

# **VERDAD RESOURCES**

**WATTENBERG FIELD**

**2N-64W-28 GEORGENE PAD**

**GEORGENE 2828-03H**

**Wellbore #1**

**Design #2**

## **Anticollision Summary Report**

**09 July, 2020**

# HP

## Anticollision Summary Report

<b>Company:</b>	VERDAD RESOURCES	<b>Local Co-ordinate Reference:</b>	Well GEORGENE 2828-03H
<b>Project:</b>	WATTENBERG FIELD	<b>TVD Reference:</b>	RKB = 24' @ 5040.00usft (RIG)
<b>Reference Site:</b>	2N-64W-28 GEORGENE PAD	<b>MD Reference:</b>	RKB = 24' @ 5040.00usft (RIG)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	GEORGENE 2828-03H	<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>	Wellbore #1	<b>Database:</b>	EDM 5000.16 Single User Db
<b>Reference Design:</b>	Design #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Design #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 1,500.00usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Added to Error Values

Survey Tool Program		Date	7/9/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	1,700.00	Design #2 (Wellbore #1)	ISCWSA MWD	Fixed:v2:standard declination	
1,700.00	12,393.78	Design #2 (Wellbore #1)	ISCWSA MWD	Fixed:v2:standard declination	

Summary						
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
2N-64W-28 GEORGENE PAD						
GEORGENE 2828-01H - Wellbore #1 - Design #2	200.00	200.00	30.00	22.44	3.965	CC, ES
GEORGENE 2828-01H - Wellbore #1 - Design #2	12,394.30	12,293.92	1,119.29	772.48	3.227	SF
GEORGENE 2828-02H - Wellbore #1 - Design #2	300.00	300.00	15.00	7.34	1.959	CC, ES
GEORGENE 2828-02H - Wellbore #1 - Design #2	12,382.39	12,298.76	560.00	205.95	1.582	SF
GEORGENE 2828-04H - Wellbore #1 - Design #2	400.00	401.00	15.02	7.23	1.929	CC, ES
GEORGENE 2828-04H - Wellbore #1 - Design #2	12,394.30	12,539.35	560.11	206.48	1.584	SF
GEORGENE 2833-01H - Wellbore #1 - Design #2	400.00	402.00	75.02	67.24	9.638	CC, ES, SF
GEORGENE 2833-02H - Wellbore #1 - Design #2	400.00	402.00	60.00	52.22	7.709	CC, ES, SF
GEORGENE 2833-03H - Wellbore #1 - Design #2	316.33	317.33	44.99	37.32	5.865	CC
GEORGENE 2833-03H - Wellbore #1 - Design #2	400.00	401.00	44.99	37.21	5.781	ES, SF
GEORGENE 2833-04H - Wellbore #1 - Design #2	116.33	117.33	30.00	22.47	3.983	CC
GEORGENE 2833-04H - Wellbore #1 - Design #2	200.00	201.00	30.00	22.43	3.964	ES, SF
2N-64W-28 Offsets Incomplete						
BRNAK 34-28 - Noble PR Well - No Surveys	9,106.46	7,030.00	939.13	624.72	2.987	CC, ES
BRNAK 34-28 - Noble PR Well - No Surveys	9,200.00	7,030.00	943.77	627.73	2.986	SF
BRNAK 44-28 - Noble PR Well - No Surveys	916.04	883.25	295.03	260.38	8.515	CC
BRNAK 44-28 - Noble PR Well - No Surveys	1,100.00	1,063.06	297.56	256.00	7.160	ES
BRNAK 44-28 - Noble PR Well - No Surveys	8,100.00	7,050.00	1,118.71	834.68	3.939	SF
BRNAK 77-28 - Noble P&A Well - No Surveys	8,482.06	7,022.00	247.40	-47.16	0.840	Level 1, CC, ES, SF
GREER 13-28 - Noble SI Well - No Surveys	11,935.09	7,022.00	378.67	-30.43	0.926	Level 1, CC, ES, SF
GREER 14-28 - Noble T/A Well - No Surveys	11,915.54	7,046.00	936.23	526.95	2.288	CC, ES, SF
GREER 23-28 - Noble SI Well - No Surveys	10,212.07	7,007.00	579.21	229.05	1.654	CC, ES, SF
GREER 24-28 - Noble T/A Well - No Surveys	10,597.99	7,040.00	1,116.99	752.66	3.066	CC
GREER 24-28 - Noble T/A Well - No Surveys	10,600.00	7,040.00	1,116.99	752.62	3.066	ES
GREER 24-28 - Noble T/A Well - No Surveys	10,700.00	7,040.00	1,121.64	755.55	3.064	SF
STONEBRAKER 32-28 - PDC P&A Well - No Surveys						Out of range
STONEBRAKER 42-28 - PDC P&A Well - No Surveys						Out of range
STONEBREAKER 28V-234 - PDC PR Well - Actual Ensig						Out of range
STONEBREAKER 28W-304 - PDC PR Well - Actual Ens	11,919.63	11,403.00	1,238.27	911.18	3.786	CC, ES
STONEBREAKER 28W-304 - PDC PR Well - Actual Ens	12,000.00	11,403.00	1,240.88	911.27	3.765	SF

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<b>Reference Well:</b>	GEORGENE 2828-03H	<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>	Wellbore #1	<b>Database:</b>	EDM 5000.16 Single User Db
<b>Reference Design:</b>	Design #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)		Separation Factor	Warning
Offset Well - Wellbore - Design						
2N-64W-29 Offsets						
BAUMGARTNER #14-29 - Noble SI Well - No Surveys						Out of range
BELL #41-29 - Noble PR Well - No Surveys						Out of range
Bell USX #Y29-03 - Noble PR Well - No Surveys						Out of range
JIM CREEK #1-29 - Noble P&A Well - No Surveys						Out of range
KAMINSKY #1-29 - Noble P&A Well - Actual VES Survey						Out of range
NGL C5 - NGL IJ Well - No Surveys						Out of range
NGL C5A - NGL IJ Well - Actual Ensign Surveys	12,394.30	7,672.89	776.78	583.70	4.023	CC, ES, SF
NGL C5B - NGL IJ Well - Actual Total Surveys						Out of range
PARKER #29-34 - Noble SI Well - Actual Coretech Surve						Out of range
2N-64W-33 Offsets Incomplete						
JACKSON 33-6H - Verdad PR Well - Actual BHI Surveys	10,457.11	6,794.23	1,242.77	1,115.43	9.759	CC
JACKSON 33-6H - Verdad PR Well - Actual BHI Surveys	10,500.00	6,794.22	1,243.51	1,114.95	9.673	ES
JACKSON 33-6H - Verdad PR Well - Actual BHI Surveys	10,700.00	6,794.20	1,266.28	1,133.79	9.558	SF
JACKSON 33-7H - Verdad PR Well - Actual BHI Surveys	10,287.71	6,927.93	1,069.93	944.85	8.554	CC
JACKSON 33-7H - Verdad PR Well - Actual BHI Surveys	10,300.00	6,928.23	1,070.00	944.52	8.527	ES
JACKSON 33-7H - Verdad PR Well - Actual BHI Surveys	10,500.00	6,933.07	1,090.76	960.66	8.384	SF
UPV 33-15K4 - Noble T/A Well - No Surveys						Out of range
UPV 33-7K4 - Noble PR Well - No Surveys						Out of range
2N-64W-34 Offsets Incomplete						
FRITZLER 12-34 - Noble PR Well - Actual VES Surveys						Out of range
Shufly State Y34-784 - Noble Planned Well - Planned Su	6,976.45	13,531.25	363.87	258.67	3.459	CC
Shufly State Y34-784 - Noble Planned Well - Planned Su	7,000.00	13,535.49	365.03	258.08	3.413	ES
Shufly State Y34-784 - Noble Planned Well - Planned Su	7,050.00	13,544.21	375.11	265.14	3.411	SF

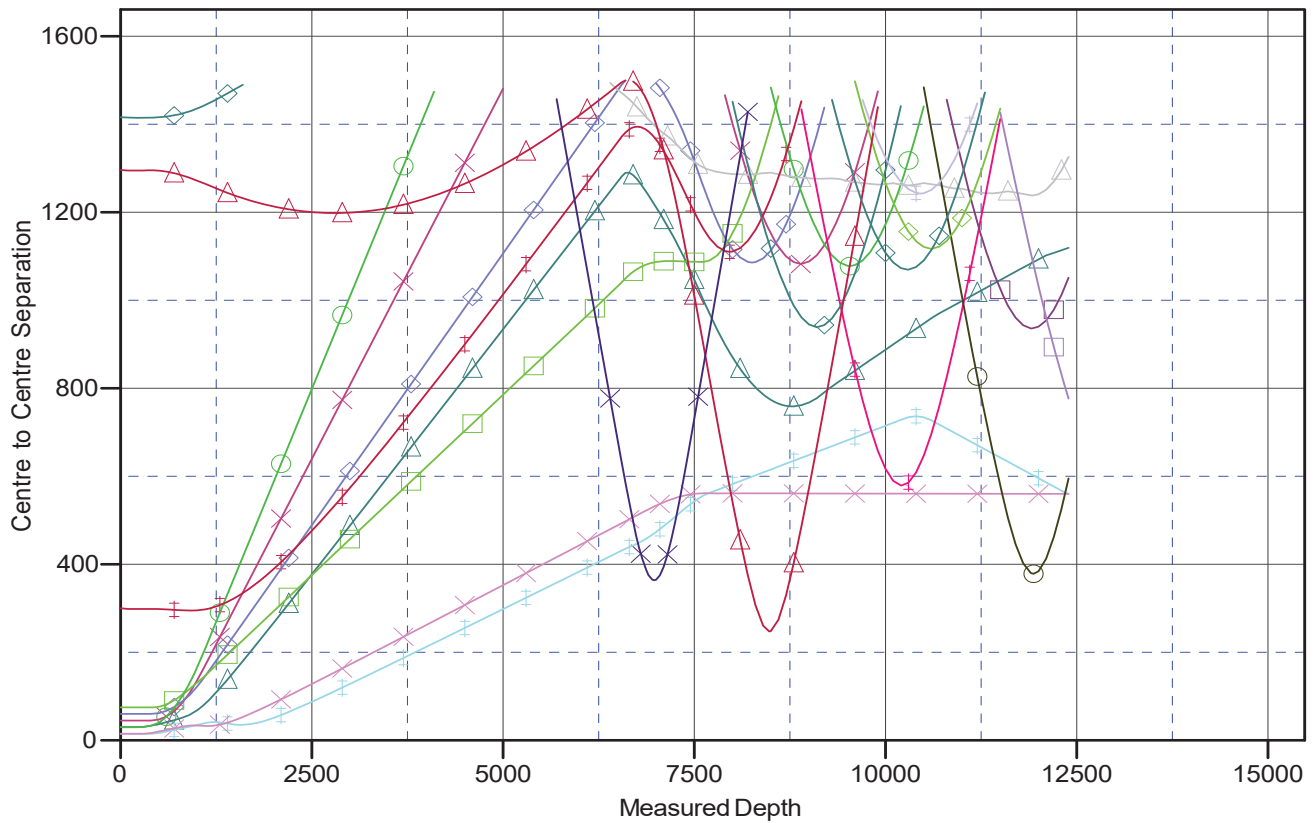
**HP**  
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<b>Reference Well:</b>	GEORGENE 2828-03H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	3.28 usft	<b>Output errors are at</b>	2.45 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.16 Single User Db
<b>Reference Design:</b>	Design #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to RKB = 24' @ 5040.00usft (RIG)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: GEORGENE 2828-03H  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.61°

## Ladder Plot



### LEGEND

GEORGENE 2833-03H, Wellbore #1, Design #2 V0	STONEBREAKER 28W304, PDC PR Wet, Actual Ensign Surveys V0	BRNAK 77-28, Noble P&A Well, No Surveys V0
GEORGENE 2828-01H, Wellbore #1, Design #2 V0	GREER 23-28, Noble SI Well, No Surveys V0	JACKSON 33-7H, Verdad PR Wet Actual BHI Surveys V0
GEORGENE 2828-04H, Wellbore #1, Design #2 V0	BRNAK 44-28, Noble PR Wet, No Surveys V0	JACKSON 33-6H, Verdad PR Wet Actual BHI Surveys V0
GEORGENE 2833-02H, Wellbore #1, Design #2 V0	GREER 14-28, Noble T/A Well, No Surveys V0	Shufly State Y34-784, Noble Planned Well, Planned Surveys (Grid to True) V0
GEORGENE 2833-01H, Wellbore #1, Design #2 V0	GREER 13-28, Noble SI Well, No Surveys V0	NGL CSA, NGL LJ Well, Actual Ensign Surveys V0
GEORGENE 2833-04H, Wellbore #1, Design #2 V0	BRNAK 34-28, Noble PR Wet, No Surveys V0	
GEORGENE 2828-02H, Wellbore #1, Design #2 V0	GREER 24-28, Noble T/A Well, No Surveys V0	

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Reference Well:	GEORGENE 2828-03H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.28 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB = 24' @ 5040.00usft (RIG)

Offset Depths are relative to Offset Datum

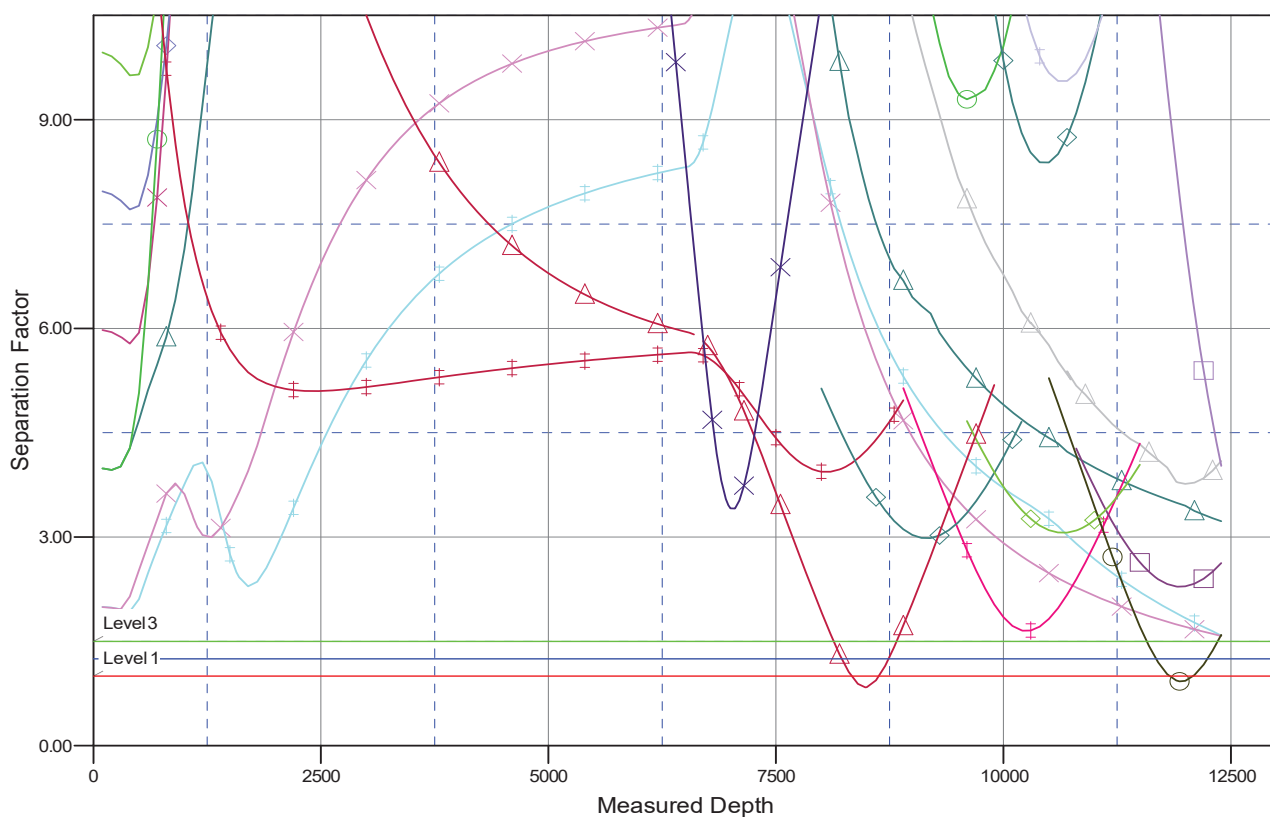
Central Meridian is -105.500000

Coordinates are relative to: GEORGENE 2828-03H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.61°

## Separation Factor Plot



## LEGEND

GEORGENE 2833-03H, Wellbore #1, Design #2 V0	STONEBREAKER 28W304, PDC PR Well, Actual Ensign Surveys V0	BRNAK 77-28, Noble P&A Well, No Surveys V0
GEORGENE 2828-01H, Wellbore #1, Design #2 V0	GREER 23-28, Noble SI Well, No Surveys V0	JACKSON 33-7H, Verdad PR Well, Actual BHI Surveys V0
GEORGENE 2828-04H, Wellbore #1, Design #2 V0	BRNAK 44-28, Noble PR Well, No Surveys V0	JACKSON 33-6H, Verdad PR Well, Actual BHI Surveys V0
GEORGENE 2833-02H, Wellbore #1, Design #2 V0	GREER 14-28, Noble T/A Well, No Surveys V0	Shufly State Y34-784, Noble Planned Well, Planned Surveys (Grid to True) V0
GEORGENE 2833-01H, Wellbore #1, Design #2 V0	GREER 13-28, Noble SI Well, No Surveys V0	NGL CSA, NGL LJ Well, Actual Ensign Surveys V0
GEORGENE 2833-04H, Wellbore #1, Design #2 V0	BRNAK 34-28, Noble PR Well, No Surveys V0	
GEORGENE 2828-02H, Wellbore #1, Design #2 V0	GREER 24-28, Noble T/A Well, No Surveys V0	