.95	1,666.71	-54.67	4,909.52	4,726.24	183.28	26.787
10,500.00	6,942.73	6,928.91	6,927.73	66.33	146.25	-89.95	1,666.71	-54.67	4,986.88	4,803.36	183.52	27.174
10,600.00	6,942.66	6,928.83	6,927.66	67.75	146.24	-89.95	1,666.71	-54.67	5,065.02	4,881.27	183.75	27.564
10,700.00	6,942.58	6,928.76	6,927.58	69.18	146.24	-89.94	1,666.71	-54.67	5,143.93	4,959.95	183.98	27.959
10,800.00	6,942.51	6,928.68	6,927.51	70.62	146.24	-89.94	1,666.71	-54.67	5,223.56	5,039.36	184.20	28.359
10,900.00	6,942.43	6,928.61	6,927.43	72.07	146.24	-89.94	1,666.71	-54.67	5,303.87	5,119.46	184.41	28.762
11,000.00	6,942.36	6,928.53	6,927.36	73.52	146.24	-89.94	1,666.71	-54.67	5,384.85	5,200.23	184.61	29.168
11,100.00	6,942.28	6,928.46	6,927.28	74.98	146.24	-89.94	1,666.71	-54.67	5,466.45	5,281.64	184.81	29.578
11,200.00	6,942.21	6,928.38	6,927.21	76.45	146.24	-89.94	1,666.71	-54.67	5,548.66	5,363.66	185.01	29.992
11,300.00	6,942.13	6,928.31	6,927.13	77.92	146.23	-89.94	1,666.71	-54.67	5,631.45	5,446.25	185.19	30.409
11,400.00	6,942.06	6,928.23	6,927.06	79.40	146.23	-89.93	1,666.71	-54.67	5,714.78	5,529.41	185.37	30.828
11,500.00	6,941.98	6,928.15	6,926.98	80.88	146.23	-89.93	1,666.71	-54.67	5,798.64	5,613.09	185.55	31.251
11,600.00	6,941.91	6,928.08	6,926.91	82.36	146.23	-89.93	1,666.71	-54.67	5,883.01	5,697.29	185.72	31.677
11,700.00	6,941.83	6,928.00	6,926.83	83.85	146.23	-89.93	1,666.71	-54.67	5,967.86	5,781.97	185.89	32.105
11,800.00	6,941.76	6,927.93	6,926.76	85.35	146.23	-89.93	1,666.71	-54.67	6,053.17	5,867.12	186.05	32.535
11,900.00	6,941.68	6,927.85	6,926.68	86.85	146.23	-89.93	1,666.71	-54.67	6,138.92	5,952.72	186.21	32.968
12,000.00	6,941.60	6,927.78	6,926.60	88.35	146.22	-89.93	1,666.71	-54.67	6,225.10	6,038.74	186.36	33.404
12,100.00	6,941.53	6,927.70	6,926.53	89.85	146.22	-89.92	1,666.71	-54.67	6,311.69	6,125.18	186.51	33.841
12,200.00	6,941.45	6,927.63	6,926.45	91.36	146.22	-89.92	1,666.71	-54.67	6,398.67	6,212.01	186.65	34.281
12,300.00	6,941.38	6,927.55	6,926.38	92.88	146.22	-89.92	1,666.71	-54.67	6,486.02	6,299.23	186.79	34.723
12,400.00	6,941.30	6,927.48	6,926.30	94.39	146.22	-89.92	1,666.71	-54.67	6,573.74	6,386.80	186.93	35.166
12,500.00	6,941.23	6,927.40	6,926.23	95.91	146.22	-89.92	1,666.71	-54.67	6,661.80	6,474.73	187.07	35.612
12,600.00	6,941.15	6,927.33	6,926.15	97.43	146.22	-89.92	1,666.71	-54.67	6,750.19	6,562.99	187.20	36.059
12,700.00	6,941.08	6,927.25	6,926.08	98.95	146.21	-89.92	1,666.71	-54.67	6,838.90	6,651.58	187.33	36.508
12,800.00	6,941.00	6,927.18	6,926.00	100.48	146.21	-89.92	1,666.71	-54.67	6,927.92	6,740.47	187.45	36.958
12,900.00	6,940.93	6,927.10	6,925.93	102.01	146.21	-89.91	1,666.71	-54.67	7,017.24	6,829.66	187.58	37.410
13,000.00	6,940.85	6,927.03	6,925.85	103.54	146.21	-89.91	1,666.71	-54.67	7,106.84	6,919.14	187.70	37.863
13,100.00	6,940.78	6,926.95	6,925.78	105.07	146.21	-89.91	1,666.71	-54.67	7,196.71	7,008.90	187.81	38.318
13,200.00	6,940.70	6,926.88	6,925.70	106.61	146.21	-89.91	1,666.71	-54.67	7,286.85	7,098.92	187.93	38.774
13,300.00	6,940.63	6,926.80	6,925.63	108.14	146.21	-89.91	1,666.71	-54.67	7,377.25	7,189.20	188.04	39.231
13,400.00	6,940.55	6,926.73	6,925.55	109.68	146.21	-89.91	1,666.71	-54.67	7,467.88	7,279.73	188.16	39.690
13,500.00	6,940.48	6,926.65	6,925.48	111.22	146.20	-89.91	1,666.71	-54.67	7,558.76	7,370.49	188.26	40.150
13,600.00	6,940.40	6,926.58	6,925.40	112.77	146.20	-89.90	1,666.71	-54.67	7,649.86	7,461.49	188.37	40.610
13,700.00	6,940.33	6,926.50	6,925.33	114.31	146.20	-89.90	1,666.71	-54.67	7,741.18	7,552.70	188.48	41.072
13,800.00	6,940.25	6,926.43	6,925.25	115.86	146.20	-89.90	1,666.71	-54.67	7,832.71	7,644.13	188.58	41.535
13,900.00	6,940.18	6,926.35	6,925.18	117.41	146.20	-89.90	1,666.71	-54.67	7,924.45	7,735.77	188.68	41.998
14,000.00	6,940.10	6,926.28	6,925.10	118.95	146.20	-89.90	1,666.71	-54.67	8,016.39	7,827.60	188.79	42.463
14,100.00	6,940.03	6,926.20	6,925.03	120.51	146.20	-89.90	1,666.71	-54.67	8,108.51	7,919.63	188.88	42.928
14,200.00	6,939.95	6,926.13	6,924.95	122.06	146.19	-89.90	1,666.71	-54.67	8,200.82	8,011.84	188.98	43.395

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031B - OH - OH-INC											Offset Site Error:	0.00 usft
Survey Program: 515-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Ellipses (usft)			Warning
14,300.00	6,939.88	6,926.05	6,924.88	123.61	146.19	-89.89	1,666.71	-54.67	8,293.31	8,104.23	189.08	43.861
14,400.00	6,939.80	6,925.98	6,924.80	125.17	146.19	-89.89	1,666.71	-54.67	8,385.98	8,196.80	189.18	44.329
14,500.00	6,939.73	6,925.90	6,924.73	126.72	146.19	-89.89	1,666.71	-54.67	8,478.80	8,289.53	189.27	44.798
14,600.00	6,939.65	6,925.83	6,924.65	128.28	146.19	-89.89	1,666.71	-54.67	8,571.79	8,382.43	189.36	45.267
14,700.00	6,939.58	6,925.75	6,924.58	129.84	146.19	-89.89	1,666.71	-54.67	8,664.94	8,475.48	189.45	45.736
14,800.00	6,939.50	6,925.68	6,924.50	131.40	146.19	-89.89	1,666.71	-54.67	8,758.24	8,568.69	189.55	46.206
14,900.00	6,939.43	6,925.60	6,924.43	132.96	146.18	-89.89	1,666.71	-54.67	8,851.68	8,662.04	189.64	46.677
15,000.00	6,939.35	6,925.52	6,924.35	134.52	146.18	-89.88	1,666.71	-54.67	8,945.26	8,755.54	189.73	47.149
15,100.00	6,939.28	6,925.45	6,924.28	136.08	146.18	-89.88	1,666.71	-54.67	9,038.99	8,849.17	189.81	47.620
15,200.00	6,939.20	6,925.37	6,924.20	137.64	146.18	-89.88	1,666.71	-54.67	9,132.84	8,942.94	189.90	48.093
15,300.00	6,939.13	6,925.30	6,924.13	139.21	146.18	-89.88	1,666.71	-54.67	9,226.83	9,036.84	189.99	48.565
15,400.00	6,939.05	6,925.22	6,924.05	140.77	146.18	-89.88	1,666.71	-54.67	9,320.94	9,130.86	190.07	49.038
15,500.00	6,938.98	6,925.15	6,923.98	142.34	146.18	-89.88	1,666.71	-54.67	9,415.17	9,225.01	190.16	49.512
15,600.00	6,938.90	6,925.07	6,923.90	143.91	146.17	-89.88	1,666.71	-54.67	9,509.52	9,319.27	190.24	49.986
15,700.00	6,938.82	6,925.00	6,923.82	145.47	146.17	-89.88	1,666.71	-54.67	9,603.98	9,413.65	190.33	50.460
15,800.00	6,938.75	6,924.92	6,923.75	147.04	146.17	-89.87	1,666.71	-54.67	9,698.56	9,508.14	190.41	50.935
15,900.00	6,938.67	6,924.85	6,923.67	148.61	146.17	-89.87	1,666.71	-54.67	9,793.24	9,602.74	190.49	51.409
16,000.00	6,938.60	6,924.77	6,923.60	150.18	146.17	-89.87	1,666.71	-54.67	9,888.03	9,697.45	190.58	51.885
16,100.00	6,938.52	6,924.70	6,923.52	151.75	146.17	-89.87	1,666.71	-54.67	9,982.91	9,792.25	190.66	52.360
16,200.00	6,938.45	6,924.62	6,923.45	153.32	146.17	-89.87	1,666.71	-54.67	10,077.90	9,887.16	190.74	52.835
16,300.00	6,938.37	6,924.55	6,923.37	154.90	146.16	-89.87	1,666.71	-54.67	10,172.99	9,982.16	190.82	53.311
16,400.00	6,938.30	6,924.47	6,923.30	156.47	146.16	-89.87	1,666.71	-54.67	10,268.16	10,077.26	190.90	53.787
16,500.00	6,938.22	6,924.40	6,923.22	158.04	146.16	-89.86	1,666.71	-54.67	10,363.43	10,172.45	190.98	54.263
16,600.00	6,938.15	6,924.32	6,923.15	159.62	146.16	-89.86	1,666.71	-54.67	10,458.79	10,267.72	191.06	54.740
16,700.00	6,938.07	6,924.25	6,923.07	161.19	146.16	-89.86	1,666.71	-54.67	10,554.23	10,363.08	191.14	55.216
16,800.00	6,938.00	6,924.17	6,923.00	162.77	146.16	-89.86	1,666.71	-54.67	10,649.75	10,458.53	191.22	55.693
16,900.00	6,937.92	6,924.10	6,922.92	164.34	146.16	-89.86	1,666.71	-54.67	10,745.36	10,554.06	191.30	56.169
17,000.00	6,937.85	6,924.02	6,922.85	165.92	146.16	-89.86	1,666.71	-54.67	10,841.05	10,649.67	191.38	56.646
17,100.00	6,937.77	6,923.95	6,922.77	167.50	146.15	-89.86	1,666.71	-54.67	10,936.81	10,745.35	191.46	57.123
17,200.00	6,937.70	6,923.87	6,922.70	169.07	146.15	-89.85	1,666.71	-54.67	11,032.65	10,841.11	191.54	57.600
17,300.00	6,937.62	6,923.80	6,922.62	170.65	146.15	-89.85	1,666.71	-54.67	11,128.56	10,936.95	191.62	58.077
17,400.00	6,937.55	6,923.72	6,922.55	172.23	146.15	-89.85	1,666.71	-54.67	11,224.55	11,032.85	191.70	58.554
17,500.00	6,937.47	6,923.65	6,922.47	173.81	146.15	-89.85	1,666.71	-54.67	11,320.60	11,128.83	191.77	59.031
17,600.00	6,937.40	6,923.57	6,922.40	175.39	146.15	-89.85	1,666.71	-54.67	11,416.72	11,224.87	191.85	59.508
17,700.00	6,937.32	6,923.50	6,922.32	176.97	146.15	-89.85	1,666.71	-54.67	11,512.91	11,320.98	191.93	59.985
17,800.00	6,937.25	6,923.42	6,922.25	178.55	146.14	-89.85	1,666.71	-54.67	11,609.16	11,417.15	192.01	60.462
17,900.00	6,937.17	6,923.35	6,922.17	180.13	146.14	-89.85	1,666.71	-54.67	11,705.47	11,513.39	192.09	60.939
18,000.00	6,937.10	6,923.27	6,922.10	181.71	146.14	-89.84	1,666.71	-54.67	11,801.85	11,609.68	192.16	61.416
18,100.00	6,937.02	6,923.20	6,922.02	183.29	146.14	-89.84	1,666.71	-54.67	11,898.28	11,706.04	192.24	61.893
18,200.00	6,936.95	6,923.12	6,921.95	184.87	146.14	-89.84	1,666.71	-54.67	11,994.78	11,802.46	192.32	62.369
18,300.00	6,936.87	6,923.05	6,921.87	186.46	146.14	-89.84	1,666.71	-54.67	12,091.33	11,898.93	192.40	62.846
18,400.00	6,936.80	6,922.97	6,921.80	188.04	146.14	-89.84	1,666.71	-54.67	12,187.93	11,995.46	192.47	63.323
18,500.00	6,936.72	6,922.89	6,921.72	189.62	146.13	-89.84	1,666.71	-54.67	12,284.59	12,092.04	192.55	63.799
18,600.00	6,936.65	6,922.82	6,921.65	191.21	146.13	-89.84	1,666.71	-54.67	12,381.31	12,188.68	192.63	64.276
18,700.00	6,936.57	6,922.74	6,921.57	192.79	146.13	-89.83	1,666.71	-54.67	12,478.07	12,285.37	192.71	64.752
18,800.00	6,936.50	6,922.67	6,921.50	194.37	146.13	-89.83	1,666.71	-54.67	12,574.89	12,382.11	192.78	65.228
18,900.00	6,936.42	6,922.59	6,921.42	195.96	146.13	-89.83	1,666.71	-54.67	12,671.75	12,478.89	192.86	65.704
19,000.00	6,936.35	6,922.52	6,921.35	197.54	146.13	-89.83	1,666.71	-54.67	12,768.67	12,575.73	192.94	66.180
19,100.00	6,936.27	6,922.44	6,921.27	199.13	146.13	-89.83	1,666.71	-54.67	12,865.63	12,672.61	193.02	66.656
19,200.00	6,936.19	6,922.37	6,921.19	200.71	146.12	-89.83	1,666.71	-54.67	12,962.64	12,769.54	193.09	67.131
19,300.00	6,936.12	6,922.29	6,921.12	202.30	146.12	-89.83	1,666.71	-54.67	13,059.69	12,866.52	193.17	67.607
19,400.00	6,936.04	6,922.22	6,921.04	203.88	146.12	-89.82	1,666.71	-54.67	13,156.79	12,963.54	193.25	68.082

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031B - OH - OH-INC											Offset Site Error:	0.00 usft
Survey Program: 515-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
19,500.00	6,935.97	6,922.14	6,920.97	205.47	146.12	-89.82	1,666.71	-54.67	13,253.93	13,060.60	193.33	68.557
19,600.00	6,935.89	6,922.07	6,920.89	207.06	146.12	-89.82	1,666.71	-54.67	13,351.11	13,157.70	193.41	69.032
19,700.00	6,935.82	6,921.99	6,920.82	208.64	146.12	-89.82	1,666.71	-54.67	13,448.33	13,254.85	193.48	69.506
19,800.00	6,935.74	6,921.92	6,920.74	210.23	146.12	-89.82	1,666.71	-54.67	13,545.59	13,352.03	193.56	69.981
19,900.00	6,935.67	6,921.84	6,920.67	211.82	146.11	-89.82	1,666.71	-54.67	13,642.90	13,449.26	193.64	70.455
20,000.00	6,935.59	6,921.77	6,920.59	213.41	146.11	-89.82	1,666.71	-54.67	13,740.24	13,546.52	193.72	70.929
20,100.00	6,935.52	6,921.69	6,920.52	214.99	146.11	-89.81	1,666.71	-54.67	13,837.62	13,643.82	193.80	71.403
20,200.00	6,935.44	6,921.62	6,920.44	216.58	146.11	-89.81	1,666.71	-54.67	13,935.04	13,741.16	193.87	71.876
20,300.00	6,935.37	6,921.54	6,920.37	218.17	146.11	-89.81	1,666.71	-54.67	14,032.49	13,838.54	193.95	72.350
20,400.00	6,935.29	6,921.47	6,920.29	219.76	146.11	-89.81	1,666.71	-54.67	14,129.98	13,935.95	194.03	72.823
20,500.00	6,935.22	6,921.39	6,920.22	221.35	146.11	-89.81	1,666.71	-54.67	14,227.50	14,033.39	194.11	73.295
20,600.00	6,935.14	6,921.32	6,920.14	222.94	146.11	-89.81	1,666.71	-54.67	14,325.06	14,130.87	194.19	73.768
20,700.00	6,935.07	6,921.24	6,920.07	224.53	146.10	-89.81	1,666.71	-54.67	14,422.65	14,228.38	194.27	74.240
20,789.75	6,935.00	6,921.17	6,920.00	225.95	146.10	-89.81	1,666.71	-54.67	14,510.27	14,315.92	194.34	74.664

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 046A - OH - OH-SVY												Offset Site Error:	0.00 usft
Survey Program: 321-MWD OWSG Rev5												Offset Well Error:	0.00 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,000.00	4,886.51	4,635.20	4,392.80	21.88	29.87	-143.49	3,261.06	2,907.23	5,144.45	5,094.80	49.65	103.617	
5,100.00	4,983.70	4,761.75	4,519.04	22.35	31.06	-143.66	3,266.44	2,914.17	5,170.06	5,118.83	51.23	100.921	
5,200.00	5,080.90	4,888.79	4,645.81	22.83	32.26	-143.83	3,270.99	2,921.03	5,195.12	5,142.30	52.81	98.365	
5,300.00	5,178.09	5,019.01	4,775.80	23.30	33.35	-143.99	3,274.75	2,927.97	5,219.61	5,165.33	54.28	96.153	
5,400.00	5,275.29	5,151.68	4,908.25	23.77	34.37	-144.15	3,277.53	2,935.00	5,243.47	5,187.79	55.67	94.180	
5,500.00	5,372.48	5,284.91	5,041.29	24.25	35.39	-144.30	3,279.24	2,942.02	5,266.68	5,209.61	57.07	92.285	
5,600.00	5,469.68	5,418.70	5,174.89	24.72	36.42	-144.44	3,279.85	2,949.04	5,289.23	5,230.76	58.47	90.463	
5,700.00	5,566.87	5,519.94	5,275.99	25.20	37.11	-144.55	3,279.88	2,954.34	5,311.44	5,251.90	59.54	89.209	
5,800.00	5,664.07	5,623.46	5,379.37	25.67	37.83	-144.66	3,279.77	2,959.74	5,333.55	5,272.92	60.63	87.965	
5,900.00	5,761.27	5,727.06	5,482.82	26.14	38.56	-144.76	3,279.51	2,965.15	5,355.56	5,293.84	61.73	86.762	
6,000.00	5,858.46	5,830.72	5,586.35	26.62	39.28	-144.86	3,279.10	2,970.55	5,377.47	5,314.65	62.82	85.599	
6,100.00	5,955.66	5,926.82	5,682.31	27.09	39.96	-144.95	3,278.63	2,975.56	5,399.31	5,335.43	63.87	84.529	
6,200.00	6,052.85	6,016.48	5,771.85	27.57	40.60	-145.04	3,278.31	2,980.23	5,421.27	5,356.38	64.89	83.542	
6,300.00	6,150.05	6,106.07	5,861.32	28.04	41.24	-145.13	3,278.13	2,984.90	5,443.38	5,377.47	65.91	82.588	
6,400.00	6,247.24	6,195.59	5,950.72	28.52	41.88	-145.22	3,278.11	2,989.56	5,465.64	5,398.72	66.93	81.668	
6,490.87	6,335.57	6,276.88	6,031.90	28.95	42.47	-145.30	3,278.21	2,993.80	5,486.00	5,418.15	67.85	80.859	
6,500.00	6,344.44	6,285.05	6,040.05	28.99	42.53	-141.77	3,278.23	2,994.23	5,488.02	5,420.08	67.94	80.778	
6,550.00	6,392.91	6,329.76	6,084.70	29.23	42.85	-123.97	3,278.35	2,996.56	5,497.92	5,429.47	68.45	80.320	
6,600.00	6,440.98	6,376.00	6,130.88	29.46	43.18	-109.99	3,278.50	2,998.98	5,505.81	5,436.84	68.98	79.822	
6,650.00	6,488.34	6,462.40	6,217.18	29.70	43.64	-100.00	3,278.60	3,003.26	5,511.50	5,441.89	69.61	79.174	
6,700.00	6,534.69	6,550.84	6,305.53	29.92	44.11	-93.03	3,278.22	3,007.18	5,514.76	5,444.50	70.26	78.492	
6,750.00	6,579.76	6,637.11	6,391.72	30.15	44.58	-88.20	3,277.39	3,010.54	5,515.62	5,444.73	70.89	77.801	
6,800.00	6,623.27	6,720.54	6,475.10	30.36	45.02	-84.90	3,276.14	3,013.36	5,514.15	5,442.63	71.51	77.106	
6,850.00	6,664.95	6,800.52	6,555.03	30.57	45.45	-82.72	3,274.53	3,015.67	5,510.41	5,438.30	72.12	76.410	
6,900.00	6,704.53	6,876.46	6,630.93	30.78	45.86	-81.39	3,272.64	3,017.51	5,504.52	5,431.82	72.70	75.717	
6,950.00	6,741.79	6,947.83	6,702.25	30.98	46.25	-80.72	3,270.54	3,018.91	5,496.60	5,423.34	73.26	75.028	
7,000.00	6,776.48	6,997.54	6,751.95	31.17	46.10	-80.46	3,269.24	3,019.32	5,486.89	5,413.56	73.33	74.821	
7,050.00	6,808.39	7,050.59	6,804.97	31.36	46.21	-80.69	3,267.67	3,019.60	5,475.45	5,401.80	73.65	74.342	
7,100.00	6,837.34	7,098.09	6,852.45	31.54	46.31	-81.27	3,266.22	3,019.58	5,462.45	5,388.48	73.97	73.850	
7,150.00	6,863.13	7,139.80	6,894.14	31.73	46.39	-82.14	3,264.92	3,019.36	5,448.05	5,373.78	74.28	73.346	
7,200.00	6,885.61	7,175.54	6,929.86	31.91	46.47	-83.26	3,263.78	3,019.02	5,432.42	5,357.83	74.59	72.830	
7,250.00	6,904.64	7,205.20	6,959.50	32.10	46.53	-84.59	3,262.82	3,018.63	5,415.69	5,340.79	74.90	72.306	
7,300.00	6,920.10	7,228.70	6,982.98	32.29	46.58	-86.09	3,262.04	3,018.25	5,398.04	5,322.83	75.21	71.775	
7,350.00	6,931.91	7,246.04	7,000.31	32.48	46.61	-87.72	3,261.47	3,017.93	5,379.61	5,304.09	75.51	71.240	
7,400.00	6,939.97	7,257.26	7,011.52	32.68	46.64	-89.46	3,261.09	3,017.70	5,360.54	5,284.72	75.82	70.704	
7,450.00	6,944.26	7,262.42	7,016.68	32.89	46.65	-91.30	3,260.92	3,017.59	5,340.96	5,264.85	76.12	70.168	
7,481.69	6,945.00	7,262.62	7,016.88	33.03	46.65	-92.49	3,260.91	3,017.59	5,328.36	5,252.05	76.30	69.830	
7,500.00	6,944.99	7,262.06	7,016.31	33.12	46.65	-92.49	3,260.93	3,017.60	5,321.06	5,244.65	76.41	69.636	
7,600.00	6,944.91	7,259.03	7,013.29	33.60	46.64	-92.45	3,261.03	3,017.67	5,282.16	5,205.13	77.03	68.570	
7,700.00	6,944.84	7,256.10	7,010.36	34.17	46.64	-92.42	3,261.13	3,017.73	5,244.88	5,167.18	77.70	67.503	
7,800.00	6,944.76	7,253.26	7,007.53	34.80	46.63	-92.38	3,261.23	3,017.78	5,209.25	5,130.85	78.41	66.440	
7,900.00	6,944.69	7,250.52	7,004.78	35.49	46.62	-92.35	3,261.32	3,017.84	5,175.31	5,096.15	79.15	65.384	
8,000.00	6,944.61	7,247.85	7,002.12	36.25	46.62	-92.32	3,261.41	3,017.89	5,143.08	5,063.14	79.94	64.338	
8,100.00	6,944.54	7,245.27	6,999.54	37.07	46.61	-92.29	3,261.49	3,017.94	5,112.61	5,031.85	80.76	63.307	
8,200.00	6,944.46	7,242.77	6,997.04	37.94	46.61	-92.26	3,261.58	3,017.99	5,083.92	5,002.31	81.61	62.294	
8,300.00	6,944.39	7,240.34	6,994.61	38.86	46.60	-92.23	3,261.66	3,018.04	5,057.05	4,974.55	82.50	61.300	
8,400.00	6,944.31	7,237.98	6,992.25	39.83	46.60	-92.20	3,261.74	3,018.08	5,032.02	4,948.61	83.41	60.331	
8,500.00	6,944.23	7,235.69	6,989.96	40.84	46.59	-92.18	3,261.81	3,018.12	5,008.86	4,924.51	84.34	59.386	
8,600.00	6,944.16	7,233.46	6,987.74	41.89	46.59	-92.15	3,261.89	3,018.16	4,987.59	4,902.29	85.30	58.470	
8,700.00	6,944.08	7,231.30	6,985.58	42.98	46.58	-92.13	3,261.96	3,018.20	4,968.25	4,881.97	86.28	57.583	
8,800.00	6,944.01	7,229.19	6,983.47	44.10	46.58	-92.10	3,262.03	3,018.24	4,950.85	4,863.58	87.27	56.728	
8,900.00	6,943.93	7,227.14	6,981.43	45.25	46.57	-92.08	3,262.10	3,018.27	4,935.42	4,847.14	88.28	55.905	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 046A - OH - OH-SVY												Offset Site Error:	0.00 usft
Survey Program: 321-MWD OWSG Rev5												Offset Well Error:	0.00 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
9,000.00	6,943.86	7,225.15	6,979.43	46.43	46.57	-92.05	3,262.16	3,018.31	4,921.97	4,832.67	89.30	55.116	
9,100.00	6,943.78	7,223.21	6,977.50	47.63	46.57	-92.03	3,262.22	3,018.34	4,910.52	4,820.19	90.33	54.362	
9,200.00	6,943.71	7,221.32	6,975.61	48.86	46.56	-92.01	3,262.29	3,018.37	4,901.08	4,809.72	91.36	53.643	
9,300.00	6,943.63	7,219.48	6,973.77	50.11	46.56	-91.99	3,262.35	3,018.40	4,893.67	4,801.27	92.40	52.961	
9,400.00	6,943.56	7,217.69	6,971.97	51.38	46.56	-91.97	3,262.41	3,018.43	4,888.29	4,794.85	93.44	52.314	
9,500.00	6,943.48	7,215.94	6,970.23	52.66	46.55	-91.95	3,262.46	3,018.46	4,884.95	4,790.47	94.48	51.705	
9,600.00	6,943.41	7,214.23	6,968.52	53.97	46.55	-91.93	3,262.52	3,018.49	4,883.66	4,788.15	95.51	51.131	
9,613.12	6,943.40	7,214.01	6,968.30	54.14	46.55	-91.92	3,262.53	3,018.49	4,883.64	4,787.99	95.65	51.058	
9,700.00	6,943.33	7,212.57	6,966.86	55.29	46.54	-91.91	3,262.57	3,018.51	4,884.42	4,787.87	96.54	50.594	
9,800.00	6,943.26	7,210.94	6,965.23	56.63	46.54	-91.89	3,262.63	3,018.54	4,887.22	4,789.66	97.56	50.094	
9,900.00	6,943.18	7,209.36	6,963.65	57.98	46.54	-91.87	3,262.68	3,018.56	4,892.06	4,793.49	98.57	49.629	
10,000.00	6,943.11	7,207.81	6,962.10	59.34	46.53	-91.85	3,262.73	3,018.59	4,898.94	4,799.37	99.57	49.200	
10,100.00	6,943.03	7,206.30	6,960.59	60.72	46.53	-91.83	3,262.78	3,018.61	4,907.85	4,807.29	100.56	48.806	
10,200.00	6,942.96	7,204.82	6,959.12	62.11	46.53	-91.82	3,262.83	3,018.63	4,918.77	4,817.24	101.53	48.447	
10,300.00	6,942.88	7,203.38	6,957.67	63.50	46.53	-91.80	3,262.88	3,018.65	4,931.70	4,829.22	102.48	48.121	
10,400.00	6,942.81	7,201.97	6,956.26	64.91	46.52	-91.78	3,262.92	3,018.67	4,946.62	4,843.19	103.42	47.829	
10,500.00	6,942.73	7,200.59	6,954.89	66.33	46.52	-91.77	3,262.97	3,018.69	4,963.50	4,859.16	104.34	47.570	
10,600.00	6,942.66	7,199.24	6,953.54	67.75	46.52	-91.75	3,263.01	3,018.71	4,982.34	4,877.10	105.24	47.342	
10,700.00	6,942.58	7,197.92	6,952.22	69.18	46.51	-91.73	3,263.05	3,018.73	5,003.10	4,896.98	106.12	47.146	
10,800.00	6,942.51	7,196.63	6,950.93	70.62	46.51	-91.72	3,263.10	3,018.75	5,025.77	4,918.79	106.98	46.980	
10,900.00	6,942.43	7,195.36	6,949.67	72.07	46.51	-91.70	3,263.14	3,018.77	5,050.32	4,942.51	107.81	46.845	
11,000.00	6,942.36	7,194.13	6,948.43	73.52	46.51	-91.69	3,263.18	3,018.78	5,076.71	4,968.09	108.62	46.738	
11,100.00	6,942.28	7,192.92	6,947.22	74.98	46.50	-91.68	3,263.22	3,018.80	5,104.93	4,995.52	109.41	46.659	
11,200.00	6,942.21	7,191.73	6,946.04	76.45	46.50	-91.66	3,263.25	3,018.82	5,134.94	5,024.77	110.17	46.607	
11,300.00	6,942.13	7,190.57	6,944.88	77.92	46.50	-91.65	3,263.29	3,018.83	5,166.72	5,055.80	110.92	46.583 SF	
11,400.00	6,942.06	7,189.43	6,943.74	79.40	46.50	-91.63	3,263.33	3,018.85	5,200.22	5,088.59	111.63	46.584	
11,500.00	6,941.98	7,188.32	6,942.62	80.88	46.49	-91.62	3,263.37	3,018.86	5,235.42	5,123.09	112.32	46.610	
11,600.00	6,941.91	7,187.22	6,941.53	82.36	46.49	-91.61	3,263.40	3,018.88	5,272.28	5,159.28	112.99	46.660	
11,700.00	6,941.83	7,186.15	6,940.46	83.85	46.49	-91.60	3,263.44	3,018.89	5,310.76	5,197.12	113.64	46.734	
11,800.00	6,941.76	7,185.10	6,939.41	85.35	46.49	-91.58	3,263.47	3,018.90	5,350.84	5,236.58	114.26	46.831	
11,900.00	6,941.68	7,184.07	6,938.38	86.85	46.48	-91.57	3,263.50	3,018.92	5,392.48	5,277.62	114.86	46.950	
12,000.00	6,941.60	7,183.06	6,937.37	88.35	46.48	-91.56	3,263.54	3,018.93	5,435.63	5,320.20	115.43	47.090	
12,100.00	6,941.53	7,182.07	6,936.38	89.85	46.48	-91.55	3,263.57	3,018.94	5,480.27	5,364.29	115.98	47.251	
12,200.00	6,941.45	7,181.10	6,935.41	91.36	46.48	-91.54	3,263.60	3,018.95	5,526.36	5,409.85	116.51	47.432	
12,300.00	6,941.38	7,180.14	6,934.45	92.88	46.48	-91.53	3,263.63	3,018.96	5,573.86	5,456.85	117.02	47.633	
12,400.00	6,941.30	7,179.20	6,933.52	94.39	46.47	-91.51	3,263.66	3,018.98	5,622.74	5,505.24	117.50	47.852	
12,500.00	6,941.23	7,178.28	6,932.60	95.91	46.47	-91.50	3,263.69	3,018.99	5,672.96	5,555.00	117.97	48.089	
12,600.00	6,941.15	7,177.38	6,931.69	97.43	46.47	-91.49	3,263.72	3,019.00	5,724.49	5,606.08	118.41	48.344	
12,700.00	6,941.08	7,176.49	6,930.81	98.95	46.47	-91.48	3,263.75	3,019.01	5,777.29	5,658.46	118.84	48.616	
12,800.00	6,941.00	7,175.62	6,929.94	100.48	46.47	-91.47	3,263.78	3,019.02	5,831.33	5,712.09	119.24	48.904	
12,900.00	6,940.93	7,174.76	6,929.08	102.01	46.47	-91.46	3,263.80	3,019.03	5,886.57	5,766.94	119.63	49.207	
13,000.00	6,940.85	7,173.92	6,928.24	103.54	46.46	-91.45	3,263.83	3,019.04	5,942.97	5,822.98	120.00	49.526	
13,100.00	6,940.78	7,173.10	6,927.41	105.07	46.46	-91.44	3,263.86	3,019.05	6,000.52	5,880.17	120.35	49.860	
13,200.00	6,940.70	7,172.28	6,926.60	106.61	46.46	-91.43	3,263.88	3,019.06	6,059.16	5,938.48	120.68	50.208	
13,300.00	6,940.63	7,171.48	6,925.80	108.14	46.46	-91.42	3,263.91	3,019.06	6,118.88	5,997.88	121.00	50.569	
13,400.00	6,940.55	7,170.70	6,925.02	109.68	46.46	-91.42	3,263.93	3,019.07	6,179.65	6,058.34	121.30	50.944	
13,500.00	6,940.48	7,169.93	6,924.24	111.22	46.46	-91.41	3,263.96	3,019.08	6,241.42	6,119.83	121.59	51.332	
13,600.00	6,940.40	7,169.17	6,923.49	112.77	46.45	-91.40	3,263.98	3,019.09	6,304.17	6,182.31	121.86	51.731	
13,700.00	6,940.33	7,168.42	6,922.74	114.31	46.45	-91.39	3,264.01	3,019.10	6,367.87	6,245.75	122.12	52.143	
13,800.00	6,940.25	7,167.68	6,922.00	115.86	46.45	-91.38	3,264.03	3,019.11	6,432.50	6,310.13	122.37	52.567	
13,900.00	6,940.18	7,166.96	6,921.28	117.41	46.45	-91.37	3,264.05	3,019.11	6,498.03	6,375.42	122.60	53.001	
14,000.00	6,940.10	7,166.25	6,920.57	118.95	46.45	-91.36	3,264.08	3,019.12	6,564.42	6,441.60	122.82	53.446	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 046A - OH - OH-SVY												Offset Site Error:	0.00 usft
Survey Program: 321-MWD OWSG Rev5												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,300.00	6,936.12	7,140.00	6,894.34	202.30	46.39	-91.06	3,264.91	3,019.36	10,847.81	10,721.55	126.26	85.917	
19,400.00	6,936.04	7,139.66	6,893.99	203.88	46.39	-91.05	3,264.92	3,019.36	10,937.19	10,810.93	126.27	86.620	
19,500.00	6,935.97	7,139.32	6,893.65	205.47	46.39	-91.05	3,264.93	3,019.36	11,026.76	10,900.49	126.27	87.325	
19,600.00	6,935.89	7,138.98	6,893.31	207.06	46.39	-91.04	3,264.94	3,019.37	11,116.50	10,990.22	126.28	88.031	
19,700.00	6,935.82	7,138.64	6,892.98	208.64	46.39	-91.04	3,264.95	3,019.37	11,206.42	11,080.13	126.29	88.738	
19,800.00	6,935.74	7,138.31	6,892.65	210.23	46.39	-91.04	3,264.96	3,019.37	11,296.51	11,170.21	126.29	89.447	
19,900.00	6,935.67	7,137.99	6,892.32	211.82	46.39	-91.03	3,264.97	3,019.37	11,386.76	11,260.46	126.30	90.158	
20,000.00	6,935.59	7,137.66	6,892.00	213.41	46.39	-91.03	3,264.98	3,019.38	11,477.17	11,350.87	126.30	90.870	
20,100.00	6,935.52	7,137.34	6,891.68	214.99	46.39	-91.02	3,264.99	3,019.38	11,567.74	11,441.43	126.31	91.582	
20,200.00	6,935.44	7,137.03	6,891.36	216.58	46.39	-91.02	3,265.00	3,019.38	11,658.47	11,532.15	126.32	92.297	
20,300.00	6,935.37	7,136.71	6,891.05	218.17	46.39	-91.02	3,265.01	3,019.38	11,749.35	11,623.02	126.32	93.012	
20,400.00	6,935.29	7,136.40	6,890.74	219.76	46.39	-91.01	3,265.02	3,019.39	11,840.37	11,714.04	126.33	93.728	
20,500.00	6,935.22	7,136.10	6,890.43	221.35	46.38	-91.01	3,265.03	3,019.39	11,931.54	11,805.20	126.33	94.446	
20,600.00	6,935.14	7,135.79	6,890.13	222.94	46.38	-91.01	3,265.04	3,019.39	12,022.84	11,896.50	126.34	95.164	
20,700.00	6,935.07	7,135.49	6,889.83	224.53	46.38	-91.00	3,265.05	3,019.39	12,114.29	11,987.94	126.34	95.883	
20,789.75	6,935.00	7,135.23	6,889.56	225.95	46.38	-91.00	3,265.06	3,019.39	12,196.47	12,070.12	126.35	96.530	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 065 - OH - OH-INC											Offset Site Error:	0.00 usft
Survey Program: 839-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
14,200.00	6,939.95	6,911.21	6,904.95	122.06	193.53	-89.94	1,107.40	3,838.09	4,590.92	4,331.77	259.15	17.715
14,300.00	6,939.88	6,911.13	6,904.88	123.61	193.52	-89.94	1,107.40	3,838.09	4,671.07	4,412.24	258.83	18.047
14,400.00	6,939.80	6,911.06	6,904.80	125.17	193.52	-89.94	1,107.40	3,838.09	4,751.98	4,493.47	258.52	18.382
14,500.00	6,939.73	6,910.98	6,904.73	126.72	193.51	-89.94	1,107.40	3,838.09	4,833.61	4,575.40	258.21	18.720
14,600.00	6,939.65	6,910.91	6,904.65	128.28	193.51	-89.94	1,107.40	3,838.09	4,915.91	4,658.00	257.90	19.061
14,700.00	6,939.58	6,910.83	6,904.58	129.84	193.51	-89.94	1,107.40	3,838.09	4,998.86	4,741.25	257.61	19.405
14,800.00	6,939.50	6,910.76	6,904.50	131.40	193.50	-89.93	1,107.40	3,838.09	5,082.42	4,825.10	257.31	19.752
14,900.00	6,939.43	6,910.68	6,904.43	132.96	193.50	-89.93	1,107.40	3,838.09	5,166.57	4,909.54	257.03	20.101
15,000.00	6,939.35	6,910.61	6,904.35	134.52	193.50	-89.93	1,107.40	3,838.09	5,251.27	4,994.52	256.75	20.453
15,100.00	6,939.28	6,910.53	6,904.28	136.08	193.49	-89.93	1,107.40	3,838.09	5,336.50	5,080.03	256.47	20.807
15,200.00	6,939.20	6,910.46	6,904.20	137.64	193.49	-89.93	1,107.40	3,838.09	5,422.24	5,166.03	256.21	21.164
15,300.00	6,939.13	6,910.38	6,904.13	139.21	193.49	-89.93	1,107.40	3,838.09	5,508.45	5,252.51	255.94	21.522
15,400.00	6,939.05	6,910.31	6,904.05	140.77	193.48	-89.92	1,107.40	3,838.09	5,595.13	5,339.44	255.69	21.883
15,500.00	6,938.98	6,910.23	6,903.97	142.34	193.48	-89.92	1,107.40	3,838.09	5,682.24	5,426.80	255.44	22.245
15,600.00	6,938.90	6,910.16	6,903.90	143.91	193.47	-89.92	1,107.40	3,838.09	5,769.77	5,514.58	255.19	22.609
15,700.00	6,938.82	6,910.08	6,903.82	145.47	193.47	-89.92	1,107.40	3,838.09	5,857.70	5,602.75	254.96	22.975
15,800.00	6,938.75	6,910.01	6,903.75	147.04	193.47	-89.92	1,107.40	3,838.09	5,946.02	5,691.29	254.73	23.343
15,900.00	6,938.67	6,909.93	6,903.67	148.61	193.46	-89.92	1,107.40	3,838.09	6,034.69	5,780.19	254.50	23.712
16,000.00	6,938.60	6,909.86	6,903.60	150.18	193.46	-89.92	1,107.40	3,838.09	6,123.72	5,869.44	254.28	24.083
16,100.00	6,938.52	6,909.78	6,903.52	151.75	193.46	-89.91	1,107.40	3,838.09	6,213.08	5,959.01	254.07	24.455
16,200.00	6,938.45	6,909.71	6,903.45	153.32	193.45	-89.91	1,107.40	3,838.09	6,302.76	6,048.90	253.86	24.828
16,300.00	6,938.37	6,909.63	6,903.37	154.90	193.45	-89.91	1,107.40	3,838.09	6,392.74	6,139.09	253.66	25.202
16,400.00	6,938.30	6,909.56	6,903.30	156.47	193.44	-89.91	1,107.40	3,838.09	6,483.02	6,229.56	253.46	25.578
16,500.00	6,938.22	6,909.48	6,903.22	158.04	193.44	-89.91	1,107.40	3,838.09	6,573.58	6,320.32	253.27	25.955
16,600.00	6,938.15	6,909.41	6,903.15	159.62	193.44	-89.91	1,107.40	3,838.09	6,664.41	6,411.33	253.08	26.333
16,700.00	6,938.07	6,909.33	6,903.07	161.19	193.43	-89.90	1,107.40	3,838.09	6,755.50	6,502.60	252.90	26.712
16,800.00	6,938.00	6,909.26	6,903.00	162.77	193.43	-89.90	1,107.40	3,838.09	6,846.84	6,594.11	252.73	27.092
16,900.00	6,937.92	6,909.18	6,902.92	164.34	193.43	-89.90	1,107.40	3,838.09	6,938.42	6,685.86	252.56	27.473
17,000.00	6,937.85	6,909.11	6,902.85	165.92	193.42	-89.90	1,107.40	3,838.09	7,030.22	6,777.83	252.39	27.855
17,100.00	6,937.77	6,909.03	6,902.77	167.50	193.42	-89.90	1,107.40	3,838.09	7,122.25	6,870.02	252.23	28.237
17,200.00	6,937.70	6,908.96	6,902.70	169.07	193.42	-89.90	1,107.40	3,838.09	7,214.49	6,962.42	252.07	28.620
17,300.00	6,937.62	6,908.88	6,902.62	170.65	193.41	-89.89	1,107.40	3,838.09	7,306.93	7,055.01	251.92	29.005
17,400.00	6,937.55	6,908.81	6,902.55	172.23	193.41	-89.89	1,107.40	3,838.09	7,399.57	7,147.80	251.78	29.389
17,500.00	6,937.47	6,908.73	6,902.47	173.81	193.40	-89.89	1,107.40	3,838.09	7,492.40	7,240.77	251.63	29.775
17,600.00	6,937.40	6,908.66	6,902.40	175.39	193.40	-89.89	1,107.40	3,838.09	7,585.42	7,333.92	251.50	30.161
17,700.00	6,937.32	6,908.58	6,902.32	176.97	193.40	-89.89	1,107.40	3,838.09	7,678.60	7,427.24	251.36	30.548
17,800.00	6,937.25	6,908.50	6,902.25	178.55	193.39	-89.89	1,107.40	3,838.09	7,771.96	7,520.73	251.23	30.935
17,900.00	6,937.17	6,908.43	6,902.17	180.13	193.39	-89.89	1,107.40	3,838.09	7,865.48	7,614.37	251.11	31.323
18,000.00	6,937.10	6,908.35	6,902.10	181.71	193.39	-89.88	1,107.40	3,838.09	7,959.16	7,708.17	250.99	31.711
18,100.00	6,937.02	6,908.28	6,902.02	183.29	193.38	-89.88	1,107.40	3,838.09	8,052.99	7,802.12	250.87	32.100
18,200.00	6,936.95	6,908.20	6,901.95	184.87	193.38	-89.88	1,107.40	3,838.09	8,146.96	7,896.21	250.76	32.489
18,300.00	6,936.87	6,908.13	6,901.87	186.46	193.38	-89.88	1,107.40	3,838.09	8,241.08	7,990.43	250.65	32.879
18,400.00	6,936.80	6,908.05	6,901.80	188.04	193.37	-89.88	1,107.40	3,838.09	8,335.34	8,084.79	250.54	33.269
18,500.00	6,936.72	6,907.98	6,901.72	189.62	193.37	-89.88	1,107.40	3,838.09	8,429.72	8,179.28	250.44	33.660
18,600.00	6,936.65	6,907.90	6,901.65	191.21	193.36	-89.87	1,107.40	3,838.09	8,524.24	8,273.90	250.34	34.050
18,700.00	6,936.57	6,907.83	6,901.57	192.79	193.36	-89.87	1,107.40	3,838.09	8,618.88	8,368.63	250.25	34.442
18,800.00	6,936.50	6,907.75	6,901.50	194.37	193.36	-89.87	1,107.40	3,838.09	8,713.64	8,463.48	250.15	34.833
18,900.00	6,936.42	6,907.68	6,901.42	195.96	193.35	-89.87	1,107.40	3,838.09	8,808.51	8,558.45	250.07	35.225
19,000.00	6,936.35	6,907.60	6,901.35	197.54	193.35	-89.87	1,107.40	3,838.09	8,903.50	8,653.52	249.98	35.617
19,100.00	6,936.27	6,907.53	6,901.27	199.13	193.35	-89.87	1,107.40	3,838.09	8,998.60	8,748.70	249.90	36.009
19,200.00	6,936.19	6,907.45	6,901.19	200.71	193.34	-89.87	1,107.40	3,838.09	9,093.80	8,843.98	249.82	36.402
19,300.00	6,936.12	6,907.38	6,901.12	202.30	193.34	-89.86	1,107.40	3,838.09	9,189.10	8,939.36	249.74	36.794

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 065 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 839-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,400.00	6,936.04	6,907.30	6,901.04	203.88	193.34	-89.86	1,107.40	3,838.09	9,284.50	9,034.83	249.67	37.187	
19,500.00	6,935.97	6,907.23	6,900.97	205.47	193.33	-89.86	1,107.40	3,838.09	9,380.00	9,130.40	249.60	37.580	
19,600.00	6,935.89	6,907.15	6,900.89	207.06	193.33	-89.86	1,107.40	3,838.09	9,475.59	9,226.06	249.53	37.974	
19,700.00	6,935.82	6,907.08	6,900.82	208.64	193.32	-89.86	1,107.40	3,838.09	9,571.27	9,321.80	249.47	38.367	
19,800.00	6,935.74	6,907.00	6,900.74	210.23	193.32	-89.86	1,107.40	3,838.09	9,667.04	9,417.63	249.40	38.761	
19,900.00	6,935.67	6,906.93	6,900.67	211.82	193.32	-89.85	1,107.40	3,838.09	9,762.89	9,513.55	249.34	39.154	
20,000.00	6,935.59	6,906.85	6,900.59	213.41	193.31	-89.85	1,107.40	3,838.09	9,858.82	9,609.54	249.29	39.548	
20,100.00	6,935.52	6,906.78	6,900.52	214.99	193.31	-89.85	1,107.40	3,838.09	9,954.84	9,705.61	249.23	39.942	
20,200.00	6,935.44	6,906.70	6,900.44	216.58	193.31	-89.85	1,107.40	3,838.09	10,050.93	9,801.75	249.18	40.336	
20,300.00	6,935.37	6,906.63	6,900.37	218.17	193.30	-89.85	1,107.40	3,838.09	10,147.10	9,897.97	249.13	40.730	
20,400.00	6,935.29	6,906.55	6,900.29	219.76	193.30	-89.85	1,107.40	3,838.09	10,243.34	9,994.26	249.08	41.124	
20,500.00	6,935.22	6,906.48	6,900.22	221.35	193.29	-89.85	1,107.40	3,838.09	10,339.66	10,090.62	249.04	41.518	
20,600.00	6,935.14	6,906.40	6,900.14	222.94	193.29	-89.84	1,107.40	3,838.09	10,436.04	10,187.04	249.00	41.912	
20,700.00	6,935.07	6,906.33	6,900.07	224.53	193.29	-89.84	1,107.40	3,838.09	10,532.49	10,283.53	248.96	42.306	
20,789.75	6,935.00	6,906.26	6,900.00	225.95	193.28	-89.84	1,107.40	3,838.09	10,619.11	10,370.18	248.92	42.660	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 314-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference												Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	16.00	16.00	0.00	0.15	-97.61	-1,077.21	-8,065.97	8,137.58				
100.00	100.00	116.00	116.00	0.25	1.07	-97.61	-1,077.21	-8,065.97	8,137.58	8,136.26	1.32	6,149.879	
200.00	200.00	216.00	216.00	0.61	2.00	-97.61	-1,077.21	-8,065.97	8,137.58	8,134.97	2.61	3,122.767	
300.00	300.00	316.00	316.00	0.97	2.94	-97.61	-1,077.21	-8,065.97	8,137.58	8,133.67	3.91	2,082.176	
400.00	400.00	416.00	416.00	1.33	4.84	-97.61	-1,077.21	-8,065.97	8,137.58	8,131.41	6.17	1,319.053	
488.49	488.49	504.49	504.49	1.64	6.53	-97.60	-1,076.79	-8,065.97	8,137.53	8,129.36	8.17	996.018	
500.00	500.00	515.73	515.72	1.68	6.74	-97.60	-1,076.79	-8,065.97	8,137.53	8,129.10	8.43	965.875	
600.00	599.98	613.30	613.30	2.03	8.60	83.28	-1,076.93	-8,065.97	8,137.34	8,126.72	10.62	766.046	
700.00	699.84	715.86	715.84	2.36	10.57	83.33	-1,077.21	-8,065.97	8,136.77	8,123.83	12.93	629.165	
800.00	799.45	815.48	815.45	2.71	12.60	83.41	-1,077.21	-8,065.97	8,135.76	8,120.46	15.30	531.839	
900.00	898.70	911.89	911.86	3.06	14.55	83.53	-1,076.79	-8,065.97	8,134.31	8,116.70	17.61	461.925	
1,000.00	997.47	1,013.53	1,013.47	3.43	16.62	83.67	-1,077.21	-8,065.97	8,132.59	8,112.54	20.05	405.571	
1,100.00	1,095.62	1,111.69	1,111.62	3.82	18.70	83.84	-1,077.21	-8,065.97	8,130.48	8,107.96	22.51	361.124	
1,180.06	1,173.69	1,189.75	1,189.69	4.14	20.35	84.00	-1,077.21	-8,065.97	8,128.55	8,104.06	24.49	331.929	
1,200.00	1,193.07	1,209.13	1,209.07	4.22	20.76	84.03	-1,077.21	-8,065.97	8,128.05	8,103.07	24.98	325.368	
1,300.00	1,290.27	1,306.08	1,306.01	4.65	22.81	84.20	-1,075.92	-8,065.97	8,125.42	8,097.96	27.45	295.980	
1,400.00	1,387.46	1,400.66	1,400.58	5.08	24.80	84.36	-1,076.08	-8,065.97	8,123.03	8,093.14	29.88	271.826	
1,500.00	1,484.66	1,495.37	1,495.28	5.52	26.81	84.51	-1,076.50	-8,065.97	8,120.73	8,088.41	32.32	251.232	
1,600.00	1,581.85	1,598.01	1,597.85	5.97	28.98	84.68	-1,077.21	-8,065.97	8,118.53	8,083.59	34.95	232.321	
1,700.00	1,679.05	1,689.00	1,688.84	6.42	31.05	84.83	-1,077.13	-8,065.97	8,116.31	8,078.85	37.46	216.643	
1,800.00	1,776.25	1,792.42	1,792.25	6.87	33.66	85.00	-1,077.21	-8,065.97	8,114.18	8,073.65	40.52	200.227	
1,900.00	1,873.44	1,889.62	1,889.44	7.33	36.14	85.16	-1,077.21	-8,065.97	8,112.10	8,068.64	43.46	186.667	
2,000.00	1,970.64	1,985.58	1,985.38	7.78	38.58	85.33	-1,075.55	-8,065.97	8,109.93	8,063.57	46.36	174.928	
2,100.00	2,067.83	2,079.12	2,078.91	8.24	40.97	85.48	-1,075.92	-8,065.97	8,108.03	8,058.82	49.21	164.779	
2,200.00	2,165.03	2,172.90	2,172.67	8.71	43.36	85.63	-1,076.74	-8,065.97	8,106.24	8,054.18	52.06	155.719	
2,300.00	2,262.22	2,278.61	2,278.22	9.17	46.01	85.80	-1,077.21	-8,065.97	8,104.48	8,049.30	55.18	146.883	
2,400.00	2,359.42	2,373.84	2,373.44	9.63	48.39	85.97	-1,076.20	-8,065.97	8,102.65	8,044.64	58.01	139.669	
2,500.00	2,456.61	2,464.23	2,463.81	10.10	50.64	86.11	-1,076.90	-8,065.97	8,101.05	8,040.32	60.73	133.392	
2,600.00	2,553.81	2,570.29	2,569.81	10.57	52.97	86.29	-1,077.21	-8,065.97	8,099.47	8,035.94	63.53	127.486	
2,700.00	2,651.01	2,667.49	2,667.01	11.03	55.04	86.45	-1,077.21	-8,065.97	8,097.93	8,031.87	66.07	122.572	
2,800.00	2,748.20	2,763.92	2,763.42	11.50	57.09	86.62	-1,075.86	-8,065.97	8,096.37	8,027.78	68.59	118.048	
2,900.00	2,845.40	2,858.71	2,858.21	11.97	59.11	86.77	-1,076.18	-8,065.97	8,095.00	8,023.93	71.07	113.902	
3,000.00	2,942.59	2,953.71	2,953.19	12.44	61.13	86.92	-1,076.89	-8,065.97	8,093.72	8,020.16	73.56	110.030	
3,100.00	3,039.79	3,056.35	3,055.79	12.91	63.05	87.09	-1,077.21	-8,065.97	8,092.48	8,016.52	75.96	106.540	
3,200.00	3,136.98	3,153.54	3,152.98	13.38	64.77	87.25	-1,077.21	-8,065.97	8,091.29	8,013.14	78.15	103.540	
3,300.00	3,234.18	3,249.34	3,248.78	13.85	66.47	87.42	-1,076.71	-8,065.97	8,090.13	8,009.82	80.31	100.734	
3,400.00	3,331.38	3,345.00	3,344.44	14.32	68.16	87.57	-1,077.14	-8,065.97	8,089.10	8,006.63	82.48	98.079	
3,500.00	3,428.57	3,445.14	3,444.57	14.79	70.02	87.74	-1,077.21	-8,065.97	8,088.12	8,003.31	84.81	95.368	
3,600.00	3,525.77	3,542.34	3,541.77	15.26	71.84	87.90	-1,077.21	-8,065.97	8,087.20	8,000.10	87.10	92.850	
3,700.00	3,622.96	3,639.54	3,638.96	15.73	73.66	88.06	-1,077.21	-8,065.97	8,086.35	7,996.96	89.39	90.461	
3,800.00	3,720.16	3,736.62	3,736.05	16.20	75.48	88.23	-1,076.85	-8,065.97	8,085.55	7,993.87	91.68	88.194	
3,900.00	3,817.35	3,833.60	3,833.03	16.68	77.29	88.39	-1,076.90	-8,065.97	8,084.84	7,990.87	93.97	86.041	
4,000.00	3,914.55	3,930.61	3,930.03	17.15	79.11	88.55	-1,077.02	-8,065.97	8,084.19	7,987.94	96.25	83.989	
4,100.00	4,011.74	4,027.65	4,027.07	17.62	80.92	88.71	-1,077.20	-8,065.97	8,083.62	7,985.08	98.54	82.033	
4,200.00	4,108.94	4,125.56	4,124.94	18.09	83.67	88.87	-1,077.21	-8,065.97	8,083.11	7,981.35	101.76	79.433	
4,300.00	4,206.14	4,222.75	4,222.14	18.57	86.42	89.04	-1,077.21	-8,065.97	8,082.67	7,977.69	104.98	76.990	
4,400.00	4,303.33	4,319.70	4,319.07	19.04	89.16	89.20	-1,076.09	-8,065.97	8,082.27	7,974.07	108.20	74.699	
4,500.00	4,400.53	4,416.23	4,415.60	19.51	91.89	89.36	-1,076.35	-8,065.97	8,081.97	7,970.57	111.40	72.548	
4,600.00	4,497.72	4,512.92	4,512.28	19.99	94.63	89.52	-1,076.92	-8,065.97	8,081.75	7,967.14	114.61	70.515	
4,700.00	4,594.92	4,611.88	4,610.92	20.46	98.05	89.68	-1,077.21	-8,065.97	8,081.59	7,963.08	118.51	68.193	
4,800.00	4,692.11	4,707.30	4,706.28	20.93	101.69	89.85	-1,076.13	-8,065.97	8,081.47	7,958.85	122.62	65.907	
4,895.47	4,784.91	4,802.22	4,800.91	21.38	105.45	90.00	-1,077.21	-8,065.97	8,081.46	7,954.62	126.84	63.715	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066 - OH - OH-INC											Offset Site Error:	0.00 usft
Survey Program: 314-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Semi Major Axis Offset	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
				(usft)	(usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
4,900.00	4,789.31	4,806.62	4,805.31	21.41	105.64	90.01	-1,077.21	-8,065.97	8,081.46	7,954.42	127.04	63.612
4,957.85	4,845.54	4,862.84	4,861.49	21.68	108.00	90.11	-1,075.68	-8,065.97	8,081.45	7,951.78	129.67	62.321 CC
5,000.00	4,886.51	4,902.68	4,901.30	21.88	109.66	90.18	-1,075.93	-8,065.97	8,081.48	7,949.94	131.54	61.436
5,100.00	4,983.70	5,001.41	4,999.70	22.35	113.92	90.33	-1,077.21	-8,065.97	8,081.60	7,945.33	136.27	59.306
5,200.00	5,080.90	5,098.57	5,096.79	22.83	118.29	90.51	-1,075.05	-8,065.97	8,081.76	7,940.65	141.11	57.272
5,300.00	5,178.09	5,195.37	5,193.52	23.30	122.64	90.66	-1,076.28	-8,065.97	8,082.02	7,936.08	145.94	55.380
5,400.00	5,275.29	5,293.60	5,291.29	23.77	127.04	90.82	-1,077.21	-8,065.97	8,082.33	7,931.52	150.81	53.593
5,500.00	5,372.48	5,391.13	5,388.48	24.25	131.38	90.98	-1,077.21	-8,065.97	8,082.71	7,927.09	155.62	51.938
5,600.00	5,469.68	5,488.33	5,485.68	24.72	135.46	91.14	-1,077.21	-8,065.97	8,083.16	7,922.97	160.18	50.462
5,700.00	5,566.87	5,585.52	5,582.87	25.20	139.55	91.30	-1,077.21	-8,065.97	8,083.67	7,918.93	164.74	49.068
5,800.00	5,664.07	5,683.71	5,680.92	25.67	143.68	91.49	-1,074.05	-8,065.97	8,084.29	7,914.95	169.34	47.739
5,900.00	5,761.27	5,782.91	5,780.04	26.14	147.85	91.64	-1,075.65	-8,065.97	8,084.93	7,910.94	173.99	46.468
6,000.00	5,858.46	5,877.90	5,874.46	26.62	151.95	91.79	-1,077.21	-8,065.97	8,085.63	7,907.07	178.56	45.281
6,100.00	5,955.66	5,975.10	5,971.66	27.09	156.33	91.95	-1,077.21	-8,065.97	8,086.42	7,903.01	183.42	44.088
6,200.00	6,052.85	6,072.29	6,068.85	27.57	160.71	92.11	-1,077.21	-8,065.97	8,087.28	7,899.01	188.27	42.956
6,300.00	6,150.05	6,170.98	6,167.41	28.04	165.15	92.30	-1,073.65	-8,065.97	8,088.30	7,895.11	193.19	41.867
6,400.00	6,247.24	6,271.03	6,267.39	28.52	169.66	92.46	-1,074.85	-8,065.97	8,089.27	7,891.10	198.17	40.820
6,490.87	6,335.57	6,362.44	6,358.73	28.95	173.78	92.60	-1,076.88	-8,065.97	8,090.18	7,887.46	202.72	39.908
6,500.00	6,344.44	6,371.65	6,367.92	28.99	174.20	95.98	-1,077.14	-8,065.97	8,090.33	7,887.16	203.18	39.819 ES
6,550.00	6,392.91	6,413.43	6,408.91	29.23	176.29	113.15	-1,077.21	-8,065.97	8,093.56	7,888.06	205.51	39.383
6,600.00	6,440.98	6,461.49	6,456.98	29.46	178.72	126.68	-1,077.21	-8,065.97	8,100.72	7,892.55	208.17	38.914
6,650.00	6,488.34	6,508.85	6,504.34	29.70	181.11	136.56	-1,077.21	-8,065.97	8,111.75	7,900.95	210.79	38.482
6,700.00	6,534.69	6,555.20	6,550.69	29.92	183.45	143.65	-1,077.21	-8,065.97	8,126.58	7,913.23	213.36	38.089
6,750.00	6,579.76	6,600.28	6,595.76	30.15	185.73	148.83	-1,077.21	-8,065.97	8,145.13	7,929.29	215.85	37.735
6,800.00	6,623.27	6,644.84	6,640.16	30.36	187.98	152.73	-1,072.92	-8,065.97	8,167.46	7,949.15	218.30	37.413
6,850.00	6,664.95	6,688.75	6,684.04	30.57	190.20	155.68	-1,073.19	-8,065.97	8,193.06	7,972.34	220.72	37.120
6,900.00	6,704.53	6,730.62	6,725.88	30.78	192.32	157.99	-1,073.70	-8,065.97	8,221.96	7,998.94	223.01	36.868
6,950.00	6,741.79	6,770.17	6,765.39	30.98	194.32	159.82	-1,074.41	-8,065.97	8,253.96	8,028.78	225.18	36.655
7,000.00	6,776.48	6,807.14	6,802.32	31.17	196.19	161.28	-1,075.27	-8,065.97	8,288.89	8,061.68	227.20	36.482
7,050.00	6,808.39	6,841.27	6,836.40	31.36	197.91	162.47	-1,076.23	-8,065.97	8,326.50	8,097.44	229.07	36.350
7,100.00	6,837.34	6,872.00	6,866.20	31.54	199.46	163.43	-1,077.21	-8,065.97	8,366.59	8,135.84	230.74	36.259 SF
7,150.00	6,863.13	6,884.93	6,879.13	31.73	200.00	164.18	-1,077.21	-8,065.97	8,408.93	8,177.54	231.38	36.342
7,200.00	6,885.61	6,907.41	6,901.61	31.91	200.92	164.81	-1,077.21	-8,065.97	8,453.23	8,220.83	232.40	36.374
7,250.00	6,904.64	6,926.44	6,920.64	32.10	201.70	165.32	-1,077.21	-8,065.97	8,499.22	8,265.96	233.26	36.437
7,300.00	6,920.10	6,941.90	6,936.10	32.29	202.34	165.72	-1,077.21	-8,065.97	8,546.60	8,312.65	233.95	36.531
7,350.00	6,931.91	6,953.71	6,947.91	32.48	202.83	166.02	-1,077.21	-8,065.97	8,595.09	8,360.60	234.48	36.655
7,400.00	6,939.97	6,961.77	6,955.97	32.68	203.16	166.22	-1,077.21	-8,065.97	8,644.38	8,409.53	234.85	36.809
7,450.00	6,944.26	6,966.06	6,960.26	32.89	203.34	166.28	-1,077.21	-8,065.97	8,694.17	8,459.13	235.04	36.990
7,481.69	6,945.00	6,966.80	6,961.00	33.03	203.37	-6.83	-1,077.21	-8,065.97	8,725.85	8,490.77	235.08	37.119
7,500.00	6,944.99	6,966.79	6,960.99	33.12	203.37	-6.82	-1,077.21	-8,065.97	8,744.16	8,509.08	235.08	37.197
7,600.00	6,944.91	6,966.71	6,960.91	33.60	203.36	-6.74	-1,077.21	-8,065.97	8,844.16	8,609.08	235.08	37.622
7,700.00	6,944.84	6,966.64	6,960.84	34.17	203.36	-6.67	-1,077.21	-8,065.97	8,944.16	8,709.08	235.08	38.047
7,800.00	6,944.76	6,966.56	6,960.76	34.80	203.36	-6.60	-1,077.21	-8,065.97	9,044.16	8,809.07	235.09	38.471
7,900.00	6,944.69	6,966.49	6,960.69	35.49	203.35	-6.52	-1,077.21	-8,065.97	9,144.16	8,909.07	235.10	38.895
8,000.00	6,944.61	6,966.41	6,960.61	36.25	203.35	-6.45	-1,077.21	-8,065.97	9,244.16	9,009.06	235.10	39.320
8,100.00	6,944.54	6,966.34	6,960.54	37.07	203.35	-6.39	-1,077.21	-8,065.97	9,344.16	9,109.05	235.11	39.744
8,200.00	6,944.46	6,966.26	6,960.46	37.94	203.34	-6.32	-1,077.21	-8,065.97	9,444.16	9,209.04	235.12	40.168
8,300.00	6,944.39	6,966.19	6,960.39	38.86	203.34	-6.25	-1,077.21	-8,065.97	9,544.16	9,309.03	235.13	40.591
8,400.00	6,944.31	6,966.11	6,960.31	39.83	203.34	-6.19	-1,077.21	-8,065.97	9,644.16	9,409.02	235.14	41.015
8,500.00	6,944.23	6,966.03	6,960.23	40.84	203.33	-6.13	-1,077.21	-8,065.97	9,744.16	9,509.01	235.15	41.438
8,600.00	6,944.16	6,965.96	6,960.16	41.89	203.33	-6.06	-1,077.21	-8,065.97	9,844.16	9,609.00	235.16	41.862
8,700.00	6,944.08	6,965.88	6,960.08	42.98	203.33	-6.00	-1,077.21	-8,065.97	9,944.16	9,708.99	235.17	42.285

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066 - OH - OH-INC												Offset Site Error: 0.00 usft		
Survey Program: 314-A027Ua_INC-ONLY		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Offset Well Error: 0.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
8,800.00	6,944.01	6,965.81	6,960.01	44.10	203.33	-5.94	-1,077.21	-8,065.97	10,044.16	9,808.98	235.18	42.708		
8,900.00	6,943.93	6,965.73	6,959.93	45.25	203.32	-5.89	-1,077.21	-8,065.97	10,144.16	9,908.96	235.20	43.130		
9,000.00	6,943.86	6,965.66	6,959.86	46.43	203.32	-5.83	-1,077.21	-8,065.97	10,244.16	10,008.95	235.21	43.553		
9,100.00	6,943.78	6,965.58	6,959.78	47.63	203.32	-5.77	-1,077.21	-8,065.97	10,344.16	10,108.93	235.23	43.975		
9,200.00	6,943.71	6,965.51	6,959.71	48.86	203.31	-5.72	-1,077.21	-8,065.97	10,444.16	10,208.92	235.24	44.398		
9,300.00	6,943.63	6,965.43	6,959.63	50.11	203.31	-5.66	-1,077.21	-8,065.97	10,544.16	10,308.90	235.26	44.820		
9,400.00	6,943.56	6,965.36	6,959.56	51.38	203.31	-5.61	-1,077.21	-8,065.97	10,644.16	10,408.89	235.28	45.241		
9,500.00	6,943.48	6,965.28	6,959.48	52.66	203.30	-5.56	-1,077.21	-8,065.97	10,744.16	10,508.87	235.29	45.663		
9,600.00	6,943.41	6,965.21	6,959.41	53.97	203.30	-5.51	-1,077.21	-8,065.97	10,844.16	10,608.85	235.31	46.084		
9,700.00	6,943.33	6,965.13	6,959.33	55.29	203.30	-5.46	-1,077.21	-8,065.97	10,944.16	10,708.83	235.33	46.505		
9,800.00	6,943.26	6,965.06	6,959.26	56.63	203.29	-5.41	-1,077.21	-8,065.97	11,044.16	10,808.81	235.35	46.926		
9,900.00	6,943.18	6,964.98	6,959.18	57.98	203.29	-5.36	-1,077.21	-8,065.97	11,144.16	10,908.79	235.37	47.347		
10,000.00	6,943.11	6,964.91	6,959.11	59.34	203.29	-5.31	-1,077.21	-8,065.97	11,244.16	11,008.77	235.39	47.768		
10,100.00	6,943.03	6,964.83	6,959.03	60.72	203.29	-5.27	-1,077.21	-8,065.97	11,344.16	11,108.75	235.42	48.188		
10,200.00	6,942.96	6,964.76	6,958.96	62.11	203.28	-5.22	-1,077.21	-8,065.97	11,444.16	11,208.72	235.44	48.608		
10,300.00	6,942.88	6,964.68	6,958.88	63.50	203.28	-5.18	-1,077.21	-8,065.97	11,544.16	11,308.70	235.46	49.028		
10,400.00	6,942.81	6,964.61	6,958.81	64.91	203.28	-5.13	-1,077.21	-8,065.97	11,644.16	11,408.67	235.49	49.447		
10,500.00	6,942.73	6,964.53	6,958.73	66.33	203.27	-5.09	-1,077.21	-8,065.97	11,744.16	11,508.65	235.51	49.867		
10,600.00	6,942.66	6,964.46	6,958.66	67.75	203.27	-5.05	-1,077.21	-8,065.97	11,844.16	11,608.62	235.54	50.286		
10,700.00	6,942.58	6,964.38	6,958.58	69.18	203.27	-5.00	-1,077.21	-8,065.97	11,944.16	11,708.60	235.56	50.705		
10,800.00	6,942.51	6,964.31	6,958.51	70.62	203.26	-4.96	-1,077.21	-8,065.97	12,044.16	11,808.57	235.59	51.123		
10,900.00	6,942.43	6,964.23	6,958.43	72.07	203.26	-4.92	-1,077.21	-8,065.97	12,144.16	11,908.54	235.62	51.542		
11,000.00	6,942.36	6,964.16	6,958.36	73.52	203.26	-4.88	-1,077.21	-8,065.97	12,244.16	12,008.51	235.65	51.960		
11,100.00	6,942.28	6,964.08	6,958.28	74.98	203.25	-4.84	-1,077.21	-8,065.97	12,344.16	12,108.48	235.68	52.378		
11,200.00	6,942.21	6,964.01	6,958.21	76.45	203.25	-4.80	-1,077.21	-8,065.97	12,444.16	12,208.45	235.71	52.795		
11,300.00	6,942.13	6,963.93	6,958.13	77.92	203.25	-4.77	-1,077.21	-8,065.97	12,544.16	12,308.42	235.74	53.213		
11,400.00	6,942.06	6,963.86	6,958.06	79.40	203.25	-4.73	-1,077.21	-8,065.97	12,644.16	12,408.39	235.77	53.630		
11,500.00	6,941.98	6,963.78	6,957.98	80.88	203.24	-4.69	-1,077.21	-8,065.97	12,744.16	12,508.36	235.80	54.046		
11,600.00	6,941.91	6,963.71	6,957.91	82.36	203.24	-4.65	-1,077.21	-8,065.97	12,844.16	12,608.33	235.83	54.463		
11,700.00	6,941.83	6,963.63	6,957.83	83.85	203.24	-4.62	-1,077.21	-8,065.97	12,944.16	12,708.29	235.87	54.879		
11,800.00	6,941.76	6,963.56	6,957.76	85.35	203.23	-4.58	-1,077.21	-8,065.97	13,044.16	12,808.26	235.90	55.295		
11,900.00	6,941.68	6,963.48	6,957.68	86.85	203.23	-4.55	-1,077.21	-8,065.97	13,144.16	12,908.23	235.93	55.711		
12,000.00	6,941.60	6,963.40	6,957.60	88.35	203.23	-4.51	-1,077.21	-8,065.97	13,244.16	13,008.19	235.97	56.126		
12,100.00	6,941.53	6,963.33	6,957.53	89.85	203.22	-4.48	-1,077.21	-8,065.97	13,344.16	13,108.15	236.01	56.541		
12,200.00	6,941.45	6,963.25	6,957.45	91.36	203.22	-4.45	-1,077.21	-8,065.97	13,444.16	13,208.12	236.04	56.956		
12,300.00	6,941.38	6,963.18	6,957.38	92.88	203.22	-4.41	-1,077.21	-8,065.97	13,544.16	13,308.08	236.08	57.371		
12,400.00	6,941.30	6,963.10	6,957.30	94.39	203.21	-4.38	-1,077.21	-8,065.97	13,644.16	13,408.04	236.12	57.785		
12,500.00	6,941.23	6,963.03	6,957.23	95.91	203.21	-4.35	-1,077.21	-8,065.97	13,744.16	13,508.00	236.16	58.199		
12,600.00	6,941.15	6,962.95	6,957.15	97.43	203.21	-4.32	-1,077.21	-8,065.97	13,844.16	13,607.96	236.20	58.613		
12,700.00	6,941.08	6,962.88	6,957.08	98.95	203.20	-4.29	-1,077.21	-8,065.97	13,944.16	13,707.92	236.24	59.026		
12,800.00	6,941.00	6,962.80	6,957.00	100.48	203.20	-4.26	-1,077.21	-8,065.97	14,044.16	13,807.88	236.28	59.439		
12,900.00	6,940.93	6,962.73	6,956.93	102.01	203.20	-4.23	-1,077.21	-8,065.97	14,144.16	13,907.84	236.32	59.852		
13,000.00	6,940.85	6,962.65	6,956.85	103.54	203.20	-4.20	-1,077.21	-8,065.97	14,244.16	14,007.80	236.36	60.264		
13,100.00	6,940.78	6,962.58	6,956.78	105.07	203.19	-4.17	-1,077.21	-8,065.97	14,344.16	14,107.75	236.40	60.676		
13,200.00	6,940.70	6,962.50	6,956.70	106.61	203.19	-4.14	-1,077.21	-8,065.97	14,444.16	14,207.71	236.45	61.088		
13,300.00	6,940.63	6,962.43	6,956.63	108.14	203.19	-4.11	-1,077.21	-8,065.97	14,544.16	14,307.67	236.49	61.500		
13,400.00	6,940.55	6,962.35	6,956.55	109.68	203.18	-4.08	-1,077.21	-8,065.97	14,644.16	14,407.62	236.54	61.911		
13,500.00	6,940.48	6,962.28	6,956.48	111.22	203.18	-4.06	-1,077.21	-8,065.97	14,744.16	14,507.58	236.58	62.321		
13,600.00	6,940.40	6,962.20	6,956.40	112.77	203.18	-4.03	-1,077.21	-8,065.97	14,844.16	14,607.53	236.63	62.732		
13,700.00	6,940.33	6,962.13	6,956.33	114.31	203.17	-4.00	-1,077.21	-8,065.97	14,944.16	14,707.48	236.67	63.142		
13,800.00	6,940.25	6,962.05	6,956.25	115.86	203.17	-3.98	-1,077.21	-8,065.97	15,044.16	14,807.44	236.72	63.552		
13,900.00	6,940.18	6,961.98	6,956.18	117.41	203.17	-3.95	-1,077.21	-8,065.97	15,144.16	14,907.39	236.77	63.961		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program:		314-A027Ua_INC-ONLY					Rule Assigned:		Offset Well Error:		0.00 usft			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
14,000.00	6,940.10	6,961.90	6,956.10	118.95	203.16	-3.92	-1,077.21	-8,065.97	15,244.16	15,007.34	236.82	64.371		
14,100.00	6,940.03	6,961.83	6,956.03	120.51	203.16	-3.90	-1,077.21	-8,065.97	15,344.16	15,107.29	236.87	64.779		
14,200.00	6,939.95	6,961.75	6,955.95	122.06	203.16	-3.87	-1,077.21	-8,065.97	15,444.16	15,207.24	236.92	65.188		
14,300.00	6,939.88	6,961.68	6,955.88	123.61	203.16	-3.85	-1,077.21	-8,065.97	15,544.16	15,307.19	236.97	65.596		
14,400.00	6,939.80	6,961.60	6,955.80	125.17	203.15	-3.82	-1,077.21	-8,065.97	15,644.16	15,407.14	237.02	66.004		
14,500.00	6,939.73	6,961.53	6,955.73	126.72	203.15	-3.80	-1,077.21	-8,065.97	15,744.16	15,507.09	237.07	66.411		
14,600.00	6,939.65	6,961.45	6,955.65	128.28	203.15	-3.78	-1,077.21	-8,065.97	15,844.16	15,607.04	237.12	66.818		
14,700.00	6,939.58	6,961.38	6,955.58	129.84	203.14	-3.75	-1,077.21	-8,065.97	15,944.16	15,706.98	237.18	67.225		
14,800.00	6,939.50	6,961.30	6,955.50	131.40	203.14	-3.73	-1,077.21	-8,065.97	16,044.16	15,806.93	237.23	67.632		
14,900.00	6,939.43	6,961.23	6,955.43	132.96	203.14	-3.71	-1,077.21	-8,065.97	16,144.16	15,906.88	237.28	68.038		
15,000.00	6,939.35	6,961.15	6,955.35	134.52	203.13	-3.68	-1,077.21	-8,065.97	16,244.16	16,006.82	237.34	68.443		
15,100.00	6,939.28	6,961.08	6,955.28	136.08	203.13	-3.66	-1,077.21	-8,065.97	16,344.16	16,106.77	237.39	68.849		
15,200.00	6,939.20	6,961.00	6,955.20	137.64	203.13	-3.64	-1,077.21	-8,065.97	16,444.16	16,206.71	237.45	69.254		
15,300.00	6,939.13	6,960.93	6,955.13	139.21	203.12	-3.62	-1,077.21	-8,065.97	16,544.16	16,306.65	237.51	69.658		
15,400.00	6,939.05	6,960.85	6,955.05	140.77	203.12	-3.59	-1,077.21	-8,065.97	16,644.16	16,406.60	237.56	70.062		
15,500.00	6,938.98	6,960.77	6,954.98	142.34	203.12	-3.57	-1,077.21	-8,065.97	16,744.16	16,506.54	237.62	70.466		
15,600.00	6,938.90	6,960.70	6,954.90	143.91	203.12	-3.55	-1,077.21	-8,065.97	16,844.16	16,606.48	237.68	70.870		
15,700.00	6,938.82	6,960.62	6,954.82	145.47	203.11	-3.53	-1,077.21	-8,065.97	16,944.16	16,706.42	237.74	71.273		
15,800.00	6,938.75	6,960.55	6,954.75	147.04	203.11	-3.51	-1,077.21	-8,065.97	17,044.16	16,806.36	237.80	71.676		
15,900.00	6,938.67	6,960.47	6,954.67	148.61	203.11	-3.49	-1,077.21	-8,065.97	17,144.16	16,906.30	237.86	72.078		
16,000.00	6,938.60	6,960.40	6,954.60	150.18	203.10	-3.47	-1,077.21	-8,065.97	17,244.16	17,006.24	237.92	72.480		
16,100.00	6,938.52	6,960.32	6,954.52	151.75	203.10	-3.45	-1,077.21	-8,065.97	17,344.16	17,106.18	237.98	72.882		
16,200.00	6,938.45	6,960.25	6,954.45	153.32	203.10	-3.43	-1,077.21	-8,065.97	17,444.16	17,206.12	238.04	73.283		
16,300.00	6,938.37	6,960.17	6,954.37	154.90	203.09	-3.41	-1,077.21	-8,065.97	17,544.16	17,306.06	238.10	73.684		
16,400.00	6,938.30	6,960.10	6,954.30	156.47	203.09	-3.39	-1,077.21	-8,065.97	17,644.16	17,406.00	238.16	74.084		
16,500.00	6,938.22	6,960.02	6,954.22	158.04	203.09	-3.37	-1,077.21	-8,065.97	17,744.16	17,505.93	238.23	74.484		
16,600.00	6,938.15	6,959.95	6,954.15	159.62	203.08	-3.35	-1,077.21	-8,065.97	17,844.16	17,605.87	238.29	74.884		
16,700.00	6,938.07	6,959.87	6,954.07	161.19	203.08	-3.34	-1,077.21	-8,065.97	17,944.16	17,705.80	238.35	75.283		
16,800.00	6,938.00	6,959.80	6,954.00	162.77	203.08	-3.32	-1,077.21	-8,065.97	18,044.16	17,805.74	238.42	75.682		
16,900.00	6,937.92	6,959.72	6,953.92	164.34	203.08	-3.30	-1,077.21	-8,065.97	18,144.16	17,905.67	238.48	76.081		
17,000.00	6,937.85	6,959.65	6,953.85	165.92	203.07	-3.28	-1,077.21	-8,065.97	18,244.16	18,005.61	238.55	76.479		
17,100.00	6,937.77	6,959.57	6,953.77	167.50	203.07	-3.26	-1,077.21	-8,065.97	18,344.16	18,105.54	238.62	76.877		
17,200.00	6,937.70	6,959.50	6,953.70	169.07	203.07	-3.24	-1,077.21	-8,065.97	18,444.16	18,205.47	238.68	77.274		
17,300.00	6,937.62	6,959.42	6,953.62	170.65	203.06	-3.23	-1,077.21	-8,065.97	18,544.16	18,305.41	238.75	77.671		
17,400.00	6,937.55	6,959.35	6,953.55	172.23	203.06	-3.21	-1,077.21	-8,065.97	18,644.16	18,405.34	238.82	78.068		
17,500.00	6,937.47	6,959.27	6,953.47	173.81	203.06	-3.19	-1,077.21	-8,065.97	18,744.16	18,505.27	238.89	78.464		
17,600.00	6,937.40	6,959.20	6,953.40	175.39	203.05	-3.18	-1,077.21	-8,065.97	18,844.16	18,605.20	238.96	78.860		
17,700.00	6,937.32	6,959.12	6,953.32	176.97	203.05	-3.16	-1,077.21	-8,065.97	18,944.16	18,705.13	239.03	79.255		
17,800.00	6,937.25	6,959.05	6,953.25	178.55	203.05	-3.14	-1,077.21	-8,065.97	19,044.16	18,805.06	239.10	79.650		
17,900.00	6,937.17	6,958.97	6,953.17	180.13	203.04	-3.13	-1,077.21	-8,065.97	19,144.16	18,904.99	239.17	80.045		
18,000.00	6,937.10	6,958.90	6,953.10	181.71	203.04	-3.11	-1,077.21	-8,065.97	19,244.16	19,004.92	239.24	80.439		
18,100.00	6,937.02	6,958.82	6,953.02	183.29	203.04	-3.09	-1,077.21	-8,065.97	19,344.16	19,104.85	239.31	80.833		
18,200.00	6,936.95	6,958.75	6,952.95	184.87	203.03	-3.08	-1,077.21	-8,065.97	19,444.16	19,204.78	239.38	81.226		
18,300.00	6,936.87	6,958.67	6,952.87	186.46	203.03	-3.06	-1,077.21	-8,065.97	19,544.16	19,304.70	239.45	81.619		
18,400.00	6,936.80	6,958.60	6,952.80	188.04	203.03	-3.05	-1,077.21	-8,065.97	19,644.16	19,404.63	239.53	82.012		
18,500.00	6,936.72	6,958.52	6,952.72	189.62	203.03	-3.03	-1,077.21	-8,065.97	19,744.16	19,504.56	239.60	82.404		
18,600.00	6,936.65	6,958.45	6,952.65	191.21	203.02	-3.02	-1,077.21	-8,065.97	19,844.16	19,604.48	239.68	82.796		
18,700.00	6,936.57	6,958.37	6,952.57	192.79	203.02	-3.00	-1,077.21	-8,065.97	19,944.16	19,704.41	239.75	83.187		
18,800.00	6,936.50	6,958.30	6,952.50	194.37	203.02	-2.99	-1,077.21	-8,065.97	20,044.16	19,804.33	239.83	83.578		
18,900.00	6,936.42	6,958.22	6,952.42	195.96	203.01	-2.97	-1,077.21	-8,065.97	20,144.16	19,904.26	239.90	83.969		
19,000.00	6,936.35	6,958.14	6,952.35	197.54	203.01	-2.96	-1,077.21	-8,065.97	20,244.16	20,004.18	239.98	84.359		
19,100.00	6,936.27	6,958.07	6,952.27	199.13	203.01	-2.94	-1,077.21	-8,065.97	20,344.16	20,104.11	240.05	84.749		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 314-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,200.00	6,936.19	6,957.99	6,952.19	200.71	203.00	-2.93	-1,077.21	-8,065.97	20,444.16	20,204.03	240.13	85.138	
19,300.00	6,936.12	6,957.92	6,952.12	202.30	203.00	-2.91	-1,077.21	-8,065.97	20,544.16	20,303.95	240.21	85.527	
19,400.00	6,936.04	6,957.84	6,952.04	203.88	203.00	-2.90	-1,077.21	-8,065.97	20,644.16	20,403.87	240.29	85.915	
19,500.00	6,935.97	6,957.77	6,951.97	205.47	202.99	-2.89	-1,077.21	-8,065.97	20,744.16	20,503.79	240.36	86.303	
19,600.00	6,935.89	6,957.69	6,951.89	207.06	202.99	-2.87	-1,077.21	-8,065.97	20,844.16	20,603.72	240.44	86.691	
19,700.00	6,935.82	6,957.62	6,951.82	208.64	202.99	-2.86	-1,077.21	-8,065.97	20,944.16	20,703.64	240.52	87.078	
19,800.00	6,935.74	6,957.54	6,951.74	210.23	202.99	-2.84	-1,077.21	-8,065.97	21,044.16	20,803.56	240.60	87.465	
19,900.00	6,935.67	6,957.47	6,951.67	211.82	202.98	-2.83	-1,077.21	-8,065.97	21,144.16	20,903.48	240.68	87.851	
20,000.00	6,935.59	6,957.39	6,951.59	213.41	202.98	-2.82	-1,077.21	-8,065.97	21,244.16	21,003.40	240.76	88.237	
20,100.00	6,935.52	6,957.32	6,951.52	214.99	202.98	-2.80	-1,077.21	-8,065.97	21,344.16	21,103.32	240.84	88.623	
20,200.00	6,935.44	6,957.24	6,951.44	216.58	202.97	-2.79	-1,077.21	-8,065.97	21,444.16	21,203.23	240.92	89.008	
20,300.00	6,935.37	6,957.17	6,951.37	218.17	202.97	-2.78	-1,077.21	-8,065.97	21,544.16	21,303.15	241.01	89.393	
20,400.00	6,935.29	6,957.09	6,951.29	219.76	202.97	-2.77	-1,077.21	-8,065.97	21,644.16	21,403.07	241.09	89.777	
20,500.00	6,935.22	6,957.02	6,951.22	221.35	202.96	-2.75	-1,077.21	-8,065.97	21,744.16	21,502.99	241.17	90.161	
20,600.00	6,935.14	6,956.94	6,951.14	222.94	202.96	-2.74	-1,077.21	-8,065.97	21,844.16	21,602.90	241.25	90.544	
20,700.00	6,935.07	6,956.87	6,951.07	224.53	202.96	-2.73	-1,077.21	-8,065.97	21,944.16	21,702.82	241.34	90.927	
20,789.75	6,935.00	6,956.80	6,951.00	225.95	202.95	-2.72	-1,077.21	-8,065.97	22,033.91	21,792.49	241.41	91.271	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066M - OH - OH-SVY													Offset Site Error:	0.00 usft
Survey Program: 74-MWD OWSG Rev5													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	-92.61	-297.41	-6,530.37	6,537.15					
100.00	100.00	80.20	80.19	0.25	0.49	-92.60	-296.89	-6,530.59	6,537.41	6,536.68	0.73	8,958.141		
200.00	200.00	180.19	180.18	0.61	1.41	-92.59	-295.69	-6,531.10	6,537.86	6,535.88	1.98	3,297.049		
300.00	300.00	270.15	270.13	0.97	2.10	-92.58	-294.44	-6,531.63	6,538.39	6,535.39	3.00	2,182.269		
400.00	400.00	361.24	361.20	1.33	2.80	-92.57	-292.77	-6,532.34	6,539.08	6,535.05	4.03	1,622.092		
500.00	500.00	469.22	469.16	1.68	3.88	-92.55	-290.82	-6,533.17	6,539.77	6,534.33	5.43	1,203.743		
600.00	599.98	577.16	577.09	2.03	4.95	88.35	-289.21	-6,533.85	6,540.28	6,533.46	6.82	959.446		
700.00	699.84	679.90	679.82	2.36	6.40	88.40	-287.95	-6,534.38	6,540.60	6,532.02	8.58	762.421		
800.00	799.45	779.40	779.31	2.71	8.06	88.48	-286.75	-6,534.89	6,540.82	6,530.25	10.57	618.537		
900.00	898.70	878.50	878.40	3.06	9.71	88.59	-285.56	-6,535.40	6,540.97	6,528.40	12.58	520.100		
1,000.00	997.47	977.06	976.95	3.43	11.36	88.74	-284.37	-6,535.90	6,541.07	6,526.49	14.58	448.503		
1,100.00	1,095.62	1,074.98	1,074.86	3.82	13.00	88.91	-283.19	-6,536.40	6,541.15	6,524.55	16.60	394.067		
1,180.06	1,173.69	1,151.82	1,151.69	4.14	14.19	89.06	-282.26	-6,536.80	6,541.22	6,523.11	18.11	361.231		
1,200.00	1,193.07	1,170.75	1,170.62	4.22	14.47	89.11	-282.02	-6,536.90	6,541.25	6,522.78	18.47	354.166		
1,300.00	1,290.27	1,265.65	1,265.51	4.65	15.88	89.31	-280.79	-6,537.42	6,541.44	6,521.15	20.29	322.401		
1,400.00	1,387.46	1,360.52	1,360.37	5.08	17.30	89.52	-279.48	-6,537.98	6,541.76	6,519.64	22.12	295.756		
1,500.00	1,484.66	1,455.35	1,455.19	5.52	18.71	89.72	-278.11	-6,538.56	6,542.20	6,518.25	23.95	273.110		
1,600.00	1,581.85	1,550.14	1,549.97	5.97	20.12	89.93	-276.66	-6,539.17	6,542.77	6,516.97	25.80	253.644		
1,700.00	1,679.05	1,646.75	1,646.57	6.42	21.39	90.14	-275.13	-6,539.82	6,543.45	6,515.95	27.50	237.915		
1,800.00	1,776.25	1,745.73	1,745.53	6.87	22.50	90.36	-273.61	-6,540.47	6,544.22	6,515.17	29.04	225.327		
1,900.00	1,873.44	1,844.75	1,844.54	7.33	23.61	90.58	-272.18	-6,541.08	6,545.04	6,514.45	30.59	213.984		
2,000.00	1,970.64	1,943.81	1,943.59	7.78	24.72	90.79	-270.82	-6,541.65	6,545.93	6,513.79	32.13	203.715		
2,100.00	2,067.83	2,042.92	2,042.68	8.24	25.83	91.01	-269.53	-6,542.20	6,546.87	6,513.19	33.68	194.376		
2,200.00	2,165.03	2,140.37	2,140.13	8.71	26.88	91.22	-268.34	-6,542.70	6,547.89	6,512.71	35.17	186.154		
2,300.00	2,262.22	2,235.20	2,234.95	9.17	27.84	91.42	-267.14	-6,543.22	6,549.01	6,512.43	36.58	179.034		
2,400.00	2,359.42	2,330.00	2,329.74	9.63	28.81	91.63	-265.86	-6,543.75	6,550.26	6,512.27	37.99	172.439		
2,500.00	2,456.61	2,424.77	2,424.50	10.10	29.77	91.84	-264.52	-6,544.32	6,551.63	6,512.24	39.39	166.315 ES		
2,600.00	2,553.81	2,519.50	2,519.21	10.57	30.73	92.04	-263.12	-6,544.92	6,553.13	6,512.33	40.80	160.614		
2,700.00	2,651.01	2,614.19	2,613.89	11.03	31.69	92.25	-261.64	-6,545.55	6,554.76	6,512.55	42.21	155.295		
2,800.00	2,748.20	2,712.58	2,712.27	11.50	32.54	92.46	-260.09	-6,546.20	6,556.49	6,512.99	43.50	150.730		
2,900.00	2,845.40	2,811.81	2,811.49	11.97	33.36	92.68	-258.60	-6,546.84	6,558.28	6,513.51	44.76	146.510		
3,000.00	2,942.59	2,911.09	2,910.75	12.44	34.18	92.90	-257.19	-6,547.43	6,560.13	6,514.10	46.03	142.521		
3,100.00	3,039.79	3,010.41	3,010.06	12.91	35.01	93.11	-255.86	-6,548.00	6,562.03	6,514.74	47.30	138.743		
3,200.00	3,136.98	3,109.77	3,109.41	13.38	35.83	93.32	-254.61	-6,548.53	6,564.00	6,515.43	48.56	135.161		
3,300.00	3,234.18	3,207.10	3,206.73	13.85	36.50	93.53	-253.43	-6,549.03	6,566.03	6,516.36	49.67	132.182		
3,400.00	3,331.38	3,304.00	3,303.63	14.32	37.13	93.74	-252.27	-6,549.52	6,568.15	6,517.40	50.75	129.418		
3,500.00	3,428.57	3,400.90	3,400.52	14.79	37.76	93.95	-251.10	-6,550.02	6,570.37	6,518.54	51.83	126.770		
3,600.00	3,525.77	3,497.80	3,497.42	15.26	38.40	94.16	-249.93	-6,550.51	6,572.68	6,519.77	52.91	124.231		
3,700.00	3,622.96	3,594.71	3,594.31	15.73	39.03	94.37	-248.76	-6,551.01	6,575.08	6,521.09	53.99	121.794		
3,800.00	3,720.16	3,597.00	3,596.60	16.20	39.05	94.37	-248.74	-6,551.02	6,578.25	6,523.79	54.46	120.781		
3,900.00	3,817.35	3,597.00	3,596.60	16.68	39.05	94.37	-248.74	-6,551.02	6,582.94	6,528.02	54.92	119.871		
4,000.00	3,914.55	3,597.00	3,596.60	17.15	39.05	94.37	-248.74	-6,551.02	6,589.14	6,533.79	55.36	119.029		
4,100.00	4,011.74	3,597.00	3,596.60	17.62	39.05	94.37	-248.74	-6,551.02	6,596.86	6,541.07	55.79	118.253		
4,200.00	4,108.94	3,597.00	3,596.60	18.09	39.05	94.37	-248.74	-6,551.02	6,606.08	6,549.87	56.20	117.542		
4,300.00	4,206.14	3,597.00	3,596.60	18.57	39.05	94.37	-248.74	-6,551.02	6,616.79	6,560.19	56.61	116.894		
4,400.00	4,303.33	3,597.00	3,596.60	19.04	39.05	94.37	-248.74	-6,551.02	6,629.00	6,572.01	57.00	116.307		
4,500.00	4,400.53	3,597.00	3,596.60	19.51	39.05	94.37	-248.74	-6,551.02	6,642.70	6,585.32	57.37	115.779		
4,589.97	4,487.97	4,006.87	4,004.85	19.94	94.22	95.45	-218.78	-6,564.52	6,629.70	6,540.39	89.31	74.233		
4,600.00	4,497.72	4,011.30	4,009.23	19.99	94.83	95.46	-218.18	-6,564.79	6,630.70	6,540.97	89.74	73.891		
4,700.00	4,594.92	4,055.18	4,052.57	20.46	100.90	95.60	-211.97	-6,567.60	6,641.17	6,547.15	94.02	70.639		
4,800.00	4,692.11	4,098.55	4,095.31	20.93	106.91	95.74	-205.27	-6,570.64	6,652.51	6,554.16	98.35	67.639		
4,900.00	4,789.31	4,141.41	4,137.45	21.41	112.86	95.88	-198.10	-6,573.89	6,664.74	6,562.00	102.75	64.866		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066M - OH - OH-SVY													Offset Site Error:	0.00 usft
Survey Program:		74-MWD OWSG Rev5						Rule Assigned:				Offset Well Error:	0.00 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 (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			Minimum Separation (usft)	
5,000.00	4,886.51	4,183.76	4,178.96	21.88	118.75	96.03	-190.49	-6,577.34	6,677.87	6,570.67	107.20	62.296		
5,100.00	4,983.70	4,225.58	4,219.84	22.35	124.57	96.18	-182.46	-6,580.99	6,691.89	6,580.19	111.70	59.911		
5,200.00	5,080.90	4,266.88	4,260.08	22.83	130.33	96.32	-174.04	-6,584.81	6,706.81	6,590.57	116.25	57.694		
5,300.00	5,178.09	4,307.63	4,299.68	23.30	136.02	96.47	-165.23	-6,588.81	6,722.65	6,601.80	120.85	55.629		
5,400.00	5,275.29	4,347.85	4,338.62	23.77	141.64	96.63	-156.07	-6,592.97	6,739.39	6,613.90	125.49	53.704		
5,500.00	5,372.48	4,387.53	4,376.90	24.25	147.18	96.78	-146.58	-6,597.28	6,757.05	6,626.88	130.18	51.907		
5,600.00	5,469.68	4,426.67	4,414.53	24.72	152.66	96.93	-136.78	-6,601.74	6,775.63	6,640.73	134.90	50.226		
5,700.00	5,566.87	4,465.25	4,451.49	25.20	158.06	97.09	-126.68	-6,606.32	6,795.14	6,655.47	139.66	48.654		
5,800.00	5,664.07	4,503.30	4,487.78	25.67	163.39	97.24	-116.31	-6,611.04	6,815.56	6,671.11	144.46	47.181		
5,900.00	5,761.27	4,540.79	4,523.41	26.14	168.64	97.40	-105.68	-6,615.87	6,836.92	6,687.64	149.28	45.800		
6,000.00	5,858.46	4,577.74	4,558.39	26.62	173.82	97.55	-94.82	-6,620.80	6,859.20	6,705.07	154.13	44.504		
6,100.00	5,955.66	4,614.15	4,592.70	27.09	178.93	97.71	-83.75	-6,625.84	6,882.41	6,723.41	159.00	43.286		
6,200.00	6,052.85	4,650.01	4,626.35	27.57	183.96	97.86	-72.47	-6,630.96	6,906.55	6,742.66	163.89	42.142		
6,300.00	6,150.05	4,685.33	4,659.36	28.04	188.92	98.02	-61.02	-6,636.17	6,931.62	6,762.83	168.79	41.066		
6,400.00	6,247.24	5,147.00	5,075.51	28.52	253.82	100.21	120.00	-6,718.51	6,988.68	6,772.00	216.69	32.252		
6,490.87	6,335.57	5,147.00	5,075.51	28.95	253.82	100.21	120.00	-6,718.51	7,008.86	6,790.30	218.56	32.068		
6,500.00	6,344.44	5,147.00	5,075.51	28.99	253.82	103.60	120.00	-6,718.51	7,011.01	6,792.26	218.75	32.050		
6,550.00	6,392.91	5,147.00	5,075.51	29.23	253.82	120.86	120.00	-6,718.51	7,025.22	6,805.47	219.74	31.970		
6,600.00	6,440.98	5,147.00	5,075.51	29.46	253.82	134.54	120.00	-6,718.51	7,043.43	6,822.74	220.69	31.915		
6,650.00	6,488.34	5,147.00	5,075.51	29.70	253.82	144.62	120.00	-6,718.51	7,065.50	6,843.92	221.58	31.887		
6,700.00	6,534.69	5,147.00	5,075.51	29.92	253.82	152.00	120.00	-6,718.51	7,091.26	6,868.85	222.41	31.884 SF		
6,750.00	6,579.76	5,147.00	5,075.51	30.15	253.82	157.56	120.00	-6,718.51	7,120.51	6,897.34	223.17	31.907		
6,800.00	6,623.27	5,147.00	5,075.51	30.36	253.82	161.93	120.00	-6,718.51	7,153.03	6,929.18	223.85	31.954		
6,850.00	6,664.95	5,147.00	5,075.51	30.57	253.82	165.54	120.00	-6,718.51	7,188.58	6,964.11	224.47	32.025		
6,900.00	6,704.53	5,147.00	5,075.51	30.78	253.82	168.70	120.00	-6,718.51	7,226.90	7,001.89	225.01	32.119		
6,950.00	6,741.79	5,147.00	5,075.51	30.98	253.82	171.68	120.00	-6,718.51	7,267.70	7,042.23	225.47	32.234		
7,000.00	6,776.48	5,147.00	5,075.51	31.17	253.82	174.71	120.00	-6,718.51	7,310.69	7,084.85	225.85	32.370		
7,050.00	6,808.39	5,147.00	5,075.51	31.36	253.82	178.10	120.00	-6,718.51	7,355.58	7,129.44	226.15	32.525		
7,100.00	6,837.34	5,147.00	5,075.51	31.54	253.82	-177.66	120.00	-6,718.51	7,402.06	7,175.69	226.37	32.699		
7,150.00	6,863.13	5,147.00	5,075.51	31.73	253.82	-171.64	120.00	-6,718.51	7,449.81	7,223.29	226.52	32.888		
7,200.00	6,885.61	5,147.00	5,075.51	31.91	253.82	-161.74	120.00	-6,718.51	7,498.51	7,271.93	226.59	33.093		
7,250.00	6,904.64	5,147.00	5,075.51	32.10	253.82	-142.61	120.00	-6,718.51	7,547.86	7,321.27	226.59	33.311		
7,300.00	6,920.10	5,147.00	5,075.51	32.29	253.82	-105.98	120.00	-6,718.51	7,597.53	7,371.02	226.51	33.541		
7,350.00	6,931.91	5,147.00	5,075.51	32.48	253.82	-67.90	120.00	-6,718.51	7,647.22	7,420.85	226.37	33.782		
7,400.00	6,939.97	5,147.00	5,075.51	32.68	253.82	-47.66	120.00	-6,718.51	7,696.62	7,470.46	226.17	34.031		
7,450.00	6,944.26	5,147.00	5,075.51	32.89	253.82	-37.67	120.00	-6,718.51	7,745.44	7,519.54	225.90	34.287		
7,481.69	6,945.00	5,147.00	5,075.51	33.03	253.82	-33.82	120.00	-6,718.51	7,775.95	7,550.25	225.70	34.452		
7,500.00	6,944.99	5,147.00	5,075.51	33.12	253.82	-33.82	120.00	-6,718.51	7,793.47	7,567.88	225.58	34.548		
7,600.00	6,944.91	5,147.00	5,075.51	33.60	253.82	-33.82	120.00	-6,718.51	7,889.19	7,664.24	224.95	35.071		
7,700.00	6,944.84	5,147.00	5,075.51	34.17	253.82	-33.82	120.00	-6,718.51	7,985.02	7,760.69	224.33	35.595		
7,800.00	6,944.76	5,147.00	5,075.51	34.80	253.82	-33.82	120.00	-6,718.51	8,080.94	7,857.22	223.73	36.120		
7,900.00	6,944.69	5,147.00	5,075.51	35.49	253.82	-33.82	120.00	-6,718.51	8,176.97	7,953.83	223.14	36.645		
8,000.00	6,944.61	5,147.00	5,075.51	36.25	253.82	-33.82	120.00	-6,718.51	8,273.09	8,050.52	222.57	37.171		
8,100.00	6,944.54	5,147.00	5,075.51	37.07	253.82	-33.82	120.00	-6,718.51	8,369.30	8,147.29	222.01	37.698		
8,200.00	6,944.46	5,147.00	5,075.51	37.94	253.82	-33.82	120.00	-6,718.51	8,465.60	8,244.13	221.47	38.225		
8,300.00	6,944.39	5,147.00	5,075.51	38.86	253.82	-33.82	120.00	-6,718.51	8,561.98	8,341.04	220.94	38.752		
8,400.00	6,944.31	5,147.00	5,075.51	39.83	253.82	-33.82	120.00	-6,718.51	8,658.45	8,438.02	220.43	39.280		
8,500.00	6,944.23	5,147.00	5,075.51	40.84	253.82	-33.82	120.00	-6,718.51	8,754.99	8,535.06	219.93	39.809		
8,600.00	6,944.16	5,147.00	5,075.51	41.89	253.82	-33.82	120.00	-6,718.51	8,851.61	8,632.17	219.44	40.338		
8,700.00	6,944.08	5,147.00	5,075.51	42.98	253.82	-33.82	120.00	-6,718.51	8,948.31	8,729.35	218.96	40.867		
8,800.00	6,944.01	5,147.00	5,075.51	44.10	253.82	-33.82	120.00	-6,718.51	9,045.07	8,826.58	218.50	41.396		
8,900.00	6,943.93	5,147.00	5,075.51	45.25	253.82	-33.82	120.00	-6,718.51	9,141.91	8,923.87	218.05	41.926		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066M - OH - OH-SVY											Offset Site Error:	0.00 usft
Survey Program: 74-MWD OWSG Rev5											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
				(usft)	(usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
9,000.00	6,943.86	5,147.00	5,075.51	46.43	253.82	-33.82	120.00	-6,718.51	9,238.82	9,021.21	217.61	42.457
9,100.00	6,943.78	5,147.00	5,075.51	47.63	253.82	-33.82	120.00	-6,718.51	9,335.79	9,118.61	217.18	42.987
9,200.00	6,943.71	5,147.00	5,075.51	48.86	253.82	-33.82	120.00	-6,718.51	9,432.82	9,216.06	216.76	43.518
9,300.00	6,943.63	5,147.00	5,075.51	50.11	253.82	-33.82	120.00	-6,718.51	9,529.91	9,313.56	216.35	44.049
9,400.00	6,943.56	5,147.00	5,075.51	51.38	253.82	-33.82	120.00	-6,718.51	9,627.07	9,411.12	215.95	44.580
9,500.00	6,943.48	5,147.00	5,075.51	52.66	253.82	-33.82	120.00	-6,718.51	9,724.28	9,508.72	215.56	45.111
9,600.00	6,943.41	5,147.00	5,075.51	53.97	253.82	-33.82	120.00	-6,718.51	9,821.55	9,606.36	215.18	45.643
9,700.00	6,943.33	5,147.00	5,075.51	55.29	253.82	-33.82	120.00	-6,718.51	9,918.87	9,704.05	214.81	46.175
9,800.00	6,943.26	5,147.00	5,075.51	56.63	253.82	-33.82	120.00	-6,718.51	10,016.24	9,801.79	214.45	46.706
9,900.00	6,943.18	5,147.00	5,075.51	57.98	253.82	-33.82	120.00	-6,718.51	10,113.67	9,899.57	214.10	47.238
10,000.00	6,943.11	5,147.00	5,075.51	59.34	253.82	-33.82	120.00	-6,718.51	10,211.14	9,997.39	213.76	47.770
10,100.00	6,943.03	5,147.00	5,075.51	60.72	253.82	-33.82	120.00	-6,718.51	10,308.67	10,095.25	213.42	48.302
10,200.00	6,942.96	5,147.00	5,075.51	62.11	253.82	-33.82	120.00	-6,718.51	10,406.24	10,193.14	213.09	48.834
10,300.00	6,942.88	5,147.00	5,075.51	63.50	253.82	-33.82	120.00	-6,718.51	10,503.85	10,291.08	212.77	49.366
10,400.00	6,942.81	5,147.00	5,075.51	64.91	253.82	-33.82	120.00	-6,718.51	10,601.51	10,389.05	212.46	49.898
10,500.00	6,942.73	5,147.00	5,075.51	66.33	253.82	-33.82	120.00	-6,718.51	10,699.22	10,487.06	212.16	50.430
10,600.00	6,942.66	5,147.00	5,075.51	67.75	253.82	-33.82	120.00	-6,718.51	10,796.97	10,585.10	211.86	50.962
10,700.00	6,942.58	5,147.00	5,075.51	69.18	253.82	-33.82	120.00	-6,718.51	10,894.75	10,683.18	211.57	51.494
10,800.00	6,942.51	5,147.00	5,075.51	70.62	253.82	-33.82	120.00	-6,718.51	10,992.58	10,781.29	211.29	52.026
10,900.00	6,942.43	5,147.00	5,075.51	72.07	253.82	-33.82	120.00	-6,718.51	11,090.45	10,879.43	211.01	52.558
11,000.00	6,942.36	5,147.00	5,075.51	73.52	253.82	-33.82	120.00	-6,718.51	11,188.35	10,977.60	210.74	53.090
11,100.00	6,942.28	5,147.00	5,075.51	74.98	253.82	-33.82	120.00	-6,718.51	11,286.29	11,075.81	210.48	53.621
11,200.00	6,942.21	5,147.00	5,075.51	76.45	253.82	-33.82	120.00	-6,718.51	11,384.26	11,174.04	210.23	54.153
11,300.00	6,942.13	5,147.00	5,075.51	77.92	253.82	-33.82	120.00	-6,718.51	11,482.28	11,272.30	209.97	54.684
11,400.00	6,942.06	5,147.00	5,075.51	79.40	253.82	-33.82	120.00	-6,718.51	11,580.32	11,370.59	209.73	55.215
11,500.00	6,941.98	5,147.00	5,075.51	80.88	253.82	-33.82	120.00	-6,718.51	11,678.40	11,468.91	209.49	55.746
11,600.00	6,941.91	5,147.00	5,075.51	82.36	253.82	-33.82	120.00	-6,718.51	11,776.51	11,567.25	209.26	56.277
11,700.00	6,941.83	5,147.00	5,075.51	83.85	253.82	-33.82	120.00	-6,718.51	11,874.65	11,665.62	209.03	56.808
11,800.00	6,941.76	5,147.00	5,075.51	85.35	253.82	-33.82	120.00	-6,718.51	11,972.82	11,764.01	208.81	57.338
11,900.00	6,941.68	5,147.00	5,075.51	86.85	253.82	-33.82	120.00	-6,718.51	12,071.03	11,862.43	208.59	57.869
12,000.00	6,941.60	5,147.00	5,075.51	88.35	253.82	-33.82	120.00	-6,718.51	12,169.26	11,960.88	208.38	58.399
12,100.00	6,941.53	5,147.00	5,075.51	89.85	253.82	-33.82	120.00	-6,718.51	12,267.52	12,059.34	208.18	58.928
12,200.00	6,941.45	5,147.00	5,075.51	91.36	253.82	-33.82	120.00	-6,718.51	12,365.81	12,157.83	207.98	59.458
12,300.00	6,941.38	5,147.00	5,075.51	92.88	253.82	-33.82	120.00	-6,718.51	12,464.12	12,256.34	207.78	59.987
12,400.00	6,941.30	5,147.00	5,075.51	94.39	253.82	-33.82	120.00	-6,718.51	12,562.47	12,354.88	207.59	60.516
12,500.00	6,941.23	5,147.00	5,075.51	95.91	253.82	-33.82	120.00	-6,718.51	12,660.83	12,453.43	207.40	61.045
12,600.00	6,941.15	4,601.40	4,580.70	97.43	177.14	-24.01	-87.67	-6,624.05	12,720.56	12,563.39	157.17	80.933
12,700.00	6,941.08	4,596.77	4,576.33	98.95	176.49	-23.94	-89.08	-6,623.41	12,818.46	12,661.78	156.67	81.817
12,800.00	6,941.00	4,592.17	4,572.00	100.48	175.85	-23.88	-90.48	-6,622.78	12,916.38	12,760.20	156.18	82.703
12,900.00	6,940.93	4,587.61	4,567.70	102.01	175.21	-23.81	-91.86	-6,622.15	13,014.32	12,858.63	155.69	83.590
13,000.00	6,940.85	4,583.08	4,563.43	103.54	174.57	-23.75	-93.22	-6,621.53	13,112.30	12,957.08	155.21	84.479
13,100.00	6,940.78	4,578.60	4,559.20	105.07	173.94	-23.69	-94.57	-6,620.92	13,210.29	13,055.55	154.74	85.369
13,200.00	6,940.70	4,574.15	4,555.00	106.61	173.32	-23.62	-95.89	-6,620.31	13,308.32	13,154.03	154.28	86.260
13,300.00	6,940.63	4,569.74	4,550.83	108.14	172.70	-23.56	-97.21	-6,619.72	13,406.36	13,252.54	153.83	87.153
13,400.00	6,940.55	4,565.37	4,546.69	109.68	172.09	-23.50	-98.50	-6,619.13	13,504.43	13,351.06	153.38	88.047
13,500.00	6,940.48	4,561.03	4,542.59	111.22	171.48	-23.44	-99.78	-6,618.55	13,602.53	13,449.59	152.94	88.943
13,600.00	6,940.40	4,556.73	4,538.52	112.77	170.88	-23.38	-101.04	-6,617.97	13,700.64	13,548.14	152.50	89.839
13,700.00	6,940.33	4,552.47	4,534.48	114.31	170.28	-23.32	-102.29	-6,617.41	13,798.78	13,646.71	152.07	90.737
13,800.00	6,940.25	4,548.23	4,530.47	115.86	169.69	-23.26	-103.52	-6,616.85	13,896.94	13,745.29	151.65	91.637
13,900.00	6,940.18	4,544.04	4,526.49	117.41	169.10	-23.20	-104.74	-6,616.29	13,995.13	13,843.89	151.24	92.537
14,000.00	6,940.10	4,539.88	4,522.55	118.95	168.51	-23.15	-105.95	-6,615.74	14,093.33	13,942.50	150.83	93.438
14,100.00	6,940.03	4,535.75	4,518.63	120.51	167.94	-23.09	-107.13	-6,615.20	14,191.55	14,041.13	150.43	94.341

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066M - OH - OH-SVY												Offset Site Error:	0.00 usft
Survey Program: 74-MWD OWSG Rev5												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,400.00	6,936.04	4,356.47	4,346.94	203.88	142.84	-20.85	-154.05	-6,593.89	19,419.77	19,283.86	135.92	142.880	
19,500.00	6,935.97	4,353.70	4,344.27	205.47	142.45	-20.82	-154.70	-6,593.59	19,518.73	19,382.99	135.74	143.795	
19,600.00	6,935.89	4,350.94	4,341.61	207.06	142.07	-20.78	-155.35	-6,593.30	19,617.71	19,482.14	135.57	144.710	
19,700.00	6,935.82	4,348.21	4,338.97	208.64	141.69	-20.75	-155.99	-6,593.01	19,716.69	19,581.29	135.39	145.624	
19,800.00	6,935.74	4,345.50	4,336.34	210.23	141.31	-20.72	-156.62	-6,592.72	19,815.67	19,680.45	135.23	146.538	
19,900.00	6,935.67	4,342.80	4,333.74	211.82	140.93	-20.69	-157.25	-6,592.43	19,914.67	19,779.61	135.06	147.451	
20,000.00	6,935.59	4,340.12	4,331.15	213.41	140.56	-20.66	-157.87	-6,592.15	20,013.68	19,878.78	134.90	148.364	
20,100.00	6,935.52	4,337.46	4,328.57	214.99	140.19	-20.63	-158.48	-6,591.87	20,112.69	19,977.95	134.73	149.277	
20,200.00	6,935.44	4,334.82	4,326.01	216.58	139.82	-20.60	-159.09	-6,591.60	20,211.71	20,077.14	134.58	150.188	
20,300.00	6,935.37	4,332.19	4,323.47	218.17	139.45	-20.57	-159.70	-6,591.32	20,310.74	20,176.32	134.42	151.099	
20,400.00	6,935.29	4,329.58	4,320.95	219.76	139.08	-20.54	-160.29	-6,591.05	20,409.78	20,275.51	134.27	152.010	
20,500.00	6,935.22	4,326.99	4,318.44	221.35	138.72	-20.52	-160.88	-6,590.79	20,508.82	20,374.71	134.12	152.920	
20,600.00	6,935.14	4,324.42	4,315.95	222.94	138.36	-20.49	-161.47	-6,590.52	20,607.88	20,473.91	133.97	153.829	
20,700.00	6,935.07	4,321.86	4,313.47	224.53	138.01	-20.46	-162.05	-6,590.26	20,706.94	20,573.12	133.82	154.737	
20,789.75	6,935.00	4,319.58	4,311.26	225.95	137.69	-20.43	-162.56	-6,590.02	20,795.85	20,662.16	133.69	155.552	

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 067 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program:		328-A027Ua_INC-ONLY						Rule Assigned:				Offset Well Error:	0.00 usft	
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance			Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	35.00	35.00	0.00	0.34	-85.96	733.34	-10,383.76	10,409.63					
100.00	100.00	135.00	135.00	0.25	1.33	-85.96	733.34	-10,383.76	10,409.63	10,408.05	1.58	6,585.165		
200.00	200.00	235.00	235.00	0.61	2.31	-85.96	733.34	-10,383.76	10,409.63	10,406.70	2.92	3,559.871		
300.00	300.00	335.01	335.00	0.97	3.37	-85.96	733.34	-10,383.76	10,409.63	10,405.29	4.34	2,400.365		
400.00	400.00	435.01	435.00	1.33	5.34	-85.96	733.34	-10,383.76	10,409.63	10,402.96	6.67	1,561.808		
500.00	500.00	535.01	535.00	1.68	7.31	-85.96	733.34	-10,383.76	10,409.63	10,400.63	8.99	1,157.456	CC	
600.00	599.98	636.18	636.17	2.03	9.30	94.92	734.10	-10,383.76	10,409.83	10,398.50	11.33	918.981		
700.00	699.84	738.05	738.03	2.36	11.31	94.94	733.80	-10,383.76	10,410.26	10,396.59	13.67	761.725		
800.00	799.45	834.50	834.45	2.71	13.20	94.97	733.34	-10,383.76	10,410.98	10,395.08	15.90	654.711		
900.00	898.70	933.75	933.70	3.06	15.09	95.02	733.34	-10,383.76	10,412.05	10,393.91	18.14	573.837		
1,000.00	997.47	1,032.52	1,032.47	3.43	16.97	95.07	733.34	-10,383.76	10,413.44	10,393.05	20.39	510.634		
1,100.00	1,095.62	1,131.91	1,131.85	3.82	18.85	95.15	734.12	-10,383.76	10,415.23	10,392.56	22.67	459.404		
1,180.06	1,173.69	1,211.70	1,211.64	4.14	20.37	95.21	733.91	-10,383.76	10,416.86	10,392.35	24.51	424.947		
1,200.00	1,193.07	1,231.53	1,231.47	4.22	20.75	95.24	733.83	-10,383.76	10,417.29	10,392.32	24.97	417.143		
1,300.00	1,290.27	1,325.35	1,325.27	4.65	22.53	95.35	733.34	-10,383.76	10,419.49	10,392.31	27.18	383.373	ES	
1,400.00	1,387.46	1,422.54	1,422.46	5.08	24.32	95.48	733.34	-10,383.76	10,421.77	10,392.37	29.40	354.498		
1,500.00	1,484.66	1,519.74	1,519.66	5.52	26.11	95.61	733.34	-10,383.76	10,424.11	10,392.48	31.63	329.607		
1,600.00	1,581.85	1,617.65	1,617.56	5.97	27.91	95.73	733.87	-10,383.76	10,426.54	10,392.67	33.87	307.827		
1,700.00	1,679.05	1,716.47	1,716.39	6.42	29.73	95.86	733.71	-10,383.76	10,428.97	10,392.83	36.14	288.585		
1,800.00	1,776.25	1,815.39	1,815.30	6.87	31.55	95.99	733.38	-10,383.76	10,431.43	10,393.02	38.41	271.580		
1,900.00	1,873.44	1,908.54	1,908.44	7.33	33.26	96.10	733.34	-10,383.76	10,433.97	10,393.39	40.58	257.106		
2,000.00	1,970.64	2,005.74	2,005.64	7.78	35.06	96.23	733.34	-10,383.76	10,436.57	10,393.74	42.83	243.666		
2,100.00	2,067.83	2,103.27	2,103.17	8.24	36.85	96.36	733.91	-10,383.76	10,439.28	10,394.19	45.09	231.527		
2,200.00	2,165.03	2,202.22	2,202.12	8.71	38.68	96.48	733.80	-10,383.76	10,441.97	10,394.60	47.37	220.416		
2,300.00	2,262.22	2,301.25	2,301.15	9.17	40.50	96.61	733.52	-10,383.76	10,444.70	10,395.04	49.66	210.317		
2,400.00	2,359.42	2,394.54	2,394.42	9.63	42.23	96.73	733.34	-10,383.76	10,447.49	10,395.64	51.85	201.512		
2,500.00	2,456.61	2,491.74	2,491.61	10.10	44.02	96.85	733.34	-10,383.76	10,450.35	10,396.25	54.10	193.156		
2,600.00	2,553.81	2,588.93	2,588.81	10.57	45.81	96.98	733.34	-10,383.76	10,453.26	10,396.90	56.36	185.467		
2,700.00	2,651.01	2,687.96	2,687.84	11.03	47.64	97.11	733.83	-10,383.76	10,456.28	10,397.62	58.65	178.268		
2,800.00	2,748.20	2,787.24	2,787.11	11.50	49.47	97.23	733.58	-10,383.76	10,459.27	10,398.32	60.95	171.595		
2,900.00	2,845.40	2,880.54	2,880.40	11.97	51.21	97.35	733.34	-10,383.76	10,462.31	10,399.15	63.16	165.650		
3,000.00	2,942.59	2,977.73	2,977.59	12.44	53.06	97.47	733.34	-10,383.76	10,465.43	10,399.95	65.48	159.835		
3,100.00	3,039.79	3,074.93	3,074.79	12.91	54.91	97.60	733.34	-10,383.76	10,468.60	10,400.81	67.79	154.417		
3,200.00	3,136.98	3,173.97	3,173.82	13.38	56.80	97.73	733.82	-10,383.76	10,471.88	10,401.73	70.15	149.284		
3,300.00	3,234.18	3,273.53	3,273.39	13.85	58.69	97.85	733.59	-10,383.76	10,475.13	10,402.62	72.51	144.463		
3,400.00	3,331.38	3,366.54	3,366.38	14.32	60.50	97.97	733.34	-10,383.76	10,478.43	10,403.64	74.78	140.117		
3,500.00	3,428.57	3,463.74	3,463.57	14.79	62.46	98.09	733.34	-10,383.76	10,481.80	10,404.59	77.22	135.743		
3,600.00	3,525.77	3,562.32	3,562.15	15.26	64.46	98.22	733.97	-10,383.76	10,485.32	10,405.64	79.68	131.592		
3,700.00	3,622.96	3,664.37	3,664.20	15.73	66.52	98.35	733.69	-10,383.76	10,488.76	10,406.55	82.21	127.580		
3,800.00	3,720.16	3,755.37	3,755.16	16.20	68.38	98.47	733.34	-10,383.76	10,492.25	10,407.71	84.54	124.106		
3,900.00	3,817.35	3,852.57	3,852.35	16.68	70.42	98.59	733.34	-10,383.76	10,495.84	10,408.79	87.04	120.580		
4,000.00	3,914.55	3,949.76	3,949.55	17.15	72.45	98.71	733.34	-10,383.76	10,499.47	10,409.93	89.55	117.252		
4,100.00	4,011.74	4,050.35	4,050.12	17.62	74.55	98.85	734.39	-10,383.76	10,503.31	10,411.19	92.12	114.018		
4,200.00	4,108.94	4,152.91	4,152.68	18.09	76.70	98.97	733.98	-10,383.76	10,507.00	10,412.26	94.73	110.910		
4,300.00	4,206.14	4,241.43	4,241.14	18.57	78.55	99.08	733.34	-10,383.76	10,510.69	10,413.64	97.05	108.297		
4,400.00	4,303.33	4,338.63	4,338.33	19.04	80.59	99.20	733.34	-10,383.76	10,514.53	10,414.97	99.57	105.604		
4,500.00	4,400.53	4,435.82	4,435.53	19.51	82.63	99.33	733.34	-10,383.76	10,518.42	10,416.35	102.08	103.045		
4,600.00	4,497.72	4,534.67	4,534.36	19.99	84.71	99.46	734.48	-10,383.76	10,522.54	10,417.92	104.62	100.577		
4,700.00	4,594.92	4,637.50	4,637.19	20.46	86.87	99.59	734.20	-10,383.76	10,526.50	10,419.25	107.25	98.148		
4,800.00	4,692.11	4,740.50	4,740.18	20.93	89.03	99.71	733.56	-10,383.76	10,530.45	10,420.57	109.88	95.832		
4,900.00	4,789.31	4,824.68	4,824.31	21.41	90.81	99.82	733.34	-10,383.76	10,534.51	10,422.38	112.13	93.953		
5,000.00	4,886.51	4,921.88	4,921.51	21.88	92.85	99.94	733.34	-10,383.76	10,538.66	10,424.01	114.64	91.926		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 067 - OH - OH-INC											Offset Site Error:	0.00 usft
Survey Program: 328-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
5,100.00	4,983.70	5,019.07	5,018.70	22.35	94.90	100.06	733.34	-10,383.76	10,542.85	10,425.69	117.16	89.988
5,200.00	5,080.90	5,119.62	5,119.24	22.83	97.02	100.20	734.55	-10,383.76	10,547.30	10,427.56	119.75	88.080
5,300.00	5,178.09	5,222.40	5,222.01	23.30	99.19	100.32	734.19	-10,383.76	10,551.55	10,429.17	122.38	86.219
5,400.00	5,275.29	5,325.33	5,324.93	23.77	101.36	100.45	733.52	-10,383.76	10,555.79	10,430.78	125.02	84.433
5,500.00	5,372.48	5,407.95	5,407.48	24.25	103.10	100.55	733.34	-10,383.76	10,560.16	10,432.93	127.23	83.000
5,600.00	5,469.68	5,505.14	5,504.68	24.72	105.15	100.67	733.34	-10,383.76	10,564.61	10,434.86	129.75	81.422
5,700.00	5,566.87	5,602.75	5,602.28	25.20	107.21	100.80	734.44	-10,383.76	10,569.30	10,437.02	132.28	79.901
5,800.00	5,664.07	5,706.85	5,706.37	25.67	109.41	100.93	734.23	-10,383.76	10,573.82	10,438.88	134.95	78.355
5,900.00	5,761.27	5,811.14	5,810.65	26.14	111.61	101.06	733.64	-10,383.76	10,578.33	10,440.71	137.62	76.868
6,000.00	5,858.46	5,894.00	5,893.46	26.62	113.36	101.16	733.34	-10,383.76	10,582.92	10,443.08	139.84	75.680
6,100.00	5,955.66	5,991.20	5,990.66	27.09	115.42	101.28	733.34	-10,383.76	10,587.62	10,445.26	142.36	74.371
6,200.00	6,052.85	6,088.39	6,087.85	27.57	117.48	101.40	733.34	-10,383.76	10,592.38	10,447.49	144.89	73.108
6,300.00	6,150.05	6,185.59	6,185.05	28.04	119.54	101.53	733.34	-10,383.76	10,597.18	10,449.77	147.41	71.888
6,400.00	6,247.24	6,282.78	6,282.24	28.52	121.59	101.65	733.34	-10,383.76	10,602.03	10,452.10	149.94	70.710
6,490.87	6,335.57	6,371.11	6,370.57	28.95	123.46	101.76	733.34	-10,383.76	10,606.49	10,454.26	152.23	69.673
6,500.00	6,344.44	6,379.98	6,379.44	28.99	123.65	105.15	733.34	-10,383.76	10,607.00	10,454.54	152.46	69.572
6,550.00	6,392.91	6,428.45	6,427.91	29.23	124.68	122.37	733.34	-10,383.76	10,612.12	10,458.40	153.72	69.036
6,600.00	6,440.98	6,476.52	6,475.98	29.46	125.69	136.01	733.34	-10,383.76	10,621.09	10,466.12	154.96	68.540
6,650.00	6,488.34	6,523.87	6,523.34	29.70	126.70	146.05	733.34	-10,383.76	10,633.85	10,477.67	156.18	68.087
6,700.00	6,534.69	6,570.23	6,569.69	29.92	127.68	153.37	733.34	-10,383.76	10,650.34	10,492.97	157.37	67.678
6,750.00	6,579.76	6,615.30	6,614.76	30.15	128.63	158.85	733.34	-10,383.76	10,670.44	10,511.92	158.52	67.314
6,800.00	6,623.27	6,658.81	6,658.27	30.36	129.55	163.10	733.34	-10,383.76	10,694.03	10,534.41	159.62	66.997
6,850.00	6,664.95	6,700.48	6,699.95	30.57	130.43	166.54	733.34	-10,383.76	10,720.96	10,560.29	160.67	66.727
6,900.00	6,704.53	6,740.07	6,739.53	30.78	131.27	169.45	733.34	-10,383.76	10,751.06	10,589.40	161.66	66.504
6,950.00	6,741.79	6,777.33	6,776.79	30.98	132.06	172.05	733.34	-10,383.76	10,784.15	10,621.56	162.59	66.329
7,000.00	6,776.48	6,812.02	6,811.48	31.17	132.79	174.47	733.34	-10,383.76	10,820.22	10,656.58	163.44	66.202
7,050.00	6,808.39	6,843.93	6,843.39	31.36	133.47	176.89	733.34	-10,383.76	10,858.44	10,694.23	164.22	66.122
7,100.00	6,837.34	6,872.87	6,872.34	31.54	134.08	179.45	733.34	-10,383.76	10,899.19	10,734.28	164.91	66.090 SF
7,150.00	6,863.13	6,898.67	6,898.13	31.73	134.63	-177.64	733.34	-10,383.76	10,942.01	10,776.49	165.53	66.105
7,200.00	6,885.61	6,921.15	6,920.61	31.91	135.10	-174.11	733.34	-10,383.76	10,986.64	10,820.59	166.05	66.165
7,250.00	6,904.64	6,940.18	6,939.64	32.10	135.51	-169.45	733.34	-10,383.76	11,032.79	10,866.31	166.48	66.270
7,300.00	6,920.10	6,955.64	6,955.10	32.29	135.83	-162.80	733.34	-10,383.76	11,080.20	10,913.38	166.82	66.420
7,350.00	6,931.91	6,967.44	6,966.91	32.48	136.08	-152.45	733.34	-10,383.76	11,128.56	10,961.49	167.07	66.611
7,400.00	6,939.97	6,975.51	6,974.97	32.68	136.25	-135.28	733.34	-10,383.76	11,177.57	11,010.36	167.22	66.844
7,450.00	6,944.26	6,979.80	6,979.26	32.89	136.35	-108.69	733.34	-10,383.76	11,226.95	11,059.68	167.28	67.116
7,481.69	6,945.00	6,980.54	6,980.00	33.03	136.36	-89.72	733.34	-10,383.76	11,258.29	11,091.03	167.26	67.308
7,500.00	6,944.99	6,980.52	6,979.99	33.12	136.36	-89.72	733.34	-10,383.76	11,276.40	11,109.15	167.25	67.423
7,600.00	6,944.91	6,980.45	6,979.91	33.60	136.36	-89.71	733.34	-10,383.76	11,375.27	11,208.11	167.16	68.052
7,700.00	6,944.84	6,980.37	6,979.84	34.17	136.36	-89.71	733.34	-10,383.76	11,474.16	11,307.10	167.07	68.680
7,800.00	6,944.76	6,980.30	6,979.76	34.80	136.36	-89.71	733.34	-10,383.76	11,573.08	11,406.09	166.98	69.307
7,900.00	6,944.69	6,980.22	6,979.69	35.49	136.35	-89.71	733.34	-10,383.76	11,672.01	11,505.11	166.90	69.934
8,000.00	6,944.61	6,980.15	6,979.61	36.25	136.35	-89.70	733.34	-10,383.76	11,770.96	11,604.13	166.82	70.559
8,100.00	6,944.54	6,980.07	6,979.54	37.07	136.35	-89.70	733.34	-10,383.76	11,869.92	11,703.17	166.75	71.184
8,200.00	6,944.46	6,980.00	6,979.46	37.94	136.35	-89.70	733.34	-10,383.76	11,968.91	11,802.23	166.68	71.808
8,300.00	6,944.39	6,979.92	6,979.39	38.86	136.35	-89.70	733.34	-10,383.76	12,067.91	11,901.29	166.61	72.432
8,400.00	6,944.31	6,979.85	6,979.31	39.83	136.35	-89.69	733.34	-10,383.76	12,166.92	12,000.38	166.55	73.054
8,500.00	6,944.23	6,979.77	6,979.23	40.84	136.35	-89.69	733.34	-10,383.76	12,265.96	12,099.47	166.49	73.676
8,600.00	6,944.16	6,979.70	6,979.16	41.89	136.34	-89.69	733.34	-10,383.76	12,365.00	12,198.58	166.43	74.297
8,700.00	6,944.08	6,979.62	6,979.08	42.98	136.34	-89.69	733.34	-10,383.76	12,464.07	12,297.70	166.37	74.917
8,800.00	6,944.01	6,979.55	6,979.01	44.10	136.34	-89.68	733.34	-10,383.76	12,563.15	12,396.83	166.32	75.537
8,900.00	6,943.93	6,979.47	6,978.93	45.25	136.34	-89.68	733.34	-10,383.76	12,662.24	12,495.97	166.27	76.155
9,000.00	6,943.86	6,979.40	6,978.86	46.43	136.34	-89.68	733.34	-10,383.76	12,761.34	12,595.12	166.22	76.773

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 067 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 328-A027Ua_INC-ONLY				Rule Assigned:								Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor
9,100.00	6,943.78	6,979.32	6,978.78	47.63	136.34	-89.68	733.34	-10,383.76	12,860.47	12,694.29	166.18	77.390	
9,200.00	6,943.71	6,979.25	6,978.71	48.86	136.33	-89.67	733.34	-10,383.76	12,959.60	12,793.46	166.14	78.006	
9,300.00	6,943.63	6,979.17	6,978.63	50.11	136.33	-89.67	733.34	-10,383.76	13,058.75	12,892.65	166.10	78.621	
9,400.00	6,943.56	6,979.10	6,978.56	51.38	136.33	-89.67	733.34	-10,383.76	13,157.91	12,991.85	166.06	79.235	
9,500.00	6,943.48	6,979.02	6,978.48	52.66	136.33	-89.67	733.34	-10,383.76	13,257.08	13,091.05	166.03	79.849	
9,600.00	6,943.41	6,978.95	6,978.41	53.97	136.33	-89.66	733.34	-10,383.76	13,356.27	13,190.27	166.00	80.461	
9,700.00	6,943.33	6,978.87	6,978.33	55.29	136.33	-89.66	733.34	-10,383.76	13,455.46	13,289.50	165.97	81.073	
9,800.00	6,943.26	6,978.80	6,978.26	56.63	136.32	-89.66	733.34	-10,383.76	13,554.67	13,388.73	165.94	81.684	
9,900.00	6,943.18	6,978.72	6,978.18	57.98	136.32	-89.66	733.34	-10,383.76	13,653.89	13,487.98	165.92	82.294	
10,000.00	6,943.11	6,978.65	6,978.11	59.34	136.32	-89.65	733.34	-10,383.76	13,753.13	13,587.23	165.89	82.903	
10,100.00	6,943.03	6,978.57	6,978.03	60.72	136.32	-89.65	733.34	-10,383.76	13,852.37	13,686.49	165.87	83.512	
10,200.00	6,942.96	6,978.50	6,977.96	62.11	136.32	-89.65	733.34	-10,383.76	13,951.62	13,785.77	165.86	84.119	
10,300.00	6,942.88	6,978.42	6,977.88	63.50	136.32	-89.65	733.34	-10,383.76	14,050.89	13,885.05	165.84	84.725	
10,400.00	6,942.81	6,978.35	6,977.81	64.91	136.31	-89.64	733.34	-10,383.76	14,150.16	13,984.33	165.83	85.331	
10,500.00	6,942.73	6,978.27	6,977.73	66.33	136.31	-89.64	733.34	-10,383.76	14,249.45	14,083.63	165.82	85.936	
10,600.00	6,942.66	6,978.19	6,977.66	67.75	136.31	-89.64	733.34	-10,383.76	14,348.74	14,182.94	165.81	86.539	
10,700.00	6,942.58	6,978.12	6,977.58	69.18	136.31	-89.64	733.34	-10,383.76	14,448.05	14,282.25	165.80	87.142	
10,800.00	6,942.51	6,978.04	6,977.51	70.62	136.31	-89.63	733.34	-10,383.76	14,547.36	14,381.57	165.79	87.744	
10,900.00	6,942.43	6,977.97	6,977.43	72.07	136.31	-89.63	733.34	-10,383.76	14,646.68	14,480.89	165.79	88.345	
11,000.00	6,942.36	6,977.89	6,977.36	73.52	136.31	-89.63	733.34	-10,383.76	14,746.02	14,580.23	165.79	88.945	
11,100.00	6,942.28	6,977.82	6,977.28	74.98	136.30	-89.63	733.34	-10,383.76	14,845.36	14,679.57	165.79	89.544	
11,200.00	6,942.21	6,977.74	6,977.21	76.45	136.30	-89.62	733.34	-10,383.76	14,944.71	14,778.92	165.79	90.142	
11,300.00	6,942.13	6,977.67	6,977.13	77.92	136.30	-89.62	733.34	-10,383.76	15,044.07	14,878.27	165.79	90.740	
11,400.00	6,942.06	6,977.59	6,977.06	79.40	136.30	-89.62	733.34	-10,383.76	15,143.43	14,977.64	165.80	91.336	
11,500.00	6,941.98	6,977.52	6,976.98	80.88	136.30	-89.62	733.34	-10,383.76	15,242.81	15,077.00	165.81	91.931	
11,600.00	6,941.91	6,977.44	6,976.91	82.36	136.30	-89.61	733.34	-10,383.76	15,342.19	15,176.38	165.82	92.526	
11,700.00	6,941.83	6,977.37	6,976.83	83.85	136.29	-89.61	733.34	-10,383.76	15,441.59	15,275.76	165.83	93.119	
11,800.00	6,941.76	6,977.29	6,976.76	85.35	136.29	-89.61	733.34	-10,383.76	15,540.98	15,375.15	165.84	93.712	
11,900.00	6,941.68	6,977.22	6,976.68	86.85	136.29	-89.61	733.34	-10,383.76	15,640.39	15,474.54	165.85	94.303	
12,000.00	6,941.60	6,977.14	6,976.60	88.35	136.29	-89.60	733.34	-10,383.76	15,739.81	15,573.94	165.87	94.894	
12,100.00	6,941.53	6,977.07	6,976.53	89.85	136.29	-89.60	733.34	-10,383.76	15,839.23	15,673.34	165.88	95.484	
12,200.00	6,941.45	6,976.99	6,976.45	91.36	136.29	-89.60	733.34	-10,383.76	15,938.66	15,772.76	165.90	96.072	
12,300.00	6,941.38	6,976.92	6,976.38	92.88	136.28	-89.59	733.34	-10,383.76	16,038.09	15,872.17	165.92	96.660	
12,400.00	6,941.30	6,976.84	6,976.30	94.39	136.28	-89.59	733.34	-10,383.76	16,137.54	15,971.59	165.94	97.247	
12,500.00	6,941.23	6,976.77	6,976.23	95.91	136.28	-89.59	733.34	-10,383.76	16,236.99	16,071.02	165.97	97.833	
12,600.00	6,941.15	6,976.69	6,976.15	97.43	136.28	-89.59	733.34	-10,383.76	16,336.45	16,170.45	165.99	98.417	
12,700.00	6,941.08	6,976.62	6,976.08	98.95	136.28	-89.58	733.34	-10,383.76	16,435.91	16,269.89	166.02	99.001	
12,800.00	6,941.00	6,976.54	6,976.00	100.48	136.28	-89.58	733.34	-10,383.76	16,535.38	16,369.33	166.04	99.584	
12,900.00	6,940.93	6,976.47	6,975.93	102.01	136.28	-89.58	733.34	-10,383.76	16,634.85	16,468.78	166.07	100.166	
13,000.00	6,940.85	6,976.39	6,975.85	103.54	136.27	-89.58	733.34	-10,383.76	16,734.34	16,568.23	166.10	100.747	
13,100.00	6,940.78	6,976.32	6,975.78	105.07	136.27	-89.57	733.34	-10,383.76	16,833.83	16,667.69	166.13	101.327	
13,200.00	6,940.70	6,976.24	6,975.70	106.61	136.27	-89.57	733.34	-10,383.76	16,933.32	16,767.15	166.17	101.906	
13,300.00	6,940.63	6,976.17	6,975.63	108.14	136.27	-89.57	733.34	-10,383.76	17,032.82	16,866.62	166.20	102.484	
13,400.00	6,940.55	6,976.09	6,975.55	109.68	136.27	-89.57	733.34	-10,383.76	17,132.33	16,966.09	166.24	103.061	
13,500.00	6,940.48	6,976.02	6,975.48	111.22	136.27	-89.56	733.34	-10,383.76	17,231.84	17,065.57	166.27	103.637	
13,600.00	6,940.40	6,975.94	6,975.40	112.77	136.26	-89.56	733.34	-10,383.76	17,331.36	17,165.05	166.31	104.212	
13,700.00	6,940.33	6,975.87	6,975.33	114.31	136.26	-89.56	733.34	-10,383.76	17,430.88	17,264.53	166.35	104.786	
13,800.00	6,940.25	6,975.79	6,975.25	115.86	136.26	-89.56	733.34	-10,383.76	17,530.41	17,364.02	166.39	105.359	
13,900.00	6,940.18	6,975.72	6,975.18	117.41	136.26	-89.55	733.34	-10,383.76	17,629.94	17,463.52	166.43	105.931	
14,000.00	6,940.10	6,975.64	6,975.10	118.95	136.26	-89.55	733.34	-10,383.76	17,729.48	17,563.01	166.47	106.502	
14,100.00	6,940.03	6,975.57	6,975.03	120.51	136.26	-89.55	733.34	-10,383.76	17,829.03	17,662.51	166.51	107.072	
14,200.00	6,939.95	6,975.49	6,974.95	122.06	136.25	-89.55	733.34	-10,383.76	17,928.58	17,762.02	166.56	107.641	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 067 - OH - OH-INC											Offset Site Error:	0.00 usft
Survey Program: 328-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
14,300.00	6,939.88	6,975.41	6,974.88	123.61	136.25	-89.54	733.34	-10,383.76	18,028.13	17,861.53	166.60	108.209
14,400.00	6,939.80	6,975.34	6,974.80	125.17	136.25	-89.54	733.34	-10,383.76	18,127.69	17,961.04	166.65	108.776
14,500.00	6,939.73	6,975.26	6,974.73	126.72	136.25	-89.54	733.34	-10,383.76	18,227.26	18,060.56	166.70	109.342
14,600.00	6,939.65	6,975.19	6,974.65	128.28	136.25	-89.54	733.34	-10,383.76	18,326.82	18,160.08	166.75	109.907
14,700.00	6,939.58	6,975.11	6,974.58	129.84	136.25	-89.53	733.34	-10,383.76	18,426.40	18,259.60	166.80	110.472
14,800.00	6,939.50	6,975.04	6,974.50	131.40	136.24	-89.53	733.34	-10,383.76	18,525.98	18,359.13	166.85	111.035
14,900.00	6,939.43	6,974.96	6,974.43	132.96	136.24	-89.53	733.34	-10,383.76	18,625.56	18,458.66	166.90	111.597
15,000.00	6,939.35	6,974.89	6,974.35	134.52	136.24	-89.53	733.34	-10,383.76	18,725.15	18,558.19	166.95	112.158
15,100.00	6,939.28	6,974.81	6,974.28	136.08	136.24	-89.52	733.34	-10,383.76	18,824.74	18,657.73	167.01	112.718
15,200.00	6,939.20	6,974.74	6,974.20	137.64	136.24	-89.52	733.34	-10,383.76	18,924.33	18,757.27	167.06	113.277
15,300.00	6,939.13	6,974.66	6,974.13	139.21	136.24	-89.52	733.34	-10,383.76	19,023.93	18,856.82	167.12	113.835
15,400.00	6,939.05	6,974.59	6,974.05	140.77	136.24	-89.52	733.34	-10,383.76	19,123.54	18,956.36	167.17	114.392
15,500.00	6,938.98	6,974.51	6,973.98	142.34	136.23	-89.51	733.34	-10,383.76	19,223.15	19,055.91	167.23	114.949
15,600.00	6,938.90	6,974.44	6,973.90	143.91	136.23	-89.51	733.34	-10,383.76	19,322.76	19,155.47	167.29	115.504
15,700.00	6,938.82	6,974.36	6,973.82	145.47	136.23	-89.51	733.34	-10,383.76	19,422.38	19,255.02	167.35	116.058
15,800.00	6,938.75	6,974.29	6,973.75	147.04	136.23	-89.51	733.34	-10,383.76	19,522.00	19,354.58	167.41	116.611
15,900.00	6,938.67	6,974.21	6,973.67	148.61	136.23	-89.50	733.34	-10,383.76	19,621.62	19,454.15	167.47	117.163
16,000.00	6,938.60	6,974.14	6,973.60	150.18	136.23	-89.50	733.34	-10,383.76	19,721.25	19,553.71	167.53	117.714
16,100.00	6,938.52	6,974.06	6,973.52	151.75	136.22	-89.50	733.34	-10,383.76	19,820.88	19,653.28	167.60	118.264
16,200.00	6,938.45	6,973.99	6,973.45	153.32	136.22	-89.50	733.34	-10,383.76	19,920.52	19,752.85	167.66	118.814
16,300.00	6,938.37	6,973.91	6,973.37	154.90	136.22	-89.49	733.34	-10,383.76	20,020.15	19,852.43	167.73	119.362
16,400.00	6,938.30	6,973.84	6,973.30	156.47	136.22	-89.49	733.34	-10,383.76	20,119.80	19,952.00	167.79	119.909
16,500.00	6,938.22	6,973.76	6,973.22	158.04	136.22	-89.49	733.34	-10,383.76	20,219.44	20,051.58	167.86	120.455
16,600.00	6,938.15	6,973.69	6,973.15	159.62	136.22	-89.49	733.34	-10,383.76	20,319.09	20,151.17	167.93	121.000
16,700.00	6,938.07	6,973.61	6,973.07	161.19	136.21	-89.48	733.34	-10,383.76	20,418.75	20,250.75	167.99	121.544
16,800.00	6,938.00	6,973.54	6,973.00	162.77	136.21	-89.48	733.34	-10,383.76	20,518.40	20,350.34	168.06	122.088
16,900.00	6,937.92	6,973.46	6,972.92	164.34	136.21	-89.48	733.34	-10,383.76	20,618.06	20,449.93	168.13	122.630
17,000.00	6,937.85	6,973.39	6,972.85	165.92	136.21	-89.48	733.34	-10,383.76	20,717.73	20,549.52	168.20	123.171
17,100.00	6,937.77	6,973.31	6,972.77	167.50	136.21	-89.47	733.34	-10,383.76	20,817.39	20,649.12	168.27	123.711
17,200.00	6,937.70	6,973.24	6,972.70	169.07	136.21	-89.47	733.34	-10,383.76	20,917.06	20,748.72	168.35	124.251
17,300.00	6,937.62	6,973.16	6,972.62	170.65	136.21	-89.47	733.34	-10,383.76	21,016.73	20,848.32	168.42	124.789
17,400.00	6,937.55	6,973.09	6,972.55	172.23	136.20	-89.47	733.34	-10,383.76	21,116.41	20,947.92	168.49	125.326
17,500.00	6,937.47	6,973.01	6,972.47	173.81	136.20	-89.46	733.34	-10,383.76	21,216.09	21,047.52	168.57	125.862
17,600.00	6,937.40	6,972.94	6,972.40	175.39	136.20	-89.46	733.34	-10,383.76	21,315.77	21,147.13	168.64	126.398
17,700.00	6,937.32	6,972.86	6,972.32	176.97	136.20	-89.46	733.34	-10,383.76	21,415.46	21,246.74	168.72	126.932
17,800.00	6,937.25	6,972.78	6,972.25	178.55	136.20	-89.46	733.34	-10,383.76	21,515.14	21,346.35	168.79	127.465
17,900.00	6,937.17	6,972.71	6,972.17	180.13	136.20	-89.45	733.34	-10,383.76	21,614.83	21,445.96	168.87	127.998
18,000.00	6,937.10	6,972.63	6,972.10	181.71	136.19	-89.45	733.34	-10,383.76	21,714.53	21,545.58	168.95	128.529
18,100.00	6,937.02	6,972.56	6,972.02	183.29	136.19	-89.45	733.34	-10,383.76	21,814.22	21,645.20	169.02	129.059
18,200.00	6,936.95	6,972.48	6,971.95	184.87	136.19	-89.45	733.34	-10,383.76	21,913.92	21,744.82	169.10	129.589
18,300.00	6,936.87	6,972.41	6,971.87	186.46	136.19	-89.44	733.34	-10,383.76	22,013.62	21,844.44	169.18	130.117
18,400.00	6,936.80	6,972.33	6,971.80	188.04	136.19	-89.44	733.34	-10,383.76	22,113.33	21,944.07	169.26	130.645
18,500.00	6,936.72	6,972.26	6,971.72	189.62	136.19	-89.44	733.34	-10,383.76	22,213.04	22,043.69	169.34	131.171
18,600.00	6,936.65	6,972.18	6,971.65	191.21	136.18	-89.43	733.34	-10,383.76	22,312.75	22,143.32	169.43	131.697
18,700.00	6,936.57	6,972.11	6,971.57	192.79	136.18	-89.43	733.34	-10,383.76	22,412.46	22,242.95	169.51	132.221
18,800.00	6,936.50	6,972.03	6,971.50	194.37	136.18	-89.43	733.34	-10,383.76	22,512.17	22,342.58	169.59	132.745
18,900.00	6,936.42	6,971.96	6,971.42	195.96	136.18	-89.43	733.34	-10,383.76	22,611.89	22,442.22	169.67	133.267
19,000.00	6,936.35	6,971.88	6,971.35	197.54	136.18	-89.42	733.34	-10,383.76	22,711.61	22,541.85	169.76	133.789
19,100.00	6,936.27	6,971.81	6,971.27	199.13	136.18	-89.42	733.34	-10,383.76	22,811.33	22,641.49	169.84	134.310
19,200.00	6,936.19	6,971.73	6,971.19	200.71	136.17	-89.42	733.34	-10,383.76	22,911.06	22,741.13	169.93	134.829
19,300.00	6,936.12	6,971.66	6,971.12	202.30	136.17	-89.42	733.34	-10,383.76	23,010.78	22,840.77	170.01	135.348
19,400.00	6,936.04	6,971.58	6,971.04	203.88	136.17	-89.41	733.34	-10,383.76	23,110.51	22,940.41	170.10	135.866

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 067 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program: 328-A027Ua_INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,500.00	6,935.97	6,971.51	6,970.97	205.47	136.17	-89.41	733.34	-10,383.76	23,210.24	23,040.06	170.18	136.383		
19,600.00	6,935.89	6,971.43	6,970.89	207.06	136.17	-89.41	733.34	-10,383.76	23,309.98	23,139.71	170.27	136.898		
19,700.00	6,935.82	6,971.36	6,970.82	208.64	136.17	-89.41	733.34	-10,383.76	23,409.72	23,239.36	170.36	137.413		
19,800.00	6,935.74	6,971.28	6,970.74	210.23	136.17	-89.40	733.34	-10,383.76	23,509.45	23,339.01	170.45	137.927		
19,900.00	6,935.67	6,971.21	6,970.67	211.82	136.16	-89.40	733.34	-10,383.76	23,609.19	23,438.66	170.54	138.440		
20,000.00	6,935.59	6,971.13	6,970.59	213.41	136.16	-89.40	733.34	-10,383.76	23,708.94	23,538.31	170.63	138.952		
20,100.00	6,935.52	6,971.06	6,970.52	214.99	136.16	-89.40	733.34	-10,383.76	23,808.68	23,637.97	170.72	139.463		
20,200.00	6,935.44	6,970.98	6,970.44	216.58	136.16	-89.39	733.34	-10,383.76	23,908.43	23,737.62	170.81	139.973		
20,300.00	6,935.37	6,970.91	6,970.37	218.17	136.16	-89.39	733.34	-10,383.76	24,008.18	23,837.28	170.90	140.483		
20,400.00	6,935.29	6,970.83	6,970.29	219.76	136.16	-89.39	733.34	-10,383.76	24,107.93	23,936.94	170.99	140.991		
20,500.00	6,935.22	6,970.76	6,970.22	221.35	136.15	-89.39	733.34	-10,383.76	24,207.68	24,036.60	171.08	141.498		
20,600.00	6,935.14	6,970.68	6,970.14	222.94	136.15	-89.38	733.34	-10,383.76	24,307.44	24,136.27	171.17	142.004		
20,700.00	6,935.07	6,970.61	6,970.07	224.53	136.15	-89.38	733.34	-10,383.76	24,407.20	24,235.93	171.27	142.510		
20,789.75	6,935.00	6,970.54	6,970.00	225.95	136.15	-89.38	733.34	-10,383.76	24,496.73	24,325.38	171.35	142.963		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 068 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program: 350-A027Ua_INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	169.57	-1,200.34	221.06	1,220.67					
100.00	100.00	81.00	81.00	0.25	0.80	169.57	-1,200.34	221.06	1,220.53	1,219.48	1.05	1,163.597		
200.00	200.00	181.00	181.00	0.61	1.78	169.57	-1,200.34	221.06	1,220.53	1,218.13	2.39	510.183		
300.00	300.00	281.00	281.00	0.97	2.77	169.57	-1,200.34	221.06	1,220.53	1,216.79	3.74	326.717		
400.00	400.00	381.01	381.00	1.33	4.04	169.57	-1,200.34	221.06	1,220.53	1,215.16	5.36	227.545		
500.00	500.00	481.01	481.00	1.68	5.94	169.57	-1,200.34	221.06	1,220.53	1,212.90	7.63	160.064		
600.00	599.98	580.99	580.98	2.03	7.84	-9.58	-1,200.34	221.06	1,218.81	1,208.94	9.87	123.488		
700.00	699.84	678.71	678.70	2.36	9.70	-9.64	-1,199.56	221.06	1,212.88	1,200.82	12.06	100.533		
800.00	799.45	775.45	775.43	2.71	11.54	-9.74	-1,199.85	221.06	1,204.58	1,190.34	14.25	84.541		
900.00	898.70	879.74	879.70	3.06	13.52	-9.88	-1,200.34	221.06	1,193.04	1,176.47	16.58	71.978		
1,000.00	997.47	978.51	978.47	3.43	15.34	-10.06	-1,200.34	221.06	1,177.63	1,158.88	18.75	62.805		
1,100.00	1,095.62	1,076.66	1,076.62	3.82	17.15	-10.30	-1,200.34	221.06	1,158.84	1,137.92	20.92	55.395		
1,180.06	1,173.69	1,153.96	1,153.91	4.14	18.58	-10.52	-1,199.81	221.06	1,140.86	1,118.23	22.64	50.399		
1,200.00	1,193.07	1,172.97	1,172.93	4.22	18.93	-10.57	-1,199.83	221.06	1,136.26	1,113.20	23.06	49.270		
1,300.00	1,290.27	1,268.37	1,268.32	4.65	20.68	-10.78	-1,200.01	221.06	1,113.31	1,088.13	25.18	44.214		
1,400.00	1,387.46	1,368.52	1,368.46	5.08	22.53	-11.02	-1,200.34	221.06	1,090.52	1,063.13	27.39	39.814		
1,500.00	1,484.66	1,465.72	1,465.66	5.52	24.33	-11.26	-1,200.34	221.06	1,067.42	1,037.87	29.55	36.120		
1,600.00	1,581.85	1,562.91	1,562.85	5.97	26.12	-11.51	-1,200.34	221.06	1,044.34	1,012.63	31.72	32.926		
1,700.00	1,679.05	1,658.94	1,658.87	6.42	27.89	-11.77	-1,199.87	221.06	1,020.83	986.96	33.87	30.144		
1,800.00	1,776.25	1,754.42	1,754.36	6.87	29.66	-12.04	-1,200.07	221.06	997.99	961.98	36.01	27.717		
1,900.00	1,873.44	1,854.52	1,854.44	7.33	31.51	-12.33	-1,200.34	221.06	975.23	937.00	38.23	25.509		
2,000.00	1,970.64	1,951.71	1,951.64	7.78	33.30	-12.64	-1,200.34	221.06	952.24	911.84	40.41	23.567		
2,100.00	2,067.83	2,048.91	2,048.83	8.24	35.10	-12.95	-1,200.34	221.06	929.28	886.70	42.58	21.822		
2,200.00	2,165.03	2,145.09	2,145.01	8.71	36.87	-13.29	-1,199.83	221.06	905.85	861.11	44.75	20.245		
2,300.00	2,262.22	2,240.89	2,240.81	9.17	38.64	-13.63	-1,200.02	221.06	883.14	836.23	46.90	18.830		
2,400.00	2,359.42	2,340.52	2,340.42	9.63	40.50	-14.00	-1,200.34	221.06	860.57	811.43	49.14	17.513		
2,500.00	2,456.61	2,437.71	2,437.61	10.10	42.40	-14.39	-1,200.34	221.06	837.73	786.30	51.43	16.288		
2,600.00	2,553.81	2,534.91	2,534.81	10.57	44.31	-14.80	-1,200.34	221.06	814.93	761.21	53.73	15.169		
2,700.00	2,651.01	2,631.41	2,631.31	11.03	46.20	-15.24	-1,199.82	221.06	791.68	735.67	56.01	14.135		
2,800.00	2,748.20	2,727.39	2,727.29	11.50	48.08	-15.69	-1,199.99	221.06	769.13	710.85	58.28	13.196		
2,900.00	2,845.40	2,823.46	2,823.35	11.97	49.96	-16.17	-1,200.32	221.06	746.79	686.23	60.56	12.331		
3,000.00	2,942.59	2,923.73	2,923.59	12.44	52.05	-16.70	-1,200.34	221.06	724.21	661.16	63.04	11.487		
3,100.00	3,039.79	3,020.93	3,020.79	12.91	54.08	-17.25	-1,200.34	221.06	701.66	636.19	65.47	10.717		
3,200.00	3,136.98	3,118.13	3,117.98	13.38	56.11	-17.84	-1,200.34	221.06	679.18	611.27	67.91	10.002		
3,300.00	3,234.18	3,215.32	3,215.18	13.85	58.14	-18.46	-1,200.34	221.06	656.77	586.43	70.34	9.337		
3,400.00	3,331.38	3,311.86	3,311.70	14.32	60.16	-19.19	-1,198.50	221.06	632.71	559.95	72.77	8.695		
3,500.00	3,428.57	3,407.98	3,407.82	14.79	62.17	-19.89	-1,198.70	221.06	610.68	535.48	75.19	8.122		
3,600.00	3,525.77	3,504.19	3,504.02	15.26	64.18	-20.65	-1,199.09	221.06	588.91	511.29	77.62	7.587		
3,700.00	3,622.96	3,600.50	3,600.32	15.73	66.20	-21.45	-1,199.67	221.06	567.43	487.38	80.05	7.088		
3,800.00	3,720.16	3,701.43	3,701.16	16.20	68.31	-22.36	-1,200.34	221.06	546.14	463.57	82.57	6.614		
3,900.00	3,817.35	3,798.63	3,798.35	16.68	70.35	-23.33	-1,200.34	221.06	524.38	439.33	85.05	6.166		
4,000.00	3,914.55	3,895.82	3,895.55	17.15	72.40	-24.39	-1,200.34	221.06	502.77	415.25	87.52	5.744		
4,100.00	4,011.74	3,992.13	3,991.85	17.62	74.43	-25.58	-1,199.32	221.06	480.43	390.43	90.00	5.338		
4,200.00	4,108.94	4,088.01	4,087.72	18.09	76.44	-26.80	-1,199.68	221.06	459.54	367.07	92.47	4.970		
4,300.00	4,206.14	4,187.48	4,187.14	18.57	78.54	-28.17	-1,200.34	221.06	439.14	344.13	95.01	4.622		
4,400.00	4,303.33	4,284.68	4,284.33	19.04	80.59	-29.68	-1,200.34	221.06	418.42	320.89	97.53	4.290		
4,500.00	4,400.53	4,381.87	4,381.53	19.51	82.64	-31.34	-1,200.34	221.06	398.01	297.95	100.06	3.978		
4,600.00	4,497.72	4,478.51	4,478.15	19.99	84.68	-33.25	-1,199.31	221.06	377.10	274.49	102.61	3.675		
4,700.00	4,594.92	4,574.77	4,574.41	20.46	86.71	-35.25	-1,199.65	221.06	357.77	252.62	105.16	3.402		
4,800.00	4,692.11	4,671.20	4,670.83	20.93	88.74	-37.43	-1,200.32	221.06	339.19	231.46	107.73	3.149		
4,900.00	4,789.31	4,770.73	4,770.31	21.41	90.85	-40.01	-1,200.34	221.06	320.66	210.28	110.38	2.905		
5,000.00	4,886.51	4,867.93	4,867.51	21.88	92.90	-42.84	-1,200.34	221.06	302.80	189.78	113.02	2.679		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 068 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program:		350-A027Ua_INC-ONLY					Rule Assigned:			Offset Well Error:		0.00 usft		
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance				Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,100.00	4,983.70	4,964.88	4,964.44	22.35	94.95	-46.15	-1,199.26	221.06	285.02	169.32	115.70	2.463		
5,200.00	5,080.90	5,061.55	5,061.11	22.83	97.00	-49.64	-1,199.54	221.06	269.19	150.80	118.39	2.274		
5,300.00	5,178.09	5,158.37	5,157.93	23.30	99.04	-53.48	-1,200.14	221.06	254.70	133.58	121.12	2.103		
5,400.00	5,275.29	5,256.79	5,256.29	23.77	101.13	-57.89	-1,200.34	221.06	241.29	117.40	123.89	1.948		
5,500.00	5,372.48	5,353.98	5,353.48	24.25	103.18	-62.77	-1,200.34	221.06	229.39	102.72	126.67	1.811		
5,600.00	5,469.68	5,451.10	5,450.59	24.72	105.24	-68.34	-1,199.31	221.06	219.00	89.54	129.46	1.692		
5,700.00	5,566.87	5,548.14	5,547.63	25.20	107.29	-74.05	-1,199.58	221.06	211.30	79.09	132.21	1.598		
5,800.00	5,664.07	5,645.35	5,644.83	25.67	109.35	-80.02	-1,200.19	221.06	206.01	71.10	134.91	1.527		
5,900.00	5,761.27	5,742.84	5,742.27	26.14	111.41	-86.36	-1,200.34	221.06	203.16	65.61	137.55	1.477	Level 3	
5,956.48	5,816.17	5,797.74	5,797.17	26.41	112.58	-90.00	-1,200.34	221.06	202.72	63.74	138.99	1.459	Level 3, CC	
6,000.00	5,858.46	5,840.03	5,839.46	26.62	113.47	-92.81	-1,200.34	221.06	202.98	62.90	140.08	1.449	Level 3, ES	
6,100.00	5,955.66	5,937.26	5,936.67	27.09	115.53	-99.49	-1,199.23	221.06	205.72	63.21	142.50	1.444	Level 3, SF	
6,200.00	6,052.85	6,034.69	6,034.10	27.57	117.60	-105.59	-1,199.46	221.06	210.91	66.07	144.84	1.456	Level 3	
6,300.00	6,150.05	6,132.29	6,131.69	28.04	119.67	-111.29	-1,200.01	221.06	218.35	71.24	147.11	1.484	Level 3	
6,400.00	6,247.24	6,228.89	6,228.24	28.52	121.71	-116.57	-1,200.34	221.06	227.98	78.67	149.31	1.527		
6,490.87	6,335.57	6,317.22	6,316.57	28.95	123.59	-121.07	-1,200.34	221.06	238.52	87.23	151.29	1.577		
6,500.00	6,344.44	6,326.09	6,325.44	28.99	123.77	-118.08	-1,200.34	221.06	239.60	88.12	151.49	1.582		
6,550.00	6,392.91	6,374.57	6,373.91	29.23	124.80	-103.39	-1,200.34	221.06	243.96	91.41	152.55	1.599		
6,600.00	6,440.98	6,422.63	6,421.98	29.46	125.82	-92.88	-1,200.34	221.06	245.85	92.29	153.56	1.601		
6,650.00	6,488.34	6,469.99	6,469.34	29.70	126.83	-86.62	-1,200.34	221.06	245.66	91.15	154.51	1.590		
6,700.00	6,534.69	6,516.34	6,515.69	29.92	127.81	-83.75	-1,200.34	221.06	243.86	88.49	155.38	1.569		
6,750.00	6,579.76	6,561.61	6,560.95	30.15	128.77	-83.62	-1,198.84	221.06	242.29	86.15	156.14	1.552		
6,800.00	6,623.27	6,605.36	6,604.69	30.36	129.70	-85.12	-1,198.91	221.06	239.39	82.55	156.84	1.526		
6,850.00	6,664.95	6,647.29	6,646.62	30.57	130.59	-87.95	-1,199.02	221.06	237.22	79.77	157.45	1.507		
6,883.53	6,691.74	6,674.27	6,673.60	30.71	131.16	-90.33	-1,199.11	221.06	236.70	78.88	157.82	1.500	Level 3	
6,900.00	6,704.53	6,687.15	6,686.48	30.78	131.43	-91.60	-1,199.16	221.06	236.85	78.85	158.00	1.499	Level 3	
6,950.00	6,741.79	6,724.68	6,724.00	30.98	132.23	-95.62	-1,199.34	221.06	239.38	80.83	158.55	1.510		
7,000.00	6,776.48	6,759.64	6,758.97	31.17	132.97	-99.57	-1,199.53	221.06	245.84	86.69	159.15	1.545		
7,050.00	6,808.39	6,791.83	6,791.15	31.36	133.65	-103.09	-1,199.74	221.06	256.97	97.14	159.83	1.608		
7,100.00	6,837.34	6,821.04	6,820.36	31.54	134.27	-105.91	-1,199.94	221.06	273.16	112.55	160.61	1.701		
7,150.00	6,863.13	6,847.08	6,846.39	31.73	134.82	-107.83	-1,200.15	221.06	294.38	132.95	161.42	1.824		
7,200.00	6,885.61	6,869.78	6,869.10	31.91	135.30	-108.72	-1,200.34	221.06	320.30	158.07	162.23	1.974		
7,250.00	6,904.64	6,886.40	6,885.64	32.10	135.66	-107.96	-1,200.34	221.06	350.53	187.65	162.89	2.152		
7,300.00	6,920.10	6,901.86	6,901.10	32.29	135.98	-106.44	-1,200.34	221.06	384.30	220.76	163.54	2.350		
7,350.00	6,931.91	6,913.66	6,912.91	32.48	136.24	-103.64	-1,200.34	221.06	420.96	256.88	164.08	2.566		
7,400.00	6,939.97	6,921.73	6,920.97	32.68	136.41	-99.49	-1,200.34	221.06	459.90	295.40	164.50	2.796		
7,450.00	6,944.26	6,926.01	6,925.26	32.89	136.50	-94.02	-1,200.34	221.06	500.57	335.77	164.79	3.038		
7,481.69	6,945.00	6,926.76	6,926.00	33.03	136.51	-89.93	-1,200.34	221.06	526.99	362.07	164.92	3.195		
7,500.00	6,944.99	6,926.74	6,925.99	33.12	136.51	-89.93	-1,200.34	221.06	542.47	377.49	164.98	3.288		
7,600.00	6,944.91	6,926.67	6,925.91	33.60	136.51	-89.92	-1,200.34	221.06	629.68	464.44	165.24	3.811		
7,700.00	6,944.84	6,926.59	6,925.84	34.17	136.51	-89.90	-1,200.34	221.06	720.22	554.79	165.44	4.353		
7,800.00	6,944.76	6,926.52	6,925.76	34.80	136.51	-89.89	-1,200.34	221.06	812.99	647.40	165.58	4.910		
7,900.00	6,944.69	6,926.44	6,925.69	35.49	136.51	-89.87	-1,200.34	221.06	907.29	741.59	165.69	5.476		
8,000.00	6,944.61	6,926.37	6,925.61	36.25	136.50	-89.86	-1,200.34	221.06	1,002.69	836.91	165.78	6.048		
8,100.00	6,944.54	6,926.29	6,925.54	37.07	136.50	-89.84	-1,200.34	221.06	1,098.92	933.06	165.85	6.626		
8,200.00	6,944.46	6,926.22	6,925.46	37.94	136.50	-89.83	-1,200.34	221.06	1,195.76	1,029.85	165.91	7.207		
8,300.00	6,944.39	6,926.14	6,925.39	38.86	136.50	-89.81	-1,200.34	221.06	1,293.08	1,127.12	165.97	7.791		
8,400.00	6,944.31	6,926.07	6,925.31	39.83	136.50	-89.79	-1,200.34	221.06	1,390.79	1,224.77	166.01	8.378		
8,500.00	6,944.23	6,925.99	6,925.23	40.84	136.50	-89.78	-1,200.34	221.06	1,488.80	1,322.74	166.05	8.966		
8,600.00	6,944.16	6,925.92	6,925.16	41.89	136.50	-89.76	-1,200.34	221.06	1,587.05	1,420.96	166.09	9.555		
8,700.00	6,944.08	6,925.84	6,925.08	42.98	136.49	-89.75	-1,200.34	221.06	1,685.51	1,519.39	166.13	10.146		
8,800.00	6,944.01	6,925.77	6,925.01	44.10	136.49	-89.73	-1,200.34	221.06	1,784.15	1,617.99	166.16	10.737		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 068 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program:		350-A027Ua_INC-ONLY					Rule Assigned:			Offset Well Error:			0.00 usft	
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance				Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
8,900.00	6,943.93	6,925.69	6,924.93	45.25	136.49	-89.72	-1,200.34	221.06	1,882.93	1,716.73	166.19	11.330		
9,000.00	6,943.86	6,925.62	6,924.86	46.43	136.49	-89.70	-1,200.34	221.06	1,981.83	1,815.60	166.22	11.923		
9,100.00	6,943.78	6,925.54	6,924.78	47.63	136.49	-89.69	-1,200.34	221.06	2,080.83	1,914.58	166.25	12.516		
9,200.00	6,943.71	6,925.47	6,924.71	48.86	136.49	-89.67	-1,200.34	221.06	2,179.93	2,013.64	166.28	13.110		
9,300.00	6,943.63	6,925.39	6,924.63	50.11	136.48	-89.66	-1,200.34	221.06	2,279.10	2,112.79	166.31	13.704		
9,400.00	6,943.56	6,925.32	6,924.56	51.38	136.48	-89.64	-1,200.34	221.06	2,378.35	2,212.00	166.34	14.298		
9,500.00	6,943.48	6,925.24	6,924.48	52.66	136.48	-89.63	-1,200.34	221.06	2,477.65	2,311.28	166.37	14.892		
9,600.00	6,943.41	6,925.17	6,924.41	53.97	136.48	-89.61	-1,200.34	221.06	2,577.01	2,410.61	166.40	15.487		
9,700.00	6,943.33	6,925.09	6,924.33	55.29	136.48	-89.60	-1,200.34	221.06	2,676.41	2,509.99	166.43	16.081		
9,800.00	6,943.26	6,925.01	6,924.26	56.63	136.48	-89.58	-1,200.34	221.06	2,775.86	2,609.41	166.46	16.676		
9,900.00	6,943.18	6,924.94	6,924.18	57.98	136.47	-89.57	-1,200.34	221.06	2,875.35	2,708.86	166.49	17.271		
10,000.00	6,943.11	6,924.86	6,924.11	59.34	136.47	-89.55	-1,200.34	221.06	2,974.87	2,808.35	166.52	17.865		
10,100.00	6,943.03	6,924.79	6,924.03	60.72	136.47	-89.54	-1,200.34	221.06	3,074.43	2,907.88	166.55	18.460		
10,200.00	6,942.96	6,924.71	6,923.96	62.11	136.47	-89.52	-1,200.34	221.06	3,174.01	3,007.43	166.58	19.054		
10,300.00	6,942.88	6,924.64	6,923.88	63.50	136.47	-89.51	-1,200.34	221.06	3,273.61	3,107.00	166.61	19.648		
10,400.00	6,942.81	6,924.56	6,923.81	64.91	136.47	-89.49	-1,200.34	221.06	3,373.24	3,206.60	166.64	20.242		
10,500.00	6,942.73	6,924.49	6,923.73	66.33	136.46	-89.48	-1,200.34	221.06	3,472.89	3,306.22	166.67	20.836		
10,600.00	6,942.66	6,924.41	6,923.66	67.75	136.46	-89.46	-1,200.34	221.06	3,572.56	3,405.86	166.71	21.430		
10,700.00	6,942.58	6,924.34	6,923.58	69.18	136.46	-89.45	-1,200.34	221.06	3,672.25	3,505.51	166.74	22.024		
10,800.00	6,942.51	6,924.26	6,923.51	70.62	136.46	-89.43	-1,200.34	221.06	3,771.96	3,605.18	166.77	22.617		
10,900.00	6,942.43	6,924.19	6,923.43	72.07	136.46	-89.42	-1,200.34	221.06	3,871.68	3,704.87	166.81	23.210		
11,000.00	6,942.36	6,924.11	6,923.36	73.52	136.46	-89.40	-1,200.34	221.06	3,971.41	3,804.57	166.84	23.803		
11,100.00	6,942.28	6,924.04	6,923.28	74.98	136.46	-89.39	-1,200.34	221.06	4,071.16	3,904.28	166.88	24.396		
11,200.00	6,942.21	6,923.96	6,923.21	76.45	136.45	-89.37	-1,200.34	221.06	4,170.92	4,004.00	166.91	24.989		
11,300.00	6,942.13	6,923.89	6,923.13	77.92	136.45	-89.36	-1,200.34	221.06	4,270.69	4,103.74	166.95	25.581		
11,400.00	6,942.06	6,923.81	6,923.06	79.40	136.45	-89.34	-1,200.34	221.06	4,370.47	4,203.48	166.99	26.172		
11,500.00	6,941.98	6,923.74	6,922.98	80.88	136.45	-89.33	-1,200.34	221.06	4,470.26	4,303.23	167.03	26.764		
11,600.00	6,941.91	6,923.66	6,922.91	82.36	136.45	-89.31	-1,200.34	221.06	4,570.06	4,403.00	167.06	27.355		
11,700.00	6,941.83	6,923.59	6,922.83	83.85	136.45	-89.30	-1,200.34	221.06	4,669.87	4,502.77	167.10	27.946		
11,800.00	6,941.76	6,923.51	6,922.76	85.35	136.44	-89.28	-1,200.34	221.06	4,769.68	4,602.54	167.14	28.537		
11,900.00	6,941.68	6,923.44	6,922.68	86.85	136.44	-89.27	-1,200.34	221.06	4,869.51	4,702.33	167.18	29.127		
12,000.00	6,941.60	6,923.36	6,922.60	88.35	136.44	-89.25	-1,200.34	221.06	4,969.34	4,802.12	167.22	29.717		
12,100.00	6,941.53	6,923.29	6,922.53	89.85	136.44	-89.24	-1,200.34	221.06	5,069.18	4,901.91	167.27	30.306		
12,200.00	6,941.45	6,923.21	6,922.45	91.36	136.44	-89.22	-1,200.34	221.06	5,169.02	5,001.71	167.31	30.895		
12,300.00	6,941.38	6,923.14	6,922.38	92.88	136.44	-89.21	-1,200.34	221.06	5,268.87	5,101.52	167.35	31.484		
12,400.00	6,941.30	6,923.06	6,922.30	94.39	136.43	-89.19	-1,200.34	221.06	5,368.73	5,201.33	167.39	32.072		
12,500.00	6,941.23	6,922.99	6,922.23	95.91	136.43	-89.18	-1,200.34	221.06	5,468.59	5,301.15	167.44	32.660		
12,600.00	6,941.15	6,922.91	6,922.15	97.43	136.43	-89.16	-1,200.34	221.06	5,568.45	5,400.97	167.48	33.248		
12,700.00	6,941.08	6,922.84	6,922.08	98.95	136.43	-89.15	-1,200.34	221.06	5,668.32	5,500.80	167.53	33.835		
12,800.00	6,941.00	6,922.76	6,922.00	100.48	136.43	-89.13	-1,200.34	221.06	5,768.20	5,600.62	167.58	34.422		
12,900.00	6,940.93	6,922.69	6,921.93	102.01	136.43	-89.12	-1,200.34	221.06	5,868.08	5,700.46	167.62	35.008		
13,000.00	6,940.85	6,922.61	6,921.85	103.54	136.43	-89.10	-1,200.34	221.06	5,967.96	5,800.29	167.67	35.594		
13,100.00	6,940.78	6,922.54	6,921.78	105.07	136.42	-89.09	-1,200.34	221.06	6,067.85	5,900.13	167.72	36.179		
13,200.00	6,940.70	6,922.46	6,921.70	106.61	136.42	-89.07	-1,200.34	221.06	6,167.74	5,999.97	167.77	36.764		
13,300.00	6,940.63	6,922.38	6,921.63	108.14	136.42	-89.06	-1,200.34	221.06	6,267.63	6,099.82	167.82	37.348		
13,400.00	6,940.55	6,922.31	6,921.55	109.68	136.42	-89.04	-1,200.34	221.06	6,367.53	6,199.67	167.87	37.932		
13,500.00	6,940.48	6,922.23	6,921.48	111.22	136.42	-89.03	-1,200.34	221.06	6,467.43	6,299.52	167.92	38.516		
13,600.00	6,940.40	6,922.16	6,921.40	112.77	136.42	-89.01	-1,200.34	221.06	6,567.34	6,399.37	167.97	39.099		
13,700.00	6,940.33	6,922.08	6,921.33	114.31	136.41	-89.00	-1,200.34	221.06	6,667.24	6,499.22	168.02	39.681		
13,800.00	6,940.25	6,922.01	6,921.25	115.86	136.41	-88.98	-1,200.34	221.06	6,767.15	6,599.08	168.07	40.263		
13,900.00	6,940.18	6,921.93	6,921.18	117.41	136.41	-88.97	-1,200.34	221.06	6,867.07	6,698.94	168.13	40.845		
14,000.00	6,940.10	6,921.86	6,921.10	118.95	136.41	-88.95	-1,200.34	221.06	6,966.98	6,798.80	168.18	41.426		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 068 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 350-A027Ua_INC-ONLY				Reference Offset				Rule Assigned:				Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.00	6,940.03	6,921.78	6,921.03	120.51	136.41	-88.94	-1,200.34	221.06	7,066.90	6,898.66	168.23	42.006	
14,200.00	6,939.95	6,921.71	6,920.95	122.06	136.41	-88.92	-1,200.34	221.06	7,166.82	6,998.53	168.29	42.586	
14,300.00	6,939.88	6,921.63	6,920.88	123.61	136.40	-88.91	-1,200.34	221.06	7,266.74	7,098.39	168.34	43.166	
14,400.00	6,939.80	6,921.56	6,920.80	125.17	136.40	-88.89	-1,200.34	221.06	7,366.66	7,198.26	168.40	43.745	
14,500.00	6,939.73	6,921.48	6,920.73	126.72	136.40	-88.88	-1,200.34	221.06	7,466.59	7,298.13	168.46	44.323	
14,600.00	6,939.65	6,921.41	6,920.65	128.28	136.40	-88.86	-1,200.34	221.06	7,566.51	7,398.00	168.52	44.901	
14,700.00	6,939.58	6,921.33	6,920.58	129.84	136.40	-88.85	-1,200.34	221.06	7,666.44	7,497.87	168.57	45.478	
14,800.00	6,939.50	6,921.26	6,920.50	131.40	136.40	-88.83	-1,200.34	221.06	7,766.38	7,597.74	168.63	46.055	
14,900.00	6,939.43	6,921.18	6,920.43	132.96	136.39	-88.82	-1,200.34	221.06	7,866.31	7,697.62	168.69	46.631	
15,000.00	6,939.35	6,921.11	6,920.35	134.52	136.39	-88.80	-1,200.34	221.06	7,966.24	7,797.49	168.75	47.207	
15,100.00	6,939.28	6,921.03	6,920.28	136.08	136.39	-88.79	-1,200.34	221.06	8,066.18	7,897.37	168.81	47.782	
15,200.00	6,939.20	6,920.96	6,920.20	137.64	136.39	-88.77	-1,200.34	221.06	8,166.12	7,997.25	168.87	48.357	
15,300.00	6,939.13	6,920.88	6,920.13	139.21	136.39	-88.76	-1,200.34	221.06	8,266.06	8,097.12	168.93	48.930	
15,400.00	6,939.05	6,920.81	6,920.05	140.77	136.39	-88.74	-1,200.34	221.06	8,366.00	8,197.00	169.00	49.504	
15,500.00	6,938.98	6,920.73	6,919.98	142.34	136.39	-88.73	-1,200.34	221.06	8,465.94	8,296.88	169.06	50.077	
15,600.00	6,938.90	6,920.66	6,919.90	143.91	136.38	-88.71	-1,200.34	221.06	8,565.88	8,396.76	169.12	50.649	
15,700.00	6,938.82	6,920.58	6,919.82	145.47	136.38	-88.70	-1,200.34	221.06	8,665.83	8,496.64	169.19	51.220	
15,800.00	6,938.75	6,920.51	6,919.75	147.04	136.38	-88.68	-1,200.34	221.06	8,765.78	8,596.52	169.25	51.791	
15,900.00	6,938.67	6,920.43	6,919.67	148.61	136.38	-88.67	-1,200.34	221.06	8,865.72	8,696.41	169.32	52.361	
16,000.00	6,938.60	6,920.36	6,919.60	150.18	136.38	-88.65	-1,200.34	221.06	8,965.67	8,796.29	169.38	52.931	
16,100.00	6,938.52	6,920.28	6,919.52	151.75	136.38	-88.63	-1,200.34	221.06	9,065.62	8,896.17	169.45	53.500	
16,200.00	6,938.45	6,920.21	6,919.45	153.32	136.37	-88.62	-1,200.34	221.06	9,165.57	8,996.06	169.52	54.069	
16,300.00	6,938.37	6,920.13	6,919.37	154.90	136.37	-88.60	-1,200.34	221.06	9,265.52	9,095.94	169.58	54.637	
16,400.00	6,938.30	6,920.06	6,919.30	156.47	136.37	-88.59	-1,200.34	221.06	9,365.48	9,195.82	169.65	55.204	
16,500.00	6,938.22	6,919.98	6,919.22	158.04	136.37	-88.57	-1,200.34	221.06	9,465.43	9,295.71	169.72	55.771	
16,600.00	6,938.15	6,919.91	6,919.15	159.62	136.37	-88.56	-1,200.34	221.06	9,565.39	9,395.60	169.79	56.337	
16,700.00	6,938.07	6,919.83	6,919.07	161.19	136.37	-88.54	-1,200.34	221.06	9,665.34	9,495.48	169.86	56.902	
16,800.00	6,938.00	6,919.75	6,919.00	162.77	136.36	-88.53	-1,200.34	221.06	9,765.30	9,595.37	169.93	57.467	
16,900.00	6,937.92	6,919.68	6,918.92	164.34	136.36	-88.51	-1,200.34	221.06	9,865.26	9,695.26	170.00	58.031	
17,000.00	6,937.85	6,919.60	6,918.85	165.92	136.36	-88.50	-1,200.34	221.06	9,965.21	9,795.14	170.07	58.594	
17,100.00	6,937.77	6,919.53	6,918.77	167.50	136.36	-88.48	-1,200.34	221.06	10,065.17	9,895.03	170.14	59.157	
17,200.00	6,937.70	6,919.45	6,918.70	169.07	136.36	-88.47	-1,200.34	221.06	10,165.13	9,994.92	170.22	59.719	
17,300.00	6,937.62	6,919.38	6,918.62	170.65	136.36	-88.45	-1,200.34	221.06	10,265.09	10,094.80	170.29	60.280	
17,400.00	6,937.55	6,919.30	6,918.55	172.23	136.35	-88.44	-1,200.34	221.06	10,365.06	10,194.69	170.36	60.841	
17,500.00	6,937.47	6,919.23	6,918.47	173.81	136.35	-88.42	-1,200.34	221.06	10,465.02	10,294.58	170.44	61.401	
17,600.00	6,937.40	6,919.15	6,918.40	175.39	136.35	-88.41	-1,200.34	221.06	10,564.98	10,394.47	170.51	61.960	
17,700.00	6,937.32	6,919.08	6,918.32	176.97	136.35	-88.39	-1,200.34	221.06	10,664.95	10,494.36	170.59	62.519	
17,800.00	6,937.25	6,919.00	6,918.25	178.55	136.35	-88.38	-1,200.34	221.06	10,764.91	10,594.25	170.66	63.077	
17,900.00	6,937.17	6,918.93	6,918.17	180.13	136.35	-88.36	-1,200.34	221.06	10,864.87	10,694.14	170.74	63.635	
18,000.00	6,937.10	6,918.85	6,918.10	181.71	136.35	-88.35	-1,200.34	221.06	10,964.84	10,794.03	170.82	64.191	
18,100.00	6,937.02	6,918.78	6,918.02	183.29	136.34	-88.33	-1,200.34	221.06	11,064.81	10,893.91	170.89	64.747	
18,200.00	6,936.95	6,918.70	6,917.95	184.87	136.34	-88.32	-1,200.34	221.06	11,164.77	10,993.80	170.97	65.303	
18,300.00	6,936.87	6,918.63	6,917.87	186.46	136.34	-88.30	-1,200.34	221.06	11,264.74	11,093.69	171.05	65.857	
18,400.00	6,936.80	6,918.55	6,917.80	188.04	136.34	-88.29	-1,200.34	221.06	11,364.71	11,193.58	171.13	66.411	
18,500.00	6,936.72	6,918.48	6,917.72	189.62	136.34	-88.27	-1,200.34	221.06	11,464.68	11,293.47	171.21	66.964	
18,600.00	6,936.65	6,918.40	6,917.65	191.21	136.34	-88.26	-1,200.34	221.06	11,564.65	11,393.36	171.28	67.517	
18,700.00	6,936.57	6,918.33	6,917.57	192.79	136.33	-88.24	-1,200.34	221.06	11,664.62	11,493.25	171.36	68.069	
18,800.00	6,936.50	6,918.25	6,917.50	194.37	136.33	-88.23	-1,200.34	221.06	11,764.59	11,593.14	171.45	68.620	
18,900.00	6,936.42	6,918.18	6,917.42	195.96	136.33	-88.21	-1,200.34	221.06	11,864.56	11,693.03	171.53	69.170	
19,000.00	6,936.35	6,918.10	6,917.35	197.54	136.33	-88.20	-1,200.34	221.06	11,964.53	11,792.92	171.61	69.720	
19,100.00	6,936.27	6,918.03	6,917.27	199.13	136.33	-88.18	-1,200.34	221.06	12,064.50	11,892.81	171.69	70.269	
19,200.00	6,936.19	6,917.95	6,917.19	200.71	136.33	-88.17	-1,200.34	221.06	12,164.47	11,992.70	171.77	70.817	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 068 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 350-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,300.00	6,936.12	6,917.88	6,917.12	202.30	136.32	-88.15	-1,200.34	221.06	12,264.45	12,092.59	171.86	71.365	
19,400.00	6,936.04	6,917.80	6,917.04	203.88	136.32	-88.14	-1,200.34	221.06	12,364.42	12,192.48	171.94	71.912	
19,500.00	6,935.97	6,917.73	6,916.97	205.47	136.32	-88.12	-1,200.34	221.06	12,464.39	12,292.37	172.02	72.458	
19,600.00	6,935.89	6,917.65	6,916.89	207.06	136.32	-88.11	-1,200.34	221.06	12,564.37	12,392.26	172.11	73.003	
19,700.00	6,935.82	6,917.58	6,916.82	208.64	136.32	-88.09	-1,200.34	221.06	12,664.34	12,492.15	172.19	73.548	
19,800.00	6,935.74	6,917.50	6,916.74	210.23	136.32	-88.08	-1,200.34	221.06	12,764.32	12,592.04	172.28	74.092	
19,900.00	6,935.67	6,917.43	6,916.67	211.82	136.32	-88.06	-1,200.34	221.06	12,864.29	12,691.93	172.36	74.635	
20,000.00	6,935.59	6,917.35	6,916.59	213.41	136.31	-88.05	-1,200.34	221.06	12,964.27	12,791.82	172.45	75.178	
20,100.00	6,935.52	6,917.28	6,916.52	214.99	136.31	-88.03	-1,200.34	221.06	13,064.24	12,891.71	172.53	75.720	
20,200.00	6,935.44	6,917.20	6,916.44	216.58	136.31	-88.02	-1,200.34	221.06	13,164.22	12,991.60	172.62	76.261	
20,300.00	6,935.37	6,917.12	6,916.37	218.17	136.31	-88.00	-1,200.34	221.06	13,264.19	13,091.49	172.71	76.801	
20,400.00	6,935.29	6,917.05	6,916.29	219.76	136.31	-87.99	-1,200.34	221.06	13,364.17	13,191.38	172.80	77.341	
20,500.00	6,935.22	6,916.97	6,916.22	221.35	136.31	-87.97	-1,200.34	221.06	13,464.15	13,291.26	172.88	77.879	
20,600.00	6,935.14	6,916.90	6,916.14	222.94	136.30	-87.96	-1,200.34	221.06	13,564.13	13,391.15	172.97	78.418	
20,700.00	6,935.07	6,916.82	6,916.07	224.53	136.30	-87.94	-1,200.34	221.06	13,664.10	13,491.04	173.06	78.955	
20,789.75	6,935.00	6,916.76	6,916.00	225.95	136.30	-87.93	-1,200.34	221.06	13,753.83	13,580.69	173.14	79.437	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 119 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program:		265-A027Ua_INC-ONLY						Rule Assigned:				Offset Well Error:	0.00 usft	
Measured Depth	Reference	Measured Depth	Offset	Semi Major Axis	Offset	Highside Toolface	Offset Wellbore Centre		Distance		Minimum Separation	Separation Factor	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)			
0.00	0.00	6.00	6.00	0.00	0.05	-121.35	-2,046.23	-3,358.67	3,932.91					
100.00	100.00	106.00	106.00	0.25	0.94	-121.35	-2,046.23	-3,358.67	3,932.91	3,931.72	1.19	3,304.825		
200.00	200.00	206.00	206.00	0.61	1.82	-121.35	-2,046.23	-3,358.67	3,932.91	3,930.47	2.43	1,615.625		
300.00	300.00	306.00	306.00	0.97	3.09	-121.35	-2,046.23	-3,358.67	3,932.91	3,928.85	4.05	970.136		
346.89	346.89	352.83	352.83	1.14	3.93	-121.35	-2,046.14	-3,358.67	3,932.86	3,927.79	5.07	776.385		
400.00	400.00	403.33	403.32	1.33	4.84	-121.35	-2,046.17	-3,358.67	3,932.88	3,926.71	6.17	637.864		
500.00	500.00	506.00	506.00	1.68	6.69	-121.35	-2,046.23	-3,358.67	3,932.91	3,924.53	8.38	469.588		
600.00	599.98	603.21	603.20	2.03	8.44	59.56	-2,045.99	-3,358.67	3,931.89	3,921.43	10.47	375.553		
700.00	699.84	705.85	705.84	2.36	10.29	59.67	-2,046.23	-3,358.67	3,929.37	3,916.72	12.65	310.658		
800.00	799.45	805.46	805.45	2.71	12.05	59.86	-2,046.23	-3,358.67	3,924.97	3,910.22	14.76	266.009		
900.00	898.70	904.71	904.70	3.06	13.81	60.12	-2,046.23	-3,358.67	3,918.84	3,901.97	16.87	232.354		
1,000.00	997.47	1,002.42	1,002.41	3.43	15.54	60.45	-2,045.98	-3,358.67	3,910.88	3,891.92	18.96	206.253		
1,100.00	1,095.62	1,098.93	1,098.91	3.82	17.25	60.85	-2,046.07	-3,358.67	3,901.44	3,880.39	21.05	185.337		
1,180.06	1,173.69	1,175.71	1,175.70	4.14	18.60	61.22	-2,046.20	-3,358.67	3,892.76	3,870.03	22.73	171.288		
1,200.00	1,193.07	1,199.09	1,199.07	4.22	19.02	61.29	-2,046.23	-3,358.67	3,890.47	3,867.25	23.23	167.511		
1,300.00	1,290.27	1,296.28	1,296.27	4.65	20.81	61.59	-2,046.23	-3,358.67	3,878.98	3,853.56	25.42	152.596		
1,400.00	1,387.46	1,393.48	1,393.46	5.08	22.60	61.89	-2,046.23	-3,358.67	3,867.60	3,839.98	27.62	140.011		
1,500.00	1,484.66	1,489.90	1,489.88	5.52	24.37	62.19	-2,045.97	-3,358.67	3,856.20	3,826.38	29.82	129.317		
1,600.00	1,581.85	1,585.55	1,585.53	5.97	26.13	62.49	-2,046.05	-3,358.67	3,845.08	3,813.07	32.01	120.130		
1,700.00	1,679.05	1,681.23	1,681.22	6.42	27.89	62.79	-2,046.21	-3,358.67	3,834.11	3,799.91	34.20	112.106		
1,800.00	1,776.25	1,782.28	1,782.25	6.87	29.91	63.11	-2,046.23	-3,358.67	3,823.19	3,786.52	36.67	104.270		
1,900.00	1,873.44	1,879.48	1,879.44	7.33	31.88	63.42	-2,046.23	-3,358.67	3,812.36	3,773.29	39.08	97.555		
2,000.00	1,970.64	1,975.25	1,975.21	7.78	33.83	63.73	-2,045.42	-3,358.67	3,801.28	3,759.81	41.47	91.670		
2,100.00	2,067.83	2,068.24	2,068.20	8.24	35.71	64.03	-2,045.61	-3,358.67	3,790.78	3,746.98	43.80	86.547		
2,200.00	2,165.03	2,161.35	2,161.30	8.71	37.60	64.32	-2,046.02	-3,358.67	3,780.51	3,734.37	46.14	81.938		
2,300.00	2,262.22	2,268.34	2,268.22	9.17	39.84	64.66	-2,046.23	-3,358.67	3,770.23	3,721.41	48.82	77.221		
2,400.00	2,359.42	2,352.95	2,352.83	9.63	41.63	64.94	-2,045.97	-3,358.67	3,759.90	3,708.83	51.07	73.621		
2,500.00	2,456.61	2,462.76	2,462.61	10.10	44.09	65.30	-2,046.23	-3,358.67	3,749.88	3,695.90	53.98	69.468		
2,600.00	2,553.81	2,559.96	2,559.81	10.57	46.30	65.62	-2,046.23	-3,358.67	3,739.88	3,683.23	56.65	66.016		
2,700.00	2,651.01	2,655.73	2,655.57	11.03	48.48	65.95	-2,045.16	-3,358.67	3,729.54	3,670.25	59.29	62.901		
2,800.00	2,748.20	2,747.84	2,747.67	11.50	50.58	66.25	-2,045.39	-3,358.67	3,719.89	3,658.04	61.85	60.143		
2,900.00	2,845.40	2,840.10	2,839.92	11.97	52.68	66.55	-2,045.92	-3,358.67	3,710.50	3,646.09	64.41	57.604		
3,000.00	2,942.59	2,948.89	2,948.59	12.44	55.15	66.91	-2,046.23	-3,358.67	3,701.11	3,633.76	67.34	54.959		
3,100.00	3,039.79	3,046.09	3,045.79	12.91	57.35	67.24	-2,046.23	-3,358.67	3,691.72	3,621.72	70.01	52.734		
3,200.00	3,136.98	3,143.28	3,142.98	13.38	59.55	67.57	-2,046.23	-3,358.67	3,682.47	3,609.80	72.67	50.674		
3,300.00	3,234.18	3,240.48	3,240.18	13.85	61.75	67.90	-2,046.23	-3,358.67	3,673.34	3,598.01	75.34	48.760		
3,400.00	3,331.38	3,337.67	3,337.38	14.32	63.95	68.23	-2,046.23	-3,358.67	3,664.34	3,586.34	78.00	46.978		
3,500.00	3,428.57	3,432.70	3,432.34	14.79	66.11	68.61	-2,042.43	-3,358.67	3,653.99	3,573.37	80.62	45.323		
3,600.00	3,525.77	3,526.03	3,525.66	15.26	68.22	68.93	-2,042.71	-3,358.67	3,645.38	3,562.18	83.20	43.813		
3,700.00	3,622.96	3,619.50	3,619.11	15.73	70.33	69.25	-2,043.25	-3,358.67	3,637.01	3,551.22	85.79	42.395		
3,800.00	3,720.16	3,713.11	3,712.70	16.20	72.45	69.56	-2,044.06	-3,358.67	3,628.86	3,540.48	88.38	41.061		
3,900.00	3,817.35	3,806.85	3,806.42	16.68	74.58	69.88	-2,045.13	-3,358.67	3,620.93	3,529.96	90.97	39.804		
4,000.00	3,914.55	3,921.10	3,920.55	17.15	77.20	70.26	-2,046.23	-3,358.67	3,613.08	3,519.03	94.06	38.413		
4,100.00	4,011.74	4,016.89	4,016.34	17.62	79.46	70.60	-2,045.87	-3,358.67	3,604.88	3,508.09	96.79	37.243		
4,200.00	4,108.94	4,115.56	4,114.94	18.09	81.81	70.95	-2,046.23	-3,358.67	3,597.07	3,497.45	99.62	36.109		
4,300.00	4,206.14	4,212.85	4,212.14	18.57	84.85	71.29	-2,046.23	-3,358.67	3,589.26	3,486.13	103.13	34.803		
4,400.00	4,303.33	4,310.16	4,309.33	19.04	88.25	71.64	-2,046.23	-3,358.67	3,581.59	3,474.59	107.00	33.472		
4,500.00	4,400.53	4,407.48	4,406.53	19.51	91.70	71.99	-2,046.23	-3,358.67	3,574.07	3,463.14	110.93	32.220		
4,600.00	4,497.72	4,496.65	4,495.54	19.99	95.06	72.31	-2,046.00	-3,358.67	3,566.61	3,451.84	114.77	31.077		
4,700.00	4,594.92	4,602.19	4,600.92	20.46	99.11	72.69	-2,046.23	-3,358.67	3,559.43	3,440.13	119.29	29.838		
4,800.00	4,692.11	4,699.62	4,698.11	20.93	103.14	73.05	-2,046.23	-3,358.67	3,552.32	3,428.52	123.80	28.694		
4,900.00	4,789.31	4,796.96	4,795.31	21.41	107.35	73.40	-2,046.23	-3,358.67	3,545.35	3,416.87	128.48	27.595		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 119 - OH - OH-INC											Offset Site Error:	0.00 usft
Survey Program: 265-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
5,000.00	4,886.51	4,888.19	4,886.48	21.88	111.11	73.76	-2,044.73	-3,358.67	3,538.08	3,405.36	132.72	26.658
5,100.00	4,983.70	4,991.77	4,989.70	22.35	115.41	74.11	-2,046.23	-3,358.67	3,531.85	3,394.35	137.49	25.687
5,200.00	5,080.90	5,087.82	5,085.61	22.83	119.53	74.48	-2,045.52	-3,358.67	3,525.10	3,383.00	142.10	24.808
5,300.00	5,178.09	5,175.27	5,172.86	23.30	123.35	74.79	-2,045.78	-3,358.67	3,518.81	3,372.41	146.40	24.035
5,400.00	5,275.29	5,267.32	5,264.76	23.77	127.46	75.14	-2,045.67	-3,358.67	3,512.55	3,361.57	150.98	23.264
5,500.00	5,372.48	5,371.87	5,369.10	24.25	132.15	75.53	-2,045.30	-3,358.67	3,506.33	3,350.17	156.16	22.454
5,600.00	5,469.68	5,478.67	5,475.68	24.72	136.77	75.91	-2,046.23	-3,358.67	3,500.62	3,339.37	161.25	21.709
5,700.00	5,566.87	5,576.13	5,572.87	25.20	140.85	76.28	-2,046.23	-3,358.67	3,494.81	3,329.00	165.82	21.076
5,800.00	5,664.07	5,673.47	5,670.07	25.67	144.76	76.64	-2,046.23	-3,358.67	3,489.16	3,318.96	170.20	20.500
5,900.00	5,761.27	5,759.64	5,756.20	26.14	148.50	76.98	-2,045.53	-3,358.67	3,483.50	3,309.07	174.43	19.971
6,000.00	5,858.46	5,864.37	5,860.70	26.62	153.31	77.38	-2,045.24	-3,358.67	3,478.06	3,298.35	179.72	19.353
6,100.00	5,955.66	5,965.58	5,961.66	27.09	157.98	77.75	-2,046.23	-3,358.67	3,473.09	3,288.23	184.87	18.787
6,200.00	6,052.85	6,045.49	6,041.49	27.57	161.57	78.06	-2,045.43	-3,358.67	3,467.90	3,278.95	188.95	18.354
6,300.00	6,150.05	6,158.58	6,154.31	28.04	166.38	78.50	-2,045.13	-3,358.67	3,462.90	3,268.66	194.24	17.828
6,400.00	6,247.24	6,257.73	6,253.24	28.52	170.58	78.86	-2,046.23	-3,358.67	3,458.39	3,259.47	198.92	17.386
6,490.87	6,335.57	6,338.54	6,334.01	28.95	174.15	79.18	-2,045.28	-3,358.67	3,454.02	3,251.09	202.93	17.021
6,500.00	6,344.44	6,345.62	6,341.09	28.99	174.47	82.59	-2,045.36	-3,358.67	3,453.70	3,250.41	203.29	16.989
6,517.95	6,361.87	6,359.57	6,355.02	29.07	175.08	89.11	-2,045.58	-3,358.67	3,453.44	3,249.45	203.99	16.929 CC
6,550.00	6,392.91	6,403.69	6,398.91	29.23	177.05	99.90	-2,046.23	-3,358.67	3,454.22	3,248.11	206.12	16.759 ES
6,600.00	6,440.98	6,446.10	6,441.29	29.46	178.98	113.47	-2,045.52	-3,358.67	3,458.29	3,250.00	208.29	16.603
6,650.00	6,488.34	6,499.30	6,494.34	29.70	181.38	123.33	-2,046.23	-3,358.67	3,466.47	3,255.52	210.94	16.433
6,700.00	6,534.69	6,545.35	6,540.35	29.92	183.43	130.35	-2,045.27	-3,358.67	3,478.11	3,264.87	213.23	16.311
6,750.00	6,579.76	6,579.68	6,574.67	30.15	184.95	135.28	-2,045.57	-3,358.67	3,493.74	3,278.74	215.00	16.250
6,800.00	6,623.27	6,634.47	6,629.27	30.36	187.32	138.94	-2,046.23	-3,358.67	3,513.03	3,295.42	217.61	16.144
6,850.00	6,664.95	6,676.15	6,670.95	30.57	189.08	141.53	-2,046.23	-3,358.67	3,535.74	3,316.14	219.60	16.101
6,900.00	6,704.53	6,709.80	6,704.55	30.78	190.49	143.33	-2,045.17	-3,358.67	3,561.65	3,340.41	221.24	16.099 SF
6,950.00	6,741.79	6,739.99	6,734.71	30.98	191.76	144.46	-2,045.64	-3,358.67	3,591.07	3,368.35	222.72	16.124
7,000.00	6,776.48	6,787.93	6,782.48	31.17	193.72	145.21	-2,046.23	-3,358.67	3,623.50	3,398.62	224.89	16.113
7,050.00	6,808.39	6,819.85	6,814.39	31.36	194.99	145.36	-2,046.23	-3,358.67	3,658.70	3,432.35	226.35	16.164
7,100.00	6,837.34	6,847.50	6,842.02	31.54	196.09	145.00	-2,045.22	-3,358.67	3,696.36	3,468.73	227.63	16.239
7,150.00	6,863.13	6,869.17	6,863.68	31.73	196.95	143.97	-2,045.35	-3,358.67	3,736.59	3,507.93	228.65	16.342
7,200.00	6,885.61	6,888.16	6,882.66	31.91	197.70	142.20	-2,045.59	-3,358.67	3,778.96	3,549.40	229.56	16.462
7,250.00	6,904.64	6,904.31	6,898.80	32.10	198.34	139.42	-2,045.89	-3,358.67	3,823.21	3,592.86	230.34	16.598
7,300.00	6,920.10	6,931.77	6,926.10	32.29	199.40	135.56	-2,046.23	-3,358.67	3,869.01	3,637.48	231.53	16.711
7,350.00	6,931.91	6,943.57	6,937.91	32.48	199.85	129.23	-2,046.23	-3,358.67	3,916.07	3,683.99	232.08	16.874
7,400.00	6,939.97	6,951.64	6,945.97	32.68	200.15	119.27	-2,046.23	-3,358.67	3,964.13	3,731.64	232.48	17.051
7,450.00	6,944.26	6,955.92	6,950.26	32.89	200.31	103.48	-2,046.23	-3,358.67	4,012.87	3,780.14	232.73	17.243
7,481.69	6,945.00	6,956.67	6,951.00	33.03	200.33	89.77	-2,046.23	-3,358.67	4,043.98	3,811.17	232.81	17.371
7,500.00	6,944.99	6,956.65	6,950.99	33.12	200.33	89.77	-2,046.23	-3,358.67	4,061.99	3,829.16	232.83	17.446
7,600.00	6,944.91	6,956.58	6,950.91	33.60	200.33	89.76	-2,046.23	-3,358.67	4,160.38	3,927.40	232.97	17.858
7,700.00	6,944.84	6,956.50	6,950.84	34.17	200.33	89.75	-2,046.23	-3,358.67	4,258.84	4,025.73	233.10	18.270
7,800.00	6,944.76	6,956.43	6,950.76	34.80	200.32	89.75	-2,046.23	-3,358.67	4,357.37	4,124.14	233.23	18.682
7,900.00	6,944.69	6,956.35	6,950.69	35.49	200.32	89.74	-2,046.23	-3,358.67	4,455.97	4,222.61	233.36	19.095
8,000.00	6,944.61	6,956.28	6,950.61	36.25	200.32	89.74	-2,046.23	-3,358.67	4,554.63	4,321.15	233.48	19.507
8,100.00	6,944.54	6,956.20	6,950.54	37.07	200.32	89.73	-2,046.23	-3,358.67	4,653.34	4,419.74	233.60	19.920
8,200.00	6,944.46	6,956.13	6,950.46	37.94	200.31	89.73	-2,046.23	-3,358.67	4,752.11	4,518.40	233.71	20.333
8,300.00	6,944.39	6,956.05	6,950.39	38.86	200.31	89.72	-2,046.23	-3,358.67	4,850.93	4,617.11	233.83	20.746
8,400.00	6,944.31	6,955.98	6,950.31	39.83	200.31	89.71	-2,046.23	-3,358.67	4,949.80	4,715.87	233.93	21.159
8,500.00	6,944.23	6,955.90	6,950.23	40.84	200.31	89.71	-2,046.23	-3,358.67	5,048.71	4,814.67	234.04	21.572
8,600.00	6,944.16	6,955.83	6,950.16	41.89	200.30	89.70	-2,046.23	-3,358.67	5,147.67	4,913.52	234.14	21.985
8,700.00	6,944.08	6,955.75	6,950.08	42.98	200.30	89.70	-2,046.23	-3,358.67	5,246.66	5,012.42	234.24	22.398
8,800.00	6,944.01	6,955.67	6,950.01	44.10	200.30	89.69	-2,046.23	-3,358.67	5,345.69	5,111.35	234.34	22.811

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 119 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program:		265-A027Ua_INC-ONLY						Rule Assigned:				Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.00	6,943.93	6,955.60	6,949.93	45.25	200.29	89.68	-2,046.23	-3,358.67	5,444.76	5,210.32	234.44	23.225	
9,000.00	6,943.86	6,955.52	6,949.86	46.43	200.29	89.68	-2,046.23	-3,358.67	5,543.86	5,309.33	234.53	23.638	
9,100.00	6,943.78	6,955.45	6,949.78	47.63	200.29	89.67	-2,046.23	-3,358.67	5,642.99	5,408.37	234.62	24.051	
9,200.00	6,943.71	6,955.37	6,949.71	48.86	200.29	89.67	-2,046.23	-3,358.67	5,742.15	5,507.44	234.71	24.464	
9,300.00	6,943.63	6,955.30	6,949.63	50.11	200.28	89.66	-2,046.23	-3,358.67	5,841.34	5,606.54	234.80	24.878	
9,400.00	6,943.56	6,955.22	6,949.56	51.38	200.28	89.65	-2,046.23	-3,358.67	5,940.56	5,705.67	234.89	25.291	
9,500.00	6,943.48	6,955.15	6,949.48	52.66	200.28	89.65	-2,046.23	-3,358.67	6,039.80	5,804.83	234.98	25.704	
9,600.00	6,943.41	6,955.07	6,949.41	53.97	200.27	89.64	-2,046.23	-3,358.67	6,139.07	5,904.01	235.06	26.117	
9,700.00	6,943.33	6,955.00	6,949.33	55.29	200.27	89.64	-2,046.23	-3,358.67	6,238.36	6,003.22	235.14	26.530	
9,800.00	6,943.26	6,954.92	6,949.26	56.63	200.27	89.63	-2,046.23	-3,358.67	6,337.68	6,102.45	235.22	26.943	
9,900.00	6,943.18	6,954.85	6,949.18	57.98	200.27	89.63	-2,046.23	-3,358.67	6,437.01	6,201.71	235.30	27.356	
10,000.00	6,943.11	6,954.77	6,949.11	59.34	200.26	89.62	-2,046.23	-3,358.67	6,536.37	6,300.99	235.38	27.769	
10,100.00	6,943.03	6,954.70	6,949.03	60.72	200.26	89.61	-2,046.23	-3,358.67	6,635.74	6,400.28	235.46	28.182	
10,200.00	6,942.96	6,954.62	6,948.96	62.11	200.26	89.61	-2,046.23	-3,358.67	6,735.14	6,499.60	235.54	28.595	
10,300.00	6,942.88	6,954.55	6,948.88	63.50	200.25	89.60	-2,046.23	-3,358.67	6,834.55	6,598.93	235.61	29.008	
10,400.00	6,942.81	6,954.47	6,948.81	64.91	200.25	89.60	-2,046.23	-3,358.67	6,933.97	6,698.29	235.69	29.420	
10,500.00	6,942.73	6,954.40	6,948.73	66.33	200.25	89.59	-2,046.23	-3,358.67	7,033.42	6,797.66	235.76	29.833	
10,600.00	6,942.66	6,954.32	6,948.66	67.75	200.25	89.58	-2,046.23	-3,358.67	7,132.88	6,897.04	235.84	30.245	
10,700.00	6,942.58	6,954.25	6,948.58	69.18	200.24	89.58	-2,046.23	-3,358.67	7,232.35	6,996.44	235.91	30.657	
10,800.00	6,942.51	6,954.17	6,948.51	70.62	200.24	89.57	-2,046.23	-3,358.67	7,331.84	7,095.86	235.98	31.070	
10,900.00	6,942.43	6,954.10	6,948.43	72.07	200.24	89.57	-2,046.23	-3,358.67	7,431.34	7,195.29	236.05	31.482	
11,000.00	6,942.36	6,954.02	6,948.36	73.52	200.24	89.56	-2,046.23	-3,358.67	7,530.86	7,294.74	236.12	31.894	
11,100.00	6,942.28	6,953.95	6,948.28	74.98	200.23	89.56	-2,046.23	-3,358.67	7,630.39	7,394.20	236.19	32.306	
11,200.00	6,942.21	6,953.87	6,948.21	76.45	200.23	89.55	-2,046.23	-3,358.67	7,729.93	7,493.67	236.26	32.718	
11,300.00	6,942.13	6,953.80	6,948.13	77.92	200.23	89.54	-2,046.23	-3,358.67	7,829.48	7,593.15	236.33	33.129	
11,400.00	6,942.06	6,953.72	6,948.06	79.40	200.22	89.54	-2,046.23	-3,358.67	7,929.04	7,692.64	236.40	33.541	
11,500.00	6,941.98	6,953.65	6,947.98	80.88	200.22	89.53	-2,046.23	-3,358.67	8,028.62	7,792.15	236.47	33.952	
11,600.00	6,941.91	6,953.57	6,947.91	82.36	200.22	89.53	-2,046.23	-3,358.67	8,128.20	7,891.67	236.54	34.363	
11,700.00	6,941.83	6,953.50	6,947.83	83.85	200.22	89.52	-2,046.23	-3,358.67	8,227.80	7,991.19	236.61	34.774	
11,800.00	6,941.76	6,953.42	6,947.76	85.35	200.21	89.51	-2,046.23	-3,358.67	8,327.40	8,090.73	236.67	35.185	
11,900.00	6,941.68	6,953.35	6,947.68	86.85	200.21	89.51	-2,046.23	-3,358.67	8,427.02	8,190.28	236.74	35.596	
12,000.00	6,941.60	6,953.27	6,947.60	88.35	200.21	89.50	-2,046.23	-3,358.67	8,526.64	8,289.83	236.81	36.007	
12,100.00	6,941.53	6,953.20	6,947.53	89.85	200.20	89.50	-2,046.23	-3,358.67	8,626.27	8,389.40	236.87	36.417	
12,200.00	6,941.45	6,953.12	6,947.45	91.36	200.20	89.49	-2,046.23	-3,358.67	8,725.91	8,488.97	236.94	36.828	
12,300.00	6,941.38	6,953.04	6,947.38	92.88	200.20	89.49	-2,046.23	-3,358.67	8,825.56	8,588.55	237.01	37.238	
12,400.00	6,941.30	6,952.97	6,947.30	94.39	200.20	89.48	-2,046.23	-3,358.67	8,925.22	8,688.14	237.07	37.648	
12,500.00	6,941.23	6,952.89	6,947.23	95.91	200.19	89.47	-2,046.23	-3,358.67	9,024.88	8,787.74	237.14	38.057	
12,600.00	6,941.15	6,952.82	6,947.15	97.43	200.19	89.47	-2,046.23	-3,358.67	9,124.55	8,887.35	237.20	38.467	
12,700.00	6,941.08	6,952.74	6,947.08	98.95	200.19	89.46	-2,046.23	-3,358.67	9,224.23	8,986.96	237.27	38.877	
12,800.00	6,941.00	6,952.67	6,947.00	100.48	200.18	89.46	-2,046.23	-3,358.67	9,323.91	9,086.58	237.34	39.286	
12,900.00	6,940.93	6,952.59	6,946.93	102.01	200.18	89.45	-2,046.23	-3,358.67	9,423.61	9,186.20	237.40	39.695	
13,000.00	6,940.85	6,952.52	6,946.85	103.54	200.18	89.44	-2,046.23	-3,358.67	9,523.30	9,285.84	237.47	40.104	
13,100.00	6,940.78	6,952.44	6,946.78	105.07	200.18	89.44	-2,046.23	-3,358.67	9,623.01	9,385.48	237.53	40.512	
13,200.00	6,940.70	6,952.37	6,946.70	106.61	200.17	89.43	-2,046.23	-3,358.67	9,722.72	9,485.12	237.60	40.921	
13,300.00	6,940.63	6,952.29	6,946.63	108.14	200.17	89.43	-2,046.23	-3,358.67	9,822.44	9,584.77	237.66	41.329	
13,400.00	6,940.55	6,952.22	6,946.55	109.68	200.17	89.42	-2,046.23	-3,358.67	9,922.16	9,684.43	237.73	41.737	
13,500.00	6,940.48	6,952.14	6,946.48	111.22	200.16	89.41	-2,046.23	-3,358.67	10,021.89	9,784.09	237.79	42.145	
13,600.00	6,940.40	6,952.07	6,946.40	112.77	200.16	89.41	-2,046.23	-3,358.67	10,121.62	9,883.76	237.86	42.553	
13,700.00	6,940.33	6,951.99	6,946.33	114.31	200.16	89.40	-2,046.23	-3,358.67	10,221.36	9,983.43	237.93	42.960	
13,800.00	6,940.25	6,951.92	6,946.25	115.86	200.16	89.40	-2,046.23	-3,358.67	10,321.10	10,083.11	237.99	43.367	
13,900.00	6,940.18	6,951.84	6,946.18	117.41	200.15	89.39	-2,046.23	-3,358.67	10,420.85	10,182.79	238.06	43.774	
14,000.00	6,940.10	6,951.77	6,946.10	118.95	200.15	89.39	-2,046.23	-3,358.67	10,520.60	10,282.48	238.12	44.181	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 119 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program:		265-A027Ua_INC-ONLY					Rule Assigned:			Offset Well Error:		0.00 usft		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
14,100.00	6,940.03	6,951.69	6,946.03	120.51	200.15	89.38	-2,046.23	-3,358.67	10,620.36	10,382.17	238.19	44.588		
14,200.00	6,939.95	6,951.62	6,945.95	122.06	200.15	89.37	-2,046.23	-3,358.67	10,720.12	10,481.87	238.26	44.994		
14,300.00	6,939.88	6,951.54	6,945.88	123.61	200.14	89.37	-2,046.23	-3,358.67	10,819.89	10,581.57	238.32	45.400		
14,400.00	6,939.80	6,951.47	6,945.80	125.17	200.14	89.36	-2,046.23	-3,358.67	10,919.66	10,681.27	238.39	45.806		
14,500.00	6,939.73	6,951.39	6,945.73	126.72	200.14	89.36	-2,046.23	-3,358.67	11,019.43	10,780.98	238.45	46.212		
14,600.00	6,939.65	6,951.32	6,945.65	128.28	200.13	89.35	-2,046.23	-3,358.67	11,119.21	10,880.69	238.52	46.617		
14,700.00	6,939.58	6,951.24	6,945.58	129.84	200.13	89.34	-2,046.23	-3,358.67	11,219.00	10,980.41	238.59	47.022		
14,800.00	6,939.50	6,951.17	6,945.50	131.40	200.13	89.34	-2,046.23	-3,358.67	11,318.78	11,080.13	238.66	47.427		
14,900.00	6,939.43	6,951.09	6,945.43	132.96	200.13	89.33	-2,046.23	-3,358.67	11,418.57	11,179.85	238.72	47.832		
15,000.00	6,939.35	6,951.02	6,945.35	134.52	200.12	89.33	-2,046.23	-3,358.67	11,518.37	11,279.58	238.79	48.236		
15,100.00	6,939.28	6,950.94	6,945.28	136.08	200.12	89.32	-2,046.23	-3,358.67	11,618.17	11,379.31	238.86	48.641		
15,200.00	6,939.20	6,950.87	6,945.20	137.64	200.12	89.32	-2,046.23	-3,358.67	11,717.97	11,479.04	238.92	49.045		
15,300.00	6,939.13	6,950.79	6,945.13	139.21	200.11	89.31	-2,046.23	-3,358.67	11,817.77	11,578.78	238.99	49.448		
15,400.00	6,939.05	6,950.72	6,945.05	140.77	200.11	89.30	-2,046.23	-3,358.67	11,917.58	11,678.52	239.06	49.852		
15,500.00	6,938.98	6,950.64	6,944.98	142.34	200.11	89.30	-2,046.23	-3,358.67	12,017.39	11,778.26	239.13	50.255		
15,600.00	6,938.90	6,950.57	6,944.90	143.91	200.11	89.29	-2,046.23	-3,358.67	12,117.20	11,878.01	239.20	50.658		
15,700.00	6,938.82	6,950.49	6,944.82	145.47	200.10	89.29	-2,046.23	-3,358.67	12,217.02	11,977.76	239.27	51.060		
15,800.00	6,938.75	6,950.41	6,944.75	147.04	200.10	89.28	-2,046.23	-3,358.67	12,316.84	12,077.51	239.33	51.463		
15,900.00	6,938.67	6,950.34	6,944.67	148.61	200.10	89.27	-2,046.23	-3,358.67	12,416.66	12,177.26	239.40	51.865		
16,000.00	6,938.60	6,950.26	6,944.60	150.18	200.09	89.27	-2,046.23	-3,358.67	12,516.49	12,277.02	239.47	52.267		
16,100.00	6,938.52	6,950.19	6,944.52	151.75	200.09	89.26	-2,046.23	-3,358.67	12,616.32	12,376.78	239.54	52.668		
16,200.00	6,938.45	6,950.11	6,944.45	153.32	200.09	89.26	-2,046.23	-3,358.67	12,716.15	12,476.54	239.61	53.070		
16,300.00	6,938.37	6,950.04	6,944.37	154.90	200.09	89.25	-2,046.23	-3,358.67	12,815.98	12,576.30	239.68	53.471		
16,400.00	6,938.30	6,949.96	6,944.30	156.47	200.08	89.25	-2,046.23	-3,358.67	12,915.82	12,676.07	239.75	53.871		
16,500.00	6,938.22	6,949.89	6,944.22	158.04	200.08	89.24	-2,046.23	-3,358.67	13,015.66	12,775.84	239.82	54.272		
16,600.00	6,938.15	6,949.81	6,944.15	159.62	200.08	89.23	-2,046.23	-3,358.67	13,115.50	12,875.61	239.89	54.672		
16,700.00	6,938.07	6,949.74	6,944.07	161.19	200.08	89.23	-2,046.23	-3,358.67	13,215.35	12,975.38	239.96	55.072		
16,800.00	6,938.00	6,949.66	6,944.00	162.77	200.07	89.22	-2,046.23	-3,358.67	13,315.19	13,075.16	240.04	55.472		
16,900.00	6,937.92	6,949.59	6,943.92	164.34	200.07	89.22	-2,046.23	-3,358.67	13,415.04	13,174.93	240.11	55.871		
17,000.00	6,937.85	6,949.51	6,943.85	165.92	200.07	89.21	-2,046.23	-3,358.67	13,514.89	13,274.71	240.18	56.270		
17,100.00	6,937.77	6,949.44	6,943.77	167.50	200.06	89.20	-2,046.23	-3,358.67	13,614.74	13,374.49	240.25	56.669		
17,200.00	6,937.70	6,949.36	6,943.70	169.07	200.06	89.20	-2,046.23	-3,358.67	13,714.60	13,474.27	240.32	57.067		
17,300.00	6,937.62	6,949.29	6,943.62	170.65	200.06	89.19	-2,046.23	-3,358.67	13,814.46	13,574.06	240.40	57.465		
17,400.00	6,937.55	6,949.21	6,943.55	172.23	200.06	89.19	-2,046.23	-3,358.67	13,914.32	13,673.85	240.47	57.863		
17,500.00	6,937.47	6,949.14	6,943.47	173.81	200.05	89.18	-2,046.23	-3,358.67	14,014.18	13,773.63	240.54	58.261		
17,600.00	6,937.40	6,949.06	6,943.40	175.39	200.05	89.17	-2,046.23	-3,358.67	14,114.04	13,873.42	240.62	58.658		
17,700.00	6,937.32	6,948.99	6,943.32	176.97	200.05	89.17	-2,046.23	-3,358.67	14,213.90	13,973.22	240.69	59.055		
17,800.00	6,937.25	6,948.91	6,943.25	178.55	200.04	89.16	-2,046.23	-3,358.67	14,313.77	14,073.01	240.76	59.452		
17,900.00	6,937.17	6,948.84	6,943.17	180.13	200.04	89.16	-2,046.23	-3,358.67	14,413.64	14,172.80	240.84	59.848		
18,000.00	6,937.10	6,948.76	6,943.10	181.71	200.04	89.15	-2,046.23	-3,358.67	14,513.51	14,272.60	240.91	60.244		
18,100.00	6,937.02	6,948.69	6,943.02	183.29	200.04	89.15	-2,046.23	-3,358.67	14,613.38	14,372.40	240.99	60.640		
18,200.00	6,936.95	6,948.61	6,942.95	184.87	200.03	89.14	-2,046.23	-3,358.67	14,713.26	14,472.20	241.06	61.035		
18,300.00	6,936.87	6,948.54	6,942.87	186.46	200.03	89.13	-2,046.23	-3,358.67	14,813.13	14,572.00	241.14	61.430		
18,400.00	6,936.80	6,948.46	6,942.80	188.04	200.03	89.13	-2,046.23	-3,358.67	14,913.01	14,671.80	241.21	61.825		
18,500.00	6,936.72	6,948.39	6,942.72	189.62	200.02	89.12	-2,046.23	-3,358.67	15,012.89	14,771.60	241.29	62.220		
18,600.00	6,936.65	6,948.31	6,942.65	191.21	200.02	89.12	-2,046.23	-3,358.67	15,112.77	14,871.41	241.36	62.614		
18,700.00	6,936.57	6,948.24	6,942.57	192.79	200.02	89.11	-2,046.23	-3,358.67	15,212.65	14,971.21	241.44	63.008		
18,800.00	6,936.50	6,948.16	6,942.50	194.37	200.02	89.10	-2,046.23	-3,358.67	15,312.54	15,071.02	241.52	63.401		
18,900.00	6,936.42	6,948.09	6,942.42	195.96	200.01	89.10	-2,046.23	-3,358.67	15,412.42	15,170.83	241.59	63.794		
19,000.00	6,936.35	6,948.01	6,942.35	197.54	200.01	89.09	-2,046.23	-3,358.67	15,512.31	15,270.64	241.67	64.187		
19,100.00	6,936.27	6,947.94	6,942.27	199.13	200.01	89.09	-2,046.23	-3,358.67	15,612.20	15,370.45	241.75	64.580		
19,200.00	6,936.19	6,947.86	6,942.19	200.71	200.01	89.08	-2,046.23	-3,358.67	15,712.09	15,470.26	241.83	64.972		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 119 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 265-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,300.00	6,936.12	6,947.78	6,942.12	202.30	200.00	89.08	-2,046.23	-3,358.67	15,811.98	15,570.07	241.91	65.364	
19,400.00	6,936.04	6,947.71	6,942.04	203.88	200.00	89.07	-2,046.23	-3,358.67	15,911.87	15,669.89	241.98	65.756	
19,500.00	6,935.97	6,947.63	6,941.97	205.47	200.00	89.06	-2,046.23	-3,358.67	16,011.76	15,769.70	242.06	66.147	
19,600.00	6,935.89	6,947.56	6,941.89	207.06	199.99	89.06	-2,046.23	-3,358.67	16,111.66	15,869.52	242.14	66.538	
19,700.00	6,935.82	6,947.48	6,941.82	208.64	199.99	89.05	-2,046.23	-3,358.67	16,211.56	15,969.33	242.22	66.929	
19,800.00	6,935.74	6,947.41	6,941.74	210.23	199.99	89.05	-2,046.23	-3,358.67	16,311.45	16,069.15	242.30	67.319	
19,900.00	6,935.67	6,947.33	6,941.67	211.82	199.99	89.04	-2,046.23	-3,358.67	16,411.35	16,168.97	242.38	67.709	
20,000.00	6,935.59	6,947.26	6,941.59	213.41	199.98	89.03	-2,046.23	-3,358.67	16,511.25	16,268.79	242.46	68.098	
20,100.00	6,935.52	6,947.18	6,941.52	214.99	199.98	89.03	-2,046.23	-3,358.67	16,611.15	16,368.61	242.54	68.488	
20,200.00	6,935.44	6,947.11	6,941.44	216.58	199.98	89.02	-2,046.23	-3,358.67	16,711.06	16,468.43	242.62	68.877	
20,300.00	6,935.37	6,947.03	6,941.37	218.17	199.97	89.02	-2,046.23	-3,358.67	16,810.96	16,568.26	242.70	69.265	
20,400.00	6,935.29	6,946.96	6,941.29	219.76	199.97	89.01	-2,046.23	-3,358.67	16,910.87	16,668.08	242.79	69.654	
20,500.00	6,935.22	6,946.88	6,941.22	221.35	199.97	89.01	-2,046.23	-3,358.67	17,010.77	16,767.90	242.87	70.041	
20,600.00	6,935.14	6,946.81	6,941.14	222.94	199.97	89.00	-2,046.23	-3,358.67	17,110.68	16,867.73	242.95	70.429	
20,700.00	6,935.07	6,946.73	6,941.07	224.53	199.96	88.99	-2,046.23	-3,358.67	17,210.59	16,967.55	243.03	70.816	
20,789.75	6,935.00	6,946.67	6,941.00	225.95	199.96	88.99	-2,046.23	-3,358.67	17,300.25	17,057.15	243.11	71.164	

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125 - OH - OH-INC											Offset Site Error:	0.00 usft
Survey Program: 173-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
14,200.00	6,939.95	7,206.18	7,200.87	122.06	217.74	-92.08	1,277.95	-5,598.19	13,327.43	13,078.95	248.49	53.635
14,300.00	6,939.88	7,206.30	7,200.99	123.61	217.75	-92.09	1,277.95	-5,598.19	13,425.71	13,177.13	248.58	54.010
14,400.00	6,939.80	7,206.42	7,201.11	125.17	217.75	-92.09	1,277.94	-5,598.19	13,524.00	13,275.33	248.67	54.385
14,500.00	6,939.73	7,206.54	7,201.23	126.72	217.76	-92.09	1,277.94	-5,598.19	13,622.32	13,373.56	248.76	54.760
14,600.00	6,939.65	7,206.67	7,201.36	128.28	217.76	-92.10	1,277.94	-5,598.19	13,720.67	13,471.81	248.86	55.135
14,700.00	6,939.58	7,206.79	7,201.48	129.84	217.77	-92.10	1,277.93	-5,598.19	13,819.04	13,570.09	248.95	55.509
14,800.00	6,939.50	7,206.91	7,201.60	131.40	217.77	-92.10	1,277.93	-5,598.19	13,917.43	13,668.39	249.05	55.883
14,900.00	6,939.43	7,207.03	7,201.73	132.96	217.77	-92.10	1,277.92	-5,598.19	14,015.85	13,766.71	249.14	56.256
15,000.00	6,939.35	7,207.16	7,201.85	134.52	217.78	-92.11	1,277.92	-5,598.19	14,114.29	13,865.05	249.24	56.630
15,100.00	6,939.28	7,207.28	7,201.97	136.08	217.78	-92.11	1,277.92	-5,598.19	14,212.75	13,963.41	249.33	57.003
15,200.00	6,939.20	7,207.41	7,202.10	137.64	217.79	-92.11	1,277.91	-5,598.19	14,311.23	14,061.80	249.43	57.375
15,300.00	6,939.13	7,207.53	7,202.22	139.21	217.79	-92.12	1,277.91	-5,598.19	14,409.73	14,160.20	249.53	57.748
15,400.00	6,939.05	7,207.65	7,202.34	140.77	217.80	-92.12	1,277.90	-5,598.19	14,508.25	14,258.63	249.63	58.120
15,500.00	6,938.98	7,207.78	7,202.47	142.34	217.80	-92.12	1,277.90	-5,598.19	14,606.80	14,357.07	249.73	58.491
15,600.00	6,938.90	7,207.90	7,202.59	143.91	217.81	-92.12	1,277.90	-5,598.19	14,705.36	14,455.53	249.82	58.863
15,700.00	6,938.82	7,208.03	7,202.72	145.47	217.81	-92.13	1,277.89	-5,598.19	14,803.94	14,554.02	249.92	59.234
15,800.00	6,938.75	7,208.15	7,202.84	147.04	217.82	-92.13	1,277.89	-5,598.19	14,902.54	14,652.52	250.02	59.604
15,900.00	6,938.67	7,208.28	7,202.97	148.61	217.82	-92.13	1,277.88	-5,598.19	15,001.16	14,751.04	250.12	59.975
16,000.00	6,938.60	7,208.40	7,203.09	150.18	217.83	-92.14	1,277.88	-5,598.19	15,099.80	14,849.57	250.23	60.345
16,100.00	6,938.52	7,208.53	7,203.22	151.75	217.83	-92.14	1,277.88	-5,598.19	15,198.45	14,948.13	250.33	60.715
16,200.00	6,938.45	7,208.65	7,203.34	153.32	217.84	-92.14	1,277.87	-5,598.19	15,297.12	15,046.70	250.43	61.084
16,300.00	6,938.37	7,208.78	7,203.47	154.90	217.84	-92.14	1,277.87	-5,598.19	15,395.81	15,145.28	250.53	61.453
16,400.00	6,938.30	7,208.91	7,203.60	156.47	217.84	-92.15	1,277.86	-5,598.19	15,494.52	15,243.89	250.63	61.822
16,500.00	6,938.22	7,209.03	7,203.72	158.04	217.85	-92.15	1,277.86	-5,598.19	15,593.24	15,342.51	250.73	62.190
16,600.00	6,938.15	7,209.16	7,203.85	159.62	217.85	-92.15	1,277.86	-5,598.19	15,691.98	15,441.15	250.84	62.558
16,700.00	6,938.07	7,209.29	7,203.98	161.19	217.86	-92.16	1,277.85	-5,598.19	15,790.74	15,539.80	250.94	62.926
16,800.00	6,938.00	7,209.41	7,204.10	162.77	217.86	-92.16	1,277.85	-5,598.19	15,889.51	15,638.46	251.04	63.294
16,900.00	6,937.92	7,209.54	7,204.23	164.34	217.87	-92.16	1,277.84	-5,598.19	15,988.29	15,737.15	251.15	63.661
17,000.00	6,937.85	7,209.67	7,204.36	165.92	217.87	-92.17	1,277.84	-5,598.19	16,087.09	15,835.84	251.25	64.027
17,100.00	6,937.77	7,209.80	7,204.48	167.50	217.88	-92.17	1,277.84	-5,598.19	16,185.91	15,934.55	251.36	64.394
17,200.00	6,937.70	7,209.92	7,204.61	169.07	217.88	-92.17	1,277.83	-5,598.19	16,284.74	16,033.28	251.46	64.760
17,300.00	6,937.62	7,210.05	7,204.74	170.65	217.89	-92.17	1,277.83	-5,598.19	16,383.58	16,132.02	251.57	65.126
17,400.00	6,937.55	7,210.18	7,204.87	172.23	217.89	-92.18	1,277.82	-5,598.19	16,482.44	16,230.77	251.67	65.491
17,500.00	6,937.47	7,210.31	7,205.00	173.81	217.90	-92.18	1,277.82	-5,598.19	16,581.31	16,329.53	251.78	65.856
17,600.00	6,937.40	7,210.44	7,205.12	175.39	217.90	-92.18	1,277.82	-5,598.19	16,680.20	16,428.31	251.89	66.221
17,700.00	6,937.32	7,210.57	7,205.25	176.97	217.91	-92.19	1,277.81	-5,598.19	16,779.10	16,527.11	251.99	66.586
17,800.00	6,937.25	7,210.69	7,205.38	178.55	217.91	-92.19	1,277.81	-5,598.19	16,878.01	16,625.91	252.10	66.950
17,900.00	6,937.17	7,210.82	7,205.51	180.13	217.92	-92.19	1,277.80	-5,598.19	16,976.93	16,724.73	252.21	67.313
18,000.00	6,937.10	7,210.95	7,205.64	181.71	217.92	-92.20	1,277.80	-5,598.19	17,075.87	16,823.56	252.31	67.677
18,100.00	6,937.02	7,211.08	7,205.77	183.29	217.93	-92.20	1,277.79	-5,598.19	17,174.82	16,922.40	252.42	68.040
18,200.00	6,936.95	7,211.21	7,205.90	184.87	217.93	-92.20	1,277.79	-5,598.19	17,273.78	17,021.25	252.53	68.403
18,300.00	6,936.87	7,211.34	7,206.03	186.46	217.94	-92.20	1,277.79	-5,598.19	17,372.75	17,120.12	252.64	68.765
18,400.00	6,936.80	7,211.47	7,206.16	188.04	217.94	-92.21	1,277.78	-5,598.19	17,471.74	17,218.99	252.75	69.127
18,500.00	6,936.72	7,211.60	7,206.29	189.62	217.95	-92.21	1,277.78	-5,598.19	17,570.74	17,317.88	252.86	69.489
18,600.00	6,936.65	7,211.73	7,206.42	191.21	217.95	-92.21	1,277.77	-5,598.19	17,669.74	17,416.78	252.97	69.850
18,700.00	6,936.57	7,211.87	7,206.55	192.79	217.96	-92.22	1,277.77	-5,598.19	17,768.76	17,515.69	253.08	70.211
18,800.00	6,936.50	7,212.00	7,206.68	194.37	217.96	-92.22	1,277.76	-5,598.19	17,867.79	17,614.61	253.19	70.572
18,900.00	6,936.42	7,212.13	7,206.81	195.96	217.97	-92.22	1,277.76	-5,598.19	17,966.83	17,713.54	253.29	70.932
19,000.00	6,936.35	7,212.26	7,206.94	197.54	217.97	-92.23	1,277.76	-5,598.19	18,065.88	17,812.48	253.41	71.292
19,100.00	6,936.27	7,212.39	7,207.08	199.13	217.97	-92.23	1,277.75	-5,598.19	18,164.94	17,911.43	253.52	71.652
19,200.00	6,936.19	7,212.52	7,207.21	200.71	217.98	-92.23	1,277.75	-5,598.19	18,264.02	18,010.39	253.63	72.011
19,300.00	6,936.12	7,212.66	7,207.34	202.30	217.98	-92.23	1,277.74	-5,598.19	18,363.10	18,109.36	253.74	72.370

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 173-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,400.00	6,936.04	7,212.79	7,207.47	203.88	217.99	-92.24	1,277.74	-5,598.19	18,462.19	18,208.34	253.85	72.729	
19,500.00	6,935.97	7,212.92	7,207.60	205.47	217.99	-92.24	1,277.73	-5,598.19	18,561.29	18,307.33	253.96	73.087	
19,600.00	6,935.89	7,213.05	7,207.74	207.06	218.00	-92.24	1,277.73	-5,598.19	18,660.40	18,406.33	254.07	73.445	
19,700.00	6,935.82	7,213.19	7,207.87	208.64	218.00	-92.25	1,277.73	-5,598.19	18,759.52	18,505.34	254.18	73.803	
19,800.00	6,935.74	7,213.32	7,208.00	210.23	218.01	-92.25	1,277.72	-5,598.19	18,858.65	18,604.36	254.30	74.160	
19,900.00	6,935.67	7,213.45	7,208.14	211.82	218.01	-92.25	1,277.72	-5,598.19	18,957.79	18,703.38	254.41	74.517	
20,000.00	6,935.59	7,213.59	7,208.27	213.41	218.02	-92.26	1,277.71	-5,598.19	19,056.94	18,802.42	254.52	74.874	
20,100.00	6,935.52	7,213.72	7,208.40	214.99	218.02	-92.26	1,277.71	-5,598.19	19,156.09	18,901.46	254.63	75.230	
20,200.00	6,935.44	7,213.85	7,208.54	216.58	218.03	-92.26	1,277.70	-5,598.19	19,255.26	19,000.51	254.75	75.586	
20,300.00	6,935.37	7,213.99	7,208.67	218.17	218.03	-92.27	1,277.70	-5,598.19	19,354.43	19,099.57	254.86	75.941	
20,400.00	6,935.29	7,214.12	7,208.81	219.76	218.04	-92.27	1,277.70	-5,598.19	19,453.62	19,198.64	254.97	76.297	
20,500.00	6,935.22	7,214.26	7,208.94	221.35	218.04	-92.27	1,277.69	-5,598.19	19,552.81	19,297.72	255.09	76.651	
20,600.00	6,935.14	7,214.39	7,209.08	222.94	218.05	-92.27	1,277.69	-5,598.19	19,652.01	19,396.80	255.20	77.006	
20,700.00	6,935.07	7,214.53	7,209.21	224.53	218.05	-92.28	1,277.68	-5,598.19	19,751.21	19,495.90	255.32	77.360	
20,789.75	6,935.00	7,214.65	7,209.33	225.95	218.06	-92.28	1,277.68	-5,598.19	19,840.26	19,584.84	255.42	77.677	

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125E - OH - OH-INC												Offset Site Error:	0.00 usft		
Survey Program:		130-A027Ua_INC-ONLY				Rule Assigned:								Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Offset Wellbore Centre			Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
8,800.00	6,944.01	6,962.15	6,959.21	44.10	176.20	87.50	-1,331.56	-5,415.38	7,385.28	7,176.97	208.31	35.453			
8,900.00	6,943.93	6,962.08	6,959.13	45.25	176.20	87.47	-1,331.56	-5,415.38	7,485.27	7,276.93	208.33	35.929			
9,000.00	6,943.86	6,962.00	6,959.06	46.43	176.19	87.44	-1,331.56	-5,415.38	7,585.26	7,376.90	208.36	36.405			
9,100.00	6,943.78	6,961.93	6,958.99	47.63	176.19	87.40	-1,331.56	-5,415.38	7,685.24	7,476.86	208.38	36.880			
9,200.00	6,943.71	6,961.86	6,958.91	48.86	176.19	87.37	-1,331.56	-5,415.38	7,785.23	7,576.82	208.41	37.355			
9,300.00	6,943.63	6,961.78	6,958.84	50.11	176.19	87.33	-1,331.56	-5,415.38	7,885.22	7,676.78	208.44	37.830			
9,400.00	6,943.56	6,961.71	6,958.77	51.38	176.19	87.30	-1,331.56	-5,415.38	7,985.21	7,776.74	208.46	38.305			
9,500.00	6,943.48	6,961.64	6,958.69	52.66	176.18	87.27	-1,331.56	-5,415.38	8,085.19	7,876.70	208.49	38.780			
9,600.00	6,943.41	6,961.56	6,958.62	53.97	176.18	87.23	-1,331.56	-5,415.38	8,185.18	7,976.67	208.52	39.254			
9,700.00	6,943.33	6,961.49	6,958.55	55.29	176.18	87.20	-1,331.56	-5,415.38	8,285.17	8,076.63	208.54	39.729			
9,800.00	6,943.26	6,961.41	6,958.47	56.63	176.18	87.16	-1,331.56	-5,415.38	8,385.16	8,176.59	208.57	40.203			
9,900.00	6,943.18	6,961.34	6,958.40	57.98	176.17	87.13	-1,331.56	-5,415.38	8,485.15	8,276.55	208.60	40.676			
10,000.00	6,943.11	6,961.26	6,958.32	59.34	176.17	87.09	-1,331.56	-5,415.38	8,585.14	8,376.51	208.63	41.150			
10,100.00	6,943.03	6,961.19	6,958.25	60.72	176.17	87.06	-1,331.56	-5,415.38	8,685.13	8,476.47	208.66	41.623			
10,200.00	6,942.96	6,961.12	6,958.17	62.11	176.17	87.02	-1,331.56	-5,415.38	8,785.12	8,576.43	208.69	42.096			
10,300.00	6,942.88	6,961.04	6,958.10	63.50	176.17	86.99	-1,331.56	-5,415.38	8,885.11	8,676.39	208.72	42.569			
10,400.00	6,942.81	6,960.97	6,958.02	64.91	176.16	86.95	-1,331.56	-5,415.38	8,985.10	8,776.35	208.75	43.041			
10,500.00	6,942.73	6,960.89	6,957.95	66.33	176.16	86.92	-1,331.56	-5,415.38	9,085.09	8,876.30	208.79	43.514			
10,600.00	6,942.66	6,960.82	6,957.87	67.75	176.16	86.88	-1,331.56	-5,415.38	9,185.08	8,976.26	208.82	43.986			
10,700.00	6,942.58	6,960.74	6,957.80	69.18	176.16	86.85	-1,331.56	-5,415.38	9,285.07	9,076.22	208.85	44.457			
10,800.00	6,942.51	6,960.67	6,957.72	70.62	176.16	86.81	-1,331.56	-5,415.38	9,385.06	9,176.18	208.89	44.929			
10,900.00	6,942.43	6,960.59	6,957.65	72.07	176.15	86.78	-1,331.56	-5,415.38	9,485.06	9,276.13	208.92	45.400			
11,000.00	6,942.36	6,960.52	6,957.57	73.52	176.15	86.74	-1,331.56	-5,415.38	9,585.05	9,376.09	208.96	45.871			
11,100.00	6,942.28	6,960.44	6,957.50	74.98	176.15	86.71	-1,331.56	-5,415.38	9,685.04	9,476.05	208.99	46.342			
11,200.00	6,942.21	6,960.37	6,957.42	76.45	176.15	86.67	-1,331.56	-5,415.38	9,785.03	9,576.00	209.03	46.812			
11,300.00	6,942.13	6,960.29	6,957.35	77.92	176.14	86.64	-1,331.56	-5,415.38	9,885.02	9,675.96	209.06	47.282			
11,400.00	6,942.06	6,960.21	6,957.27	79.40	176.14	86.60	-1,331.56	-5,415.38	9,985.02	9,775.91	209.10	47.752			
11,500.00	6,941.98	6,960.14	6,957.20	80.88	176.14	86.57	-1,331.56	-5,415.38	10,085.01	9,875.87	209.14	48.221			
11,600.00	6,941.91	6,960.06	6,957.12	82.36	176.14	86.53	-1,331.56	-5,415.38	10,185.00	9,975.82	209.18	48.691			
11,700.00	6,941.83	6,959.99	6,957.04	83.85	176.14	86.50	-1,331.56	-5,415.38	10,284.99	10,075.78	209.22	49.159			
11,800.00	6,941.76	6,959.91	6,956.97	85.35	176.13	86.46	-1,331.56	-5,415.38	10,384.99	10,175.73	209.26	49.628			
11,900.00	6,941.68	6,959.83	6,956.89	86.85	176.13	86.43	-1,331.56	-5,415.38	10,484.98	10,275.68	209.30	50.096			
12,000.00	6,941.60	6,959.76	6,956.82	88.35	176.13	86.39	-1,331.56	-5,415.38	10,584.97	10,375.64	209.34	50.564			
12,100.00	6,941.53	6,959.68	6,956.74	89.85	176.13	86.36	-1,331.56	-5,415.38	10,684.97	10,475.59	209.38	51.032			
12,200.00	6,941.45	6,959.61	6,956.66	91.36	176.13	86.32	-1,331.56	-5,415.38	10,784.96	10,575.54	209.42	51.499			
12,300.00	6,941.38	6,959.53	6,956.59	92.88	176.12	86.29	-1,331.56	-5,415.38	10,884.95	10,675.49	209.46	51.966			
12,400.00	6,941.30	6,959.45	6,956.51	94.39	176.12	86.25	-1,331.56	-5,415.38	10,984.95	10,775.44	209.51	52.433			
12,500.00	6,941.23	6,959.37	6,956.43	95.91	176.12	86.21	-1,331.56	-5,415.38	11,084.94	10,875.39	209.55	52.899			
12,600.00	6,941.15	6,959.30	6,956.36	97.43	176.12	86.18	-1,331.56	-5,415.38	11,184.93	10,975.34	209.59	53.365			
12,700.00	6,941.08	6,959.22	6,956.28	98.95	176.11	86.14	-1,331.56	-5,415.38	11,284.93	11,075.29	209.64	53.831			
12,800.00	6,941.00	6,959.14	6,956.20	100.48	176.11	86.11	-1,331.56	-5,415.38	11,384.92	11,175.24	209.68	54.296			
12,900.00	6,940.93	6,959.07	6,956.12	102.01	176.11	86.07	-1,331.56	-5,415.38	11,484.92	11,275.19	209.73	54.761			
13,000.00	6,940.85	6,958.99	6,956.05	103.54	176.11	86.03	-1,331.56	-5,415.38	11,584.91	11,375.14	209.78	55.225			
13,100.00	6,940.78	6,958.91	6,955.97	105.07	176.11	86.00	-1,331.56	-5,415.38	11,684.91	11,475.08	209.82	55.690			
13,200.00	6,940.70	6,958.83	6,955.89	106.61	176.10	85.96	-1,331.56	-5,415.38	11,784.90	11,575.03	209.87	56.153			
13,300.00	6,940.63	6,958.76	6,955.81	108.14	176.10	85.93	-1,331.56	-5,415.38	11,884.89	11,674.98	209.92	56.617			
13,400.00	6,940.55	6,958.68	6,955.74	109.68	176.10	85.89	-1,331.56	-5,415.38	11,984.89	11,774.92	209.97	57.080			
13,500.00	6,940.48	6,958.60	6,955.66	111.22	176.10	85.85	-1,331.56	-5,415.38	12,084.88	11,874.87	210.02	57.543			
13,600.00	6,940.40	6,958.52	6,955.58	112.77	176.09	85.82	-1,331.56	-5,415.38	12,184.88	11,974.81	210.06	58.005			
13,700.00	6,940.33	6,958.44	6,955.50	114.31	176.09	85.78	-1,331.56	-5,415.38	12,284.87	12,074.76	210.12	58.467			
13,800.00	6,940.25	6,958.37	6,955.42	115.86	176.09	85.75	-1,331.56	-5,415.38	12,384.87	12,174.70	210.17	58.929			
13,900.00	6,940.18	6,958.29	6,955.35	117.41	176.09	85.71	-1,331.56	-5,415.38	12,484.86	12,274.65	210.22	59.390			

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125E - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program:		130-A027Ua_INC-ONLY					Rule Assigned:		Offset Well Error:		0.00 usft		
Reference	Offset	Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre		Distance		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
14,000.00	6,940.10	6,958.21	6,955.27	118.95	176.09	85.67	-1,331.56	-5,415.38	12,584.86	12,374.59	210.27	59.851	
14,100.00	6,940.03	6,958.13	6,955.19	120.51	176.08	85.64	-1,331.56	-5,415.38	12,684.85	12,474.53	210.32	60.312	
14,200.00	6,939.95	6,958.05	6,955.11	122.06	176.08	85.60	-1,331.56	-5,415.38	12,784.85	12,574.48	210.37	60.772	
14,300.00	6,939.88	6,957.97	6,955.03	123.61	176.08	85.56	-1,331.56	-5,415.38	12,884.85	12,674.42	210.43	61.232	
14,400.00	6,939.80	6,957.89	6,954.95	125.17	176.08	85.53	-1,331.56	-5,415.38	12,984.84	12,774.36	210.48	61.691	
14,500.00	6,939.73	6,957.81	6,954.87	126.72	176.07	85.49	-1,331.56	-5,415.38	13,084.84	12,874.30	210.54	62.150	
14,600.00	6,939.65	6,957.74	6,954.79	128.28	176.07	85.45	-1,331.56	-5,415.38	13,184.83	12,974.24	210.59	62.608	
14,700.00	6,939.58	6,957.66	6,954.71	129.84	176.07	85.42	-1,331.56	-5,415.38	13,284.83	13,074.18	210.65	63.067	
14,800.00	6,939.50	6,957.58	6,954.64	131.40	176.07	85.38	-1,331.56	-5,415.38	13,384.82	13,174.12	210.70	63.524	
14,900.00	6,939.43	6,957.50	6,954.56	132.96	176.06	85.34	-1,331.56	-5,415.38	13,484.82	13,274.06	210.76	63.982	
15,000.00	6,939.35	6,957.42	6,954.48	134.52	176.06	85.31	-1,331.56	-5,415.38	13,584.82	13,374.00	210.82	64.439	
15,100.00	6,939.28	6,957.34	6,954.40	136.08	176.06	85.27	-1,331.56	-5,415.38	13,684.81	13,473.93	210.88	64.895	
15,200.00	6,939.20	6,957.26	6,954.32	137.64	176.06	85.23	-1,331.56	-5,415.38	13,784.81	13,573.87	210.93	65.351	
15,300.00	6,939.13	6,957.18	6,954.24	139.21	176.06	85.19	-1,331.56	-5,415.38	13,884.80	13,673.81	210.99	65.807	
15,400.00	6,939.05	6,957.10	6,954.16	140.77	176.05	85.16	-1,331.56	-5,415.38	13,984.80	13,773.75	211.05	66.262	
15,500.00	6,938.98	6,957.02	6,954.08	142.34	176.05	85.12	-1,331.56	-5,415.38	14,084.80	13,873.68	211.11	66.717	
15,600.00	6,938.90	6,956.94	6,954.00	143.91	176.05	85.08	-1,331.56	-5,415.38	14,184.79	13,973.62	211.17	67.171	
15,700.00	6,938.82	6,956.86	6,953.92	145.47	176.05	85.05	-1,331.56	-5,415.38	14,284.79	14,073.55	211.23	67.625	
15,800.00	6,938.75	6,956.78	6,953.84	147.04	176.04	85.01	-1,331.56	-5,415.38	14,384.78	14,173.49	211.30	68.079	
15,900.00	6,938.67	6,956.70	6,953.75	148.61	176.04	84.97	-1,331.56	-5,415.38	14,484.78	14,273.42	211.36	68.532	
16,000.00	6,938.60	6,956.62	6,953.67	150.18	176.04	84.93	-1,331.56	-5,415.38	14,584.78	14,373.36	211.42	68.985	
16,100.00	6,938.52	6,956.53	6,953.59	151.75	176.04	84.90	-1,331.56	-5,415.38	14,684.77	14,473.29	211.48	69.437	
16,200.00	6,938.45	6,956.45	6,953.51	153.32	176.03	84.86	-1,331.56	-5,415.38	14,784.77	14,573.22	211.55	69.889	
16,300.00	6,938.37	6,956.37	6,953.43	154.90	176.03	84.82	-1,331.56	-5,415.38	14,884.77	14,673.15	211.61	70.340	
16,400.00	6,938.30	6,956.29	6,953.35	156.47	176.03	84.78	-1,331.56	-5,415.38	14,984.76	14,773.09	211.68	70.791	
16,500.00	6,938.22	6,956.21	6,953.27	158.04	176.03	84.75	-1,331.56	-5,415.38	15,084.76	14,873.02	211.74	71.241	
16,600.00	6,938.15	6,956.13	6,953.19	159.62	176.03	84.71	-1,331.56	-5,415.38	15,184.76	14,972.95	211.81	71.691	
16,700.00	6,938.07	6,956.05	6,953.11	161.19	176.02	84.67	-1,331.56	-5,415.38	15,284.75	15,072.88	211.87	72.141	
16,800.00	6,938.00	6,955.97	6,953.02	162.77	176.02	84.63	-1,331.56	-5,415.38	15,384.75	15,172.81	211.94	72.590	
16,900.00	6,937.92	6,955.88	6,952.94	164.34	176.02	84.60	-1,331.56	-5,415.38	15,484.75	15,272.74	212.01	73.039	
17,000.00	6,937.85	6,955.80	6,952.86	165.92	176.02	84.56	-1,331.56	-5,415.38	15,584.74	15,372.67	212.07	73.487	
17,100.00	6,937.77	6,955.72	6,952.78	167.50	176.01	84.52	-1,331.56	-5,415.38	15,684.74	15,472.60	212.14	73.935	
17,200.00	6,937.70	6,955.64	6,952.70	169.07	176.01	84.48	-1,331.56	-5,415.38	15,784.74	15,572.53	212.21	74.382	
17,300.00	6,937.62	6,955.55	6,952.61	170.65	176.01	84.44	-1,331.56	-5,415.38	15,884.73	15,672.45	212.28	74.829	
17,400.00	6,937.55	6,955.47	6,952.53	172.23	176.01	84.41	-1,331.56	-5,415.38	15,984.73	15,772.38	212.35	75.275	
17,500.00	6,937.47	6,955.39	6,952.47	173.81	176.00	84.43	-1,332.70	-5,415.38	16,084.68	15,872.26	212.43	75.719	
17,600.00	6,937.40	6,955.32	6,952.40	175.39	176.00	84.40	-1,332.70	-5,415.38	16,184.68	15,972.18	212.50	76.164	
17,700.00	6,937.32	6,955.24	6,952.32	176.97	176.00	84.36	-1,332.70	-5,415.38	16,284.68	16,072.11	212.57	76.609	
17,800.00	6,937.25	6,955.17	6,952.25	178.55	176.00	84.33	-1,332.70	-5,415.38	16,384.67	16,172.03	212.64	77.054	
17,900.00	6,937.17	6,955.09	6,952.17	180.13	176.00	84.29	-1,332.70	-5,415.38	16,484.67	16,271.96	212.71	77.498	
18,000.00	6,937.10	6,955.02	6,952.10	181.71	175.99	84.26	-1,332.70	-5,415.38	16,584.67	16,371.88	212.78	77.941	
18,100.00	6,937.02	6,954.94	6,952.02	183.29	175.99	84.22	-1,332.70	-5,415.38	16,684.66	16,471.81	212.86	78.384	
18,200.00	6,936.95	6,954.87	6,951.95	184.87	175.99	84.19	-1,332.70	-5,415.38	16,784.66	16,571.73	212.93	78.827	
18,300.00	6,936.87	6,954.79	6,951.87	186.46	175.99	84.15	-1,332.70	-5,415.38	16,884.66	16,671.65	213.01	79.269	
18,400.00	6,936.80	6,954.72	6,951.80	188.04	175.99	84.12	-1,332.70	-5,415.38	16,984.66	16,771.58	213.08	79.710	
18,500.00	6,936.72	6,954.64	6,951.72	189.62	175.98	84.09	-1,332.70	-5,415.38	17,084.65	16,871.50	213.15	80.151	
18,600.00	6,936.65	6,954.57	6,951.65	191.21	175.98	84.05	-1,332.70	-5,415.38	17,184.65	16,971.42	213.23	80.592	
18,700.00	6,936.57	6,954.49	6,951.57	192.79	175.98	84.02	-1,332.70	-5,415.38	17,284.65	17,071.34	213.31	81.032	
18,800.00	6,936.50	6,954.42	6,951.50	194.37	175.98	83.98	-1,332.70	-5,415.38	17,384.65	17,171.26	213.38	81.472	
18,900.00	6,936.42	6,954.34	6,951.42	195.96	175.97	83.95	-1,332.70	-5,415.38	17,484.64	17,271.18	213.46	81.911	
19,000.00	6,936.35	6,954.27	6,951.35	197.54	175.97	83.91	-1,332.70	-5,415.38	17,584.64	17,371.10	213.54	82.350	
19,100.00	6,936.27	6,954.19	6,951.27	199.13	175.97	83.88	-1,332.70	-5,415.38	17,684.64	17,471.02	213.61	82.788	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125E - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 130-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,200.00	6,936.19	6,954.12	6,951.19	200.71	175.97	83.85	-1,332.70	-5,415.38	17,784.63	17,570.94	213.69	83.226	
19,300.00	6,936.12	6,954.04	6,951.12	202.30	175.97	83.81	-1,332.70	-5,415.38	17,884.63	17,670.86	213.77	83.663	
19,400.00	6,936.04	6,953.97	6,951.04	203.88	175.96	83.78	-1,332.70	-5,415.38	17,984.63	17,770.78	213.85	84.099	
19,500.00	6,935.97	6,953.89	6,950.97	205.47	175.96	83.74	-1,332.70	-5,415.38	18,084.63	17,870.70	213.93	84.536	
19,600.00	6,935.89	6,953.82	6,950.89	207.06	175.96	83.71	-1,332.70	-5,415.38	18,184.63	17,970.62	214.01	84.971	
19,700.00	6,935.82	6,953.74	6,950.82	208.64	175.96	83.67	-1,332.70	-5,415.38	18,284.62	18,070.53	214.09	85.407	
19,800.00	6,935.74	6,953.67	6,950.74	210.23	175.96	83.64	-1,332.70	-5,415.38	18,384.62	18,170.45	214.17	85.841	
19,900.00	6,935.67	6,953.59	6,950.67	211.82	175.95	83.60	-1,332.70	-5,415.38	18,484.62	18,270.37	214.25	86.276	
20,000.00	6,935.59	6,953.52	6,950.59	213.41	175.95	83.57	-1,332.70	-5,415.38	18,584.62	18,370.28	214.33	86.709	
20,100.00	6,935.52	6,953.44	6,950.52	214.99	175.95	83.54	-1,332.70	-5,415.38	18,684.61	18,470.20	214.41	87.142	
20,200.00	6,935.44	6,953.36	6,950.44	216.58	175.95	83.50	-1,332.70	-5,415.38	18,784.61	18,570.11	214.50	87.575	
20,300.00	6,935.37	6,953.29	6,950.37	218.17	175.94	83.47	-1,332.70	-5,415.38	18,884.61	18,670.03	214.58	88.007	
20,400.00	6,935.29	6,953.21	6,950.29	219.76	175.94	83.43	-1,332.70	-5,415.38	18,984.61	18,769.94	214.66	88.439	
20,500.00	6,935.22	6,953.14	6,950.22	221.35	175.94	83.40	-1,332.70	-5,415.38	19,084.61	18,869.86	214.75	88.870	
20,600.00	6,935.14	6,953.06	6,950.14	222.94	175.94	83.36	-1,332.70	-5,415.38	19,184.60	18,969.77	214.83	89.301	
20,700.00	6,935.07	6,952.99	6,950.07	224.53	175.94	83.33	-1,332.70	-5,415.38	19,284.60	19,069.69	214.91	89.731	
20,789.75	6,935.00	6,952.92	6,950.00	225.95	175.93	83.30	-1,332.70	-5,415.38	19,374.35	19,159.36	214.99	90.117	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153B - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program: 158-A027Ua_INC-ONLY													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	95.87	-426.02	4,146.20	4,168.04					
100.00	100.00	93.00	93.00	0.25	0.82	95.87	-426.02	4,146.20	4,168.03	4,166.96	1.07	3,877.773		
200.00	200.00	193.00	193.00	0.61	2.06	95.87	-426.02	4,146.20	4,168.03	4,165.36	2.67	1,561.014		
261.42	261.42	254.38	254.38	0.83	3.22	95.87	-425.92	4,146.20	4,168.02	4,163.97	4.05	1,029.287		
300.00	300.00	292.57	292.57	0.97	3.94	95.87	-425.94	4,146.20	4,168.02	4,163.11	4.91	849.045		
400.00	400.00	393.01	393.00	1.33	6.39	95.87	-426.02	4,146.20	4,168.03	4,160.32	7.71	540.321		
500.00	500.00	493.01	493.00	1.68	9.35	95.87	-426.02	4,146.20	4,168.03	4,156.99	11.04	377.601		
600.00	599.98	592.72	592.70	2.03	12.31	-83.30	-425.01	4,146.20	4,167.72	4,153.39	14.34	290.713		
700.00	699.84	691.06	691.03	2.36	15.23	-83.38	-425.26	4,146.20	4,167.14	4,149.56	17.59	236.971		
800.00	799.45	789.23	789.20	2.71	18.14	-83.51	-425.86	4,146.20	4,166.20	4,145.36	20.84	199.914		
900.00	898.70	892.07	891.70	3.06	22.11	-83.70	-426.02	4,146.20	4,164.85	4,139.69	25.16	165.517		
1,000.00	997.47	990.83	990.47	3.43	26.13	-83.95	-426.02	4,146.20	4,163.15	4,133.59	29.55	140.871		
1,100.00	1,095.62	1,084.10	1,083.62	3.82	29.92	-84.26	-424.05	4,146.20	4,160.98	4,127.24	33.74	123.336		
1,180.06	1,173.69	1,158.68	1,158.14	4.14	32.96	-84.50	-425.51	4,146.20	4,159.33	4,122.24	37.10	112.120		
1,200.00	1,193.07	1,186.98	1,186.07	4.22	34.10	-84.58	-426.02	4,146.20	4,158.91	4,120.58	38.33	108.511		
1,300.00	1,290.27	1,284.18	1,283.27	4.65	38.01	-84.89	-426.02	4,146.20	4,156.69	4,114.03	42.65	97.453		
1,400.00	1,387.46	1,381.38	1,380.46	5.08	41.91	-85.21	-426.02	4,146.20	4,154.60	4,107.61	46.99	88.417		
1,500.00	1,484.66	1,476.80	1,475.78	5.52	45.74	-85.55	-423.15	4,146.20	4,152.46	4,101.20	51.26	81.008		
1,600.00	1,581.85	1,571.77	1,570.70	5.97	49.55	-85.84	-424.31	4,146.20	4,150.72	4,095.20	55.52	74.762		
1,700.00	1,679.05	1,673.61	1,672.05	6.42	54.07	-86.15	-426.02	4,146.20	4,149.13	4,088.65	60.49	68.597		
1,800.00	1,776.25	1,770.81	1,769.25	6.87	59.81	-86.46	-426.02	4,146.20	4,147.57	4,080.89	66.68	62.200		
1,900.00	1,873.44	1,868.00	1,866.44	7.33	65.56	-86.78	-426.02	4,146.20	4,146.15	4,073.27	72.88	56.890		
2,000.00	1,970.64	1,963.99	1,962.32	7.78	71.23	-87.13	-423.29	4,146.20	4,144.76	4,065.75	79.01	52.459		
2,100.00	2,067.83	2,060.23	2,058.50	8.24	76.91	-87.42	-424.65	4,146.20	4,143.65	4,058.50	85.15	48.660		
2,200.00	2,165.03	2,161.28	2,158.03	8.71	83.56	-87.73	-426.02	4,146.20	4,142.67	4,050.41	92.26	44.900		
2,300.00	2,262.22	2,258.48	2,255.22	9.17	90.98	-88.04	-426.02	4,146.20	4,141.78	4,041.63	100.15	41.357		
2,400.00	2,359.42	2,354.68	2,351.02	9.63	98.32	-88.40	-422.72	4,146.20	4,140.97	4,033.02	107.96	38.358		
2,500.00	2,456.61	2,454.72	2,449.61	10.10	105.88	-88.68	-426.02	4,146.20	4,140.39	4,024.41	115.98	35.699		
2,600.00	2,553.81	2,551.92	2,546.81	10.57	112.95	-88.99	-426.02	4,146.20	4,139.90	4,016.39	123.51	33.518		
2,700.00	2,651.01	2,650.40	2,644.93	11.03	120.11	-89.33	-424.91	4,146.20	4,139.54	4,008.41	131.14	31.566		
2,800.00	2,748.20	2,747.57	2,741.20	11.50	126.98	-89.62	-426.02	4,146.20	4,139.31	4,000.83	138.48	29.891		
2,889.10	2,834.81	2,834.18	2,827.81	11.92	133.05	-89.91	-426.02	4,146.20	4,139.23	3,994.26	144.97	28.553		
2,900.00	2,845.40	2,845.02	2,838.44	11.97	133.81	-89.99	-422.05	4,146.20	4,139.28	3,993.50	145.78	28.394		
2,909.16	2,854.30	2,854.16	2,847.56	12.01	134.45	-90.02	-422.10	4,146.20	4,139.28	3,992.82	146.46	28.262		
3,000.00	2,942.59	2,945.66	2,938.89	12.44	140.86	-90.30	-423.98	4,146.20	4,139.31	3,986.01	153.30	27.001		
3,100.00	3,039.79	3,040.70	3,032.79	12.91	147.21	-90.57	-426.02	4,146.20	4,139.44	3,979.33	160.11	25.853		
3,200.00	3,136.98	3,137.90	3,129.98	13.38	153.34	-90.89	-426.02	4,146.20	4,139.75	3,973.03	166.71	24.831		
3,300.00	3,234.18	3,236.65	3,228.45	13.85	159.57	-91.27	-421.31	4,146.20	4,140.37	3,966.95	173.42	23.875		
3,400.00	3,331.38	3,339.03	3,330.66	14.32	166.03	-91.58	-423.44	4,146.20	4,140.88	3,960.54	180.35	22.961		
3,500.00	3,428.57	3,431.05	3,421.57	14.79	171.45	-91.84	-426.02	4,146.20	4,141.48	3,955.24	186.24	22.238		
3,600.00	3,525.77	3,528.24	3,518.77	15.26	176.20	-92.15	-426.02	4,146.20	4,142.32	3,950.86	191.46	21.636		
3,700.00	3,622.96	3,633.77	3,624.08	15.73	181.36	-92.51	-425.18	4,146.20	4,143.35	3,946.27	197.08	21.023		
3,800.00	3,720.16	3,723.18	3,713.16	16.20	184.71	-92.79	-426.02	4,146.20	4,144.41	3,943.50	200.90	20.629		
3,900.00	3,817.35	3,820.38	3,810.35	16.68	187.94	-93.10	-426.02	4,146.20	4,145.65	3,941.04	204.61	20.262		
4,000.00	3,914.55	3,917.58	3,907.55	17.15	191.17	-93.42	-426.02	4,146.20	4,147.02	3,938.72	208.31	19.908		
4,100.00	4,011.74	4,014.77	4,004.74	17.62	194.40	-93.73	-426.02	4,146.20	4,148.53	3,936.52	212.01	19.568		
4,200.00	4,108.94	4,111.97	4,101.94	18.09	197.63	-94.05	-426.02	4,146.20	4,150.17	3,934.46	215.71	19.240		
4,300.00	4,206.14	4,209.92	4,199.70	18.57	200.89	-94.45	-419.30	4,146.20	4,152.58	3,933.14	219.43	18.924		
4,400.00	4,303.33	4,309.40	4,299.15	19.04	204.20	-94.77	-419.73	4,146.20	4,154.48	3,931.27	223.21	18.612		
4,500.00	4,400.53	4,409.16	4,398.86	19.51	207.51	-95.08	-420.67	4,146.20	4,156.46	3,929.46	227.00	18.311		
4,600.00	4,497.72	4,509.20	4,498.84	19.99	210.84	-95.38	-422.11	4,146.20	4,158.50	3,927.71	230.79	18.018		
4,700.00	4,594.92	4,609.51	4,599.08	20.46	214.17	-95.68	-424.07	4,146.20	4,160.60	3,926.01	234.60	17.735		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153B - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program: 158-A027Ua_INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
4,800.00	4,692.11	4,696.05	4,685.11	20.93	216.98	-95.93	-426.02	4,146.20	4,162.80	3,924.93	237.87	17.500		
4,900.00	4,789.31	4,793.24	4,782.31	21.41	218.78	-96.24	-426.02	4,146.20	4,165.36	3,925.22	240.14	17.345		
5,000.00	4,886.51	4,890.44	4,879.51	21.88	220.58	-96.56	-426.02	4,146.20	4,168.06	3,925.64	242.41	17.194		
5,100.00	4,983.70	4,987.64	4,976.70	22.35	222.39	-96.87	-426.02	4,146.20	4,170.88	3,926.20	244.69	17.046		
5,200.00	5,080.90	5,084.83	5,073.90	22.83	224.19	-97.18	-426.02	4,146.20	4,173.84	3,926.88	246.96	16.901		
5,300.00	5,178.09	5,182.03	5,171.09	23.30	226.00	-97.49	-426.02	4,146.20	4,176.93	3,927.70	249.23	16.759		
5,400.00	5,275.29	5,279.22	5,268.29	23.77	227.80	-97.80	-426.02	4,146.20	4,180.15	3,928.64	251.50	16.621		
5,500.00	5,372.48	5,376.42	5,365.48	24.25	229.61	-98.11	-426.02	4,146.20	4,183.49	3,929.72	253.77	16.485		
5,600.00	5,469.68	5,473.61	5,462.68	24.72	231.41	-98.42	-426.02	4,146.20	4,186.97	3,930.93	256.04	16.353		
5,700.00	5,566.87	5,570.81	5,559.87	25.20	233.22	-98.73	-426.02	4,146.20	4,190.58	3,932.26	258.31	16.223		
5,800.00	5,664.07	5,668.01	5,657.07	25.67	235.02	-99.04	-426.02	4,146.20	4,194.31	3,933.73	260.58	16.096		
5,900.00	5,761.27	5,765.20	5,754.27	26.14	236.83	-99.35	-426.02	4,146.20	4,198.17	3,935.32	262.85	15.972		
6,000.00	5,858.46	5,862.40	5,851.46	26.62	238.63	-99.66	-426.02	4,146.20	4,202.16	3,937.04	265.12	15.850		
6,100.00	5,955.66	5,959.59	5,948.66	27.09	240.43	-99.96	-426.02	4,146.20	4,206.28	3,938.89	267.39	15.731		
6,200.00	6,052.85	6,056.79	6,045.85	27.57	242.24	-100.27	-426.02	4,146.20	4,210.53	3,940.87	269.66	15.614		
6,300.00	6,150.05	6,153.98	6,143.05	28.04	244.04	-100.58	-426.02	4,146.20	4,214.90	3,942.98	271.92	15.500		
6,400.00	6,247.24	6,251.18	6,240.24	28.52	245.85	-100.88	-426.02	4,146.20	4,219.40	3,945.21	274.19	15.389		
6,490.87	6,335.57	6,339.50	6,328.57	28.95	247.49	-101.16	-426.02	4,146.20	4,223.60	3,947.35	276.25	15.289		
6,500.00	6,344.44	6,348.37	6,337.44	28.99	247.65	-97.81	-426.02	4,146.20	4,223.96	3,947.51	276.46	15.279		
6,550.00	6,392.91	6,396.85	6,385.91	29.23	248.55	-80.87	-426.02	4,146.20	4,223.74	3,946.15	277.59	15.216		
6,600.00	6,440.98	6,444.91	6,433.98	29.46	249.44	-67.67	-426.02	4,146.20	4,219.76	3,941.04	278.72	15.140		
6,650.00	6,488.34	6,492.27	6,481.34	29.70	250.32	-58.24	-426.02	4,146.20	4,212.06	3,932.22	279.84	15.052		
6,700.00	6,534.69	6,538.63	6,527.69	29.92	251.18	-51.69	-426.02	4,146.20	4,200.70	3,919.77	280.93	14.953		
6,750.00	6,579.76	6,583.70	6,572.76	30.15	252.02	-47.18	-426.02	4,146.20	4,185.76	3,903.75	282.00	14.843		
6,800.00	6,623.27	6,627.21	6,616.27	30.36	252.83	-44.12	-426.02	4,146.20	4,167.33	3,884.29	283.04	14.723		
6,850.00	6,664.95	6,668.88	6,657.95	30.57	253.60	-42.14	-426.02	4,146.20	4,145.55	3,861.50	284.04	14.595		
6,900.00	6,704.53	6,708.47	6,697.53	30.78	254.34	-40.98	-426.02	4,146.20	4,120.54	3,835.54	285.00	14.458		
6,950.00	6,741.79	6,745.72	6,734.79	30.98	255.03	-40.53	-426.02	4,146.20	4,092.47	3,806.56	285.91	14.314		
7,000.00	6,776.48	6,780.41	6,769.48	31.17	255.67	-40.71	-426.02	4,146.20	4,061.53	3,774.75	286.77	14.163		
7,050.00	6,808.39	6,812.33	6,801.39	31.36	256.27	-41.50	-426.02	4,146.20	4,027.89	3,740.32	287.58	14.006		
7,100.00	6,837.34	6,841.27	6,830.34	31.54	256.80	-42.92	-426.02	4,146.20	3,991.79	3,703.47	288.32	13.845		
7,150.00	6,863.13	6,867.06	6,856.13	31.73	257.28	-45.05	-426.02	4,146.20	3,953.43	3,664.44	289.00	13.680		
7,200.00	6,885.61	6,889.54	6,878.61	31.91	257.70	-48.02	-426.02	4,146.20	3,913.07	3,623.46	289.61	13.512		
7,250.00	6,904.64	6,908.57	6,897.64	32.10	258.05	-51.98	-426.02	4,146.20	3,870.94	3,580.79	290.15	13.341		
7,300.00	6,920.10	6,924.04	6,913.10	32.29	258.34	-57.18	-426.02	4,146.20	3,827.31	3,536.69	290.62	13.170		
7,350.00	6,931.91	6,935.84	6,924.91	32.48	258.56	-63.91	-426.02	4,146.20	3,782.44	3,491.42	291.01	12.997		
7,400.00	6,939.97	6,943.91	6,932.97	32.68	258.71	-72.40	-426.02	4,146.20	3,736.60	3,445.26	291.34	12.826		
7,450.00	6,944.26	6,948.19	6,937.26	32.89	258.79	-82.74	-426.02	4,146.20	3,690.07	3,398.49	291.58	12.655		
7,481.69	6,945.00	6,948.93	6,938.00	33.03	258.80	-90.12	-426.02	4,146.20	3,660.36	3,368.65	291.70	12.548		
7,500.00	6,944.99	6,948.92	6,937.99	33.12	258.80	-90.12	-426.02	4,146.20	3,643.15	3,351.39	291.76	12.487		
7,600.00	6,944.91	6,948.85	6,937.91	33.60	258.80	-90.11	-426.02	4,146.20	3,549.41	3,257.32	292.10	12.151		
7,700.00	6,944.84	6,948.77	6,937.84	34.17	258.80	-90.11	-426.02	4,146.20	3,456.03	3,163.56	292.46	11.817		
7,800.00	6,944.76	6,948.70	6,937.76	34.80	258.80	-90.11	-426.02	4,146.20	3,363.02	3,070.17	292.85	11.484		
7,900.00	6,944.69	6,948.62	6,937.69	35.49	258.80	-90.10	-426.02	4,146.20	3,270.42	2,977.15	293.27	11.151		
8,000.00	6,944.61	6,948.55	6,937.61	36.25	258.80	-90.10	-426.02	4,146.20	3,178.27	2,884.55	293.73	10.821		
8,100.00	6,944.54	6,948.47	6,937.54	37.07	258.79	-90.10	-426.02	4,146.20	3,086.62	2,792.40	294.22	10.491		
8,200.00	6,944.46	6,948.40	6,937.46	37.94	258.79	-90.09	-426.02	4,146.20	2,995.49	2,700.75	294.74	10.163		
8,300.00	6,944.39	6,948.32	6,937.39	38.86	258.79	-90.09	-426.02	4,146.20	2,904.95	2,609.64	295.31	9.837		
8,400.00	6,944.31	6,948.24	6,937.31	39.83	258.79	-90.09	-426.02	4,146.20	2,815.05	2,519.12	295.93	9.513		
8,500.00	6,944.23	6,948.17	6,937.23	40.84	258.79	-90.08	-426.02	4,146.20	2,725.85	2,429.26	296.60	9.190		
8,600.00	6,944.16	6,948.09	6,937.16	41.89	258.79	-90.08	-426.02	4,146.20	2,637.43	2,340.11	297.32	8.871		
8,700.00	6,944.08	6,948.02	6,937.08	42.98	258.79	-90.08	-426.02	4,146.20	2,549.87	2,251.77	298.10	8.554		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153B - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 158-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
8,800.00	6,944.01	6,947.94	6,937.01	44.10	258.78	-90.07	-426.02	4,146.20	2,463.25	2,164.31	298.94	8.240	
8,900.00	6,943.93	6,947.87	6,936.93	45.25	258.78	-90.07	-426.02	4,146.20	2,377.68	2,077.83	299.85	7.930	
9,000.00	6,943.86	6,947.79	6,936.86	46.43	258.78	-90.07	-426.02	4,146.20	2,293.28	1,992.44	300.84	7.623	
9,100.00	6,943.78	6,947.72	6,936.78	47.63	258.78	-90.06	-426.02	4,146.20	2,210.18	1,908.28	301.90	7.321	
9,200.00	6,943.71	6,947.64	6,936.71	48.86	258.78	-90.06	-426.02	4,146.20	2,128.54	1,825.49	303.05	7.024	
9,300.00	6,943.63	6,947.57	6,936.63	50.11	258.78	-90.06	-426.02	4,146.20	2,048.52	1,744.23	304.29	6.732	
9,400.00	6,943.56	6,947.49	6,936.56	51.38	258.78	-90.05	-426.02	4,146.20	1,970.33	1,664.71	305.62	6.447	
9,500.00	6,943.48	6,947.42	6,936.48	52.66	258.77	-90.05	-426.02	4,146.20	1,894.20	1,587.14	307.05	6.169	
9,600.00	6,943.41	6,947.34	6,936.41	53.97	258.77	-90.05	-426.02	4,146.20	1,820.37	1,511.79	308.58	5.899	
9,700.00	6,943.33	6,947.27	6,936.33	55.29	258.77	-90.04	-426.02	4,146.20	1,749.15	1,438.93	310.21	5.639	
9,800.00	6,943.26	6,947.19	6,936.26	56.63	258.77	-90.04	-426.02	4,146.20	1,680.86	1,368.92	311.94	5.388	
9,900.00	6,943.18	6,947.12	6,936.18	57.98	258.77	-90.04	-426.02	4,146.20	1,615.88	1,302.13	313.74	5.150	
10,000.00	6,943.11	6,947.04	6,936.11	59.34	258.77	-90.03	-426.02	4,146.20	1,554.62	1,238.99	315.62	4.926	
10,100.00	6,943.03	6,946.97	6,936.03	60.72	258.77	-90.03	-426.02	4,146.20	1,497.53	1,179.98	317.55	4.716	
10,200.00	6,942.96	6,946.89	6,935.96	62.11	258.76	-90.02	-426.02	4,146.20	1,445.12	1,125.63	319.49	4.523	
10,300.00	6,942.88	6,946.82	6,935.88	63.50	258.76	-90.02	-426.02	4,146.20	1,397.91	1,076.49	321.42	4.349	
10,400.00	6,942.81	6,946.74	6,935.81	64.91	258.76	-90.02	-426.02	4,146.20	1,356.43	1,033.17	323.26	4.196	
10,500.00	6,942.73	6,946.67	6,935.73	66.33	258.76	-90.01	-426.02	4,146.20	1,321.24	996.26	324.98	4.066	
10,600.00	6,942.66	6,946.59	6,935.66	67.75	258.76	-90.01	-426.02	4,146.20	1,292.85	966.34	326.51	3.960	
10,700.00	6,942.58	6,946.52	6,935.58	69.18	258.76	-90.01	-426.02	4,146.20	1,271.70	943.92	327.78	3.880	
10,800.00	6,942.51	6,946.44	6,935.51	70.62	258.76	-90.00	-426.02	4,146.20	1,258.17	929.42	328.75	3.827	
10,900.00	6,942.43	6,946.37	6,935.43	72.07	258.75	-90.00	-426.02	4,146.20	1,252.50	923.14	329.36	3.803	
10,921.10	6,942.42	6,946.35	6,935.42	72.38	258.75	-90.00	-426.02	4,146.20	1,252.32	922.88	329.44	3.801	CC, ES, SF
11,000.00	6,942.36	6,946.29	6,935.36	73.52	258.75	-90.00	-426.02	4,146.20	1,254.80	925.21	329.60	3.807	
11,100.00	6,942.28	6,946.22	6,935.28	74.98	258.75	-89.99	-426.02	4,146.20	1,265.03	935.57	329.46	3.840	
11,200.00	6,942.21	6,946.14	6,935.21	76.45	258.75	-89.99	-426.02	4,146.20	1,282.99	954.02	328.97	3.900	
11,300.00	6,942.13	6,946.07	6,935.13	77.92	258.75	-89.99	-426.02	4,146.20	1,308.37	980.20	328.17	3.987	
11,400.00	6,942.06	6,945.99	6,935.06	79.40	258.75	-89.98	-426.02	4,146.20	1,340.75	1,013.64	327.11	4.099	
11,500.00	6,941.98	6,945.92	6,934.98	80.88	258.75	-89.98	-426.02	4,146.20	1,379.63	1,053.79	325.84	4.234	
11,600.00	6,941.91	6,945.84	6,934.91	82.36	258.75	-89.98	-426.02	4,146.20	1,424.48	1,100.06	324.42	4.391	
11,700.00	6,941.83	6,945.77	6,934.83	83.85	258.74	-89.97	-426.02	4,146.20	1,474.76	1,151.85	322.91	4.567	
11,800.00	6,941.76	6,945.69	6,934.76	85.35	258.74	-89.97	-426.02	4,146.20	1,529.93	1,208.58	321.35	4.761	
11,900.00	6,941.68	6,945.61	6,934.68	86.85	258.74	-89.97	-426.02	4,146.20	1,589.48	1,269.71	319.78	4.974	
12,000.00	6,941.60	6,945.54	6,934.60	88.35	258.74	-89.96	-426.02	4,146.20	1,652.95	1,334.72	318.23	5.191	
12,100.00	6,941.53	6,945.46	6,934.53	89.85	258.74	-89.96	-426.02	4,146.20	1,719.88	1,403.17	316.71	5.430	
12,200.00	6,941.45	6,945.39	6,934.45	91.36	258.74	-89.96	-426.02	4,146.20	1,789.91	1,474.65	315.26	5.678	
12,300.00	6,941.38	6,945.31	6,934.38	92.88	258.74	-89.95	-426.02	4,146.20	1,862.67	1,548.80	313.87	5.935	
12,400.00	6,941.30	6,945.24	6,934.30	94.39	258.73	-89.95	-426.02	4,146.20	1,937.86	1,625.31	312.55	6.200	
12,500.00	6,941.23	6,945.16	6,934.23	95.91	258.73	-89.95	-426.02	4,146.20	2,015.21	1,703.90	311.31	6.473	
12,600.00	6,941.15	6,945.09	6,934.15	97.43	258.73	-89.94	-426.02	4,146.20	2,094.48	1,784.34	310.14	6.753	
12,700.00	6,941.08	6,945.01	6,934.08	98.95	258.73	-89.94	-426.02	4,146.20	2,175.46	1,866.41	309.05	7.039	
12,800.00	6,941.00	6,944.94	6,934.00	100.48	258.73	-89.94	-426.02	4,146.20	2,257.96	1,949.94	308.03	7.330	
12,900.00	6,940.93	6,944.86	6,933.93	102.01	258.73	-89.93	-426.02	4,146.20	2,341.83	2,034.76	307.07	7.626	
13,000.00	6,940.85	6,944.79	6,933.85	103.54	258.73	-89.93	-426.02	4,146.20	2,426.92	2,120.73	306.18	7.926	
13,100.00	6,940.78	6,944.71	6,933.78	105.07	258.72	-89.93	-426.02	4,146.20	2,513.11	2,207.75	305.36	8.230	
13,200.00	6,940.70	6,944.64	6,933.70	106.61	258.72	-89.92	-426.02	4,146.20	2,600.28	2,295.70	304.59	8.537	
13,300.00	6,940.63	6,944.56	6,933.63	108.14	258.72	-89.92	-426.02	4,146.20	2,688.35	2,384.48	303.87	8.847	
13,400.00	6,940.55	6,944.49	6,933.55	109.68	258.72	-89.91	-426.02	4,146.20	2,777.23	2,474.03	303.20	9.160	
13,500.00	6,940.48	6,944.41	6,933.48	111.22	258.72	-89.91	-426.02	4,146.20	2,866.84	2,564.26	302.59	9.474	
13,600.00	6,940.40	6,944.34	6,933.40	112.77	258.72	-89.91	-426.02	4,146.20	2,957.12	2,655.11	302.01	9.791	
13,700.00	6,940.33	6,944.26	6,933.33	114.31	258.72	-89.90	-426.02	4,146.20	3,048.00	2,746.53	301.47	10.110	
13,800.00	6,940.25	6,944.19	6,933.25	115.86	258.71	-89.90	-426.02	4,146.20	3,139.44	2,838.47	300.98	10.431	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153B - OH - OH-INC											Offset Site Error:	0.00 usft
Survey Program: 158-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
13,900.00	6,940.18	6,944.11	6,933.18	117.41	258.71	-89.90	-426.02	4,146.20	3,231.39	2,930.87	300.51	10.753
14,000.00	6,940.10	6,944.04	6,933.10	118.95	258.71	-89.89	-426.02	4,146.20	3,323.80	3,023.72	300.08	11.076
14,100.00	6,940.03	6,943.96	6,933.03	120.51	258.71	-89.89	-426.02	4,146.20	3,416.64	3,116.96	299.68	11.401
14,200.00	6,939.95	6,943.89	6,932.95	122.06	258.71	-89.89	-426.02	4,146.20	3,509.87	3,210.56	299.31	11.727
14,300.00	6,939.88	6,943.81	6,932.88	123.61	258.71	-89.88	-426.02	4,146.20	3,603.46	3,304.50	298.96	12.053
14,400.00	6,939.80	6,943.74	6,932.80	125.17	258.71	-89.88	-426.02	4,146.20	3,697.39	3,398.76	298.63	12.381
14,500.00	6,939.73	6,943.66	6,932.73	126.72	258.70	-89.88	-426.02	4,146.20	3,791.63	3,493.30	298.33	12.709
14,600.00	6,939.65	6,943.59	6,932.65	128.28	258.70	-89.87	-426.02	4,146.20	3,886.16	3,588.11	298.05	13.039
14,700.00	6,939.58	6,943.51	6,932.58	129.84	258.70	-89.87	-426.02	4,146.20	3,980.96	3,683.17	297.79	13.368
14,800.00	6,939.50	6,943.44	6,932.50	131.40	258.70	-89.87	-426.02	4,146.20	4,076.00	3,778.46	297.55	13.699
14,900.00	6,939.43	6,943.36	6,932.43	132.96	258.70	-89.86	-426.02	4,146.20	4,171.28	3,873.96	297.32	14.030
15,000.00	6,939.35	6,943.29	6,932.35	134.52	258.70	-89.86	-426.02	4,146.20	4,266.77	3,969.66	297.11	14.361
15,100.00	6,939.28	6,943.21	6,932.28	136.08	258.70	-89.86	-426.02	4,146.20	4,362.46	4,065.55	296.91	14.693
15,200.00	6,939.20	6,943.14	6,932.20	137.64	258.69	-89.85	-426.02	4,146.20	4,458.35	4,161.62	296.73	15.025
15,300.00	6,939.13	6,943.06	6,932.13	139.21	258.69	-89.85	-426.02	4,146.20	4,554.41	4,257.85	296.56	15.357
15,400.00	6,939.05	6,942.98	6,932.05	140.77	258.69	-89.85	-426.02	4,146.20	4,650.63	4,354.23	296.40	15.690
15,500.00	6,938.98	6,942.91	6,931.98	142.34	258.69	-89.84	-426.02	4,146.20	4,747.02	4,450.76	296.26	16.023
15,600.00	6,938.90	6,942.83	6,931.90	143.91	258.69	-89.84	-426.02	4,146.20	4,843.55	4,547.42	296.12	16.356
15,700.00	6,938.82	6,942.76	6,931.82	145.47	258.69	-89.84	-426.02	4,146.20	4,940.21	4,644.21	296.00	16.690
15,800.00	6,938.75	6,942.68	6,931.75	147.04	258.69	-89.83	-426.02	4,146.20	5,037.01	4,741.13	295.88	17.024
15,900.00	6,938.67	6,942.61	6,931.67	148.61	258.69	-89.83	-426.02	4,146.20	5,133.93	4,838.15	295.78	17.357
16,000.00	6,938.60	6,942.53	6,931.60	150.18	258.68	-89.83	-426.02	4,146.20	5,230.97	4,935.29	295.68	17.691
16,100.00	6,938.52	6,942.46	6,931.52	151.75	258.68	-89.82	-426.02	4,146.20	5,328.11	5,032.52	295.59	18.025
16,200.00	6,938.45	6,942.38	6,931.45	153.32	258.68	-89.82	-426.02	4,146.20	5,425.36	5,129.85	295.51	18.359
16,300.00	6,938.37	6,942.31	6,931.37	154.90	258.68	-89.82	-426.02	4,146.20	5,522.71	5,227.28	295.43	18.694
16,400.00	6,938.30	6,942.23	6,931.30	156.47	258.68	-89.81	-426.02	4,146.20	5,620.15	5,324.79	295.36	19.028
16,500.00	6,938.22	6,942.16	6,931.22	158.04	258.68	-89.81	-426.02	4,146.20	5,717.68	5,422.38	295.30	19.362
16,600.00	6,938.15	6,942.08	6,931.15	159.62	258.68	-89.80	-426.02	4,146.20	5,815.29	5,520.05	295.25	19.696
16,700.00	6,938.07	6,942.01	6,931.07	161.19	258.67	-89.80	-426.02	4,146.20	5,912.99	5,617.79	295.20	20.031
16,800.00	6,938.00	6,941.93	6,931.00	162.77	258.67	-89.80	-426.02	4,146.20	6,010.76	5,715.60	295.15	20.365
16,900.00	6,937.92	6,941.86	6,930.92	164.34	258.67	-89.79	-426.02	4,146.20	6,108.60	5,813.48	295.11	20.699
17,000.00	6,937.85	6,941.78	6,930.85	165.92	258.67	-89.79	-426.02	4,146.20	6,206.51	5,911.43	295.08	21.033
17,100.00	6,937.77	6,941.71	6,930.77	167.50	258.67	-89.79	-426.02	4,146.20	6,304.48	6,009.43	295.05	21.368
17,200.00	6,937.70	6,941.63	6,930.70	169.07	258.67	-89.78	-426.02	4,146.20	6,402.52	6,107.49	295.02	21.702
17,300.00	6,937.62	6,941.56	6,930.62	170.65	258.67	-89.78	-426.02	4,146.20	6,500.62	6,205.61	295.00	22.036
17,400.00	6,937.55	6,941.48	6,930.55	172.23	258.66	-89.78	-426.02	4,146.20	6,598.77	6,303.78	294.99	22.370
17,500.00	6,937.47	6,941.41	6,930.47	173.81	258.66	-89.77	-426.02	4,146.20	6,696.98	6,402.01	294.98	22.704
17,600.00	6,937.40	6,941.33	6,930.40	175.39	258.66	-89.77	-426.02	4,146.20	6,795.24	6,500.28	294.97	23.037
17,700.00	6,937.32	6,941.26	6,930.32	176.97	258.66	-89.77	-426.02	4,146.20	6,893.56	6,598.59	294.96	23.371
17,800.00	6,937.25	6,941.18	6,930.25	178.55	258.66	-89.76	-426.02	4,146.20	6,991.91	6,696.95	294.96	23.705
17,900.00	6,937.17	6,941.11	6,930.17	180.13	258.66	-89.76	-426.02	4,146.20	7,090.32	6,795.36	294.96	24.038
18,000.00	6,937.10	6,941.03	6,930.10	181.71	258.66	-89.76	-426.02	4,146.20	7,188.77	6,893.80	294.97	24.371
18,100.00	6,937.02	6,940.96	6,930.02	183.29	258.65	-89.75	-426.02	4,146.20	7,287.26	6,992.29	294.97	24.705
18,200.00	6,936.95	6,940.88	6,929.95	184.87	258.65	-89.75	-426.02	4,146.20	7,385.79	7,090.81	294.99	25.038
18,300.00	6,936.87	6,940.81	6,929.87	186.46	258.65	-89.75	-426.02	4,146.20	7,484.36	7,189.37	295.00	25.371
18,400.00	6,936.80	6,940.73	6,929.80	188.04	258.65	-89.74	-426.02	4,146.20	7,582.97	7,287.96	295.02	25.704
18,500.00	6,936.72	6,940.66	6,929.72	189.62	258.65	-89.74	-426.02	4,146.20	7,681.62	7,386.58	295.04	26.036
18,600.00	6,936.65	6,940.58	6,929.65	191.21	258.65	-89.74	-426.02	4,146.20	7,780.30	7,485.24	295.06	26.369
18,700.00	6,936.57	6,940.51	6,929.57	192.79	258.65	-89.73	-426.02	4,146.20	7,879.01	7,583.93	295.08	26.701
18,800.00	6,936.50	6,940.43	6,929.50	194.37	258.64	-89.73	-426.02	4,146.20	7,977.75	7,682.65	295.11	27.033
18,900.00	6,936.42	6,940.35	6,929.42	195.96	258.64	-89.73	-426.02	4,146.20	8,076.53	7,781.39	295.14	27.365
19,000.00	6,936.35	6,940.28	6,929.35	197.54	258.64	-89.72	-426.02	4,146.20	8,175.34	7,880.17	295.17	27.697

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153B - OH - OH-INC											Offset Site Error:	0.00 usft
Survey Program: 158-A027Ua_INC-ONLY											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
19,100.00	6,936.27	6,940.20	6,929.27	199.13	258.64	-89.72	-426.02	4,146.20	8,274.17	7,978.97	295.20	28.029
19,200.00	6,936.19	6,940.13	6,929.19	200.71	258.64	-89.72	-426.02	4,146.20	8,373.03	8,077.80	295.23	28.361
19,300.00	6,936.12	6,940.05	6,929.12	202.30	258.64	-89.71	-426.02	4,146.20	8,471.92	8,176.65	295.27	28.692
19,400.00	6,936.04	6,939.98	6,929.04	203.88	258.64	-89.71	-426.02	4,146.20	8,570.83	8,275.52	295.31	29.023
19,500.00	6,935.97	6,939.90	6,928.97	205.47	258.63	-89.71	-426.02	4,146.20	8,669.77	8,374.42	295.35	29.354
19,600.00	6,935.89	6,939.83	6,928.89	207.06	258.63	-89.70	-426.02	4,146.20	8,768.74	8,473.34	295.39	29.685
19,700.00	6,935.82	6,939.75	6,928.82	208.64	258.63	-89.70	-426.02	4,146.20	8,867.72	8,572.28	295.44	30.015
19,800.00	6,935.74	6,939.68	6,928.74	210.23	258.63	-89.69	-426.02	4,146.20	8,966.73	8,671.25	295.48	30.346
19,900.00	6,935.67	6,939.60	6,928.67	211.82	258.63	-89.69	-426.02	4,146.20	9,065.76	8,770.23	295.53	30.676
20,000.00	6,935.59	6,939.53	6,928.59	213.41	258.63	-89.69	-426.02	4,146.20	9,164.81	8,869.23	295.58	31.006
20,100.00	6,935.52	6,939.45	6,928.52	214.99	258.63	-89.68	-426.02	4,146.20	9,263.88	8,968.25	295.63	31.336
20,200.00	6,935.44	6,939.38	6,928.44	216.58	258.63	-89.68	-426.02	4,146.20	9,362.98	9,067.29	295.68	31.665
20,300.00	6,935.37	6,939.30	6,928.37	218.17	258.62	-89.68	-426.02	4,146.20	9,462.09	9,166.35	295.74	31.995
20,400.00	6,935.29	6,939.23	6,928.29	219.76	258.62	-89.67	-426.02	4,146.20	9,561.22	9,265.42	295.79	32.324
20,500.00	6,935.22	6,939.15	6,928.22	221.35	258.62	-89.67	-426.02	4,146.20	9,660.36	9,364.51	295.85	32.653
20,600.00	6,935.14	6,939.08	6,928.14	222.94	258.62	-89.67	-426.02	4,146.20	9,759.53	9,463.62	295.91	32.982
20,700.00	6,935.07	6,939.00	6,928.07	224.53	258.62	-89.66	-426.02	4,146.20	9,858.71	9,562.74	295.97	33.310
20,789.75	6,935.00	6,938.93	6,928.00	225.95	258.62	-89.66	-426.02	4,146.20	9,947.74	9,651.72	296.02	33.605

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153C - OH - OH-SVY													Offset Site Error:	0.00 usft
Survey Program: 349-MWD OWSG Rev5													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	46.57	1,118.81	1,181.81	1,630.97					
100.00	100.00	0.00	0.00	0.25	0.00	46.57	1,118.81	1,181.81	1,627.41	1,627.16	0.25	6,479.005		
200.00	200.00	103.39	103.39	0.61	1.14	46.56	1,118.79	1,181.32	1,627.07	1,625.32	1.74	934.068		
300.00	300.00	215.75	215.74	0.97	2.37	46.52	1,118.74	1,179.70	1,625.99	1,622.66	3.33	488.085		
400.00	400.00	328.06	328.02	1.33	3.60	46.45	1,118.65	1,176.94	1,624.15	1,619.23	4.92	330.097		
500.00	500.00	423.93	423.84	1.68	3.92	46.40	1,118.30	1,174.38	1,621.97	1,616.39	5.58	290.645		
565.71	565.70	483.03	482.93	1.91	3.97	-132.73	1,117.21	1,173.96	1,621.31	1,615.45	5.86	276.771	CC, ES	
600.00	599.98	510.16	510.05	2.03	3.99	-132.72	1,116.36	1,174.27	1,621.52	1,615.52	6.00	270.175		
700.00	699.84	572.46	572.26	2.36	4.03	-132.64	1,113.94	1,176.53	1,625.06	1,618.67	6.38	254.593		
800.00	799.45	640.24	639.78	2.71	4.05	-132.47	1,110.82	1,181.45	1,633.08	1,626.33	6.75	241.999		
900.00	898.70	702.53	701.55	3.06	4.12	-132.22	1,107.25	1,188.62	1,645.68	1,638.56	7.12	230.992		
1,000.00	997.47	782.00	779.84	3.43	4.23	-131.84	1,101.37	1,200.88	1,662.32	1,654.79	7.52	220.993		
1,100.00	1,095.62	843.00	839.45	3.82	4.35	-131.41	1,095.93	1,212.63	1,682.94	1,675.00	7.93	212.163		
1,180.06	1,173.69	897.12	892.00	4.14	4.45	-131.01	1,090.67	1,224.40	1,702.22	1,693.93	8.29	205.410		
1,200.00	1,193.07	905.00	899.62	4.22	4.47	-130.99	1,089.88	1,226.26	1,707.42	1,699.05	8.37	203.998		
1,300.00	1,290.27	968.00	960.24	4.65	4.62	-130.84	1,083.58	1,242.22	1,734.77	1,725.94	8.83	196.422		
1,400.00	1,387.46	1,031.00	1,020.12	5.08	4.80	-130.62	1,076.56	1,260.49	1,764.02	1,754.68	9.33	189.052		
1,500.00	1,484.66	1,104.12	1,088.62	5.52	5.02	-130.27	1,067.11	1,284.23	1,794.72	1,784.81	9.91	181.146		
1,600.00	1,581.85	1,181.76	1,160.22	5.97	5.29	-129.81	1,055.41	1,311.86	1,826.51	1,815.94	10.57	172.865		
1,700.00	1,679.05	1,238.71	1,211.81	6.42	5.51	-129.41	1,045.81	1,333.99	1,859.80	1,848.62	11.18	166.343		
1,800.00	1,776.25	1,292.70	1,259.94	6.87	5.74	-128.99	1,036.39	1,356.56	1,895.13	1,883.32	11.81	160.466		
1,900.00	1,873.44	1,344.00	1,304.94	7.33	6.00	-128.57	1,027.22	1,379.41	1,932.52	1,920.07	12.45	155.217		
2,000.00	1,970.64	1,413.10	1,364.63	7.78	6.45	-127.96	1,014.48	1,411.82	1,971.66	1,958.39	13.26	148.673		
2,100.00	2,067.83	1,485.08	1,425.85	8.24	7.00	-127.29	1,000.29	1,446.90	2,011.87	1,997.71	14.15	142.162		
2,200.00	2,165.03	1,540.43	1,472.16	8.71	7.48	-126.76	988.81	1,474.95	2,053.42	2,038.50	14.92	137.608		
2,300.00	2,262.22	1,598.00	1,519.42	9.17	8.03	-126.17	976.42	1,505.39	2,096.68	2,080.93	15.74	133.176		
2,400.00	2,359.42	1,684.22	1,589.03	9.63	8.92	-125.26	956.62	1,552.27	2,140.89	2,123.98	16.91	126.599		
2,500.00	2,456.61	1,736.30	1,630.54	10.10	9.49	-124.71	944.21	1,581.16	2,186.06	2,168.34	17.71	123.402		
2,600.00	2,553.81	1,793.73	1,675.73	10.57	10.15	-124.10	930.52	1,613.86	2,232.83	2,214.24	18.59	120.092		
2,700.00	2,651.01	1,864.46	1,731.10	11.03	10.98	-123.35	913.85	1,654.57	2,280.67	2,261.03	19.64	116.127		
2,800.00	2,748.20	1,971.38	1,813.89	11.50	12.29	-122.23	886.97	1,716.66	2,328.79	2,307.62	21.17	109.983		
2,900.00	2,845.40	2,037.00	1,864.39	11.97	13.12	-121.54	869.86	1,754.91	2,377.17	2,354.98	22.19	107.150		
3,000.00	2,942.59	2,110.51	1,920.81	12.44	14.05	-120.80	850.66	1,797.95	2,426.20	2,402.90	23.30	104.118		
3,100.00	3,039.79	2,163.00	1,960.85	12.91	14.73	-120.28	837.28	1,829.14	2,476.53	2,452.39	24.14	102.605		
3,200.00	3,136.98	2,239.19	2,098.19	13.38	16.95	-118.69	793.06	1,930.19	2,525.36	2,498.77	26.59	94.983		
3,300.00	3,234.18	2,688.24	2,392.47	13.85	20.60	-116.57	717.33	2,101.11	2,568.25	2,537.58	30.67	83.739		
3,400.00	3,331.38	2,747.00	2,444.23	14.32	21.13	-116.32	706.19	2,126.60	2,608.19	2,576.73	31.46	82.895		
3,500.00	3,428.57	3,366.96	3,022.21	14.79	25.09	-115.34	619.54	2,326.44	2,647.25	2,611.14	36.11	73.303		
3,600.00	3,525.77	3,445.00	3,098.47	15.26	25.36	-115.39	611.31	2,340.82	2,669.15	2,632.29	36.87	72.402		
3,700.00	3,622.96	3,609.20	3,259.83	15.73	25.87	-115.64	599.03	2,368.53	2,691.51	2,653.61	37.90	71.013		
3,800.00	3,720.16	3,941.73	3,590.65	16.20	26.35	-116.67	586.32	2,393.13	2,705.94	2,666.98	38.96	69.461		
3,900.00	3,817.35	4,038.34	3,687.25	16.68	30.15	-117.08	586.03	2,394.17	2,717.63	2,674.38	43.25	62.839		
4,000.00	3,914.55	4,134.93	3,783.83	17.15	34.22	-117.49	585.73	2,395.24	2,729.49	2,681.65	47.84	57.058		
4,100.00	4,011.74	4,231.52	3,880.41	17.62	38.35	-117.90	585.43	2,396.35	2,741.52	2,689.00	52.51	52.207		
4,200.00	4,108.94	4,328.11	3,977.00	18.09	42.51	-118.30	585.12	2,397.48	2,753.71	2,696.47	57.24	48.105		
4,300.00	4,206.14	4,424.71	4,073.59	18.57	46.70	-118.70	584.80	2,398.65	2,766.07	2,704.06	62.01	44.605		
4,400.00	4,303.33	4,521.31	4,170.18	19.04	50.90	-119.10	584.46	2,399.85	2,778.60	2,711.79	66.81	41.590		
4,500.00	4,400.53	4,617.91	4,266.78	19.51	55.12	-119.49	584.12	2,401.09	2,791.28	2,719.66	71.63	38.970		
4,600.00	4,497.72	4,714.52	4,363.38	19.99	59.34	-119.88	583.78	2,402.35	2,804.12	2,727.67	76.46	36.676		
4,700.00	4,594.92	4,811.13	4,459.98	20.46	63.58	-120.27	583.42	2,403.65	2,817.12	2,735.82	81.30	34.653		
4,800.00	4,692.11	4,907.75	4,556.58	20.93	67.82	-120.65	583.05	2,404.98	2,830.27	2,744.13	86.14	32.855		
4,900.00	4,789.31	5,004.37	4,653.19	21.41	72.06	-121.02	582.68	2,406.35	2,843.57	2,752.57	91.00	31.250		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153C - OH - OH-SVY											Offset Site Error:	0.00 usft
Survey Program: 349-MWD OWSG Rev5											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
5,000.00	4,886.51	5,100.99	4,749.80	21.88	76.31	-121.40	582.29	2,407.74	2,857.02	2,761.17	95.85	29.807
5,100.00	4,983.70	5,197.62	4,846.42	22.35	80.56	-121.76	581.90	2,409.17	2,870.61	2,769.90	100.71	28.504
5,200.00	5,080.90	5,294.24	4,943.04	22.83	84.82	-122.13	581.50	2,410.63	2,884.35	2,778.78	105.57	27.322
5,300.00	5,178.09	5,390.88	5,039.66	23.30	89.08	-122.49	581.08	2,412.13	2,898.23	2,787.80	110.43	26.246
5,400.00	5,275.29	5,487.51	5,136.28	23.77	93.34	-122.85	580.66	2,413.65	2,912.25	2,796.96	115.29	25.261
5,500.00	5,372.48	5,584.15	5,232.91	24.25	97.61	-123.20	580.23	2,415.21	2,926.41	2,806.26	120.14	24.357
5,600.00	5,469.68	5,680.80	5,329.54	24.72	101.89	-123.55	579.80	2,416.80	2,940.70	2,815.70	125.00	23.525
5,700.00	5,566.87	5,777.73	5,426.45	25.20	104.80	-123.90	579.35	2,418.43	2,955.12	2,826.69	128.43	23.009
5,800.00	5,664.07	5,875.02	5,523.73	25.67	105.96	-124.24	578.90	2,420.07	2,969.65	2,839.62	130.04	22.837
5,900.00	5,761.27	5,972.32	5,621.01	26.14	107.12	-124.59	578.45	2,421.70	2,984.30	2,852.66	131.64	22.670
6,000.00	5,858.46	6,069.62	5,718.30	26.62	108.28	-124.92	578.00	2,423.34	2,999.05	2,865.80	133.25	22.508
6,100.00	5,955.66	6,166.91	5,815.58	27.09	109.44	-125.26	577.54	2,424.98	3,013.90	2,879.05	134.85	22.350
6,200.00	6,052.85	6,264.21	5,912.86	27.57	110.48	-125.59	577.09	2,426.61	3,028.86	2,892.53	136.33	22.217
6,300.00	6,150.05	6,361.50	6,010.14	28.04	110.70	-125.92	576.64	2,428.25	3,043.92	2,906.93	136.99	22.220
6,400.00	6,247.24	6,458.80	6,107.42	28.52	110.92	-126.25	576.19	2,429.89	3,059.08	2,921.43	137.64	22.225
6,490.87	6,335.57	6,547.21	6,195.82	28.95	111.12	-126.54	575.78	2,431.38	3,072.94	2,934.70	138.24	22.230
6,500.00	6,344.44	6,556.10	6,204.70	28.99	111.14	-123.12	575.74	2,431.53	3,074.29	2,935.99	138.30	22.230
6,550.00	6,392.91	6,604.67	6,253.26	29.23	111.25	-105.88	575.52	2,432.34	3,079.92	2,941.29	138.63	22.217
6,600.00	6,440.98	6,652.89	6,301.48	29.46	111.36	-92.49	575.29	2,433.15	3,082.60	2,943.64	138.96	22.183
6,650.00	6,488.34	6,700.48	6,349.06	29.70	111.47	-82.97	575.07	2,433.96	3,082.35	2,943.04	139.30	22.127
6,700.00	6,534.69	6,746.03	6,394.60	29.92	111.57	-76.42	574.86	2,434.73	3,079.19	2,939.55	139.64	22.050
6,750.00	6,579.76	6,788.88	6,437.45	30.15	111.67	-71.99	574.65	2,435.50	3,073.22	2,933.24	139.98	21.955
6,800.00	6,623.27	6,830.38	6,478.94	30.36	111.77	-69.06	574.42	2,436.31	3,064.53	2,924.21	140.32	21.840
6,850.00	6,664.95	6,870.29	6,518.84	30.57	111.87	-67.26	574.19	2,437.15	3,053.20	2,912.55	140.65	21.708
6,900.00	6,704.53	6,908.35	6,556.89	30.78	111.96	-66.32	573.96	2,437.99	3,039.36	2,898.37	140.98	21.558
6,950.00	6,741.79	6,944.35	6,592.88	30.98	112.04	-66.07	573.73	2,438.83	3,023.12	2,881.81	141.31	21.393
7,000.00	6,776.48	6,978.07	6,626.59	31.17	112.12	-66.41	573.50	2,439.66	3,004.65	2,863.01	141.64	21.214
7,050.00	6,808.39	7,009.29	6,657.80	31.36	112.20	-67.25	573.28	2,440.46	2,984.10	2,842.14	141.96	21.021
7,100.00	6,837.34	7,037.83	6,686.32	31.54	112.26	-68.55	573.07	2,441.22	2,961.63	2,819.35	142.28	20.815
7,150.00	6,863.13	7,063.49	6,711.98	31.73	112.33	-70.25	572.88	2,441.92	2,937.44	2,794.84	142.60	20.599
7,200.00	6,885.61	7,086.13	6,734.61	31.91	112.38	-72.33	572.70	2,442.56	2,911.72	2,768.80	142.91	20.374
7,250.00	6,904.64	7,105.58	6,754.05	32.10	112.43	-74.73	572.55	2,443.13	2,884.65	2,741.43	143.23	20.140
7,300.00	6,920.10	7,121.72	6,770.18	32.29	112.46	-77.44	572.41	2,443.60	2,856.45	2,712.91	143.54	19.900
7,350.00	6,931.91	7,134.43	6,782.89	32.48	112.50	-80.39	572.31	2,443.99	2,827.32	2,683.47	143.85	19.655
7,400.00	6,939.97	7,143.62	6,792.07	32.68	112.52	-83.55	572.23	2,444.27	2,797.46	2,653.30	144.15	19.406
7,450.00	6,944.26	7,149.22	6,797.67	32.89	112.53	-86.87	572.19	2,444.44	2,767.06	2,622.61	144.45	19.155
7,481.69	6,945.00	7,150.88	6,799.33	33.03	112.53	-89.04	572.17	2,444.49	2,747.61	2,602.97	144.64	18.996
7,500.00	6,944.99	7,151.42	6,799.86	33.12	112.54	-89.05	572.17	2,444.51	2,736.38	2,591.63	144.75	18.904
7,600.00	6,944.91	7,154.35	6,802.80	33.60	112.54	-89.13	572.14	2,444.60	2,676.43	2,531.06	145.37	18.411
7,700.00	6,944.84	7,157.31	6,805.75	34.17	112.55	-89.21	572.12	2,444.69	2,618.93	2,472.89	146.04	17.933
7,800.00	6,944.76	7,160.29	6,808.73	34.80	112.56	-89.29	572.09	2,444.78	2,564.03	2,417.28	146.75	17.472
7,900.00	6,944.69	7,163.28	6,811.72	35.49	112.56	-89.36	572.07	2,444.87	2,511.92	2,364.41	147.50	17.030
8,000.00	6,944.61	7,166.30	6,814.74	36.25	112.57	-89.44	572.04	2,444.97	2,462.75	2,314.46	148.30	16.607
8,100.00	6,944.54	7,169.33	6,817.77	37.07	112.58	-89.52	572.01	2,445.06	2,416.73	2,267.60	149.13	16.206
8,200.00	6,944.46	7,172.39	6,820.82	37.94	112.59	-89.61	571.99	2,445.16	2,374.02	2,224.03	149.99	15.828
8,300.00	6,944.39	7,175.46	6,823.89	38.86	112.59	-89.69	571.96	2,445.26	2,334.81	2,183.94	150.88	15.475
8,400.00	6,944.31	7,178.56	6,826.99	39.83	112.60	-89.77	571.93	2,445.35	2,299.29	2,147.50	151.78	15.148
8,500.00	6,944.23	7,181.67	6,830.10	40.84	112.61	-89.85	571.91	2,445.45	2,267.61	2,114.91	152.70	14.850
8,600.00	6,944.16	7,184.81	6,833.24	41.89	112.62	-89.93	571.88	2,445.55	2,239.95	2,086.33	153.62	14.581
8,700.00	6,944.08	7,187.97	6,836.39	42.98	112.62	-90.02	571.85	2,445.65	2,216.46	2,061.92	154.54	14.342
8,800.00	6,944.01	7,191.15	6,839.57	44.10	112.63	-90.10	571.82	2,445.76	2,197.26	2,041.82	155.44	14.136
8,900.00	6,943.93	7,194.35	6,842.77	45.25	112.64	-90.19	571.79	2,445.86	2,182.48	2,026.17	156.31	13.962

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153C - OH - OH-SVY													Offset Site Error:	0.00 usft
Survey Program:		349-MWD OWSG Rev5						Rule Assigned:					Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
9,000.00	6,943.86	7,197.57	6,845.99	46.43	112.65	-90.27	571.77	2,445.96	2,172.20	2,015.05	157.15	13.822		
9,100.00	6,943.78	7,200.81	6,849.23	47.63	112.65	-90.36	571.74	2,446.07	2,166.49	2,008.54	157.95	13.717		
9,174.03	6,943.73	7,203.23	6,851.64	48.54	112.66	-90.42	571.71	2,446.15	2,165.23	2,006.72	158.50	13.660		
9,200.00	6,943.71	7,204.08	6,852.49	48.86	112.66	-90.44	571.71	2,446.17	2,165.38	2,006.69	158.69	13.645		
9,300.00	6,943.63	7,207.36	6,855.78	50.11	112.67	-90.53	571.68	2,446.28	2,168.88	2,009.51	159.37	13.609		
9,400.00	6,943.56	7,210.68	6,859.09	51.38	112.68	-90.62	571.65	2,446.39	2,176.97	2,016.98	160.00	13.606 SF		
9,500.00	6,943.48	7,214.01	6,862.42	52.66	112.69	-90.71	571.62	2,446.50	2,189.60	2,029.05	160.55	13.638		
9,600.00	6,943.41	7,217.36	6,865.77	53.97	112.69	-90.80	571.59	2,446.61	2,206.69	2,045.65	161.04	13.703		
9,700.00	6,943.33	7,220.74	6,869.15	55.29	112.70	-90.88	571.56	2,446.72	2,228.13	2,066.68	161.45	13.801		
9,800.00	6,943.26	7,224.15	6,872.55	56.63	112.71	-90.97	571.53	2,446.83	2,253.80	2,092.00	161.80	13.930		
9,900.00	6,943.18	7,227.57	6,875.98	57.98	112.72	-91.07	571.49	2,446.95	2,283.56	2,121.49	162.08	14.089		
10,000.00	6,943.11	7,231.02	6,879.43	59.34	112.73	-91.16	571.46	2,447.06	2,317.26	2,154.96	162.30	14.278		
10,100.00	6,943.03	7,234.50	6,882.90	60.72	112.73	-91.25	571.43	2,447.18	2,354.72	2,192.26	162.45	14.495		
10,200.00	6,942.96	7,238.00	6,886.40	62.11	112.74	-91.34	571.40	2,447.30	2,395.76	2,233.20	162.56	14.738		
10,300.00	6,942.88	7,241.52	6,889.92	63.50	112.75	-91.43	571.37	2,447.42	2,440.21	2,277.60	162.61	15.007		
10,400.00	6,942.81	7,245.07	6,893.47	64.91	112.76	-91.53	571.33	2,447.54	2,487.88	2,325.26	162.62	15.299		
10,500.00	6,942.73	7,248.65	6,897.04	66.33	112.77	-91.62	571.30	2,447.66	2,538.59	2,376.01	162.59	15.614		
10,600.00	6,942.66	7,252.25	6,900.64	67.75	112.78	-91.72	571.26	2,447.78	2,592.17	2,429.65	162.52	15.950		
10,700.00	6,942.58	7,255.62	6,904.01	69.18	112.78	-91.81	571.23	2,447.90	2,648.43	2,486.01	162.42	16.306		
10,800.00	6,942.51	7,259.21	6,907.60	70.62	112.79	-91.90	571.20	2,448.02	2,707.22	2,544.92	162.30	16.680		
10,900.00	6,942.43	7,262.82	6,911.20	72.07	112.80	-92.00	571.17	2,448.14	2,768.37	2,606.20	162.16	17.072		
11,000.00	6,942.36	7,266.45	6,914.83	73.52	112.81	-92.09	571.13	2,448.27	2,831.72	2,669.72	162.00	17.479		
11,100.00	6,942.28	7,270.10	6,918.48	74.98	112.81	-92.19	571.10	2,448.39	2,897.14	2,735.30	161.83	17.902		
11,200.00	6,942.21	7,273.77	6,922.15	76.45	112.82	-92.29	571.06	2,448.52	2,964.48	2,802.83	161.65	18.339		
11,300.00	6,942.13	7,277.47	6,925.84	77.92	112.83	-92.38	571.03	2,448.65	3,033.62	2,872.16	161.46	18.789		
11,400.00	6,942.06	7,281.18	6,929.55	79.40	112.84	-92.48	570.99	2,448.78	3,104.44	2,943.18	161.26	19.251		
11,500.00	6,941.98	7,284.92	6,933.29	80.88	112.85	-92.58	570.95	2,448.91	3,176.82	3,015.76	161.06	19.724		
11,600.00	6,941.91	7,288.68	6,937.04	82.36	112.86	-92.68	570.92	2,449.04	3,250.67	3,089.81	160.86	20.208		
11,700.00	6,941.83	7,292.46	6,940.82	83.85	112.86	-92.78	570.88	2,449.17	3,325.87	3,165.22	160.66	20.702		
11,800.00	6,941.76	7,296.26	6,944.62	85.35	112.87	-92.88	570.84	2,449.31	3,402.35	3,241.90	160.45	21.204		
11,900.00	6,941.68	7,300.09	6,948.45	86.85	112.88	-92.98	570.81	2,449.44	3,480.02	3,319.77	160.25	21.716		
12,000.00	6,941.60	7,303.94	6,952.30	88.35	112.89	-93.08	570.77	2,449.58	3,558.81	3,398.75	160.06	22.235		
12,100.00	6,941.53	7,307.81	6,956.17	89.85	112.90	-93.19	570.73	2,449.71	3,638.63	3,478.76	159.86	22.761		
12,200.00	6,941.45	7,311.71	6,960.06	91.36	112.91	-93.29	570.69	2,449.85	3,719.42	3,559.75	159.67	23.294		
12,300.00	6,941.38	7,315.63	6,963.98	92.88	112.92	-93.39	570.66	2,449.99	3,801.12	3,641.63	159.49	23.833		
12,400.00	6,941.30	7,319.57	6,967.92	94.39	112.92	-93.50	570.62	2,450.13	3,883.68	3,724.37	159.31	24.379		
12,500.00	6,941.23	7,323.54	6,971.88	95.91	112.93	-93.60	570.58	2,450.28	3,967.03	3,807.90	159.13	24.929		
12,600.00	6,941.15	7,327.53	6,975.87	97.43	112.94	-93.71	570.54	2,450.42	4,051.13	3,892.17	158.96	25.485		
12,700.00	6,941.08	7,331.55	6,979.88	98.95	112.95	-93.81	570.50	2,450.57	4,135.94	3,977.15	158.80	26.046		
12,800.00	6,941.00	7,335.59	6,983.92	100.48	112.96	-93.92	570.46	2,450.71	4,221.41	4,062.78	158.64	26.611		
12,900.00	6,940.93	7,339.65	6,987.98	102.01	112.97	-94.02	570.42	2,450.86	4,307.51	4,149.02	158.48	27.180		
13,000.00	6,940.85	7,343.74	6,992.07	103.54	112.98	-94.13	570.38	2,451.01	4,394.18	4,235.85	158.34	27.752		
13,100.00	6,940.78	7,347.86	6,996.18	105.07	112.99	-94.24	570.33	2,451.16	4,481.41	4,323.22	158.19	28.329		
13,200.00	6,940.70	7,352.00	7,000.32	106.61	113.00	-94.35	570.29	2,451.31	4,569.16	4,411.11	158.06	28.908		
13,300.00	6,940.63	7,356.17	7,004.49	108.14	113.01	-94.46	570.25	2,451.46	4,657.40	4,499.48	157.93	29.491		
13,400.00	6,940.55	7,360.36	7,008.68	109.68	113.02	-94.57	570.21	2,451.62	4,746.11	4,588.30	157.80	30.076		
13,500.00	6,940.48	7,364.58	7,012.89	111.22	113.02	-94.68	570.16	2,451.78	4,835.25	4,677.57	157.68	30.664		
13,600.00	6,940.40	7,368.83	7,017.14	112.77	113.03	-94.79	570.12	2,451.93	4,924.80	4,767.23	157.57	31.255		
13,700.00	6,940.33	7,373.10	7,021.41	114.31	113.04	-94.90	570.08	2,452.09	5,014.75	4,857.29	157.46	31.848		
13,800.00	6,940.25	7,377.40	7,025.70	115.86	113.05	-95.02	570.03	2,452.25	5,105.07	4,947.71	157.36	32.443		
13,900.00	6,940.18	7,381.73	7,030.03	117.41	113.06	-95.13	569.99	2,452.42	5,195.74	5,038.48	157.26	33.040		
14,000.00	6,940.10	7,386.08	7,034.38	118.95	113.07	-95.25	569.94	2,452.58	5,286.74	5,129.58	157.16	33.638		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153C - OH - OH-SVY													Offset Site Error:	0.00 usft
Survey Program:		349-MWD OWSG Rev5					Rule Assigned:						Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance						Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,100.00	6,940.03	7,390.46	7,038.76	120.51	113.08	-95.36	569.90	2,452.74	5,378.06	5,220.98	157.08	34.239		
14,200.00	6,939.95	7,394.87	7,043.16	122.06	113.09	-95.48	569.85	2,452.91	5,469.68	5,312.69	156.99	34.841		
14,300.00	6,939.88	7,399.31	7,047.60	123.61	113.10	-95.59	569.81	2,453.08	5,561.59	5,404.67	156.91	35.444		
14,400.00	6,939.80	7,403.78	7,052.06	125.17	113.11	-95.71	569.76	2,453.25	5,653.76	5,496.93	156.84	36.049		
14,500.00	6,939.73	7,408.28	7,056.55	126.72	113.12	-95.83	569.71	2,453.42	5,746.20	5,589.43	156.77	36.654		
14,600.00	6,939.65	7,412.80	7,061.08	128.28	113.13	-95.95	569.66	2,453.59	5,838.88	5,682.18	156.70	37.261		
14,700.00	6,939.58	7,417.36	7,065.63	129.84	113.14	-96.07	569.62	2,453.77	5,931.80	5,775.16	156.64	37.869		
14,800.00	6,939.50	7,421.94	7,070.21	131.40	113.15	-96.19	569.57	2,453.95	6,024.94	5,868.36	156.58	38.478		
14,900.00	6,939.43	7,426.56	7,074.82	132.96	113.16	-96.31	569.52	2,454.13	6,118.29	5,961.77	156.53	39.088		
15,000.00	6,939.35	7,431.20	7,079.46	134.52	113.17	-96.43	569.47	2,454.31	6,211.85	6,055.38	156.48	39.698		
15,100.00	6,939.28	7,435.88	7,084.13	136.08	113.18	-96.55	569.42	2,454.49	6,305.61	6,149.18	156.43	40.309		
15,200.00	6,939.20	7,440.58	7,088.84	137.64	113.19	-96.67	569.37	2,454.67	6,399.55	6,243.16	156.39	40.921		
15,300.00	6,939.13	7,445.32	7,093.57	139.21	113.21	-96.80	569.32	2,454.86	6,493.67	6,337.32	156.35	41.533		
15,400.00	6,939.05	7,450.09	7,098.33	140.77	113.22	-96.92	569.26	2,455.04	6,587.95	6,431.64	156.31	42.146		
15,500.00	6,938.98	7,454.89	7,103.13	142.34	113.23	-97.05	569.21	2,455.23	6,682.41	6,526.12	156.28	42.759		
15,600.00	6,938.90	7,459.72	7,107.96	143.91	113.24	-97.17	569.16	2,455.42	6,777.01	6,620.76	156.25	43.372		
15,700.00	6,938.82	7,464.59	7,112.82	145.47	113.25	-97.30	569.11	2,455.62	6,871.77	6,715.55	156.23	43.986		
15,800.00	6,938.75	7,469.49	7,117.72	147.04	113.26	-97.43	569.05	2,455.81	6,966.67	6,810.47	156.20	44.600		
15,900.00	6,938.67	7,474.42	7,122.64	148.61	113.27	-97.56	569.00	2,456.01	7,061.71	6,905.53	156.18	45.214		
16,000.00	6,938.60	7,479.39	7,127.61	150.18	113.28	-97.69	568.94	2,456.21	7,156.89	7,000.72	156.17	45.828		
16,100.00	6,938.52	7,484.39	7,132.60	151.75	113.29	-97.82	568.89	2,456.41	7,252.19	7,096.03	156.15	46.442		
16,200.00	6,938.45	7,489.42	7,137.63	153.32	113.30	-97.95	568.83	2,456.61	7,347.61	7,191.46	156.14	47.057		
16,300.00	6,938.37	7,494.49	7,142.69	154.90	113.32	-98.08	568.78	2,456.82	7,443.15	7,287.01	156.14	47.671		
16,400.00	6,938.30	7,499.59	7,147.79	156.47	113.33	-98.21	568.72	2,457.03	7,538.80	7,382.67	156.13	48.285		
16,500.00	6,938.22	7,504.73	7,152.93	158.04	113.34	-98.34	568.66	2,457.24	7,634.56	7,478.43	156.13	48.900		
16,600.00	6,938.15	7,509.90	7,158.10	159.62	113.35	-98.48	568.60	2,457.45	7,730.43	7,574.30	156.13	49.514		
16,700.00	6,938.07	7,515.11	7,163.30	161.19	113.36	-98.61	568.54	2,457.66	7,826.39	7,670.26	156.13	50.128		
16,800.00	6,938.00	7,520.36	7,168.54	162.77	113.37	-98.75	568.48	2,457.88	7,922.46	7,766.32	156.13	50.741		
16,900.00	6,937.92	7,525.64	7,173.82	164.34	113.39	-98.89	568.42	2,458.10	8,018.61	7,862.47	156.14	51.355		
17,000.00	6,937.85	7,530.96	7,179.14	165.92	113.40	-99.02	568.36	2,458.32	8,114.86	7,958.71	156.15	51.968		
17,100.00	6,937.77	7,536.32	7,184.49	167.50	113.41	-99.16	568.30	2,458.54	8,211.19	8,055.03	156.16	52.581		
17,200.00	6,937.70	7,541.72	7,189.88	169.07	113.42	-99.30	568.24	2,458.77	8,307.61	8,151.44	156.18	53.194		
17,300.00	6,937.62	7,547.15	7,195.31	170.65	113.43	-99.44	568.18	2,458.99	8,404.11	8,247.92	156.19	53.806		
17,400.00	6,937.55	7,552.62	7,200.78	172.23	113.45	-99.58	568.11	2,459.22	8,500.69	8,344.48	156.21	54.418		
17,500.00	6,937.47	7,558.13	7,206.28	173.81	113.46	-99.73	568.05	2,459.46	8,597.34	8,441.11	156.23	55.029		
17,600.00	6,937.40	7,563.69	7,211.83	175.39	113.47	-99.87	567.98	2,459.69	8,694.07	8,537.81	156.25	55.640		
17,700.00	6,937.32	7,569.28	7,217.42	176.97	113.48	-100.01	567.92	2,459.93	8,790.86	8,634.59	156.28	56.251		
17,800.00	6,937.25	7,574.91	7,223.04	178.55	113.50	-100.16	567.85	2,460.17	8,887.73	8,731.42	156.31	56.861		
17,900.00	6,937.17	7,580.58	7,228.71	180.13	113.51	-100.30	567.79	2,460.41	8,984.66	8,828.33	156.33	57.471		
18,000.00	6,937.10	7,586.30	7,234.42	181.71	113.52	-100.45	567.72	2,460.66	9,081.65	8,925.29	156.37	58.080		
18,100.00	6,937.02	7,592.05	7,240.17	183.29	113.54	-100.60	567.65	2,460.91	9,178.71	9,022.31	156.40	58.688		
18,200.00	6,936.95	7,597.85	7,245.96	184.87	113.55	-100.75	567.58	2,461.16	9,275.83	9,119.40	156.43	59.296		
18,300.00	6,936.87	7,603.69	7,251.80	186.46	113.56	-100.89	567.51	2,461.41	9,373.00	9,216.53	156.47	59.904		
18,400.00	6,936.80	7,609.58	7,257.68	188.04	113.58	-101.05	567.44	2,461.67	9,470.23	9,313.73	156.51	60.510		
18,500.00	6,936.72	7,615.51	7,263.60	189.62	113.59	-101.20	567.37	2,461.93	9,567.52	9,410.97	156.55	61.117		
18,600.00	6,936.65	7,621.48	7,269.56	191.21	113.60	-101.35	567.30	2,462.19	9,664.86	9,508.27	156.59	61.722		
18,700.00	6,936.57	7,627.50	7,275.57	192.79	113.62	-101.50	567.22	2,462.45	9,762.24	9,605.61	156.63	62.327		
18,800.00	6,936.50	7,633.56	7,281.63	194.37	113.63	-101.66	567.15	2,462.72	9,859.68	9,703.01	156.67	62.931		
18,900.00	6,936.42	7,639.67	7,287.73	195.96	113.64	-101.81	567.08	2,462.99	9,957.17	9,800.45	156.72	63.535		
19,000.00	6,936.35	7,645.82	7,293.88	197.54	113.66	-101.97	567.00	2,463.27	10,054.70	9,897.93	156.77	64.137		
19,100.00	6,936.27	7,652.02	7,300.07	199.13	113.67	-102.13	566.92	2,463.54	10,152.28	9,995.46	156.82	64.739		
19,200.00	6,936.19	7,658.27	7,306.32	200.71	113.69	-102.28	566.85	2,463.82	10,249.90	10,093.03	156.87	65.340		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153C - OH - OH-SVY												Offset Site Error:	0.00 usft
Survey Program: 349-MWD OWSG Rev5												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,300.00	6,936.12	7,664.57	7,312.60	202.30	113.70	-102.44	566.77	2,464.11	10,347.57	10,190.65	156.92	65.941	
19,400.00	6,936.04	7,670.91	7,318.94	203.88	113.72	-102.60	566.69	2,464.39	10,445.28	10,288.30	156.98	66.541	
19,500.00	6,935.97	7,677.30	7,325.33	205.47	113.73	-102.77	566.61	2,464.69	10,543.02	10,385.99	157.03	67.140	
19,600.00	6,935.89	7,683.75	7,331.76	207.06	113.74	-102.93	566.53	2,464.98	10,640.81	10,483.72	157.09	67.738	
19,700.00	6,935.82	7,690.24	7,338.25	208.64	113.76	-103.09	566.45	2,465.28	10,738.63	10,581.49	157.15	68.335	
19,800.00	6,935.74	7,696.78	7,344.79	210.23	113.77	-103.26	566.36	2,465.58	10,836.49	10,679.29	157.21	68.931	
19,900.00	6,935.67	7,703.38	7,351.37	211.82	113.79	-103.42	566.28	2,465.88	10,934.39	10,777.12	157.27	69.527	
20,000.00	6,935.59	7,710.02	7,358.01	213.41	113.81	-103.59	566.20	2,466.19	11,032.32	10,874.99	157.33	70.122	
20,100.00	6,935.52	7,716.72	7,364.70	214.99	113.82	-103.76	566.11	2,466.50	11,130.29	10,972.89	157.40	70.715	
20,200.00	6,935.44	7,723.48	7,371.45	216.58	113.84	-103.93	566.02	2,466.81	11,228.29	11,070.83	157.46	71.308	
20,300.00	6,935.37	7,730.28	7,378.25	218.17	113.85	-104.10	565.94	2,467.13	11,326.32	11,168.79	157.53	71.900	
20,400.00	6,935.29	7,737.14	7,385.10	219.76	113.87	-104.27	565.85	2,467.46	11,424.38	11,266.78	157.60	72.491	
20,500.00	6,935.22	7,744.06	7,392.00	221.35	113.88	-104.44	565.76	2,467.78	11,522.47	11,364.81	157.67	73.082	
20,600.00	6,935.14	7,751.03	7,398.97	222.94	113.90	-104.61	565.67	2,468.11	11,620.60	11,462.86	157.74	73.671	
20,700.00	6,935.07	7,758.06	7,405.99	224.53	113.92	-104.79	565.57	2,468.45	11,718.75	11,560.94	157.81	74.259	
20,789.75	6,935.00	7,764.41	7,412.33	225.95	113.93	-104.95	565.49	2,468.75	11,806.86	11,648.99	157.87	74.786	

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 181D - OH - OH-SVY												Offset Site Error:	0.00 usft
Survey Program: 374-B001Mb_MWD+HRGM												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-85.94	1,055.77	-14,890.11	14,927.62				
100.00	100.00	38.01	38.01	0.25	0.07	-85.94	1,055.78	-14,890.11	14,927.50	14,927.18	0.32	N/A	
200.00	200.00	138.02	138.02	0.61	0.25	-85.94	1,056.00	-14,890.10	14,927.50	14,926.64	0.86	N/A	
300.00	300.00	238.04	238.04	0.97	0.43	-85.94	1,056.45	-14,890.06	14,927.49	14,926.10	1.39	N/A	
400.00	400.00	338.05	338.05	1.33	0.61	-85.94	1,057.15	-14,890.01	14,927.49	14,925.56	1.93	7,725.810	
444.99	444.99	383.00	382.99	1.49	0.70	-85.94	1,057.55	-14,889.99	14,927.49	14,925.30	2.19	6,815.953 CC	
500.00	500.00	414.00	413.99	1.68	0.81	-85.94	1,057.99	-14,889.98	14,927.54	14,925.04	2.50	5,974.891 ES	
600.00	599.98	445.00	444.98	2.03	0.93	94.93	1,058.64	-14,890.05	14,928.07	14,925.12	2.95	5,059.463	
700.00	699.84	476.00	475.97	2.36	1.04	94.92	1,059.63	-14,890.27	14,929.41	14,926.02	3.39	4,398.648	
800.00	799.45	490.70	490.65	2.71	1.09	94.88	1,060.24	-14,890.45	14,931.55	14,927.76	3.79	3,939.364	
900.00	898.70	507.00	506.93	3.06	1.15	94.83	1,061.02	-14,890.69	14,934.52	14,930.31	4.20	3,551.942	
1,000.00	997.47	537.00	536.87	3.43	1.26	94.78	1,062.81	-14,891.28	14,938.30	14,933.62	4.68	3,189.880	
1,100.00	1,095.62	550.01	549.85	3.82	1.31	94.70	1,063.73	-14,891.61	14,942.92	14,937.81	5.12	2,919.825	
1,180.06	1,173.69	568.00	567.77	4.14	1.38	94.64	1,065.12	-14,892.14	14,947.24	14,941.74	5.51	2,714.161	
1,200.00	1,193.07	568.00	567.77	4.22	1.38	94.64	1,065.12	-14,892.14	14,948.39	14,942.80	5.59	2,674.326	
1,300.00	1,290.27	568.00	567.77	4.65	1.38	94.64	1,065.12	-14,892.14	14,954.56	14,948.54	6.01	2,487.857	
1,400.00	1,387.46	599.00	598.63	5.08	1.50	94.67	1,067.91	-14,893.30	14,961.24	14,954.68	6.55	2,282.610	
1,500.00	1,484.66	599.00	598.63	5.52	1.50	94.67	1,067.91	-14,893.30	14,968.54	14,961.54	6.99	2,141.143	
1,600.00	1,581.85	630.00	629.42	5.97	1.61	94.71	1,071.19	-14,894.76	14,976.36	14,968.81	7.55	1,984.426	
1,700.00	1,679.05	630.00	629.42	6.42	1.61	94.71	1,071.19	-14,894.76	14,984.79	14,976.80	7.99	1,875.004	
1,800.00	1,776.25	630.00	629.42	6.87	1.61	94.71	1,071.19	-14,894.76	14,993.88	14,985.44	8.44	1,776.611	
1,900.00	1,873.44	664.14	663.23	7.33	1.74	94.76	1,075.48	-14,896.72	15,003.34	14,994.32	9.02	1,663.512	
2,000.00	1,970.64	691.00	689.73	7.78	1.84	94.80	1,079.44	-14,898.58	15,013.56	15,003.98	9.57	1,568.408	
2,100.00	2,067.83	691.00	689.73	8.24	1.84	94.80	1,079.44	-14,898.58	15,024.25	15,014.23	10.02	1,498.706	
2,200.00	2,165.03	691.00	689.73	8.71	1.84	94.80	1,079.44	-14,898.58	15,035.60	15,025.13	10.48	1,434.984	
2,300.00	2,262.22	722.00	720.19	9.17	1.97	94.84	1,084.61	-14,901.09	15,047.57	15,036.52	11.05	1,361.385	
2,400.00	2,359.42	722.00	720.19	9.63	1.97	94.84	1,084.61	-14,901.09	15,060.04	15,048.54	11.51	1,308.818	
2,500.00	2,456.61	722.00	720.19	10.10	1.97	94.84	1,084.61	-14,901.09	15,073.17	15,061.21	11.96	1,260.295	
2,600.00	2,553.81	753.00	750.51	10.57	2.09	94.89	1,090.38	-14,904.01	15,086.88	15,074.34	12.54	1,203.265	
2,700.00	2,651.01	753.00	750.51	11.03	2.09	94.89	1,090.38	-14,904.01	15,101.12	15,088.13	12.99	1,162.424	
2,800.00	2,748.20	753.00	750.51	11.50	2.09	94.89	1,090.38	-14,904.01	15,116.01	15,102.56	13.44	1,124.427	
2,900.00	2,845.40	783.00	779.68	11.97	2.21	94.94	1,096.61	-14,907.19	15,131.44	15,117.42	14.02	1,079.300	
3,000.00	2,942.59	783.00	779.68	12.44	2.21	94.94	1,096.61	-14,907.19	15,147.44	15,132.97	14.47	1,046.783	
3,100.00	3,039.79	783.00	779.68	12.91	2.21	94.94	1,096.61	-14,907.19	15,164.09	15,149.17	14.92	1,016.332	
3,200.00	3,136.98	814.00	809.63	13.38	2.34	94.99	1,103.70	-14,910.93	15,181.33	15,165.83	15.50	979.265	
3,300.00	3,234.18	814.00	809.63	13.85	2.34	94.99	1,103.70	-14,910.93	15,199.07	15,183.12	15.95	952.880	
3,400.00	3,331.38	814.00	809.63	14.32	2.34	94.99	1,103.70	-14,910.93	15,217.45	15,201.06	16.40	928.038	
3,500.00	3,428.57	814.00	809.63	14.79	2.34	94.99	1,103.70	-14,910.93	15,236.47	15,219.63	16.84	904.616	
3,600.00	3,525.77	814.00	809.63	15.26	2.34	94.99	1,103.70	-14,910.93	15,256.12	15,238.83	17.29	882.501	
3,700.00	3,622.96	814.00	809.63	15.73	2.34	94.99	1,103.70	-14,910.93	15,276.39	15,258.66	17.73	861.595	
3,800.00	3,720.16	845.05	839.40	16.20	2.49	95.05	1,111.35	-14,915.26	15,296.90	15,278.59	18.31	835.276	
3,900.00	3,817.35	876.00	868.84	16.68	2.64	95.10	1,119.53	-14,920.20	15,318.47	15,299.57	18.89	810.750	
4,000.00	3,914.55	876.00	868.84	17.15	2.64	95.10	1,119.53	-14,920.20	15,340.27	15,320.93	19.33	793.479	
4,100.00	4,011.74	876.00	868.84	17.62	2.64	95.10	1,119.53	-14,920.20	15,362.69	15,342.92	19.77	777.066	
4,200.00	4,108.94	876.00	868.84	18.09	2.64	95.10	1,119.53	-14,920.20	15,385.72	15,365.52	20.21	761.453	
4,300.00	4,206.14	876.00	868.84	18.57	2.64	95.10	1,119.53	-14,920.20	15,409.37	15,388.73	20.64	746.588	
4,400.00	4,303.33	876.00	868.84	19.04	2.64	95.10	1,119.53	-14,920.20	15,433.64	15,412.56	21.07	732.421	
4,500.00	4,400.53	907.00	898.04	19.51	2.80	95.16	1,128.36	-14,925.71	15,458.44	15,436.79	21.65	713.951	
4,600.00	4,497.72	907.00	898.04	19.99	2.80	95.16	1,128.36	-14,925.71	15,483.75	15,461.67	22.08	701.234	
4,700.00	4,594.92	907.00	898.04	20.46	2.80	95.16	1,128.36	-14,925.71	15,509.66	15,487.16	22.51	689.082	
4,800.00	4,692.11	920.87	911.00	20.93	2.87	95.18	1,132.54	-14,928.32	15,536.13	15,513.13	23.00	675.405	
4,900.00	4,789.31	938.00	926.95	21.41	2.96	95.22	1,137.87	-14,931.62	15,563.14	15,539.63	23.51	661.922	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 181D - OH - OH-SVY													Offset Site Error:	0.00 usft
Survey Program: 374-B001Mb_MWD+HRGM													Offset Well Error:	0.00 usft
Rule Assigned:													Warning	
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor		
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
5,000.00	4,886.51	938.00	926.95	21.88	2.96	95.22	1,137.87	-14,931.62	15,590.68	15,566.75	23.93	651.412		
5,100.00	4,983.70	953.57	941.37	22.35	3.05	95.25	1,142.89	-14,934.68	15,618.75	15,594.31	24.44	639.192		
5,200.00	5,080.90	970.00	956.49	22.83	3.14	95.28	1,148.38	-14,937.98	15,647.37	15,622.43	24.94	627.427		
5,300.00	5,178.09	970.00	956.49	23.30	3.14	95.28	1,148.38	-14,937.98	15,676.50	15,651.15	25.35	618.281		
5,400.00	5,275.29	986.27	971.39	23.77	3.24	95.31	1,154.02	-14,941.31	15,706.16	15,680.30	25.86	607.394		
5,500.00	5,372.48	1,002.00	985.72	24.25	3.33	95.35	1,159.62	-14,944.59	15,736.35	15,709.99	26.36	597.063		
5,600.00	5,469.68	1,002.00	985.72	24.72	3.33	95.35	1,159.62	-14,944.59	15,767.06	15,740.30	26.77	589.057		
5,700.00	5,566.87	1,017.11	999.41	25.20	3.42	95.38	1,165.16	-14,947.80	15,798.29	15,771.02	27.26	579.512		
5,800.00	5,664.07	1,033.00	1,013.70	25.67	3.52	95.41	1,171.17	-14,951.24	15,830.05	15,802.29	27.76	570.286		
5,900.00	5,761.27	1,033.00	1,013.70	26.14	3.52	95.41	1,171.17	-14,951.24	15,862.32	15,834.16	28.16	563.242		
6,000.00	5,858.46	1,048.39	1,027.46	26.62	3.62	95.45	1,177.17	-14,954.62	15,895.10	15,866.44	28.66	554.671		
6,100.00	5,955.66	1,064.00	1,041.34	27.09	3.72	95.48	1,183.43	-14,958.09	15,928.39	15,899.24	29.15	546.432		
6,200.00	6,052.85	1,064.00	1,041.34	27.57	3.72	95.48	1,183.43	-14,958.09	15,962.19	15,932.64	29.55	540.207		
6,300.00	6,150.05	1,064.00	1,041.34	28.04	3.72	95.48	1,183.43	-14,958.09	15,996.54	15,966.60	29.94	534.201		
6,400.00	6,247.24	1,095.00	1,068.60	28.52	3.94	95.55	1,196.39	-14,965.16	16,031.35	16,000.81	30.53	525.076		
6,490.87	6,335.57	1,095.00	1,068.60	28.95	3.94	95.55	1,196.39	-14,965.16	16,063.40	16,032.52	30.89	520.049		
6,500.00	6,344.44	1,284.00	1,232.04	28.99	5.35	99.38	1,281.85	-15,006.35	16,066.65	16,034.45	32.20	498.957		
6,550.00	6,392.91	1,303.59	1,248.91	29.23	5.50	116.61	1,290.93	-15,010.43	16,086.50	16,053.97	32.53	494.462		
6,600.00	6,440.98	1,316.00	1,259.59	29.46	5.60	130.22	1,296.70	-15,013.04	16,110.01	16,077.20	32.81	491.015		
6,650.00	6,488.34	1,316.00	1,259.59	29.70	5.60	140.17	1,296.70	-15,013.04	16,137.00	16,104.01	32.99	489.185		
6,700.00	6,534.69	1,334.38	1,275.39	29.92	5.74	147.43	1,305.22	-15,016.95	16,167.27	16,133.99	33.28	485.726		
6,750.00	6,579.76	1,347.00	1,286.24	30.15	5.84	152.80	1,311.07	-15,019.66	16,200.64	16,167.12	33.53	483.194		
6,800.00	6,623.27	1,347.00	1,286.24	30.36	5.84	156.90	1,311.07	-15,019.66	16,236.89	16,203.22	33.67	482.262		
6,850.00	6,664.95	1,347.00	1,286.24	30.57	5.84	160.16	1,311.07	-15,019.66	16,275.79	16,241.99	33.79	481.618		
6,900.00	6,704.53	1,373.15	1,308.69	30.78	6.05	163.00	1,323.24	-15,025.31	16,317.02	16,282.92	34.09	478.578		
6,950.00	6,741.79	1,380.71	1,315.16	30.98	6.11	165.48	1,326.79	-15,026.95	16,360.38	16,326.14	34.25	477.739		
6,966.61	6,753.61	6,813.29	6,417.64	31.04	33.91	176.36	2,539.12	-15,624.66	16,310.76	16,250.16	60.60	269.139		
7,000.00	6,776.48	6,835.84	6,440.19	31.17	33.97	178.19	2,539.67	-15,624.91	16,335.45	16,274.71	60.74	268.961		
7,050.00	6,808.39	6,867.26	6,471.60	31.36	34.05	-178.99	2,540.44	-15,625.27	16,374.45	16,313.54	60.91	268.833 SF		
7,100.00	6,837.34	6,895.68	6,500.01	31.54	34.12	-175.90	2,541.14	-15,625.58	16,415.67	16,354.62	61.06	268.857		
7,150.00	6,863.13	6,920.92	6,525.24	31.73	34.18	-172.29	2,541.75	-15,625.86	16,458.87	16,397.69	61.18	269.030		
7,200.00	6,885.61	6,942.84	6,547.14	31.91	34.23	-167.81	2,542.29	-15,626.11	16,503.76	16,442.48	61.27	269.349		
7,250.00	6,904.64	6,961.28	6,565.58	32.10	34.28	-161.85	2,542.74	-15,626.31	16,550.07	16,488.73	61.34	269.808		
7,300.00	6,920.10	6,976.15	6,580.44	32.29	34.32	-153.43	2,543.10	-15,626.48	16,597.53	16,536.15	61.38	270.403		
7,350.00	6,931.91	6,987.34	6,591.63	32.48	34.35	-140.96	2,543.37	-15,626.60	16,645.84	16,584.44	61.40	271.124		
7,400.00	6,939.97	6,994.79	6,599.08	32.68	34.36	-122.64	2,543.56	-15,626.68	16,694.70	16,633.31	61.39	271.964		
7,450.00	6,944.26	6,998.46	6,602.74	32.89	34.37	-99.39	2,543.65	-15,626.73	16,743.81	16,682.46	61.35	272.911		
7,481.69	6,945.00	6,998.81	6,603.09	33.03	34.37	-84.85	2,543.65	-15,626.73	16,774.93	16,713.61	61.32	273.562		
7,500.00	6,944.99	6,998.57	6,602.85	33.12	34.37	-84.85	2,543.65	-15,626.73	16,792.90	16,731.60	61.30	273.950		
7,600.00	6,944.91	6,997.25	6,601.54	33.60	34.37	-84.83	2,543.62	-15,626.71	16,891.01	16,829.82	61.19	276.052		
7,700.00	6,944.84	6,995.94	6,600.23	34.17	34.37	-84.80	2,543.58	-15,626.70	16,989.14	16,928.06	61.08	278.142		
7,800.00	6,944.76	6,994.63	6,598.92	34.80	34.36	-84.78	2,543.55	-15,626.68	17,087.29	17,026.31	60.98	280.221		
7,900.00	6,944.69	6,993.31	6,597.60	35.49	34.36	-84.76	2,543.52	-15,626.67	17,185.47	17,124.59	60.88	282.286		
8,000.00	6,944.61	6,992.00	6,596.29	36.25	34.36	-84.73	2,543.49	-15,626.65	17,283.66	17,222.88	60.79	284.339		
8,100.00	6,944.54	6,990.69	6,594.98	37.07	34.35	-84.71	2,543.46	-15,626.64	17,381.88	17,321.19	60.70	286.379		
8,200.00	6,944.46	6,989.38	6,593.67	37.94	34.35	-84.69	2,543.42	-15,626.62	17,480.12	17,419.51	60.61	288.406		
8,300.00	6,944.39	6,988.06	6,592.35	38.86	34.35	-84.67	2,543.39	-15,626.61	17,578.37	17,517.85	60.53	290.420		
8,400.00	6,944.31	6,986.75	6,591.04	39.83	34.34	-84.64	2,543.36	-15,626.60	17,676.65	17,616.20	60.45	292.421		
8,500.00	6,944.23	6,985.44	6,589.73	40.84	34.34	-84.62	2,543.33	-15,626.58	17,774.95	17,714.57	60.38	294.408		
8,600.00	6,944.16	6,984.12	6,588.42	41.89	34.34	-84.60	2,543.30	-15,626.57	17,873.26	17,812.96	60.30	296.381		
8,700.00	6,944.08	6,982.81	6,587.10	42.98	34.33	-84.57	2,543.26	-15,626.55	17,971.59	17,911.35	60.24	298.341		
8,800.00	6,944.01	6,981.50	6,585.79	44.10	34.33	-84.55	2,543.23	-15,626.54	18,069.94	18,009.77	60.18	300.286		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 181D - OH - OH-SVY												Offset Site Error:	0.00 usft
Survey Program: 374-B001Mb_MWD+HRGM												Offset Well Error:	0.00 usft
Reference												Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,900.00	6,943.93	1,095.00	1,068.60	45.25	3.94	-18.35	1,196.39	-14,965.16	18,208.35	18,176.16	32.19	565.599	
9,000.00	6,943.86	1,095.00	1,068.60	46.43	3.94	-18.35	1,196.39	-14,965.16	18,302.53	18,270.32	32.20	568.373	
9,100.00	6,943.78	1,095.00	1,068.60	47.63	3.94	-18.35	1,196.39	-14,965.16	18,396.77	18,364.55	32.21	571.089	
9,200.00	6,943.71	1,080.24	1,055.67	48.86	3.84	-18.25	1,190.13	-14,961.75	18,491.00	18,458.85	32.14	575.250	
9,300.00	6,943.63	1,064.00	1,041.34	50.11	3.72	-18.15	1,183.43	-14,958.09	18,585.40	18,553.33	32.07	579.537	
9,400.00	6,943.56	1,064.00	1,041.34	51.38	3.72	-18.15	1,183.43	-14,958.09	18,679.77	18,647.68	32.09	582.082	
9,500.00	6,943.48	1,064.00	1,041.34	52.66	3.72	-18.15	1,183.43	-14,958.09	18,774.21	18,742.09	32.12	584.572	
9,600.00	6,943.41	1,064.00	1,041.34	53.97	3.72	-18.15	1,183.43	-14,958.09	18,868.70	18,836.56	32.14	587.007	
9,700.00	6,943.33	1,064.00	1,041.34	55.29	3.72	-18.15	1,183.43	-14,958.09	18,963.25	18,931.07	32.17	589.387	
9,800.00	6,943.26	1,064.00	1,041.34	56.63	3.72	-18.15	1,183.43	-14,958.09	19,057.85	19,025.64	32.21	591.714	
9,900.00	6,943.18	1,064.00	1,041.34	57.98	3.72	-18.15	1,183.43	-14,958.09	19,152.51	19,120.27	32.24	593.988	
10,000.00	6,943.11	1,064.00	1,041.34	59.34	3.72	-18.15	1,183.43	-14,958.09	19,247.23	19,214.94	32.28	596.211	
10,100.00	6,943.03	1,064.00	1,041.34	60.72	3.72	-18.15	1,183.43	-14,958.09	19,341.99	19,309.67	32.32	598.382	
10,200.00	6,942.96	1,064.00	1,041.34	62.11	3.72	-18.15	1,183.43	-14,958.09	19,436.81	19,404.44	32.37	600.504	
10,300.00	6,942.88	1,064.00	1,041.34	63.50	3.72	-18.15	1,183.43	-14,958.09	19,531.68	19,499.27	32.41	602.576	
10,400.00	6,942.81	1,049.79	1,028.71	64.91	3.63	-18.07	1,177.73	-14,954.93	19,626.56	19,594.17	32.39	605.984	
10,500.00	6,942.73	1,046.68	1,025.94	66.33	3.61	-18.05	1,176.50	-14,954.25	19,721.52	19,689.09	32.42	608.261	
10,600.00	6,942.66	1,033.00	1,013.70	67.75	3.52	-17.97	1,171.17	-14,951.24	19,816.54	19,784.13	32.40	611.536	
10,700.00	6,942.58	1,033.00	1,013.70	69.18	3.52	-17.97	1,171.17	-14,951.24	19,911.57	19,879.11	32.46	613.411	
10,800.00	6,942.51	1,033.00	1,013.70	70.62	3.52	-17.97	1,171.17	-14,951.24	20,006.65	19,974.13	32.52	615.241	
10,900.00	6,942.43	1,033.00	1,013.70	72.07	3.52	-17.97	1,171.17	-14,951.24	20,101.78	20,069.20	32.58	617.027	
11,000.00	6,942.36	1,033.00	1,013.70	73.52	3.52	-17.97	1,171.17	-14,951.24	20,196.95	20,164.31	32.64	618.769	
11,100.00	6,942.28	1,033.00	1,013.70	74.98	3.52	-17.97	1,171.17	-14,951.24	20,292.18	20,259.47	32.70	620.469	
11,200.00	6,942.21	1,033.00	1,013.70	76.45	3.52	-17.97	1,171.17	-14,951.24	20,387.44	20,354.67	32.77	622.128	
11,300.00	6,942.13	1,033.00	1,013.70	77.92	3.52	-17.97	1,171.17	-14,951.24	20,482.76	20,449.92	32.84	623.746	
11,400.00	6,942.06	1,033.00	1,013.70	79.40	3.52	-17.97	1,171.17	-14,951.24	20,578.12	20,545.21	32.91	625.324	
11,500.00	6,941.98	1,033.00	1,013.70	80.88	3.52	-17.97	1,171.17	-14,951.24	20,673.52	20,640.54	32.98	626.864	
11,600.00	6,941.91	1,018.34	1,000.51	82.36	3.43	-17.89	1,165.61	-14,948.07	20,768.91	20,735.92	32.98	629.695	
11,700.00	6,941.83	1,016.14	998.53	83.85	3.42	-17.87	1,164.80	-14,947.60	20,864.38	20,831.33	33.05	631.354	
11,800.00	6,941.76	1,002.00	985.72	85.35	3.33	-17.79	1,159.62	-14,944.59	20,959.92	20,926.87	33.06	634.069	
11,900.00	6,941.68	1,002.00	985.72	86.85	3.33	-17.79	1,159.62	-14,944.59	21,055.46	21,022.33	33.13	635.450	
12,000.00	6,941.60	1,002.00	985.72	88.35	3.33	-17.79	1,159.62	-14,944.59	21,151.04	21,117.82	33.21	636.797	
12,100.00	6,941.53	1,002.00	985.72	89.85	3.33	-17.79	1,159.62	-14,944.59	21,246.66	21,213.36	33.30	638.110	
12,200.00	6,941.45	1,002.00	985.72	91.36	3.33	-17.79	1,159.62	-14,944.59	21,342.32	21,308.94	33.38	639.390	
12,300.00	6,941.38	1,002.00	985.72	92.88	3.33	-17.79	1,159.62	-14,944.59	21,438.02	21,404.55	33.46	640.638	
12,400.00	6,941.30	1,002.00	985.72	94.39	3.33	-17.79	1,159.62	-14,944.59	21,533.75	21,500.20	33.55	641.855	
12,500.00	6,941.23	1,002.00	985.72	95.91	3.33	-17.79	1,159.62	-14,944.59	21,629.53	21,595.89	33.64	643.041	
12,600.00	6,941.15	1,002.00	985.72	97.43	3.33	-17.79	1,159.62	-14,944.59	21,725.34	21,691.62	33.72	644.198	
12,700.00	6,941.08	1,002.00	985.72	98.95	3.33	-17.79	1,159.62	-14,944.59	21,821.20	21,787.38	33.81	645.326	
12,800.00	6,941.00	1,002.00	985.72	100.48	3.33	-17.79	1,159.62	-14,944.59	21,917.09	21,883.18	33.91	646.426	
12,900.00	6,940.93	1,002.00	985.72	102.01	3.33	-17.79	1,159.62	-14,944.59	22,013.01	21,979.01	34.00	647.499	
13,000.00	6,940.85	986.56	971.65	103.54	3.24	-17.71	1,154.12	-14,941.37	22,108.92	22,074.90	34.02	649.812	
13,100.00	6,940.78	970.00	956.49	105.07	3.14	-17.61	1,148.38	-14,937.98	22,204.95	22,170.90	34.05	652.196	
13,200.00	6,940.70	970.00	956.49	106.61	3.14	-17.61	1,148.38	-14,937.98	22,300.95	22,266.80	34.14	653.177	
13,300.00	6,940.63	970.00	956.49	108.14	3.14	-17.61	1,148.38	-14,937.98	22,396.98	22,362.74	34.24	654.133	
13,400.00	6,940.55	970.00	956.49	109.68	3.14	-17.61	1,148.38	-14,937.98	22,493.05	22,458.71	34.34	655.066	
13,500.00	6,940.48	970.00	956.49	111.22	3.14	-17.61	1,148.38	-14,937.98	22,589.16	22,554.72	34.44	655.976	
13,600.00	6,940.40	970.00	956.49	112.77	3.14	-17.61	1,148.38	-14,937.98	22,685.29	22,650.76	34.54	656.863	
13,700.00	6,940.33	970.00	956.49	114.31	3.14	-17.61	1,148.38	-14,937.98	22,781.46	22,746.83	34.64	657.728	
13,800.00	6,940.25	970.00	956.49	115.86	3.14	-17.61	1,148.38	-14,937.98	22,877.67	22,842.93	34.74	658.572	
13,900.00	6,940.18	970.00	956.49	117.41	3.14	-17.61	1,148.38	-14,937.98	22,973.91	22,939.06	34.84	659.395	
14,000.00	6,940.10	970.00	956.49	118.95	3.14	-17.61	1,148.38	-14,937.98	23,070.17	23,035.23	34.94	660.199	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 181D - OH - OH-SVY													Offset Site Error:	0.00 usft
Survey Program:		374-B001Mb_MWD+HRGM <th colspan="2">Rule Assigned:</th> <th colspan="4"></th> <th>Offset Well Error:</th> <td>0.00 usft</td>					Rule Assigned:						Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
14,100.00	6,940.03	970.00	956.49	120.51	3.14	-17.61	1,148.38	-14,937.98	23,166.47	23,131.42	35.05	660.982		
14,200.00	6,939.95	970.00	956.49	122.06	3.14	-17.61	1,148.38	-14,937.98	23,262.80	23,227.65	35.15	661.747		
14,300.00	6,939.88	970.00	956.49	123.61	3.14	-17.61	1,148.38	-14,937.98	23,359.17	23,323.91	35.26	662.494		
14,400.00	6,939.80	970.00	956.49	125.17	3.14	-17.61	1,148.38	-14,937.98	23,455.56	23,420.19	35.37	663.222		
14,500.00	6,939.73	954.27	942.01	126.72	3.05	-17.53	1,143.12	-14,934.82	23,551.92	23,516.51	35.41	665.073		
14,600.00	6,939.65	938.00	926.95	128.28	2.96	-17.44	1,137.87	-14,931.62	23,648.41	23,612.95	35.46	666.950		
14,700.00	6,939.58	938.00	926.95	129.84	2.96	-17.44	1,137.87	-14,931.62	23,744.86	23,709.29	35.57	667.614		
14,800.00	6,939.50	938.00	926.95	131.40	2.96	-17.44	1,137.87	-14,931.62	23,841.34	23,805.67	35.68	668.262		
14,900.00	6,939.43	938.00	926.95	132.96	2.96	-17.44	1,137.87	-14,931.62	23,937.85	23,902.07	35.79	668.895		
15,000.00	6,939.35	938.00	926.95	134.52	2.96	-17.44	1,137.87	-14,931.62	24,034.39	23,998.50	35.90	669.514		
15,100.00	6,939.28	938.00	926.95	136.08	2.96	-17.44	1,137.87	-14,931.62	24,130.96	24,094.95	36.01	670.117		
15,200.00	6,939.20	938.00	926.95	137.64	2.96	-17.44	1,137.87	-14,931.62	24,227.56	24,191.43	36.12	670.707		
15,300.00	6,939.13	938.00	926.95	139.21	2.96	-17.44	1,137.87	-14,931.62	24,324.18	24,287.94	36.24	671.283		
15,400.00	6,939.05	938.00	926.95	140.77	2.96	-17.44	1,137.87	-14,931.62	24,420.83	24,384.48	36.35	671.846		
15,500.00	6,938.98	938.00	926.95	142.34	2.96	-17.44	1,137.87	-14,931.62	24,517.51	24,481.04	36.46	672.396		
15,600.00	6,938.90	938.00	926.95	143.91	2.96	-17.44	1,137.87	-14,931.62	24,614.21	24,577.63	36.58	672.934		
15,700.00	6,938.82	938.00	926.95	145.47	2.96	-17.44	1,137.87	-14,931.62	24,710.94	24,674.25	36.69	673.459		
15,800.00	6,938.75	938.00	926.95	147.04	2.96	-17.44	1,137.87	-14,931.62	24,807.70	24,770.89	36.81	673.973		
15,900.00	6,938.67	938.00	926.95	148.61	2.96	-17.44	1,137.87	-14,931.62	24,904.48	24,867.55	36.92	674.476		
16,000.00	6,938.60	938.00	926.95	150.18	2.96	-17.44	1,137.87	-14,931.62	25,001.28	24,964.24	37.04	674.967		
16,100.00	6,938.52	938.00	926.95	151.75	2.96	-17.44	1,137.87	-14,931.62	25,098.12	25,060.96	37.16	675.448		
16,200.00	6,938.45	922.06	912.12	153.32	2.88	-17.36	1,132.90	-14,928.55	25,194.91	25,157.69	37.22	676.917		
16,300.00	6,938.37	907.00	898.04	154.90	2.80	-17.28	1,128.36	-14,925.71	25,291.82	25,254.54	37.29	678.319		
16,400.00	6,938.30	907.00	898.04	156.47	2.80	-17.28	1,128.36	-14,925.71	25,388.70	25,351.30	37.40	678.758		
16,500.00	6,938.22	907.00	898.04	158.04	2.80	-17.28	1,128.36	-14,925.71	25,485.61	25,448.08	37.52	679.187		
16,600.00	6,938.15	907.00	898.04	159.62	2.80	-17.28	1,128.36	-14,925.71	25,582.53	25,544.89	37.64	679.607		
16,700.00	6,938.07	907.00	898.04	161.19	2.80	-17.28	1,128.36	-14,925.71	25,679.48	25,641.72	37.76	680.018		
16,800.00	6,938.00	907.00	898.04	162.77	2.80	-17.28	1,128.36	-14,925.71	25,776.46	25,738.58	37.88	680.421		
16,900.00	6,937.92	907.00	898.04	164.34	2.80	-17.28	1,128.36	-14,925.71	25,873.46	25,835.45	38.00	680.815		
17,000.00	6,937.85	907.00	898.04	165.92	2.80	-17.28	1,128.36	-14,925.71	25,970.48	25,932.35	38.12	681.201		
17,100.00	6,937.77	907.00	898.04	167.50	2.80	-17.28	1,128.36	-14,925.71	26,067.52	26,029.28	38.25	681.580		
17,200.00	6,937.70	907.00	898.04	169.07	2.80	-17.28	1,128.36	-14,925.71	26,164.59	26,126.22	38.37	681.950		
17,300.00	6,937.62	907.00	898.04	170.65	2.80	-17.28	1,128.36	-14,925.71	26,261.67	26,223.19	38.49	682.314		
17,400.00	6,937.55	907.00	898.04	172.23	2.80	-17.28	1,128.36	-14,925.71	26,358.78	26,320.17	38.61	682.670		
17,500.00	6,937.47	907.00	898.04	173.81	2.80	-17.28	1,128.36	-14,925.71	26,455.91	26,417.18	38.73	683.019		
17,600.00	6,937.40	907.00	898.04	175.39	2.80	-17.28	1,128.36	-14,925.71	26,553.07	26,514.21	38.86	683.361		
17,700.00	6,937.32	907.00	898.04	176.97	2.80	-17.28	1,128.36	-14,925.71	26,650.24	26,611.26	38.98	683.697		
17,800.00	6,937.25	907.00	898.04	178.55	2.80	-17.28	1,128.36	-14,925.71	26,747.43	26,708.33	39.10	684.027		
17,900.00	6,937.17	907.00	898.04	180.13	2.80	-17.28	1,128.36	-14,925.71	26,844.65	26,805.42	39.23	684.350		
18,000.00	6,937.10	907.00	898.04	181.71	2.80	-17.28	1,128.36	-14,925.71	26,941.88	26,902.53	39.35	684.667		
18,100.00	6,937.02	907.00	898.04	183.29	2.80	-17.28	1,128.36	-14,925.71	27,039.14	26,999.66	39.47	684.978		
18,200.00	6,936.95	907.00	898.04	184.87	2.80	-17.28	1,128.36	-14,925.71	27,136.41	27,096.81	39.60	685.284		
18,300.00	6,936.87	907.00	898.04	186.46	2.80	-17.28	1,128.36	-14,925.71	27,233.71	27,193.98	39.72	685.584		
18,400.00	6,936.80	907.00	898.04	188.04	2.80	-17.28	1,128.36	-14,925.71	27,331.02	27,291.17	39.85	685.879		
18,500.00	6,936.72	891.99	883.94	189.62	2.72	-17.21	1,124.00	-14,922.98	27,428.28	27,388.35	39.93	686.950		
18,600.00	6,936.65	891.01	883.01	191.21	2.71	-17.20	1,123.72	-14,922.80	27,525.62	27,485.57	40.05	687.282		
18,700.00	6,936.57	876.00	868.84	192.79	2.64	-17.13	1,119.53	-14,920.20	27,623.05	27,582.92	40.13	688.334		
18,800.00	6,936.50	876.00	868.84	194.37	2.64	-17.13	1,119.53	-14,920.20	27,720.42	27,680.16	40.26	688.600		
18,900.00	6,936.42	876.00	868.84	195.96	2.64	-17.13	1,119.53	-14,920.20	27,817.80	27,777.42	40.38	688.861		
19,000.00	6,936.35	876.00	868.84	197.54	2.64	-17.13	1,119.53	-14,920.20	27,915.21	27,874.70	40.51	689.119		
19,100.00	6,936.27	876.00	868.84	199.13	2.64	-17.13	1,119.53	-14,920.20	28,012.64	27,972.00	40.64	689.371		
19,200.00	6,936.19	876.00	868.84	200.71	2.64	-17.13	1,119.53	-14,920.20	28,110.08	28,069.32	40.76	689.620		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 181D - OH - OH-SVY											Offset Site Error:	0.00 usft
Survey Program: 374-B001Mb_MWD+HRGM											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
19,300.00	6,936.12	876.00	868.84	202.30	2.64	-17.13	1,119.53	-14,920.20	28,207.54	28,166.65	40.89	689.864
19,400.00	6,936.04	876.00	868.84	203.88	2.64	-17.13	1,119.53	-14,920.20	28,305.02	28,264.00	41.02	690.105
19,500.00	6,935.97	876.00	868.84	205.47	2.64	-17.13	1,119.53	-14,920.20	28,402.51	28,361.37	41.14	690.342
19,600.00	6,935.89	876.00	868.84	207.06	2.64	-17.13	1,119.53	-14,920.20	28,500.03	28,458.76	41.27	690.575
19,700.00	6,935.82	876.00	868.84	208.64	2.64	-17.13	1,119.53	-14,920.20	28,597.56	28,556.16	41.40	690.804
19,800.00	6,935.74	876.00	868.84	210.23	2.64	-17.13	1,119.53	-14,920.20	28,695.10	28,653.58	41.53	691.030
19,900.00	6,935.67	876.00	868.84	211.82	2.64	-17.13	1,119.53	-14,920.20	28,792.67	28,751.01	41.65	691.252
20,000.00	6,935.59	876.00	868.84	213.41	2.64	-17.13	1,119.53	-14,920.20	28,890.25	28,848.47	41.78	691.471
20,100.00	6,935.52	876.00	868.84	214.99	2.64	-17.13	1,119.53	-14,920.20	28,987.84	28,945.94	41.91	691.687
20,200.00	6,935.44	876.00	868.84	216.58	2.64	-17.13	1,119.53	-14,920.20	29,085.46	29,043.42	42.04	691.899
20,300.00	6,935.37	876.00	868.84	218.17	2.64	-17.13	1,119.53	-14,920.20	29,183.09	29,140.92	42.17	692.109
20,400.00	6,935.29	876.00	868.84	219.76	2.64	-17.13	1,119.53	-14,920.20	29,280.73	29,238.44	42.29	692.315
20,500.00	6,935.22	876.00	868.84	221.35	2.64	-17.13	1,119.53	-14,920.20	29,378.39	29,335.97	42.42	692.519
20,600.00	6,935.14	876.00	868.84	222.94	2.64	-17.13	1,119.53	-14,920.20	29,476.07	29,433.52	42.55	692.720
20,700.00	6,935.07	876.00	868.84	224.53	2.64	-17.13	1,119.53	-14,920.20	29,573.76	29,531.08	42.68	692.917
20,789.75	6,935.00	876.00	868.84	225.95	2.64	-17.13	1,119.53	-14,920.20	29,661.46	29,618.66	42.80	693.093

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207 - OH - OH-INC													Offset Site Error: 0.00 usft
Survey Program: 241-A027Ua_INC-ONLY													Offset Well Error: 0.00 usft
Reference													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	150.42	-1,010.29	573.40	1,162.03				
100.00	100.00	71.00	71.00	0.25	0.76	150.42	-1,010.29	573.40	1,161.67	1,160.66	1.01	1,154.002	
200.00	200.00	171.00	171.00	0.61	1.82	150.42	-1,010.29	573.40	1,161.67	1,159.24	2.43	478.207	
300.00	300.00	271.01	271.00	0.97	3.15	150.42	-1,010.29	573.40	1,161.67	1,157.55	4.12	281.771	
400.00	400.00	371.01	371.00	1.33	5.12	150.42	-1,010.29	573.40	1,161.67	1,155.22	6.45	180.168	
500.00	500.00	471.01	471.00	1.68	7.09	150.42	-1,010.29	573.40	1,161.67	1,152.90	8.77	132.419	
600.00	599.98	567.58	567.55	2.03	8.99	-28.78	-1,009.42	573.40	1,159.39	1,148.38	11.01	105.271	
700.00	699.84	663.89	663.86	2.36	10.88	-28.93	-1,009.92	573.40	1,155.26	1,142.01	13.24	87.245	
800.00	799.45	770.51	770.45	2.71	12.94	-29.21	-1,010.29	573.40	1,147.93	1,132.29	15.64	73.388	
900.00	898.70	869.76	869.70	3.06	14.82	-29.62	-1,010.29	573.40	1,137.30	1,119.42	17.88	63.616	
1,000.00	997.47	968.43	968.37	3.43	16.70	-30.16	-1,009.74	573.40	1,123.22	1,103.11	20.11	55.854	
1,100.00	1,095.62	1,065.01	1,064.95	3.82	18.53	-30.82	-1,009.83	573.40	1,106.78	1,084.47	22.31	49.609	
1,180.06	1,173.69	1,141.87	1,141.81	4.14	19.99	-31.44	-1,010.02	573.40	1,091.66	1,067.59	24.07	45.354	
1,200.00	1,193.07	1,160.97	1,160.91	4.22	20.35	-31.56	-1,010.08	573.40	1,087.68	1,063.17	24.51	44.378	
1,300.00	1,290.27	1,261.35	1,261.27	4.65	22.26	-32.23	-1,010.29	573.40	1,067.74	1,040.94	26.79	39.850	
1,400.00	1,387.46	1,358.55	1,358.46	5.08	24.11	-32.91	-1,010.29	573.40	1,047.76	1,018.73	29.03	36.097	
1,500.00	1,484.66	1,455.74	1,455.66	5.52	25.96	-33.62	-1,010.29	573.40	1,027.93	996.67	31.27	32.878	
1,600.00	1,581.85	1,551.02	1,550.93	5.97	27.77	-34.36	-1,009.58	573.40	1,007.68	974.20	33.47	30.103	
1,700.00	1,679.05	1,646.25	1,646.16	6.42	29.58	-35.10	-1,009.92	573.40	988.47	952.78	35.69	27.697	
1,800.00	1,776.25	1,747.36	1,747.25	6.87	31.51	-35.91	-1,010.29	573.40	969.44	931.42	38.02	25.500	
1,900.00	1,873.44	1,844.56	1,844.44	7.33	33.35	-36.73	-1,010.29	573.40	950.30	910.02	40.28	23.594	
2,000.00	1,970.64	1,941.75	1,941.64	7.78	35.20	-37.59	-1,010.29	573.40	931.37	888.82	42.54	21.893	
2,100.00	2,067.83	2,038.20	2,038.08	8.24	37.04	-38.49	-1,009.75	573.40	912.22	867.42	44.80	20.363	
2,200.00	2,165.03	2,134.32	2,134.21	8.71	38.87	-39.40	-1,009.93	573.40	893.87	846.82	47.05	18.997	
2,300.00	2,262.22	2,230.53	2,230.41	9.17	40.70	-40.34	-1,010.26	573.40	875.88	826.56	49.31	17.761	
2,400.00	2,359.42	2,330.57	2,330.42	9.63	42.66	-41.37	-1,010.29	573.40	857.90	806.19	51.71	16.591	
2,500.00	2,456.61	2,427.76	2,427.61	10.10	44.58	-42.42	-1,010.29	573.40	840.17	786.11	54.06	15.541	
2,600.00	2,553.81	2,524.36	2,524.20	10.57	46.48	-43.54	-1,009.50	573.40	822.17	765.76	56.41	14.575	
2,700.00	2,651.01	2,620.14	2,619.99	11.03	48.37	-44.65	-1,009.72	573.40	805.21	746.47	58.74	13.707	
2,800.00	2,748.20	2,716.05	2,715.89	11.50	50.25	-45.79	-1,010.18	573.40	788.75	727.66	61.09	12.912	
2,900.00	2,845.40	2,816.59	2,816.40	11.97	52.23	-47.06	-1,010.29	573.40	772.37	708.85	63.52	12.159	
3,000.00	2,942.59	2,913.78	2,913.59	12.44	54.15	-48.35	-1,010.29	573.40	756.30	690.40	65.90	11.477	
3,100.00	3,039.79	3,010.98	3,010.79	12.91	56.06	-49.68	-1,010.29	573.40	740.63	672.35	68.28	10.846	
3,200.00	3,136.98	3,038.00	3,037.79	13.38	56.59	-50.07	-1,010.29	573.40	728.77	659.68	69.09	10.548 SF	
3,240.78	3,176.62	3,038.00	3,037.79	13.57	56.59	-50.07	-1,010.29	573.40	727.63	658.73	68.90	10.561 CC, ES	
3,300.00	3,234.18	3,038.00	3,037.79	13.85	56.59	-50.07	-1,010.29	573.40	730.03	661.78	68.26	10.695	
3,400.00	3,331.38	3,038.00	3,037.79	14.32	56.59	-50.07	-1,010.29	573.40	744.84	678.54	66.30	11.234	
3,500.00	3,428.57	3,038.00	3,037.79	14.79	56.59	-50.07	-1,010.29	573.40	772.42	708.97	63.46	12.173	
3,600.00	3,525.77	3,038.00	3,037.79	15.26	56.59	-50.07	-1,010.29	573.40	811.47	751.42	60.05	13.514	
3,700.00	3,622.96	3,038.00	3,037.79	15.73	56.59	-50.07	-1,010.29	573.40	860.42	804.02	56.40	15.256	
3,800.00	3,720.16	3,038.00	3,037.79	16.20	56.59	-50.07	-1,010.29	573.40	917.70	864.94	52.76	17.394	
3,900.00	3,817.35	3,038.00	3,037.79	16.68	56.59	-50.07	-1,010.29	573.40	981.84	932.54	49.30	19.917	
4,000.00	3,914.55	3,038.00	3,037.79	17.15	56.59	-50.07	-1,010.29	573.40	1,051.60	1,005.49	46.10	22.809	
4,100.00	4,011.74	3,038.00	3,037.79	17.62	56.59	-50.07	-1,010.29	573.40	1,125.92	1,082.70	43.22	26.048	
4,200.00	4,108.94	3,038.00	3,037.79	18.09	56.59	-50.07	-1,010.29	573.40	1,203.97	1,163.31	40.66	29.609	
4,300.00	4,206.14	3,038.00	3,037.79	18.57	56.59	-50.07	-1,010.29	573.40	1,285.06	1,246.66	38.40	33.462	
4,400.00	4,303.33	3,038.00	3,037.79	19.04	56.59	-50.07	-1,010.29	573.40	1,368.66	1,332.23	36.43	37.573	
4,500.00	4,400.53	3,038.00	3,037.79	19.51	56.59	-50.07	-1,010.29	573.40	1,454.33	1,419.62	34.70	41.906	
4,600.00	4,497.72	3,038.00	3,037.79	19.99	56.59	-50.07	-1,010.29	573.40	1,541.72	1,508.51	33.21	46.425	
4,700.00	4,594.92	3,038.00	3,037.79	20.46	56.59	-50.07	-1,010.29	573.40	1,630.57	1,598.65	31.92	51.091	
4,800.00	4,692.11	3,038.00	3,037.79	20.93	56.59	-50.07	-1,010.29	573.40	1,720.64	1,689.84	30.80	55.868	
4,900.00	4,789.31	3,038.00	3,037.79	21.41	56.59	-50.07	-1,010.29	573.40	1,811.75	1,781.91	29.84	60.720	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207 - OH - OH-INC													Offset Site Error:	0.00 usft	
Survey Program: 241-A027Ua_INC-ONLY				Offset		Semi Maior Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,000.00	4,886.51	3,038.00	3,037.79	21.88	56.59	-50.07	-1,010.29	573.40	1,903.76	1,874.74	29.01	65.614			
5,100.00	4,983.70	3,038.00	3,037.79	22.35	56.59	-50.07	-1,010.29	573.40	1,996.53	1,968.22	28.31	70.520			
5,200.00	5,080.90	3,038.00	3,037.79	22.83	56.59	-50.07	-1,010.29	573.40	2,089.97	2,062.26	27.71	75.412			
5,300.00	5,178.09	3,038.00	3,037.79	23.30	56.59	-50.07	-1,010.29	573.40	2,183.99	2,156.78	27.21	80.264			
5,400.00	5,275.29	3,038.00	3,037.79	23.77	56.59	-50.07	-1,010.29	573.40	2,278.52	2,251.73	26.79	85.059			
5,500.00	5,372.48	3,038.00	3,037.79	24.25	56.59	-50.07	-1,010.29	573.40	2,373.50	2,347.06	26.44	89.778			
5,600.00	5,469.68	3,038.00	3,037.79	24.72	56.59	-50.07	-1,010.29	573.40	2,468.88	2,442.72	26.15	94.408			
5,700.00	5,566.87	3,038.00	3,037.79	25.20	56.59	-50.07	-1,010.29	573.40	2,564.60	2,538.68	25.92	98.940			
5,800.00	5,664.07	3,038.00	3,037.79	25.67	56.59	-50.07	-1,010.29	573.40	2,660.65	2,634.90	25.74	103.364			
5,900.00	5,761.27	3,038.00	3,037.79	26.14	56.59	-50.07	-1,010.29	573.40	2,756.97	2,731.36	25.60	107.676			
6,000.00	5,858.46	3,038.00	3,037.79	26.62	56.59	-50.07	-1,010.29	573.40	2,853.55	2,828.04	25.51	111.871			
6,100.00	5,955.66	3,038.00	3,037.79	27.09	56.59	-50.07	-1,010.29	573.40	2,950.35	2,924.90	25.45	115.948			
6,200.00	6,052.85	3,038.00	3,037.79	27.57	56.59	-50.07	-1,010.29	573.40	3,047.36	3,021.95	25.41	119.905			
6,300.00	6,150.05	3,038.00	3,037.79	28.04	56.59	-50.07	-1,010.29	573.40	3,144.56	3,119.15	25.41	123.744			
6,400.00	6,247.24	3,038.00	3,037.79	28.52	56.59	-50.07	-1,010.29	573.40	3,241.93	3,216.49	25.43	127.465			
6,490.87	6,335.57	3,038.00	3,037.79	28.95	56.59	-50.07	-1,010.29	573.40	3,330.54	3,305.07	25.47	130.745			
6,500.00	6,344.44	3,038.00	3,037.79	28.99	56.59	-48.76	-1,010.29	573.40	3,339.44	3,313.96	25.48	131.076			
6,550.00	6,392.91	3,038.00	3,037.79	29.23	56.59	-40.03	-1,010.29	573.40	3,387.71	3,362.24	25.47	133.000			
6,600.00	6,440.98	3,038.00	3,037.79	29.46	56.59	-31.77	-1,010.29	573.40	3,435.02	3,409.59	25.42	135.108			
6,650.00	6,488.34	3,038.00	3,037.79	29.70	56.59	-25.44	-1,010.29	573.40	3,481.11	3,455.77	25.34	137.366			
6,700.00	6,534.69	3,038.00	3,037.79	29.92	56.59	-20.87	-1,010.29	573.40	3,525.76	3,500.53	25.23	139.750			
6,750.00	6,579.76	3,038.00	3,037.79	30.15	56.59	-17.57	-1,010.29	573.40	3,568.76	3,543.66	25.09	142.232			
6,800.00	6,623.27	3,038.00	3,037.79	30.36	56.59	-15.14	-1,010.29	573.40	3,609.89	3,584.96	24.93	144.781			
6,850.00	6,664.95	3,038.00	3,037.79	30.57	56.59	-13.32	-1,010.29	573.40	3,648.97	3,624.21	24.76	147.364			
6,900.00	6,704.53	3,038.00	3,037.79	30.78	56.59	-11.93	-1,010.29	573.40	3,685.84	3,661.26	24.58	149.938			
6,950.00	6,741.79	3,038.00	3,037.79	30.98	56.59	-10.85	-1,010.29	573.40	3,720.33	3,695.93	24.40	152.461			
7,000.00	6,776.48	3,038.00	3,037.79	31.17	56.59	-9.99	-1,010.29	573.40	3,752.30	3,728.07	24.23	154.882			
7,050.00	6,808.39	3,038.00	3,037.79	31.36	56.59	-9.31	-1,010.29	573.40	3,781.62	3,757.55	24.06	157.146			
7,100.00	6,837.34	3,038.00	3,037.79	31.54	56.59	-8.77	-1,010.29	573.40	3,808.16	3,784.24	23.92	159.194			
7,150.00	6,863.13	3,038.00	3,037.79	31.73	56.59	-8.34	-1,010.29	573.40	3,831.84	3,808.03	23.81	160.967			
7,200.00	6,885.61	3,038.00	3,037.79	31.91	56.59	-7.99	-1,010.29	573.40	3,852.54	3,828.82	23.72	162.407			
7,250.00	6,904.64	3,038.00	3,037.79	32.10	56.59	-7.72	-1,010.29	573.40	3,870.20	3,846.53	23.68	163.457			
7,300.00	6,920.10	3,038.00	3,037.79	32.29	56.59	-7.52	-1,010.29	573.40	3,884.76	3,861.08	23.68	164.072			
7,350.00	6,931.91	3,038.00	3,037.79	32.48	56.59	-7.38	-1,010.29	573.40	3,896.14	3,872.41	23.73	164.216			
7,400.00	6,939.97	3,038.00	3,037.79	32.68	56.59	-7.29	-1,010.29	573.40	3,904.31	3,880.49	23.83	163.868			
7,450.00	6,944.26	3,038.00	3,037.79	32.89	56.59	-7.24	-1,010.29	573.40	3,909.25	3,885.27	23.98	163.024			
7,481.69	6,945.00	3,038.00	3,037.79	33.03	56.59	-7.24	-1,010.29	573.40	3,910.70	3,886.59	24.10	162.238			
7,500.00	6,944.99	3,038.00	3,037.79	33.12	56.59	-7.24	-1,010.29	573.40	3,911.19	3,887.01	24.19	161.704			
7,600.00	6,944.91	3,038.00	3,037.79	33.60	56.59	-7.24	-1,010.29	573.40	3,915.43	3,890.65	24.78	158.015			
7,700.00	6,944.84	3,038.00	3,037.79	34.17	56.59	-7.24	-1,010.29	573.40	3,922.21	3,896.62	25.59	153.278			
7,800.00	6,944.76	3,038.00	3,037.79	34.80	56.59	-7.24	-1,010.29	573.40	3,931.52	3,904.93	26.59	147.848			
7,900.00	6,944.69	3,038.00	3,037.79	35.49	56.59	-7.24	-1,010.29	573.40	3,943.34	3,915.58	27.76	142.057			
8,000.00	6,944.61	3,038.00	3,037.79	36.25	56.59	-7.24	-1,010.29	573.40	3,957.66	3,928.60	29.06	136.179			
8,100.00	6,944.54	3,038.00	3,037.79	37.07	56.59	-7.24	-1,010.29	573.40	3,974.44	3,943.97	30.48	130.415			
8,200.00	6,944.46	3,038.00	3,037.79	37.94	56.59	-7.24	-1,010.29	573.40	3,993.66	3,961.69	31.97	124.905			
8,300.00	6,944.39	3,038.00	3,037.79	38.86	56.59	-7.24	-1,010.29	573.40	4,015.28	3,981.74	33.54	119.729			
8,400.00	6,944.31	3,038.00	3,037.79	39.83	56.59	-7.24	-1,010.29	573.40	4,039.26	4,004.11	35.15	114.930			
8,500.00	6,944.23	3,038.00	3,037.79	40.84	56.59	-7.24	-1,010.29	573.40	4,065.55	4,028.77	36.79	110.522			
8,600.00	6,944.16	3,038.00	3,037.79	41.89	56.59	-7.24	-1,010.29	573.40	4,094.12	4,055.68	38.44	106.501			
8,700.00	6,944.08	3,038.00	3,037.79	42.98	56.59	-7.24	-1,010.29	573.40	4,124.92	4,084.82	40.11	102.851			
8,800.00	6,944.01	3,038.00	3,037.79	44.10	56.59	-7.24	-1,010.29	573.40	4,157.90	4,116.13	41.77	99.551			
8,900.00	6,943.93	3,038.00	3,037.79	45.25	56.59	-7.24	-1,010.29	573.40	4,193.00	4,149.58	43.42	96.576			

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program:		241-A027Ua_INC-ONLY					Rule Assigned:			Offset Well Error:		0.00 usft		
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance				Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
9,000.00	6,943.86	3,038.00	3,037.79	46.43	56.59	-7.24	-1,010.29	573.40	4,230.17	4,185.12	45.05	93.900		
9,100.00	6,943.78	3,038.00	3,037.79	47.63	56.59	-7.24	-1,010.29	573.40	4,269.37	4,222.71	46.66	91.498		
9,200.00	6,943.71	3,038.00	3,037.79	48.86	56.59	-7.24	-1,010.29	573.40	4,310.53	4,262.28	48.24	89.347		
9,300.00	6,943.63	3,038.00	3,037.79	50.11	56.59	-7.24	-1,010.29	573.40	4,353.59	4,303.79	49.80	87.424		
9,400.00	6,943.56	3,038.00	3,037.79	51.38	56.59	-7.24	-1,010.29	573.40	4,398.51	4,347.19	51.32	85.709		
9,500.00	6,943.48	3,038.00	3,037.79	52.66	56.59	-7.24	-1,010.29	573.40	4,445.22	4,392.42	52.80	84.182		
9,600.00	6,943.41	3,038.00	3,037.79	53.97	56.59	-7.24	-1,010.29	573.40	4,493.68	4,439.42	54.25	82.828		
9,700.00	6,943.33	3,038.00	3,037.79	55.29	56.59	-7.24	-1,010.29	573.40	4,543.82	4,488.15	55.66	81.630		
9,800.00	6,943.26	3,038.00	3,037.79	56.63	56.59	-7.24	-1,010.29	573.40	4,595.58	4,538.55	57.03	80.575		
9,900.00	6,943.18	3,038.00	3,037.79	57.98	56.59	-7.24	-1,010.29	573.40	4,648.93	4,590.56	58.37	79.651		
10,000.00	6,943.11	3,038.00	3,037.79	59.34	56.59	-7.24	-1,010.29	573.40	4,703.79	4,644.13	59.66	78.845		
10,100.00	6,943.03	3,038.00	3,037.79	60.72	56.59	-7.24	-1,010.29	573.40	4,760.12	4,699.21	60.91	78.149		
10,200.00	6,942.96	3,038.00	3,037.79	62.11	56.59	-7.24	-1,010.29	573.40	4,817.87	4,755.75	62.12	77.554		
10,300.00	6,942.88	3,038.00	3,037.79	63.50	56.59	-7.24	-1,010.29	573.40	4,876.99	4,813.69	63.30	77.050		
10,400.00	6,942.81	3,038.00	3,037.79	64.91	56.59	-7.24	-1,010.29	573.40	4,937.43	4,872.99	64.43	76.630		
10,500.00	6,942.73	3,038.00	3,037.79	66.33	56.59	-7.24	-1,010.29	573.40	4,999.13	4,933.60	65.53	76.289		
10,600.00	6,942.66	3,038.00	3,037.79	67.75	56.59	-7.24	-1,010.29	573.40	5,062.06	4,995.47	66.59	76.019		
10,700.00	6,942.58	3,038.00	3,037.79	69.18	56.59	-7.24	-1,010.29	573.40	5,126.16	5,058.55	67.61	75.816		
10,800.00	6,942.51	3,038.00	3,037.79	70.62	56.59	-7.24	-1,010.29	573.40	5,191.40	5,122.80	68.60	75.674		
10,900.00	6,942.43	3,038.00	3,037.79	72.07	56.59	-7.24	-1,010.29	573.40	5,257.74	5,188.18	69.56	75.589		
11,000.00	6,942.36	3,038.00	3,037.79	73.52	56.59	-7.24	-1,010.29	573.40	5,325.12	5,254.65	70.48	75.557		
11,100.00	6,942.28	3,038.00	3,037.79	74.98	56.59	-7.24	-1,010.29	573.40	5,393.52	5,322.15	71.37	75.575		
11,200.00	6,942.21	3,038.00	3,037.79	76.45	56.59	-7.24	-1,010.29	573.40	5,462.89	5,390.67	72.22	75.638		
11,300.00	6,942.13	3,038.00	3,037.79	77.92	56.59	-7.24	-1,010.29	573.40	5,533.20	5,460.15	73.05	75.743		
11,400.00	6,942.06	3,038.00	3,037.79	79.40	56.59	-7.24	-1,010.29	573.40	5,604.41	5,530.56	73.85	75.888		
11,500.00	6,941.98	3,038.00	3,037.79	80.88	56.59	-7.24	-1,010.29	573.40	5,676.49	5,601.87	74.62	76.071		
11,600.00	6,941.91	3,038.00	3,037.79	82.36	56.59	-7.24	-1,010.29	573.40	5,749.41	5,674.05	75.36	76.288		
11,700.00	6,941.83	3,038.00	3,037.79	83.85	56.59	-7.24	-1,010.29	573.40	5,823.13	5,747.05	76.08	76.538		
11,800.00	6,941.76	3,038.00	3,037.79	85.35	56.59	-7.24	-1,010.29	573.40	5,897.62	5,820.85	76.77	76.818		
11,900.00	6,941.68	3,038.00	3,037.79	86.85	56.59	-7.24	-1,010.29	573.40	5,972.86	5,895.42	77.44	77.126		
12,000.00	6,941.60	3,038.00	3,037.79	88.35	56.59	-7.24	-1,010.29	573.40	6,048.82	5,970.73	78.09	77.462		
12,100.00	6,941.53	3,038.00	3,037.79	89.85	56.59	-7.24	-1,010.29	573.40	6,125.47	6,046.76	78.71	77.823		
12,200.00	6,941.45	3,038.00	3,037.79	91.36	56.59	-7.24	-1,010.29	573.40	6,202.78	6,123.47	79.31	78.207		
12,300.00	6,941.38	3,038.00	3,037.79	92.88	56.59	-7.24	-1,010.29	573.40	6,280.73	6,200.84	79.89	78.614		
12,400.00	6,941.30	3,038.00	3,037.79	94.39	56.59	-7.24	-1,010.29	573.40	6,359.30	6,278.85	80.46	79.041		
12,500.00	6,941.23	3,038.00	3,037.79	95.91	56.59	-7.24	-1,010.29	573.40	6,438.47	6,357.47	81.00	79.489		
12,600.00	6,941.15	3,038.00	3,037.79	97.43	56.59	-7.24	-1,010.29	573.40	6,518.21	6,436.68	81.52	79.955		
12,700.00	6,941.08	3,038.00	3,037.79	98.95	56.59	-7.24	-1,010.29	573.40	6,598.49	6,516.46	82.03	80.440		
12,800.00	6,941.00	3,038.00	3,037.79	100.48	56.59	-7.24	-1,010.29	573.40	6,679.32	6,596.79	82.52	80.940		
12,900.00	6,940.93	3,038.00	3,037.79	102.01	56.59	-7.24	-1,010.29	573.40	6,760.65	6,677.65	83.00	81.457		
13,000.00	6,940.85	3,038.00	3,037.79	103.54	56.59	-7.24	-1,010.29	573.40	6,842.48	6,759.02	83.46	81.988		
13,100.00	6,940.78	3,038.00	3,037.79	105.07	56.59	-7.24	-1,010.29	573.40	6,924.78	6,840.88	83.90	82.534		
13,200.00	6,940.70	3,038.00	3,037.79	106.61	56.59	-7.24	-1,010.29	573.40	7,007.55	6,923.22	84.33	83.093		
13,300.00	6,940.63	3,038.00	3,037.79	108.14	56.59	-7.24	-1,010.29	573.40	7,090.76	7,006.01	84.75	83.665		
13,400.00	6,940.55	3,038.00	3,037.79	109.68	56.59	-7.24	-1,010.29	573.40	7,174.40	7,089.24	85.16	84.249		
13,500.00	6,940.48	3,038.00	3,037.79	111.22	56.59	-7.24	-1,010.29	573.40	7,258.45	7,172.90	85.55	84.844		
13,600.00	6,940.40	3,038.00	3,037.79	112.77	56.59	-7.24	-1,010.29	573.40	7,342.91	7,256.98	85.93	85.451		
13,700.00	6,940.33	3,038.00	3,037.79	114.31	56.59	-7.24	-1,010.29	573.40	7,427.75	7,341.44	86.30	86.067		
13,800.00	6,940.25	3,038.00	3,037.79	115.86	56.59	-7.24	-1,010.29	573.40	7,512.96	7,426.30	86.66	86.693		
13,900.00	6,940.18	3,038.00	3,037.79	117.41	56.59	-7.24	-1,010.29	573.40	7,598.53	7,511.52	87.01	87.329		
14,000.00	6,940.10	3,038.00	3,037.79	118.95	56.59	-7.24	-1,010.29	573.40	7,684.45	7,597.10	87.35	87.973		
14,100.00	6,940.03	3,038.00	3,037.79	120.51	56.59	-7.24	-1,010.29	573.40	7,770.71	7,683.03	87.68	88.626		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program:		241-A027Ua_INC-ONLY					Rule Assigned:			Offset Well Error:			0.00 usft	
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance				Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
14,200.00	6,939.95	3,038.00	3,037.79	122.06	56.59	-7.24	-1,010.29	573.40	7,857.29	7,769.29	88.00	89.287		
14,300.00	6,939.88	3,038.00	3,037.79	123.61	56.59	-7.24	-1,010.29	573.40	7,944.19	7,855.88	88.31	89.956		
14,400.00	6,939.80	3,038.00	3,037.79	125.17	56.59	-7.24	-1,010.29	573.40	8,031.40	7,942.78	88.62	90.631		
14,500.00	6,939.73	3,038.00	3,037.79	126.72	56.59	-7.24	-1,010.29	573.40	8,118.89	8,029.98	88.91	91.314		
14,600.00	6,939.65	3,038.00	3,037.79	128.28	56.59	-7.24	-1,010.29	573.40	8,206.68	8,117.48	89.20	92.003		
14,700.00	6,939.58	3,038.00	3,037.79	129.84	56.59	-7.24	-1,010.29	573.40	8,294.74	8,205.26	89.48	92.698		
14,800.00	6,939.50	3,038.00	3,037.79	131.40	56.59	-7.24	-1,010.29	573.40	8,383.07	8,293.31	89.75	93.400		
14,900.00	6,939.43	3,038.00	3,037.79	132.96	56.59	-7.24	-1,010.29	573.40	8,471.66	8,381.63	90.02	94.107		
15,000.00	6,939.35	3,038.00	3,037.79	134.52	56.59	-7.24	-1,010.29	573.40	8,560.50	8,470.21	90.28	94.819		
15,100.00	6,939.28	3,038.00	3,037.79	136.08	56.59	-7.24	-1,010.29	573.40	8,649.58	8,559.04	90.54	95.537		
15,200.00	6,939.20	3,038.00	3,037.79	137.64	56.59	-7.24	-1,010.29	573.40	8,738.90	8,648.11	90.79	96.259		
15,300.00	6,939.13	3,038.00	3,037.79	139.21	56.59	-7.24	-1,010.29	573.40	8,828.45	8,737.42	91.03	96.986		
15,400.00	6,939.05	3,038.00	3,037.79	140.77	56.59	-7.24	-1,010.29	573.40	8,918.22	8,826.95	91.27	97.717		
15,500.00	6,938.98	3,038.00	3,037.79	142.34	56.59	-7.24	-1,010.29	573.40	9,008.20	8,916.71	91.50	98.453		
15,600.00	6,938.90	3,038.00	3,037.79	143.91	56.59	-7.24	-1,010.29	573.40	9,098.40	9,006.67	91.72	99.192		
15,700.00	6,938.82	3,038.00	3,037.79	145.47	56.59	-7.24	-1,010.29	573.40	9,188.80	9,096.85	91.95	99.936		
15,800.00	6,938.75	3,038.00	3,037.79	147.04	56.59	-7.24	-1,010.29	573.40	9,279.39	9,187.23	92.16	100.683		
15,900.00	6,938.67	3,038.00	3,037.79	148.61	56.59	-7.24	-1,010.29	573.40	9,370.18	9,277.80	92.38	101.433		
16,000.00	6,938.60	3,038.00	3,037.79	150.18	56.59	-7.24	-1,010.29	573.40	9,461.15	9,368.56	92.59	102.187		
16,100.00	6,938.52	3,038.00	3,037.79	151.75	56.59	-7.24	-1,010.29	573.40	9,552.30	9,459.51	92.79	102.944		
16,200.00	6,938.45	3,038.00	3,037.79	153.32	56.59	-7.24	-1,010.29	573.40	9,643.63	9,550.64	92.99	103.703		
16,300.00	6,938.37	3,038.00	3,037.79	154.90	56.59	-7.24	-1,010.29	573.40	9,735.13	9,641.94	93.19	104.466		
16,400.00	6,938.30	3,038.00	3,037.79	156.47	56.59	-7.24	-1,010.29	573.40	9,826.79	9,733.41	93.38	105.231		
16,500.00	6,938.22	3,038.00	3,037.79	158.04	56.59	-7.24	-1,010.29	573.40	9,918.62	9,825.05	93.57	105.999		
16,600.00	6,938.15	3,038.00	3,037.79	159.62	56.59	-7.24	-1,010.29	573.40	10,010.60	9,916.84	93.76	106.769		
16,700.00	6,938.07	3,038.00	3,037.79	161.19	56.59	-7.24	-1,010.29	573.40	10,102.74	10,008.79	93.94	107.541		
16,800.00	6,938.00	3,038.00	3,037.79	162.77	56.59	-7.24	-1,010.29	573.40	10,195.02	10,100.90	94.12	108.316		
16,900.00	6,937.92	3,038.00	3,037.79	164.34	56.59	-7.24	-1,010.29	573.40	10,287.45	10,193.14	94.30	109.092		
17,000.00	6,937.85	3,038.00	3,037.79	165.92	56.59	-7.24	-1,010.29	573.40	10,380.01	10,285.54	94.48	109.870		
17,100.00	6,937.77	3,038.00	3,037.79	167.50	56.59	-7.24	-1,010.29	573.40	10,472.72	10,378.07	94.65	110.650		
17,200.00	6,937.70	3,038.00	3,037.79	169.07	56.59	-7.24	-1,010.29	573.40	10,565.55	10,470.74	94.82	111.432		
17,300.00	6,937.62	3,038.00	3,037.79	170.65	56.59	-7.24	-1,010.29	573.40	10,658.52	10,563.54	94.98	112.215		
17,400.00	6,937.55	3,038.00	3,037.79	172.23	56.59	-7.24	-1,010.29	573.40	10,751.61	10,656.47	95.15	113.000		
17,500.00	6,937.47	3,038.00	3,037.79	173.81	56.59	-7.24	-1,010.29	573.40	10,844.83	10,749.52	95.31	113.786		
17,600.00	6,937.40	3,038.00	3,037.79	175.39	56.59	-7.24	-1,010.29	573.40	10,938.16	10,842.70	95.47	114.574		
17,700.00	6,937.32	3,038.00	3,037.79	176.97	56.59	-7.24	-1,010.29	573.40	11,031.62	10,935.99	95.63	115.362		
17,800.00	6,937.25	3,038.00	3,037.79	178.55	56.59	-7.24	-1,010.29	573.40	11,125.18	11,029.40	95.78	116.152		
17,900.00	6,937.17	3,038.00	3,037.79	180.13	56.59	-7.24	-1,010.29	573.40	11,218.86	11,122.93	95.93	116.943		
18,000.00	6,937.10	3,038.00	3,037.79	181.71	56.59	-7.24	-1,010.29	573.40	11,312.65	11,216.56	96.09	117.735		
18,100.00	6,937.02	3,038.00	3,037.79	183.29	56.59	-7.24	-1,010.29	573.40	11,406.54	11,310.30	96.24	118.527		
18,200.00	6,936.95	3,038.00	3,037.79	184.87	56.59	-7.24	-1,010.29	573.40	11,500.53	11,404.15	96.38	119.321		
18,300.00	6,936.87	3,038.00	3,037.79	186.46	56.59	-7.24	-1,010.29	573.40	11,594.63	11,498.10	96.53	120.115		
18,400.00	6,936.80	3,038.00	3,037.79	188.04	56.59	-7.24	-1,010.29	573.40	11,688.82	11,592.14	96.67	120.910		
18,500.00	6,936.72	3,038.00	3,037.79	189.62	56.59	-7.24	-1,010.29	573.40	11,783.11	11,686.29	96.82	121.705		
18,600.00	6,936.65	3,038.00	3,037.79	191.21	56.59	-7.24	-1,010.29	573.40	11,877.49	11,780.53	96.96	122.501		
18,700.00	6,936.57	3,038.00	3,037.79	192.79	56.59	-7.24	-1,010.29	573.40	11,971.96	11,874.86	97.10	123.298		
18,800.00	6,936.50	3,038.00	3,037.79	194.37	56.59	-7.24	-1,010.29	573.40	12,066.52	11,969.29	97.24	124.095		
18,900.00	6,936.42	3,038.00	3,037.79	195.96	56.59	-7.24	-1,010.29	573.40	12,161.17	12,063.80	97.37	124.892		
19,000.00	6,936.35	3,038.00	3,037.79	197.54	56.59	-7.24	-1,010.29	573.40	12,255.91	12,158.40	97.51	125.690		
19,100.00	6,936.27	3,038.00	3,037.79	199.13	56.59	-7.24	-1,010.29	573.40	12,350.72	12,253.08	97.64	126.487		
19,200.00	6,936.19	3,038.00	3,037.79	200.71	56.59	-7.24	-1,010.29	573.40	12,445.62	12,347.84	97.78	127.285		
19,300.00	6,936.12	3,038.00	3,037.79	202.30	56.59	-7.24	-1,010.29	573.40	12,540.60	12,442.69	97.91	128.084		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 241-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,400.00	6,936.04	3,038.00	3,037.79	203.88	56.59	-7.24	-1,010.29	573.40	12,635.65	12,537.61	98.04	128.882	
19,500.00	6,935.97	3,038.00	3,037.79	205.47	56.59	-7.24	-1,010.29	573.40	12,730.78	12,632.61	98.17	129.680	
19,600.00	6,935.89	3,038.00	3,037.79	207.06	56.59	-7.24	-1,010.29	573.40	12,825.99	12,727.69	98.30	130.478	
19,700.00	6,935.82	3,038.00	3,037.79	208.64	56.59	-7.24	-1,010.29	573.40	12,921.27	12,822.84	98.43	131.277	
19,800.00	6,935.74	3,038.00	3,037.79	210.23	56.59	-7.24	-1,010.29	573.40	13,016.61	12,918.06	98.55	132.075	
19,900.00	6,935.67	3,038.00	3,037.79	211.82	56.59	-7.24	-1,010.29	573.40	13,112.03	13,013.35	98.68	132.873	
20,000.00	6,935.59	3,038.00	3,037.79	213.41	56.59	-7.24	-1,010.29	573.40	13,207.52	13,108.71	98.81	133.671	
20,100.00	6,935.52	3,038.00	3,037.79	214.99	56.59	-7.24	-1,010.29	573.40	13,303.07	13,204.14	98.93	134.468	
20,200.00	6,935.44	3,038.00	3,037.79	216.58	56.59	-7.24	-1,010.29	573.40	13,398.69	13,299.63	99.05	135.266	
20,300.00	6,935.37	3,038.00	3,037.79	218.17	56.59	-7.24	-1,010.29	573.40	13,494.37	13,395.19	99.18	136.063	
20,400.00	6,935.29	3,038.00	3,037.79	219.76	56.59	-7.24	-1,010.29	573.40	13,590.11	13,490.81	99.30	136.859	
20,500.00	6,935.22	3,038.00	3,037.79	221.35	56.59	-7.24	-1,010.29	573.40	13,685.91	13,586.49	99.42	137.656	
20,600.00	6,935.14	3,038.00	3,037.79	222.94	56.59	-7.24	-1,010.29	573.40	13,781.77	13,682.23	99.54	138.452	
20,700.00	6,935.07	3,038.00	3,037.79	224.53	56.59	-7.24	-1,010.29	573.40	13,877.69	13,778.03	99.66	139.247	
20,789.75	6,935.00	3,038.00	3,037.79	225.95	56.59	-7.24	-1,010.29	573.40	13,963.83	13,864.06	99.77	139.961	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207A - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program: 343-A027Ua_INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	-10.46	895.24	-165.20	910.47					
100.00	100.00	86.00	86.00	0.25	0.80	-10.46	895.24	-165.20	910.36	909.31	1.05	870.358		
200.00	200.00	186.00	186.00	0.61	1.72	-10.46	895.24	-165.20	910.36	908.03	2.33	390.939		
300.00	300.00	286.00	286.00	0.97	2.64	-10.46	895.24	-165.20	910.36	906.75	3.61	252.083		
400.00	400.00	386.00	386.00	1.33	4.04	-10.46	895.24	-165.20	910.36	904.99	5.37	169.485		
500.00	500.00	486.00	486.00	1.68	6.08	-10.46	895.24	-165.20	910.36	902.59	7.76	117.256 CC		
600.00	599.98	585.98	585.98	2.03	8.11	170.43	895.24	-165.20	912.08	901.94	10.14	89.953 ES		
700.00	699.84	687.37	687.36	2.36	10.17	170.47	895.70	-165.20	917.69	905.16	12.54	73.200		
800.00	799.45	788.62	788.61	2.71	12.23	170.54	895.44	-165.20	926.04	911.10	14.94	61.986		
900.00	898.70	884.77	884.70	3.06	14.34	170.61	895.24	-165.20	937.86	920.46	17.40	53.910		
1,000.00	997.47	983.53	983.47	3.43	16.69	170.72	895.24	-165.20	953.30	933.21	20.09	47.440		
1,100.00	1,095.62	1,081.77	1,081.69	3.82	19.02	170.85	896.55	-165.20	973.43	950.65	22.79	42.722		
1,180.06	1,173.69	1,163.49	1,163.40	4.14	20.96	170.96	896.39	-165.20	990.81	965.79	25.02	39.608		
1,200.00	1,193.07	1,183.80	1,183.71	4.22	21.44	171.01	896.31	-165.20	995.36	969.79	25.57	38.924		
1,300.00	1,290.27	1,285.80	1,285.70	4.65	23.86	171.22	895.59	-165.20	1,017.93	989.58	28.35	35.905		
1,400.00	1,387.46	1,373.67	1,373.46	5.08	25.86	171.39	895.24	-165.20	1,040.81	1,010.09	30.71	33.886		
1,500.00	1,484.66	1,470.86	1,470.66	5.52	28.01	171.58	895.24	-165.20	1,064.08	1,030.84	33.24	32.016		
1,600.00	1,581.85	1,568.06	1,567.85	5.97	30.17	171.76	895.24	-165.20	1,087.36	1,051.60	35.76	30.408		
1,700.00	1,679.05	1,671.11	1,670.88	6.42	32.46	171.96	896.61	-165.20	1,112.02	1,073.60	38.42	28.945		
1,800.00	1,776.25	1,774.57	1,774.32	6.87	34.75	172.13	895.78	-165.20	1,134.55	1,093.47	41.09	27.614		
1,900.00	1,873.44	1,859.75	1,859.44	7.33	36.50	172.26	895.24	-165.20	1,157.26	1,114.06	43.21	26.785		
2,000.00	1,970.64	1,956.94	1,956.64	7.78	38.31	172.42	895.24	-165.20	1,180.58	1,135.18	45.40	26.006		
2,100.00	2,067.83	2,054.14	2,053.83	8.24	40.13	172.56	895.24	-165.20	1,203.91	1,156.32	47.59	25.298		
2,200.00	2,165.03	2,152.50	2,152.19	8.71	41.97	172.71	896.17	-165.20	1,228.16	1,178.36	49.80	24.660		
2,300.00	2,262.22	2,252.53	2,252.22	9.17	43.83	172.85	895.96	-165.20	1,251.30	1,199.25	52.05	24.039		
2,400.00	2,359.42	2,352.67	2,352.35	9.63	45.70	172.98	895.53	-165.20	1,274.23	1,219.92	54.30	23.465		
2,500.00	2,456.61	2,442.95	2,442.61	10.10	47.50	173.10	895.24	-165.20	1,297.28	1,240.80	56.48	22.970		
2,600.00	2,553.81	2,540.15	2,539.81	10.57	49.57	173.22	895.24	-165.20	1,320.64	1,261.71	58.92	22.412		
2,700.00	2,651.01	2,637.35	2,637.01	11.03	51.64	173.34	895.24	-165.20	1,344.00	1,282.63	61.37	21.899		
2,800.00	2,748.20	2,734.54	2,734.20	11.50	53.71	173.46	895.24	-165.20	1,367.37	1,303.55	63.82	21.425		
2,900.00	2,845.40	2,809.00	2,808.59	11.97	55.29	173.54	895.24	-165.20	1,390.93	1,325.18	65.75	21.154 SF		
3,000.00	2,942.59	2,809.00	2,808.59	12.44	55.29	173.54	895.24	-165.20	1,419.20	1,353.40	65.80	21.567		
3,100.00	3,039.79	2,809.00	2,808.59	12.91	55.29	173.54	895.24	-165.20	1,453.82	1,388.24	65.58	22.169		
3,200.00	3,136.98	2,809.00	2,808.59	13.38	55.29	173.54	895.24	-165.20	1,494.34	1,429.21	65.12	22.946		
3,300.00	3,234.18	2,809.00	2,808.59	13.85	55.29	173.54	895.24	-165.20	1,540.29	1,475.81	64.48	23.888		
3,400.00	3,331.38	2,809.00	2,808.59	14.32	55.29	173.54	895.24	-165.20	1,591.21	1,527.52	63.69	24.984		
3,500.00	3,428.57	2,809.00	2,808.59	14.79	55.29	173.54	895.24	-165.20	1,646.63	1,583.85	62.79	26.225		
3,600.00	3,525.77	2,809.00	2,808.59	15.26	55.29	173.54	895.24	-165.20	1,706.12	1,644.31	61.81	27.601		
3,700.00	3,622.96	2,809.00	2,808.59	15.73	55.29	173.54	895.24	-165.20	1,769.27	1,708.47	60.80	29.102		
3,800.00	3,720.16	2,809.00	2,808.59	16.20	55.29	173.54	895.24	-165.20	1,835.69	1,775.94	59.75	30.721		
3,900.00	3,817.35	2,809.00	2,808.59	16.68	55.29	173.54	895.24	-165.20	1,905.05	1,846.34	58.71	32.450		
4,000.00	3,914.55	2,809.00	2,808.59	17.15	55.29	173.54	895.24	-165.20	1,977.04	1,919.36	57.67	34.280		
4,100.00	4,011.74	2,809.00	2,808.59	17.62	55.29	173.54	895.24	-165.20	2,051.37	1,994.71	56.66	36.205		
4,200.00	4,108.94	2,809.00	2,808.59	18.09	55.29	173.54	895.24	-165.20	2,127.81	2,072.14	55.68	38.218		
4,300.00	4,206.14	2,809.00	2,808.59	18.57	55.29	173.54	895.24	-165.20	2,206.14	2,151.41	54.73	40.312		
4,400.00	4,303.33	2,809.00	2,808.59	19.04	55.29	173.54	895.24	-165.20	2,286.15	2,232.33	53.82	42.481		
4,500.00	4,400.53	2,809.00	2,808.59	19.51	55.29	173.54	895.24	-165.20	2,367.69	2,314.74	52.95	44.718		
4,600.00	4,497.72	2,809.00	2,808.59	19.99	55.29	173.54	895.24	-165.20	2,450.59	2,398.47	52.12	47.018		
4,700.00	4,594.92	2,809.00	2,808.59	20.46	55.29	173.54	895.24	-165.20	2,534.73	2,483.39	51.33	49.376		
4,800.00	4,692.11	2,809.00	2,808.59	20.93	55.29	173.54	895.24	-165.20	2,619.98	2,569.39	50.59	51.786		
4,900.00	4,789.31	2,809.00	2,808.59	21.41	55.29	173.54	895.24	-165.20	2,706.24	2,656.35	49.89	54.244		
5,000.00	4,886.51	2,809.00	2,808.59	21.88	55.29	173.54	895.24	-165.20	2,793.42	2,744.19	49.23	56.744		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207A - OH - OH-INC												Offset Site Error: 0.00 usft			
Survey Program: 343-A027Ua_INC-ONLY				Reference Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned: Distance				Offset Well Error: 0.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,100.00	4,983.70	2,809.00	2,808.59	22.35	55.29	173.54	895.24	-165.20	2,881.43	2,832.83	48.61	59.281			
5,200.00	5,080.90	2,809.00	2,808.59	22.83	55.29	173.54	895.24	-165.20	2,970.20	2,922.18	48.02	61.852			
5,300.00	5,178.09	2,809.00	2,808.59	23.30	55.29	173.54	895.24	-165.20	3,059.67	3,012.20	47.47	64.452			
5,400.00	5,275.29	2,809.00	2,808.59	23.77	55.29	173.54	895.24	-165.20	3,149.77	3,102.81	46.96	67.077			
5,500.00	5,372.48	2,809.00	2,808.59	24.25	55.29	173.54	895.24	-165.20	3,240.44	3,193.97	46.48	69.723			
5,600.00	5,469.68	2,809.00	2,808.59	24.72	55.29	173.54	895.24	-165.20	3,331.66	3,285.63	46.03	72.387			
5,700.00	5,566.87	2,809.00	2,808.59	25.20	55.29	173.54	895.24	-165.20	3,423.36	3,377.75	45.61	75.065			
5,800.00	5,664.07	2,809.00	2,808.59	25.67	55.29	173.54	895.24	-165.20	3,515.51	3,470.30	45.21	77.753			
5,900.00	5,761.27	2,809.00	2,808.59	26.14	55.29	173.54	895.24	-165.20	3,608.09	3,563.24	44.85	80.449			
6,000.00	5,858.46	2,809.00	2,808.59	26.62	55.29	173.54	895.24	-165.20	3,701.05	3,656.53	44.51	83.148			
6,100.00	5,955.66	2,809.00	2,808.59	27.09	55.29	173.54	895.24	-165.20	3,794.36	3,750.17	44.20	85.850			
6,200.00	6,052.85	2,809.00	2,808.59	27.57	55.29	173.54	895.24	-165.20	3,888.01	3,844.11	43.91	88.549			
6,300.00	6,150.05	2,809.00	2,808.59	28.04	55.29	173.54	895.24	-165.20	3,981.97	3,938.33	43.64	91.245			
6,400.00	6,247.24	2,809.00	2,808.59	28.52	55.29	173.54	895.24	-165.20	4,076.22	4,032.82	43.39	93.934			
6,490.87	6,335.57	2,809.00	2,808.59	28.95	55.29	173.54	895.24	-165.20	4,162.09	4,118.91	43.19	96.369			
6,500.00	6,344.44	2,809.00	2,808.59	28.99	55.29	179.30	895.24	-165.20	4,170.74	4,127.57	43.17	96.613			
6,550.00	6,392.91	2,809.00	2,808.59	29.23	55.29	-150.17	895.24	-165.20	4,218.16	4,175.09	43.07	97.943			
6,600.00	6,440.98	2,809.00	2,808.59	29.46	55.29	-123.75	895.24	-165.20	4,265.52	4,222.54	42.97	99.260			
6,650.00	6,488.34	2,809.00	2,808.59	29.70	55.29	-102.65	895.24	-165.20	4,312.52	4,269.64	42.88	100.560			
6,700.00	6,534.69	2,809.00	2,808.59	29.92	55.29	-86.42	895.24	-165.20	4,358.91	4,316.11	42.80	101.837			
6,750.00	6,579.76	2,809.00	2,808.59	30.15	55.29	-74.06	895.24	-165.20	4,404.41	4,361.68	42.73	103.082			
6,800.00	6,623.27	2,809.00	2,808.59	30.36	55.29	-64.60	895.24	-165.20	4,448.77	4,406.11	42.66	104.288			
6,850.00	6,664.95	2,809.00	2,808.59	30.57	55.29	-57.28	895.24	-165.20	4,491.77	4,449.17	42.60	105.445			
6,900.00	6,704.53	2,809.00	2,808.59	30.78	55.29	-51.53	895.24	-165.20	4,533.17	4,490.62	42.55	106.544			
6,950.00	6,741.79	2,809.00	2,808.59	30.98	55.29	-46.96	895.24	-165.20	4,572.77	4,530.26	42.51	107.574			
7,000.00	6,776.48	2,809.00	2,808.59	31.17	55.29	-43.28	895.24	-165.20	4,610.38	4,567.89	42.48	108.525			
7,050.00	6,808.39	2,809.00	2,808.59	31.36	55.29	-40.30	895.24	-165.20	4,645.81	4,603.33	42.47	109.385			
7,100.00	6,837.34	2,809.00	2,808.59	31.54	55.29	-37.87	895.24	-165.20	4,678.89	4,636.41	42.48	110.143			
7,150.00	6,863.13	2,809.00	2,808.59	31.73	55.29	-35.88	895.24	-165.20	4,709.48	4,666.97	42.51	110.788			
7,200.00	6,885.61	2,809.00	2,808.59	31.91	55.29	-34.26	895.24	-165.20	4,737.44	4,694.87	42.56	111.308			
7,250.00	6,904.64	2,809.00	2,808.59	32.10	55.29	-32.94	895.24	-165.20	4,762.63	4,719.99	42.64	111.693			
7,300.00	6,920.10	2,809.00	2,808.59	32.29	55.29	-31.88	895.24	-165.20	4,784.96	4,742.21	42.75	111.936			
7,350.00	6,931.91	2,809.00	2,808.59	32.48	55.29	-31.04	895.24	-165.20	4,804.32	4,761.43	42.88	112.029			
7,400.00	6,939.97	2,809.00	2,808.59	32.68	55.29	-30.42	895.24	-165.20	4,820.63	4,777.58	43.05	111.968			
7,450.00	6,944.26	2,809.00	2,808.59	32.89	55.29	-29.97	895.24	-165.20	4,833.82	4,790.57	43.26	111.751			
7,481.69	6,945.00	2,809.00	2,808.59	33.03	55.29	-29.78	895.24	-165.20	4,840.54	4,797.15	43.40	111.537			
7,500.00	6,944.99	2,809.00	2,808.59	33.12	55.29	-29.78	895.24	-165.20	4,844.09	4,800.60	43.49	111.391			
7,600.00	6,944.91	2,809.00	2,808.59	33.60	55.29	-29.78	895.24	-165.20	4,864.63	4,820.60	44.03	110.479			
7,700.00	6,944.84	2,809.00	2,808.59	34.17	55.29	-29.78	895.24	-165.20	4,887.13	4,842.47	44.65	109.448			
7,800.00	6,944.76	2,809.00	2,808.59	34.80	55.29	-29.78	895.24	-165.20	4,911.56	4,866.22	45.34	108.326			
7,900.00	6,944.69	2,809.00	2,808.59	35.49	55.29	-29.78	895.24	-165.20	4,937.89	4,891.80	46.09	107.139			
8,000.00	6,944.61	2,809.00	2,808.59	36.25	55.29	-29.78	895.24	-165.20	4,966.10	4,919.21	46.89	105.912			
8,100.00	6,944.54	2,809.00	2,808.59	37.07	55.29	-29.78	895.24	-165.20	4,996.16	4,948.42	47.73	104.667			
8,200.00	6,944.46	2,809.00	2,808.59	37.94	55.29	-29.78	895.24	-165.20	5,028.02	4,979.40	48.62	103.421			
8,300.00	6,944.39	2,809.00	2,808.59	38.86	55.29	-29.78	895.24	-165.20	5,061.66	5,012.12	49.53	102.193			
8,400.00	6,944.31	2,809.00	2,808.59	39.83	55.29	-29.78	895.24	-165.20	5,097.03	5,046.56	50.47	100.993			
8,500.00	6,944.23	2,809.00	2,808.59	40.84	55.29	-29.78	895.24	-165.20	5,134.12	5,082.69	51.43	99.833			
8,600.00	6,944.16	2,809.00	2,808.59	41.89	55.29	-29.78	895.24	-165.20	5,172.86	5,120.47	52.40	98.721			
8,700.00	6,944.08	2,809.00	2,808.59	42.98	55.29	-29.78	895.24	-165.20	5,213.25	5,159.86	53.38	97.661			
8,800.00	6,944.01	2,809.00	2,808.59	44.10	55.29	-29.78	895.24	-165.20	5,255.22	5,200.85	54.37	96.659			
8,900.00	6,943.93	2,809.00	2,808.59	45.25	55.29	-29.78	895.24	-165.20	5,298.75	5,243.39	55.36	95.718			
9,000.00	6,943.86	2,809.00	2,808.59	46.43	55.29	-29.78	895.24	-165.20	5,343.79	5,287.44	56.35	94.838			

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207A - OH - OH-INC												Offset Site Error:	0.00 usft				
Survey Program: 343-A027Ua_INC-ONLY				Reference				Offset				Rule Assigned:				Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning				
9,100.00	6,943.78	2,809.00	2,808.59	47.63	55.29	-29.78	895.24	-165.20	5,390.31	5,332.98	57.33	94.021					
9,200.00	6,943.71	2,809.00	2,808.59	48.86	55.29	-29.78	895.24	-165.20	5,438.28	5,379.97	58.31	93.266					
9,300.00	6,943.63	2,809.00	2,808.59	50.11	55.29	-29.78	895.24	-165.20	5,487.65	5,428.37	59.28	92.572					
9,400.00	6,943.56	2,809.00	2,808.59	51.38	55.29	-29.78	895.24	-165.20	5,538.38	5,478.14	60.24	91.940					
9,500.00	6,943.48	2,809.00	2,808.59	52.66	55.29	-29.78	895.24	-165.20	5,590.44	5,529.26	61.19	91.366					
9,600.00	6,943.41	2,809.00	2,808.59	53.97	55.29	-29.78	895.24	-165.20	5,643.80	5,581.68	62.12	90.850					
9,700.00	6,943.33	2,809.00	2,808.59	55.29	55.29	-29.78	895.24	-165.20	5,698.41	5,635.36	63.04	90.389					
9,800.00	6,943.26	2,809.00	2,808.59	56.63	55.29	-29.78	895.24	-165.20	5,754.24	5,690.29	63.95	89.982					
9,900.00	6,943.18	2,809.00	2,808.59	57.98	55.29	-29.78	895.24	-165.20	5,811.25	5,746.41	64.84	89.627					
10,000.00	6,943.11	2,809.00	2,808.59	59.34	55.29	-29.78	895.24	-165.20	5,869.41	5,803.70	65.71	89.321					
10,100.00	6,943.03	2,809.00	2,808.59	60.72	55.29	-29.78	895.24	-165.20	5,928.69	5,862.13	66.57	89.062					
10,200.00	6,942.96	2,809.00	2,808.59	62.11	55.29	-29.78	895.24	-165.20	5,989.06	5,921.65	67.41	88.849					
10,300.00	6,942.88	2,809.00	2,808.59	63.50	55.29	-29.78	895.24	-165.20	6,050.47	5,982.24	68.23	88.679					
10,400.00	6,942.81	2,809.00	2,808.59	64.91	55.29	-29.78	895.24	-165.20	6,112.90	6,043.87	69.03	88.551					
10,500.00	6,942.73	2,809.00	2,808.59	66.33	55.29	-29.78	895.24	-165.20	6,176.33	6,106.51	69.82	88.462					
10,600.00	6,942.66	2,809.00	2,808.59	67.75	55.29	-29.78	895.24	-165.20	6,240.70	6,170.12	70.59	88.412					
10,700.00	6,942.58	2,809.00	2,808.59	69.18	55.29	-29.78	895.24	-165.20	6,306.01	6,234.67	71.34	88.397					
10,800.00	6,942.51	2,809.00	2,808.59	70.62	55.29	-29.78	895.24	-165.20	6,372.22	6,300.15	72.07	88.416					
10,900.00	6,942.43	2,809.00	2,808.59	72.07	55.29	-29.78	895.24	-165.20	6,439.30	6,366.51	72.79	88.468					
11,000.00	6,942.36	2,809.00	2,808.59	73.52	55.29	-29.78	895.24	-165.20	6,507.22	6,433.74	73.49	88.552					
11,100.00	6,942.28	2,809.00	2,808.59	74.98	55.29	-29.78	895.24	-165.20	6,575.97	6,501.80	74.17	88.665					
11,200.00	6,942.21	2,809.00	2,808.59	76.45	55.29	-29.78	895.24	-165.20	6,645.51	6,570.67	74.83	88.806					
11,300.00	6,942.13	2,809.00	2,808.59	77.92	55.29	-29.78	895.24	-165.20	6,715.81	6,640.33	75.48	88.975					
11,400.00	6,942.06	2,809.00	2,808.59	79.40	55.29	-29.78	895.24	-165.20	6,786.86	6,710.75	76.11	89.169					
11,500.00	6,941.98	2,809.00	2,808.59	80.88	55.29	-29.78	895.24	-165.20	6,858.64	6,781.91	76.73	89.388					
11,600.00	6,941.91	2,809.00	2,808.59	82.36	55.29	-29.78	895.24	-165.20	6,931.11	6,853.78	77.33	89.630					
11,700.00	6,941.83	2,809.00	2,808.59	83.85	55.29	-29.78	895.24	-165.20	7,004.26	6,926.35	77.92	89.894					
11,800.00	6,941.76	2,809.00	2,808.59	85.35	55.29	-29.78	895.24	-165.20	7,078.07	6,999.58	78.49	90.180					
11,900.00	6,941.68	2,809.00	2,808.59	86.85	55.29	-29.78	895.24	-165.20	7,152.52	7,073.47	79.05	90.486					
12,000.00	6,941.60	2,809.00	2,808.59	88.35	55.29	-29.78	895.24	-165.20	7,227.58	7,147.99	79.59	90.811					
12,100.00	6,941.53	2,809.00	2,808.59	89.85	55.29	-29.78	895.24	-165.20	7,303.24	7,223.12	80.12	91.156					
12,200.00	6,941.45	2,809.00	2,808.59	91.36	55.29	-29.78	895.24	-165.20	7,379.48	7,298.84	80.63	91.517					
12,300.00	6,941.38	2,809.00	2,808.59	92.88	55.29	-29.78	895.24	-165.20	7,456.28	7,375.14	81.14	91.896					
12,400.00	6,941.30	2,809.00	2,808.59	94.39	55.29	-29.78	895.24	-165.20	7,533.62	7,451.99	81.63	92.291					
12,500.00	6,941.23	2,809.00	2,808.59	95.91	55.29	-29.78	895.24	-165.20	7,611.49	7,529.39	82.11	92.701					
12,600.00	6,941.15	2,809.00	2,808.59	97.43	55.29	-29.78	895.24	-165.20	7,689.88	7,607.30	82.58	93.126					
12,700.00	6,941.08	2,809.00	2,808.59	98.95	55.29	-29.78	895.24	-165.20	7,768.76	7,685.73	83.03	93.565					
12,800.00	6,941.00	2,809.00	2,808.59	100.48	55.29	-29.78	895.24	-165.20	7,848.12	7,764.65	83.48	94.017					
12,900.00	6,940.93	2,809.00	2,808.59	102.01	55.29	-29.78	895.24	-165.20	7,927.95	7,844.04	83.91	94.482					
13,000.00	6,940.85	2,809.00	2,808.59	103.54	55.29	-29.78	895.24	-165.20	8,008.23	7,923.90	84.33	94.960					
13,100.00	6,940.78	2,809.00	2,808.59	105.07	55.29	-29.78	895.24	-165.20	8,088.96	8,004.21	84.75	95.450					
13,200.00	6,940.70	2,809.00	2,808.59	106.61	55.29	-29.78	895.24	-165.20	8,170.10	8,084.95	85.15	95.950					
13,300.00	6,940.63	2,809.00	2,808.59	108.14	55.29	-29.78	895.24	-165.20	8,251.67	8,166.12	85.54	96.462					
13,400.00	6,940.55	2,809.00	2,808.59	109.68	55.29	-29.78	895.24	-165.20	8,333.63	8,247.70	85.93	96.984					
13,500.00	6,940.48	2,809.00	2,808.59	111.22	55.29	-29.78	895.24	-165.20	8,415.98	8,329.68	86.30	97.516					
13,600.00	6,940.40	2,809.00	2,808.59	112.77	55.29	-29.78	895.24	-165.20	8,498.72	8,412.04	86.67	98.057					
13,700.00	6,940.33	2,809.00	2,808.59	114.31	55.29	-29.78	895.24	-165.20	8,581.82	8,494.79	87.03	98.608					
13,800.00	6,940.25	2,809.00	2,808.59	115.86	55.29	-29.78	895.24	-165.20	8,665.27	8,577.89	87.38	99.167					
13,900.00	6,940.18	2,809.00	2,808.59	117.41	55.29	-29.78	895.24	-165.20	8,749.08	8,661.35	87.72	99.735					
14,000.00	6,940.10	2,809.00	2,808.59	118.95	55.29	-29.78	895.24	-165.20	8,833.22	8,745.16	88.06	100.311					
14,100.00	6,940.03	2,809.00	2,808.59	120.51	55.29	-29.78	895.24	-165.20	8,917.69	8,829.30	88.39	100.894					
14,200.00	6,939.95	2,809.00	2,808.59	122.06	55.29	-29.78	895.24	-165.20	9,002.47	8,913.77	88.71	101.485					

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207A - OH - OH-INC													Offset Site Error:	0.00 usft		
Survey Program:		343-A027Ua_INC-ONLY					Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:		Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
14,300.00	6,939.88	2,809.00	2,808.59	123.61	55.29	-29.78	895.24	-165.20	9,087.57	8,998.55	89.02	102.083				
14,400.00	6,939.80	2,809.00	2,808.59	125.17	55.29	-29.78	895.24	-165.20	9,172.97	9,083.64	89.33	102.687				
14,500.00	6,939.73	2,809.00	2,808.59	126.72	55.29	-29.78	895.24	-165.20	9,258.66	9,169.03	89.63	103.298				
14,600.00	6,939.65	2,809.00	2,808.59	128.28	55.29	-29.78	895.24	-165.20	9,344.63	9,254.70	89.93	103.916				
14,700.00	6,939.58	2,809.00	2,808.59	129.84	55.29	-29.78	895.24	-165.20	9,430.88	9,340.67	90.21	104.539				
14,800.00	6,939.50	2,809.00	2,808.59	131.40	55.29	-29.78	895.24	-165.20	9,517.40	9,426.90	90.50	105.168				
14,900.00	6,939.43	2,809.00	2,808.59	132.96	55.29	-29.78	895.24	-165.20	9,604.18	9,513.41	90.77	105.803				
15,000.00	6,939.35	2,809.00	2,808.59	134.52	55.29	-29.78	895.24	-165.20	9,691.22	9,600.17	91.05	106.443				
15,100.00	6,939.28	2,809.00	2,808.59	136.08	55.29	-29.78	895.24	-165.20	9,778.50	9,687.19	91.31	107.088				
15,200.00	6,939.20	2,809.00	2,808.59	137.64	55.29	-29.78	895.24	-165.20	9,866.03	9,774.45	91.57	107.738				
15,300.00	6,939.13	2,809.00	2,808.59	139.21	55.29	-29.78	895.24	-165.20	9,953.79	9,861.95	91.83	108.392				
15,400.00	6,939.05	2,809.00	2,808.59	140.77	55.29	-29.78	895.24	-165.20	10,041.77	9,949.69	92.08	109.051				
15,500.00	6,938.98	2,809.00	2,808.59	142.34	55.29	-29.78	895.24	-165.20	10,129.99	10,037.66	92.33	109.715				
15,600.00	6,938.90	2,809.00	2,808.59	143.91	55.29	-29.78	895.24	-165.20	10,218.42	10,125.84	92.57	110.382				
15,700.00	6,938.82	2,809.00	2,808.59	145.47	55.29	-29.78	895.24	-165.20	10,307.06	10,214.24	92.81	111.053				
15,800.00	6,938.75	2,809.00	2,808.59	147.04	55.29	-29.78	895.24	-165.20	10,395.90	10,302.86	93.05	111.729				
15,900.00	6,938.67	2,809.00	2,808.59	148.61	55.29	-29.78	895.24	-165.20	10,484.95	10,391.67	93.28	112.407				
16,000.00	6,938.60	2,809.00	2,808.59	150.18	55.29	-29.78	895.24	-165.20	10,574.19	10,480.69	93.50	113.090				
16,100.00	6,938.52	2,809.00	2,808.59	151.75	55.29	-29.78	895.24	-165.20	10,663.63	10,569.90	93.73	113.775				
16,200.00	6,938.45	2,809.00	2,808.59	153.32	55.29	-29.78	895.24	-165.20	10,753.25	10,659.31	93.94	114.464				
16,300.00	6,938.37	2,809.00	2,808.59	154.90	55.29	-29.78	895.24	-165.20	10,843.05	10,748.89	94.16	115.156				
16,400.00	6,938.30	2,809.00	2,808.59	156.47	55.29	-29.78	895.24	-165.20	10,933.03	10,838.66	94.37	115.851				
16,500.00	6,938.22	2,809.00	2,808.59	158.04	55.29	-29.78	895.24	-165.20	11,023.18	10,928.60	94.58	116.549				
16,600.00	6,938.15	2,809.00	2,808.59	159.62	55.29	-29.78	895.24	-165.20	11,113.50	11,018.72	94.79	117.249				
16,700.00	6,938.07	2,809.00	2,808.59	161.19	55.29	-29.78	895.24	-165.20	11,203.99	11,109.00	94.99	117.952				
16,800.00	6,938.00	2,809.00	2,808.59	162.77	55.29	-29.78	895.24	-165.20	11,294.63	11,199.45	95.19	118.657				
16,900.00	6,937.92	2,809.00	2,808.59	164.34	55.29	-29.78	895.24	-165.20	11,385.43	11,290.05	95.38	119.365				
17,000.00	6,937.85	2,809.00	2,808.59	165.92	55.29	-29.78	895.24	-165.20	11,476.39	11,380.81	95.58	120.075				
17,100.00	6,937.77	2,809.00	2,808.59	167.50	55.29	-29.78	895.24	-165.20	11,567.49	11,471.73	95.77	120.787				
17,200.00	6,937.70	2,809.00	2,808.59	169.07	55.29	-29.78	895.24	-165.20	11,658.74	11,562.79	95.96	121.501				
17,300.00	6,937.62	2,809.00	2,808.59	170.65	55.29	-29.78	895.24	-165.20	11,750.14	11,653.99	96.14	122.217				
17,400.00	6,937.55	2,809.00	2,808.59	172.23	55.29	-29.78	895.24	-165.20	11,841.67	11,745.34	96.32	122.935				
17,500.00	6,937.47	2,809.00	2,808.59	173.81	55.29	-29.78	895.24	-165.20	11,933.34	11,836.83	96.51	123.654				
17,600.00	6,937.40	2,809.00	2,808.59	175.39	55.29	-29.78	895.24	-165.20	12,025.14	11,928.45	96.68	124.376				
17,700.00	6,937.32	2,809.00	2,808.59	176.97	55.29	-29.78	895.24	-165.20	12,117.07	12,020.21	96.86	125.099				
17,800.00	6,937.25	2,809.00	2,808.59	178.55	55.29	-29.78	895.24	-165.20	12,209.12	12,112.09	97.03	125.823				
17,900.00	6,937.17	2,809.00	2,808.59	180.13	55.29	-29.78	895.24	-165.20	12,301.30	12,204.10	97.21	126.549				
18,000.00	6,937.10	2,809.00	2,808.59	181.71	55.29	-29.78	895.24	-165.20	12,393.61	12,296.23	97.38	127.276				
18,100.00	6,937.02	2,809.00	2,808.59	183.29	55.29	-29.78	895.24	-165.20	12,486.03	12,388.48	97.54	128.005				
18,200.00	6,936.95	2,809.00	2,808.59	184.87	55.29	-29.78	895.24	-165.20	12,578.56	12,480.85	97.71	128.734				
18,300.00	6,936.87	2,809.00	2,808.59	186.46	55.29	-29.78	895.24	-165.20	12,671.21	12,573.34	97.87	129.465				
18,400.00	6,936.80	2,809.00	2,808.59	188.04	55.29	-29.78	895.24	-165.20	12,763.97	12,665.94	98.04	130.197				
18,500.00	6,936.72	2,809.00	2,808.59	189.62	55.29	-29.78	895.24	-165.20	12,856.84	12,758.65	98.20	130.930				
18,600.00	6,936.65	2,809.00	2,808.59	191.21	55.29	-29.78	895.24	-165.20	12,949.82	12,851.46	98.36	131.664				
18,700.00	6,936.57	2,809.00	2,808.59	192.79	55.29	-29.78	895.24	-165.20	13,042.90	12,944.39	98.51	132.399				
18,800.00	6,936.50	2,809.00	2,808.59	194.37	55.29	-29.78	895.24	-165.20	13,136.08	13,037.41	98.67	133.134				
18,900.00	6,936.42	2,809.00	2,808.59	195.96	55.29	-29.78	895.24	-165.20	13,229.36	13,130.54	98.82	133.871				
19,000.00	6,936.35	2,809.00	2,808.59	197.54	55.29	-29.78	895.24	-165.20	13,322.74	13,223.76	98.97	134.608				
19,100.00	6,936.27	2,809.00	2,808.59	199.13	55.29	-29.78	895.24	-165.20	13,416.21	13,317.09	99.13	135.346				
19,200.00	6,936.19	2,809.00	2,808.59	200.71	55.29	-29.78	895.24	-165.20	13,509.78	13,410.51	99.28	136.084				
19,300.00	6,936.12	2,809.00	2,808.59	202.30	55.29	-29.78	895.24	-165.20	13,603.44	13,504.02	99.42	136.823				
19,400.00	6,936.04	2,809.00	2,808.59	203.88	55.29	-29.78	895.24	-165.20	13,697.19	13,597.62	99.57	137.563				

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207A - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 343-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,500.00	6,935.97	2,809.00	2,808.59	205.47	55.29	-29.78	895.24	-165.20	13,791.02	13,691.31	99.72	138.302	
19,600.00	6,935.89	2,809.00	2,808.59	207.06	55.29	-29.78	895.24	-165.20	13,884.95	13,785.09	99.86	139.043	
19,700.00	6,935.82	2,809.00	2,808.59	208.64	55.29	-29.78	895.24	-165.20	13,978.95	13,878.95	100.00	139.784	
19,800.00	6,935.74	2,809.00	2,808.59	210.23	55.29	-29.78	895.24	-165.20	14,073.04	13,972.90	100.15	140.525	
19,900.00	6,935.67	2,809.00	2,808.59	211.82	55.29	-29.78	895.24	-165.20	14,167.21	14,066.93	100.29	141.266	
20,000.00	6,935.59	2,809.00	2,808.59	213.41	55.29	-29.78	895.24	-165.20	14,261.46	14,161.03	100.43	142.007	
20,100.00	6,935.52	2,809.00	2,808.59	214.99	55.29	-29.78	895.24	-165.20	14,355.79	14,255.22	100.57	142.749	
20,200.00	6,935.44	2,809.00	2,808.59	216.58	55.29	-29.78	895.24	-165.20	14,450.19	14,349.49	100.70	143.491	
20,300.00	6,935.37	2,809.00	2,808.59	218.17	55.29	-29.78	895.24	-165.20	14,544.67	14,443.83	100.84	144.233	
20,400.00	6,935.29	2,809.00	2,808.59	219.76	55.29	-29.78	895.24	-165.20	14,639.22	14,538.25	100.98	144.975	
20,500.00	6,935.22	2,809.00	2,808.59	221.35	55.29	-29.78	895.24	-165.20	14,733.85	14,632.74	101.11	145.717	
20,600.00	6,935.14	2,809.00	2,808.59	222.94	55.29	-29.78	895.24	-165.20	14,828.54	14,727.30	101.25	146.460	
20,700.00	6,935.07	2,809.00	2,808.59	224.53	55.29	-29.78	895.24	-165.20	14,923.31	14,821.93	101.38	147.202	
20,789.75	6,935.00	2,809.00	2,808.59	225.95	55.29	-29.78	895.24	-165.20	15,008.41	14,906.91	101.50	147.868	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 251 - OH - OH-TD													Offset Site Error:	0.00 usft
Survey Program: 8300-A028Ua_INC-ONLY_PLANNED_5_DEG													Offset Well Error:	0.00 usft
Reference													Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	84.79	328.27	3,600.93	3,615.97					
100.00	100.00	72.00	72.00	0.25	3.14	84.79	328.27	3,600.93	3,615.86	3,612.47	3.39	1,065.770		
200.00	200.00	172.00	172.00	0.61	7.51	84.79	328.27	3,600.93	3,615.86	3,607.75	8.11	445.604		
300.00	300.00	272.00	272.00	0.97	11.87	84.79	328.27	3,600.93	3,615.86	3,603.02	12.84	281.690		
400.00	400.00	372.00	372.00	1.33	16.23	84.79	328.27	3,600.93	3,615.86	3,598.30	17.56	205.937		
500.00	500.00	472.00	472.00	1.68	20.60	84.79	328.27	3,600.93	3,615.86	3,593.58	22.28	162.293		
600.00	599.98	571.98	571.98	2.03	24.96	-94.36	328.27	3,600.93	3,615.99	3,589.01	26.98	134.008		
700.00	699.84	671.84	671.84	2.36	29.31	-94.43	328.27	3,600.93	3,616.40	3,584.72	31.67	114.180		
800.00	799.45	771.45	771.45	2.71	33.66	-94.56	328.27	3,600.93	3,617.08	3,580.72	36.36	99.472		
900.00	898.70	870.70	870.70	3.06	37.99	-94.73	328.27	3,600.93	3,618.08	3,577.03	41.05	88.140		
1,000.00	997.47	969.47	969.47	3.43	42.30	-94.95	328.27	3,600.93	3,619.41	3,573.68	45.73	79.149		
1,100.00	1,095.62	1,067.62	1,067.62	3.82	46.58	-95.21	328.27	3,600.93	3,621.13	3,570.73	50.40	71.847		
1,180.06	1,173.69	1,145.69	1,145.69	4.14	49.99	-95.45	328.27	3,600.93	3,622.82	3,568.69	54.13	66.926		
1,200.00	1,193.07	1,165.07	1,165.07	4.22	50.84	-95.52	328.27	3,600.93	3,623.28	3,568.22	55.06	65.806		
1,300.00	1,290.27	1,262.27	1,262.27	4.65	55.08	-95.88	328.27	3,600.93	3,625.68	3,565.96	59.72	60.708		
1,400.00	1,387.46	1,359.46	1,359.46	5.08	59.32	-96.24	328.27	3,600.93	3,628.23	3,563.84	64.40	56.342		
1,500.00	1,484.66	1,456.66	1,456.66	5.52	63.56	-96.60	328.27	3,600.93	3,630.94	3,561.86	69.08	52.565		
1,600.00	1,581.85	1,553.85	1,553.85	5.97	67.80	-96.95	328.27	3,600.93	3,633.79	3,560.03	73.76	49.265		
1,700.00	1,679.05	1,651.05	1,651.05	6.42	72.04	-97.31	328.27	3,600.93	3,636.79	3,558.34	78.45	46.359		
1,800.00	1,776.25	1,748.25	1,748.25	6.87	76.28	-97.67	328.27	3,600.93	3,639.94	3,556.80	83.14	43.781		
1,900.00	1,873.44	1,845.44	1,845.44	7.33	80.52	-98.02	328.27	3,600.93	3,643.24	3,555.41	87.83	41.479		
2,000.00	1,970.64	1,942.64	1,942.64	7.78	84.76	-98.38	328.27	3,600.93	3,646.69	3,554.16	92.53	39.411		
2,100.00	2,067.83	2,039.83	2,039.83	8.24	89.00	-98.74	328.27	3,600.93	3,650.29	3,553.06	97.23	37.543		
2,200.00	2,165.03	2,137.03	2,137.03	8.71	93.25	-99.09	328.27	3,600.93	3,654.04	3,552.11	101.93	35.849		
2,300.00	2,262.22	2,234.22	2,234.22	9.17	97.49	-99.44	328.27	3,600.93	3,657.93	3,551.30	106.63	34.306		
2,400.00	2,359.42	2,331.42	2,331.42	9.63	101.73	-99.80	328.27	3,600.93	3,661.97	3,550.64	111.33	32.893		
2,500.00	2,456.61	2,428.61	2,428.61	10.10	105.97	-100.15	328.27	3,600.93	3,666.16	3,550.13	116.03	31.597		
2,600.00	2,553.81	2,525.81	2,525.81	10.57	110.21	-100.50	328.27	3,600.93	3,670.49	3,549.76	120.73	30.402		
2,700.00	2,651.01	2,623.01	2,623.01	11.03	114.45	-100.85	328.27	3,600.93	3,674.97	3,549.53	125.43	29.298		
2,800.00	2,748.20	2,720.20	2,720.20	11.50	118.69	-101.20	328.27	3,600.93	3,679.59	3,549.46	130.14	28.275		
2,900.00	2,845.40	2,817.40	2,817.40	11.97	122.93	-101.55	328.27	3,600.93	3,684.36	3,549.52	134.84	27.324		
3,000.00	2,942.59	2,914.59	2,914.59	12.44	127.17	-101.90	328.27	3,600.93	3,689.27	3,549.73	139.54	26.439		
3,100.00	3,039.79	3,011.79	3,011.79	12.91	131.41	-102.25	328.27	3,600.93	3,694.32	3,550.08	144.24	25.612		
3,200.00	3,136.98	3,108.98	3,108.98	13.38	135.66	-102.59	328.27	3,600.93	3,699.52	3,550.57	148.95	24.838		
3,300.00	3,234.18	3,206.18	3,206.18	13.85	139.90	-102.94	328.27	3,600.93	3,704.86	3,551.21	153.65	24.113		
3,400.00	3,331.38	3,303.38	3,303.38	14.32	144.14	-103.28	328.27	3,600.93	3,710.34	3,551.99	158.35	23.431		
3,500.00	3,428.57	3,400.57	3,400.57	14.79	148.38	-103.63	328.27	3,600.93	3,715.96	3,552.91	163.05	22.790		
3,600.00	3,525.77	3,497.77	3,497.77	15.26	152.62	-103.97	328.27	3,600.93	3,721.72	3,553.97	167.75	22.186		
3,700.00	3,622.96	3,594.96	3,594.96	15.73	156.86	-104.31	328.27	3,600.93	3,727.62	3,555.16	172.45	21.615		
3,800.00	3,720.16	3,692.16	3,692.16	16.20	161.10	-104.65	328.27	3,600.93	3,733.66	3,556.50	177.15	21.076		
3,900.00	3,817.35	3,789.35	3,789.35	16.68	165.34	-104.99	328.27	3,600.93	3,739.83	3,557.98	181.85	20.565		
4,000.00	3,914.55	3,886.55	3,886.55	17.15	169.58	-105.33	328.27	3,600.93	3,746.15	3,559.59	186.55	20.081		
4,100.00	4,011.74	3,983.74	3,983.74	17.62	173.82	-105.67	328.27	3,600.93	3,752.60	3,561.35	191.25	19.621		
4,200.00	4,108.94	4,080.94	4,080.94	18.09	178.06	-106.00	328.27	3,600.93	3,759.19	3,563.23	195.95	19.184		
4,300.00	4,206.14	4,178.14	4,178.14	18.57	182.31	-106.34	328.27	3,600.93	3,765.91	3,565.26	200.65	18.769		
4,400.00	4,303.33	4,275.33	4,275.33	19.04	186.55	-106.67	328.27	3,600.93	3,772.77	3,567.42	205.35	18.373		
4,500.00	4,400.53	4,372.53	4,372.53	19.51	190.79	-107.00	328.27	3,600.93	3,779.76	3,569.71	210.05	17.995		
4,600.00	4,497.72	4,469.72	4,469.72	19.99	195.03	-107.34	328.27	3,600.93	3,786.88	3,572.14	214.74	17.635		
4,700.00	4,594.92	4,566.92	4,566.92	20.46	199.27	-107.67	328.27	3,600.93	3,794.14	3,574.70	219.44	17.290		
4,800.00	4,692.11	4,664.11	4,664.11	20.93	203.51	-107.99	328.27	3,600.93	3,801.53	3,577.39	224.13	16.961		
4,900.00	4,789.31	4,761.31	4,761.31	21.41	207.75	-108.32	328.27	3,600.93	3,809.04	3,580.22	228.83	16.646		
5,000.00	4,886.51	4,858.51	4,858.51	21.88	211.99	-108.65	328.27	3,600.93	3,816.69	3,583.17	233.52	16.344		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 251 - OH - OH-TD													Offset Site Error:	0.00 usft
Survey Program: 8300-A028Ua_INC-ONLY_PLANNED_5_DEG													Offset Well Error:	0.00 usft
Reference													Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
5,100.00	4,983.70	4,955.70	4,955.70	22.35	216.23	-108.97	328.27	3,600.93	3,824.47	3,586.26	238.22	16.055		
5,200.00	5,080.90	5,052.90	5,052.90	22.83	220.47	-109.30	328.27	3,600.93	3,832.38	3,589.47	242.91	15.777		
5,300.00	5,178.09	5,150.09	5,150.09	23.30	224.72	-109.62	328.27	3,600.93	3,840.41	3,592.81	247.60	15.511		
5,400.00	5,275.29	5,247.29	5,247.29	23.77	228.96	-109.94	328.27	3,600.93	3,848.58	3,596.28	252.29	15.254		
5,500.00	5,372.48	5,344.48	5,344.48	24.25	233.20	-110.26	328.27	3,600.93	3,856.86	3,599.88	256.98	15.008		
5,600.00	5,469.68	5,441.68	5,441.68	24.72	237.44	-110.58	328.27	3,600.93	3,865.28	3,603.60	261.67	14.771		
5,700.00	5,566.87	5,538.87	5,538.87	25.20	241.68	-110.90	328.27	3,600.93	3,873.81	3,607.45	266.36	14.543		
5,800.00	5,664.07	5,636.07	5,636.07	25.67	245.92	-111.22	328.27	3,600.93	3,882.47	3,611.42	271.05	14.324		
5,900.00	5,761.27	5,733.27	5,733.27	26.14	250.16	-111.53	328.27	3,600.93	3,891.26	3,615.52	275.74	14.112		
6,000.00	5,858.46	5,830.46	5,830.46	26.62	254.40	-111.85	328.27	3,600.93	3,900.16	3,619.74	280.43	13.908		
6,100.00	5,955.66	5,927.66	5,927.66	27.09	258.64	-112.16	328.27	3,600.93	3,909.19	3,624.08	285.11	13.711		
6,200.00	6,052.85	6,024.85	6,024.85	27.57	262.88	-112.47	328.27	3,600.93	3,918.34	3,628.54	289.80	13.521		
6,300.00	6,150.05	6,122.05	6,122.05	28.04	267.12	-112.78	328.27	3,600.93	3,927.61	3,633.12	294.49	13.337		
6,400.00	6,247.24	6,219.24	6,219.24	28.52	271.37	-113.09	328.27	3,600.93	3,936.99	3,637.82	299.17	13.160		
6,490.87	6,335.57	6,307.57	6,307.57	28.95	275.22	-113.36	328.27	3,600.93	3,945.62	3,642.20	303.43	13.004		
6,500.00	6,344.44	6,316.44	6,316.44	28.99	275.61	-109.99	328.27	3,600.93	3,946.44	3,642.58	303.85	12.988		
6,550.00	6,392.91	6,364.91	6,364.91	29.23	277.72	-92.96	328.27	3,600.93	3,948.85	3,642.66	306.19	12.897		
6,600.00	6,440.98	6,412.98	6,412.98	29.46	279.82	-79.73	328.27	3,600.93	3,947.81	3,639.29	308.52	12.796		
6,650.00	6,488.34	6,460.34	6,460.34	29.70	281.89	-70.32	328.27	3,600.93	3,943.35	3,632.52	310.82	12.687		
6,700.00	6,534.69	6,506.69	6,506.69	29.92	283.91	-63.86	328.27	3,600.93	3,935.49	3,622.41	313.08	12.570		
6,750.00	6,579.76	6,551.76	6,551.76	30.15	285.87	-59.49	328.27	3,600.93	3,924.33	3,609.04	315.29	12.447		
6,800.00	6,623.27	6,595.27	6,595.27	30.36	287.77	-56.63	328.27	3,600.93	3,909.94	3,592.51	317.43	12.318		
6,850.00	6,664.95	6,636.95	6,636.95	30.57	289.59	-54.88	328.27	3,600.93	3,892.43	3,572.95	319.49	12.183		
6,900.00	6,704.53	6,676.53	6,676.53	30.78	291.32	-54.01	328.27	3,600.93	3,871.94	3,550.49	321.45	12.045		
6,950.00	6,741.79	6,713.79	6,713.79	30.98	292.94	-53.88	328.27	3,600.93	3,848.62	3,525.30	323.32	11.904		
7,000.00	6,776.48	6,748.48	6,748.48	31.17	294.46	-54.39	328.27	3,600.93	3,822.62	3,497.55	325.07	11.759		
7,050.00	6,808.39	6,780.39	6,780.39	31.36	295.85	-55.50	328.27	3,600.93	3,794.13	3,467.42	326.70	11.613		
7,100.00	6,837.34	6,809.34	6,809.34	31.54	297.11	-57.20	328.27	3,600.93	3,763.34	3,435.13	328.21	11.466		
7,150.00	6,863.13	6,835.13	6,835.13	31.73	298.24	-59.49	328.27	3,600.93	3,730.46	3,400.89	329.58	11.319		
7,200.00	6,885.61	6,857.61	6,857.61	31.91	299.22	-62.38	328.27	3,600.93	3,695.71	3,364.91	330.80	11.172		
7,250.00	6,904.64	6,876.64	6,876.64	32.10	300.05	-65.90	328.27	3,600.93	3,659.31	3,327.43	331.87	11.026		
7,300.00	6,920.10	6,892.10	6,892.10	32.29	300.72	-70.05	328.27	3,600.93	3,621.49	3,288.70	332.80	10.882		
7,350.00	6,931.91	6,903.91	6,903.91	32.48	301.24	-74.84	328.27	3,600.93	3,582.50	3,248.95	333.56	10.740		
7,400.00	6,939.97	6,911.97	6,911.97	32.68	301.59	-80.23	328.27	3,600.93	3,542.58	3,208.42	334.16	10.601		
7,450.00	6,944.26	6,916.26	6,916.26	32.89	301.78	-86.12	328.27	3,600.93	3,501.97	3,167.37	334.60	10.466		
7,481.69	6,945.00	6,917.00	6,917.00	33.03	301.81	-90.06	328.27	3,600.93	3,475.99	3,141.20	334.79	10.383		
7,500.00	6,944.99	6,916.99	6,916.99	33.12	301.81	-90.06	328.27	3,600.93	3,460.95	3,126.07	334.88	10.335		
7,600.00	6,944.91	6,916.91	6,916.91	33.60	301.81	-90.06	328.27	3,600.93	3,379.39	3,043.98	335.40	10.076		
7,700.00	6,944.84	6,916.84	6,916.84	34.17	301.80	-90.06	328.27	3,600.93	3,298.85	2,962.88	335.97	9.819		
7,800.00	6,944.76	6,916.76	6,916.76	34.80	301.80	-90.06	328.27	3,600.93	3,219.39	2,882.82	336.58	9.565		
7,900.00	6,944.69	6,916.69	6,916.69	35.49	301.80	-90.05	328.27	3,600.93	3,141.12	2,803.89	337.23	9.314		
8,000.00	6,944.61	6,916.61	6,916.61	36.25	301.79	-90.05	328.27	3,600.93	3,064.11	2,726.17	337.93	9.067		
8,100.00	6,944.54	6,916.54	6,916.54	37.07	301.79	-90.05	328.27	3,600.93	2,988.45	2,649.77	338.68	8.824		
8,200.00	6,944.46	6,916.46	6,916.46	37.94	301.79	-90.05	328.27	3,600.93	2,914.27	2,574.79	339.48	8.584		
8,300.00	6,944.39	6,916.39	6,916.39	38.86	301.78	-90.04	328.27	3,600.93	2,841.67	2,501.33	340.34	8.350		
8,400.00	6,944.31	6,916.31	6,916.31	39.83	301.78	-90.04	328.27	3,600.93	2,770.78	2,429.53	341.24	8.120		
8,500.00	6,944.23	6,916.23	6,916.23	40.84	301.78	-90.04	328.27	3,600.93	2,701.73	2,359.52	342.21	7.895		
8,600.00	6,944.16	6,916.16	6,916.16	41.89	301.77	-90.04	328.27	3,600.93	2,634.66	2,291.44	343.22	7.676		
8,700.00	6,944.08	6,916.08	6,916.08	42.98	301.77	-90.04	328.27	3,600.93	2,569.74	2,225.45	344.30	7.464		
8,800.00	6,944.01	6,916.01	6,916.01	44.10	301.77	-90.03	328.27	3,600.93	2,507.13	2,161.71	345.42	7.258		
8,900.00	6,943.93	6,915.93	6,915.93	45.25	301.76	-90.03	328.27	3,600.93	2,447.00	2,100.41	346.59	7.060		
9,000.00	6,943.86	6,915.86	6,915.86	46.43	301.76	-90.03	328.27	3,600.93	2,389.54	2,041.73	347.81	6.870		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 251 - OH - OH-TD													Offset Site Error:	0.00 usft
Survey Program: 8300-A028Ua_INC-ONLY_PLANNED_5_DEG													Offset Well Error:	0.00 usft
Reference													Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
9,100.00	6,943.78	6,915.78	6,915.78	47.63	301.76	-90.03	328.27	3,600.93	2,334.96	1,985.89	349.08	6.689		
9,200.00	6,943.71	6,915.71	6,915.71	48.86	301.75	-90.02	328.27	3,600.93	2,283.45	1,933.08	350.37	6.517		
9,300.00	6,943.63	6,915.63	6,915.63	50.11	301.75	-90.02	328.27	3,600.93	2,235.24	1,883.54	351.69	6.356		
9,400.00	6,943.56	6,915.56	6,915.56	51.38	301.75	-90.02	328.27	3,600.93	2,190.52	1,837.49	353.03	6.205		
9,500.00	6,943.48	6,915.48	6,915.48	52.66	301.74	-90.02	328.27	3,600.93	2,149.54	1,795.16	354.37	6.066		
9,600.00	6,943.41	6,915.41	6,915.41	53.97	301.74	-90.02	328.27	3,600.93	2,112.50	1,756.79	355.71	5.939		
9,700.00	6,943.33	6,915.33	6,915.33	55.29	301.74	-90.01	328.27	3,600.93	2,079.60	1,722.58	357.02	5.825		
9,800.00	6,943.26	6,915.26	6,915.26	56.63	301.74	-90.01	328.27	3,600.93	2,051.07	1,692.77	358.30	5.725		
9,900.00	6,943.18	6,915.18	6,915.18	57.98	301.73	-90.01	328.27	3,600.93	2,027.06	1,667.55	359.52	5.638		
10,000.00	6,943.11	6,915.11	6,915.11	59.34	301.73	-90.01	328.27	3,600.93	2,007.76	1,647.10	360.67	5.567		
10,100.00	6,943.03	6,915.03	6,915.03	60.72	301.73	-90.01	328.27	3,600.93	1,993.30	1,631.57	361.73	5.510		
10,200.00	6,942.96	6,914.96	6,914.96	62.11	301.72	-90.00	328.27	3,600.93	1,983.77	1,621.08	362.69	5.470		
10,300.00	6,942.88	6,914.88	6,914.88	63.50	301.72	-90.00	328.27	3,600.93	1,979.26	1,615.71	363.55	5.444		
10,339.41	6,942.85	6,914.85	6,914.85	64.06	301.72	-90.00	328.27	3,600.93	1,978.87	1,615.01	363.85	5.439 CC, ES		
10,400.00	6,942.81	6,914.81	6,914.81	64.91	301.72	-90.00	328.27	3,600.93	1,979.79	1,615.51	364.28	5.435 SF		
10,500.00	6,942.73	6,914.73	6,914.73	66.33	301.71	-90.00	328.27	3,600.93	1,985.37	1,620.49	364.88	5.441		
10,600.00	6,942.66	6,914.66	6,914.66	67.75	301.71	-89.99	328.27	3,600.93	1,995.95	1,630.59	365.36	5.463		
10,700.00	6,942.58	6,914.58	6,914.58	69.18	301.71	-89.99	328.27	3,600.93	2,011.45	1,645.75	365.70	5.500		
10,800.00	6,942.51	6,914.51	6,914.51	70.62	301.70	-89.99	328.27	3,600.93	2,031.76	1,665.84	365.92	5.552		
10,900.00	6,942.43	6,914.43	6,914.43	72.07	301.70	-89.99	328.27	3,600.93	2,056.74	1,690.72	366.02	5.619		
11,000.00	6,942.36	6,914.36	6,914.36	73.52	301.70	-89.99	328.27	3,600.93	2,086.22	1,720.22	366.00	5.700		
11,100.00	6,942.28	6,914.28	6,914.28	74.98	301.69	-89.98	328.27	3,600.93	2,120.00	1,754.13	365.88	5.794		
11,200.00	6,942.21	6,914.21	6,914.21	76.45	301.69	-89.98	328.27	3,600.93	2,157.90	1,792.24	365.66	5.901		
11,300.00	6,942.13	6,914.13	6,914.13	77.92	301.69	-89.98	328.27	3,600.93	2,199.69	1,834.33	365.36	6.021		
11,400.00	6,942.06	6,914.06	6,914.06	79.40	301.68	-89.98	328.27	3,600.93	2,245.17	1,880.17	364.99	6.151		
11,500.00	6,941.98	6,913.98	6,913.98	80.88	301.68	-89.97	328.27	3,600.93	2,294.10	1,929.53	364.57	6.293		
11,600.00	6,941.91	6,913.91	6,913.91	82.36	301.68	-89.97	328.27	3,600.93	2,346.27	1,982.18	364.09	6.444		
11,700.00	6,941.83	6,913.83	6,913.83	83.85	301.67	-89.97	328.27	3,600.93	2,401.48	2,037.91	363.58	6.605		
11,800.00	6,941.76	6,913.76	6,913.76	85.35	301.67	-89.97	328.27	3,600.93	2,459.52	2,096.49	363.03	6.775		
11,900.00	6,941.68	6,913.68	6,913.68	86.85	301.67	-89.97	328.27	3,600.93	2,520.19	2,157.72	362.47	6.953		
12,000.00	6,941.60	6,913.60	6,913.60	88.35	301.66	-89.96	328.27	3,600.93	2,583.31	2,221.42	361.89	7.138		
12,100.00	6,941.53	6,913.53	6,913.53	89.85	301.66	-89.96	328.27	3,600.93	2,648.70	2,287.40	361.30	7.331		
12,200.00	6,941.45	6,913.45	6,913.45	91.36	301.66	-89.96	328.27	3,600.93	2,716.19	2,355.49	360.71	7.530		
12,300.00	6,941.38	6,913.38	6,913.38	92.88	301.65	-89.96	328.27	3,600.93	2,785.65	2,425.53	360.12	7.735		
12,400.00	6,941.30	6,913.30	6,913.30	94.39	301.65	-89.96	328.27	3,600.93	2,856.91	2,497.38	359.53	7.946		
12,500.00	6,941.23	6,913.23	6,913.23	95.91	301.65	-89.95	328.27	3,600.93	2,929.86	2,570.90	358.95	8.162		
12,600.00	6,941.15	6,913.15	6,913.15	97.43	301.64	-89.95	328.27	3,600.93	3,004.36	2,645.97	358.39	8.383		
12,700.00	6,941.08	6,913.08	6,913.08	98.95	301.64	-89.95	328.27	3,600.93	3,080.31	2,722.48	357.83	8.608		
12,800.00	6,941.00	6,913.00	6,913.00	100.48	301.64	-89.95	328.27	3,600.93	3,157.60	2,800.31	357.29	8.838		
12,900.00	6,940.93	6,912.93	6,912.93	102.01	301.63	-89.94	328.27	3,600.93	3,236.13	2,879.37	356.76	9.071		
13,000.00	6,940.85	6,912.85	6,912.85	103.54	301.63	-89.94	328.27	3,600.93	3,315.82	2,959.57	356.25	9.308		
13,100.00	6,940.78	6,912.78	6,912.78	105.07	301.63	-89.94	328.27	3,600.93	3,396.58	3,040.83	355.75	9.548		
13,200.00	6,940.70	6,912.70	6,912.70	106.61	301.62	-89.94	328.27	3,600.93	3,478.35	3,123.07	355.27	9.791		
13,300.00	6,940.63	6,912.63	6,912.63	108.14	301.62	-89.94	328.27	3,600.93	3,561.04	3,206.23	354.81	10.036		
13,400.00	6,940.55	6,912.55	6,912.55	109.68	301.62	-89.93	328.27	3,600.93	3,644.60	3,290.24	354.36	10.285		
13,500.00	6,940.48	6,912.48	6,912.48	111.22	301.61	-89.93	328.27	3,600.93	3,728.97	3,375.04	353.93	10.536		
13,600.00	6,940.40	6,912.40	6,912.40	112.77	301.61	-89.93	328.27	3,600.93	3,814.10	3,460.58	353.52	10.789		
13,700.00	6,940.33	6,912.33	6,912.33	114.31	301.61	-89.93	328.27	3,600.93	3,899.93	3,546.81	353.12	11.044		
13,800.00	6,940.25	6,912.25	6,912.25	115.86	301.60	-89.92	328.27	3,600.93	3,986.43	3,633.69	352.74	11.301		
13,900.00	6,940.18	6,912.18	6,912.18	117.41	301.60	-89.92	328.27	3,600.93	4,073.54	3,721.17	352.37	11.560		
14,000.00	6,940.10	6,912.10	6,912.10	118.95	301.60	-89.92	328.27	3,600.93	4,161.23	3,809.22	352.01	11.821		
14,100.00	6,940.03	6,912.03	6,912.03	120.51	301.59	-89.92	328.27	3,600.93	4,249.47	3,897.79	351.67	12.084		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 251 - OH - OH-TD											Offset Site Error:	0.00 usft
Survey Program: 8300-A028Ua_INC-ONLY_PLANNED_5_DEG											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Semi Major Axis Offset	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
				(usft)	(usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
14,200.00	6,939.95	6,911.95	6,911.95	122.06	301.59	-89.92	328.27	3,600.93	4,338.21	3,986.86	351.35	12.347
14,300.00	6,939.88	6,911.88	6,911.88	123.61	301.59	-89.91	328.27	3,600.93	4,427.44	4,076.40	351.04	12.613
14,400.00	6,939.80	6,911.80	6,911.80	125.17	301.58	-89.91	328.27	3,600.93	4,517.11	4,166.38	350.74	12.879
14,500.00	6,939.73	6,911.73	6,911.73	126.72	301.58	-89.91	328.27	3,600.93	4,607.21	4,256.77	350.45	13.147
14,600.00	6,939.65	6,911.65	6,911.65	128.28	301.58	-89.91	328.27	3,600.93	4,697.72	4,347.54	350.17	13.415
14,700.00	6,939.58	6,911.58	6,911.58	129.84	301.57	-89.91	328.27	3,600.93	4,788.60	4,438.69	349.91	13.685
14,800.00	6,939.50	6,911.50	6,911.50	131.40	301.57	-89.90	328.27	3,600.93	4,879.83	4,530.18	349.66	13.956
14,900.00	6,939.43	6,911.43	6,911.43	132.96	301.57	-89.90	328.27	3,600.93	4,971.41	4,621.99	349.41	14.228
15,000.00	6,939.35	6,911.35	6,911.35	134.52	301.56	-89.90	328.27	3,600.93	5,063.30	4,714.12	349.18	14.500
15,100.00	6,939.28	6,911.28	6,911.28	136.08	301.56	-89.90	328.27	3,600.93	5,155.50	4,806.54	348.96	14.774
15,200.00	6,939.20	6,911.20	6,911.20	137.64	301.56	-89.89	328.27	3,600.93	5,247.98	4,899.23	348.75	15.048
15,300.00	6,939.13	6,911.13	6,911.13	139.21	301.55	-89.89	328.27	3,600.93	5,340.73	4,992.18	348.54	15.323
15,400.00	6,939.05	6,911.05	6,911.05	140.77	301.55	-89.89	328.27	3,600.93	5,433.74	5,085.39	348.35	15.599
15,500.00	6,938.98	6,910.97	6,910.97	142.34	301.55	-89.89	328.27	3,600.93	5,526.99	5,178.83	348.16	15.875
15,600.00	6,938.90	6,910.90	6,910.90	143.91	301.54	-89.89	328.27	3,600.93	5,620.47	5,272.49	347.99	16.151
15,700.00	6,938.82	6,910.82	6,910.82	145.47	301.54	-89.88	328.27	3,600.93	5,714.18	5,366.36	347.82	16.429
15,800.00	6,938.75	6,910.75	6,910.75	147.04	301.54	-89.88	328.27	3,600.93	5,808.09	5,460.44	347.65	16.707
15,900.00	6,938.67	6,910.67	6,910.67	148.61	301.54	-89.88	328.27	3,600.93	5,902.21	5,554.71	347.50	16.985
16,000.00	6,938.60	6,910.60	6,910.60	150.18	301.53	-89.88	328.27	3,600.93	5,996.52	5,649.17	347.35	17.264
16,100.00	6,938.52	6,910.52	6,910.52	151.75	301.53	-89.87	328.27	3,600.93	6,091.00	5,743.79	347.21	17.543
16,200.00	6,938.45	6,910.45	6,910.45	153.32	301.53	-89.87	328.27	3,600.93	6,185.66	5,838.59	347.07	17.822
16,300.00	6,938.37	6,910.37	6,910.37	154.90	301.52	-89.87	328.27	3,600.93	6,280.49	5,933.54	346.95	18.102
16,400.00	6,938.30	6,910.30	6,910.30	156.47	301.52	-89.87	328.27	3,600.93	6,375.47	6,028.65	346.82	18.383
16,500.00	6,938.22	6,910.22	6,910.22	158.04	301.52	-89.87	328.27	3,600.93	6,470.61	6,123.90	346.71	18.663
16,600.00	6,938.15	6,910.15	6,910.15	159.62	301.51	-89.86	328.27	3,600.93	6,565.89	6,219.29	346.60	18.944
16,700.00	6,938.07	6,910.07	6,910.07	161.19	301.51	-89.86	328.27	3,600.93	6,661.31	6,314.82	346.49	19.225
16,800.00	6,938.00	6,910.00	6,910.00	162.77	301.51	-89.86	328.27	3,600.93	6,756.86	6,410.47	346.39	19.507
16,900.00	6,937.92	6,909.92	6,909.92	164.34	301.50	-89.86	328.27	3,600.93	6,852.54	6,506.24	346.29	19.788
17,000.00	6,937.85	6,909.85	6,909.85	165.92	301.50	-89.86	328.27	3,600.93	6,948.34	6,602.13	346.20	20.070
17,100.00	6,937.77	6,909.77	6,909.77	167.50	301.50	-89.85	328.27	3,600.93	7,044.25	6,698.13	346.12	20.352
17,200.00	6,937.70	6,909.70	6,909.70	169.07	301.49	-89.85	328.27	3,600.93	7,140.28	6,794.24	346.04	20.634
17,300.00	6,937.62	6,909.62	6,909.62	170.65	301.49	-89.85	328.27	3,600.93	7,236.42	6,890.46	345.96	20.917
17,400.00	6,937.55	6,909.55	6,909.55	172.23	301.49	-89.85	328.27	3,600.93	7,332.66	6,986.77	345.89	21.199
17,500.00	6,937.47	6,909.47	6,909.47	173.81	301.48	-89.84	328.27	3,600.93	7,428.99	7,083.17	345.82	21.482
17,600.00	6,937.40	6,909.40	6,909.40	175.39	301.48	-89.84	328.27	3,600.93	7,525.43	7,179.67	345.76	21.765
17,700.00	6,937.32	6,909.32	6,909.32	176.97	301.48	-89.84	328.27	3,600.93	7,621.95	7,276.26	345.70	22.048
17,800.00	6,937.25	6,909.25	6,909.25	178.55	301.47	-89.84	328.27	3,600.93	7,718.57	7,372.93	345.64	22.331
17,900.00	6,937.17	6,909.17	6,909.17	180.13	301.47	-89.84	328.27	3,600.93	7,815.27	7,469.68	345.59	22.615
18,000.00	6,937.10	6,909.10	6,909.10	181.71	301.47	-89.83	328.27	3,600.93	7,912.05	7,566.51	345.54	22.898
18,100.00	6,937.02	6,909.02	6,909.02	183.29	301.46	-89.83	328.27	3,600.93	8,008.91	7,663.42	345.49	23.181
18,200.00	6,936.95	6,908.95	6,908.95	184.87	301.46	-89.83	328.27	3,600.93	8,105.85	7,760.40	345.45	23.465
18,300.00	6,936.87	6,908.87	6,908.87	186.46	301.46	-89.83	328.27	3,600.93	8,202.86	7,857.45	345.41	23.748
18,400.00	6,936.80	6,908.80	6,908.80	188.04	301.45	-89.82	328.27	3,600.93	8,299.94	7,954.57	345.37	24.032
18,500.00	6,936.72	6,908.72	6,908.72	189.62	301.45	-89.82	328.27	3,600.93	8,397.09	8,051.75	345.34	24.315
18,600.00	6,936.65	6,908.65	6,908.65	191.21	301.45	-89.82	328.27	3,600.93	8,494.31	8,149.00	345.31	24.599
18,700.00	6,936.57	6,908.57	6,908.57	192.79	301.44	-89.82	328.27	3,600.93	8,591.59	8,246.30	345.28	24.883
18,800.00	6,936.50	6,908.50	6,908.50	194.37	301.44	-89.82	328.27	3,600.93	8,688.93	8,343.67	345.26	25.166
18,900.00	6,936.42	6,908.42	6,908.42	195.96	301.44	-89.81	328.27	3,600.93	8,786.33	8,441.09	345.24	25.450
19,000.00	6,936.35	6,908.35	6,908.35	197.54	301.43	-89.81	328.27	3,600.93	8,883.79	8,538.57	345.22	25.734
19,100.00	6,936.27	6,908.27	6,908.27	199.13	301.43	-89.81	328.27	3,600.93	8,981.31	8,636.10	345.20	26.018
19,200.00	6,936.19	6,908.19	6,908.19	200.71	301.43	-89.81	328.27	3,600.93	9,078.87	8,733.69	345.19	26.301
19,300.00	6,936.12	6,908.12	6,908.12	202.30	301.42	-89.81	328.27	3,600.93	9,176.50	8,831.32	345.18	26.585

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 251 - OH - OH-TD													Offset Site Error:	0.00 usft
Survey Program: 8300-A028Ua_INC-ONLY_PLANNED_5_DEG													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,400.00	6,936.04	6,908.04	6,908.04	203.88	301.42	-89.80	328.27	3,600.93	9,274.17	8,929.00	345.17	26.869		
19,500.00	6,935.97	6,907.97	6,907.97	205.47	301.42	-89.80	328.27	3,600.93	9,371.89	9,026.73	345.16	27.152		
19,600.00	6,935.89	6,907.89	6,907.89	207.06	301.41	-89.80	328.27	3,600.93	9,469.66	9,124.50	345.15	27.436		
19,700.00	6,935.82	6,907.82	6,907.82	208.64	301.41	-89.80	328.27	3,600.93	9,567.47	9,222.32	345.15	27.720		
19,800.00	6,935.74	6,907.74	6,907.74	210.23	301.41	-89.79	328.27	3,600.93	9,665.33	9,320.18	345.15	28.003		
19,900.00	6,935.67	6,907.67	6,907.67	211.82	301.40	-89.79	328.27	3,600.93	9,763.24	9,418.08	345.15	28.287		
20,000.00	6,935.59	6,907.59	6,907.59	213.41	301.40	-89.79	328.27	3,600.93	9,861.18	9,516.02	345.16	28.570		
20,100.00	6,935.52	6,907.52	6,907.52	214.99	301.40	-89.79	328.27	3,600.93	9,959.17	9,614.00	345.16	28.854		
20,200.00	6,935.44	6,907.44	6,907.44	216.58	301.39	-89.79	328.27	3,600.93	10,057.19	9,712.02	345.17	29.137		
20,300.00	6,935.37	6,907.37	6,907.37	218.17	301.39	-89.78	328.27	3,600.93	10,155.26	9,810.08	345.18	29.420		
20,400.00	6,935.29	6,907.29	6,907.29	219.76	301.39	-89.78	328.27	3,600.93	10,253.36	9,908.17	345.19	29.703		
20,500.00	6,935.22	6,907.22	6,907.22	221.35	301.38	-89.78	328.27	3,600.93	10,351.50	10,006.29	345.21	29.986		
20,600.00	6,935.14	6,907.14	6,907.14	222.94	301.38	-89.78	328.27	3,600.93	10,449.67	10,104.45	345.22	30.270		
20,700.00	6,935.07	6,907.07	6,907.07	224.53	301.38	-89.77	328.27	3,600.93	10,547.88	10,202.64	345.24	30.553		
20,789.75	6,935.00	6,907.00	6,907.00	225.95	301.37	-89.77	328.27	3,600.93	10,636.05	10,290.79	345.25	30.806		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 374 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 166-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	312.86	312.86	0.00	4.24	82.00	1,078.37	7,671.23	7,746.66				
100.00	100.00	411.01	411.00	0.25	6.52	82.00	1,078.33	7,671.23	7,746.65	7,739.88	6.77	1,144.326	
200.00	200.00	514.84	514.82	0.61	9.02	81.99	1,078.81	7,671.23	7,746.72	7,737.09	9.63	804.253	
300.00	300.00	611.10	611.00	0.97	11.48	82.00	1,078.33	7,671.23	7,746.65	7,734.21	12.44	622.557	
400.00	400.00	711.10	711.00	1.33	14.61	82.00	1,078.33	7,671.23	7,746.65	7,730.72	15.94	486.120	
500.00	500.00	814.49	814.35	1.68	17.85	81.99	1,079.92	7,671.23	7,746.87	7,727.34	19.53	396.581	
514.98	514.98	831.15	831.01	1.74	18.37	-97.14	1,079.85	7,671.23	7,746.87	7,726.76	20.11	385.276	
600.00	599.98	925.72	925.55	2.03	21.34	-97.14	1,079.00	7,671.23	7,746.97	7,723.61	23.36	331.620	
700.00	699.84	1,011.23	1,010.84	2.36	24.25	-97.16	1,078.33	7,671.23	7,747.52	7,720.91	26.61	291.154	
800.00	799.45	1,110.85	1,110.45	2.71	27.93	-97.20	1,078.33	7,671.23	7,748.61	7,717.98	30.63	252.955	
900.00	898.70	1,216.17	1,215.71	3.06	31.82	-97.28	1,080.36	7,671.23	7,750.45	7,715.57	34.88	222.215	
1,000.00	997.47	1,329.14	1,328.64	3.43	35.99	-97.37	1,079.04	7,671.23	7,752.30	7,712.88	39.42	196.653	
1,100.00	1,095.62	1,407.48	1,406.62	3.82	39.01	-97.42	1,078.33	7,671.23	7,754.67	7,711.84	42.83	181.071	
1,180.06	1,173.69	1,485.54	1,484.69	4.14	42.12	-97.50	1,078.33	7,671.23	7,757.03	7,710.77	46.26	167.672	
1,200.00	1,193.07	1,510.98	1,510.08	4.22	43.14	-97.56	1,079.86	7,671.23	7,757.89	7,710.53	47.36	163.808	
1,300.00	1,290.27	1,641.91	1,640.91	4.65	48.36	-97.76	1,077.35	7,671.23	7,760.82	7,707.82	53.00	146.431	
1,400.00	1,387.46	1,699.65	1,698.46	5.08	50.68	-97.87	1,078.33	7,671.23	7,764.14	7,708.39	55.75	139.258	
1,500.00	1,484.66	1,810.10	1,808.84	5.52	55.11	-98.07	1,079.89	7,671.23	7,767.75	7,707.13	60.62	128.140	
1,600.00	1,581.85	1,937.05	1,935.68	5.97	60.19	-98.27	1,077.06	7,671.23	7,770.82	7,704.67	66.15	117.471	
1,700.00	1,679.05	1,991.63	1,990.05	6.42	62.64	-98.37	1,078.33	7,671.23	7,774.39	7,705.34	69.05	112.592	
1,800.00	1,776.25	2,114.01	2,112.34	6.87	67.88	-98.59	1,079.10	7,671.23	7,778.11	7,703.38	74.74	104.071	
1,900.00	1,873.44	2,186.43	2,184.44	7.33	71.14	-98.70	1,078.33	7,671.23	7,781.57	7,703.12	78.45	99.194	
2,000.00	1,970.64	2,288.20	2,286.15	7.78	75.91	-98.89	1,080.24	7,671.23	7,785.60	7,701.92	83.67	93.047	
2,100.00	2,067.83	2,434.42	2,432.22	8.24	82.76	-99.12	1,077.17	7,671.23	7,789.01	7,698.02	90.98	85.610	
2,200.00	2,165.03	2,478.52	2,476.03	8.71	84.63	-99.20	1,078.33	7,671.23	7,792.86	7,699.54	93.31	83.512	
2,300.00	2,262.22	2,608.69	2,606.07	9.17	90.41	-99.43	1,079.34	7,671.23	7,797.01	7,697.46	99.55	78.324	
2,400.00	2,359.42	2,673.34	2,670.42	9.63	93.09	-99.54	1,078.33	7,671.23	7,800.73	7,698.04	102.69	75.964	
2,500.00	2,456.61	2,775.63	2,772.67	10.10	96.95	-99.72	1,079.82	7,671.23	7,805.05	7,698.04	107.01	72.935	
2,600.00	2,553.81	2,923.06	2,919.98	10.57	102.51	-99.95	1,076.85	7,671.23	7,808.79	7,695.75	113.04	69.080	
2,700.00	2,651.01	2,965.19	2,962.01	11.03	104.46	-100.03	1,078.33	7,671.23	7,813.05	7,697.60	115.45	67.674	
2,800.00	2,748.20	3,062.39	3,059.20	11.50	108.52	-100.20	1,078.33	7,671.23	7,817.30	7,697.33	119.97	65.158	
2,900.00	2,845.40	3,173.48	3,170.22	11.97	113.16	-100.40	1,080.26	7,671.23	7,822.01	7,696.93	125.08	62.537	
3,000.00	2,942.59	3,290.11	3,286.80	12.44	118.03	-100.58	1,078.53	7,671.23	7,826.11	7,695.69	130.41	60.011	
3,100.00	3,039.79	3,354.61	3,350.79	12.91	121.02	-100.69	1,078.33	7,671.23	7,830.44	7,696.58	133.86	58.495	
3,200.00	3,136.98	3,451.81	3,447.98	13.38	125.60	-100.86	1,078.33	7,671.23	7,834.96	7,696.05	138.91	56.402	
3,300.00	3,234.18	3,549.00	3,545.18	13.85	130.19	-101.02	1,078.33	7,671.23	7,839.55	7,695.59	143.96	54.456	
3,400.00	3,331.38	3,574.00	3,569.63	14.32	131.36	-101.06	1,078.33	7,671.23	7,844.54	7,698.94	145.60	53.879	
3,500.00	3,428.57	3,574.00	3,569.63	14.79	131.36	-101.06	1,078.33	7,671.23	7,850.76	7,704.73	146.03	53.762	
3,600.00	3,525.77	3,574.00	3,569.63	15.26	131.36	-101.06	1,078.33	7,671.23	7,858.25	7,711.81	146.44	53.662	
3,700.00	3,622.96	3,574.00	3,569.63	15.73	131.36	-101.06	1,078.33	7,671.23	7,867.01	7,720.18	146.83	53.580	
3,800.00	3,720.16	3,574.00	3,569.63	16.20	131.36	-101.06	1,078.33	7,671.23	7,877.02	7,729.83	147.19	53.515	
3,900.00	3,817.35	3,574.00	3,569.63	16.68	131.36	-101.06	1,078.33	7,671.23	7,888.30	7,740.76	147.54	53.466	
4,000.00	3,914.55	3,574.00	3,569.63	17.15	131.36	-101.06	1,078.33	7,671.23	7,900.82	7,752.96	147.86	53.435	
4,100.00	4,011.74	3,574.00	3,569.63	17.62	131.36	-101.06	1,078.33	7,671.23	7,914.58	7,766.42	148.16	53.421	
4,200.00	4,108.94	3,574.00	3,569.63	18.09	131.36	-101.06	1,078.33	7,671.23	7,929.58	7,781.15	148.43	53.422	
4,300.00	4,206.14	3,574.00	3,569.63	18.57	131.36	-101.06	1,078.33	7,671.23	7,945.81	7,797.13	148.69	53.440	
4,400.00	4,303.33	3,574.00	3,569.63	19.04	131.36	-101.06	1,078.33	7,671.23	7,963.27	7,814.35	148.92	53.474	
4,500.00	4,400.53	3,574.00	3,569.63	19.51	131.36	-101.06	1,078.33	7,671.23	7,981.94	7,832.81	149.13	53.524	
4,600.00	4,497.72	3,574.00	3,569.63	19.99	131.36	-101.06	1,078.33	7,671.23	8,001.81	7,852.49	149.32	53.590	
4,700.00	4,594.92	3,574.00	3,569.63	20.46	131.36	-101.06	1,078.33	7,671.23	8,022.88	7,873.40	149.48	53.671	
4,800.00	4,692.11	3,574.00	3,569.63	20.93	131.36	-101.06	1,078.33	7,671.23	8,045.14	7,895.51	149.63	53.767	
4,900.00	4,789.31	3,574.00	3,569.63	21.41	131.36	-101.06	1,078.33	7,671.23	8,068.58	7,918.83	149.75	53.879	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 374 - OH - OH-INC												Offset Site Error:	0.00 usft
Survey Program: 166-A027Ua_INC-ONLY												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,000.00	4,886.51	3,574.00	3,569.63	21.88	131.36	-101.06	1,078.33	7,671.23	8,093.19	7,943.33	149.86	54.005	
5,100.00	4,983.70	3,574.00	3,569.63	22.35	131.36	-101.06	1,078.33	7,671.23	8,118.95	7,969.01	149.94	54.146	
5,200.00	5,080.90	3,574.00	3,569.63	22.83	131.36	-101.06	1,078.33	7,671.23	8,145.86	7,995.85	150.01	54.302	
5,300.00	5,178.09	3,574.00	3,569.63	23.30	131.36	-101.06	1,078.33	7,671.23	8,173.91	8,023.85	150.06	54.472	
5,400.00	5,275.29	3,574.00	3,569.63	23.77	131.36	-101.06	1,078.33	7,671.23	8,203.07	8,052.99	150.08	54.657	
5,500.00	5,372.48	3,574.00	3,569.63	24.25	131.36	-101.06	1,078.33	7,671.23	8,233.35	8,083.26	150.09	54.855	
5,600.00	5,469.68	3,574.00	3,569.63	24.72	131.36	-101.06	1,078.33	7,671.23	8,264.73	8,114.65	150.09	55.067	
5,700.00	5,566.87	3,574.00	3,569.63	25.20	131.36	-101.06	1,078.33	7,671.23	8,297.20	8,147.14	150.06	55.293	
5,800.00	5,664.07	3,574.00	3,569.63	25.67	131.36	-101.06	1,078.33	7,671.23	8,330.73	8,180.72	150.02	55.532	
5,900.00	5,761.27	3,574.00	3,569.63	26.14	131.36	-101.06	1,078.33	7,671.23	8,365.33	8,215.38	149.96	55.785	
6,000.00	5,858.46	3,574.00	3,569.63	26.62	131.36	-101.06	1,078.33	7,671.23	8,400.98	8,251.10	149.88	56.050	
6,100.00	5,955.66	3,574.00	3,569.63	27.09	131.36	-101.06	1,078.33	7,671.23	8,437.66	8,287.87	149.79	56.329	
6,200.00	6,052.85	3,574.00	3,569.63	27.57	131.36	-101.06	1,078.33	7,671.23	8,475.37	8,325.68	149.69	56.620	
6,300.00	6,150.05	3,574.00	3,569.63	28.04	131.36	-101.06	1,078.33	7,671.23	8,514.08	8,364.51	149.57	56.924	
6,400.00	6,247.24	3,574.00	3,569.63	28.52	131.36	-101.06	1,078.33	7,671.23	8,553.78	8,404.35	149.44	57.240	
6,490.87	6,335.57	3,574.00	3,569.63	28.95	131.36	-101.06	1,078.33	7,671.23	8,590.72	8,441.41	149.30	57.538	
6,500.00	6,344.44	3,574.00	3,569.63	28.99	131.36	-97.60	1,078.33	7,671.23	8,594.41	8,445.12	149.29	57.569	
6,550.00	6,392.91	3,574.00	3,569.63	29.23	131.36	-80.06	1,078.33	7,671.23	8,612.73	8,463.52	149.21	57.722	
6,600.00	6,440.98	3,574.00	3,569.63	29.46	131.36	-66.25	1,078.33	7,671.23	8,627.71	8,478.59	149.13	57.856	
6,650.00	6,488.34	3,574.00	3,569.63	29.70	131.36	-56.19	1,078.33	7,671.23	8,639.29	8,490.25	149.04	57.967	
6,700.00	6,534.69	3,574.00	3,569.63	29.92	131.36	-48.99	1,078.33	7,671.23	8,647.40	8,498.46	148.95	58.057	
6,750.00	6,579.76	3,574.00	3,569.63	30.15	131.36	-43.77	1,078.33	7,671.23	8,652.02	8,503.16	148.85	58.125	
6,800.00	6,623.27	3,574.00	3,569.63	30.36	131.36	-39.94	1,078.33	7,671.23	8,653.10	8,504.35	148.75	58.170	
6,850.00	6,664.95	3,574.00	3,569.63	30.57	131.36	-37.10	1,078.33	7,671.23	8,650.65	8,502.00	148.65	58.193	
6,900.00	6,704.53	3,574.00	3,569.63	30.78	131.36	-34.97	1,078.33	7,671.23	8,644.69	8,496.13	148.55	58.192	
6,950.00	6,741.79	3,574.00	3,569.63	30.98	131.36	-33.40	1,078.33	7,671.23	8,635.23	8,486.77	148.45	58.167	
7,000.00	6,776.48	3,574.00	3,569.63	31.17	131.36	-32.27	1,078.33	7,671.23	8,622.33	8,473.97	148.36	58.119	
7,050.00	6,808.39	3,574.00	3,569.63	31.36	131.36	-31.50	1,078.33	7,671.23	8,606.05	8,457.79	148.26	58.047	
7,100.00	6,837.34	3,574.00	3,569.63	31.54	131.36	-31.06	1,078.33	7,671.23	8,586.47	8,438.31	148.17	57.951	
7,150.00	6,863.13	3,574.00	3,569.63	31.73	131.36	-30.92	1,078.33	7,671.23	8,563.70	8,415.62	148.08	57.831	
7,200.00	6,885.61	3,574.00	3,569.63	31.91	131.36	-31.06	1,078.33	7,671.23	8,537.84	8,389.84	148.00	57.688	
7,250.00	6,904.64	3,574.00	3,569.63	32.10	131.36	-31.49	1,078.33	7,671.23	8,509.03	8,361.10	147.93	57.521	
7,300.00	6,920.10	3,574.00	3,569.63	32.29	131.36	-32.24	1,078.33	7,671.23	8,477.41	8,329.55	147.86	57.332	
7,350.00	6,931.91	3,574.00	3,569.63	32.48	131.36	-33.34	1,078.33	7,671.23	8,443.16	8,295.35	147.81	57.121	
7,400.00	6,939.97	3,574.00	3,569.63	32.68	131.36	-34.86	1,078.33	7,671.23	8,406.45	8,258.68	147.77	56.888	
7,450.00	6,944.26	3,574.00	3,569.63	32.89	131.36	-36.89	1,078.33	7,671.23	8,367.48	8,219.74	147.74	56.635	
7,481.69	6,945.00	3,574.00	3,569.63	33.03	131.36	-38.50	1,078.33	7,671.23	8,341.70	8,193.97	147.73	56.464	
7,500.00	6,944.99	3,574.00	3,569.63	33.12	131.36	-38.50	1,078.33	7,671.23	8,326.59	8,178.86	147.73	56.364	
7,600.00	6,944.91	3,574.00	3,569.63	33.60	131.36	-38.50	1,078.33	7,671.23	8,244.27	8,096.57	147.70	55.817	
7,700.00	6,944.84	3,574.00	3,569.63	34.17	131.36	-38.50	1,078.33	7,671.23	8,162.34	8,014.66	147.68	55.270	
7,800.00	6,944.76	3,574.00	3,569.63	34.80	131.36	-38.50	1,078.33	7,671.23	8,080.82	7,933.15	147.67	54.723	
7,900.00	6,944.69	3,574.00	3,569.63	35.49	131.36	-38.50	1,078.33	7,671.23	7,999.72	7,852.06	147.67	54.174	
8,000.00	6,944.61	3,574.00	3,569.63	36.25	131.36	-38.50	1,078.33	7,671.23	7,919.06	7,771.38	147.67	53.626	
8,100.00	6,944.54	3,574.00	3,569.63	37.07	131.36	-38.50	1,078.33	7,671.23	7,838.83	7,691.15	147.69	53.077	
8,200.00	6,944.46	3,574.00	3,569.63	37.94	131.36	-38.50	1,078.33	7,671.23	7,759.07	7,611.36	147.71	52.528	
8,300.00	6,944.39	3,574.00	3,569.63	38.86	131.36	-38.50	1,078.33	7,671.23	7,679.78	7,532.04	147.75	51.979	
8,400.00	6,944.31	3,574.00	3,569.63	39.83	131.36	-38.50	1,078.33	7,671.23	7,600.98	7,453.19	147.79	51.431	
8,500.00	6,944.23	3,574.00	3,569.63	40.84	131.36	-38.50	1,078.33	7,671.23	7,522.69	7,374.84	147.84	50.882	
8,600.00	6,944.16	3,574.00	3,569.63	41.89	131.36	-38.50	1,078.33	7,671.23	7,444.91	7,297.00	147.91	50.335	
8,700.00	6,944.08	3,574.00	3,569.63	42.98	131.36	-38.50	1,078.33	7,671.23	7,367.67	7,219.69	147.98	49.788	
8,800.00	6,944.01	3,574.00	3,569.63	44.10	131.36	-38.50	1,078.33	7,671.23	7,290.98	7,142.92	148.06	49.242	
8,900.00	6,943.93	3,574.00	3,569.63	45.25	131.36	-38.50	1,078.33	7,671.23	7,214.87	7,066.71	148.16	48.698	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 374 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program:		166-A027Ua_INC-ONLY						Rule Assigned:		Offset Well Error:		0.00 usft		
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance				Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
9,000.00	6,943.86	3,574.00	3,569.63	46.43	131.36	-38.50	1,078.33	7,671.23	7,139.34	6,991.08	148.26	48.155		
9,100.00	6,943.78	3,574.00	3,569.63	47.63	131.36	-38.50	1,078.33	7,671.23	7,064.42	6,916.05	148.37	47.613		
9,200.00	6,943.71	3,574.00	3,569.63	48.86	131.36	-38.50	1,078.33	7,671.23	6,990.13	6,841.64	148.49	47.074		
9,300.00	6,943.63	3,574.00	3,569.63	50.11	131.36	-38.50	1,078.33	7,671.23	6,916.49	6,767.86	148.62	46.537		
9,400.00	6,943.56	3,574.00	3,569.63	51.38	131.36	-38.50	1,078.33	7,671.23	6,843.51	6,694.75	148.77	46.002		
9,500.00	6,943.48	3,574.00	3,569.63	52.66	131.36	-38.50	1,078.33	7,671.23	6,771.23	6,622.31	148.92	45.470		
9,600.00	6,943.41	3,574.00	3,569.63	53.97	131.36	-38.50	1,078.33	7,671.23	6,699.66	6,550.58	149.08	44.941		
9,700.00	6,943.33	3,574.00	3,569.63	55.29	131.36	-38.50	1,078.33	7,671.23	6,628.82	6,479.58	149.25	44.415		
9,800.00	6,943.26	3,574.00	3,569.63	56.63	131.36	-38.50	1,078.33	7,671.23	6,558.75	6,409.32	149.43	43.893		
9,900.00	6,943.18	3,574.00	3,569.63	57.98	131.36	-38.50	1,078.33	7,671.23	6,489.46	6,339.84	149.61	43.375		
10,000.00	6,943.11	3,574.00	3,569.63	59.34	131.36	-38.50	1,078.33	7,671.23	6,420.98	6,271.17	149.81	42.860		
10,100.00	6,943.03	3,574.00	3,569.63	60.72	131.36	-38.50	1,078.33	7,671.23	6,353.33	6,203.31	150.02	42.350		
10,200.00	6,942.96	3,574.00	3,569.63	62.11	131.36	-38.50	1,078.33	7,671.23	6,286.55	6,136.32	150.23	41.845		
10,300.00	6,942.88	3,574.00	3,569.63	63.50	131.36	-38.50	1,078.33	7,671.23	6,220.66	6,070.20	150.46	41.345		
10,400.00	6,942.81	3,574.00	3,569.63	64.91	131.36	-38.50	1,078.33	7,671.23	6,155.68	6,004.99	150.69	40.850		
10,500.00	6,942.73	3,574.00	3,569.63	66.33	131.36	-38.50	1,078.33	7,671.23	6,091.66	5,940.73	150.93	40.360		
10,600.00	6,942.66	3,574.00	3,569.63	67.75	131.36	-38.50	1,078.33	7,671.23	6,028.61	5,877.43	151.18	39.876		
10,700.00	6,942.58	3,574.00	3,569.63	69.18	131.36	-38.50	1,078.33	7,671.23	5,966.58	5,815.14	151.44	39.399		
10,800.00	6,942.51	3,574.00	3,569.63	70.62	131.36	-38.50	1,078.33	7,671.23	5,905.59	5,753.88	151.71	38.927		
10,900.00	6,942.43	3,574.00	3,569.63	72.07	131.36	-38.50	1,078.33	7,671.23	5,845.67	5,693.68	151.98	38.463		
11,000.00	6,942.36	3,574.00	3,569.63	73.52	131.36	-38.50	1,078.33	7,671.23	5,786.86	5,634.59	152.27	38.005		
11,100.00	6,942.28	3,574.00	3,569.63	74.98	131.36	-38.50	1,078.33	7,671.23	5,729.19	5,576.63	152.56	37.554		
11,200.00	6,942.21	3,574.00	3,569.63	76.45	131.36	-38.50	1,078.33	7,671.23	5,672.69	5,519.84	152.86	37.111		
11,300.00	6,942.13	3,574.00	3,569.63	77.92	131.36	-38.50	1,078.33	7,671.23	5,617.41	5,464.25	153.16	36.676		
11,400.00	6,942.06	3,574.00	3,569.63	79.40	131.36	-38.50	1,078.33	7,671.23	5,563.38	5,409.90	153.48	36.248		
11,500.00	6,941.98	3,574.00	3,569.63	80.88	131.36	-38.50	1,078.33	7,671.23	5,510.63	5,356.83	153.80	35.829		
11,600.00	6,941.91	3,574.00	3,569.63	82.36	131.36	-38.50	1,078.33	7,671.23	5,459.21	5,305.07	154.14	35.418		
11,700.00	6,941.83	3,574.00	3,569.63	83.85	131.36	-38.50	1,078.33	7,671.23	5,409.14	5,254.66	154.48	35.015		
11,800.00	6,941.76	3,574.00	3,569.63	85.35	131.36	-38.50	1,078.33	7,671.23	5,360.48	5,205.64	154.83	34.621		
11,900.00	6,941.68	3,574.00	3,569.63	86.85	131.36	-38.50	1,078.33	7,671.23	5,313.25	5,158.05	155.19	34.237		
12,000.00	6,941.60	3,574.00	3,569.63	88.35	131.36	-38.50	1,078.33	7,671.23	5,267.49	5,111.93	155.56	33.861		
12,100.00	6,941.53	3,574.00	3,569.63	89.85	131.36	-38.50	1,078.33	7,671.23	5,223.25	5,067.30	155.94	33.494		
12,200.00	6,941.45	3,574.00	3,569.63	91.36	131.36	-38.50	1,078.33	7,671.23	5,180.56	5,024.22	156.34	33.137		
12,300.00	6,941.38	3,574.00	3,569.63	92.88	131.36	-38.50	1,078.33	7,671.23	5,139.46	4,982.72	156.74	32.789		
12,400.00	6,941.30	3,574.00	3,569.63	94.39	131.36	-38.50	1,078.33	7,671.23	5,100.00	4,942.84	157.16	32.451		
12,500.00	6,941.23	3,574.00	3,569.63	95.91	131.36	-38.50	1,078.33	7,671.23	5,062.20	4,904.61	157.59	32.123		
12,600.00	6,941.15	3,574.00	3,569.63	97.43	131.36	-38.50	1,078.33	7,671.23	5,026.10	4,868.07	158.04	31.804		
12,700.00	6,941.08	3,574.00	3,569.63	98.95	131.36	-38.50	1,078.33	7,671.23	4,991.75	4,833.26	158.50	31.495		
12,800.00	6,941.00	3,574.00	3,569.63	100.48	131.36	-38.50	1,078.33	7,671.23	4,959.18	4,800.21	158.97	31.195		
12,900.00	6,940.93	3,574.00	3,569.63	102.01	131.36	-38.50	1,078.33	7,671.23	4,928.42	4,768.95	159.47	30.906		
13,000.00	6,940.85	3,574.00	3,569.63	103.54	131.36	-38.50	1,078.33	7,671.23	4,899.51	4,739.53	159.98	30.626		
13,100.00	6,940.78	3,574.00	3,569.63	105.07	131.36	-38.50	1,078.33	7,671.23	4,872.48	4,711.97	160.51	30.356		
13,200.00	6,940.70	3,574.00	3,569.63	106.61	131.36	-38.50	1,078.33	7,671.23	4,847.37	4,686.30	161.07	30.096		
13,300.00	6,940.63	3,574.00	3,569.63	108.14	131.36	-38.50	1,078.33	7,671.23	4,824.19	4,662.55	161.64	29.845		
13,400.00	6,940.55	3,574.00	3,569.63	109.68	131.36	-38.50	1,078.33	7,671.23	4,802.99	4,640.75	162.24	29.604		
13,500.00	6,940.48	3,574.00	3,569.63	111.22	131.36	-38.50	1,078.33	7,671.23	4,783.78	4,620.92	162.86	29.373		
13,600.00	6,940.40	3,574.00	3,569.63	112.77	131.36	-38.50	1,078.33	7,671.23	4,766.60	4,603.09	163.51	29.152		
13,700.00	6,940.33	3,574.00	3,569.63	114.31	131.36	-38.50	1,078.33	7,671.23	4,751.46	4,587.27	164.18	28.940		
13,800.00	6,940.25	3,574.00	3,569.63	115.86	131.36	-38.50	1,078.33	7,671.23	4,738.38	4,573.50	164.88	28.738		
13,900.00	6,940.18	3,574.00	3,569.63	117.41	131.36	-38.50	1,078.33	7,671.23	4,727.38	4,561.77	165.61	28.546		
14,000.00	6,940.10	3,574.00	3,569.63	118.95	131.36	-38.50	1,078.33	7,671.23	4,718.47	4,552.11	166.36	28.363		
14,100.00	6,940.03	3,574.00	3,569.63	120.51	131.36	-38.50	1,078.33	7,671.23	4,711.67	4,544.53	167.14	28.190		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 374 - OH - OH-INC													Offset Site Error: 0.00 usft	
Survey Program: 166-A027Ua_INC-ONLY		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Offset Well Error: 0.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
14,200.00	6,939.95	3,574.00	3,569.63	122.06	131.36	-38.50	1,078.33	7,671.23	4,706.99	4,539.04	167.94	28.027		
14,300.00	6,939.88	3,574.00	3,569.63	123.61	131.36	-38.50	1,078.33	7,671.23	4,704.42	4,535.65	168.78	27.874		
14,370.62	6,939.82	3,574.00	3,569.63	124.71	131.36	-38.50	1,078.33	7,671.23	4,703.89	4,534.51	169.38	27.772	CC	
14,400.00	6,939.80	3,574.00	3,569.63	125.17	131.36	-38.50	1,078.33	7,671.23	4,703.98	4,534.35	169.63	27.731	ES	
14,500.00	6,939.73	3,574.00	3,569.63	126.72	131.36	-38.50	1,078.33	7,671.23	4,705.67	4,535.16	170.51	27.597		
14,600.00	6,939.65	3,574.00	3,569.63	128.28	131.36	-38.50	1,078.33	7,671.23	4,709.48	4,538.07	171.41	27.474		
14,700.00	6,939.58	3,574.00	3,569.63	129.84	131.36	-38.50	1,078.33	7,671.23	4,715.41	4,543.07	172.33	27.362		
14,800.00	6,939.50	3,574.00	3,569.63	131.40	131.36	-38.50	1,078.33	7,671.23	4,723.45	4,550.17	173.27	27.260		
14,900.00	6,939.43	3,574.00	3,569.63	132.96	131.36	-38.50	1,078.33	7,671.23	4,733.59	4,559.36	174.23	27.169		
15,000.00	6,939.35	3,574.00	3,569.63	134.52	131.36	-38.50	1,078.33	7,671.23	4,745.81	4,570.61	175.20	27.088		
15,100.00	6,939.28	3,574.00	3,569.63	136.08	131.36	-38.50	1,078.33	7,671.23	4,760.10	4,583.92	176.18	27.018		
15,200.00	6,939.20	3,574.00	3,569.63	137.64	131.36	-38.50	1,078.33	7,671.23	4,776.45	4,599.28	177.17	26.960		
15,300.00	6,939.13	3,574.00	3,569.63	139.21	131.36	-38.50	1,078.33	7,671.23	4,794.82	4,616.66	178.16	26.913		
15,400.00	6,939.05	3,574.00	3,569.63	140.77	131.36	-38.50	1,078.33	7,671.23	4,815.21	4,636.05	179.16	26.877		
15,500.00	6,938.98	3,574.00	3,569.63	142.34	131.36	-38.50	1,078.33	7,671.23	4,837.57	4,657.41	180.16	26.852		
15,600.00	6,938.90	3,574.00	3,569.63	143.91	131.36	-38.50	1,078.33	7,671.23	4,861.89	4,680.74	181.15	26.839		
15,700.00	6,938.82	3,574.00	3,569.63	145.47	131.36	-38.50	1,078.33	7,671.23	4,888.13	4,706.00	182.14	26.838	SF	
15,800.00	6,938.75	3,574.00	3,569.63	147.04	131.36	-38.50	1,078.33	7,671.23	4,916.27	4,733.15	183.12	26.848		
15,900.00	6,938.67	3,574.00	3,569.63	148.61	131.36	-38.50	1,078.33	7,671.23	4,946.27	4,762.18	184.09	26.869		
16,000.00	6,938.60	3,574.00	3,569.63	150.18	131.36	-38.50	1,078.33	7,671.23	4,978.10	4,793.06	185.04	26.902		
16,100.00	6,938.52	3,574.00	3,569.63	151.75	131.36	-38.50	1,078.33	7,671.23	5,011.72	4,825.74	185.98	26.947		
16,200.00	6,938.45	3,574.00	3,569.63	153.32	131.36	-38.50	1,078.33	7,671.23	5,047.10	4,860.19	186.91	27.003		
16,300.00	6,938.37	3,574.00	3,569.63	154.90	131.36	-38.50	1,078.33	7,671.23	5,084.20	4,896.39	187.81	27.070		
16,400.00	6,938.30	3,574.00	3,569.63	156.47	131.36	-38.50	1,078.33	7,671.23	5,122.98	4,934.28	188.70	27.149		
16,500.00	6,938.22	3,574.00	3,569.63	158.04	131.36	-38.50	1,078.33	7,671.23	5,163.41	4,973.85	189.56	27.239		
16,600.00	6,938.15	3,574.00	3,569.63	159.62	131.36	-38.50	1,078.33	7,671.23	5,205.45	5,015.05	190.40	27.339		
16,700.00	6,938.07	3,574.00	3,569.63	161.19	131.36	-38.50	1,078.33	7,671.23	5,249.06	5,057.84	191.22	27.450		
16,800.00	6,938.00	3,574.00	3,569.63	162.77	131.36	-38.50	1,078.33	7,671.23	5,294.19	5,102.18	192.01	27.572		
16,900.00	6,937.92	3,574.00	3,569.63	164.34	131.36	-38.50	1,078.33	7,671.23	5,340.82	5,148.04	192.78	27.705		
17,000.00	6,937.85	3,574.00	3,569.63	165.92	131.36	-38.50	1,078.33	7,671.23	5,388.90	5,195.38	193.52	27.847		
17,100.00	6,937.77	3,574.00	3,569.63	167.50	131.36	-38.50	1,078.33	7,671.23	5,438.39	5,244.16	194.23	27.999		
17,200.00	6,937.70	3,574.00	3,569.63	169.07	131.36	-38.50	1,078.33	7,671.23	5,489.26	5,294.34	194.92	28.162		
17,300.00	6,937.62	3,574.00	3,569.63	170.65	131.36	-38.50	1,078.33	7,671.23	5,541.47	5,345.88	195.58	28.333		
17,400.00	6,937.55	3,574.00	3,569.63	172.23	131.36	-38.50	1,078.33	7,671.23	5,594.97	5,398.76	196.22	28.514		
17,500.00	6,937.47	3,574.00	3,569.63	173.81	131.36	-38.50	1,078.33	7,671.23	5,649.74	5,452.92	196.83	28.704		
17,600.00	6,937.40	3,574.00	3,569.63	175.39	131.36	-38.50	1,078.33	7,671.23	5,705.74	5,508.33	197.41	28.903		
17,700.00	6,937.32	3,574.00	3,569.63	176.97	131.36	-38.50	1,078.33	7,671.23	5,762.93	5,564.96	197.97	29.111		
17,800.00	6,937.25	3,574.00	3,569.63	178.55	131.36	-38.50	1,078.33	7,671.23	5,821.27	5,622.77	198.50	29.326		
17,900.00	6,937.17	3,574.00	3,569.63	180.13	131.36	-38.50	1,078.33	7,671.23	5,880.74	5,681.73	199.01	29.550		
18,000.00	6,937.10	3,574.00	3,569.63	181.71	131.36	-38.50	1,078.33	7,671.23	5,941.29	5,741.80	199.49	29.782		
18,100.00	6,937.02	3,574.00	3,569.63	183.29	131.36	-38.50	1,078.33	7,671.23	6,002.90	5,802.95	199.95	30.022		
18,200.00	6,936.95	3,574.00	3,569.63	184.87	131.36	-38.50	1,078.33	7,671.23	6,065.54	5,865.15	200.39	30.269		
18,300.00	6,936.87	3,574.00	3,569.63	186.46	131.36	-38.50	1,078.33	7,671.23	6,129.16	5,928.35	200.81	30.523		
18,400.00	6,936.80	3,574.00	3,569.63	188.04	131.36	-38.50	1,078.33	7,671.23	6,193.75	5,992.55	201.20	30.784		
18,500.00	6,936.72	3,574.00	3,569.63	189.62	131.36	-38.50	1,078.33	7,671.23	6,259.26	6,057.69	201.57	31.052		
18,600.00	6,936.65	3,574.00	3,569.63	191.21	131.36	-38.50	1,078.33	7,671.23	6,325.68	6,123.75	201.93	31.327		
18,700.00	6,936.57	3,574.00	3,569.63	192.79	131.36	-38.50	1,078.33	7,671.23	6,392.97	6,190.71	202.26	31.608		
18,800.00	6,936.50	3,574.00	3,569.63	194.37	131.36	-38.50	1,078.33	7,671.23	6,461.11	6,258.54	202.58	31.895		
18,900.00	6,936.42	3,574.00	3,569.63	195.96	131.36	-38.50	1,078.33	7,671.23	6,530.07	6,327.20	202.87	32.188		
19,000.00	6,936.35	3,574.00	3,569.63	197.54	131.36	-38.50	1,078.33	7,671.23	6,599.83	6,396.67	203.15	32.487		
19,100.00	6,936.27	3,574.00	3,569.63	199.13	131.36	-38.50	1,078.33	7,671.23	6,670.35	6,466.93	203.42	32.791		
19,200.00	6,936.19	3,574.00	3,569.63	200.71	131.36	-38.50	1,078.33	7,671.23	6,741.62	6,537.96	203.67	33.101		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 374 - OH - OH-INC													Offset Site Error:	0.00 usft
Survey Program: 166-A027Ua_INC-ONLY													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,300.00	6,936.12	3,574.00	3,569.63	202.30	131.36	-38.50	1,078.33	7,671.23	6,813.62	6,609.72	203.90	33.416		
19,400.00	6,936.04	3,574.00	3,569.63	203.88	131.36	-38.50	1,078.33	7,671.23	6,886.31	6,682.19	204.12	33.737		
19,500.00	6,935.97	3,574.00	3,569.63	205.47	131.36	-38.50	1,078.33	7,671.23	6,959.68	6,755.35	204.32	34.062		
19,600.00	6,935.89	3,574.00	3,569.63	207.06	131.36	-38.50	1,078.33	7,671.23	7,033.70	6,829.19	204.52	34.392		
19,700.00	6,935.82	3,574.00	3,569.63	208.64	131.36	-38.50	1,078.33	7,671.23	7,108.37	6,903.67	204.70	34.727		
19,800.00	6,935.74	3,574.00	3,569.63	210.23	131.36	-38.50	1,078.33	7,671.23	7,183.64	6,978.78	204.86	35.066		
19,900.00	6,935.67	3,574.00	3,569.63	211.82	131.36	-38.50	1,078.33	7,671.23	7,259.52	7,054.50	205.02	35.409		
20,000.00	6,935.59	3,574.00	3,569.63	213.41	131.36	-38.50	1,078.33	7,671.23	7,335.97	7,130.81	205.16	35.757		
20,100.00	6,935.52	3,574.00	3,569.63	214.99	131.36	-38.50	1,078.33	7,671.23	7,412.99	7,207.69	205.30	36.108		
20,200.00	6,935.44	3,574.00	3,569.63	216.58	131.36	-38.50	1,078.33	7,671.23	7,490.54	7,285.12	205.43	36.464		
20,300.00	6,935.37	3,574.00	3,569.63	218.17	131.36	-38.50	1,078.33	7,671.23	7,568.63	7,363.09	205.54	36.823		
20,400.00	6,935.29	3,574.00	3,569.63	219.76	131.36	-38.50	1,078.33	7,671.23	7,647.22	7,441.57	205.65	37.186		
20,500.00	6,935.22	3,574.00	3,569.63	221.35	131.36	-38.50	1,078.33	7,671.23	7,726.31	7,520.56	205.75	37.552		
20,600.00	6,935.14	3,574.00	3,569.63	222.94	131.36	-38.50	1,078.33	7,671.23	7,805.88	7,600.04	205.84	37.922		
20,700.00	6,935.07	3,574.00	3,569.63	224.53	131.36	-38.50	1,078.33	7,671.23	7,885.91	7,679.99	205.92	38.295		
20,789.75	6,935.00	3,574.00	3,569.63	225.95	131.36	-38.50	1,078.33	7,671.23	7,958.13	7,752.13	205.99	38.633		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #712H - OH - Prelim #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS												Offset Well Error:	0.00 usft
Reference												Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	-15.06	77.18	-20.76	79.92				
100.00	100.00	100.00	100.00	0.25	0.25	-15.06	77.18	-20.76	79.92	79.42	0.50	159.250	
200.00	200.00	200.00	200.00	0.61	0.61	-15.06	77.18	-20.76	79.92	78.70	1.22	65.573	
300.00	300.00	300.00	300.00	0.97	0.97	-15.06	77.18	-20.76	79.92	77.99	1.94	41.287	
400.00	400.00	400.00	400.00	1.33	1.33	-15.06	77.18	-20.76	79.92	77.27	2.65	30.128	
500.00	500.00	500.00	500.00	1.68	1.68	-15.06	77.18	-20.76	79.92	76.55	3.37	23.718 CC, ES	
600.00	599.98	597.20	597.18	2.03	2.03	166.25	78.81	-20.95	83.29	79.23	4.06	20.508	
700.00	699.84	693.72	693.57	2.36	2.38	167.37	83.68	-21.52	93.41	88.67	4.75	19.684 SF	
800.00	799.45	788.89	788.40	2.71	2.73	168.76	91.63	-22.44	110.25	104.82	5.43	20.306	
900.00	898.70	882.09	880.96	3.06	3.07	170.11	102.45	-23.69	133.72	127.62	6.11	21.903	
1,000.00	997.47	972.75	970.61	3.43	3.40	171.26	115.84	-25.25	163.67	156.90	6.77	24.183	
1,100.00	1,095.62	1,060.36	1,056.79	3.82	3.74	172.17	131.44	-27.05	199.86	192.44	7.41	26.961	
1,180.06	1,173.69	1,128.01	1,122.99	4.14	4.01	172.75	145.28	-28.66	233.16	225.24	7.92	29.444	
1,200.00	1,193.07	1,144.52	1,139.10	4.22	4.07	172.90	148.89	-29.08	241.97	233.93	8.05	30.074	
1,300.00	1,290.27	1,225.89	1,218.14	4.65	4.40	173.50	168.04	-31.30	287.72	279.09	8.63	33.340	
1,400.00	1,387.46	1,311.79	1,301.17	5.08	4.77	173.98	189.94	-33.83	335.27	326.00	9.27	36.184	
1,500.00	1,484.66	1,399.69	1,386.11	5.52	5.15	174.34	212.41	-36.44	382.91	372.98	9.93	38.574	
1,600.00	1,581.85	1,487.59	1,471.05	5.97	5.54	174.63	234.88	-39.04	430.56	419.97	10.59	40.644	
1,700.00	1,679.05	1,575.49	1,555.98	6.42	5.93	174.85	257.36	-41.65	478.22	466.96	11.27	42.452	
1,800.00	1,776.25	1,663.38	1,640.92	6.87	6.33	175.04	279.83	-44.25	525.88	513.94	11.94	44.041	
1,900.00	1,873.44	1,751.28	1,725.86	7.33	6.73	175.19	302.30	-46.86	573.55	560.93	12.62	45.448	
2,000.00	1,970.64	1,839.18	1,810.79	7.78	7.13	175.33	324.78	-49.46	621.22	607.92	13.30	46.701	
2,100.00	2,067.83	1,927.08	1,895.73	8.24	7.53	175.44	347.25	-52.07	668.89	654.91	13.99	47.824	
2,200.00	2,165.03	2,014.98	1,980.67	8.71	7.94	175.54	369.72	-54.67	716.57	701.89	14.67	48.834	
2,300.00	2,262.22	2,102.88	2,065.61	9.17	8.35	175.62	392.20	-57.28	764.24	748.88	15.36	49.748	
2,400.00	2,359.42	2,190.78	2,150.54	9.63	8.76	175.70	414.67	-59.88	811.92	795.86	16.05	50.579	
2,500.00	2,456.61	2,278.67	2,235.48	10.10	9.17	175.76	437.14	-62.49	859.59	842.85	16.74	51.336	
2,600.00	2,553.81	2,366.57	2,320.42	10.57	9.58	175.82	459.62	-65.09	907.27	889.83	17.44	52.029	
2,700.00	2,651.01	2,454.47	2,405.35	11.03	9.99	175.88	482.09	-67.70	954.95	936.82	18.13	52.666	
2,800.00	2,748.20	2,542.37	2,490.29	11.50	10.40	175.93	504.56	-70.30	1,002.63	983.80	18.83	53.253	
2,900.00	2,845.40	2,630.27	2,575.23	11.97	10.82	175.97	527.04	-72.91	1,050.31	1,030.78	19.52	53.796	
3,000.00	2,942.59	2,718.17	2,660.17	12.44	11.23	176.01	549.51	-75.51	1,097.99	1,077.77	20.22	54.298	
3,100.00	3,039.79	2,806.07	2,745.10	12.91	11.65	176.05	571.98	-78.12	1,145.67	1,124.75	20.92	54.765	
3,200.00	3,136.98	2,893.96	2,830.04	13.38	12.06	176.08	594.46	-80.72	1,193.35	1,171.73	21.62	55.200	
3,300.00	3,234.18	2,981.86	2,914.98	13.85	12.48	176.12	616.93	-83.33	1,241.03	1,218.71	22.32	55.606	
3,400.00	3,331.38	3,069.76	2,999.92	14.32	12.90	176.14	639.40	-85.93	1,288.71	1,265.69	23.02	55.986	
3,500.00	3,428.57	3,157.66	3,084.85	14.79	13.31	176.17	661.88	-88.54	1,336.39	1,312.67	23.72	56.341	
3,600.00	3,525.77	3,245.56	3,169.79	15.26	13.73	176.20	684.35	-91.14	1,384.08	1,359.65	24.42	56.675	
3,700.00	3,622.96	3,333.46	3,254.73	15.73	14.15	176.22	706.82	-93.75	1,431.76	1,406.63	25.12	56.989	
3,800.00	3,720.16	3,421.36	3,339.66	16.20	14.57	176.24	729.30	-96.35	1,479.44	1,453.61	25.83	57.285	
3,900.00	3,817.35	3,509.26	3,424.60	16.68	14.98	176.26	751.77	-98.96	1,527.12	1,500.59	26.53	57.564	
4,000.00	3,914.55	3,597.15	3,509.54	17.15	15.40	176.28	774.24	-101.56	1,574.80	1,547.57	27.23	57.828	
4,100.00	4,011.74	3,685.05	3,594.48	17.62	15.82	176.30	796.72	-104.17	1,622.49	1,594.55	27.94	58.077	
4,200.00	4,108.94	3,772.95	3,679.41	18.09	16.24	176.32	819.19	-106.77	1,670.17	1,641.53	28.64	58.314	
4,300.00	4,206.14	3,860.85	3,764.35	18.57	16.66	176.33	841.66	-109.38	1,717.85	1,688.51	29.35	58.538	
4,400.00	4,303.33	3,948.75	3,849.29	19.04	17.08	176.35	864.14	-111.98	1,765.54	1,735.48	30.05	58.751	
4,500.00	4,400.53	4,036.65	3,934.22	19.51	17.50	176.36	886.61	-114.59	1,813.22	1,782.46	30.76	58.953	
4,600.00	4,497.72	4,124.55	4,019.16	19.99	17.92	176.38	909.08	-117.19	1,860.90	1,829.44	31.46	59.145	
4,700.00	4,594.92	4,212.44	4,104.10	20.46	18.34	176.39	931.56	-119.80	1,908.59	1,876.42	32.17	59.329	
4,800.00	4,692.11	4,300.34	4,189.04	20.93	18.76	176.40	954.03	-122.40	1,956.27	1,923.39	32.88	59.503	
4,900.00	4,789.31	4,388.24	4,273.97	21.41	19.18	176.42	976.50	-125.01	2,003.95	1,970.37	33.58	59.670	
5,000.00	4,886.51	4,476.14	4,358.91	21.88	19.60	176.43	998.98	-127.61	2,051.64	2,017.34	34.29	59.829	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #712H - OH - Prelim #1											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
5,100.00	4,983.70	4,564.04	4,443.85	22.35	20.02	176.44	1,021.45	-130.22	2,099.32	2,064.32	35.00	59.981
5,200.00	5,080.90	4,651.94	4,528.78	22.83	20.44	176.45	1,043.92	-132.82	2,147.00	2,111.29	35.71	60.127
5,300.00	5,178.09	4,739.84	4,613.72	23.30	20.86	176.46	1,066.40	-135.43	2,194.69	2,158.27	36.42	60.266
5,400.00	5,275.29	4,827.73	4,698.66	23.77	21.28	176.47	1,088.87	-138.03	2,242.37	2,205.24	37.13	60.400
5,500.00	5,372.48	4,915.63	4,783.60	24.25	21.70	176.48	1,111.34	-140.64	2,290.05	2,252.22	37.83	60.527
5,600.00	5,469.68	5,003.53	4,868.53	24.72	22.12	176.49	1,133.82	-143.24	2,337.74	2,299.19	38.54	60.650
5,700.00	5,566.87	5,091.43	4,953.47	25.20	22.54	176.49	1,156.29	-145.85	2,385.42	2,346.17	39.25	60.768
5,800.00	5,664.07	5,179.33	5,038.41	25.67	22.96	176.50	1,178.76	-148.45	2,433.10	2,393.14	39.97	60.881
5,900.00	5,761.27	5,267.23	5,123.35	26.14	23.38	176.51	1,201.24	-151.06	2,480.79	2,440.11	40.68	60.989
6,000.00	5,858.46	5,355.13	5,208.28	26.62	23.80	176.52	1,223.71	-153.66	2,528.47	2,487.09	41.39	61.094
6,100.00	5,955.66	5,443.02	5,293.22	27.09	24.22	176.53	1,246.18	-156.27	2,576.16	2,534.06	42.10	61.194
6,200.00	6,052.85	5,530.92	5,378.16	27.57	24.64	176.53	1,268.66	-158.87	2,623.84	2,581.03	42.81	61.290
6,300.00	6,150.05	5,618.82	5,463.09	28.04	25.06	176.54	1,291.13	-161.48	2,671.52	2,628.00	43.52	61.383
6,400.00	6,247.24	5,706.72	5,548.03	28.52	25.48	176.55	1,313.60	-164.08	2,719.21	2,674.97	44.23	61.472
6,490.87	6,335.57	5,786.60	5,625.22	28.95	25.87	176.55	1,334.03	-166.45	2,762.54	2,717.66	44.88	61.551
6,500.00	6,344.44	5,794.62	5,632.97	28.99	25.90	-179.64	1,336.08	-166.69	2,766.90	2,721.95	44.95	61.559
6,550.00	6,392.91	5,838.34	5,675.22	29.23	26.11	-160.13	1,347.25	-167.99	2,790.99	2,745.69	45.30	61.610
6,600.00	6,440.98	5,881.53	5,716.95	29.46	26.32	-144.31	1,358.30	-169.27	2,815.34	2,769.69	45.65	61.675
6,650.00	6,488.34	5,923.92	5,757.91	29.70	26.52	-132.20	1,369.13	-170.52	2,839.83	2,793.85	45.99	61.755
6,700.00	6,534.69	5,965.24	5,797.84	29.92	26.72	-122.94	1,379.70	-171.75	2,864.34	2,818.03	46.31	61.851
6,750.00	6,579.76	6,005.24	5,836.49	30.15	26.91	-115.67	1,389.93	-172.93	2,888.78	2,842.16	46.62	61.963
6,800.00	6,623.27	6,043.67	5,873.63	30.36	27.10	-109.79	1,399.75	-174.07	2,913.06	2,866.14	46.92	62.089
6,850.00	6,664.95	6,080.30	5,909.03	30.57	27.27	-104.90	1,409.12	-175.16	2,937.09	2,889.90	47.20	62.231
6,900.00	6,704.53	6,114.90	5,942.46	30.78	27.44	-100.73	1,417.96	-176.18	2,960.82	2,913.36	47.46	62.385
6,950.00	6,741.79	6,147.26	5,973.73	30.98	27.59	-97.11	1,426.24	-177.14	2,984.18	2,936.47	47.71	62.553
7,000.00	6,776.48	6,177.18	6,002.64	31.17	27.74	-93.91	1,433.89	-178.03	3,007.10	2,959.16	47.94	62.732
7,050.00	6,808.39	6,204.47	6,029.02	31.36	27.87	-91.05	1,440.87	-178.84	3,029.54	2,981.39	48.15	62.920
7,100.00	6,837.34	6,228.97	6,052.69	31.54	27.99	-88.46	1,447.13	-179.56	3,051.44	3,003.09	48.35	63.116
7,150.00	6,863.13	6,250.52	6,073.51	31.73	28.09	-86.10	1,452.64	-180.20	3,072.75	3,024.22	48.53	63.319
7,200.00	6,885.61	6,269.00	6,091.36	31.91	28.18	-83.93	1,457.36	-180.75	3,093.41	3,044.71	48.70	63.526
7,250.00	6,904.64	6,284.28	6,106.13	32.10	28.25	-81.93	1,461.27	-181.20	3,113.36	3,064.51	48.85	63.736
7,300.00	6,920.10	6,296.27	6,117.72	32.29	28.31	-80.08	1,464.34	-181.56	3,132.55	3,083.56	48.99	63.947
7,350.00	6,931.91	6,304.91	6,126.06	32.48	28.35	-78.37	1,466.54	-181.81	3,150.91	3,101.79	49.11	64.157
7,400.00	6,939.97	6,310.13	6,131.11	32.68	28.38	-76.79	1,467.88	-181.97	3,168.36	3,119.14	49.22	64.366
7,450.00	6,944.26	6,311.90	6,132.82	32.89	28.38	-75.34	1,468.33	-182.02	3,184.84	3,135.52	49.32	64.571
7,481.69	6,945.00	6,311.23	6,132.18	33.03	28.38	-74.49	1,468.16	-182.00	3,194.74	3,145.36	49.38	64.701
7,500.00	6,944.99	6,310.45	6,131.42	33.12	28.38	-74.47	1,467.96	-181.98	3,200.38	3,150.97	49.41	64.775
7,600.00	6,944.91	6,306.16	6,127.27	33.60	28.36	-74.39	1,466.86	-181.85	3,232.85	3,183.24	49.61	65.164
7,700.00	6,944.84	6,301.87	6,123.13	34.17	28.34	-74.31	1,465.77	-181.72	3,268.05	3,218.19	49.85	65.553
7,800.00	6,944.76	6,297.57	6,118.98	34.80	28.32	-74.23	1,464.67	-181.60	3,305.89	3,255.76	50.13	65.945
7,900.00	6,944.69	6,293.28	6,114.83	35.49	28.29	-74.15	1,463.57	-181.47	3,346.29	3,295.85	50.44	66.343
8,000.00	6,944.61	6,288.99	6,110.69	36.25	28.27	-74.07	1,462.47	-181.34	3,389.16	3,338.39	50.77	66.752
8,100.00	6,944.54	6,284.70	6,106.54	37.07	28.25	-73.99	1,461.38	-181.21	3,434.40	3,383.27	51.13	67.174
8,200.00	6,944.46	6,280.41	6,102.39	37.94	28.23	-73.91	1,460.28	-181.09	3,481.91	3,430.41	51.50	67.614
8,300.00	6,944.39	6,276.12	6,098.25	38.86	28.21	-73.83	1,459.18	-180.96	3,531.62	3,479.74	51.88	68.072
8,400.00	6,944.31	6,271.83	6,094.10	39.83	28.19	-73.75	1,458.09	-180.83	3,583.42	3,531.14	52.27	68.551
8,500.00	6,944.23	6,267.54	6,089.95	40.84	28.17	-73.67	1,456.99	-180.71	3,637.23	3,584.55	52.67	69.054
8,600.00	6,944.16	6,263.24	6,085.81	41.89	28.15	-73.59	1,455.89	-180.58	3,692.95	3,639.88	53.07	69.581
8,700.00	6,944.08	6,258.95	6,081.66	42.98	28.13	-73.50	1,454.79	-180.45	3,750.51	3,697.04	53.48	70.133
8,800.00	6,944.01	6,254.66	6,077.51	44.10	28.11	-73.42	1,453.70	-180.32	3,809.83	3,755.95	53.88	70.711
8,900.00	6,943.93	6,250.37	6,073.37	45.25	28.09	-73.34	1,452.60	-180.20	3,870.81	3,816.53	54.28	71.316
9,000.00	6,943.86	6,246.08	6,069.22	46.43	28.07	-73.26	1,451.50	-180.07	3,933.38	3,878.71	54.67	71.946

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #712H - OH - Prelim #1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM+MS					Rule Assigned:			Offset Well Error:		0.00 usft		
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance				Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,100.00	6,943.78	6,241.79	6,065.07	47.63	28.05	-73.18	1,450.41	-179.94	3,997.48	3,942.42	55.06	72.604		
9,200.00	6,943.71	6,237.50	6,060.93	48.86	28.03	-73.10	1,449.31	-179.81	4,063.02	4,007.58	55.44	73.287		
9,300.00	6,943.63	6,233.21	6,056.78	50.11	28.01	-73.02	1,448.21	-179.69	4,129.93	4,074.12	55.81	73.996		
9,400.00	6,943.56	6,228.91	6,052.63	51.38	27.99	-72.94	1,447.11	-179.56	4,198.16	4,141.98	56.18	74.730		
9,500.00	6,943.48	6,224.62	6,048.49	52.66	27.97	-72.86	1,446.02	-179.43	4,267.63	4,211.10	56.53	75.488		
9,600.00	6,943.41	6,220.33	6,044.34	53.97	27.94	-72.78	1,444.92	-179.31	4,338.30	4,281.42	56.88	76.270		
9,700.00	6,943.33	6,216.04	6,040.19	55.29	27.92	-72.70	1,443.82	-179.18	4,410.09	4,352.87	57.22	77.075		
9,800.00	6,943.26	6,211.75	6,036.05	56.63	27.90	-72.62	1,442.73	-179.05	4,482.96	4,425.42	57.55	77.902		
9,900.00	6,943.18	6,207.46	6,031.90	57.98	27.88	-72.54	1,441.63	-178.92	4,556.86	4,498.99	57.86	78.750		
10,000.00	6,943.11	6,203.17	6,027.75	59.34	27.86	-72.46	1,440.53	-178.80	4,631.73	4,573.56	58.17	79.619		
10,100.00	6,943.03	6,198.88	6,023.61	60.72	27.84	-72.38	1,439.43	-178.67	4,707.54	4,649.06	58.47	80.508		
10,200.00	6,942.96	6,194.58	6,019.46	62.11	27.82	-72.30	1,438.34	-178.54	4,784.22	4,725.46	58.76	81.415		
10,300.00	6,942.88	6,190.29	6,015.31	63.50	27.80	-72.21	1,437.24	-178.42	4,861.76	4,802.71	59.04	82.341		
10,400.00	6,942.81	6,186.00	6,011.17	64.91	27.78	-72.13	1,436.14	-178.29	4,940.09	4,880.77	59.32	83.284		
10,500.00	6,942.73	6,181.71	6,007.02	66.33	27.76	-72.05	1,435.05	-178.16	5,019.19	4,959.61	59.58	84.244		
10,600.00	6,942.66	6,177.42	6,002.87	67.75	27.74	-71.97	1,433.95	-178.03	5,099.02	5,039.19	59.83	85.220		
10,700.00	6,942.58	6,173.13	5,998.73	69.18	27.72	-71.89	1,432.85	-177.91	5,179.55	5,119.47	60.08	86.211		
10,800.00	6,942.51	6,168.84	5,994.58	70.62	27.70	-71.81	1,431.75	-177.78	5,260.75	5,200.43	60.32	87.216		
10,900.00	6,942.43	6,164.55	5,990.43	72.07	27.68	-71.73	1,430.66	-177.65	5,342.57	5,282.02	60.55	88.235		
11,000.00	6,942.36	6,160.26	5,986.29	73.52	27.66	-71.65	1,429.56	-177.53	5,425.01	5,364.23	60.77	89.267		
11,100.00	6,942.28	6,155.96	5,982.14	74.98	27.64	-71.57	1,428.46	-177.40	5,508.02	5,447.03	60.99	90.312		
11,200.00	6,942.21	6,151.67	5,977.99	76.45	27.62	-71.49	1,427.37	-177.27	5,591.58	5,530.39	61.20	91.369		
11,300.00	6,942.13	6,147.38	5,973.85	77.92	27.60	-71.41	1,426.27	-177.14	5,675.68	5,614.28	61.40	92.437		
11,400.00	6,942.06	6,143.09	5,969.70	79.40	27.57	-71.33	1,425.17	-177.02	5,760.28	5,698.68	61.60	93.516		
11,500.00	6,941.98	6,138.80	5,965.55	80.88	27.55	-71.25	1,424.07	-176.89	5,845.36	5,783.57	61.79	94.605		
11,600.00	6,941.91	6,134.51	5,961.41	82.36	27.53	-71.17	1,422.98	-176.76	5,930.90	5,868.93	61.97	95.704		
11,700.00	6,941.83	6,130.22	5,957.26	83.85	27.51	-71.09	1,421.88	-176.64	6,016.89	5,954.74	62.15	96.813		
11,800.00	6,941.76	6,125.93	5,953.11	85.35	27.49	-71.01	1,420.78	-176.51	6,103.30	6,040.98	62.32	97.930		
11,900.00	6,941.68	6,121.63	5,948.97	86.85	27.47	-70.93	1,419.69	-176.38	6,190.12	6,127.62	62.49	99.056		
12,000.00	6,941.60	6,117.34	5,944.82	88.35	27.45	-70.85	1,418.59	-176.25	6,277.32	6,214.67	62.65	100.190		
12,100.00	6,941.53	6,113.05	5,940.67	89.85	27.43	-70.77	1,417.49	-176.13	6,364.90	6,302.09	62.81	101.332		
12,200.00	6,941.45	6,108.76	5,936.53	91.36	27.41	-70.69	1,416.39	-176.00	6,452.84	6,389.87	62.97	102.481		
12,300.00	6,941.38	6,104.47	5,932.38	92.88	27.39	-70.61	1,415.30	-175.87	6,541.12	6,478.01	63.12	103.637		
12,400.00	6,941.30	6,100.18	5,928.23	94.39	27.37	-70.53	1,414.20	-175.75	6,629.73	6,566.47	63.26	104.799		
12,500.00	6,941.23	6,095.89	5,924.09	95.91	27.35	-70.45	1,413.10	-175.62	6,718.66	6,655.26	63.40	105.968		
12,600.00	6,941.15	6,091.60	5,919.94	97.43	27.33	-70.37	1,412.01	-175.49	6,807.90	6,744.36	63.54	107.142		
12,700.00	6,941.08	6,087.30	5,915.79	98.95	27.31	-70.29	1,410.91	-175.36	6,897.42	6,833.75	63.67	108.322		
12,800.00	6,941.00	6,083.01	5,911.65	100.48	27.29	-70.21	1,409.81	-175.24	6,987.23	6,923.42	63.81	109.508		
12,900.00	6,940.93	6,078.72	5,907.50	102.01	27.27	-70.13	1,408.71	-175.11	7,077.31	7,013.37	63.93	110.698		
13,000.00	6,940.85	6,074.43	5,903.35	103.54	27.25	-70.05	1,407.62	-174.98	7,167.65	7,103.59	64.06	111.894		
13,100.00	6,940.78	6,070.14	5,899.21	105.07	27.23	-69.97	1,406.52	-174.86	7,258.24	7,194.06	64.18	113.094		
13,200.00	6,940.70	6,065.85	5,895.06	106.61	27.20	-69.89	1,405.42	-174.73	7,349.07	7,284.77	64.30	114.298		
13,300.00	6,940.63	6,061.56	5,890.91	108.14	27.18	-69.81	1,404.33	-174.60	7,440.13	7,375.72	64.41	115.506		
13,400.00	6,940.55	6,057.27	5,886.77	109.68	27.16	-69.73	1,403.23	-174.47	7,531.42	7,466.89	64.53	116.718		
13,500.00	6,940.48	6,052.98	5,882.62	111.22	27.14	-69.65	1,402.13	-174.35	7,622.92	7,558.29	64.64	117.934		
13,600.00	6,940.40	6,048.68	5,878.47	112.77	27.12	-69.57	1,401.03	-174.22	7,714.64	7,649.89	64.75	119.153		
13,700.00	6,940.33	6,044.39	5,874.33	114.31	27.10	-69.49	1,399.94	-174.09	7,806.55	7,741.70	64.85	120.375		
13,800.00	6,940.25	6,040.10	5,870.18	115.86	27.08	-69.41	1,398.84	-173.96	7,898.66	7,833.70	64.96	121.601		
13,900.00	6,940.18	6,035.81	5,866.03	117.41	27.06	-69.33	1,397.74	-173.84	7,990.96	7,925.90	65.06	122.829		
14,000.00	6,940.10	6,031.52	5,861.89	118.95	27.04	-69.25	1,396.65	-173.71	8,083.43	8,018.27	65.16	124.060		
14,100.00	6,940.03	6,027.23	5,857.74	120.51	27.02	-69.17	1,395.55	-173.58	8,176.08	8,110.83	65.26	125.293		
14,200.00	6,939.95	6,022.94	5,853.59	122.06	27.00	-69.09	1,394.45	-173.46	8,268.90	8,203.55	65.35	126.528		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #712H - OH - Prelim #1											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
14,300.00	6,939.88	6,018.65	5,849.45	123.61	26.98	-69.01	1,393.35	-173.33	8,361.89	8,296.44	65.45	127.766
14,400.00	6,939.80	6,014.35	5,845.30	125.17	26.96	-68.93	1,392.26	-173.20	8,455.03	8,389.49	65.54	129.006
14,500.00	6,939.73	6,010.06	5,841.15	126.72	26.94	-68.85	1,391.16	-173.07	8,548.32	8,482.69	65.63	130.247
14,600.00	6,939.65	6,005.77	5,837.01	128.28	26.92	-68.77	1,390.06	-172.95	8,641.77	8,576.04	65.72	131.491
14,700.00	6,939.58	6,001.48	5,832.86	129.84	26.90	-68.69	1,388.97	-172.82	8,735.35	8,669.54	65.81	132.736
14,800.00	6,939.50	5,997.19	5,828.71	131.40	26.88	-68.61	1,387.87	-172.69	8,829.08	8,763.18	65.90	133.982
14,900.00	6,939.43	5,992.90	5,824.57	132.96	26.85	-68.53	1,386.77	-172.57	8,922.93	8,856.95	65.98	135.230
15,000.00	6,939.35	5,988.61	5,820.42	134.52	26.83	-68.45	1,385.67	-172.44	9,016.92	8,950.85	66.07	136.478
15,100.00	6,939.28	5,984.32	5,816.27	136.08	26.81	-68.37	1,384.58	-172.31	9,111.04	9,044.88	66.15	137.728
15,200.00	6,939.20	5,980.02	5,812.13	137.64	26.79	-68.29	1,383.48	-172.18	9,205.27	9,139.04	66.23	138.979
15,300.00	6,939.13	5,975.73	5,807.98	139.21	26.77	-68.21	1,382.38	-172.06	9,299.63	9,233.31	66.32	140.231
15,400.00	6,939.05	5,971.44	5,803.83	140.77	26.75	-68.13	1,381.29	-171.93	9,394.10	9,327.70	66.40	141.483
15,500.00	6,938.98	5,967.15	5,799.69	142.34	26.73	-68.05	1,380.19	-171.80	9,488.68	9,422.20	66.48	142.736
15,600.00	6,938.90	5,962.86	5,795.54	143.91	26.71	-67.97	1,379.09	-171.68	9,583.37	9,516.81	66.56	143.990
15,700.00	6,938.82	5,958.57	5,791.39	145.47	26.69	-67.89	1,377.99	-171.55	9,678.16	9,611.53	66.63	145.244
15,800.00	6,938.75	5,954.28	5,787.25	147.04	26.67	-67.81	1,376.90	-171.42	9,773.06	9,706.35	66.71	146.499
15,900.00	6,938.67	5,949.99	5,783.10	148.61	26.65	-67.73	1,375.80	-171.29	9,868.05	9,801.27	66.79	147.753
16,000.00	6,938.60	5,945.69	5,778.95	150.18	26.63	-67.65	1,374.70	-171.17	9,963.14	9,896.28	66.86	149.008
16,100.00	6,938.52	5,941.40	5,774.81	151.75	26.61	-67.57	1,373.61	-171.04	10,058.33	9,991.39	66.94	150.263
16,200.00	6,938.45	5,937.11	5,770.66	153.32	26.59	-67.50	1,372.51	-170.91	10,153.60	10,086.59	67.01	151.518
16,300.00	6,938.37	5,932.82	5,766.51	154.90	26.57	-67.42	1,371.41	-170.79	10,248.97	10,181.88	67.09	152.773
16,400.00	6,938.30	5,928.53	5,762.37	156.47	26.55	-67.34	1,370.31	-170.66	10,344.42	10,277.26	67.16	154.027
16,500.00	6,938.22	5,924.24	5,758.22	158.04	26.53	-67.26	1,369.22	-170.53	10,439.95	10,372.72	67.23	155.282
16,600.00	6,938.15	5,919.95	5,754.07	159.62	26.51	-67.18	1,368.12	-170.40	10,535.56	10,468.26	67.30	156.536
16,700.00	6,938.07	5,915.66	5,749.93	161.19	26.48	-67.10	1,367.02	-170.28	10,631.25	10,563.88	67.38	157.789
16,800.00	6,938.00	5,911.37	5,745.78	162.77	26.46	-67.02	1,365.93	-170.15	10,727.02	10,659.58	67.45	159.042
16,900.00	6,937.92	5,907.07	5,741.64	164.34	26.44	-66.94	1,364.83	-170.02	10,822.87	10,755.35	67.52	160.295
17,000.00	6,937.85	5,902.78	5,737.49	165.92	26.42	-66.86	1,363.73	-169.90	10,918.79	10,851.20	67.59	161.547
17,100.00	6,937.77	5,898.49	5,733.34	167.50	26.40	-66.78	1,362.63	-169.77	11,014.77	10,947.12	67.66	162.798
17,200.00	6,937.70	5,894.20	5,729.20	169.07	26.38	-66.70	1,361.54	-169.64	11,110.83	11,043.10	67.73	164.049
17,300.00	6,937.62	5,889.91	5,725.05	170.65	26.36	-66.62	1,360.44	-169.51	11,206.96	11,139.16	67.80	165.299
17,400.00	6,937.55	5,885.62	5,720.90	172.23	26.34	-66.55	1,359.34	-169.39	11,303.15	11,235.28	67.87	166.548
17,500.00	6,937.47	5,881.33	5,716.76	173.81	26.32	-66.47	1,358.25	-169.26	11,399.40	11,331.46	67.94	167.796
17,600.00	6,937.40	5,877.04	5,712.61	175.39	26.30	-66.39	1,357.15	-169.13	11,495.72	11,427.71	68.00	169.043
17,700.00	6,937.32	5,872.74	5,708.46	176.97	26.28	-66.31	1,356.05	-169.00	11,592.09	11,524.02	68.07	170.289
17,800.00	6,937.25	5,868.45	5,704.32	178.55	26.26	-66.23	1,354.95	-168.88	11,688.53	11,620.39	68.14	171.534
17,900.00	6,937.17	5,864.16	5,700.17	180.13	26.24	-66.15	1,353.86	-168.75	11,785.03	11,716.82	68.21	172.778
18,000.00	6,937.10	5,859.87	5,696.02	181.71	26.22	-66.07	1,352.76	-168.62	11,881.58	11,813.30	68.28	174.021
18,100.00	6,937.02	5,855.58	5,691.88	183.29	26.20	-65.99	1,351.66	-168.50	11,978.18	11,909.84	68.34	175.263
18,200.00	6,936.95	5,851.29	5,687.73	184.87	26.18	-65.92	1,350.57	-168.37	12,074.84	12,006.43	68.41	176.503
18,300.00	6,936.87	5,847.00	5,683.58	186.46	26.16	-65.84	1,349.47	-168.24	12,171.55	12,103.08	68.48	177.742
18,400.00	6,936.80	5,842.71	5,679.44	188.04	26.14	-65.76	1,348.37	-168.11	12,268.32	12,199.77	68.55	178.979
18,500.00	6,936.72	5,838.41	5,675.29	189.62	26.11	-65.68	1,347.27	-167.99	12,365.13	12,296.52	68.61	180.215
18,600.00	6,936.65	5,834.12	5,671.14	191.21	26.09	-65.60	1,346.18	-167.86	12,461.99	12,393.31	68.68	181.450
18,700.00	6,936.57	5,829.83	5,667.00	192.79	26.07	-65.52	1,345.08	-167.73	12,558.90	12,490.16	68.75	182.683
18,800.00	6,936.50	5,825.54	5,662.85	194.37	26.05	-65.44	1,343.98	-167.61	12,655.86	12,587.05	68.81	183.915
18,900.00	6,936.42	5,821.25	5,658.70	195.96	26.03	-65.37	1,342.89	-167.48	12,752.86	12,683.98	68.88	185.145
19,000.00	6,936.35	5,816.96	5,654.56	197.54	26.01	-65.29	1,341.79	-167.35	12,849.91	12,780.96	68.95	186.374
19,100.00	6,936.27	5,812.67	5,650.41	199.13	25.99	-65.21	1,340.69	-167.22	12,947.00	12,877.99	69.01	187.600
19,200.00	6,936.19	5,808.38	5,646.26	200.71	25.97	-65.13	1,339.59	-167.10	13,044.13	12,975.05	69.08	188.825
19,300.00	6,936.12	5,804.09	5,642.12	202.30	25.95	-65.05	1,338.50	-166.97	13,141.31	13,072.16	69.15	190.049
19,400.00	6,936.04	5,799.79	5,637.97	203.88	25.93	-64.98	1,337.40	-166.84	13,238.52	13,169.31	69.21	191.270

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #712H - OH - Prelim #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,500.00	6,935.97	5,795.50	5,633.82	205.47	25.91	-64.90	1,336.30	-166.72	13,335.78	13,266.50	69.28	192.490	
19,600.00	6,935.89	5,791.21	5,629.68	207.06	25.89	-64.82	1,335.21	-166.59	13,433.07	13,363.72	69.35	193.708	
19,700.00	6,935.82	5,786.92	5,625.53	208.64	25.87	-64.74	1,334.11	-166.46	13,530.40	13,460.99	69.41	194.924	
19,800.00	6,935.74	5,782.63	5,621.38	210.23	25.85	-64.66	1,333.01	-166.33	13,627.77	13,558.29	69.48	196.139	
19,900.00	6,935.67	5,778.34	5,617.24	211.82	25.83	-64.58	1,331.91	-166.21	13,725.18	13,655.63	69.55	197.351	
20,000.00	6,935.59	5,774.05	5,613.09	213.41	25.81	-64.51	1,330.82	-166.08	13,822.62	13,753.00	69.61	198.561	
20,100.00	6,935.52	5,769.76	5,608.94	214.99	25.79	-64.43	1,329.72	-165.95	13,920.09	13,850.41	69.68	199.769	
20,200.00	6,935.44	5,765.46	5,604.80	216.58	25.77	-64.35	1,328.62	-165.83	14,017.60	13,947.86	69.75	200.976	
20,300.00	6,935.37	5,761.17	5,600.65	218.17	25.74	-64.27	1,327.53	-165.70	14,115.15	14,045.33	69.81	202.180	
20,400.00	6,935.29	5,756.88	5,596.50	219.76	25.72	-64.20	1,326.43	-165.57	14,212.73	14,142.84	69.88	203.382	
20,500.00	6,935.22	5,752.59	5,592.36	221.35	25.70	-64.12	1,325.33	-165.44	14,310.34	14,240.39	69.95	204.582	
20,600.00	6,935.14	5,748.30	5,588.21	222.94	25.68	-64.04	1,324.23	-165.32	14,407.98	14,337.96	70.02	205.780	
20,700.00	6,935.07	5,744.01	5,584.06	224.53	25.66	-63.96	1,323.14	-165.19	14,505.65	14,435.56	70.08	206.976	
20,789.75	6,935.00	5,740.16	5,580.34	225.95	25.64	-63.89	1,322.15	-165.08	14,593.33	14,523.19	70.14	208.047	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #714H - OH - Prelim 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS												Offset Well Error:	0.00 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-15.26	57.88	-15.79	60.00				
100.00	100.00	100.00	100.00	0.25	0.25	-15.26	57.88	-15.79	60.00	59.50	0.50	119.554	
200.00	200.00	200.00	200.00	0.61	0.61	-15.26	57.88	-15.79	60.00	58.78	1.22	49.228	
300.00	300.00	300.00	300.00	0.97	0.97	-15.26	57.88	-15.79	60.00	58.06	1.94	30.995	
400.00	400.00	400.00	400.00	1.33	1.33	-15.26	57.88	-15.79	60.00	57.35	2.65	22.618	
500.00	500.00	500.00	500.00	1.68	1.68	-15.26	57.88	-15.79	60.00	56.63	3.37	17.806	CC, ES
600.00	599.98	601.11	601.09	2.03	2.03	164.60	56.57	-17.00	60.76	56.70	4.06	14.969	
700.00	699.84	701.11	701.02	2.36	2.37	162.97	53.82	-19.52	63.90	59.17	4.73	13.510	
800.00	799.45	800.89	800.73	2.71	2.71	162.37	51.08	-22.03	70.40	64.98	5.41	13.001	SF
900.00	898.70	900.40	900.17	3.06	3.06	162.62	48.34	-24.54	80.21	74.10	6.11	13.128	
1,000.00	997.47	999.52	999.22	3.43	3.41	163.42	45.61	-27.04	93.35	86.54	6.81	13.703	
1,100.00	1,095.62	1,098.13	1,097.76	3.82	3.75	164.50	42.90	-29.53	109.83	102.31	7.52	14.604	
1,180.06	1,173.69	1,176.62	1,176.20	4.14	4.03	165.42	40.74	-31.50	125.44	117.35	8.09	15.503	
1,200.00	1,193.07	1,196.11	1,195.68	4.22	4.10	165.67	40.20	-32.00	129.60	121.36	8.24	15.737	
1,300.00	1,290.27	1,293.88	1,293.38	4.65	4.45	166.69	37.51	-34.46	150.48	141.53	8.94	16.826	
1,400.00	1,387.46	1,391.65	1,391.07	5.08	4.80	167.46	34.82	-36.93	171.39	161.73	9.66	17.749	
1,500.00	1,484.66	1,489.41	1,488.77	5.52	5.15	168.06	32.13	-39.39	192.33	181.95	10.37	18.540	
1,600.00	1,581.85	1,587.18	1,586.47	5.97	5.50	168.55	29.44	-41.86	213.28	202.19	11.09	19.225	
1,700.00	1,679.05	1,684.94	1,684.17	6.42	5.85	168.95	26.75	-44.32	234.25	222.43	11.82	19.823	
1,800.00	1,776.25	1,782.71	1,781.87	6.87	6.20	169.28	24.06	-46.78	255.22	242.68	12.54	20.349	
1,900.00	1,873.44	1,880.48	1,879.56	7.33	6.55	169.56	21.37	-49.25	276.20	262.93	13.27	20.815	
2,000.00	1,970.64	1,978.24	1,977.26	7.78	6.90	169.81	18.68	-51.71	297.19	283.19	14.00	21.230	
2,100.00	2,067.83	2,076.01	2,074.96	8.24	7.26	170.02	15.99	-54.18	318.18	303.45	14.73	21.603	
2,200.00	2,165.03	2,173.77	2,172.66	8.71	7.61	170.20	13.30	-56.64	339.17	323.71	15.46	21.939	
2,300.00	2,262.22	2,271.54	2,270.35	9.17	7.96	170.36	10.61	-59.11	360.17	343.98	16.19	22.244	
2,400.00	2,359.42	2,369.30	2,368.05	9.63	8.31	170.51	7.93	-61.57	381.17	364.25	16.93	22.521	
2,500.00	2,456.61	2,467.07	2,465.75	10.10	8.67	170.64	5.24	-64.04	402.17	384.51	17.66	22.774	
2,600.00	2,553.81	2,564.84	2,563.45	10.57	9.02	170.76	2.55	-66.50	423.18	404.78	18.39	23.007	
2,700.00	2,651.01	2,662.60	2,661.14	11.03	9.37	170.86	-0.14	-68.97	444.18	425.05	19.13	23.221	
2,800.00	2,748.20	2,760.37	2,758.84	11.50	9.73	170.96	-2.83	-71.43	465.19	445.33	19.86	23.418	
2,900.00	2,845.40	2,858.13	2,856.54	11.97	10.08	171.05	-5.52	-73.90	486.20	465.60	20.60	23.601	
3,000.00	2,942.59	2,955.90	2,954.24	12.44	10.43	171.13	-8.21	-76.36	507.21	485.87	21.34	23.771	
3,100.00	3,039.79	3,053.66	3,051.94	12.91	10.79	171.20	-10.90	-78.83	528.22	506.14	22.07	23.929	
3,200.00	3,136.98	3,151.43	3,149.63	13.38	11.14	171.27	-13.59	-81.29	549.23	526.42	22.81	24.077	
3,300.00	3,234.18	3,249.20	3,247.33	13.85	11.50	171.33	-16.28	-83.76	570.24	546.69	23.55	24.215	
3,400.00	3,331.38	3,346.96	3,345.03	14.32	11.85	171.39	-18.97	-86.22	591.25	566.96	24.29	24.344	
3,500.00	3,428.57	3,444.73	3,442.73	14.79	12.20	171.45	-21.66	-88.69	612.26	587.24	25.03	24.466	
3,600.00	3,525.77	3,542.49	3,540.42	15.26	12.56	171.50	-24.35	-91.15	633.28	607.51	25.76	24.580	
3,700.00	3,622.96	3,640.26	3,638.12	15.73	12.91	171.55	-27.04	-93.62	654.29	627.79	26.50	24.688	
3,800.00	3,720.16	3,738.03	3,735.82	16.20	13.26	171.59	-29.73	-96.08	675.30	648.06	27.24	24.789	
3,900.00	3,817.35	3,835.79	3,833.52	16.68	13.62	171.64	-32.42	-98.55	696.32	668.34	27.98	24.885	
4,000.00	3,914.55	3,933.56	3,931.21	17.15	13.97	171.68	-35.11	-101.01	717.33	688.61	28.72	24.976	
4,100.00	4,011.74	4,031.32	4,028.91	17.62	14.33	171.71	-37.80	-103.48	738.35	708.89	29.46	25.063	
4,200.00	4,108.94	4,129.09	4,126.61	18.09	14.68	171.75	-40.49	-105.94	759.36	729.16	30.20	25.145	
4,300.00	4,206.14	4,226.85	4,224.31	18.57	15.04	171.78	-43.18	-108.41	780.38	749.44	30.94	25.223	
4,400.00	4,303.33	4,324.62	4,322.01	19.04	15.39	171.81	-45.87	-110.87	801.40	769.72	31.68	25.297	
4,500.00	4,400.53	4,422.39	4,419.70	19.51	15.74	171.84	-48.56	-113.34	822.41	789.99	32.42	25.368	
4,600.00	4,497.72	4,520.15	4,517.40	19.99	16.10	171.87	-51.25	-115.80	843.43	810.27	33.16	25.435	
4,700.00	4,594.92	4,617.92	4,615.10	20.46	16.45	171.90	-53.94	-118.27	864.44	830.54	33.90	25.499	
4,800.00	4,692.11	4,715.68	4,712.80	20.93	16.81	171.93	-56.63	-120.73	885.46	850.82	34.64	25.561	
4,900.00	4,789.31	4,813.45	4,810.49	21.41	17.16	171.95	-59.32	-123.20	906.48	871.10	35.38	25.620	
5,000.00	4,886.51	4,911.21	4,908.19	21.88	17.52	171.97	-62.01	-125.66	927.49	891.37	36.12	25.676	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #714H - OH - Prelim 1											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
5,100.00	4,983.70	5,008.98	5,005.89	22.35	17.87	172.00	-64.70	-128.13	948.51	911.65	36.86	25.730
5,200.00	5,080.90	5,106.75	5,103.59	22.83	18.22	172.02	-67.39	-130.59	969.53	931.92	37.60	25.782
5,300.00	5,178.09	5,204.51	5,201.28	23.30	18.58	172.04	-70.08	-133.06	990.55	952.20	38.35	25.832
5,400.00	5,275.29	5,302.28	5,298.98	23.77	18.93	172.06	-72.77	-135.52	1,011.56	972.48	39.09	25.880
5,500.00	5,372.48	5,400.04	5,396.68	24.25	19.29	172.08	-75.46	-137.98	1,032.58	992.75	39.83	25.926
5,600.00	5,469.68	5,497.81	5,494.38	24.72	19.64	172.10	-78.15	-140.45	1,053.60	1,013.03	40.57	25.970
5,700.00	5,566.87	5,595.58	5,592.08	25.20	20.00	172.11	-80.84	-142.91	1,074.62	1,033.31	41.31	26.013
5,800.00	5,664.07	5,693.34	5,689.77	25.67	20.35	172.13	-83.53	-145.38	1,095.63	1,053.58	42.05	26.054
5,900.00	5,761.27	5,791.11	5,787.47	26.14	20.70	172.15	-86.22	-147.84	1,116.65	1,073.86	42.79	26.093
6,000.00	5,858.46	5,888.87	5,885.17	26.62	21.06	172.16	-88.91	-150.31	1,137.67	1,094.13	43.54	26.131
6,100.00	5,955.66	5,986.64	5,982.87	27.09	21.41	172.18	-91.60	-152.77	1,158.69	1,114.41	44.28	26.168
6,200.00	6,052.85	6,084.40	6,080.56	27.57	21.77	172.19	-94.29	-155.24	1,179.71	1,134.69	45.02	26.204
6,300.00	6,150.05	6,182.17	6,178.26	28.04	22.12	172.21	-96.98	-157.70	1,200.73	1,154.96	45.76	26.238
6,400.00	6,247.24	6,279.94	6,275.96	28.52	22.48	172.22	-99.67	-160.17	1,221.74	1,175.24	46.50	26.271
6,490.87	6,335.57	6,361.19	6,357.14	28.95	22.77	172.21	-101.90	-162.73	1,240.95	1,193.82	47.13	26.331
6,500.00	6,344.44	6,368.05	6,363.98	28.99	22.80	175.74	-102.09	-163.22	1,242.94	1,195.75	47.18	26.343
6,550.00	6,392.91	6,400.00	6,395.75	29.23	22.91	-166.28	-102.95	-166.45	1,254.57	1,207.13	47.44	26.446
6,600.00	6,440.98	6,440.30	6,435.53	29.46	23.06	-152.12	-104.02	-172.79	1,267.37	1,219.61	47.76	26.538
6,650.00	6,488.34	6,473.12	6,467.57	29.70	23.19	-141.60	-104.87	-179.80	1,281.41	1,233.40	48.01	26.688
6,700.00	6,534.69	6,500.00	6,493.52	29.92	23.29	-133.75	-105.56	-186.77	1,296.79	1,248.57	48.22	26.894
6,750.00	6,579.76	6,529.24	6,521.39	30.15	23.40	-127.85	-106.29	-195.59	1,313.55	1,265.11	48.44	27.118
6,800.00	6,623.27	6,550.00	6,540.91	30.36	23.48	-122.95	-106.80	-202.63	1,331.79	1,283.21	48.58	27.416
6,850.00	6,664.95	6,571.22	6,560.62	30.57	23.56	-118.88	-107.31	-210.47	1,351.52	1,302.81	48.71	27.744
6,900.00	6,704.53	6,586.98	6,575.08	30.78	23.62	-115.13	-107.68	-216.72	1,372.76	1,323.97	48.79	28.133
6,950.00	6,741.79	6,600.00	6,586.91	30.98	23.66	-111.60	-107.98	-222.15	1,395.45	1,346.61	48.84	28.570
7,000.00	6,776.48	6,600.00	6,586.91	31.17	23.66	-107.71	-107.98	-222.15	1,419.55	1,370.80	48.75	29.120
7,050.00	6,808.39	6,615.72	6,601.05	31.36	23.72	-104.62	-108.34	-229.03	1,444.77	1,395.94	48.83	29.585
7,100.00	6,837.34	6,619.98	6,604.84	31.54	23.74	-101.11	-108.44	-230.95	1,471.13	1,422.33	48.80	30.148
7,150.00	6,863.13	6,622.00	6,606.64	31.73	23.75	-97.55	-108.48	-231.87	1,498.38	1,449.64	48.74	30.740
7,200.00	6,885.61	6,622.01	6,606.65	31.91	23.75	-93.96	-108.48	-231.88	1,526.33	1,477.65	48.68	31.354
7,250.00	6,904.64	6,620.24	6,605.08	32.10	23.74	-90.37	-108.44	-231.07	1,554.78	1,506.17	48.61	31.983
7,300.00	6,920.10	6,616.88	6,602.08	32.29	23.73	-86.82	-108.37	-229.55	1,583.52	1,534.97	48.54	32.620
7,350.00	6,931.91	6,600.00	6,586.91	32.48	23.66	-82.86	-107.98	-222.15	1,612.43	1,564.10	48.33	33.364
7,400.00	6,939.97	6,600.00	6,586.91	32.68	23.66	-79.78	-107.98	-222.15	1,641.04	1,592.69	48.35	33.941
7,450.00	6,944.26	6,600.00	6,586.91	32.89	23.66	-76.89	-107.98	-222.15	1,669.36	1,620.97	48.39	34.495
7,481.69	6,945.00	6,600.00	6,586.91	33.03	23.66	-75.17	-107.98	-222.15	1,687.10	1,638.67	48.43	34.834
7,500.00	6,944.99	6,600.00	6,586.91	33.12	23.66	-75.17	-107.98	-222.15	1,697.36	1,648.90	48.46	35.027
7,600.00	6,944.91	6,575.45	6,564.52	33.60	23.57	-74.30	-107.41	-212.11	1,755.24	1,706.92	48.32	36.327
7,700.00	6,944.84	6,550.00	6,540.91	34.17	23.48	-73.39	-106.80	-202.63	1,816.64	1,768.45	48.18	37.702
7,800.00	6,944.76	6,550.00	6,540.91	34.80	23.48	-73.39	-106.80	-202.63	1,880.89	1,832.52	48.36	38.891
7,900.00	6,944.69	6,550.00	6,540.91	35.49	23.48	-73.39	-106.80	-202.63	1,948.15	1,899.61	48.54	40.136
8,000.00	6,944.61	6,527.66	6,519.89	36.25	23.39	-72.59	-106.25	-195.08	2,017.73	1,969.26	48.47	41.626
8,100.00	6,944.54	6,518.29	6,511.00	37.07	23.36	-72.26	-106.02	-192.14	2,089.73	2,041.18	48.55	43.042
8,200.00	6,944.46	6,500.00	6,493.52	37.94	23.29	-71.60	-105.56	-186.77	2,163.92	2,115.38	48.54	44.581
8,300.00	6,944.39	6,500.00	6,493.52	38.86	23.29	-71.60	-105.56	-186.77	2,239.85	2,191.14	48.71	45.982
8,400.00	6,944.31	6,500.00	6,493.52	39.83	23.29	-71.60	-105.56	-186.77	2,317.61	2,268.74	48.88	47.418
8,500.00	6,944.23	6,500.00	6,493.52	40.84	23.29	-71.60	-105.56	-186.77	2,397.03	2,347.99	49.03	48.887
8,600.00	6,944.16	6,500.00	6,493.52	41.89	23.29	-71.60	-105.56	-186.77	2,477.93	2,428.75	49.18	50.384
8,700.00	6,944.08	6,475.77	6,470.15	42.98	23.20	-70.73	-104.94	-180.44	2,559.69	2,510.57	49.12	52.113
8,800.00	6,944.01	6,470.36	6,464.90	44.10	23.18	-70.53	-104.80	-179.15	2,642.92	2,593.70	49.21	53.702
8,900.00	6,943.93	6,450.00	6,445.03	45.25	23.10	-69.80	-104.27	-174.69	2,727.43	2,678.24	49.19	55.451
9,000.00	6,943.86	6,450.00	6,445.03	46.43	23.10	-69.80	-104.27	-174.69	2,812.62	2,763.30	49.32	57.027

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #714H - OH - Prelim 1											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
9,100.00	6,943.78	6,450.00	6,445.03	47.63	23.10	-69.80	-104.27	-174.69	2,898.77	2,849.32	49.45	58.622
9,200.00	6,943.71	6,450.00	6,445.03	48.86	23.10	-69.80	-104.27	-174.69	2,985.77	2,936.20	49.57	60.234
9,300.00	6,943.63	6,450.00	6,445.03	50.11	23.10	-69.80	-104.27	-174.69	3,073.57	3,023.88	49.69	61.861
9,400.00	6,943.56	6,450.00	6,445.03	51.38	23.10	-69.80	-104.27	-174.69	3,162.09	3,112.30	49.80	63.501
9,500.00	6,943.48	6,450.00	6,445.03	52.66	23.10	-69.80	-104.27	-174.69	3,251.28	3,201.38	49.90	65.153
9,600.00	6,943.41	6,450.00	6,445.03	53.97	23.10	-69.80	-104.27	-174.69	3,341.08	3,291.07	50.00	66.817
9,700.00	6,943.33	6,450.00	6,445.03	55.29	23.10	-69.80	-104.27	-174.69	3,431.44	3,381.34	50.10	68.490
9,800.00	6,943.26	6,450.00	6,445.03	56.63	23.10	-69.80	-104.27	-174.69	3,522.33	3,472.13	50.20	70.172
9,900.00	6,943.18	6,428.63	6,424.05	57.98	23.02	-69.04	-103.71	-170.69	3,613.30	3,563.15	50.16	72.040
10,000.00	6,943.11	6,425.95	6,421.41	59.34	23.01	-68.95	-103.64	-170.24	3,705.01	3,654.78	50.23	73.758
10,100.00	6,943.03	6,423.39	6,418.89	60.72	23.00	-68.85	-103.57	-169.82	3,797.13	3,746.82	50.31	75.481
10,200.00	6,942.96	6,400.00	6,395.75	62.11	22.91	-68.02	-102.95	-166.45	3,890.00	3,839.74	50.26	77.401
10,300.00	6,942.88	6,400.00	6,395.75	63.50	22.91	-68.02	-102.95	-166.45	3,982.77	3,932.42	50.34	79.111
10,400.00	6,942.81	6,400.00	6,395.75	64.91	22.91	-68.02	-102.95	-166.45	4,075.88	4,025.45	50.43	80.825
10,500.00	6,942.73	6,400.00	6,395.75	66.33	22.91	-68.02	-102.95	-166.45	4,169.31	4,118.80	50.51	82.544
10,600.00	6,942.66	6,400.00	6,395.75	67.75	22.91	-68.02	-102.95	-166.45	4,263.04	4,212.45	50.59	84.266
10,700.00	6,942.58	6,400.00	6,395.75	69.18	22.91	-68.02	-102.95	-166.45	4,357.04	4,306.38	50.67	85.990
10,800.00	6,942.51	6,400.00	6,395.75	70.62	22.91	-68.02	-102.95	-166.45	4,451.31	4,400.57	50.75	87.718
10,900.00	6,942.43	6,400.00	6,395.75	72.07	22.91	-68.02	-102.95	-166.45	4,545.83	4,495.01	50.82	89.447
11,000.00	6,942.36	6,400.00	6,395.75	73.52	22.91	-68.02	-102.95	-166.45	4,640.57	4,589.68	50.90	91.178
11,100.00	6,942.28	6,400.00	6,395.75	74.98	22.91	-68.02	-102.95	-166.45	4,735.53	4,684.56	50.97	92.911
11,200.00	6,942.21	6,400.00	6,395.75	76.45	22.91	-68.02	-102.95	-166.45	4,830.69	4,779.65	51.04	94.644
11,300.00	6,942.13	6,400.00	6,395.75	77.92	22.91	-68.02	-102.95	-166.45	4,926.05	4,874.94	51.11	96.378
11,400.00	6,942.06	6,400.00	6,395.75	79.40	22.91	-68.02	-102.95	-166.45	5,021.58	4,970.40	51.18	98.112
11,500.00	6,941.98	6,400.00	6,395.75	80.88	22.91	-68.02	-102.95	-166.45	5,117.29	5,066.04	51.25	99.846
11,600.00	6,941.91	6,400.00	6,395.75	82.36	22.91	-68.02	-102.95	-166.45	5,213.16	5,161.84	51.32	101.580
11,700.00	6,941.83	6,400.00	6,395.75	83.85	22.91	-68.02	-102.95	-166.45	5,309.18	5,257.79	51.39	103.313
11,800.00	6,941.76	6,400.00	6,395.75	85.35	22.91	-68.02	-102.95	-166.45	5,405.34	5,353.88	51.46	105.045
11,900.00	6,941.68	6,400.00	6,395.75	86.85	22.91	-68.02	-102.95	-166.45	5,501.64	5,450.12	51.53	106.776
12,000.00	6,941.60	6,400.00	6,395.75	88.35	22.91	-68.02	-102.95	-166.45	5,598.07	5,546.48	51.59	108.506
12,100.00	6,941.53	6,400.00	6,395.75	89.85	22.91	-68.02	-102.95	-166.45	5,694.63	5,642.97	51.66	110.234
12,200.00	6,941.45	6,400.00	6,395.75	91.36	22.91	-68.02	-102.95	-166.45	5,791.30	5,739.57	51.73	111.960
12,300.00	6,941.38	6,400.00	6,395.75	92.88	22.91	-68.02	-102.95	-166.45	5,888.08	5,836.29	51.79	113.685
12,400.00	6,941.30	6,400.00	6,395.75	94.39	22.91	-68.02	-102.95	-166.45	5,984.97	5,933.11	51.86	115.407
12,500.00	6,941.23	6,400.00	6,395.75	95.91	22.91	-68.02	-102.95	-166.45	6,081.96	6,030.03	51.93	117.127
12,600.00	6,941.15	6,400.00	6,395.75	97.43	22.91	-68.02	-102.95	-166.45	6,179.04	6,127.05	51.99	118.845
12,700.00	6,941.08	6,400.00	6,395.75	98.95	22.91	-68.02	-102.95	-166.45	6,276.22	6,224.16	52.06	120.560
12,800.00	6,941.00	6,400.00	6,395.75	100.48	22.91	-68.02	-102.95	-166.45	6,373.48	6,321.35	52.13	122.273
12,900.00	6,940.93	6,400.00	6,395.75	102.01	22.91	-68.02	-102.95	-166.45	6,470.83	6,418.63	52.19	123.982
13,000.00	6,940.85	6,400.00	6,395.75	103.54	22.91	-68.02	-102.95	-166.45	6,568.25	6,515.99	52.26	125.688
13,100.00	6,940.78	6,400.00	6,395.75	105.07	22.91	-68.02	-102.95	-166.45	6,665.76	6,613.43	52.32	127.392
13,200.00	6,940.70	6,400.00	6,395.75	106.61	22.91	-68.02	-102.95	-166.45	6,763.33	6,710.94	52.39	129.092
13,300.00	6,940.63	6,400.00	6,395.75	108.14	22.91	-68.02	-102.95	-166.45	6,860.98	6,808.52	52.46	130.788
13,400.00	6,940.55	6,400.00	6,395.75	109.68	22.91	-68.02	-102.95	-166.45	6,958.69	6,906.16	52.53	132.481
13,500.00	6,940.48	6,376.68	6,372.57	111.22	22.83	-67.20	-102.32	-163.93	7,056.01	7,003.51	52.50	134.391
13,600.00	6,940.40	6,375.93	6,371.83	112.77	22.83	-67.18	-102.30	-163.86	7,153.82	7,101.25	52.57	136.084
13,700.00	6,940.33	6,375.21	6,371.11	114.31	22.82	-67.15	-102.28	-163.80	7,251.69	7,199.05	52.63	137.774
13,800.00	6,940.25	6,374.50	6,370.40	115.86	22.82	-67.13	-102.26	-163.74	7,349.61	7,296.91	52.70	139.460
13,900.00	6,940.18	6,373.81	6,369.72	117.41	22.82	-67.10	-102.24	-163.68	7,447.59	7,394.82	52.77	141.141
14,000.00	6,940.10	6,373.14	6,369.05	118.95	22.82	-67.08	-102.22	-163.62	7,545.62	7,492.79	52.83	142.818
14,100.00	6,940.03	6,350.00	6,345.97	120.51	22.73	-66.27	-101.59	-162.10	7,644.12	7,591.31	52.82	144.727
14,200.00	6,939.95	6,350.00	6,345.97	122.06	22.73	-66.27	-101.59	-162.10	7,742.23	7,689.34	52.89	146.389

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #714H - OH - Prelim 1											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Offset Well Error:	0.00 usft
Reference	Vertical	Measured	Vertical	Reference	Offset		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Warning
Measured Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)							
14,300.00	6,939.88	6,350.00	6,345.97	123.61	22.73	-66.27	-101.59	-162.10	7,840.38	7,787.42	52.96	148.048
14,400.00	6,939.80	6,350.00	6,345.97	125.17	22.73	-66.27	-101.59	-162.10	7,938.58	7,885.55	53.03	149.702
14,500.00	6,939.73	6,350.00	6,345.97	126.72	22.73	-66.27	-101.59	-162.10	8,036.83	7,983.73	53.10	151.351
14,600.00	6,939.65	6,350.00	6,345.97	128.28	22.73	-66.27	-101.59	-162.10	8,135.11	8,081.94	53.17	152.996
14,700.00	6,939.58	6,350.00	6,345.97	129.84	22.73	-66.27	-101.59	-162.10	8,233.44	8,180.20	53.24	154.637
14,800.00	6,939.50	6,350.00	6,345.97	131.40	22.73	-66.27	-101.59	-162.10	8,331.81	8,278.49	53.32	156.273
14,900.00	6,939.43	6,350.00	6,345.97	132.96	22.73	-66.27	-101.59	-162.10	8,430.22	8,376.83	53.39	157.904
15,000.00	6,939.35	6,350.00	6,345.97	134.52	22.73	-66.27	-101.59	-162.10	8,528.66	8,475.20	53.46	159.530
15,100.00	6,939.28	6,350.00	6,345.97	136.08	22.73	-66.27	-101.59	-162.10	8,627.14	8,573.60	53.53	161.151
15,200.00	6,939.20	6,350.00	6,345.97	137.64	22.73	-66.27	-101.59	-162.10	8,725.65	8,672.04	53.61	162.768
15,300.00	6,939.13	6,350.00	6,345.97	139.21	22.73	-66.27	-101.59	-162.10	8,824.20	8,770.52	53.68	164.379
15,400.00	6,939.05	6,350.00	6,345.97	140.77	22.73	-66.27	-101.59	-162.10	8,922.78	8,869.02	53.76	165.986
15,500.00	6,938.98	6,350.00	6,345.97	142.34	22.73	-66.27	-101.59	-162.10	9,021.39	8,967.56	53.83	167.587
15,600.00	6,938.90	6,350.00	6,345.97	143.91	22.73	-66.27	-101.59	-162.10	9,120.03	9,066.12	53.91	169.184
15,700.00	6,938.82	6,350.00	6,345.97	145.47	22.73	-66.27	-101.59	-162.10	9,218.70	9,164.72	53.98	170.775
15,800.00	6,938.75	6,350.00	6,345.97	147.04	22.73	-66.27	-101.59	-162.10	9,317.40	9,263.34	54.06	172.361
15,900.00	6,938.67	6,350.00	6,345.97	148.61	22.73	-66.27	-101.59	-162.10	9,416.13	9,361.99	54.13	173.942
16,000.00	6,938.60	6,350.00	6,345.97	150.18	22.73	-66.27	-101.59	-162.10	9,514.88	9,460.67	54.21	175.518
16,100.00	6,938.52	6,350.00	6,345.97	151.75	22.73	-66.27	-101.59	-162.10	9,613.66	9,559.37	54.29	177.088
16,200.00	6,938.45	6,350.00	6,345.97	153.32	22.73	-66.27	-101.59	-162.10	9,712.46	9,658.10	54.36	178.653
16,300.00	6,938.37	6,350.00	6,345.97	154.90	22.73	-66.27	-101.59	-162.10	9,811.29	9,756.85	54.44	180.213
16,400.00	6,938.30	6,350.00	6,345.97	156.47	22.73	-66.27	-101.59	-162.10	9,910.14	9,855.62	54.52	181.767
16,500.00	6,938.22	6,350.00	6,345.97	158.04	22.73	-66.27	-101.59	-162.10	10,009.01	9,954.41	54.60	183.316
16,600.00	6,938.15	6,350.00	6,345.97	159.62	22.73	-66.27	-101.59	-162.10	10,107.91	10,053.23	54.68	184.859
16,700.00	6,938.07	6,350.00	6,345.97	161.19	22.73	-66.27	-101.59	-162.10	10,206.83	10,152.07	54.76	186.397
16,800.00	6,938.00	6,350.00	6,345.97	162.77	22.73	-66.27	-101.59	-162.10	10,305.77	10,250.93	54.84	187.929
16,900.00	6,937.92	6,350.00	6,345.97	164.34	22.73	-66.27	-101.59	-162.10	10,404.73	10,349.81	54.92	189.456
17,000.00	6,937.85	6,350.00	6,345.97	165.92	22.73	-66.27	-101.59	-162.10	10,503.70	10,448.70	55.00	190.977
17,100.00	6,937.77	6,350.00	6,345.97	167.50	22.73	-66.27	-101.59	-162.10	10,602.70	10,547.62	55.08	192.493
17,200.00	6,937.70	6,350.00	6,345.97	169.07	22.73	-66.27	-101.59	-162.10	10,701.72	10,646.56	55.16	194.003
17,300.00	6,937.62	6,350.00	6,345.97	170.65	22.73	-66.27	-101.59	-162.10	10,800.75	10,745.51	55.24	195.507
17,400.00	6,937.55	6,350.00	6,345.97	172.23	22.73	-66.27	-101.59	-162.10	10,899.81	10,844.48	55.33	197.006
17,500.00	6,937.47	6,350.00	6,345.97	173.81	22.73	-66.27	-101.59	-162.10	10,998.88	10,943.46	55.41	198.499
17,600.00	6,937.40	6,350.00	6,345.97	175.39	22.73	-66.27	-101.59	-162.10	11,097.96	11,042.47	55.49	199.987
17,700.00	6,937.32	6,350.00	6,345.97	176.97	22.73	-66.27	-101.59	-162.10	11,197.06	11,141.49	55.58	201.469
17,800.00	6,937.25	6,350.00	6,345.97	178.55	22.73	-66.27	-101.59	-162.10	11,296.18	11,240.52	55.66	202.945
17,900.00	6,937.17	6,350.00	6,345.97	180.13	22.73	-66.27	-101.59	-162.10	11,395.32	11,339.57	55.75	204.415
18,000.00	6,937.10	6,350.00	6,345.97	181.71	22.73	-66.27	-101.59	-162.10	11,494.46	11,438.63	55.83	205.880
18,100.00	6,937.02	6,350.00	6,345.97	183.29	22.73	-66.27	-101.59	-162.10	11,593.63	11,537.71	55.92	207.339
18,200.00	6,936.95	6,350.00	6,345.97	184.87	22.73	-66.27	-101.59	-162.10	11,692.80	11,636.80	56.00	208.792
18,300.00	6,936.87	6,350.00	6,345.97	186.46	22.73	-66.27	-101.59	-162.10	11,792.00	11,735.91	56.09	210.239
18,400.00	6,936.80	6,350.00	6,345.97	188.04	22.73	-66.27	-101.59	-162.10	11,891.20	11,835.03	56.18	211.681
18,500.00	6,936.72	6,350.00	6,345.97	189.62	22.73	-66.27	-101.59	-162.10	11,990.42	11,934.16	56.26	213.117
18,600.00	6,936.65	6,350.00	6,345.97	191.21	22.73	-66.27	-101.59	-162.10	12,089.65	12,033.30	56.35	214.547
18,700.00	6,936.57	6,350.00	6,345.97	192.79	22.73	-66.27	-101.59	-162.10	12,188.89	12,132.46	56.44	215.971
18,800.00	6,936.50	6,350.00	6,345.97	194.37	22.73	-66.27	-101.59	-162.10	12,288.15	12,231.62	56.53	217.390
18,900.00	6,936.42	6,350.00	6,345.97	195.96	22.73	-66.27	-101.59	-162.10	12,387.42	12,330.80	56.61	218.803
19,000.00	6,936.35	6,350.00	6,345.97	197.54	22.73	-66.27	-101.59	-162.10	12,486.70	12,429.99	56.70	220.210
19,100.00	6,936.27	6,350.00	6,345.97	199.13	22.73	-66.27	-101.59	-162.10	12,585.99	12,529.19	56.79	221.611
19,200.00	6,936.19	6,350.00	6,345.97	200.71	22.73	-66.27	-101.59	-162.10	12,685.29	12,628.41	56.88	223.007
19,300.00	6,936.12	6,350.00	6,345.97	202.30	22.73	-66.27	-101.59	-162.10	12,784.60	12,727.63	56.97	224.396
19,400.00	6,936.04	6,350.00	6,345.97	203.88	22.73	-66.27	-101.59	-162.10	12,883.93	12,826.86	57.06	225.780

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #714H - OH - Prelim 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Minimum Separation (usft)	Separation Factor
19,500.00	6,935.97	6,350.00	6,345.97	205.47	22.73	-66.27	-101.59	-162.10	12,983.26	12,926.10		57.16	227.158
19,600.00	6,935.89	6,350.00	6,345.97	207.06	22.73	-66.27	-101.59	-162.10	13,082.60	13,025.36		57.25	228.531
19,700.00	6,935.82	6,350.00	6,345.97	208.64	22.73	-66.27	-101.59	-162.10	13,181.96	13,124.62		57.34	229.897
19,800.00	6,935.74	6,350.00	6,345.97	210.23	22.73	-66.27	-101.59	-162.10	13,281.32	13,223.89		57.43	231.258
19,900.00	6,935.67	6,350.00	6,345.97	211.82	22.73	-66.27	-101.59	-162.10	13,380.69	13,323.17		57.52	232.613
20,000.00	6,935.59	6,350.00	6,345.97	213.41	22.73	-66.27	-101.59	-162.10	13,480.08	13,422.46		57.62	233.962
20,100.00	6,935.52	6,350.00	6,345.97	214.99	22.73	-66.27	-101.59	-162.10	13,579.47	13,521.76		57.71	235.306
20,200.00	6,935.44	6,350.00	6,345.97	216.58	22.73	-66.27	-101.59	-162.10	13,678.87	13,621.07		57.80	236.644
20,300.00	6,935.37	6,350.00	6,345.97	218.17	22.73	-66.27	-101.59	-162.10	13,778.28	13,720.38		57.90	237.975
20,400.00	6,935.29	6,350.00	6,345.97	219.76	22.73	-66.27	-101.59	-162.10	13,877.70	13,819.70		57.99	239.302
20,500.00	6,935.22	6,350.00	6,345.97	221.35	22.73	-66.27	-101.59	-162.10	13,977.12	13,919.03		58.09	240.622
20,600.00	6,935.14	6,350.00	6,345.97	222.94	22.73	-66.27	-101.59	-162.10	14,076.56	14,018.37		58.18	241.937
20,700.00	6,935.07	6,350.00	6,345.97	224.53	22.73	-66.27	-101.59	-162.10	14,176.00	14,117.72		58.28	243.246
20,789.75	6,935.00	6,350.00	6,345.97	225.95	22.73	-66.27	-101.59	-162.10	14,265.25	14,206.89		58.36	244.416

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #720H - OH - Prelim #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	-15.25	38.59	-10.52	40.00				
100.00	100.00	100.00	100.00	0.25	0.25	-15.25	38.59	-10.52	40.00	39.50	0.50	79.699	
200.00	200.00	200.00	200.00	0.61	0.61	-15.25	38.59	-10.52	40.00	38.78	1.22	32.817	
300.00	300.00	300.00	300.00	0.97	0.97	-15.25	38.59	-10.52	40.00	38.06	1.94	20.663	
400.00	400.00	400.00	400.00	1.33	1.33	-15.25	38.59	-10.52	40.00	37.35	2.65	15.078	
500.00	500.00	500.00	500.00	1.68	1.68	-15.25	38.59	-10.52	40.00	36.63	3.37	11.870 CC, ES	
600.00	599.98	598.56	598.54	2.03	2.04	166.81	40.28	-10.49	43.35	39.28	4.07	10.660	
700.00	699.84	696.42	696.26	2.36	2.39	169.46	45.32	-10.38	53.46	48.70	4.76	11.241	
800.00	799.45	792.88	792.37	2.71	2.74	172.17	53.54	-10.20	70.38	64.93	5.44	12.927	
900.00	898.70	887.32	886.14	3.06	3.09	174.31	64.73	-9.96	94.03	87.90	6.12	15.353	
1,000.00	997.47	979.13	976.90	3.43	3.42	175.85	78.55	-9.67	124.22	117.43	6.79	18.294	
1,100.00	1,095.62	1,067.80	1,064.09	3.82	3.77	176.94	94.66	-9.32	160.72	153.28	7.44	21.607	
1,180.06	1,173.69	1,136.23	1,131.01	4.14	4.04	177.58	108.93	-9.02	194.28	186.34	7.95	24.448	
1,200.00	1,193.07	1,152.92	1,147.28	4.22	4.10	177.72	112.66	-8.94	203.17	195.09	8.07	25.165	
1,300.00	1,290.27	1,235.16	1,227.12	4.65	4.44	178.30	132.38	-8.52	249.26	240.60	8.66	28.785	
1,400.00	1,387.46	1,322.17	1,311.21	5.08	4.81	178.75	154.74	-8.04	296.92	287.61	9.30	31.914	
1,500.00	1,484.66	1,410.05	1,396.13	5.52	5.19	179.08	177.34	-7.56	344.61	334.64	9.96	34.583	
1,600.00	1,581.85	1,497.94	1,481.06	5.97	5.58	179.33	199.93	-7.08	392.30	381.67	10.63	36.902	
1,700.00	1,679.05	1,585.82	1,565.98	6.42	5.97	179.53	222.53	-6.59	440.00	428.70	11.30	38.931	
1,800.00	1,776.25	1,673.70	1,650.91	6.87	6.37	179.68	245.13	-6.11	487.71	475.73	11.98	40.719	
1,900.00	1,873.44	1,761.58	1,735.83	7.33	6.77	179.81	267.73	-5.63	535.41	522.76	12.66	42.306	
2,000.00	1,970.64	1,849.46	1,820.76	7.78	7.17	179.92	290.33	-5.15	583.12	569.78	13.34	43.721	
2,100.00	2,067.83	1,937.34	1,905.68	8.24	7.57	-179.99	312.92	-4.66	630.83	616.81	14.02	44.991	
2,200.00	2,165.03	2,025.22	1,990.61	8.71	7.98	-179.91	335.52	-4.18	678.54	663.83	14.71	46.136	
2,300.00	2,262.22	2,113.10	2,075.53	9.17	8.39	-179.84	358.12	-3.70	726.25	710.86	15.40	47.173	
2,400.00	2,359.42	2,200.99	2,160.46	9.63	8.80	-179.78	380.72	-3.22	773.96	757.88	16.09	48.116	
2,500.00	2,456.61	2,288.87	2,245.38	10.10	9.21	-179.73	403.32	-2.73	821.68	804.90	16.78	48.978	
2,600.00	2,553.81	2,376.75	2,330.30	10.57	9.62	-179.68	425.92	-2.25	869.39	851.92	17.47	49.767	
2,700.00	2,651.01	2,464.63	2,415.23	11.03	10.03	-179.64	448.51	-1.77	917.10	898.94	18.16	50.493	
2,800.00	2,748.20	2,552.51	2,500.15	11.50	10.44	-179.60	471.11	-1.29	964.81	945.96	18.86	51.163	
2,900.00	2,845.40	2,640.39	2,585.08	11.97	10.86	-179.57	493.71	-0.80	1,012.53	992.97	19.55	51.783	
3,000.00	2,942.59	2,728.27	2,670.00	12.44	11.27	-179.54	516.31	-0.32	1,060.24	1,039.99	20.25	52.357	
3,100.00	3,039.79	2,816.16	2,754.93	12.91	11.68	-179.51	538.91	0.16	1,107.96	1,087.01	20.95	52.899	
3,200.00	3,136.98	2,904.04	2,839.85	13.38	12.10	-179.48	561.51	0.64	1,155.67	1,134.03	21.65	53.390	
3,300.00	3,234.18	2,991.92	2,924.78	13.85	12.51	-179.46	584.10	1.13	1,203.39	1,181.04	22.34	53.855	
3,400.00	3,331.38	3,079.80	3,009.70	14.32	12.93	-179.43	606.70	1.61	1,251.10	1,228.06	23.04	54.291	
3,500.00	3,428.57	3,167.68	3,094.63	14.79	13.35	-179.41	629.30	2.09	1,298.82	1,275.07	23.74	54.699	
3,600.00	3,525.77	3,255.56	3,179.55	15.26	13.76	-179.39	651.90	2.57	1,346.53	1,322.08	24.45	55.083	
3,700.00	3,622.96	3,343.44	3,264.48	15.73	14.18	-179.38	674.50	3.06	1,394.25	1,369.10	25.15	55.444	
3,800.00	3,720.16	3,431.32	3,349.40	16.20	14.60	-179.36	697.09	3.54	1,441.96	1,416.11	25.85	55.784	
3,900.00	3,817.35	3,519.21	3,434.33	16.68	15.02	-179.34	719.69	4.02	1,489.68	1,463.12	26.55	56.106	
4,000.00	3,914.55	3,607.09	3,519.25	17.15	15.43	-179.33	742.29	4.50	1,537.39	1,510.14	27.25	56.410	
4,100.00	4,011.74	3,694.97	3,604.18	17.62	15.85	-179.32	764.89	4.99	1,585.11	1,557.15	27.96	56.697	
4,200.00	4,108.94	3,782.85	3,689.10	18.09	16.27	-179.30	787.49	5.47	1,632.82	1,604.16	28.66	56.970	
4,300.00	4,206.14	3,870.73	3,774.03	18.57	16.69	-179.29	810.09	5.95	1,680.54	1,651.17	29.37	57.229	
4,400.00	4,303.33	3,958.61	3,858.95	19.04	17.11	-179.28	832.68	6.43	1,728.25	1,698.18	30.07	57.474	
4,500.00	4,400.53	4,046.49	3,943.88	19.51	17.53	-179.27	855.28	6.92	1,775.97	1,745.19	30.77	57.708	
4,600.00	4,497.72	4,134.37	4,028.80	19.99	17.94	-179.26	877.88	7.40	1,823.68	1,792.20	31.48	57.931	
4,700.00	4,594.92	4,222.26	4,113.72	20.46	18.36	-179.25	900.48	7.88	1,871.40	1,839.21	32.19	58.143	
4,800.00	4,692.11	4,310.14	4,198.65	20.93	18.78	-179.24	923.08	8.37	1,919.12	1,886.22	32.89	58.345	
4,900.00	4,789.31	4,398.02	4,283.57	21.41	19.20	-179.23	945.67	8.85	1,966.83	1,933.23	33.60	58.539	
5,000.00	4,886.51	4,485.90	4,368.50	21.88	19.62	-179.22	968.27	9.33	2,014.55	1,980.24	34.31	58.723	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #720H - OH - Prelim #1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM+MS						Rule Assigned:				Offset Well Error:	0.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,100.00	4,983.70	4,573.78	4,453.42	22.35	20.04	-179.21	990.87	9.81	2,062.26	2,027.25	35.01	58.900		
5,200.00	5,080.90	4,661.66	4,538.35	22.83	20.46	-179.20	1,013.47	10.30	2,109.98	2,074.26	35.72	59.069		
5,300.00	5,178.09	4,749.54	4,623.27	23.30	20.88	-179.20	1,036.07	10.78	2,157.70	2,121.27	36.43	59.231		
5,400.00	5,275.29	4,837.43	4,708.20	23.77	21.30	-179.19	1,058.67	11.26	2,205.41	2,168.28	37.14	59.386		
5,500.00	5,372.48	4,925.31	4,793.12	24.25	21.72	-179.18	1,081.26	11.74	2,253.13	2,215.28	37.85	59.535		
5,600.00	5,469.68	5,013.19	4,878.05	24.72	22.14	-179.18	1,103.86	12.23	2,300.84	2,262.29	38.55	59.678		
5,700.00	5,566.87	5,101.07	4,962.97	25.20	22.56	-179.17	1,126.46	12.71	2,348.56	2,309.30	39.26	59.815		
5,800.00	5,664.07	5,188.95	5,047.90	25.67	22.98	-179.16	1,149.06	13.19	2,396.28	2,356.30	39.97	59.947		
5,900.00	5,761.27	5,276.83	5,132.82	26.14	23.40	-179.16	1,171.66	13.67	2,443.99	2,403.31	40.68	60.073		
6,000.00	5,858.46	5,364.71	5,217.75	26.62	23.82	-179.15	1,194.26	14.16	2,491.71	2,450.32	41.39	60.195		
6,100.00	5,955.66	5,452.59	5,302.67	27.09	24.24	-179.15	1,216.85	14.64	2,539.43	2,497.32	42.10	60.313		
6,200.00	6,052.85	5,540.48	5,387.60	27.57	24.66	-179.14	1,239.45	15.12	2,587.14	2,544.33	42.82	60.425		
6,300.00	6,150.05	5,628.36	5,472.52	28.04	25.08	-179.14	1,262.05	15.60	2,634.86	2,591.33	43.53	60.534		
6,400.00	6,247.24	5,716.24	5,557.45	28.52	25.50	-179.13	1,284.65	16.09	2,682.57	2,638.34	44.24	60.639		
6,490.87	6,335.57	5,796.10	5,634.62	28.95	25.88	-179.13	1,305.18	16.52	2,725.93	2,681.05	44.89	60.731		
6,500.00	6,344.44	5,804.12	5,642.37	28.99	25.92	-175.31	1,307.25	16.57	2,730.29	2,685.34	44.95	60.740		
6,550.00	6,392.91	5,847.93	5,684.71	29.23	26.13	-155.82	1,318.51	16.81	2,754.22	2,708.92	45.31	60.792		
6,600.00	6,440.98	5,891.34	5,726.66	29.46	26.34	-140.05	1,329.67	17.05	2,778.16	2,732.50	45.66	60.850		
6,650.00	6,488.34	5,934.08	5,767.96	29.70	26.54	-128.05	1,340.67	17.28	2,801.97	2,755.97	46.00	60.914		
6,700.00	6,534.69	5,975.89	5,808.37	29.92	26.74	-118.92	1,351.42	17.51	2,825.56	2,779.23	46.33	60.984		
6,750.00	6,579.76	6,016.52	5,847.62	30.15	26.94	-111.83	1,361.86	17.73	2,848.84	2,802.18	46.65	61.062		
6,800.00	6,623.27	6,055.70	5,885.48	30.36	27.13	-106.15	1,371.94	17.95	2,871.72	2,824.75	46.96	61.147		
6,850.00	6,664.95	6,093.20	5,921.72	30.57	27.30	-101.49	1,381.58	18.16	2,894.14	2,846.88	47.26	61.239		
6,900.00	6,704.53	6,128.79	5,956.12	30.78	27.47	-97.58	1,390.73	18.35	2,916.04	2,868.50	47.54	61.337		
6,950.00	6,741.79	6,162.24	5,988.45	30.98	27.64	-94.24	1,399.34	18.53	2,937.37	2,889.57	47.81	61.440		
7,000.00	6,776.48	6,193.36	6,018.52	31.17	27.78	-91.34	1,407.34	18.71	2,958.10	2,910.04	48.06	61.548		
7,050.00	6,808.39	6,221.95	6,046.14	31.36	27.92	-88.79	1,414.69	18.86	2,978.18	2,929.88	48.30	61.659		
7,100.00	6,837.34	6,247.83	6,071.16	31.54	28.04	-86.52	1,421.34	19.00	2,997.58	2,949.05	48.53	61.772		
7,150.00	6,863.13	6,270.85	6,093.40	31.73	28.15	-84.49	1,427.26	19.13	3,016.26	2,967.52	48.74	61.886		
7,200.00	6,885.61	6,290.86	6,112.73	31.91	28.25	-82.66	1,432.41	19.24	3,034.20	2,985.26	48.94	62.000		
7,250.00	6,904.64	6,307.74	6,129.04	32.10	28.33	-80.99	1,436.75	19.33	3,051.35	3,002.22	49.13	62.112		
7,300.00	6,920.10	6,321.38	6,142.23	32.29	28.40	-79.46	1,440.26	19.41	3,067.67	3,018.37	49.30	62.222		
7,350.00	6,931.91	6,331.70	6,152.20	32.48	28.45	-78.07	1,442.91	19.47	3,083.13	3,033.66	49.46	62.330		
7,400.00	6,939.97	6,338.64	6,158.91	32.68	28.48	-76.81	1,444.70	19.50	3,097.67	3,048.05	49.62	62.433		
7,450.00	6,944.26	6,342.15	6,162.30	32.89	28.50	-75.65	1,445.60	19.52	3,111.24	3,061.49	49.75	62.533		
7,481.69	6,945.00	6,342.60	6,162.73	33.03	28.50	-74.99	1,445.71	19.53	3,119.31	3,069.48	49.83	62.594		
7,500.00	6,944.99	6,342.45	6,162.59	33.12	28.50	-74.98	1,445.68	19.52	3,123.91	3,074.03	49.88	62.629		
7,600.00	6,944.91	6,341.66	6,161.83	33.60	28.49	-74.97	1,445.47	19.52	3,150.75	3,100.58	50.16	62.812		
7,700.00	6,944.84	7,778.45	6,949.85	34.17	34.71	-90.09	1,641.15	917.37	3,159.82	3,099.59	60.22	52.467		
7,800.00	6,944.76	7,878.39	6,949.79	34.80	35.36	-90.09	1,639.57	1,017.30	3,163.16	3,101.42	61.73	51.238		
7,900.00	6,944.69	7,978.33	6,949.72	35.49	36.07	-90.09	1,637.98	1,117.24	3,166.50	3,103.13	63.37	49.968		
8,000.00	6,944.61	8,078.28	6,949.66	36.25	36.84	-90.09	1,636.40	1,217.17	3,169.84	3,104.71	65.12	48.674		
8,100.00	6,944.54	8,178.22	6,949.60	37.07	37.67	-90.09	1,634.82	1,317.10	3,173.18	3,106.19	66.98	47.372		
8,200.00	6,944.46	8,278.17	6,949.54	37.94	38.55	-90.09	1,633.23	1,417.03	3,176.52	3,107.57	68.94	46.074		
8,300.00	6,944.39	8,378.11	6,949.48	38.86	39.47	-90.09	1,631.65	1,516.96	3,179.86	3,108.86	70.99	44.790		
8,400.00	6,944.31	8,478.06	6,949.42	39.83	40.44	-90.09	1,630.07	1,616.89	3,183.20	3,110.07	73.13	43.529		
8,500.00	6,944.23	8,578.00	6,949.36	40.84	41.45	-90.09	1,628.48	1,716.83	3,186.54	3,111.20	75.34	42.297		
8,600.00	6,944.16	8,677.94	6,949.30	41.89	42.49	-90.09	1,626.90	1,816.76	3,189.87	3,112.26	77.62	41.098		
8,700.00	6,944.08	8,777.89	6,949.24	42.98	43.58	-90.09	1,625.32	1,916.69	3,193.21	3,113.26	79.96	39.936		
8,800.00	6,944.01	8,877.83	6,949.18	44.10	44.69	-90.09	1,623.73	2,016.62	3,196.55	3,114.19	82.36	38.812		
8,900.00	6,943.93	8,977.78	6,949.12	45.25	45.83	-90.09	1,622.15	2,116.55	3,199.89	3,115.08	84.81	37.729		
9,000.00	6,943.86	9,077.72	6,949.06	46.43	47.00	-90.09	1,620.57	2,216.48	3,203.23	3,115.92	87.32	36.685		

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #720H - OH - Prelim #1												Offset Site Error: 0.00 usft			
Survey Program:		0-MWD+HRGM+MS					Rule Assigned:							Offset Well Error: 0.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
9,100.00	6,943.78	9,177.67	6,949.00	47.63	48.19	-90.09	1,618.98	2,316.42	3,206.57	3,116.71	89.86	35.683			
9,200.00	6,943.71	9,277.61	6,948.94	48.86	49.41	-90.09	1,617.40	2,416.35	3,209.91	3,117.46	92.45	34.720			
9,300.00	6,943.63	9,377.55	6,948.88	50.11	50.65	-90.09	1,615.82	2,516.28	3,213.25	3,118.17	95.08	33.796			
9,400.00	6,943.56	9,477.50	6,948.82	51.38	51.90	-90.09	1,614.23	2,616.21	3,216.59	3,118.85	97.74	32.910			
9,500.00	6,943.48	9,577.44	6,948.76	52.66	53.18	-90.09	1,612.65	2,716.14	3,219.93	3,119.50	100.43	32.061			
9,600.00	6,943.41	9,677.39	6,948.70	53.97	54.48	-90.09	1,611.07	2,816.07	3,223.27	3,120.12	103.15	31.248			
9,700.00	6,943.33	9,777.33	6,948.64	55.29	55.79	-90.09	1,609.48	2,916.01	3,226.61	3,120.71	105.90	30.468			
9,800.00	6,943.26	9,877.27	6,948.58	56.63	57.11	-90.09	1,607.90	3,015.94	3,229.95	3,121.28	108.67	29.722			
9,900.00	6,943.18	9,977.22	6,948.52	57.98	58.45	-90.09	1,606.32	3,115.87	3,233.29	3,121.82	111.47	29.006			
10,000.00	6,943.11	10,077.16	6,948.46	59.34	59.80	-90.09	1,604.73	3,215.80	3,236.63	3,122.34	114.29	28.320			
10,100.00	6,943.03	10,177.11	6,948.40	60.72	61.16	-90.09	1,603.15	3,315.73	3,239.97	3,122.84	117.13	27.662			
10,200.00	6,942.96	10,277.05	6,948.34	62.11	62.54	-90.09	1,601.57	3,415.66	3,243.31	3,123.32	119.98	27.031			
10,300.00	6,942.88	10,377.00	6,948.28	63.50	63.93	-90.09	1,599.98	3,515.60	3,246.65	3,123.79	122.86	26.426			
10,400.00	6,942.81	10,476.94	6,948.22	64.91	65.32	-90.09	1,598.40	3,615.53	3,249.99	3,124.24	125.75	25.845			
10,500.00	6,942.73	10,576.88	6,948.16	66.33	66.73	-90.09	1,596.82	3,715.46	3,253.33	3,124.67	128.65	25.288			
10,600.00	6,942.66	10,676.83	6,948.10	67.75	68.14	-90.09	1,595.23	3,815.39	3,256.67	3,125.10	131.57	24.752			
10,700.00	6,942.58	10,776.77	6,948.04	69.18	69.56	-90.09	1,593.65	3,915.32	3,260.01	3,125.50	134.50	24.237			
10,800.00	6,942.51	10,876.72	6,947.98	70.62	70.99	-90.09	1,592.07	4,015.25	3,263.35	3,125.90	137.45	23.743			
10,900.00	6,942.43	10,976.66	6,947.92	72.07	72.43	-90.09	1,590.48	4,115.19	3,266.69	3,126.28	140.40	23.267			
11,000.00	6,942.36	11,076.61	6,947.86	73.52	73.87	-90.10	1,588.90	4,215.12	3,270.02	3,126.66	143.37	22.809			
11,100.00	6,942.28	11,176.55	6,947.80	74.98	75.32	-90.10	1,587.32	4,315.05	3,273.36	3,127.02	146.34	22.368			
11,200.00	6,942.21	11,276.49	6,947.74	76.45	76.77	-90.10	1,585.73	4,414.98	3,276.70	3,127.37	149.33	21.943			
11,300.00	6,942.13	11,376.44	6,947.68	77.92	78.24	-90.10	1,584.15	4,514.91	3,280.04	3,127.72	152.32	21.533			
11,400.00	6,942.06	11,476.38	6,947.62	79.40	79.70	-90.10	1,582.57	4,614.84	3,283.38	3,128.06	155.33	21.138			
11,500.00	6,941.98	11,576.33	6,947.56	80.88	81.17	-90.10	1,580.98	4,714.78	3,286.72	3,128.38	158.34	20.757			
11,600.00	6,941.91	11,676.27	6,947.50	82.36	82.65	-90.10	1,579.40	4,814.71	3,290.06	3,128.70	161.36	20.390			
11,700.00	6,941.83	11,776.21	6,947.44	83.85	84.13	-90.10	1,577.82	4,914.64	3,293.40	3,129.02	164.38	20.035			
11,800.00	6,941.76	11,876.16	6,947.38	85.35	85.62	-90.10	1,576.23	5,014.57	3,296.74	3,129.33	167.42	19.692			
11,900.00	6,941.68	11,976.10	6,947.32	86.85	87.11	-90.10	1,574.65	5,114.50	3,300.08	3,129.63	170.45	19.361			
12,000.00	6,941.60	12,076.05	6,947.26	88.35	88.60	-90.10	1,573.07	5,214.43	3,303.42	3,129.92	173.50	19.040			
12,100.00	6,941.53	12,175.99	6,947.20	89.85	90.10	-90.10	1,571.48	5,314.37	3,306.76	3,130.21	176.55	18.730			
12,200.00	6,941.45	12,275.94	6,947.14	91.36	91.60	-90.10	1,569.90	5,414.30	3,310.10	3,130.50	179.60	18.430			
12,300.00	6,941.38	12,375.88	6,947.08	92.88	93.10	-90.10	1,568.32	5,514.23	3,313.44	3,130.77	182.67	18.139			
12,400.00	6,941.30	12,475.82	6,947.02	94.39	94.61	-90.10	1,566.73	5,614.16	3,316.78	3,131.05	185.73	17.858			
12,500.00	6,941.23	12,575.77	6,946.96	95.91	96.12	-90.10	1,565.15	5,714.09	3,320.12	3,131.32	188.80	17.585			
12,600.00	6,941.15	12,675.71	6,946.90	97.43	97.63	-90.10	1,563.57	5,814.02	3,323.46	3,131.58	191.88	17.321			
12,700.00	6,941.08	12,775.66	6,946.84	98.95	99.15	-90.10	1,561.98	5,913.96	3,326.80	3,131.84	194.95	17.064			
12,800.00	6,941.00	12,875.60	6,946.78	100.48	100.67	-90.10	1,560.40	6,013.89	3,330.14	3,132.10	198.04	16.816			
12,900.00	6,940.93	12,975.55	6,946.72	102.01	102.19	-90.10	1,558.82	6,113.82	3,333.48	3,132.35	201.12	16.574			
13,000.00	6,940.85	13,075.49	6,946.66	103.54	103.71	-90.10	1,557.23	6,213.75	3,336.82	3,132.60	204.21	16.340			
13,100.00	6,940.78	13,175.43	6,946.60	105.07	105.24	-90.10	1,555.65	6,313.68	3,340.16	3,132.85	207.31	16.112			
13,200.00	6,940.70	13,275.38	6,946.54	106.61	106.77	-90.10	1,554.07	6,413.61	3,343.50	3,133.09	210.41	15.891			
13,300.00	6,940.63	13,375.32	6,946.48	108.14	108.30	-90.10	1,552.48	6,513.55	3,346.84	3,133.33	213.51	15.676			
13,400.00	6,940.55	13,475.27	6,946.42	109.68	109.83	-90.10	1,550.90	6,613.48	3,350.17	3,133.57	216.61	15.466			
13,500.00	6,940.48	13,575.21	6,946.36	111.22	111.36	-90.10	1,549.32	6,713.41	3,353.51	3,133.80	219.72	15.263			
13,600.00	6,940.40	13,675.16	6,946.30	112.77	112.90	-90.10	1,547.73	6,813.34	3,356.85	3,134.03	222.83	15.065			
13,700.00	6,940.33	13,775.10	6,946.23	114.31	114.44	-90.10	1,546.15	6,913.27	3,360.19	3,134.26	225.94	14.872			
13,800.00	6,940.25	13,875.04	6,946.17	115.86	115.98	-90.10	1,544.57	7,013.20	3,363.53	3,134.48	229.05	14.685			
13,900.00	6,940.18	13,974.99	6,946.11	117.41	117.52	-90.10	1,542.98	7,113.14	3,366.87	3,134.70	232.17	14.502			
14,000.00	6,940.10	14,074.93	6,946.05	118.95	119.06	-90.10	1,541.40	7,213.07	3,370.21	3,134.92	235.29	14.324			
14,100.00	6,940.03	14,174.88	6,945.99	120.51	120.61	-90.10	1,539.82	7,313.00	3,373.55	3,135.14	238.41	14.150			
14,200.00	6,939.95	14,274.82	6,945.93	122.06	122.15	-90.10	1,538.23	7,412.93	3,376.89	3,135.36	241.53	13.981			

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #720H - OH - Prelim #1												Offset Site Error: 0.00 usft	
Survey Program:		0-MWD+HRGM+MS						Rule Assigned:				Offset Well Error: 0.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.00	6,939.88	14,374.76	6,945.87	123.61	123.70	-90.10	1,536.65	7,512.86	3,380.23	3,135.57	244.66	13.816	
14,400.00	6,939.80	14,474.71	6,945.81	125.17	125.25	-90.10	1,535.07	7,612.79	3,383.57	3,135.78	247.79	13.655	
14,500.00	6,939.73	14,574.65	6,945.75	126.72	126.80	-90.10	1,533.48	7,712.73	3,386.91	3,135.99	250.92	13.498	
14,600.00	6,939.65	14,674.60	6,945.69	128.28	128.35	-90.10	1,531.90	7,812.66	3,390.25	3,136.20	254.05	13.345	
14,700.00	6,939.58	14,774.54	6,945.63	129.84	129.90	-90.10	1,530.32	7,912.59	3,393.59	3,136.41	257.18	13.195	
14,800.00	6,939.50	14,874.49	6,945.57	131.40	131.45	-90.10	1,528.73	8,012.52	3,396.93	3,136.61	260.32	13.049	
14,900.00	6,939.43	14,974.43	6,945.51	132.96	133.01	-90.10	1,527.15	8,112.45	3,400.27	3,136.81	263.45	12.906	
15,000.00	6,939.35	15,074.37	6,945.45	134.52	134.56	-90.10	1,525.57	8,212.38	3,403.61	3,137.02	266.59	12.767	
15,100.00	6,939.28	15,174.32	6,945.39	136.08	136.12	-90.10	1,523.98	8,312.32	3,406.95	3,137.22	269.73	12.631	
15,200.00	6,939.20	15,274.26	6,945.33	137.64	137.68	-90.10	1,522.40	8,412.25	3,410.29	3,137.41	272.87	12.498	
15,300.00	6,939.13	15,374.21	6,945.27	139.21	139.24	-90.10	1,520.82	8,512.18	3,413.63	3,137.61	276.02	12.367	
15,400.00	6,939.05	15,474.15	6,945.21	140.77	140.80	-90.10	1,519.23	8,612.11	3,416.97	3,137.80	279.16	12.240	
15,500.00	6,938.98	15,574.10	6,945.15	142.34	142.36	-90.10	1,517.65	8,712.04	3,420.31	3,138.00	282.31	12.116	
15,600.00	6,938.90	15,674.04	6,945.09	143.91	143.92	-90.10	1,516.07	8,811.97	3,423.65	3,138.19	285.46	11.994	
15,700.00	6,938.82	15,773.98	6,945.03	145.47	145.48	-90.10	1,514.48	8,911.91	3,426.99	3,138.38	288.60	11.874	
15,800.00	6,938.75	15,873.93	6,944.97	147.04	147.05	-90.10	1,512.90	9,011.84	3,430.33	3,138.57	291.75	11.758	
15,900.00	6,938.67	15,973.87	6,944.91	148.61	148.61	-90.10	1,511.32	9,111.77	3,433.66	3,138.76	294.90	11.643	
16,000.00	6,938.60	16,073.82	6,944.85	150.18	150.18	-90.10	1,509.73	9,211.70	3,437.00	3,138.95	298.06	11.531	
16,100.00	6,938.52	16,173.76	6,944.79	151.75	151.74	-90.10	1,508.15	9,311.63	3,440.34	3,139.13	301.21	11.422	
16,200.00	6,938.45	16,273.70	6,944.73	153.32	153.31	-90.10	1,506.57	9,411.56	3,443.68	3,139.32	304.36	11.314	
16,300.00	6,938.37	16,373.65	6,944.67	154.90	154.88	-90.10	1,504.98	9,511.50	3,447.02	3,139.50	307.52	11.209	
16,400.00	6,938.30	16,473.59	6,944.61	156.47	156.44	-90.10	1,503.40	9,611.43	3,450.36	3,139.69	310.68	11.106	
16,500.00	6,938.22	16,573.54	6,944.55	158.04	158.01	-90.10	1,501.82	9,711.36	3,453.70	3,139.87	313.83	11.005	
16,600.00	6,938.15	16,673.48	6,944.49	159.62	159.58	-90.10	1,500.23	9,811.29	3,457.04	3,140.05	316.99	10.906	
16,700.00	6,938.07	16,773.43	6,944.43	161.19	161.15	-90.10	1,498.65	9,911.22	3,460.38	3,140.23	320.15	10.809	
16,800.00	6,938.00	16,873.37	6,944.37	162.77	162.72	-90.10	1,497.07	10,011.15	3,463.72	3,140.41	323.31	10.713	
16,900.00	6,937.92	16,973.31	6,944.31	164.34	164.29	-90.10	1,495.48	10,111.09	3,467.06	3,140.59	326.47	10.620	
17,000.00	6,937.85	17,073.26	6,944.25	165.92	165.87	-90.10	1,493.90	10,211.02	3,470.40	3,140.77	329.63	10.528	
17,100.00	6,937.77	17,173.20	6,944.19	167.50	167.44	-90.10	1,492.32	10,310.95	3,473.74	3,140.94	332.80	10.438	
17,200.00	6,937.70	17,273.15	6,944.13	169.07	169.01	-90.10	1,490.73	10,410.88	3,477.08	3,141.12	335.96	10.350	
17,300.00	6,937.62	17,373.09	6,944.07	170.65	170.58	-90.10	1,489.15	10,510.81	3,480.42	3,141.29	339.12	10.263	
17,400.00	6,937.55	17,473.04	6,944.01	172.23	172.16	-90.10	1,487.57	10,610.74	3,483.76	3,141.47	342.29	10.178	
17,500.00	6,937.47	17,572.98	6,943.95	173.81	173.73	-90.11	1,485.98	10,710.68	3,487.10	3,141.64	345.46	10.094	
17,600.00	6,937.40	17,672.92	6,943.89	175.39	175.31	-90.11	1,484.40	10,810.61	3,490.44	3,141.82	348.62	10.012	
17,700.00	6,937.32	17,772.87	6,943.83	176.97	176.88	-90.11	1,482.82	10,910.54	3,493.78	3,141.99	351.79	9.931	
17,800.00	6,937.25	17,872.81	6,943.77	178.55	178.46	-90.11	1,481.23	11,010.47	3,497.12	3,142.16	354.96	9.852	
17,900.00	6,937.17	17,972.76	6,943.71	180.13	180.03	-90.11	1,479.65	11,110.40	3,500.46	3,142.33	358.13	9.774	
18,000.00	6,937.10	18,072.70	6,943.65	181.71	181.61	-90.11	1,478.07	11,210.33	3,503.80	3,142.50	361.29	9.698	
18,100.00	6,937.02	18,172.65	6,943.59	183.29	183.19	-90.11	1,476.48	11,310.27	3,507.14	3,142.67	364.46	9.623	
18,200.00	6,936.95	18,272.59	6,943.53	184.87	184.77	-90.11	1,474.90	11,410.20	3,510.48	3,142.84	367.63	9.549	
18,300.00	6,936.87	18,372.53	6,943.47	186.46	186.34	-90.11	1,473.32	11,510.13	3,513.81	3,143.01	370.81	9.476	
18,400.00	6,936.80	18,472.48	6,943.41	188.04	187.92	-90.11	1,471.73	11,610.06	3,517.15	3,143.18	373.98	9.405	
18,500.00	6,936.72	18,572.42	6,943.35	189.62	189.50	-90.11	1,470.15	11,709.99	3,520.49	3,143.34	377.15	9.334	
18,600.00	6,936.65	18,672.37	6,943.29	191.21	191.08	-90.11	1,468.57	11,809.92	3,523.83	3,143.51	380.32	9.265	
18,700.00	6,936.57	18,772.31	6,943.23	192.79	192.66	-90.11	1,466.98	11,909.86	3,527.17	3,143.68	383.50	9.197	
18,800.00	6,936.50	18,872.25	6,943.17	194.37	194.24	-90.11	1,465.40	12,009.79	3,530.51	3,143.84	386.67	9.131	
18,900.00	6,936.42	18,972.20	6,943.11	195.96	195.82	-90.11	1,463.82	12,109.72	3,533.85	3,144.01	389.84	9.065	
19,000.00	6,936.35	19,072.14	6,943.05	197.54	197.40	-90.11	1,462.23	12,209.65	3,537.19	3,144.17	393.02	9.000	
19,100.00	6,936.27	19,172.09	6,942.99	199.13	198.98	-90.11	1,460.65	12,309.58	3,540.53	3,144.34	396.19	8.936	
19,200.00	6,936.19	19,272.03	6,942.93	200.71	200.56	-90.11	1,459.07	12,409.51	3,543.87	3,144.50	399.37	8.874	
19,300.00	6,936.12	19,371.98	6,942.87	202.30	202.15	-90.11	1,457.48	12,509.45	3,547.21	3,144.66	402.55	8.812	
19,400.00	6,936.04	19,471.92	6,942.81	203.88	203.73	-90.11	1,455.90	12,609.38	3,550.55	3,144.83	405.72	8.751	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #720H - OH - Prelim #1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM+MS													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,500.00	6,935.97	19,571.86	6,942.74	205.47	205.31	-90.11	1,454.32	12,709.31	3,553.89	3,144.99	408.90	8.691	
19,600.00	6,935.89	19,671.81	6,942.68	207.06	206.89	-90.11	1,452.73	12,809.24	3,557.23	3,145.15	412.08	8.632	
19,700.00	6,935.82	19,771.75	6,942.62	208.64	208.47	-90.11	1,451.15	12,909.17	3,560.57	3,145.31	415.26	8.574	
19,800.00	6,935.74	19,871.70	6,942.56	210.23	210.06	-90.11	1,449.57	13,009.10	3,563.91	3,145.47	418.43	8.517	
19,900.00	6,935.67	19,971.64	6,942.50	211.82	211.64	-90.11	1,447.98	13,109.04	3,567.25	3,145.64	421.61	8.461	
20,000.00	6,935.59	20,071.59	6,942.44	213.41	213.22	-90.11	1,446.40	13,208.97	3,570.59	3,145.80	424.79	8.405	
20,100.00	6,935.52	20,171.53	6,942.38	214.99	214.81	-90.11	1,444.82	13,308.90	3,573.93	3,145.96	427.97	8.351	
20,200.00	6,935.44	20,271.47	6,942.32	216.58	216.39	-90.11	1,443.23	13,408.83	3,577.27	3,146.11	431.15	8.297	
20,300.00	6,935.37	20,371.42	6,942.26	218.17	217.98	-90.11	1,441.65	13,508.76	3,580.61	3,146.27	434.33	8.244	
20,400.00	6,935.29	20,471.36	6,942.20	219.76	219.56	-90.11	1,440.06	13,608.69	3,583.95	3,146.43	437.51	8.192	
20,500.00	6,935.22	20,571.31	6,942.14	221.35	221.15	-90.11	1,438.48	13,708.63	3,587.29	3,146.59	440.69	8.140	
20,600.00	6,935.14	20,671.25	6,942.08	222.94	222.73	-90.11	1,436.90	13,808.56	3,590.63	3,146.75	443.88	8.089	
20,700.00	6,935.07	20,771.19	6,942.02	224.53	224.32	-90.11	1,435.31	13,908.49	3,593.97	3,146.91	447.06	8.039	
20,789.75	6,935.00	20,808.89	6,942.00	225.95	224.92	-90.11	1,434.72	13,946.18	3,597.34	3,148.39	448.95	8.013 SF	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #722H - OH - Prelim #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS												Offset Well Error:	0.00 usft
Reference												Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	-15.25	19.29	-5.26	20.00				
100.00	100.00	100.00	100.00	0.25	0.25	-15.25	19.29	-5.26	20.00	19.50	0.50	39.849	
200.00	200.00	200.00	200.00	0.61	0.61	-15.25	19.29	-5.26	20.00	18.78	1.22	16.409	
300.00	300.00	300.00	300.00	0.97	0.97	-15.25	19.29	-5.26	20.00	18.06	1.94	10.331	
400.00	400.00	400.00	400.00	1.33	1.33	-15.25	19.29	-5.26	20.00	17.35	2.65	7.539	
500.00	500.00	500.00	500.00	1.68	1.68	-15.25	19.29	-5.26	20.00	16.63	3.37	5.935 CC, ES	
600.00	599.98	599.73	599.73	2.03	2.04	167.82	20.28	-5.07	22.61	18.54	4.07	5.556	
700.00	699.84	699.52	699.51	2.36	2.40	170.97	21.48	-4.85	28.89	24.12	4.76	6.065	
800.00	799.45	799.02	799.00	2.71	2.76	173.61	22.67	-4.62	38.68	33.21	5.46	7.079	
900.00	898.70	898.12	898.09	3.06	3.11	175.50	23.86	-4.40	51.97	45.80	6.17	8.426	
1,000.00	997.47	996.69	996.65	3.43	3.46	176.78	25.05	-4.18	68.74	61.87	6.88	9.999	
1,100.00	1,095.62	1,094.61	1,094.57	3.82	3.82	177.65	26.22	-3.96	88.96	81.38	7.58	11.730	
1,180.06	1,173.69	1,172.46	1,172.41	4.14	4.09	178.15	27.16	-3.78	107.61	99.46	8.15	13.199	
1,200.00	1,193.07	1,191.78	1,191.73	4.22	4.16	178.26	27.39	-3.74	112.53	104.23	8.30	13.563	
1,300.00	1,290.27	1,288.69	1,288.63	4.65	4.51	178.67	28.55	-3.52	137.19	128.19	9.00	15.245	
1,400.00	1,387.46	1,385.60	1,385.53	5.08	4.86	178.96	29.72	-3.30	161.86	152.16	9.71	16.676	
1,500.00	1,484.66	1,482.50	1,482.43	5.52	5.21	179.17	30.88	-3.08	186.53	176.12	10.42	17.907	
1,600.00	1,581.85	1,579.41	1,579.33	5.97	5.55	179.34	32.04	-2.86	211.21	200.08	11.13	18.976	
1,700.00	1,679.05	1,676.32	1,676.23	6.42	5.90	179.47	33.21	-2.64	235.88	224.03	11.85	19.912	
1,800.00	1,776.25	1,773.22	1,773.13	6.87	6.25	179.57	34.37	-2.42	260.56	247.99	12.56	20.739	
1,900.00	1,873.44	1,870.13	1,870.03	7.33	6.60	179.66	35.54	-2.20	285.23	271.95	13.28	21.474	
2,000.00	1,970.64	1,967.04	1,966.93	7.78	6.94	179.73	36.70	-1.98	309.91	295.91	14.00	22.131	
2,100.00	2,067.83	2,063.94	2,063.83	8.24	7.29	179.79	37.86	-1.76	334.59	319.86	14.73	22.722	
2,200.00	2,165.03	2,160.85	2,160.73	8.71	7.64	179.84	39.03	-1.54	359.26	343.81	15.45	23.256	
2,300.00	2,262.22	2,257.76	2,257.63	9.17	7.99	179.89	40.19	-1.32	383.94	367.77	16.17	23.741	
2,400.00	2,359.42	2,354.67	2,354.53	9.63	8.33	179.93	41.35	-1.10	408.62	391.72	16.90	24.184	
2,500.00	2,456.61	2,451.57	2,451.43	10.10	8.68	179.97	42.52	-0.89	433.30	415.67	17.62	24.589	
2,600.00	2,553.81	2,548.48	2,548.33	10.57	9.03	180.00	43.68	-0.67	457.97	439.63	18.35	24.962	
2,700.00	2,651.01	2,645.39	2,645.23	11.03	9.38	-179.97	44.84	-0.45	482.65	463.58	19.07	25.305	
2,800.00	2,748.20	2,742.29	2,742.13	11.50	9.72	-179.94	46.01	-0.23	507.33	487.53	19.80	25.623	
2,900.00	2,845.40	2,839.20	2,839.03	11.97	10.07	-179.92	47.17	-0.01	532.01	511.48	20.53	25.917	
3,000.00	2,942.59	2,936.11	2,935.93	12.44	10.42	-179.90	48.33	0.21	556.69	535.43	21.25	26.191	
3,100.00	3,039.79	3,033.01	3,032.83	12.91	10.77	-179.88	49.50	0.43	581.36	559.38	21.98	26.447	
3,200.00	3,136.98	3,129.92	3,129.73	13.38	11.11	-179.86	50.66	0.65	606.04	583.33	22.71	26.686	
3,300.00	3,234.18	3,226.83	3,226.63	13.85	11.46	-179.84	51.82	0.87	630.72	607.28	23.44	26.909	
3,400.00	3,331.38	3,323.73	3,323.53	14.32	11.81	-179.83	52.99	1.09	655.40	631.23	24.17	27.119	
3,500.00	3,428.57	3,420.64	3,420.42	14.79	12.16	-179.81	54.15	1.31	680.08	655.18	24.90	27.316	
3,600.00	3,525.77	3,517.55	3,517.32	15.26	12.50	-179.80	55.32	1.53	704.76	679.13	25.63	27.502	
3,700.00	3,622.96	3,614.45	3,614.22	15.73	12.85	-179.79	56.48	1.75	729.44	703.08	26.36	27.677	
3,800.00	3,720.16	3,711.36	3,711.12	16.20	13.20	-179.78	57.64	1.96	754.12	727.03	27.08	27.843	
3,900.00	3,817.35	3,808.27	3,808.02	16.68	13.54	-179.77	58.81	2.18	778.79	750.98	27.81	27.999	
4,000.00	3,914.55	3,905.18	3,904.92	17.15	13.89	-179.76	59.97	2.40	803.47	774.93	28.54	28.148	
4,100.00	4,011.74	4,002.08	4,001.82	17.62	14.24	-179.75	61.13	2.62	828.15	798.88	29.27	28.289	
4,200.00	4,108.94	4,098.99	4,098.72	18.09	14.59	-179.74	62.30	2.84	852.83	822.83	30.01	28.423	
4,300.00	4,206.14	4,195.90	4,195.62	18.57	14.93	-179.73	63.46	3.06	877.51	846.77	30.74	28.550	
4,400.00	4,303.33	4,292.80	4,292.52	19.04	15.28	-179.72	64.62	3.28	902.19	870.72	31.47	28.672	
4,500.00	4,400.53	4,389.71	4,389.42	19.51	15.63	-179.71	65.79	3.50	926.87	894.67	32.20	28.787	
4,600.00	4,497.72	4,486.62	4,486.32	19.99	15.98	-179.71	66.95	3.72	951.55	918.62	32.93	28.898	
4,700.00	4,594.92	4,583.52	4,583.22	20.46	16.32	-179.70	68.11	3.94	976.22	942.57	33.66	29.003	
4,800.00	4,692.11	4,680.43	4,680.12	20.93	16.67	-179.69	69.28	4.16	1,000.90	966.51	34.39	29.104	
4,900.00	4,789.31	4,777.34	4,777.02	21.41	17.02	-179.69	70.44	4.38	1,025.58	990.46	35.12	29.201	
5,000.00	4,886.51	4,874.24	4,873.92	21.88	17.37	-179.68	71.60	4.60	1,050.26	1,014.41	35.85	29.294	

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #722H - OH - Prelim #1											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
5,100.00	4,983.70	4,971.15	4,970.82	22.35	17.71	-179.67	72.77	4.81	1,074.94	1,038.36	36.58	29.383
5,200.00	5,080.90	5,068.06	5,067.72	22.83	18.06	-179.67	73.93	5.03	1,099.62	1,062.30	37.32	29.468
5,300.00	5,178.09	5,164.96	5,164.62	23.30	18.41	-179.66	75.10	5.25	1,124.30	1,086.25	38.05	29.550
5,400.00	5,275.29	5,261.87	5,261.52	23.77	18.76	-179.66	76.26	5.47	1,148.98	1,110.20	38.78	29.628
5,500.00	5,372.48	5,358.78	5,358.42	24.25	19.10	-179.65	77.42	5.69	1,173.66	1,134.14	39.51	29.704
5,600.00	5,469.68	5,455.69	5,455.32	24.72	19.45	-179.65	78.59	5.91	1,198.34	1,158.09	40.24	29.777
5,700.00	5,566.87	5,552.59	5,552.22	25.20	19.80	-179.64	79.75	6.13	1,223.01	1,182.04	40.98	29.847
5,800.00	5,664.07	5,649.50	5,649.12	25.67	20.15	-179.64	80.91	6.35	1,247.69	1,205.99	41.71	29.915
5,900.00	5,761.27	5,746.41	5,746.02	26.14	20.49	-179.64	82.08	6.57	1,272.37	1,229.93	42.44	29.980
6,000.00	5,858.46	5,843.31	5,842.92	26.62	20.84	-179.63	83.24	6.79	1,297.05	1,253.88	43.17	30.043
6,100.00	5,955.66	5,940.22	5,939.82	27.09	21.19	-179.63	84.40	7.01	1,321.73	1,277.82	43.91	30.104
6,200.00	6,052.85	6,037.13	6,036.71	27.57	21.54	-179.63	85.57	7.23	1,346.41	1,301.77	44.64	30.163
6,300.00	6,150.05	6,134.03	6,133.61	28.04	21.88	-179.62	86.73	7.45	1,371.09	1,325.72	45.37	30.220
6,400.00	6,247.24	6,230.94	6,230.51	28.52	22.23	-179.62	87.89	7.66	1,395.77	1,349.66	46.10	30.274
6,490.87	6,335.57	6,319.40	6,318.97	28.95	22.55	-179.62	88.96	7.88	1,418.19	1,371.42	46.77	30.321
6,500.00	6,344.44	6,329.14	6,328.71	28.99	22.58	-176.03	89.07	8.04	1,420.44	1,373.60	46.84	30.322
6,550.00	6,392.91	6,382.51	6,381.94	29.23	22.77	-157.77	89.60	11.58	1,432.78	1,385.54	47.24	30.330
6,600.00	6,440.98	6,435.89	6,434.71	29.46	22.95	-143.13	89.97	19.56	1,445.07	1,397.44	47.63	30.340
6,650.00	6,488.34	6,489.29	6,486.63	29.70	23.14	-132.17	90.20	31.93	1,457.24	1,409.23	48.02	30.349
6,700.00	6,534.69	6,542.71	6,537.36	29.92	23.33	-123.98	90.27	48.61	1,469.22	1,420.82	48.40	30.357
6,750.00	6,579.76	6,596.15	6,586.54	30.15	23.51	-117.74	90.18	69.50	1,480.93	1,432.16	48.77	30.363
6,800.00	6,623.27	6,649.63	6,633.82	30.36	23.70	-112.83	89.94	94.45	1,492.30	1,443.15	49.15	30.362
6,850.00	6,664.95	6,703.13	6,678.86	30.57	23.89	-108.87	89.54	123.29	1,503.25	1,453.73	49.52	30.354
6,900.00	6,704.53	6,756.65	6,721.34	30.78	24.08	-105.60	88.99	155.81	1,513.73	1,463.82	49.90	30.335
6,950.00	6,741.79	6,810.17	6,760.93	30.98	24.28	-102.85	88.30	191.79	1,523.65	1,473.37	50.28	30.301
7,000.00	6,776.48	6,863.68	6,797.36	31.17	24.49	-100.50	87.46	230.95	1,532.98	1,482.30	50.68	30.250
7,050.00	6,808.39	6,917.15	6,830.35	31.36	24.71	-98.49	86.49	273.01	1,541.63	1,490.55	51.08	30.180
7,100.00	6,837.34	6,970.56	6,859.67	31.54	24.93	-96.76	85.39	317.62	1,549.57	1,498.07	51.50	30.086
7,150.00	6,863.13	7,023.88	6,885.09	31.73	25.17	-95.26	84.17	364.45	1,556.75	1,504.80	51.95	29.968
7,200.00	6,885.61	7,077.06	6,906.47	31.91	25.42	-93.98	82.84	413.12	1,563.11	1,510.70	52.41	29.824
7,250.00	6,904.64	7,130.08	6,923.66	32.10	25.68	-92.90	81.41	463.23	1,568.63	1,515.73	52.90	29.653
7,300.00	6,920.10	7,182.89	6,936.58	32.29	25.96	-91.99	79.90	514.40	1,573.26	1,519.85	53.41	29.457
7,350.00	6,931.91	7,235.45	6,945.18	32.48	26.24	-91.25	78.32	566.21	1,576.99	1,523.05	53.94	29.236
7,400.00	6,939.97	7,287.72	6,949.46	32.68	26.54	-90.68	76.67	618.27	1,579.78	1,525.30	54.49	28.993
7,450.00	6,944.26	7,338.69	6,949.98	32.89	26.84	-90.28	75.01	669.20	1,581.64	1,526.59	55.05	28.730
7,481.69	6,945.00	7,370.36	6,949.95	33.03	27.03	-90.18	73.98	700.86	1,582.35	1,526.93	55.42	28.551
7,500.00	6,944.99	7,388.67	6,949.93	33.12	27.14	-90.18	73.39	719.16	1,582.66	1,527.02	55.64	28.445
7,600.00	6,944.91	7,488.65	6,949.84	33.60	27.82	-90.18	70.13	819.09	1,584.32	1,527.38	56.94	27.824
7,700.00	6,944.84	7,588.64	6,949.75	34.17	28.58	-90.18	66.87	919.02	1,585.99	1,527.59	58.39	27.162
7,800.00	6,944.76	7,688.63	6,949.66	34.80	29.40	-90.18	63.61	1,018.95	1,587.65	1,527.67	59.98	26.471
7,900.00	6,944.69	7,788.61	6,949.57	35.49	30.28	-90.18	60.35	1,118.89	1,589.31	1,527.62	61.69	25.764
8,000.00	6,944.61	7,888.60	6,949.48	36.25	31.22	-90.17	57.09	1,218.82	1,590.98	1,527.46	63.52	25.048
8,100.00	6,944.54	7,988.59	6,949.39	37.07	32.22	-90.17	53.83	1,318.75	1,592.64	1,527.19	65.45	24.334
8,200.00	6,944.46	8,088.57	6,949.30	37.94	33.26	-90.17	50.57	1,418.69	1,594.30	1,526.82	67.48	23.626
8,300.00	6,944.39	8,188.56	6,949.21	38.86	34.34	-90.17	47.31	1,518.62	1,595.97	1,526.37	69.60	22.930
8,400.00	6,944.31	8,288.54	6,949.12	39.83	35.47	-90.17	44.05	1,618.55	1,597.63	1,525.83	71.80	22.251
8,500.00	6,944.23	8,388.53	6,949.03	40.84	36.63	-90.17	40.79	1,718.48	1,599.29	1,525.22	74.07	21.590
8,600.00	6,944.16	8,488.52	6,948.94	41.89	37.82	-90.17	37.53	1,818.42	1,600.96	1,524.54	76.42	20.951
8,700.00	6,944.08	8,588.50	6,948.85	42.98	39.04	-90.17	34.27	1,918.35	1,602.62	1,523.80	78.82	20.333
8,800.00	6,944.01	8,688.49	6,948.76	44.10	40.29	-90.17	31.01	2,018.28	1,604.28	1,523.01	81.27	19.739
8,900.00	6,943.93	8,788.48	6,948.67	45.25	41.56	-90.17	27.75	2,118.22	1,605.95	1,522.17	83.78	19.168
9,000.00	6,943.86	8,888.46	6,948.58	46.43	42.86	-90.17	24.49	2,218.15	1,607.61	1,521.28	86.34	18.620

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #722H - OH - Prelim #1											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Ellipses (usft)			Warning
9,100.00	6,943.78	8,988.45	6,948.49	47.63	44.17	-90.17	21.23	2,318.08	1,609.28	1,520.34	88.93	18.095
9,200.00	6,943.71	9,088.43	6,948.40	48.86	45.50	-90.17	17.97	2,418.02	1,610.94	1,519.37	91.57	17.593
9,300.00	6,943.63	9,188.42	6,948.31	50.11	46.85	-90.17	14.71	2,517.95	1,612.60	1,518.36	94.24	17.112
9,400.00	6,943.56	9,288.41	6,948.22	51.38	48.22	-90.16	11.45	2,617.88	1,614.27	1,517.32	96.94	16.652
9,500.00	6,943.48	9,388.39	6,948.13	52.66	49.60	-90.16	8.19	2,717.81	1,615.93	1,516.25	99.68	16.212
9,600.00	6,943.41	9,488.38	6,948.04	53.97	50.99	-90.16	4.93	2,817.75	1,617.59	1,515.16	102.44	15.791
9,700.00	6,943.33	9,588.36	6,947.95	55.29	52.40	-90.16	1.67	2,917.68	1,619.26	1,514.04	105.22	15.389
9,800.00	6,943.26	9,688.35	6,947.86	56.63	53.82	-90.16	-1.59	3,017.61	1,620.92	1,512.89	108.03	15.004
9,900.00	6,943.18	9,788.34	6,947.77	57.98	55.24	-90.16	-4.85	3,117.55	1,622.58	1,511.72	110.86	14.636
10,000.00	6,943.11	9,888.32	6,947.68	59.34	56.68	-90.16	-8.11	3,217.48	1,624.25	1,510.53	113.71	14.284
10,100.00	6,943.03	9,988.31	6,947.59	60.72	58.12	-90.16	-11.37	3,317.41	1,625.91	1,509.33	116.58	13.946
10,200.00	6,942.96	10,088.30	6,947.50	62.11	59.58	-90.16	-14.63	3,417.35	1,627.58	1,508.11	119.47	13.623
10,300.00	6,942.88	10,188.28	6,947.41	63.50	61.04	-90.16	-17.89	3,517.28	1,629.24	1,506.87	122.37	13.314
10,400.00	6,942.81	10,288.27	6,947.32	64.91	62.50	-90.16	-21.15	3,617.21	1,630.90	1,505.61	125.29	13.017
10,500.00	6,942.73	10,388.25	6,947.23	66.33	63.98	-90.16	-24.41	3,717.14	1,632.57	1,504.34	128.22	12.732
10,600.00	6,942.66	10,488.24	6,947.14	67.75	65.46	-90.16	-27.67	3,817.08	1,634.23	1,503.06	131.17	12.459
10,700.00	6,942.58	10,588.23	6,947.05	69.18	66.94	-90.16	-30.93	3,917.01	1,635.89	1,501.77	134.12	12.197
10,800.00	6,942.51	10,688.21	6,946.96	70.62	68.43	-90.16	-34.18	4,016.94	1,637.56	1,500.47	137.09	11.945
10,900.00	6,942.43	10,788.20	6,946.87	72.07	69.93	-90.15	-37.44	4,116.88	1,639.22	1,499.15	140.07	11.703
11,000.00	6,942.36	10,888.18	6,946.78	73.52	71.43	-90.15	-40.70	4,216.81	1,640.88	1,497.83	143.06	11.470
11,100.00	6,942.28	10,988.17	6,946.69	74.98	72.94	-90.15	-43.96	4,316.74	1,642.55	1,496.49	146.05	11.246
11,200.00	6,942.21	11,088.16	6,946.60	76.45	74.44	-90.15	-47.22	4,416.68	1,644.21	1,495.15	149.06	11.031
11,300.00	6,942.13	11,188.14	6,946.51	77.92	75.96	-90.15	-50.48	4,516.61	1,645.88	1,493.80	152.07	10.823
11,400.00	6,942.06	11,288.13	6,946.42	79.40	77.47	-90.15	-53.74	4,616.54	1,647.54	1,492.44	155.10	10.623
11,500.00	6,941.98	11,388.12	6,946.33	80.88	78.99	-90.15	-57.00	4,716.47	1,649.20	1,491.08	158.13	10.430
11,600.00	6,941.91	11,488.10	6,946.24	82.36	80.52	-90.15	-60.26	4,816.41	1,650.87	1,489.70	161.16	10.244
11,700.00	6,941.83	11,588.09	6,946.15	83.85	82.04	-90.15	-63.52	4,916.34	1,652.53	1,488.32	164.20	10.064
11,800.00	6,941.76	11,688.07	6,946.06	85.35	83.57	-90.15	-66.78	5,016.27	1,654.19	1,486.94	167.25	9.890
11,900.00	6,941.68	11,788.06	6,945.97	86.85	85.11	-90.15	-70.04	5,116.21	1,655.86	1,485.55	170.31	9.723
12,000.00	6,941.60	11,888.05	6,945.88	88.35	86.64	-90.15	-73.30	5,216.14	1,657.52	1,484.15	173.37	9.561
12,100.00	6,941.53	11,988.03	6,945.79	89.85	88.18	-90.15	-76.56	5,316.07	1,659.18	1,482.75	176.43	9.404
12,200.00	6,941.45	12,088.02	6,945.70	91.36	89.72	-90.15	-79.82	5,416.00	1,660.85	1,481.34	179.51	9.252
12,300.00	6,941.38	12,188.00	6,945.61	92.88	91.26	-90.14	-83.08	5,515.94	1,662.51	1,479.93	182.58	9.106
12,400.00	6,941.30	12,287.99	6,945.52	94.39	92.80	-90.14	-86.34	5,615.87	1,664.18	1,478.52	185.66	8.964
12,500.00	6,941.23	12,387.98	6,945.43	95.91	94.35	-90.14	-89.60	5,715.80	1,665.84	1,477.09	188.74	8.826
12,600.00	6,941.15	12,487.96	6,945.34	97.43	95.89	-90.14	-92.86	5,815.74	1,667.50	1,475.67	191.83	8.693
12,700.00	6,941.08	12,587.95	6,945.25	98.95	97.44	-90.14	-96.12	5,915.67	1,669.17	1,474.24	194.92	8.563
12,800.00	6,941.00	12,687.94	6,945.16	100.48	98.99	-90.14	-99.38	6,015.60	1,670.83	1,472.81	198.02	8.438
12,900.00	6,940.93	12,787.92	6,945.07	102.01	100.55	-90.14	-102.64	6,115.54	1,672.49	1,471.37	201.12	8.316
13,000.00	6,940.85	12,887.91	6,944.98	103.54	102.10	-90.14	-105.90	6,215.47	1,674.16	1,469.94	204.22	8.198
13,100.00	6,940.78	12,987.89	6,944.89	105.07	103.66	-90.14	-109.16	6,315.40	1,675.82	1,468.49	207.33	8.083
13,200.00	6,940.70	13,087.88	6,944.80	106.61	105.21	-90.14	-112.42	6,415.33	1,677.48	1,467.05	210.44	7.972
13,300.00	6,940.63	13,187.87	6,944.71	108.14	106.77	-90.14	-115.68	6,515.27	1,679.15	1,465.60	213.55	7.863
13,400.00	6,940.55	13,287.85	6,944.62	109.68	108.33	-90.14	-118.94	6,615.20	1,680.81	1,464.15	216.66	7.758
13,500.00	6,940.48	13,387.84	6,944.53	111.22	109.89	-90.14	-122.20	6,715.13	1,682.48	1,462.70	219.78	7.655
13,600.00	6,940.40	13,487.82	6,944.44	112.77	111.46	-90.14	-125.46	6,815.07	1,684.14	1,461.24	222.90	7.556
13,700.00	6,940.33	13,587.81	6,944.34	114.31	113.02	-90.14	-128.72	6,915.00	1,685.80	1,459.78	226.02	7.459
13,800.00	6,940.25	13,687.80	6,944.25	115.86	114.58	-90.14	-131.98	7,014.93	1,687.47	1,458.32	229.14	7.364
13,900.00	6,940.18	13,787.78	6,944.16	117.41	116.15	-90.13	-135.24	7,114.87	1,689.13	1,456.86	232.27	7.272
14,000.00	6,940.10	13,887.77	6,944.07	118.95	117.72	-90.13	-138.50	7,214.80	1,690.79	1,455.39	235.40	7.183
14,100.00	6,940.03	13,987.76	6,943.98	120.51	119.28	-90.13	-141.76	7,314.73	1,692.46	1,453.93	238.53	7.095
14,200.00	6,939.95	14,087.74	6,943.89	122.06	120.85	-90.13	-145.01	7,414.66	1,694.12	1,452.46	241.66	7.010

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

SDT
Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #722H - OH - Prelim #1											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS											Offset Well Error:	0.00 usft
Rule Assigned:												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Warning
14,300.00	6,939.88	14,187.73	6,943.80	123.61	122.42	-90.13	-148.27	7,514.60	1,695.78	1,450.99	244.80	6.927
14,400.00	6,939.80	14,287.71	6,943.71	125.17	123.99	-90.13	-151.53	7,614.53	1,697.45	1,449.51	247.94	6.846
14,500.00	6,939.73	14,387.70	6,943.62	126.72	125.56	-90.13	-154.79	7,714.46	1,699.11	1,448.04	251.07	6.767
14,600.00	6,939.65	14,487.69	6,943.53	128.28	127.14	-90.13	-158.05	7,814.40	1,700.78	1,446.56	254.21	6.690
14,700.00	6,939.58	14,587.67	6,943.44	129.84	128.71	-90.13	-161.31	7,914.33	1,702.44	1,445.08	257.36	6.615
14,800.00	6,939.50	14,687.66	6,943.35	131.40	130.28	-90.13	-164.57	8,014.26	1,704.10	1,443.60	260.50	6.542
14,900.00	6,939.43	14,787.64	6,943.26	132.96	131.86	-90.13	-167.83	8,114.19	1,705.77	1,442.12	263.64	6.470
15,000.00	6,939.35	14,887.63	6,943.17	134.52	133.43	-90.13	-171.09	8,214.13	1,707.43	1,440.64	266.79	6.400
15,100.00	6,939.28	14,987.62	6,943.08	136.08	135.01	-90.13	-174.35	8,314.06	1,709.09	1,439.15	269.94	6.331
15,200.00	6,939.20	15,087.60	6,942.99	137.64	136.58	-90.13	-177.61	8,413.99	1,710.76	1,437.67	273.09	6.264
15,300.00	6,939.13	15,187.59	6,942.90	139.21	138.16	-90.13	-180.87	8,513.93	1,712.42	1,436.18	276.24	6.199
15,400.00	6,939.05	15,287.58	6,942.81	140.77	139.74	-90.13	-184.13	8,613.86	1,714.08	1,434.69	279.39	6.135
15,500.00	6,938.98	15,387.56	6,942.72	142.34	141.32	-90.12	-187.39	8,713.79	1,715.75	1,433.20	282.54	6.072
15,600.00	6,938.90	15,487.55	6,942.63	143.91	142.89	-90.12	-190.65	8,813.73	1,717.41	1,431.71	285.70	6.011
15,700.00	6,938.82	15,587.53	6,942.54	145.47	144.47	-90.12	-193.91	8,913.66	1,719.08	1,430.22	288.85	5.951
15,800.00	6,938.75	15,687.52	6,942.45	147.04	146.05	-90.12	-197.17	9,013.59	1,720.74	1,428.73	292.01	5.893
15,900.00	6,938.67	15,787.51	6,942.36	148.61	147.63	-90.12	-200.43	9,113.52	1,722.40	1,427.23	295.17	5.835
16,000.00	6,938.60	15,887.49	6,942.27	150.18	149.21	-90.12	-203.69	9,213.46	1,724.07	1,425.74	298.33	5.779
16,100.00	6,938.52	15,987.48	6,942.18	151.75	150.79	-90.12	-206.95	9,313.39	1,725.73	1,424.24	301.49	5.724
16,200.00	6,938.45	16,087.46	6,942.09	153.32	152.38	-90.12	-210.21	9,413.32	1,727.39	1,422.74	304.65	5.670
16,300.00	6,938.37	16,187.45	6,942.00	154.90	153.96	-90.12	-213.47	9,513.26	1,729.06	1,421.25	307.81	5.617
16,400.00	6,938.30	16,287.44	6,941.91	156.47	155.54	-90.12	-216.73	9,613.19	1,730.72	1,419.75	310.97	5.565
16,500.00	6,938.22	16,387.42	6,941.82	158.04	157.12	-90.12	-219.99	9,713.12	1,732.38	1,418.25	314.14	5.515
16,600.00	6,938.15	16,487.41	6,941.73	159.62	158.71	-90.12	-223.25	9,813.06	1,734.05	1,416.75	317.30	5.465
16,700.00	6,938.07	16,587.40	6,941.64	161.19	160.29	-90.12	-226.51	9,912.99	1,735.71	1,415.24	320.47	5.416
16,800.00	6,938.00	16,687.38	6,941.55	162.77	161.87	-90.12	-229.77	10,012.92	1,737.37	1,413.74	323.63	5.368
16,900.00	6,937.92	16,787.37	6,941.46	164.34	163.46	-90.12	-233.03	10,112.85	1,739.04	1,412.24	326.80	5.321
17,000.00	6,937.85	16,887.35	6,941.37	165.92	165.04	-90.12	-236.29	10,212.79	1,740.70	1,410.73	329.97	5.275
17,100.00	6,937.77	16,987.34	6,941.28	167.50	166.63	-90.11	-239.55	10,312.72	1,742.37	1,409.23	333.14	5.230
17,200.00	6,937.70	17,087.33	6,941.19	169.07	168.21	-90.11	-242.81	10,412.65	1,744.03	1,407.72	336.31	5.186
17,300.00	6,937.62	17,187.31	6,941.10	170.65	169.80	-90.11	-246.07	10,512.59	1,745.69	1,406.22	339.48	5.142
17,400.00	6,937.55	17,287.30	6,941.01	172.23	171.39	-90.11	-249.33	10,612.52	1,747.36	1,404.71	342.65	5.100
17,500.00	6,937.47	17,387.28	6,940.92	173.81	172.97	-90.11	-252.59	10,712.45	1,749.02	1,403.20	345.82	5.058
17,600.00	6,937.40	17,487.27	6,940.83	175.39	174.56	-90.11	-255.84	10,812.39	1,750.68	1,401.69	348.99	5.016
17,700.00	6,937.32	17,587.26	6,940.74	176.97	176.15	-90.11	-259.10	10,912.32	1,752.35	1,400.18	352.16	4.976
17,800.00	6,937.25	17,687.24	6,940.65	178.55	177.73	-90.11	-262.36	11,012.25	1,754.01	1,398.67	355.34	4.936
17,900.00	6,937.17	17,787.23	6,940.56	180.13	179.32	-90.11	-265.62	11,112.18	1,755.67	1,397.16	358.51	4.897
18,000.00	6,937.10	17,887.22	6,940.47	181.71	180.91	-90.11	-268.88	11,212.12	1,757.34	1,395.65	361.69	4.859
18,100.00	6,937.02	17,987.20	6,940.38	183.29	182.50	-90.11	-272.14	11,312.05	1,759.00	1,394.14	364.86	4.821
18,200.00	6,936.95	18,087.19	6,940.29	184.87	184.09	-90.11	-275.40	11,411.98	1,760.67	1,392.63	368.04	4.784
18,300.00	6,936.87	18,187.17	6,940.20	186.46	185.68	-90.11	-278.66	11,511.92	1,762.33	1,391.12	371.21	4.747
18,400.00	6,936.80	18,287.16	6,940.11	188.04	187.27	-90.11	-281.92	11,611.85	1,763.99	1,389.60	374.39	4.712
18,500.00	6,936.72	18,387.15	6,940.02	189.62	188.85	-90.11	-285.18	11,711.78	1,765.66	1,388.09	377.57	4.676
18,600.00	6,936.65	18,487.13	6,939.93	191.21	190.44	-90.11	-288.44	11,811.71	1,767.32	1,386.58	380.75	4.642
18,700.00	6,936.57	18,587.12	6,939.84	192.79	192.03	-90.11	-291.70	11,911.65	1,768.98	1,385.06	383.92	4.608
18,800.00	6,936.50	18,687.11	6,939.75	194.37	193.62	-90.10	-294.96	12,011.58	1,770.65	1,383.55	387.10	4.574
18,900.00	6,936.42	18,787.09	6,939.66	195.96	195.21	-90.10	-298.22	12,111.51	1,772.31	1,382.03	390.28	4.541
19,000.00	6,936.35	18,887.08	6,939.57	197.54	196.80	-90.10	-301.48	12,211.45	1,773.97	1,380.51	393.46	4.509
19,100.00	6,936.27	18,987.06	6,939.48	199.13	198.39	-90.10	-304.74	12,311.38	1,775.64	1,379.00	396.64	4.477
19,200.00	6,936.19	19,087.05	6,939.39	200.71	199.99	-90.10	-308.00	12,411.31	1,777.30	1,377.48	399.82	4.445
19,300.00	6,936.12	19,187.04	6,939.30	202.30	201.58	-90.10	-311.26	12,511.25	1,778.97	1,375.96	403.00	4.414
19,400.00	6,936.04	19,287.02	6,939.21	203.88	203.17	-90.10	-314.52	12,611.18	1,780.63	1,374.44	406.18	4.384

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #722H - OH - Prelim #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM+MS													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,500.00	6,935.97	19,387.01	6,939.12	205.47	204.76	-90.10	-317.78	12,711.11	1,782.29	1,372.93	409.37	4.354		
19,600.00	6,935.89	19,486.99	6,939.03	207.06	206.35	-90.10	-321.04	12,811.04	1,783.96	1,371.41	412.55	4.324		
19,700.00	6,935.82	19,586.98	6,938.94	208.64	207.94	-90.10	-324.30	12,910.98	1,785.62	1,369.89	415.73	4.295		
19,800.00	6,935.74	19,686.97	6,938.85	210.23	209.53	-90.10	-327.56	13,010.91	1,787.28	1,368.37	418.91	4.266		
19,900.00	6,935.67	19,786.95	6,938.76	211.82	211.13	-90.10	-330.82	13,110.84	1,788.95	1,366.85	422.10	4.238		
20,000.00	6,935.59	19,886.94	6,938.67	213.41	212.72	-90.10	-334.08	13,210.78	1,790.61	1,365.33	425.28	4.210		
20,100.00	6,935.52	19,986.93	6,938.58	214.99	214.31	-90.10	-337.34	13,310.71	1,792.28	1,363.81	428.47	4.183		
20,200.00	6,935.44	20,086.91	6,938.49	216.58	215.90	-90.10	-340.60	13,410.64	1,793.94	1,362.29	431.65	4.156		
20,300.00	6,935.37	20,186.90	6,938.40	218.17	217.50	-90.10	-343.86	13,510.58	1,795.60	1,360.77	434.84	4.129		
20,400.00	6,935.29	20,286.88	6,938.31	219.76	219.09	-90.10	-347.12	13,610.51	1,797.27	1,359.25	438.02	4.103		
20,500.00	6,935.22	20,386.87	6,938.22	221.35	220.68	-90.09	-350.38	13,710.44	1,798.93	1,357.72	441.21	4.077		
20,600.00	6,935.14	20,486.86	6,938.13	222.94	222.28	-90.09	-353.64	13,810.37	1,800.59	1,356.20	444.39	4.052		
20,700.00	6,935.07	20,586.84	6,938.04	224.53	223.87	-90.09	-356.90	13,910.31	1,802.26	1,354.68	447.58	4.027		
20,789.75	6,935.00	20,626.08	6,938.00	225.95	224.49	-90.09	-358.18	13,949.53	1,804.46	1,355.51	448.95	4.019 SF		

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 6300+30 @ 6330.00usft (H&P 530)

Offset Depths are relative to Offset Datum

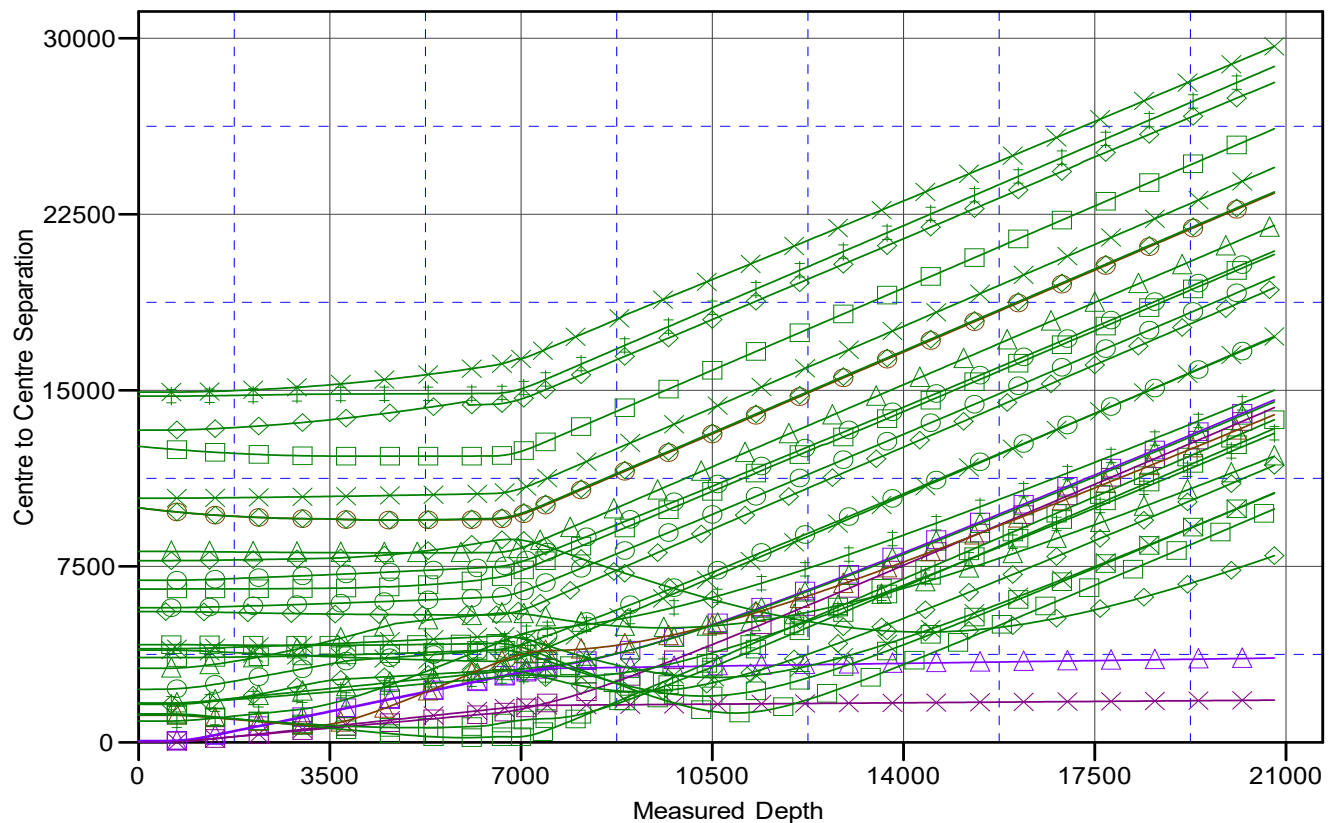
Central Meridian is -107.833334

Coordinates are relative to: Rosa Unit #724H - Slot B06

Coordinate System is US State Plane 1983, New Mexico Western Zone

Grid Convergence at Surface is: 0.26°

Ladder Plot



LEGEND

(X) Rosa Unit #722H, OH, Prelim #1 V0	(O) RU 119, OH, OH-INC V0	(O) RU 031B, OH, OH-INC V0
(X) Rosa Unit #720H, OH, Prelim #1 V0	(O) RU 012D, OH, OH-SVY V0	(O) RU 125, OH, OH-INC V0
(X) Rosa Unit #714H, OH, Prelim 1 V0	(O) RU 022B, OH, OH-SVY V0	(O) RU 251, OH, OH-TD V0
(X) Rosa Unit #712H, OH, Prelim #1 V0	(O) RU 125E, OH, OH-INC V0	(O) RU 005C, OH, OH-SVY+INC V0
(O) RU 068, OH, OH-INC V0	(O) RU 181D, OH, OH-SVY V0	(O) RU 067, OH, OH-INC V0
(O) RU 030B, OH, OH-INC V0	(O) RU 207, OH, OH-INC V0	(O) RU 065, OH, OH-INC V0
(O) RU 153C, OH, OH-SVY V0	(O) RU 031, OH, OH-TD V0	(O) RU 066M, OH, OH-SVY V0
(O) RU 153B, OH, OH-INC V0	(O) RU 016D, OH, OH-SVY V0	(O) RU 066, OH, OH-INC V0
(O) RU 374, OH, OH-INC V0	(O) RU 207A, OH, OH-INC V0	(O) RU 020D, ST01, ST01-SVY V0
(O) RU 046A, OH, OH-SVY V0	(O) RU 031A, OH, OH-INC V0	(O) RU 020D, OH, OH-SVY V0

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

SDT

Anticollision Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Project:	Rio Arriba, NM (NAD83)	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000 Multi User Db
Reference Design:	Prelim #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 6300+30 @ 6330.00usft (H&P 530)

Offset Depths are relative to Offset Datum

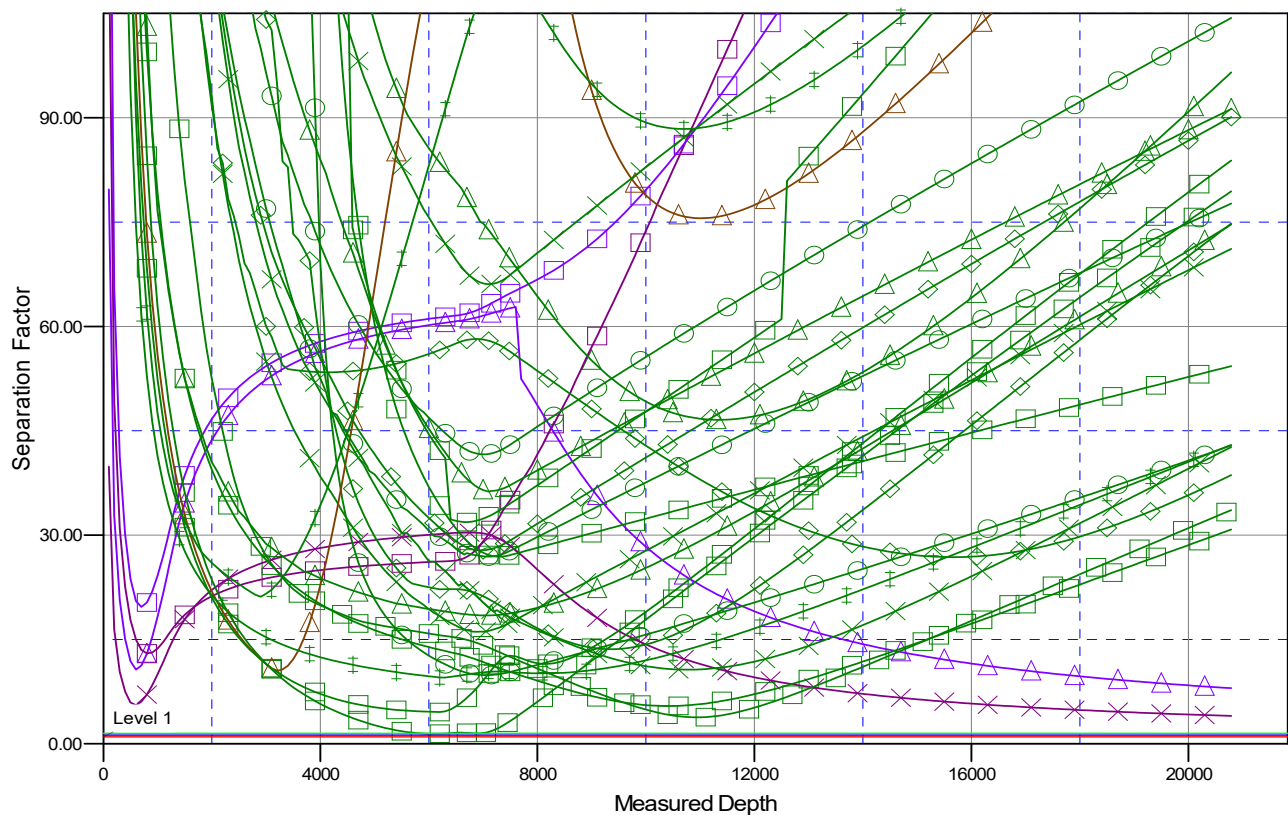
Central Meridian is -107.833334

Coordinates are relative to: Rosa Unit #724H - Slot B06

Coordinate System is US State Plane 1983, New Mexico Western Zone

Grid Convergence at Surface is: 0.26°

Separation Factor Plot



LEGEND

(X) Rosa Unit #722H, OH, Prelim #1 V0	(X) RU 119, OH, OH-INC V0	(X) RU 031B, OH, OH-INC V0
(X) Rosa Unit #720H, OH, Prelim #1 V0	(X) RU 012D, OH, OH-SVY V0	(X) RU 125, OH, OH-INC V0
(X) Rosa Unit #714H, OH, Prelim 1 V0	(X) RU 022B, OH, OH-SVY V0	(X) RU 251, OH, OH-TD V0
(X) Rosa Unit #712H, OH, Prelim #1 V0	(X) RU 005C, OH, OH-SVY+INC V0	(X) RU 125E, OH, OH-INC V0
(X) RU 068, OH, OH-INC V0	(X) RU 181D, OH, OH-SVY V0	(X) RU 067, OH, OH-INC V0
(X) RU 030B, OH, OH-INC V0	(X) RU 207, OH, OH-INC V0	(X) RU 065, OH, OH-INC V0
(X) RU 153C, OH, OH-SVY V0	(X) RU 031, OH, OH-TD V0	(X) RU 066M, OH, OH-SVY V0
(X) RU 153B, OH, OH-INC V0	(X) RU 016D, OH, OH-SVY V0	(X) RU 066, OH, OH-INC V0
(X) RU 374, OH, OH-INC V0	(X) RU 207A, OH, OH-INC V0	(X) RU 020D, ST01, ST01-SVY V0
(X) RU 065A, OH, OH-SVY V0	(X) RU 031A, OH, OH-INC V0	(X) RU 020D, OH, OH-SVY V0

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

Logos Operating LLC

Rio Arriba, NM (NAD83)

Rosa Pad 26 - 5 Well

Rosa Unit #724H - Slot B06

OH

Plan: Prelim #1

Standard Planning Report

30 August, 2024

SDT
Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Company:	Logos Operating LLC	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	North Reference:	True
Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #1		

Project	Rio Arriba, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Rosa Pad 26 - 5 Well				
Site Position:		Northing:	2,147,556.27 usft	Latitude:	36.900914
From:	Lat/Long	Easting:	2,851,875.56 usft	Longitude:	-107.392877
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well	Rosa Unit #724H - Slot B06					
Well Position	+N/-S	0.00 usft	Northing:	2,147,459.92 usft	Latitude:	36.900649
	+E/-W	0.00 usft	Easting:	2,851,902.02 usft	Longitude:	-107.392788
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	6,300.00 usft
Grid Convergence:		0.26 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/11/2023	8.55	63.46	49,574.65047134

Design	Prelim #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	90.26

Plan Survey Tool Program			Date	8/30/2024	
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	20,789.49	Prelim #1 (OH)	MWD+HRGM+MS	
				MWD + HRGM + Multi-Station	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,180.06	13.60	179.13	1,173.69	-80.33	1.23	2.00	2.00	0.00	179.13	
6,490.87	13.60	179.13	6,335.57	-1,329.09	20.27	0.00	0.00	0.00	0.00	
7,481.69	90.04	92.82	6,945.00	-1,507.52	649.26	9.00	7.72	-8.71	-86.40	RU 724H POE-5
20,789.75	90.04	92.82	6,935.00	-2,162.61	13,941.19	0.00	0.00	0.00	0.00	RU 724H PBHL-5

SDT
Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Company:	Logos Operating LLC	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	North Reference:	True
Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
600.00	2.00	179.13	599.98	-1.74	0.03	0.03	2.00	2.00	0.00
700.00	4.00	179.13	699.84	-6.98	0.11	0.14	2.00	2.00	0.00
800.00	6.00	179.13	799.45	-15.69	0.24	0.31	2.00	2.00	0.00
900.00	8.00	179.13	898.70	-27.88	0.43	0.55	2.00	2.00	0.00
1,000.00	10.00	179.13	997.47	-43.52	0.66	0.86	2.00	2.00	0.00
1,100.00	12.00	179.13	1,095.62	-62.60	0.95	1.24	2.00	2.00	0.00
1,180.06	13.60	179.13	1,173.69	-80.33	1.23	1.59	2.00	2.00	0.00
Start 5310.81 hold at 1180.06 MD									
1,200.00	13.60	179.13	1,193.07	-85.02	1.30	1.68	0.00	0.00	0.00
1,300.00	13.60	179.13	1,290.27	-108.53	1.66	2.15	0.00	0.00	0.00
1,400.00	13.60	179.13	1,387.46	-132.05	2.01	2.61	0.00	0.00	0.00
1,500.00	13.60	179.13	1,484.66	-155.56	2.37	3.08	0.00	0.00	0.00
1,600.00	13.60	179.13	1,581.85	-179.07	2.73	3.54	0.00	0.00	0.00
1,700.00	13.60	179.13	1,679.05	-202.59	3.09	4.01	0.00	0.00	0.00
1,800.00	13.60	179.13	1,776.25	-226.10	3.45	4.47	0.00	0.00	0.00
1,900.00	13.60	179.13	1,873.44	-249.61	3.81	4.94	0.00	0.00	0.00
2,000.00	13.60	179.13	1,970.64	-273.13	4.17	5.41	0.00	0.00	0.00
2,100.00	13.60	179.13	2,067.83	-296.64	4.52	5.87	0.00	0.00	0.00
2,200.00	13.60	179.13	2,165.03	-320.15	4.88	6.34	0.00	0.00	0.00
2,300.00	13.60	179.13	2,262.22	-343.67	5.24	6.80	0.00	0.00	0.00
2,400.00	13.60	179.13	2,359.42	-367.18	5.60	7.27	0.00	0.00	0.00
2,470.56	13.60	179.13	2,428.00	-383.77	5.85	7.60	0.00	0.00	0.00
Ojo Alamo									
2,500.00	13.60	179.13	2,456.61	-390.69	5.96	7.73	0.00	0.00	0.00
2,583.73	13.60	179.13	2,538.00	-410.38	6.26	8.12	0.00	0.00	0.00
Kirtland									
2,600.00	13.60	179.13	2,553.81	-414.21	6.32	8.20	0.00	0.00	0.00
2,700.00	13.60	179.13	2,651.01	-437.72	6.68	8.66	0.00	0.00	0.00
2,800.00	13.60	179.13	2,748.20	-461.23	7.04	9.13	0.00	0.00	0.00
2,900.00	13.60	179.13	2,845.40	-484.75	7.39	9.59	0.00	0.00	0.00
2,927.37	13.60	179.13	2,872.00	-491.18	7.49	9.72	0.00	0.00	0.00
Fruitland									
3,000.00	13.60	179.13	2,942.59	-508.26	7.75	10.06	0.00	0.00	0.00
3,086.84	13.60	179.13	3,027.00	-528.68	8.06	10.46	0.00	0.00	0.00
T/Coals									
3,100.00	13.60	179.13	3,039.79	-531.77	8.11	10.52	0.00	0.00	0.00
3,200.00	13.60	179.13	3,136.98	-555.29	8.47	10.99	0.00	0.00	0.00
3,241.17	13.60	179.13	3,177.00	-564.97	8.62	11.18	0.00	0.00	0.00
T/Coals									
3,300.00	13.60	179.13	3,234.18	-578.80	8.83	11.46	0.00	0.00	0.00
3,400.00	13.60	179.13	3,331.38	-602.32	9.19	11.92	0.00	0.00	0.00
3,419.16	13.60	179.13	3,350.00	-606.82	9.26	12.01	0.00	0.00	0.00
Pictured Cliffs									
3,500.00	13.60	179.13	3,428.57	-625.83	9.55	12.39	0.00	0.00	0.00
3,527.19	13.60	179.13	3,455.00	-632.22	9.64	12.51	0.00	0.00	0.00
Lewis									

SDT

Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Company:	Logos Operating LLC	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	North Reference:	True
Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,600.00	13.60	179.13	3,525.77	-649.34	9.90	12.85	0.00	0.00	0.00
3,700.00	13.60	179.13	3,622.96	-672.86	10.26	13.32	0.00	0.00	0.00
3,800.00	13.60	179.13	3,720.16	-696.37	10.62	13.78	0.00	0.00	0.00
3,900.00	13.60	179.13	3,817.35	-719.88	10.98	14.25	0.00	0.00	0.00
4,000.00	13.60	179.13	3,914.55	-743.40	11.34	14.71	0.00	0.00	0.00
4,100.00	13.60	179.13	4,011.74	-766.91	11.70	15.18	0.00	0.00	0.00
4,200.00	13.60	179.13	4,108.94	-790.42	12.06	15.64	0.00	0.00	0.00
4,300.00	13.60	179.13	4,206.14	-813.94	12.42	16.11	0.00	0.00	0.00
4,400.00	13.60	179.13	4,303.33	-837.45	12.77	16.57	0.00	0.00	0.00
4,500.00	13.60	179.13	4,400.53	-860.96	13.13	17.04	0.00	0.00	0.00
4,600.00	13.60	179.13	4,497.72	-884.48	13.49	17.50	0.00	0.00	0.00
4,683.62	13.60	179.13	4,579.00	-904.14	13.79	17.89	0.00	0.00	0.00
Chacra									
4,700.00	13.60	179.13	4,594.92	-907.99	13.85	17.97	0.00	0.00	0.00
4,800.00	13.60	179.13	4,692.11	-931.50	14.21	18.44	0.00	0.00	0.00
4,900.00	13.60	179.13	4,789.31	-955.02	14.57	18.90	0.00	0.00	0.00
5,000.00	13.60	179.13	4,886.51	-978.53	14.93	19.37	0.00	0.00	0.00
5,100.00	13.60	179.13	4,983.70	-1,002.04	15.28	19.83	0.00	0.00	0.00
5,172.33	13.60	179.13	5,054.00	-1,019.05	15.54	20.17	0.00	0.00	0.00
U/Cliff House									
5,200.00	13.60	179.13	5,080.90	-1,025.56	15.64	20.30	0.00	0.00	0.00
5,300.00	13.60	179.13	5,178.09	-1,049.07	16.00	20.76	0.00	0.00	0.00
5,400.00	13.60	179.13	5,275.29	-1,072.58	16.36	21.23	0.00	0.00	0.00
5,484.07	13.60	179.13	5,357.00	-1,092.35	16.66	21.62	0.00	0.00	0.00
Cliff House									
5,500.00	13.60	179.13	5,372.48	-1,096.10	16.72	21.69	0.00	0.00	0.00
5,525.22	13.60	179.13	5,397.00	-1,102.03	16.81	21.81	0.00	0.00	0.00
Menefee									
5,600.00	13.60	179.13	5,469.68	-1,119.61	17.08	22.16	0.00	0.00	0.00
5,700.00	13.60	179.13	5,566.87	-1,143.12	17.44	22.62	0.00	0.00	0.00
5,760.83	13.60	179.13	5,626.00	-1,157.43	17.65	22.91	0.00	0.00	0.00
Point Lookout									
5,800.00	13.60	179.13	5,664.07	-1,166.64	17.80	23.09	0.00	0.00	0.00
5,900.00	13.60	179.13	5,761.27	-1,190.15	18.15	23.55	0.00	0.00	0.00
6,000.00	13.60	179.13	5,858.46	-1,213.66	18.51	24.02	0.00	0.00	0.00
6,100.00	13.60	179.13	5,955.66	-1,237.18	18.87	24.49	0.00	0.00	0.00
6,200.00	13.60	179.13	6,052.85	-1,260.69	19.23	24.95	0.00	0.00	0.00
6,300.00	13.60	179.13	6,150.05	-1,284.21	19.59	25.42	0.00	0.00	0.00
6,313.33	13.60	179.13	6,163.00	-1,287.34	19.64	25.48	0.00	0.00	0.00
Mancos									
6,400.00	13.60	179.13	6,247.24	-1,307.72	19.95	25.88	0.00	0.00	0.00
6,490.87	13.60	179.13	6,335.57	-1,329.09	20.27	26.30	0.00	0.00	0.00
Start DLS 9.00 TFO -86.40									
6,500.00	13.68	175.66	6,344.44	-1,331.24	20.37	26.41	9.00	0.83	-38.01
6,550.00	14.90	158.02	6,392.91	-1,343.09	23.23	29.32	9.00	2.44	-35.27
6,600.00	17.22	144.02	6,440.98	-1,355.05	29.98	36.13	9.00	4.64	-28.01
6,650.00	20.27	133.67	6,488.34	-1,367.02	40.60	46.80	9.00	6.10	-20.69
6,700.00	23.76	126.09	6,534.69	-1,378.94	55.01	61.27	9.00	7.00	-15.16
6,750.00	27.54	120.41	6,579.76	-1,390.73	73.13	79.44	9.00	7.55	-11.34
6,800.00	31.49	116.04	6,623.27	-1,402.32	94.84	101.21	9.00	7.91	-8.75
6,850.00	35.56	112.57	6,664.95	-1,413.64	120.02	126.43	9.00	8.14	-6.95
6,900.00	39.72	109.73	6,704.53	-1,424.62	148.50	154.96	9.00	8.31	-5.68
6,950.00	43.93	107.35	6,741.79	-1,435.19	180.10	186.62	9.00	8.42	-4.76

SDT

Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Company:	Logos Operating LLC	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	North Reference:	True
Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,990.36	47.36	105.68	6,770.00	-1,443.38	207.77	214.32	9.00	8.50	-4.14
Black Top									
7,000.00	48.18	105.31	6,776.48	-1,445.29	214.65	221.20	9.00	8.54	-3.85
7,050.00	52.47	103.52	6,808.39	-1,454.84	251.91	258.51	9.00	8.57	-3.57
7,100.00	56.78	101.93	6,837.34	-1,463.81	291.67	298.31	9.00	8.62	-3.18
7,150.00	61.11	100.49	6,863.13	-1,472.12	333.68	340.36	9.00	8.66	-2.88
7,200.00	65.45	99.16	6,885.61	-1,479.73	377.67	384.38	9.00	8.68	-2.65
7,250.00	69.80	97.93	6,904.64	-1,486.59	423.38	430.12	9.00	8.71	-2.47
7,300.00	74.16	96.76	6,920.10	-1,492.66	470.53	477.30	9.00	8.72	-2.34
7,350.00	78.53	95.64	6,931.91	-1,497.90	518.82	525.61	9.00	8.73	-2.24
7,400.00	82.90	94.56	6,939.97	-1,502.28	567.96	574.77	9.00	8.74	-2.17
7,450.00	87.27	93.49	6,944.26	-1,505.78	617.64	624.46	9.00	8.75	-2.13
7,481.69	90.04	92.82	6,945.00	-1,507.52	649.26	656.10	9.00	8.75	-2.11
Start 13308.06 hold at 7481.69 MD									
7,500.00	90.04	92.82	6,944.99	-1,508.42	667.55	674.39	0.00	0.00	0.00
7,600.00	90.04	92.82	6,944.91	-1,513.35	767.43	774.29	0.00	0.00	0.00
7,700.00	90.04	92.82	6,944.84	-1,518.27	867.31	874.19	0.00	0.00	0.00
7,800.00	90.04	92.82	6,944.76	-1,523.19	967.19	974.09	0.00	0.00	0.00
7,900.00	90.04	92.82	6,944.69	-1,528.11	1,067.07	1,073.99	0.00	0.00	0.00
8,000.00	90.04	92.82	6,944.61	-1,533.04	1,166.95	1,173.89	0.00	0.00	0.00
8,100.00	90.04	92.82	6,944.54	-1,537.96	1,266.83	1,273.79	0.00	0.00	0.00
8,200.00	90.04	92.82	6,944.46	-1,542.88	1,366.70	1,373.69	0.00	0.00	0.00
8,300.00	90.04	92.82	6,944.39	-1,547.80	1,466.58	1,473.59	0.00	0.00	0.00
8,400.00	90.04	92.82	6,944.31	-1,552.73	1,566.46	1,573.49	0.00	0.00	0.00
8,500.00	90.04	92.82	6,944.23	-1,557.65	1,666.34	1,673.39	0.00	0.00	0.00
8,600.00	90.04	92.82	6,944.16	-1,562.57	1,766.22	1,773.29	0.00	0.00	0.00
8,700.00	90.04	92.82	6,944.08	-1,567.49	1,866.10	1,873.19	0.00	0.00	0.00
8,800.00	90.04	92.82	6,944.01	-1,572.42	1,965.98	1,973.09	0.00	0.00	0.00
8,900.00	90.04	92.82	6,943.93	-1,577.34	2,065.86	2,072.99	0.00	0.00	0.00
9,000.00	90.04	92.82	6,943.86	-1,582.26	2,165.73	2,172.89	0.00	0.00	0.00
9,100.00	90.04	92.82	6,943.78	-1,587.18	2,265.61	2,272.79	0.00	0.00	0.00
9,200.00	90.04	92.82	6,943.71	-1,592.11	2,365.49	2,372.69	0.00	0.00	0.00
9,300.00	90.04	92.82	6,943.63	-1,597.03	2,465.37	2,472.59	0.00	0.00	0.00
9,400.00	90.04	92.82	6,943.56	-1,601.95	2,565.25	2,572.49	0.00	0.00	0.00
9,500.00	90.04	92.82	6,943.48	-1,606.87	2,665.13	2,672.39	0.00	0.00	0.00
9,600.00	90.04	92.82	6,943.41	-1,611.80	2,765.01	2,772.29	0.00	0.00	0.00
9,700.00	90.04	92.82	6,943.33	-1,616.72	2,864.89	2,872.19	0.00	0.00	0.00
9,800.00	90.04	92.82	6,943.26	-1,621.64	2,964.76	2,972.09	0.00	0.00	0.00
9,900.00	90.04	92.82	6,943.18	-1,626.56	3,064.64	3,071.99	0.00	0.00	0.00
10,000.00	90.04	92.82	6,943.11	-1,631.49	3,164.52	3,171.89	0.00	0.00	0.00
10,100.00	90.04	92.82	6,943.03	-1,636.41	3,264.40	3,271.79	0.00	0.00	0.00
10,200.00	90.04	92.82	6,942.96	-1,641.33	3,364.28	3,371.69	0.00	0.00	0.00
10,300.00	90.04	92.82	6,942.88	-1,646.25	3,464.16	3,471.59	0.00	0.00	0.00
10,400.00	90.04	92.82	6,942.81	-1,651.18	3,564.04	3,571.49	0.00	0.00	0.00
10,500.00	90.04	92.82	6,942.73	-1,656.10	3,663.92	3,671.39	0.00	0.00	0.00
10,600.00	90.04	92.82	6,942.66	-1,661.02	3,763.79	3,771.29	0.00	0.00	0.00
10,700.00	90.04	92.82	6,942.58	-1,665.94	3,863.67	3,871.19	0.00	0.00	0.00
10,800.00	90.04	92.82	6,942.51	-1,670.87	3,963.55	3,971.09	0.00	0.00	0.00
10,900.00	90.04	92.82	6,942.43	-1,675.79	4,063.43	4,070.99	0.00	0.00	0.00
11,000.00	90.04	92.82	6,942.36	-1,680.71	4,163.31	4,170.89	0.00	0.00	0.00
11,100.00	90.04	92.82	6,942.28	-1,685.63	4,263.19	4,270.79	0.00	0.00	0.00
11,200.00	90.04	92.82	6,942.21	-1,690.56	4,363.07	4,370.69	0.00	0.00	0.00
11,300.00	90.04	92.82	6,942.13	-1,695.48	4,462.95	4,470.59	0.00	0.00	0.00
11,400.00	90.04	92.82	6,942.06	-1,700.40	4,562.82	4,570.49	0.00	0.00	0.00

SDT
Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Company:	Logos Operating LLC	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	North Reference:	True
Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,500.00	90.04	92.82	6,941.98	-1,705.32	4,662.70	4,670.39	0.00	0.00	0.00
11,600.00	90.04	92.82	6,941.91	-1,710.25	4,762.58	4,770.29	0.00	0.00	0.00
11,700.00	90.04	92.82	6,941.83	-1,715.17	4,862.46	4,870.19	0.00	0.00	0.00
11,800.00	90.04	92.82	6,941.76	-1,720.09	4,962.34	4,970.09	0.00	0.00	0.00
11,900.00	90.04	92.82	6,941.68	-1,725.01	5,062.22	5,069.99	0.00	0.00	0.00
12,000.00	90.04	92.82	6,941.60	-1,729.94	5,162.10	5,169.89	0.00	0.00	0.00
12,100.00	90.04	92.82	6,941.53	-1,734.86	5,261.98	5,269.79	0.00	0.00	0.00
12,200.00	90.04	92.82	6,941.45	-1,739.78	5,361.85	5,369.69	0.00	0.00	0.00
12,300.00	90.04	92.82	6,941.38	-1,744.70	5,461.73	5,469.59	0.00	0.00	0.00
12,400.00	90.04	92.82	6,941.30	-1,749.63	5,561.61	5,569.49	0.00	0.00	0.00
12,500.00	90.04	92.82	6,941.23	-1,754.55	5,661.49	5,669.39	0.00	0.00	0.00
12,600.00	90.04	92.82	6,941.15	-1,759.47	5,761.37	5,769.29	0.00	0.00	0.00
12,700.00	90.04	92.82	6,941.08	-1,764.39	5,861.25	5,869.19	0.00	0.00	0.00
12,800.00	90.04	92.82	6,941.00	-1,769.32	5,961.13	5,969.09	0.00	0.00	0.00
12,900.00	90.04	92.82	6,940.93	-1,774.24	6,061.01	6,068.99	0.00	0.00	0.00
13,000.00	90.04	92.82	6,940.85	-1,779.16	6,160.88	6,168.89	0.00	0.00	0.00
13,100.00	90.04	92.82	6,940.78	-1,784.08	6,260.76	6,268.79	0.00	0.00	0.00
13,200.00	90.04	92.82	6,940.70	-1,789.01	6,360.64	6,368.69	0.00	0.00	0.00
13,300.00	90.04	92.82	6,940.63	-1,793.93	6,460.52	6,468.60	0.00	0.00	0.00
13,400.00	90.04	92.82	6,940.55	-1,798.85	6,560.40	6,568.50	0.00	0.00	0.00
13,500.00	90.04	92.82	6,940.48	-1,803.77	6,660.28	6,668.40	0.00	0.00	0.00
13,600.00	90.04	92.82	6,940.40	-1,808.70	6,760.16	6,768.30	0.00	0.00	0.00
13,700.00	90.04	92.82	6,940.33	-1,813.62	6,860.04	6,868.20	0.00	0.00	0.00
13,800.00	90.04	92.82	6,940.25	-1,818.54	6,959.91	6,968.10	0.00	0.00	0.00
13,900.00	90.04	92.82	6,940.18	-1,823.46	7,059.79	7,068.00	0.00	0.00	0.00
14,000.00	90.04	92.82	6,940.10	-1,828.39	7,159.67	7,167.90	0.00	0.00	0.00
14,100.00	90.04	92.82	6,940.03	-1,833.31	7,259.55	7,267.80	0.00	0.00	0.00
14,200.00	90.04	92.82	6,939.95	-1,838.23	7,359.43	7,367.70	0.00	0.00	0.00
14,300.00	90.04	92.82	6,939.88	-1,843.15	7,459.31	7,467.60	0.00	0.00	0.00
14,400.00	90.04	92.82	6,939.80	-1,848.08	7,559.19	7,567.50	0.00	0.00	0.00
14,500.00	90.04	92.82	6,939.73	-1,853.00	7,659.07	7,667.40	0.00	0.00	0.00
14,600.00	90.04	92.82	6,939.65	-1,857.92	7,758.94	7,767.30	0.00	0.00	0.00
14,700.00	90.04	92.82	6,939.58	-1,862.84	7,858.82	7,867.20	0.00	0.00	0.00
14,800.00	90.04	92.82	6,939.50	-1,867.77	7,958.70	7,967.10	0.00	0.00	0.00
14,900.00	90.04	92.82	6,939.43	-1,872.69	8,058.58	8,067.00	0.00	0.00	0.00
15,000.00	90.04	92.82	6,939.35	-1,877.61	8,158.46	8,166.90	0.00	0.00	0.00
15,100.00	90.04	92.82	6,939.28	-1,882.53	8,258.34	8,266.80	0.00	0.00	0.00
15,200.00	90.04	92.82	6,939.20	-1,887.46	8,358.22	8,366.70	0.00	0.00	0.00
15,300.00	90.04	92.82	6,939.13	-1,892.38	8,458.10	8,466.60	0.00	0.00	0.00
15,400.00	90.04	92.82	6,939.05	-1,897.30	8,557.97	8,566.50	0.00	0.00	0.00
15,500.00	90.04	92.82	6,938.98	-1,902.22	8,657.85	8,666.40	0.00	0.00	0.00
15,600.00	90.04	92.82	6,938.90	-1,907.15	8,757.73	8,766.30	0.00	0.00	0.00
15,700.00	90.04	92.82	6,938.82	-1,912.07	8,857.61	8,866.20	0.00	0.00	0.00
15,800.00	90.04	92.82	6,938.75	-1,916.99	8,957.49	8,966.10	0.00	0.00	0.00
15,900.00	90.04	92.82	6,938.67	-1,921.91	9,057.37	9,066.00	0.00	0.00	0.00
16,000.00	90.04	92.82	6,938.60	-1,926.84	9,157.25	9,165.90	0.00	0.00	0.00
16,100.00	90.04	92.82	6,938.52	-1,931.76	9,257.13	9,265.80	0.00	0.00	0.00
16,200.00	90.04	92.82	6,938.45	-1,936.68	9,357.00	9,365.70	0.00	0.00	0.00
16,300.00	90.04	92.82	6,938.37	-1,941.60	9,456.88	9,465.60	0.00	0.00	0.00
16,400.00	90.04	92.82	6,938.30	-1,946.53	9,556.76	9,565.50	0.00	0.00	0.00
16,500.00	90.04	92.82	6,938.22	-1,951.45	9,656.64	9,665.40	0.00	0.00	0.00
16,600.00	90.04	92.82	6,938.15	-1,956.37	9,756.52	9,765.30	0.00	0.00	0.00
16,700.00	90.04	92.82	6,938.07	-1,961.29	9,856.40	9,865.20	0.00	0.00	0.00
16,800.00	90.04	92.82	6,938.00	-1,966.22	9,956.28	9,965.10	0.00	0.00	0.00

SDT

Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Company:	Logos Operating LLC	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	North Reference:	True
Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,900.00	90.04	92.82	6,937.92	-1,971.14	10,056.16	10,065.00	0.00	0.00	0.00
17,000.00	90.04	92.82	6,937.85	-1,976.06	10,156.03	10,164.90	0.00	0.00	0.00
17,100.00	90.04	92.82	6,937.77	-1,980.98	10,255.91	10,264.80	0.00	0.00	0.00
17,200.00	90.04	92.82	6,937.70	-1,985.90	10,355.79	10,364.70	0.00	0.00	0.00
17,300.00	90.04	92.82	6,937.62	-1,990.83	10,455.67	10,464.60	0.00	0.00	0.00
17,400.00	90.04	92.82	6,937.55	-1,995.75	10,555.55	10,564.50	0.00	0.00	0.00
17,500.00	90.04	92.82	6,937.47	-2,000.67	10,655.43	10,664.40	0.00	0.00	0.00
17,600.00	90.04	92.82	6,937.40	-2,005.59	10,755.31	10,764.30	0.00	0.00	0.00
17,700.00	90.04	92.82	6,937.32	-2,010.52	10,855.19	10,864.20	0.00	0.00	0.00
17,800.00	90.04	92.82	6,937.25	-2,015.44	10,955.06	10,964.10	0.00	0.00	0.00
17,900.00	90.04	92.82	6,937.17	-2,020.36	11,054.94	11,064.00	0.00	0.00	0.00
18,000.00	90.04	92.82	6,937.10	-2,025.28	11,154.82	11,163.90	0.00	0.00	0.00
18,100.00	90.04	92.82	6,937.02	-2,030.21	11,254.70	11,263.80	0.00	0.00	0.00
18,200.00	90.04	92.82	6,936.95	-2,035.13	11,354.58	11,363.70	0.00	0.00	0.00
18,300.00	90.04	92.82	6,936.87	-2,040.05	11,454.46	11,463.60	0.00	0.00	0.00
18,400.00	90.04	92.82	6,936.80	-2,044.97	11,554.34	11,563.50	0.00	0.00	0.00
18,500.00	90.04	92.82	6,936.72	-2,049.90	11,654.22	11,663.40	0.00	0.00	0.00
18,600.00	90.04	92.82	6,936.65	-2,054.82	11,754.09	11,763.30	0.00	0.00	0.00
18,700.00	90.04	92.82	6,936.57	-2,059.74	11,853.97	11,863.20	0.00	0.00	0.00
18,800.00	90.04	92.82	6,936.50	-2,064.66	11,953.85	11,963.10	0.00	0.00	0.00
18,900.00	90.04	92.82	6,936.42	-2,069.59	12,053.73	12,063.00	0.00	0.00	0.00
19,000.00	90.04	92.82	6,936.35	-2,074.51	12,153.61	12,162.90	0.00	0.00	0.00
19,100.00	90.04	92.82	6,936.27	-2,079.43	12,253.49	12,262.80	0.00	0.00	0.00
19,200.00	90.04	92.82	6,936.19	-2,084.35	12,353.37	12,362.70	0.00	0.00	0.00
19,300.00	90.04	92.82	6,936.12	-2,089.28	12,453.25	12,462.60	0.00	0.00	0.00
19,400.00	90.04	92.82	6,936.04	-2,094.20	12,553.12	12,562.50	0.00	0.00	0.00
19,500.00	90.04	92.82	6,935.97	-2,099.12	12,653.00	12,662.40	0.00	0.00	0.00
19,600.00	90.04	92.82	6,935.89	-2,104.04	12,752.88	12,762.30	0.00	0.00	0.00
19,700.00	90.04	92.82	6,935.82	-2,108.97	12,852.76	12,862.20	0.00	0.00	0.00
19,800.00	90.04	92.82	6,935.74	-2,113.89	12,952.64	12,962.10	0.00	0.00	0.00
19,900.00	90.04	92.82	6,935.67	-2,118.81	13,052.52	13,062.00	0.00	0.00	0.00
20,000.00	90.04	92.82	6,935.59	-2,123.73	13,152.40	13,161.90	0.00	0.00	0.00
20,100.00	90.04	92.82	6,935.52	-2,128.66	13,252.28	13,261.80	0.00	0.00	0.00
20,200.00	90.04	92.82	6,935.44	-2,133.58	13,352.15	13,361.70	0.00	0.00	0.00
20,300.00	90.04	92.82	6,935.37	-2,138.50	13,452.03	13,461.60	0.00	0.00	0.00
20,400.00	90.04	92.82	6,935.29	-2,143.42	13,551.91	13,561.50	0.00	0.00	0.00
20,500.00	90.04	92.82	6,935.22	-2,148.35	13,651.79	13,661.40	0.00	0.00	0.00
20,600.00	90.04	92.82	6,935.14	-2,153.27	13,751.67	13,761.30	0.00	0.00	0.00
20,700.00	90.04	92.82	6,935.07	-2,158.19	13,851.55	13,861.20	0.00	0.00	0.00
20,789.49	90.04	92.82	6,935.00	-2,162.60	13,940.93	13,950.60	0.00	0.00	0.00
TD at 20789.75									
20,789.75	90.04	92.82	6,935.00	-2,162.61	13,941.19	13,950.86	0.00	0.00	0.00

SDT
Planning Report

Database:	EDM 5000 Multi User Db	Local Co-ordinate Reference:	Well Rosa Unit #724H - Slot B06
Company:	Logos Operating LLC	TVD Reference:	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	MD Reference:	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	North Reference:	True
Well:	Rosa Unit #724H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelim #1		

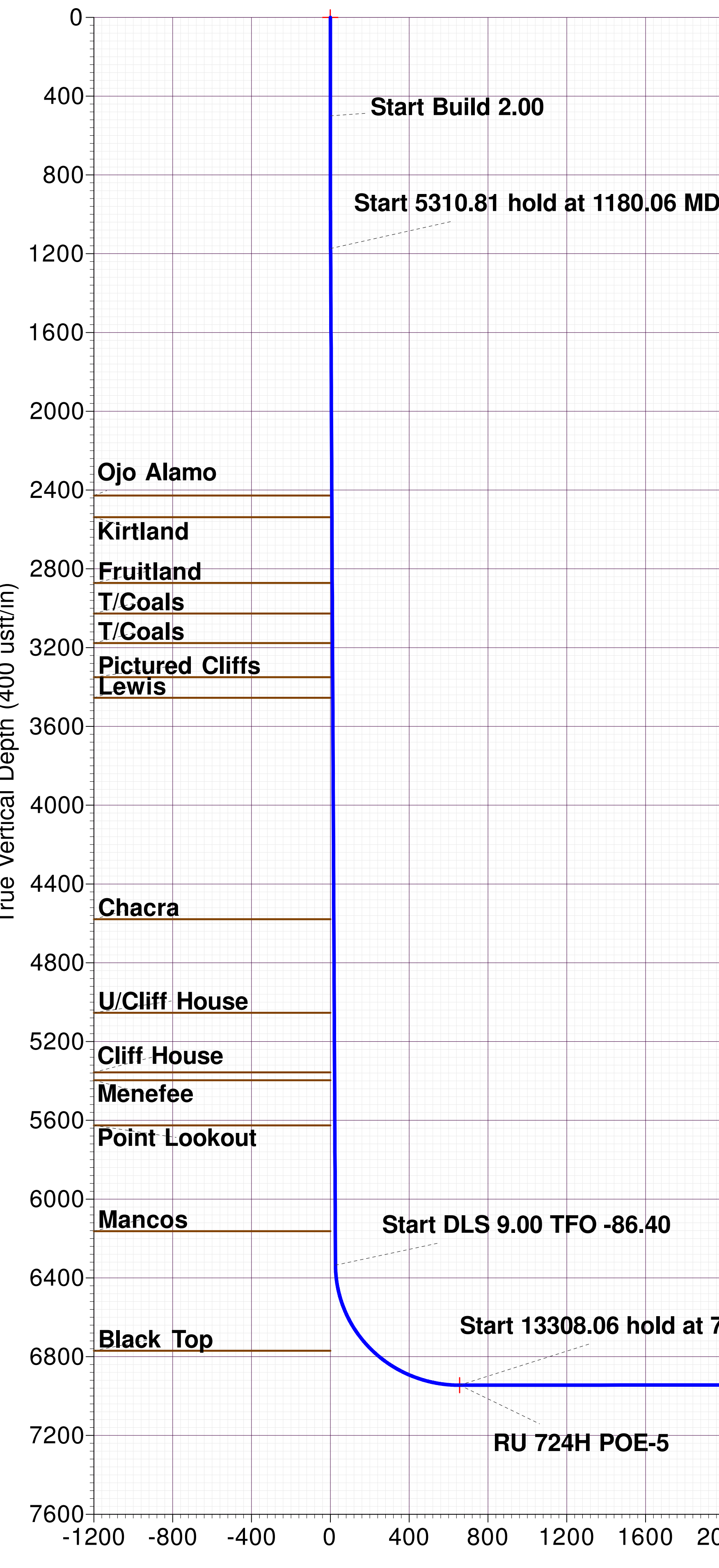
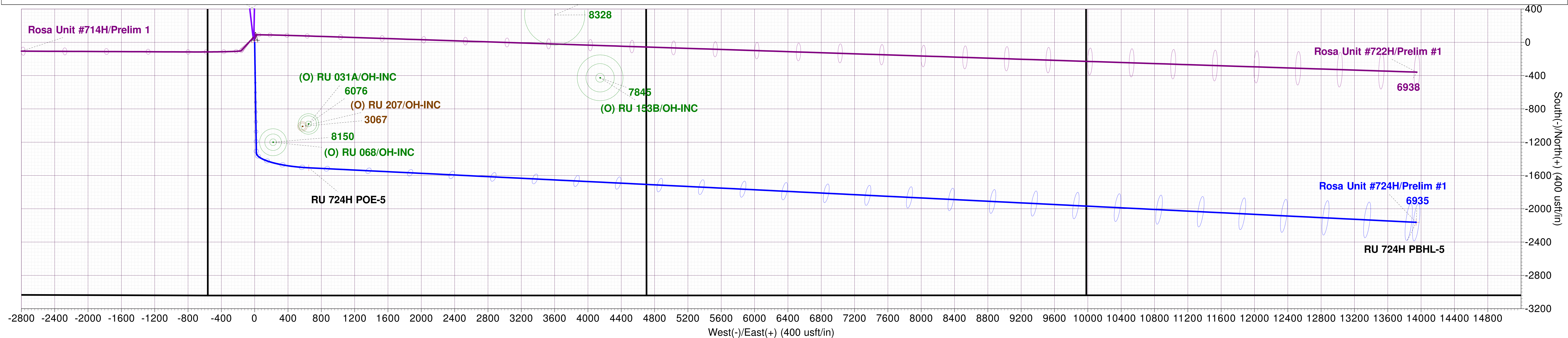
Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
RU 724H SHL-5	0.00	0.00	0.00	0.00	0.00	2,147,459.91	2,851,902.02	36.900649	-107.392788
- plan hits target center									
- Point									
RU 724H PBHL-5	0.00	0.00	6,935.00	-2,162.61	13,941.19	2,145,361.70	2,865,853.05	36.894699	-107.345112
- plan hits target center									
- Point									
RU 724H POE-5	0.00	0.00	6,945.00	-1,507.52	649.26	2,145,955.41	2,852,558.24	36.896508	-107.390568
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth					
(usft)	(usft)	Name	Lithology	Dip	Dip Direction	
				(°)	(°)	
2,470.56	2,428.00	Ojo Alamo				
2,583.73	2,538.00	Kirtland				
2,927.37	2,872.00	Fruitland				
3,086.84	3,027.00	T/Coals				
3,241.17	3,177.00	T/Coals				
3,419.16	3,350.00	Pictured Cliffs				
3,527.19	3,455.00	Lewis				
4,683.62	4,579.00	Chacra				
5,172.33	5,054.00	U/Cliff House				
5,484.07	5,357.00	Cliff House				
5,525.22	5,397.00	Menefee				
5,760.83	5,626.00	Point Lookout				
6,313.33	6,163.00	Mancos				
6,990.36	6,770.00	Black Top				

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		
(usft)	(usft)	+N/-S	+E/-W	Comment
		(usft)	(usft)	
500.00	500.00	0.00	0.00	Start Build 2.00
1,180.06	1,173.69	-80.33	1.23	Start 5310.81 hold at 1180.06 MD
6,490.87	6,335.57	-1,329.09	20.27	Start DLS 9.00 TFO -86.40
7,481.69	6,945.00	-1,507.52	649.26	Start 13308.06 hold at 7481.69 MD
20,789.49	6,935.00	-2,162.60	13,940.93	TD at 20789.75



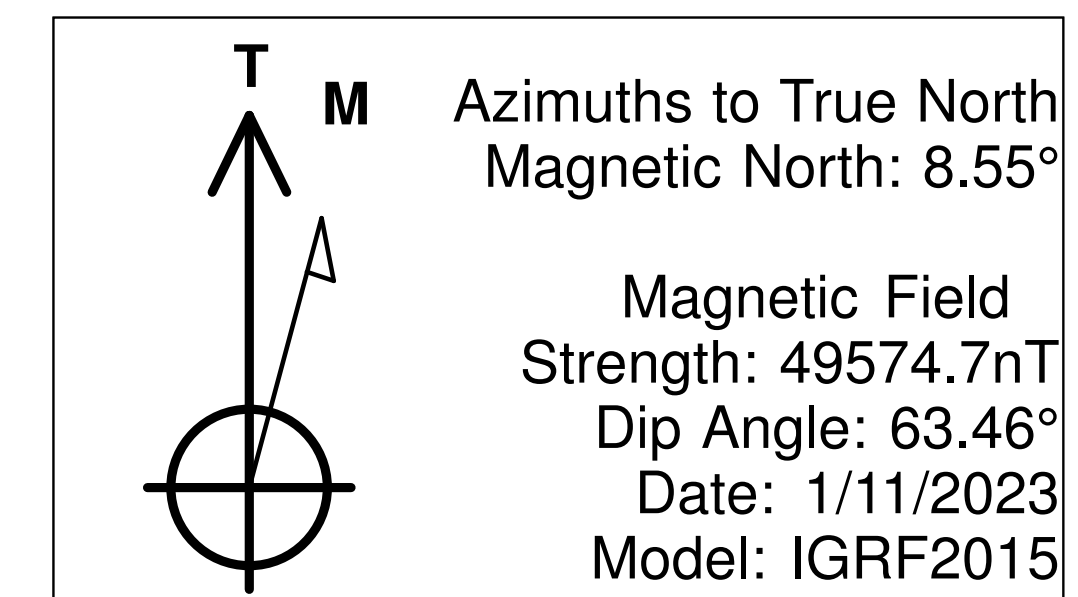
County: Rio Arriba, NM (NAD83)
Site: Rosa Pad 26 - 5 Well
Well: Rosa Unit #724H
Depth Reference: 6300+30 @ 6330.00usft (H&P 530)
Rig: H&P 530
Plan: Prelim #1
Job #: Prelim



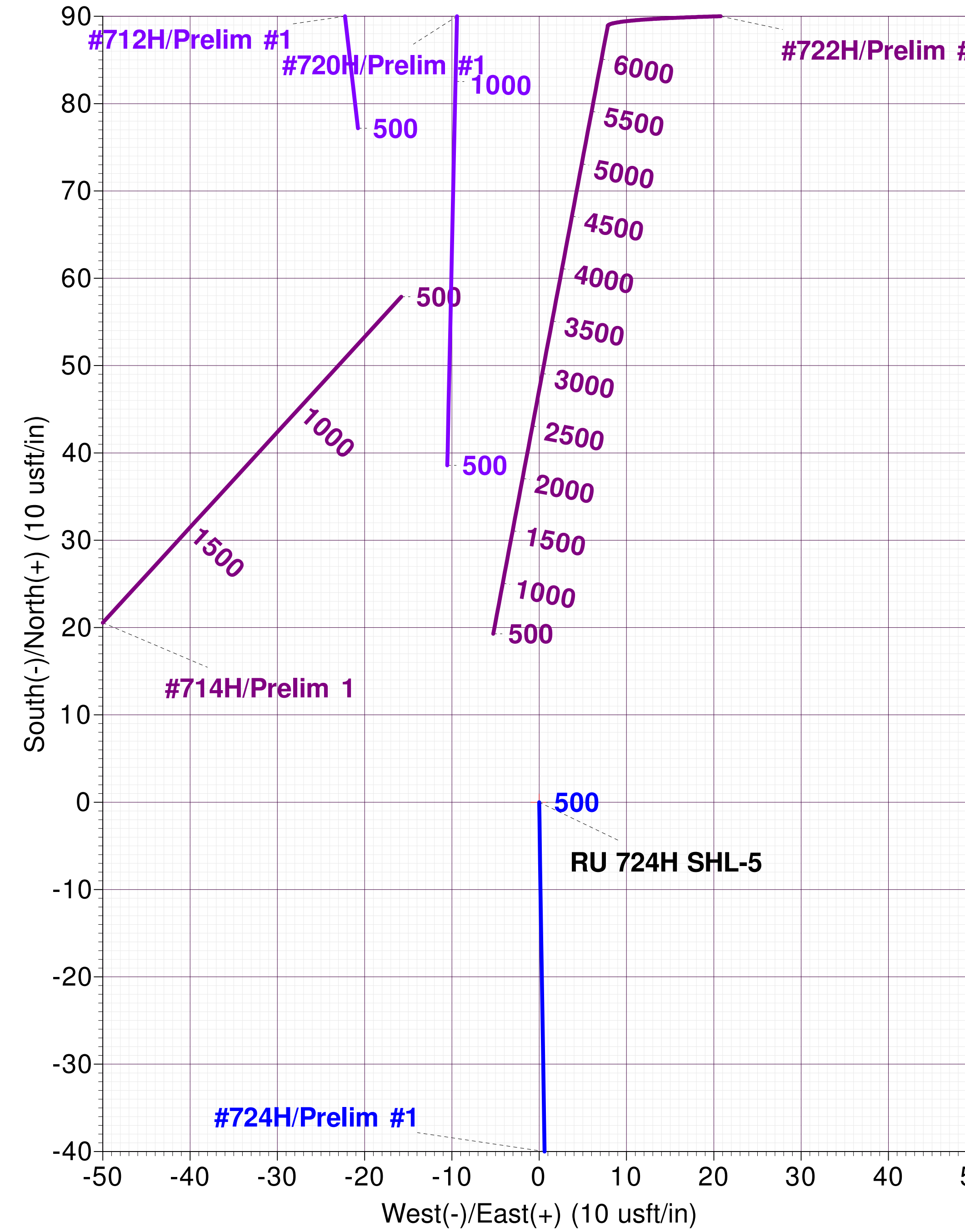
SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00	
3	1180.06	13.60	179.13	1173.69	-80.33	1.23	2.00	179.13	1.59	Start 5310.81 hold at 1180.06 MD	
4	6490.87	13.60	179.13	6335.57	-1329.09	20.27	0.00	0.00	26.30	Start DLS 9.00 TFO -86.40	
5	7481.69	90.04	92.82	6945.00	-1507.52	649.26	9.00	-86.40	656.10	Start 13308.06 hold at 7481.69 MD	
6	20789.75	90.04	92.82	6935.00	-2162.61	13941.19	0.00	0.00	13950.86	TD at 20789.75	

DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
RU 724H SHL-5	0.00	0.00	0.00	2147459.92	2851902.02	36.900649	-107.392788		
RU 724H PBHL-5	6935.00	-2162.61	13941.19	2145361.70	2865853.04	36.894699	-107.345112		
RU 724H POE-5	6945.00	-1507.52	649.26	2145955.41	2852558.24	36.896508	-107.390568		

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
2428.00	2470.56	Ojo Alamo
2538.00	2583.73	Kirtland
2872.00	2927.37	Fruitland
3027.00	3086.84	T/Coals
3177.00	3241.17	T/Coals
3350.00	3419.16	Pictured Cliffs
3455.00	3527.19	Lewis
4579.00	4683.62	Chacra
5054.00	5172.33	U/Cliff House
5357.00	5484.07	Cliff House
5397.00	5525.22	Menefee
5626.00	5760.83	Point Lookout
6163.00	6313.33	Mancos
6770.00	6990.36	Black Top



TOTAL CORRECTION: 8.55°





LOGOS Operating, LLC Operations Plan

Note: This procedure will be adjusted onsite based upon actual conditions

Date:	September 25, 2024	Pool:	Basin Mancos
Well Name:	Rosa Unit 724H	GL Elevation:	6,300'
Surface Location:	Sec 17, T31N, R5W 2233' FNL, 565' FWL (36.900649° N, -107.392788° W – NAD83)	KB:	30'
Bottom Hole Location:	Sec 15, T31N, R5W 876' FSL, 1314' FEL (36.894699° N, -107.345112° W – NAD83)	Measured Depth:	20,790' (KB)
Lease Serial CA Serial	# NMSF078764 # NMNM78407E	County:	Rio Arriba

I. GEOLOGY

A. Formation Tops (Based on KB Elevation): Estimated top of important geological markers:
SURFACE FORMATION – NACIMIENTO

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	2471'	2428'	*POINT LOOKOUT	5761'	5626'
KIRTLAND	2584'	2538'	*MANCOS	6313'	6163'
*FRUITLAND	2927'	2872'	KICKOFF POINT	6491'	6336'
*PICTURED CLIFFS	3419'	3350'	LANDING POINT	7482'	6945'
LEWIS	3527'	3455'	TD	20790'	6935'
CHACRA	4684'	4579'			
*CLIFF HOUSE	5484'	5357'			
MENEFEE	5525'	5397'			

* indicates depth at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered.

B. MUD LOGGING PROGRAM: Mudlogger on location from KOP to TD.

C. LOGGING PROGRAM: LWD GR from surface casing to TD.

D. NATURAL GAUGES: Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING

A. MUD PROGRAM: LSND mud (WBM) will be used to drill the 26"/24" conductor hole. LSND (WBM) will be used to drill the 17-1/2" surface hole and 12-1/4" intermediate hole. A LSND (WBM) or (OBM) will be used to drill the 8-1/2" curve and lateral portion of the wellbore. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

Above ground steel pits will be used for fluid and cuttings while drilling. In the unlikely event that a tank develops a leak, upon immediate visual discovery, the fluid would be transferred to another tank and contaminated soil would be removed and disposed. Any leaks, spills or other undesirable events will be reported in accordance with BLM NTL 3A. Rig crews will monitor the tanks at all times.



- B. BOP TESTING:** The BOPE will be tested to **250 psi (Low) for 5 minutes** and **3000 psi (High) for 10 minutes**. Pressure test surface casing to **600 psi for 30 minutes** and intermediate casing to **1500 psi for 30 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. BOP equipment will be tested every 30 days, after any repairs are made to the BOP equipment, and after the BOP equipment is subjected to pressure. Annular preventers will be functionally operated at least once per week. Pipe and blind rams shall be activated each trip or but not more than once a day. The New Mexico Oil & Gas Conservation Commission and the BLM will be notified 24 hours in advance of testing of BOPE. **All tests and inspections will be recorded and logged with time and results.** A full BOP test will be conducted when initially installed for the first well on the pad or if seals subject to test pressure are broken, following related repairs and at a minimum of 30 day intervals. A BOPE Shell Test only will be conducted for subsequent wells on the pad when seals subject to pressure have not been broken or repaired and fall within the 30 day interval of first full test.
- C. GeoHazards:** There are no Geohazards
- D. Maximum Anticipated Pressure:** 6,945' TVD x 0.43 = 2,987 psi
- E. H2S Concerns:** There is no record of any naturally occurring H2S in any formation in the Rosa Unit. No H2S is anticipated in this formation or this well.

III. MATERIALS

A. CASING EQUIPMENT:

CASING TYPE	OH SIZE (IN)	DEPTH (MD)	CSG SIZE	WEIGHT	GRADE	CONN
CONDUCTOR	26" or 24"	320' or greater (GL)	20"	94 LBS	J-55 or equiv	LTC/BTC
SURFACE	17.5"	3,469'	13.375"	54.5 LBS	J-55 or equiv	LTC/BTC
INTERMEDIATE	12.25"	6,388'	9.625"	43.5 LBS	N-80 or equiv	LTC/BTC
PRODUCTION	8.5"	20,790'	5.5"	20 LBS	P-110 or equiv	LTC/BTC

NOTE: All casing depths are approximate, based on KB elevation and will be based on drilling conditions +/- 50'. Weights, grades and connections will be based on availability and may vary but will be equivalent or greater.

B. FLOAT EQUIPMENT:

- 1. CONDUCTOR CASING:** 20" cement nose guide shoe. Place float collar 1 joint above shoe. Run (1) standard centralizer on each of the bottom (3) joints of casing.
- 2. SURFACE CASING:** 13-3/8" cement nose guide shoe with float. Place float collar one joint above the shoe. Install (1) centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) centralizer at 2,500 ft., 2,000ft., 1,500 ft., 1,000 ft., and 500ft.
 - Casing will be kept fluid filled during drilling
- 3. INTERMEDIATE CASING:** 9-5/8" cement float shoe. Place float collar one joint above the shoe. Install (1) centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) centralizer at 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. Optional use of DV Tools (2) will be strategically placed above loss circulation zones anticipated in the Mesaverde and Fruitland Coal. Optional use of cancellation plugs for DV tools may be used if losses while cementing are not encountered. Optional use of an ICP may be used in conjunction with DV Tools.
- 4. PRODUCTION CASING:** Run 5-1/2" casing with cement nose guide Float Shoe, 5-1/2" full or pup joints as necessary, Landing Collar, 5-1/2" full or pup joints as necessary, at least (1) one Toe Sleeve (Sliding Sleeve) positioned inside the applicable production area. Centralizer program will be determined by wellbore conditions. Production casing to be pressure tested



during completion operations with frac stack installed.

C. CEMENTING:

(Note: Cement type and volumes may be adjusted onsite due to actual conditions and availability)

1. CONDUCTOR: Casing shall be set at ~ 320'(GL) and cemented to surface. TOC at Surface.

Conductor - 20"	Top	Footage	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Type G	-	320	0.9599	1.3	449	80	1.10	408	15.8
Type III		320	0.9599	1.3	449	80	1.39	323	14.6

24" hole

Set Depth (GL) 320

2. SURFACE: Casing shall be kept fluid-filled while running into the hole to meet BLM minimum collapse requirements. The surface casing will be cemented in 1 stage. If cement does not circulate to the surface, a CBL will be run to determine TOC.

Surface - 13-3/8"	Top	Footage	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Stage 1 Tail	2,869	600	0.6947	1.3	575	102	1.10	523	15.8
Stage 1 Lead - OH	320	2,549	0.6947	1.3	2,302	410	1.90	1212	12.4
Stage 2 Lead - Cased	-	320	1.019	1	326	58	1.90	172	12.4
					3,204	571		1906	

Set Depth 3469

3. INTERMEDIATE : Casing shall be kept fluid filled while running in to the hole to meet BLM minimum collapse requirements. The intermediate casing will be cemented in 2 or 3 stages using DV/STAGE tools in order to reduce cement losses and maximize cement coverage. Operator proposes optional DV tools and optional ICP's above anticipated loss circulation zones in the Mesaverde and in the Fruitland coal. If losses are not observed during the second stage a cancelation plug will be pumped and the remaining cement will be pumped during stage 2. If cement does not circulate to the DV tool(s) or to surface, a CBL will be run to determine

Intermediate - 9-5/8"	Top	Footage	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Stage 1 Tail	5,888	500	0.3132	1.3	220	39	1.10	200	15.8
Stage 1 Lead	4,759	1,129	0.3132	1.3	460	82	1.90	242	12.4
					680	121		442	
Stage 2 Tail	4,159	600	0.3132	1.3	244	44	1.58	155	13.2
Stage 2 Lead	3,369	790	0.3132	1.3	322	57	1.90	169	12.4
Stage 2 Lead - Cased	3,269	100	0.3627	1	36	6	1.90	19	12.4
Stage 2 Totals					602	107		343	
Int 2 Totals					1,282	228		785	
Contingency									
Stage 3 Tail	3,469	75	0.3132	1.3	31	5	1.58	19	13.2
Stage 3 Tail - Cased	2,969	500	0.3490	1	175	31	1.58	110	13.2
Stage 3 Lead - Cased	-	2,969	0.3490	1	1,036	185	1.90	545	12.4
Contingency Stage 3 Totals					1,241	221		675	

Set Depth 6388



TOC. Calculations based on 30% excess for open hole and cement to surface. Actual excess pumped will be determined by well conditions.

4. **PRODUCTION:** Casing will be cemented in 1 stage with 100' of cement overlap above intermediate shoe. A CBL, or alternatively, a Temperature Survey will be used to determine TOC.

Production - 5-1/2"	Top	ft	Cement (ft3/ft) Annular Capacity	Excess (15%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Cased Lead	6,288	100	0.2531	1	25	5	1.98	13	13.2
Open Hole Lead	6,388	14,402	0.2291	1.15	3,800	677	1.98	1,919	13.2
					3,825	681		1,932	

Set depth 20790

Calculations based on 15% excess for open hole and 100' overlap into intermediate casing. Actual volumes will vary.

Cement calculations are used for volume estimation. Well conditions will dictate final cement job design. Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM and New Mexico Oil Conservation Division requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected. All waiting on cement times shall be a minimum of 8 hours or adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

IV. **COMPLETION**

A. **CBL**

CBLs and/or Temperature Surveys will be performed as needed or required to determine cement top if cement is not circulated.

B. **PRESSURE TEST**

- C. Pressure test 5-1/2" casing to 0.22 psi/ft * 6,945' TVD = 1528 psi for 30 minutes. Increase pressure to Open RSI sleeves.

D. **STIMULATION**

Stimulate with sand and water. Isolate stages with flow through or dissolvable frac plugs. Drill out frac plugs and flowback lateral.

E. **PRODUCTION TUBING**

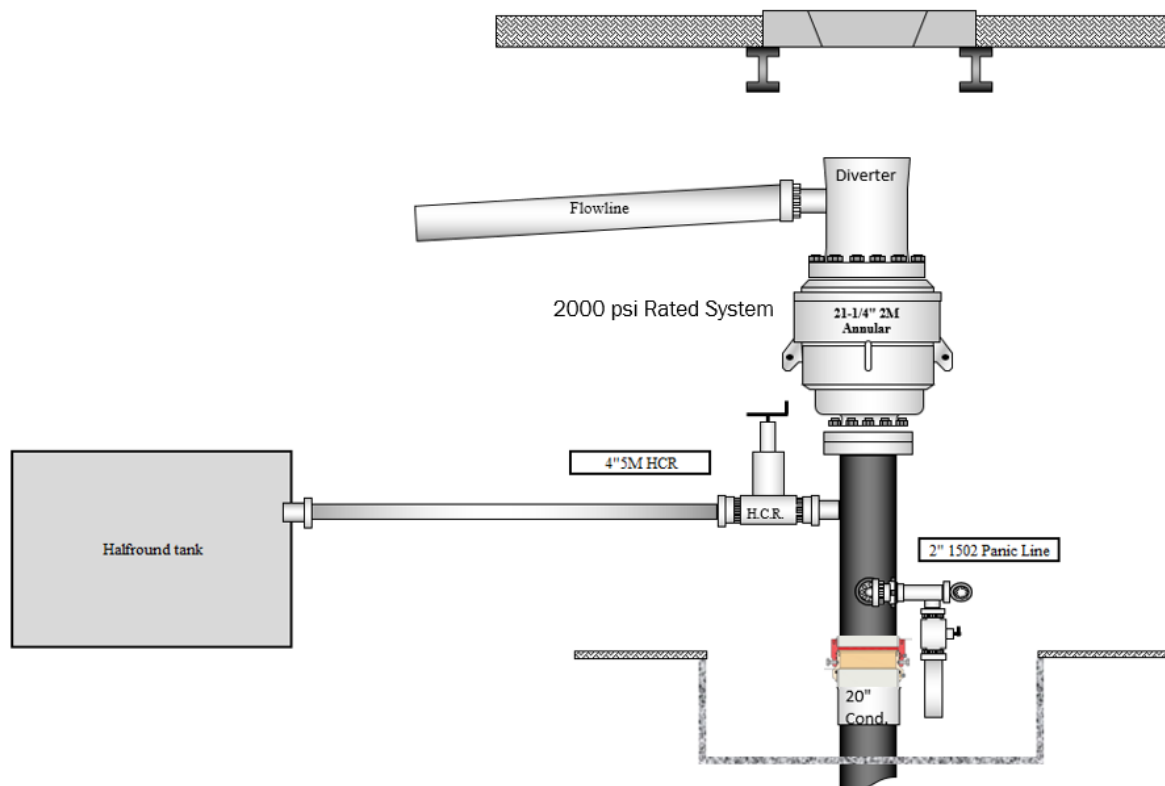
2-7/8", 6.5#, J-55 or L-80, EUE tubing will be run once volumes and pressures dictate. Due to the extremely high initial flow rates and pressures seen in offset wells, tubing will be installed once it is safe to do so, typically 12-36 months after completion.

*NOTE: Although this horizontal well may be drilled past the applicable setbacks, an unorthodox location application is not required because the completed interval in this well, as defined by 19.15.16.7 8(1) NMAC, will be entirely within the applicable setbacks. This approach complies with all applicable rules, including 19.15.16.14 A(3) NMAC, 19.15.16.14 8(2) NMAC, 19.15.16.15 8(2)NMAC, and 19.15.16.15. 8(4) NMAC.



BOP Equipment

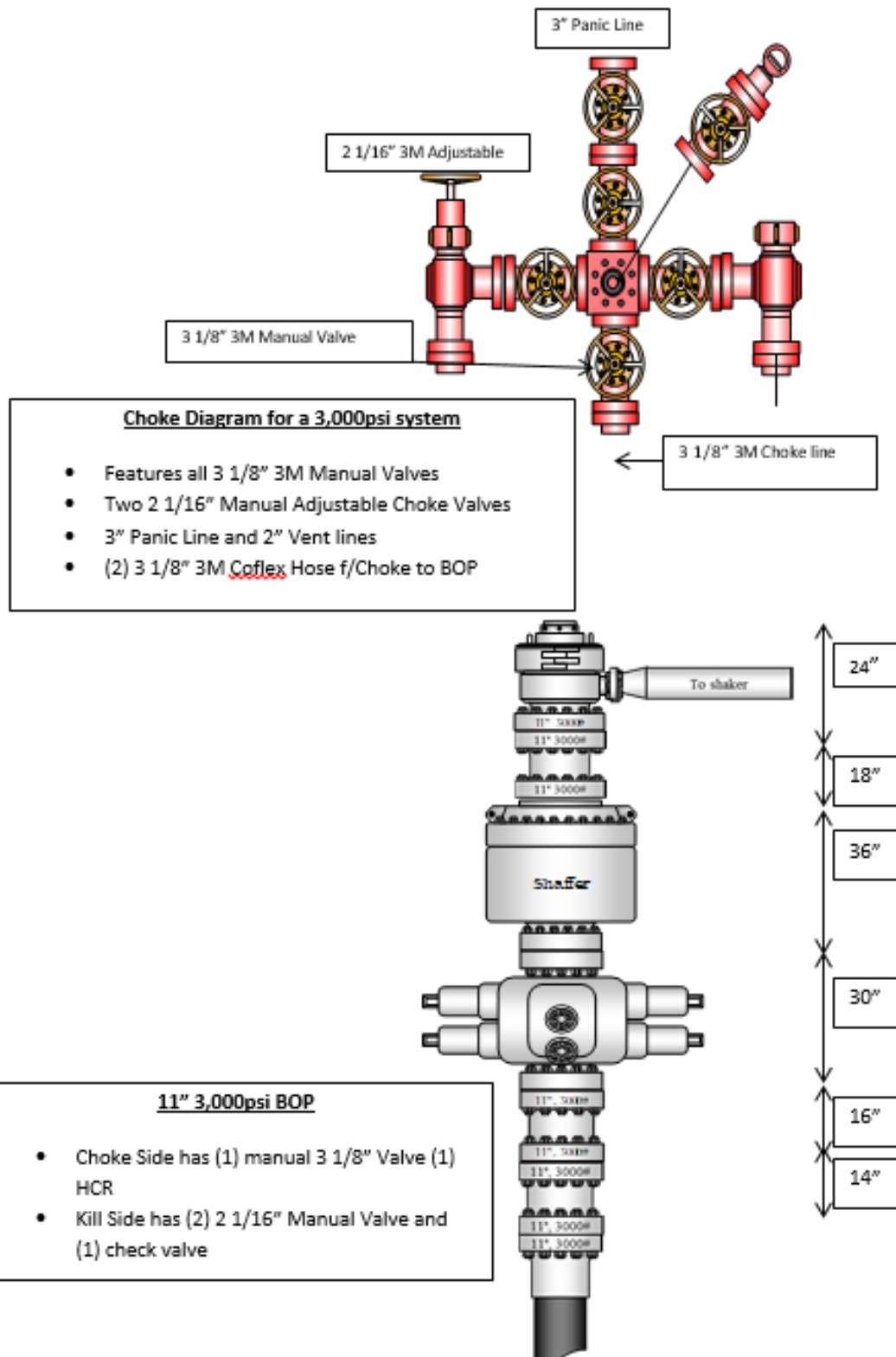
Surface Hole Diverter:





BOP:

3M 11" B.O.P.E Diagram



District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 387909

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 387909
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	All original COA's still apply. Additionally, if cement is not circulated to surface during cementing operations, then a CBL is required.	10/27/2024