

# **VERDAD RESOURCES**

**WATTENBERG FIELD**

**8N-61W-29 GAFFNEY 2920 PAD**

**GAFFNEY 2920-07H**

**Plan A**

**Permit Rev-1**

## **Anticollision Summary Report**

**26 September, 2022**

## Anticollision Summary Report

<b>Company:</b>	VERDAD RESOURCES	<b>Local Co-ordinate Reference:</b>	Well GAFFNEY 2920-07H
<b>Project:</b>	WATTENBERG FIELD	<b>TVD Reference:</b>	RKB = 20' @ 5011.00usft (RIG)
<b>Reference Site:</b>	8N-61W-29 GAFFNEY 2920 PAD	<b>MD Reference:</b>	RKB = 20' @ 5011.00usft (RIG)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	GAFFNEY 2920-07H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	3.28 usft	<b>Output errors are at</b>	2.45 sigma
<b>Reference Wellbore</b>	Plan A	<b>Database:</b>	EDM 5000.16 Single User Db
<b>Reference Design:</b>	Permit Rev-1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Permit Rev-1		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum centre distance of 1,500.00usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.45 Sigma	<b>Casing Method:</b>	Added to Error Values

<b>Survey Tool Program</b>	<b>Date</b>	9/26/2022			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	1,870.00	Permit Rev-1 (Plan A)	ISCWSA MWD	Fixed:v2:standard declination	
1,870.00	15,637.13	Permit Rev-1 (Plan A)	ISCWSA MWD	Fixed:v2:standard declination	

<b>Summary</b>						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
8N-61W-17 Offsets						
Sievers LE17-62HN - Noble PR Well - Actual Sperry Surv	15,637.13	10,720.69	864.67	615.58	3.471	CC, ES, SF
8N-61W-20 LEMUR 2019 PAD						
LEMUR 2019-01H - Wellbore #1 - Design #1						Out of range
LEMUR 2019-02H - Wellbore #1 - Design #2						Out of range
LEMUR 2019-03H - Wellbore #1 - Design #2						Out of range
LEMUR 2019-04H - Wellbore #1 - Design #2						Out of range
LEMUR 2019-05H - Wellbore #1 - Design #2						Out of range
LEMUR 2019-06H - Wellbore #1 - Design #2						Out of range
LEMUR 2019-07H - Wellbore #1 - Design #1						Out of range
LEMUR 2019-08H - Wellbore #1 - Design #1						Out of range
LEMUR 2019-09H - Wellbore #1 - Design #1						Out of range
LEMUR 2019-10H - Wellbore #1 - Design #1						Out of range
LEMUR 2019-11H - Wellbore #1 - Design #1						Out of range
LEMUR 2019-12H - Wellbore #1 - Design #1						Out of range
LEMUR 2019-13H - Wellbore #1 - Design #1						Out of range
LEMUR 2019-14H - Wellbore #1 - Design #1						Out of range
8N-61W-29 GAFFNEY 2920 PAD						
GAFFNEY 2920-01H - Plan A - Permit Rev-1	226.55	226.55	96.00	88.41	12.653	CC, ES, SF
GAFFNEY 2920-02H - Plan A - Permit Rev-1	226.55	226.55	80.00	72.41	10.544	CC, ES, SF
GAFFNEY 2920-03H - Plan A - Permit Rev-1	226.55	226.55	64.00	56.41	8.435	CC, ES, SF
GAFFNEY 2920-04H - Plan A - Permit Rev-1	226.55	226.55	48.00	40.41	6.326	CC, ES, SF
GAFFNEY 2920-05H - Plan A - Permit Rev-1	226.55	226.55	32.00	24.41	4.218	CC, ES
GAFFNEY 2920-05H - Plan A - Permit Rev-1	15,615.94	15,088.11	1,158.13	800.75	3.241	SF
GAFFNEY 2920-06H - Plan A - Permit Rev-1	226.55	226.55	16.00	8.41	2.109	CC, ES
GAFFNEY 2920-06H - Plan A - Permit Rev-1	15,625.88	15,342.74	579.06	220.99	1.617	SF
GAFFNEY 2920-08H - Plan A - Permit Rev-1	200.00	200.00	16.00	8.43	2.114	CC, ES
GAFFNEY 2920-08H - Plan A - Permit Rev-1	15,637.13	15,956.38	579.06	220.19	1.614	SF

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<b>Reference Site:</b>	8N-61W-29 GAFFNEY 2920 PAD	<b>MD Reference:</b>	RKB = 20' @ 5011.00usft (RIG)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	GAFFNEY 2920-07H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	3.28 usft	<b>Output errors are at</b>	2.45 sigma
<b>Reference Wellbore</b>	Plan A	<b>Database:</b>	EDM 5000.16 Single User Db
<b>Reference Design:</b>	Permit Rev-1	<b>Offset TVD Reference:</b>	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						
8N-61W-29 Offsets						
ANCONA 28-16-1HN - Mallard Planned Well - Planned M	15,637.13	14,477.53	1,222.60	852.84	3.307	CC, ES, SF
GAFFNEY 29-8-61 - Verdad PR Well - Actual Precision S	0.00	0.00	116.24			
HEINZE #1 - Weaver D/A Well - No Surveys	7,543.22	6,377.82	586.50	300.58	2.051	CC
HEINZE #1 - Weaver D/A Well - No Surveys	7,600.00	6,417.04	589.98	297.04	2.014	ES
HEINZE #1 - Weaver D/A Well - No Surveys	7,650.00	6,449.61	598.94	300.00	2.004	SF
8N-61W-33 Offsets Incomplete						
HARLEQUIN 28-29-4HN - Drilled w/No Actuals on COGC	7,678.10	14,052.16	229.65	-4.46	0.981	Level 1, CC
HARLEQUIN 28-29-4HN - Drilled w/No Actuals on COGC	7,750.00	14,021.88	242.26	-37.31	0.867	Level 1, ES, SF
HARLEQUIN 28-29-5HN - Mallard Planned Well - Planne	7,415.95	13,800.70	777.23	476.15	2.582	CC
HARLEQUIN 28-29-5HN - Mallard Planned Well - Planne	7,450.00	13,782.05	778.65	474.36	2.559	ES
HARLEQUIN 28-29-5HN - Mallard Planned Well - Planne	7,500.00	13,755.30	785.84	477.56	2.549	SF
HARLEQUIN 28-29-6HN - Mallard Planned Well - Planne	7,362.38	13,621.03	1,437.84	1,129.16	4.658	CC, ES
HARLEQUIN 28-29-6HN - Mallard Planned Well - Planne	7,450.00	13,572.49	1,445.63	1,134.13	4.641	SF
HARLEQUIN 28-29-7HN - Mallard Planned Well - Planne						Out of range

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<b>Reference Well:</b>	GAFFNEY 2920-07H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	3.28 usft	<b>Output errors are at</b>	2.45 sigma
<b>Reference Wellbore</b>	Plan A	<b>Database:</b>	EDM 5000.16 Single User Db
<b>Reference Design:</b>	Permit Rev-1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to RKB = 20' @ 5011.00usft (RIG)

Offset Depths are relative to Offset Datum

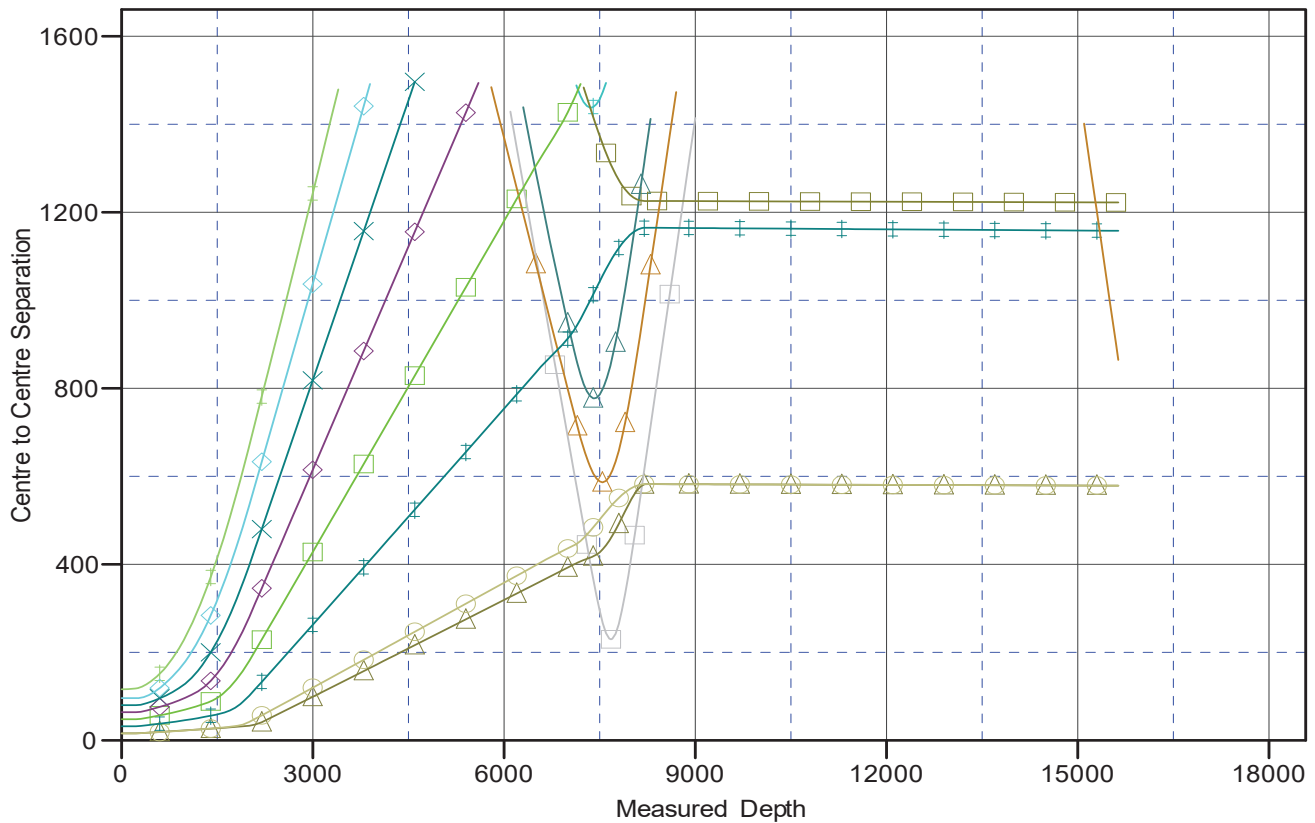
Central Meridian is -105.500000

Coordinates are relative to: GAFFNEY 2920-07H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.82°

### Ladder Plot



### LEGEND

inner Well, Planned Mallard Surveys V0  
inner Well, Planned Mallard Surveys V0  
to Actuals on COGCC, Mallard PR Well - Planned Surveys No Actuals, Planned Mallard Surveys V0  
veys V0  
Actual Precision Surveys (Grid to True) V0

ANCONA 2816-1HN, Mallard Planned Well, Planned Mallard Surveys V0  
GAFFNEY 2920-01H, Plan A, Permit Rev-1 V0  
GAFFNEY 2920-02H, Plan A, Permit Rev-1 V0  
GAFFNEY 2920-03H, Plan A, Permit Rev-1 V0  
GAFFNEY 2920-04H, Plan A, Permit Rev-1 V0

GAFFNEY 2920-05H, Plan A, Permit Rev-1 V0  
GAFFNEY 2920-06H, Plan A, Permit Rev-1 V0  
GAFFNEY 2920-07H, Plan A, Permit Rev-1 V0  
SIEVERS LE-17-62HN, Noble PR Well, Actual Sperry Surveys V0

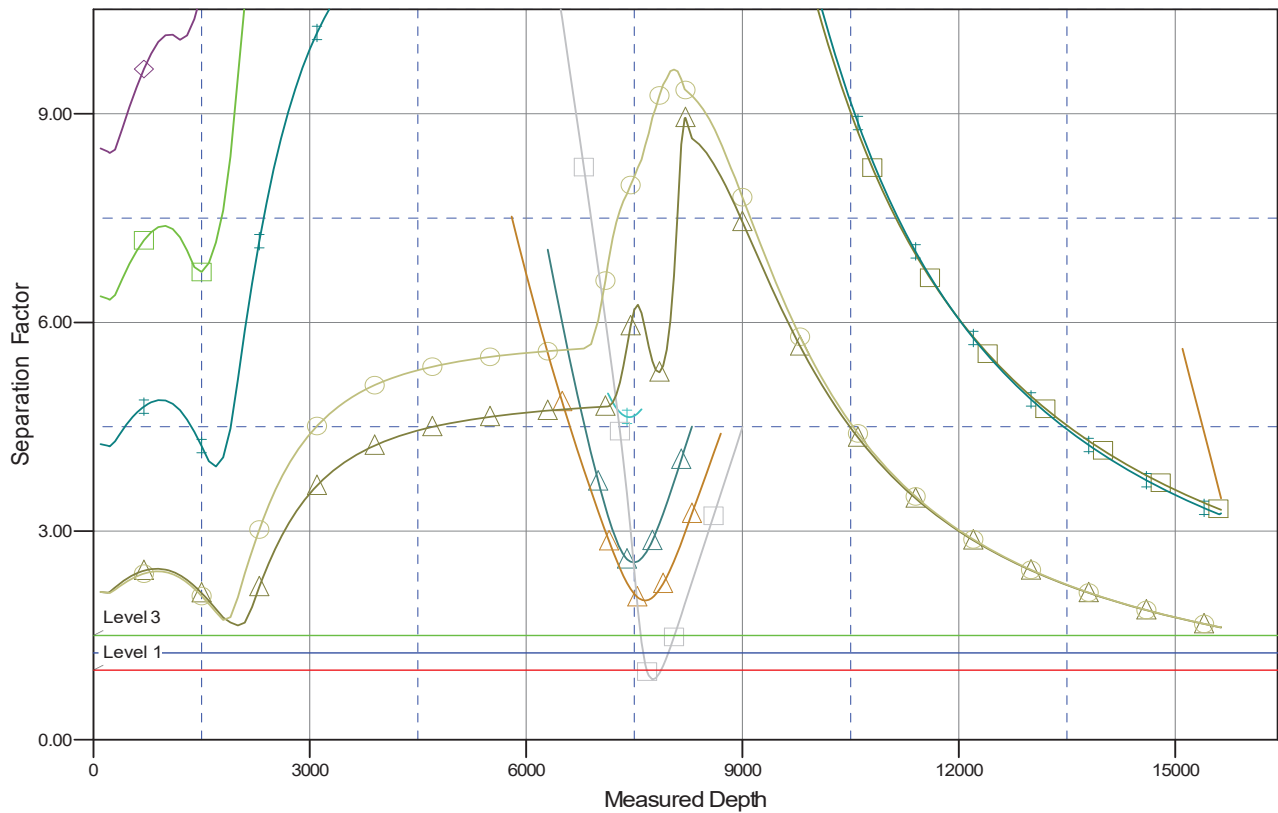
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<b>Well Error:</b>	3.28 usft	<b>Output errors are at</b>	2.45 sigma
<b>Reference Wellbore</b>	Plan A	<b>Database:</b>	EDM 5000.16 Single User Db
<b>Reference Design:</b>	Permit Rev-1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to RKB = 20' @ 5011.00usft (RIG)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: GAFFNEY 2920-07H  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.82°

### Separation Factor Plot



#### LEGEND

inner Well, Planned Mallard Surveys V0  
inner Well, Planned Mallard Surveys V0  
to Actuals on COGOC Mallard PR Well - Planned Surveys No Actuals, Planned Mallard Surveys V0  
inner Well, Planned Mallard Surveys V0  
Actual Precision Surveys (Grid to True) V0

ANCONA 2816-1HN, Mallard Planned Well, Planned Mallard Surveys V0  
GAFFNEY 2920-01H, Plan A, Permit Rev-1 V0  
GAFFNEY 2920-02H, Plan A, Permit Rev-1 V0  
GAFFNEY 2920-03H, Plan A, Permit Rev-1 V0  
GAFFNEY 2920-04H, Plan A, Permit Rev-1 V0  
GAFFNEY 2920-05H, Plan A, Permit Rev-1 V0

GAFFNEY 2920-05H, Plan A, Permit Rev-1 V0  
GAFFNEY 2920-06H, Plan A, Permit Rev-1 V0  
GAFFNEY 2920-03H, Plan A, Permit Rev-1 V0  
Sievers LE-17-62HN, Noble PR Well, Actual Sperry Surveys V0