

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 11/29/2018

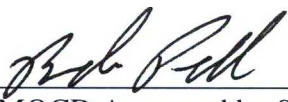
Well information;

Operator dhc corp, Well Name and Number Trieb Fackel 001 COM #2H

API# 30-045-35907, Section 33, Township 300 N/S, Range 10 E/W

Conditions of Approval: (See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
- ☐ Hold C-104 for NSL, NSP, DHC
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☐ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☐ Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ☒ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ☒ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.


NMOCD Approved by Signature

8/1/19
Date

NMOCD

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

JUL 20 2019

DISTRICT III

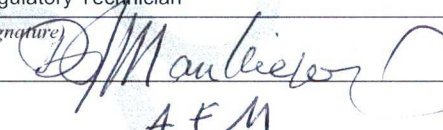
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMSF007282
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator HILCORP ENERGY COMPANY		8. Lease Name and Well No. TRIEB FEDERAL COM 601 2H
3a. Address 1111 Travis Street Houston TX 77002	3b. Phone No. (include area code) (713)209-2400	9. API Well No. 30-045-35907
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface ^H LOT 8 / 2501 FNL / 417 FEL / LAT 36.769094 / LONG -107.882224 At proposed prod. zone ^C LOT 3 / 750 FNL / 2327 FWL / LAT 36.77384 / LONG -107.854972		10. Field and Pool, or Exploratory BASIN MANCOS
14. Distance in miles and direction from nearest town or post office* 3 miles		11. Sec., T. R. M. or Blk. and Survey or Area SEC 33 / T30N / R10W / NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease 793.62	12. County or Parish SAN JUAN
17. Spacing Unit dedicated to this well 476.76	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 649 feet	13. State NM
19. Proposed Depth 6078 feet / 13888 feet	20. BLM/BIA Bond No. in file FED: NMB001486	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6050 feet	22. Approximate date work will start* 04/01/2019	23. Estimated duration 45 days
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed Typed) Amanda Walker / Ph: (505)324-5122	Date 11/29/2018
Title Operations/Regulatory Technician		
Approved by (Signature) 	Name (Printed Typed) Office FARMINGTON	Date 7/19/19
Title AFM		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

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.

DRILLING OPERATIONS
AUTHORIZED ARE SUBJECT TO
COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS"

BLM'S APPROVAL OR ACCEPTANCE OF
THIS ACTION DOES NOT RELIEVE THE
LESSEE AND OPERATOR FROM
OBTAINING ANY OTHER AUTHORIZATION
REQUIRED FOR OPERATIONS ON
FEDERAL AND INDIAN LANDS

This action is subject to technical
and procedural review pursuant to
43 CFR 3165.3 and appeal
pursuant to 43 CFR 3165.4

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
611 S. First Street, Artesia, NM 88210
Phone: (505) 748-1283 Fax: (505) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

☐ AMENDED REPORT

17 OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and 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 such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the Division.

Signature: Amanda Walker Date: 12/19/2018
Printed Name: Amanda Walker
E-mail Address: mwalker@hilcorp.com

18 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.

Date Revised: NOVEMBER 19, 2018
Date of Survey: JULY 20, 2018
Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number: 15269

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 36-045-35907		*Pool Code 97232	*Pool Name BASIN MANCOS
*Property Code 325994	*Property Name TRIEB FEDERAL CO 601 COM		*Well Number 2H
*BGAD No. 372171	*Operator Name HILCORP ENERGY COMPANY		*Elevation 6050'

10 Surface Location

U. or lot no.	Section	Township	Range	Lot 10n	Feet from the	North/South line	Feet from the	East/West line	County
H	33	30N	10W	8	2501	NORTH	417	EAST	SAN JUAN

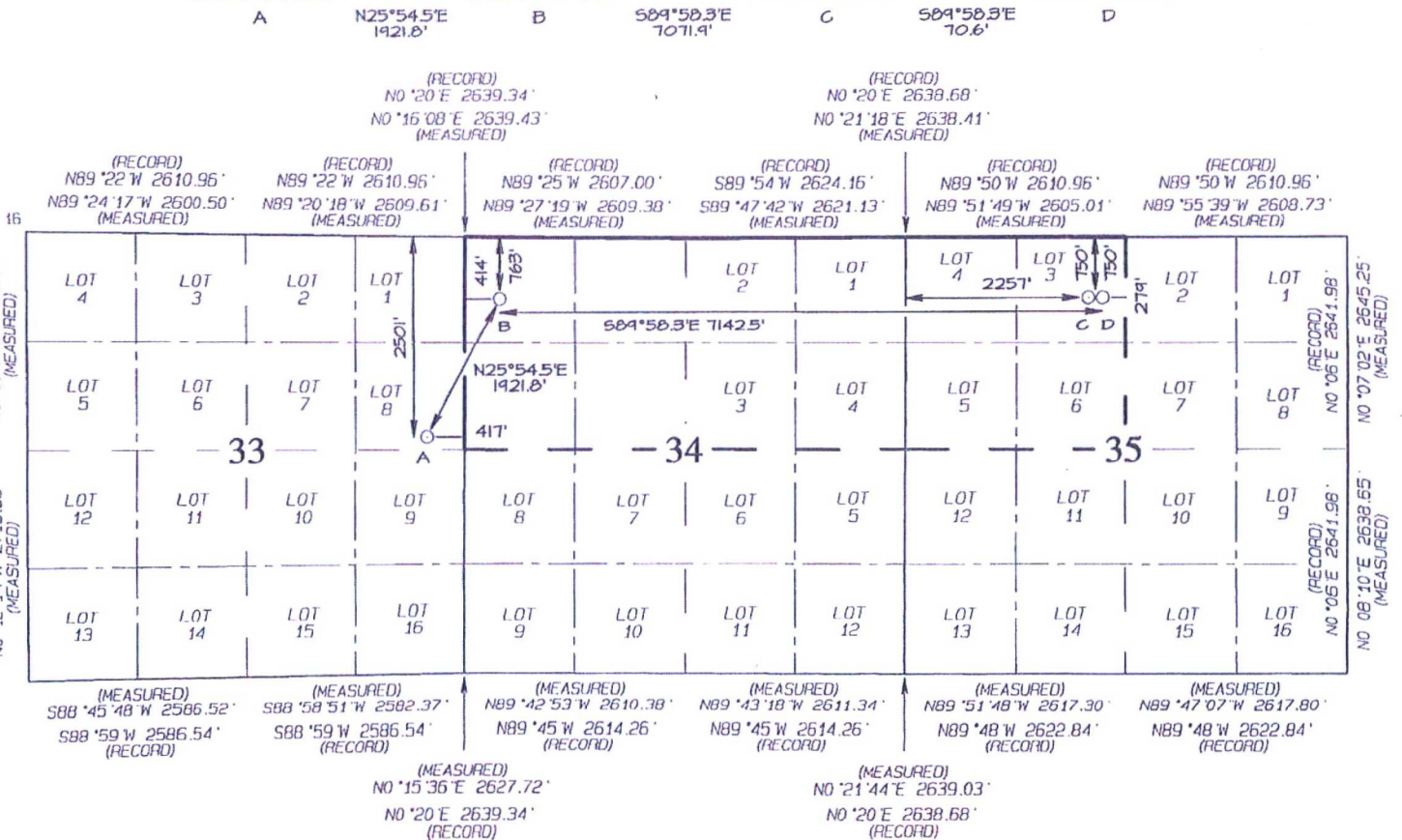
11 Bottom Hole Location If Different From Surface

U. or lot no.	Section	Township	Range	Lot 10n	Feet from the	North/South line	Feet from the	East/West line	County
C	35	30N	10W	3	750	NORTH	2327	WEST	SAN JUAN

*Dedicated Acres 476.76	N/2 - Section 34 NW/4 - Section 35	*Job or Infill	*Consolidation Code	*Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

A SURFACE LOCATION 2501' FNL 417' FEL SEC 33, T30N, R10W LAT: 36.769089°N LONG: 107.881605°W DATUM: NAD1927 LAT: 36.769094°N LONG: 107.882224°W DATUM: NAD1983	B FIRST TAKE POINT 763' FNL 414' FNL SEC 34, T30N, R10W LAT: 36.773839°N LONG: 107.878741°W DATUM: NAD1927 LAT: 36.773843°N LONG: 107.879360°W DATUM: NAD1983	C LAST TAKE POINT 750' FNL 2257' FNL SEC 35, T30N, R10W LAT: 36.773836°N LONG: 107.854595°W DATUM: NAD1927 LAT: 36.773841°N LONG: 107.855214°W DATUM: NAD1983	D BOTTOM HOLE LOCATION 750' FNL 2327' FNL SEC 35, T30N, R10W LAT: 36.773836°N LONG: 107.854354°W DATUM: NAD1927 LAT: 36.773840°N LONG: 107.854972°W DATUM: NAD1983
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Hilcorp Energy Company

Technical Plan

1. Location

TRIEB FEDERAL COM 601 2H

SHL: 2501' FNL, 417' FEL -- T 30N, R 10W, Sec 33

BHL: 750' FNL, 2327' FWL -- T 30N, R 10W, Sec 35

GL: 6050'

2. Geological Markers

Anticipated formation tops with comments of any possible water, gas, or oil shows are indicated below:

<u>Formation</u>	<u>(TVD)</u>	<u>(MD)</u>	<u>Remarks</u>
San Jose	Surface	Surface	Wet
Ojo Alamo	1354'	1367'	Wet
Kirtland	1484'	1504'	Wet
Fruitland	2116'	2169'	Possible Gas/Water
Pictured Cliffs	2612'	2691'	Wet
Lewis Shale	3500'	3628'	
Massive Cliffhouse	3947'	4099'	Possible Gas/Water
Menefee	4358'	4531'	Possible Gas/Water
Point Lookout	4852'	5052'	Possible Gas/Water
Mancos	5282'	5506'	Oil/Gas
Mancos Lateral Target	6051'	6304'	Oil/Gas

3. Pressure Control Equipment

See Attached BOPE & Choke Manifold Schematic for a diagram of pressure control equipment.

- BOPE will be nipped up on top of wellhead after surface casing is set and cemented.
- Pressure control configuration will be designed to meet and exceed 5M standards.
- All equipment will have 5M pressure ratings.
- A rotating head will be rigged up on top of annular as seen in attached diagram.

4. Casing & Cement Program

A) The proposed casing program is outlined below:

Proposed Casing				
Casing	Hole Size	Casing Size	Weight/Grade	Depth
Surface	17-1/2"	13-3/8"	54.5#, J-55, BTC, New	0' - 400' (MD)
Intermediate	12-1/4"	9-5/8"	40.0#, P-110 IC, LTC, New	0' - 5,528' (MD)
Production	8-1/2"	5-1/2"	20.0#, P-110, BTC, New	0' - 13,888' (MD)

The production casing will be run from total MD to surface. If the 8-1/2" hole is not drilled to total MD, the production casing setting depth and length will be adjusted accordingly. A toe initiation sliding sleeve will be installed at the toe of the production casing.

B) The proposed cement program is shown below:

Cement Program						
Interval	Depth (MD)	Sacks	Slurry	Excess	Volume	Planned Cement Top
Surface	400'	503	Lead Cmt: Premium Cement 2% CaCl, 0.125 lb/sk Poley E flake 1.175 ft ³ /sk -- 5.14 gal/sk, 15.8 ppg	100%	591 ft ³	Surface
Intermediate	4528'	947	Lead Cmt: Halcem Sytem 0.3% HR-5, 0.125 lb/sk Poly E flake, 1.974 ft ³ /sk -- 10.28 gal/sk, 12.3 ppg	30%	1869 ft ³	Surface
	5528'	328	Tail Cmt: Varicem Cement 0.1% HR-5, 0.125 lb/sk Poly E flake, 1.295 ft ³ /sk -- 5.69 gal/sk, 13.5 ppg	30%	424 ft ³	4314'
Production	13888'	1939	Tail Cmt: Bondcem 0.3% Super CBL, 0.1% HR -601, 6.08 gal/sk FW. 13.3 ppg, 1.356 ft ³ /sk	10%	2647 ft ³	4000'

Actual cement volumes will be determined and may be adjusted onsite based on well conditions. For the intermediate hole, a 2-stage cement job may be performed if hole conditions indicate during operations. Stage tool will be placed appropriately as conditions indicate.

C) The proposed centralizer program is shown below:

Centralizer Program	
Interval	Centralizers
Surface	1 per joint on bottom 3 joints
Intermediate	1 above intermediate shoe joint with collar clamp 1 every 3 rd joint to surface
Production	1 per joint in horizontal section of production interval 1 every 3 rd joint in vertical section of production interval

To allow adequate time for cement to achieve a minimum of 500 psi compressive strength, a minimum of 8 hours wait on cement time for each hole section will be observed. The wellhead will not be installed, casing will not be tested, and the prior casing shoe will not be drilled out until adequate wait on cement time is achieved.

5. Drilling Fluids

A) The proposed drilling fluid program is outlined below:

Mud Program					
Interval	Mud Type	Weight (ppg)	Fluid Loss (cc)	Invert Ratio (Diesel/Brine)	Depth (MD)
Surface	Water / Gel System	8.3 - 9.2	NC		0-400'
Intermediate	LSND / Gel system	8.4 - 9	<6		400 – 5,528'
Production	Oil Based Mud	10 - 12	6-8	70/30 – 75/25	5528 – TD'

Oil based mud will be an Invert Mud. Base fluid will be diesel. Brine fluid will be CaCl or KCl.

LCM may be added to the mud system if hole conditions indicate.

- ✓ B) Closed loop equipment will be utilized for solids control. Cuttings from surface, intermediate, and production hole will be hauled to an approved disposal site.

6. Abnormal Pressures & Hazards

- No over-pressured intervals expected.
- Estimated Reservoir Pressure = 1875 psi. (Based on a pore pressure gradient of 0.31 psi/ft from layer pressure tests of Mancos formation in offset well)
- There is some offset Fruitland Coal, Mesa Verde, and Picture Cliffs production within the area which could result in these respective formations being under pressured.
- No hydrogen sulfide gas is expected based on nearby well production.

7. Testing, Logging, Coring

- Mud Logs: Mud loggers will be rigged up from KOP to production hole TD.
- MWD: Directional tools from KOP to production hole TD.
- LWD: Gamma Ray will be utilized in production hole for well placement.
- Cased Hole Logs: A Temp Survey or CBL will be ran on the intermediate hole if cement is not circulated to surface during intermediate cement job.

8. Directional Plan

The planned wellbore directional plan and plot is attached.

The planned directional plan is built off geological targets from offset wells. The production hole will be landed and drilled within target formation horizontally utilizing LWD equipment to help steer the wellbore. On site adjustments will be made to the directional plan as formation and hole indicates.

9. Completion

a) Pressure Test

- Pressure test 5-1/2" production casing to allowable frac pressure. Hold test for 30 minutes. Cycle pressure to activate toe sleeve

b) Stimulation

- Stimulate with approximately 10,000,000 pounds of proppant in 200,000 bbls of water; the number of stages and amount of proppant will be adjusted based on real-time pumping conditions during the stimulation
- Stages will be perforated using wireline and isolated using frac plugs
- Plugs will be drilled out and stimulation fluid will be flowed back

c) Running Tubing

- Production tubing will be run and landed at the top of the horizontal section of the well



Hilcorp Energy Corp.

San Juan, NM NAD27

Trieb Fed Pad

Trieb Federal Com 601 2H

OH

Plan #2

Anticollision Report

09 November, 2018



Scientific Drilling

www.scientificdrilling.com



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 M/D Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Reference	Plan #2
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.00usft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 15,000.00 usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program Date 11/9/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	13,887.55	Plan #2 (OH)	MWD+HDGM	OWSG MWD + HDGM

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						
Trieb Fed Pad						
Grenier A3M - OH - OH	7,260.77	6,071.37	345.35	182.16	2.116	CC, ES, SF
Grenier A3N - OH - OH	10,821.21	6,085.15	32.69	-122.81	0.210	Level 1, CC, ES, SF
Trieb Fed 2B - OH - OH	2,838.31	2,777.52	289.65	221.28	4.237	CC
Trieb Fed 2B - OH - OH	2,900.00	2,835.90	290.33	220.46	4.155	ES
Trieb Fed 2B - OH - OH	3,100.00	3,025.17	301.74	227.16	4.046	SF
Trieb Federal Com 601 1H - OH - Plan #2	500.00	500.00	15.09	11.86	4.677	CC
Trieb Federal Com 601 1H - OH - Plan #2	1,000.00	998.59	16.97	10.10	2.470	ES
Trieb Federal Com 601 1H - OH - Plan #2	13,887.55	13,636.27	1,128.08	659.45	2.407	SF
Trieb Federal Com 602 1H - OH - Plan #2	500.00	500.00	76.63	73.40	23.752	CC, ES
Trieb Federal Com 602 1H - OH - Plan #2	13,887.55	13,604.82	2,538.06	2,070.58	5.429	SF
Trieb Federal Com 602 2H - OH - Plan #2	500.00	500.00	52.28	49.06	16.206	CC, ES
Trieb Federal Com 602 2H - OH - Plan #2	13,887.55	14,001.38	3,840.23	3,370.96	8.183	SF
Trieb Federal Com 603 1H - OH - Plan #2	500.00	500.00	25.10	21.88	7.780	CC
Trieb Federal Com 603 1H - OH - Plan #2	600.00	599.15	25.46	21.50	6.429	ES
Trieb Federal Com 603 1H - OH - Plan #2	1,000.00	997.07	31.82	24.95	4.633	SF
Trieb Federal Com 603 2H - OH - Plan #2	500.00	500.00	24.81	21.58	7.689	CC, ES
Trieb Federal Com 603 2H - OH - Plan #2	600.00	599.29	27.41	23.47	6.961	SF
Trieb Federal Com 603 3H - OH - Plan #2	500.00	500.00	29.22	25.99	9.057	CC
Trieb Federal Com 603 3H - OH - Plan #2	900.00	895.89	29.91	23.64	4.769	ES
Trieb Federal Com 603 3H - OH - Plan #2	1,200.00	1,192.50	34.93	26.35	4.069	SF
Trieb Federal Com 603 4H - OH - Plan #2	500.00	500.00	49.91	46.68	15.469	CC, ES
Trieb Federal Com 603 4H - OH - Plan #2	700.00	696.55	60.91	56.25	13.068	SF
Trieb Federal Strat Test 600 #1 - OH - Plan #1	500.00	500.00	29.21	25.99	9.055	CC
Trieb Federal Strat Test 600 #1 - OH - Plan #1	600.00	599.98	29.80	25.86	7.558	ES
Trieb Federal Strat Test 600 #1 - OH - Plan #1	700.00	699.84	32.06	27.40	6.881	SF

Offset Design Trieb Fed Pad - Grenier A3M - OH - OH												
Survey Program: 7200-UNKNOWN												
Offset Site Error: 0.00 usft												
Offset Well Error: 0.00 usft												
Reference	Offset	Semi Major Axis		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
0.00	0.00	11.00	11.00	0.00	0.22	44.39	1,383.77	1,354.57	1,936.41	1,936.19	0.22	8,793.894
100.00	100.00	111.00	111.00	0.18	2.22	44.39	1,383.77	1,354.57	1,936.41	1,934.01	2.40	807.029
200.00	200.00	211.00	211.00	0.54	4.22	44.39	1,383.77	1,354.57	1,936.41	1,931.65	4.76	406.989

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Grenier A3M - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 7200-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
300.00	300.00	311.00	311.00	0.90	6.22	44.39	1,383.77	1,354.57	1,936.41	1,929.30	7.12	272.107		
400.00	400.00	411.00	411.00	1.25	8.22	44.39	1,383.77	1,354.57	1,936.41	1,926.94	9.47	204.374		
500.00	500.00	511.00	511.00	1.61	10.22	44.39	1,383.77	1,354.57	1,936.41	1,924.58	11.83	163.641		
600.00	599.98	610.98	610.98	1.97	12.22	39.70	1,383.77	1,354.57	1,935.07	1,920.88	14.19	136.354		
700.00	699.84	710.84	710.84	2.33	14.22	39.85	1,383.77	1,354.57	1,931.04	1,914.50	16.55	116.687		
800.00	799.45	810.45	810.45	2.70	16.21	40.10	1,383.77	1,354.57	1,924.36	1,905.45	18.90	101.798		
900.00	898.70	909.70	909.70	3.06	18.19	40.46	1,383.77	1,354.57	1,915.03	1,893.77	21.25	90.099		
1,000.00	997.47	1,008.47	1,008.47	3.44	20.17	40.92	1,383.77	1,354.57	1,903.11	1,879.50	23.60	80.635		
1,100.00	1,095.62	1,106.62	1,106.62	3.83	22.13	41.49	1,383.77	1,354.57	1,888.63	1,862.69	25.94	72.797		
1,200.00	1,193.06	1,204.06	1,204.06	4.25	24.08	42.17	1,383.77	1,354.57	1,871.68	1,843.40	28.28	66.179		
1,300.00	1,289.64	1,300.64	1,300.64	4.68	26.01	42.97	1,383.77	1,354.57	1,852.32	1,821.70	30.62	60.502		
1,400.00	1,385.27	1,396.27	1,396.27	5.14	27.93	43.89	1,383.77	1,354.57	1,830.64	1,797.70	32.95	55.565		
1,500.00	1,480.00	1,491.00	1,491.00	5.63	29.82	44.72	1,383.77	1,354.57	1,807.15	1,771.88	35.27	51.231		
1,600.00	1,574.64	1,585.64	1,585.64	6.14	31.71	45.43	1,383.77	1,354.57	1,783.71	1,746.10	37.61	47.428		
1,700.00	1,669.28	1,680.28	1,680.28	6.65	33.61	46.15	1,383.77	1,354.57	1,760.55	1,720.59	39.95	44.064		
1,800.00	1,763.91	1,774.91	1,774.91	7.17	35.50	46.90	1,383.77	1,354.57	1,737.68	1,695.37	42.31	41.070		
1,900.00	1,858.55	1,869.55	1,869.55	7.70	37.39	47.67	1,383.77	1,354.57	1,715.11	1,670.44	44.67	38.391		
2,000.00	1,953.18	1,964.18	1,964.18	8.23	39.28	48.45	1,383.77	1,354.57	1,692.86	1,645.82	47.05	35.982		
2,100.00	2,047.82	2,058.82	2,058.82	8.77	41.18	49.25	1,383.77	1,354.57	1,670.94	1,621.52	49.43	33.805		
2,200.00	2,142.45	2,153.45	2,153.45	9.31	43.07	50.08	1,383.77	1,354.57	1,649.36	1,597.55	51.82	31.831		
2,300.00	2,237.09	2,248.09	2,248.09	9.86	44.96	50.92	1,383.77	1,354.57	1,628.14	1,573.93	54.21	30.032		
2,400.00	2,331.73	2,342.73	2,342.73	10.40	46.85	51.79	1,383.77	1,354.57	1,607.29	1,550.67	56.62	28.389		
2,500.00	2,426.36	2,437.36	2,437.36	10.95	48.75	52.67	1,383.77	1,354.57	1,586.82	1,527.79	59.03	26.884		
2,600.00	2,521.00	2,532.00	2,532.00	11.50	50.64	53.58	1,383.77	1,354.57	1,566.74	1,505.30	61.44	25.499		
2,700.00	2,615.63	2,626.63	2,626.63	12.05	52.53	54.51	1,383.77	1,354.57	1,547.09	1,483.22	63.87	24.224		
2,800.00	2,710.27	2,721.27	2,721.27	12.61	54.43	55.46	1,383.77	1,354.57	1,527.86	1,461.57	66.29	23.046		
2,900.00	2,804.90	2,815.90	2,815.90	13.16	56.32	56.43	1,383.77	1,354.57	1,509.08	1,440.35	68.73	21.956		
3,000.00	2,899.54	2,910.54	2,910.54	13.72	58.21	57.43	1,383.77	1,354.57	1,490.77	1,419.59	71.17	20.946		
3,100.00	2,994.17	3,005.17	3,005.17	14.27	60.10	58.45	1,383.77	1,354.57	1,472.93	1,399.31	73.62	20.007		
3,200.00	3,088.81	3,099.81	3,099.81	14.83	62.00	59.49	1,383.77	1,354.57	1,455.60	1,379.52	76.08	19.133		
3,300.00	3,183.45	3,194.45	3,194.45	15.39	63.89	60.55	1,383.77	1,354.57	1,438.78	1,360.24	78.54	18.320		
3,400.00	3,278.08	3,289.08	3,289.08	15.95	65.78	61.64	1,383.77	1,354.57	1,422.50	1,341.49	81.00	17.561		
3,500.00	3,372.72	3,383.72	3,383.72	16.51	67.67	62.75	1,383.77	1,354.57	1,406.77	1,323.29	83.47	16.853		
3,600.00	3,467.35	3,478.35	3,478.35	17.07	69.57	63.88	1,383.77	1,354.57	1,391.61	1,305.66	85.95	16.191		
3,700.00	3,561.99	3,572.99	3,572.99	17.63	71.46	65.04	1,383.77	1,354.57	1,377.04	1,288.61	88.43	15.572		
3,800.00	3,656.62	3,667.62	3,667.62	18.19	73.35	66.21	1,383.77	1,354.57	1,363.09	1,272.17	90.92	14.993		
3,900.00	3,751.26	3,762.26	3,762.26	18.75	75.25	67.41	1,383.77	1,354.57	1,349.76	1,256.36	93.40	14.451		
4,000.00	3,845.90	3,856.90	3,856.90	19.31	77.14	68.63	1,383.77	1,354.57	1,337.09	1,241.19	95.90	13.943		
4,100.00	3,940.53	3,951.53	3,951.53	19.87	79.03	69.87	1,383.77	1,354.57	1,325.08	1,226.68	98.39	13.467		
4,200.00	4,035.17	4,046.17	4,046.17	20.43	80.92	71.13	1,383.77	1,354.57	1,313.75	1,212.86	100.89	13.021		
4,300.00	4,129.80	4,140.80	4,140.80	20.99	82.82	72.41	1,383.77	1,354.57	1,303.13	1,199.74	103.39	12.604		
4,400.00	4,224.44	4,235.44	4,235.44	21.56	84.71	73.71	1,383.77	1,354.57	1,293.23	1,187.34	105.89	12.213		
4,500.00	4,319.07	4,330.07	4,330.07	22.12	86.60	75.02	1,383.77	1,354.57	1,284.06	1,175.67	108.40	11.846		
4,600.00	4,413.71	4,424.71	4,424.71	22.68	88.49	76.35	1,383.77	1,354.57	1,275.65	1,164.75	110.90	11.503		
4,700.00	4,508.34	4,519.34	4,519.34	23.25	90.39	77.70	1,383.77	1,354.57	1,268.01	1,154.61	113.40	11.182		
4,800.00	4,602.98	4,613.98	4,613.98	23.81	92.28	79.06	1,383.77	1,354.57	1,261.14	1,145.25	115.90	10.882		
4,900.00	4,697.62	4,708.62	4,708.62	24.37	94.17	80.43	1,383.77	1,354.57	1,255.08	1,136.68	118.40	10.601		
5,000.00	4,792.25	4,803.25	4,803.25	24.94	96.07	81.82	1,383.77	1,354.57	1,249.82	1,128.93	120.89	10.339		
5,100.00	4,886.89	4,897.89	4,897.89	25.50	97.96	83.21	1,383.77	1,354.57	1,245.37	1,121.99	123.38	10.094		
5,200.00	4,981.52	4,992.52	4,992.52	26.06	99.85	84.61	1,383.77	1,354.57	1,241.75	1,115.89	125.86	9.866		
5,300.00	5,076.16	5,087.16	5,087.16	26.63	101.74	86.02	1,383.77	1,354.57	1,238.96	1,110.62	128.34	9.653		
5,400.00	5,170.79	5,181.79	5,181.79	27.19	103.64	87.43	1,383.77	1,354.57	1,237.01	1,106.20	130.82	9.456		

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 7200-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
5,500.00	5,265.43	5,276.43	5,276.43	27.76	105.53	88.85	1,383.77	1,354.57	1,235.91	1,102.62	133.28	9.273		
5,600.00	5,360.06	5,371.06	5,371.06	28.32	107.42	90.27	1,383.77	1,354.57	1,235.64	1,099.90	135.74	9.103		
5,621.64	5,380.54	5,391.54	5,391.54	28.44	107.83	87.61	1,383.77	1,354.57	1,235.51	1,099.23	136.27	9.066		
5,700.00	5,454.58	5,465.58	5,465.58	28.89	109.31	78.46	1,383.77	1,354.57	1,233.81	1,095.62	138.19	8.928		
5,800.00	5,547.66	5,558.66	5,558.66	29.45	111.17	61.93	1,383.77	1,354.57	1,220.21	1,079.61	140.60	8.678		
5,900.00	5,637.51	5,648.51	5,648.51	29.98	112.97	51.68	1,383.77	1,354.57	1,194.04	1,051.11	142.93	8.354		
6,000.00	5,722.36	5,733.36	5,733.36	30.50	114.67	46.17	1,383.77	1,354.57	1,155.94	1,010.80	145.14	7.964		
6,100.00	5,800.57	5,811.57	5,811.57	31.00	116.23	43.98	1,383.77	1,354.57	1,106.79	959.59	147.20	7.519		
6,200.00	5,870.60	5,881.60	5,881.60	31.50	117.63	44.43	1,383.77	1,354.57	1,047.72	898.62	149.10	7.027		
6,300.00	5,931.11	5,942.11	5,942.11	32.00	118.84	47.33	1,383.77	1,354.57	980.08	829.26	150.82	6.498		
6,400.00	5,980.92	5,991.92	5,991.92	32.54	119.84	52.85	1,383.77	1,354.57	905.45	753.08	152.37	5.942		
6,500.00	6,019.04	6,030.04	6,030.04	33.15	120.60	61.24	1,383.77	1,354.57	825.59	671.84	153.75	5.370		
6,600.00	6,044.75	6,055.75	6,055.75	33.88	121.12	72.25	1,383.77	1,354.57	742.49	587.50	154.99	4.791		
6,700.00	6,057.54	6,068.54	6,068.54	34.79	121.37	84.48	1,383.77	1,354.57	658.31	502.20	156.12	4.217		
6,800.00	6,059.15	6,070.15	6,070.15	35.91	121.40	89.80	1,383.77	1,354.57	575.83	418.60	157.23	3.662		
6,900.00	6,059.41	6,070.41	6,070.41	37.29	121.41	89.84	1,383.77	1,354.57	499.42	340.80	158.62	3.148		
7,000.00	6,059.68	6,070.68	6,070.68	38.92	121.41	89.88	1,383.77	1,354.57	432.75	272.42	160.32	2.699		
7,100.00	6,059.94	6,070.94	6,070.94	40.76	121.42	89.93	1,383.77	1,354.57	380.94	218.87	162.07	2.350		
7,200.00	6,060.21	6,071.21	6,071.21	42.78	121.42	89.97	1,383.77	1,354.57	350.66	187.47	163.18	2.149		
7,260.77	6,060.37	6,071.37	6,071.37	44.08	121.43	90.00	1,383.77	1,354.57	345.35	182.16	163.19	2.116	CC, ES, SF	
7,300.00	6,060.48	6,071.48	6,071.48	44.94	121.43	90.02	1,383.77	1,354.57	347.57	184.72	162.85	2.134		
7,400.00	6,060.74	6,071.74	6,071.74	47.22	121.43	90.06	1,383.77	1,354.57	372.36	211.23	161.13	2.311		
7,500.00	6,061.01	6,072.01	6,072.01	49.59	121.44	90.11	1,383.77	1,354.57	420.12	261.19	158.92	2.644		
7,600.00	6,061.27	6,072.27	6,072.27	52.04	121.45	90.15	1,383.77	1,354.57	484.09	327.11	156.98	3.084		
7,700.00	6,061.54	6,072.54	6,072.54	54.56	121.45	90.19	1,383.77	1,354.57	558.74	403.22	155.51	3.593		
7,800.00	6,061.81	6,072.81	6,072.81	57.13	121.46	90.24	1,383.77	1,354.57	640.34	485.86	154.48	4.145		
7,900.00	6,062.07	6,073.07	6,073.07	59.75	121.46	90.28	1,383.77	1,354.57	726.55	572.80	153.75	4.725		
8,000.00	6,062.34	6,073.34	6,073.34	62.40	121.47	90.33	1,383.77	1,354.57	815.92	662.67	153.25	5.324		
8,100.00	6,062.60	6,073.60	6,073.60	65.09	121.47	90.37	1,383.77	1,354.57	907.51	754.61	152.90	5.935		
8,200.00	6,062.87	6,073.87	6,073.87	67.81	121.48	90.41	1,383.77	1,354.57	1,000.71	848.06	152.64	6.556		
8,300.00	6,063.14	6,074.14	6,074.14	70.55	121.48	90.46	1,383.77	1,354.57	1,095.11	942.64	152.46	7.183		
8,400.00	6,063.40	6,074.40	6,074.40	73.32	121.49	90.50	1,383.77	1,354.57	1,190.42	1,038.09	152.33	7.815		
8,500.00	6,063.67	6,074.67	6,074.67	76.11	121.49	90.55	1,383.77	1,354.57	1,286.45	1,134.20	152.24	8.450		
8,600.00	6,063.93	6,074.93	6,074.93	78.91	121.50	90.59	1,383.77	1,354.57	1,383.04	1,230.86	152.17	9.088		
8,700.00	6,064.20	6,075.20	6,075.20	81.73	121.50	90.64	1,383.77	1,354.57	1,480.08	1,327.95	152.13	9.729		
8,800.00	6,064.47	6,075.47	6,075.47	84.57	121.51	90.68	1,383.77	1,354.57	1,577.49	1,425.39	152.10	10.371		
8,900.00	6,064.73	6,075.73	6,075.73	87.41	121.51	90.72	1,383.77	1,354.57	1,675.21	1,523.13	152.08	11.015		
9,000.00	6,065.00	6,076.00	6,076.00	90.27	121.52	90.77	1,383.77	1,354.57	1,773.18	1,621.11	152.07	11.660		
9,100.00	6,065.26	6,076.26	6,076.26	93.14	121.53	90.81	1,383.77	1,354.57	1,871.36	1,719.29	152.07	12.306		
9,200.00	6,065.53	6,076.53	6,076.53	96.01	121.53	90.86	1,383.77	1,354.57	1,969.73	1,817.66	152.07	12.952		
9,300.00	6,065.80	6,076.80	6,076.80	98.90	121.54	90.90	1,383.77	1,354.57	2,068.26	1,916.17	152.08	13.600		
9,400.00	6,066.06	6,077.06	6,077.06	101.79	121.54	90.94	1,383.77	1,354.57	2,166.92	2,014.82	152.10	14.247		
9,500.00	6,066.33	6,077.33	6,077.33	104.69	121.55	90.99	1,383.77	1,354.57	2,265.70	2,113.58	152.11	14.895		
9,600.00	6,066.59	6,077.59	6,077.59	107.60	121.55	91.03	1,383.77	1,354.57	2,364.58	2,212.44	152.13	15.543		
9,700.00	6,066.86	6,077.86	6,077.86	110.51	121.56	91.08	1,383.77	1,354.57	2,463.55	2,311.39	152.16	16.191		
9,800.00	6,067.13	6,078.13	6,078.13	113.42	121.56	91.12	1,383.77	1,354.57	2,562.60	2,410.42	152.18	16.839		
9,900.00	6,067.39	6,078.39	6,078.39	116.35	121.57	91.16	1,383.77	1,354.57	2,661.72	2,509.51	152.21	17.487		
10,000.00	6,067.66	6,078.66	6,078.66	119.27	121.57	91.21	1,383.77	1,354.57	2,760.90	2,608.67	152.24	18.136		
10,100.00	6,067.92	6,078.92	6,078.92	122.20	121.58	91.25	1,383.77	1,354.57	2,860.14	2,707.88	152.27	18.784		
10,200.00	6,068.19	6,079.19	6,079.19	125.14	121.58	91.30	1,383.77	1,354.57	2,959.44	2,807.14	152.30	19.432		
10,300.00	6,068.46	6,079.46	6,079.46	128.08	121.59	91.34	1,383.77	1,354.57	3,058.78	2,906.45	152.33	20.080		
10,400.00	6,068.72	6,079.72	6,079.72	131.02	121.59	91.39	1,383.77	1,354.57	3,158.16	3,005.79	152.36	20.728		

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well, Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Grenier A3M - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 7200-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
10,500.00	6,068.99	6,079.99	6,079.99	133.96	121.60	91.43	1,383.77	1,354.57	3,257.57	3,105.18	152.40	21.375		
10,600.00	6,069.25	6,080.25	6,080.25	136.91	121.61	91.47	1,383.77	1,354.57	3,357.03	3,204.59	152.43	22.023		
10,700.00	6,069.52	6,080.52	6,080.52	139.86	121.61	91.52	1,383.77	1,354.57	3,456.51	3,304.04	152.47	22.670		
10,800.00	6,069.79	6,080.79	6,080.79	142.81	121.62	91.56	1,383.77	1,354.57	3,556.03	3,403.52	152.51	23.317		
10,900.00	6,070.05	6,081.05	6,081.05	145.77	121.62	91.61	1,383.77	1,354.57	3,655.56	3,503.02	152.55	23.964		
11,000.00	6,070.32	6,081.32	6,081.32	148.73	121.63	91.65	1,383.77	1,354.57	3,755.13	3,602.54	152.59	24.610		
11,100.00	6,070.58	6,081.58	6,081.58	151.69	121.63	91.69	1,383.77	1,354.57	3,854.72	3,702.09	152.63	25.256		
11,200.00	6,070.85	6,081.85	6,081.85	154.65	121.64	91.74	1,383.77	1,354.57	3,954.32	3,801.66	152.67	25.902		
11,300.00	6,071.12	6,082.12	6,082.12	157.61	121.64	91.78	1,383.77	1,354.57	4,053.95	3,901.24	152.71	26.547		
11,400.00	6,071.38	6,082.38	6,082.38	160.58	121.65	91.83	1,383.77	1,354.57	4,153.60	4,000.84	152.75	27.192		
11,500.00	6,071.65	6,082.65	6,082.65	163.54	121.65	91.87	1,383.77	1,354.57	4,253.26	4,100.46	152.80	27.836		
11,600.00	6,071.91	6,082.91	6,082.91	166.51	121.66	91.91	1,383.77	1,354.57	4,352.93	4,200.09	152.84	28.480		
11,700.00	6,072.18	6,083.18	6,083.18	169.48	121.66	91.96	1,383.77	1,354.57	4,452.63	4,299.74	152.88	29.124		
11,800.00	6,072.45	6,083.45	6,083.45	172.46	121.67	92.00	1,383.77	1,354.57	4,552.33	4,399.40	152.93	29.768		
11,900.00	6,072.71	6,083.71	6,083.71	175.43	121.67	92.05	1,383.77	1,354.57	4,652.05	4,499.07	152.98	30.410		
12,000.00	6,072.98	6,083.98	6,083.98	178.40	121.68	92.09	1,383.77	1,354.57	4,751.78	4,598.76	153.02	31.053		
12,100.00	6,073.24	6,084.24	6,084.24	181.38	121.68	92.13	1,383.77	1,354.57	4,851.52	4,698.45	153.07	31.695		
12,200.00	6,073.51	6,084.51	6,084.51	184.36	121.69	92.18	1,383.77	1,354.57	4,951.27	4,798.15	153.12	32.336		
12,300.00	6,073.78	6,084.78	6,084.78	187.33	121.70	92.22	1,383.77	1,354.57	5,051.03	4,897.86	153.17	32.977		
12,400.00	6,074.04	6,085.04	6,085.04	190.31	121.70	92.27	1,383.77	1,354.57	5,150.80	4,997.59	153.22	33.618		
12,500.00	6,074.31	6,085.31	6,085.31	193.29	121.71	92.31	1,383.77	1,354.57	5,250.58	5,097.31	153.27	34.258		
12,600.00	6,074.58	6,085.58	6,085.58	196.27	121.71	92.36	1,383.77	1,354.57	5,350.37	5,197.05	153.32	34.898		
12,700.00	6,074.84	6,085.84	6,085.84	199.26	121.72	92.40	1,383.77	1,354.57	5,450.16	5,296.79	153.37	35.537		
12,800.00	6,075.11	6,086.11	6,086.11	202.24	121.72	92.44	1,383.77	1,354.57	5,549.96	5,396.54	153.42	36.175		
12,900.00	6,075.37	6,086.37	6,086.37	205.22	121.73	92.49	1,383.77	1,354.57	5,649.77	5,496.30	153.47	36.813		
13,000.00	6,075.64	6,086.64	6,086.64	208.21	121.73	92.53	1,383.77	1,354.57	5,749.59	5,596.06	153.52	37.451		
13,100.00	6,075.91	6,086.91	6,086.91	211.19	121.74	92.58	1,383.77	1,354.57	5,849.41	5,695.83	153.58	38.088		
13,200.00	6,076.17	6,087.17	6,087.17	214.18	121.74	92.62	1,383.77	1,354.57	5,949.24	5,795.61	153.63	38.724		
13,300.00	6,076.44	6,087.44	6,087.44	217.16	121.75	92.66	1,383.77	1,354.57	6,049.07	5,895.39	153.69	39.360		
13,400.00	6,076.70	6,087.70	6,087.70	220.15	121.75	92.71	1,383.77	1,354.57	6,148.91	5,995.17	153.74	39.995		
13,500.00	6,076.97	6,087.97	6,087.97	223.14	121.76	92.75	1,383.77	1,354.57	6,248.76	6,094.96	153.80	40.630		
13,600.00	6,077.24	6,088.24	6,088.24	226.13	121.76	92.80	1,383.77	1,354.57	6,348.61	6,194.75	153.85	41.264		
13,700.00	6,077.50	6,088.50	6,088.50	229.12	121.77	92.84	1,383.77	1,354.57	6,448.46	6,294.55	153.91	41.897		
13,800.00	6,077.77	6,088.77	6,088.77	232.11	121.78	92.88	1,383.77	1,354.57	6,548.32	6,394.35	153.97	42.530		
13,887.55	6,078.00	6,089.00	6,089.00	234.72	121.78	92.92	1,383.77	1,354.57	6,635.75	6,481.73	154.02	43.084		



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Grenier A3N - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 301-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface Toolface (°)	Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		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	67.79	2,006.69	4,915.91	5,309.73					
100.00	100.00	80.15	80.15	0.18	0.09	67.80	2,006.61	4,915.97	5,309.74	5,309.47	0.27	N/A		
200.00	200.00	175.57	175.57	0.54	0.20	67.80	2,006.31	4,916.21	5,309.85	5,309.11	0.74	7,212.857		
300.00	300.00	270.99	270.99	0.90	0.31	67.81	2,005.79	4,916.63	5,310.05	5,308.85	1.20	4,416.281		
400.00	400.00	362.00	361.99	1.25	0.48	67.82	2,005.07	4,917.24	5,310.37	5,308.64	1.73	3,064.786		
500.00	500.00	470.18	470.17	1.61	0.70	67.83	2,004.05	4,917.98	5,310.64	5,308.33	2.31	2,298.945		
600.00	599.98	567.01	566.98	1.97	0.90	63.13	2,003.14	4,918.71	5,310.20	5,307.33	2.87	1,848.023		
700.00	699.84	685.14	685.11	2.33	1.14	63.24	2,001.94	4,919.29	5,307.89	5,304.42	3.47	1,529.558		
800.00	799.45	780.60	780.56	2.70	1.34	63.40	2,000.91	4,919.79	5,304.05	5,300.02	4.03	1,315.837		
900.00	898.70	882.73	882.69	3.06	1.55	63.63	1,999.83	4,920.27	5,298.62	5,294.01	4.61	1,150.045		
1,000.00	997.47	996.20	996.14	3.44	1.79	63.95	1,998.33	4,920.74	5,291.53	5,286.31	5.22	1,012.844		
1,100.00	1,095.62	1,214.69	1,214.24	3.83	2.29	64.66	1,986.53	4,921.49	5,281.16	5,275.04	6.11	863.795		
1,200.00	1,193.06	1,315.09	1,314.19	4.25	2.54	65.21	1,976.96	4,922.49	5,268.85	5,262.09	6.77	778.431		
1,300.00	1,289.64	1,583.34	1,579.09	4.68	3.35	66.61	1,935.56	4,926.31	5,253.77	5,245.78	7.99	657.617		
1,400.00	1,385.27	1,692.42	1,685.94	5.14	3.74	67.49	1,913.68	4,927.58	5,235.85	5,227.04	8.82	593.826		
1,500.00	1,480.00	1,858.77	1,846.80	5.63	4.46	68.61	1,871.60	4,930.76	5,216.20	5,206.21	9.99	522.327		
1,600.00	1,574.64	1,948.74	1,932.85	6.14	4.90	69.18	1,845.43	4,932.98	5,196.42	5,185.51	10.90	476.559		
1,700.00	1,669.28	2,027.08	2,007.71	6.65	5.28	69.68	1,822.41	4,935.03	5,177.26	5,165.49	11.77	439.936		
1,800.00	1,763.91	2,097.48	2,075.09	7.17	5.58	70.12	1,802.09	4,936.77	5,158.71	5,146.14	12.57	410.260		
1,900.00	1,858.55	2,144.18	2,120.01	7.70	5.77	70.41	1,789.38	4,937.87	5,141.13	5,127.84	13.28	387.106		
2,000.00	1,953.18	2,178.00	2,152.71	8.23	5.90	70.61	1,780.81	4,938.74	5,124.77	5,110.82	13.94	367.539		
2,100.00	2,047.82	2,241.00	2,213.96	8.77	6.14	70.98	1,766.19	4,940.64	5,109.69	5,094.97	14.72	347.241		
2,200.00	2,142.45	2,262.58	2,235.04	9.31	6.22	71.11	1,761.59	4,941.39	5,095.77	5,080.44	15.33	332.312		
2,300.00	2,237.09	2,304.00	2,275.60	9.86	6.37	71.34	1,753.42	4,942.99	5,083.21	5,067.19	16.03	317.167		
2,400.00	2,331.73	2,450.40	2,419.92	10.40	6.85	72.11	1,729.27	4,947.22	5,071.12	5,054.07	17.04	297.552		
2,500.00	2,426.36	2,524.33	2,493.32	10.95	7.05	72.46	1,720.47	4,947.97	5,058.76	5,040.96	17.79	284.296		
2,600.00	2,521.00	2,577.09	2,545.89	11.50	7.18	72.69	1,716.02	4,948.38	5,047.29	5,028.82	18.47	273.245		
2,700.00	2,615.63	2,698.05	2,666.73	12.05	7.41	73.17	1,711.37	4,948.58	5,036.60	5,017.36	19.24	261.741		
2,800.00	2,710.27	2,778.62	2,747.29	12.61	7.52	73.45	1,711.73	4,947.65	5,025.73	5,005.82	19.91	252.459		
2,900.00	2,804.90	2,884.69	2,853.35	13.16	7.67	73.81	1,712.71	4,946.09	5,014.86	4,994.25	20.61	243.371		
3,000.00	2,899.54	2,990.77	2,959.41	13.72	7.83	74.18	1,713.39	4,944.46	5,004.06	4,982.75	21.32	234.751		
3,100.00	2,994.17	3,074.08	3,042.71	14.27	7.96	74.47	1,713.70	4,943.18	4,993.39	4,971.38	22.00	226.948		
3,200.00	3,088.81	3,157.79	3,126.42	14.83	8.09	74.77	1,713.93	4,942.16	4,983.16	4,960.47	22.69	219.591		
3,300.00	3,183.45	3,248.99	3,217.61	15.39	8.24	75.09	1,713.97	4,941.19	4,973.24	4,949.83	23.40	212.513		
3,400.00	3,278.08	3,336.96	3,305.58	15.95	8.39	75.41	1,713.89	4,940.37	4,963.60	4,939.49	24.11	205.883		
3,500.00	3,372.72	3,429.07	3,397.68	16.51	8.54	75.74	1,713.90	4,939.60	4,954.26	4,929.44	24.82	199.621		
3,600.00	3,467.35	3,525.57	3,494.18	17.07	8.70	76.09	1,713.96	4,938.77	4,945.11	4,919.57	25.54	193.621		
3,700.00	3,561.99	3,625.31	3,593.92	17.63	8.87	76.46	1,713.95	4,937.82	4,936.05	4,909.78	26.27	187.882		
3,800.00	3,656.62	3,724.63	3,693.23	18.19	9.05	76.82	1,713.81	4,936.81	4,927.10	4,900.09	27.01	182.415		
3,900.00	3,751.26	3,824.41	3,793.00	18.75	9.22	77.19	1,713.57	4,935.73	4,918.29	4,890.54	27.75	177.240		
4,000.00	3,845.90	3,923.88	3,892.46	19.31	9.40	77.56	1,713.21	4,934.48	4,909.49	4,880.99	28.49	172.320		
4,100.00	3,940.53	4,019.76	3,988.33	19.87	9.57	77.91	1,712.77	4,933.32	4,900.91	4,871.69	29.23	167.671		
4,200.00	4,035.17	4,115.77	4,084.33	20.43	9.75	78.27	1,712.31	4,932.14	4,892.53	4,862.56	29.97	163.247		
4,300.00	4,129.80	4,220.58	4,189.14	20.99	9.94	78.67	1,711.80	4,930.64	4,884.17	4,853.44	30.73	158.960		
4,400.00	4,224.44	4,317.39	4,285.93	21.56	10.12	79.04	1,711.15	4,929.25	4,875.99	4,844.52	31.48	154.913		
4,500.00	4,319.07	4,394.84	4,363.38	22.12	10.27	79.33	1,710.49	4,928.21	4,868.09	4,835.90	32.20	151.201		
4,600.00	4,413.71	4,472.99	4,441.52	22.68	10.41	79.63	1,709.82	4,927.46	4,860.76	4,827.85	32.92	147.669		
4,700.00	4,508.34	4,565.35	4,533.87	23.25	10.60	79.99	1,709.05	4,926.75	4,853.83	4,820.16	33.67	144.163		
4,800.00	4,602.98	4,659.70	4,628.21	23.81	10.78	80.35	1,708.27	4,926.02	4,847.11	4,812.68	34.43	140.800		
4,900.00	4,697.62	4,754.04	4,722.55	24.37	10.97	80.71	1,707.48	4,925.29	4,840.61	4,805.42	35.18	137.585		
5,000.00	4,792.25	4,848.38	4,816.88	24.94	11.15	81.08	1,706.70	4,924.56	4,834.32	4,798.38	35.94	134.510		
5,100.00	4,886.89	4,942.72	4,911.22	25.50	11.34	81.45	1,705.92	4,923.83	4,828.26	4,791.56	36.70	131.566		

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Grenier A3N - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 301-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			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	
5,200.00	4,981.52	5,037.06	5,005.55	26.06	11.53	81.81	1,705.13	4,923.10	4,822.42	4,784.96	37.46	128.746	
5,300.00	5,076.16	5,131.40	5,099.89	26.63	11.71	82.18	1,704.35	4,922.37	4,816.80	4,778.58	38.22	126.043	
5,400.00	5,170.79	5,225.74	5,194.22	27.19	11.90	82.55	1,703.57	4,921.64	4,811.40	4,772.42	38.97	123.450	
5,500.00	5,265.43	5,320.09	5,288.56	27.76	12.08	82.92	1,702.78	4,920.92	4,806.22	4,766.49	39.73	120.961	
5,600.00	5,360.06	5,414.43	5,382.89	28.32	12.27	83.29	1,702.00	4,920.19	4,801.27	4,760.78	40.49	118.571	
5,700.00	5,454.58	5,508.63	5,477.00	28.89	12.46	70.39	1,701.22	4,919.46	4,794.12	4,752.87	41.25	116.221	
5,800.00	5,547.66	5,601.31	5,569.76	29.45	12.64	52.55	1,700.45	4,918.74	4,774.55	4,732.56	41.99	113.717	
5,900.00	5,637.51	5,690.65	5,659.10	29.98	12.82	40.67	1,699.71	4,918.05	4,741.73	4,699.05	42.68	111.091	
6,000.00	5,722.36	5,774.91	5,743.36	30.50	12.98	33.04	1,699.01	4,917.40	4,696.28	4,652.95	43.33	108.379	
6,100.00	5,800.57	5,852.46	5,820.90	31.00	13.13	28.08	1,698.36	4,916.80	4,639.04	4,595.12	43.92	105.613	
6,200.00	5,870.60	5,921.78	5,890.21	31.50	13.27	24.81	1,697.79	4,916.26	4,571.09	4,526.63	44.46	102.824	
6,300.00	5,931.11	5,981.52	5,949.95	32.00	13.39	22.68	1,697.29	4,915.80	4,493.71	4,448.79	44.92	100.048	
6,400.00	5,980.92	6,030.52	5,998.95	32.54	13.49	21.40	1,696.89	4,915.42	4,408.35	4,363.05	45.30	97.320	
6,500.00	6,019.04	6,067.83	6,036.26	33.15	13.56	20.88	1,696.58	4,915.13	4,316.64	4,271.05	45.59	94.676	
6,600.00	6,044.75	6,092.72	6,061.14	33.88	13.61	21.45	1,696.37	4,914.94	4,220.33	4,174.53	45.80	92.152	
6,700.00	6,057.54	6,104.71	6,073.13	34.79	13.63	27.31	1,696.27	4,914.85	4,121.26	4,075.36	45.90	89.779	
6,800.00	6,059.15	6,105.54	6,073.96	35.91	13.63	121.48	1,696.26	4,914.84	4,021.29	3,975.36	45.93	87.554	
6,900.00	6,059.41	6,105.03	6,073.46	37.29	13.63	120.83	1,696.27	4,914.85	3,921.30	3,875.35	45.94	85.349	
7,000.00	6,059.68	6,104.53	6,072.95	38.92	13.63	120.18	1,696.27	4,914.85	3,821.30	3,775.34	45.96	83.143	
7,100.00	6,059.94	6,104.02	6,072.44	40.76	13.63	119.52	1,696.28	4,914.85	3,721.31	3,675.33	45.98	80.937	
7,200.00	6,060.21	6,103.51	6,071.93	42.78	13.63	118.85	1,696.28	4,914.86	3,621.31	3,575.32	46.00	78.729	
7,300.00	6,060.48	6,103.00	6,071.43	44.94	13.63	118.17	1,696.28	4,914.86	3,521.32	3,475.30	46.02	76.521	
7,400.00	6,060.74	6,102.50	6,070.92	47.22	13.63	117.48	1,696.29	4,914.87	3,421.32	3,375.28	46.04	74.313	
7,500.00	6,061.01	6,101.99	6,070.41	49.59	13.63	116.78	1,696.29	4,914.87	3,321.33	3,275.27	46.06	72.105	
7,600.00	6,061.27	6,101.48	6,069.91	52.04	13.63	116.07	1,696.30	4,914.87	3,221.34	3,175.25	46.09	69.896	
7,700.00	6,061.54	6,100.98	6,069.40	54.56	13.63	115.36	1,696.30	4,914.88	3,121.34	3,075.23	46.11	67.687	
7,800.00	6,061.81	6,100.47	6,068.89	57.13	13.62	114.63	1,696.31	4,914.88	3,021.35	2,975.21	46.14	65.479	
7,900.00	6,062.07	6,099.96	6,068.38	59.75	13.62	113.90	1,696.31	4,914.89	2,921.36	2,875.18	46.17	63.270	
8,000.00	6,062.34	6,099.46	6,067.88	62.40	13.62	113.16	1,696.31	4,914.89	2,821.36	2,775.16	46.21	61.061	
8,100.00	6,062.60	6,098.95	6,067.37	65.09	13.62	112.41	1,696.32	4,914.89	2,721.37	2,675.13	46.24	58.853	
8,200.00	6,062.87	6,098.44	6,066.86	67.81	13.62	111.65	1,696.32	4,914.90	2,621.38	2,575.10	46.28	56.645	
8,300.00	6,063.14	6,097.93	6,066.36	70.55	13.62	110.88	1,696.33	4,914.90	2,521.39	2,475.07	46.32	54.437	
8,400.00	6,063.40	6,097.43	6,065.85	73.32	13.62	110.11	1,696.33	4,914.91	2,421.40	2,375.04	46.36	52.230	
8,500.00	6,063.67	6,096.92	6,065.34	76.11	13.62	109.33	1,696.33	4,914.91	2,321.41	2,275.01	46.41	50.024	
8,600.00	6,063.93	6,096.41	6,064.83	78.91	13.62	108.54	1,696.34	4,914.91	2,221.42	2,174.97	46.46	47.818	
8,700.00	6,064.20	6,095.91	6,064.33	81.73	13.62	107.74	1,696.34	4,914.92	2,121.44	2,074.93	46.51	45.613	
8,800.00	6,064.47	6,095.40	6,063.82	84.57	13.61	106.93	1,696.35	4,914.92	2,021.45	1,974.88	46.57	43.408	
8,900.00	6,064.73	6,094.89	6,063.31	87.41	13.61	106.12	1,696.35	4,914.93	1,921.46	1,874.83	46.63	41.205	
9,000.00	6,065.00	6,094.38	6,062.81	90.27	13.61	105.30	1,696.36	4,914.93	1,821.48	1,774.78	46.70	39.002	
9,100.00	6,065.26	6,093.88	6,062.30	93.14	13.61	104.47	1,696.36	4,914.93	1,721.50	1,674.72	46.78	36.801	
9,200.00	6,065.53	6,093.37	6,061.79	96.01	13.61	103.64	1,696.36	4,914.94	1,621.52	1,574.66	46.86	34.601	
9,300.00	6,065.80	6,092.86	6,061.29	98.90	13.61	102.80	1,696.37	4,914.94	1,521.54	1,474.58	46.96	32.401	
9,400.00	6,066.06	6,092.36	6,060.78	101.79	13.61	101.96	1,696.37	4,914.95	1,421.57	1,374.50	47.07	30.203	
9,500.00	6,066.33	6,091.85	6,060.27	104.69	13.61	101.11	1,696.38	4,914.95	1,321.60	1,274.41	47.19	28.006	
9,600.00	6,066.59	6,091.34	6,059.76	107.60	13.61	100.25	1,696.38	4,914.95	1,221.63	1,174.30	47.33	25.811	
9,700.00	6,066.86	6,090.83	6,059.26	110.51	13.60	99.39	1,696.39	4,914.96	1,121.67	1,074.18	47.50	23.616	
9,800.00	6,067.13	6,090.33	6,058.75	113.42	13.60	98.53	1,696.39	4,914.96	1,021.72	974.03	47.69	21.422	
9,900.00	6,067.39	6,089.82	6,058.24	116.35	13.60	97.66	1,696.39	4,914.96	921.78	873.84	47.93	19.230	
10,000.00	6,067.66	6,089.31	6,057.74	119.27	13.60	96.78	1,696.40	4,914.97	821.85	773.61	48.24	17.038	
10,100.00	6,067.92	6,088.81	6,057.23	122.20	13.60	95.91	1,696.40	4,914.97	721.94	673.32	48.63	14.847	
10,200.00	6,068.19	6,088.30	6,056.72	125.14	13.60	95.03	1,696.41	4,914.98	622.06	572.91	49.15	12.656	
10,300.00	6,068.46	6,087.79	6,056.21	128.08	13.60	94.15	1,696.41	4,914.98	522.23	472.32	49.91	10.464	

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Grenier A3N - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 301-MWD													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	
10,400.00	6,068.72	6,087.28	6,055.71	131.02	13.60	93.26	1,696.41	4,914.98	422.47	371.40	51.07	8.273	
10,500.00	6,068.99	6,086.78	6,055.20	133.96	13.60	92.38	1,696.42	4,914.99	322.87	269.78	53.08	6.082	
10,600.00	6,069.25	6,086.27	6,054.69	136.91	13.60	91.49	1,696.42	4,914.99	223.61	166.34	57.27	3.905	
10,700.00	6,069.52	6,085.76	6,054.19	139.86	13.59	90.60	1,696.43	4,915.00	125.54	56.05	69.49	1.807	
10,800.00	6,069.79	6,085.26	6,053.68	142.81	13.59	89.71	1,696.43	4,915.00	38.97	-100.66	139.63	0.279 Level 1	
10,821.21	6,069.84	6,085.15	6,053.57	143.44	13.59	89.52	1,696.43	4,915.00	32.69	-122.81	155.50	0.210 Level 1, CC, ES, SF	
10,900.00	6,070.05	6,084.75	6,053.17	145.77	13.59	88.82	1,696.44	4,915.00	85.30	18.51	66.79	1.277 Level 3	
11,000.00	6,070.32	6,084.24	6,052.67	148.73	13.59	87.94	1,696.44	4,915.01	181.75	134.09	47.66	3.814	
11,100.00	6,070.58	6,083.73	6,052.16	151.69	13.59	87.05	1,696.44	4,915.01	280.70	235.73	44.96	6.243	
11,200.00	6,070.85	6,083.23	6,051.65	154.65	13.59	86.16	1,696.45	4,915.02	380.19	335.66	44.54	8.537	
11,300.00	6,071.12	6,082.72	6,051.14	157.61	13.59	85.28	1,696.45	4,915.02	479.90	435.32	44.57	10.767	
11,400.00	6,071.38	6,082.21	6,050.64	160.58	13.59	84.39	1,696.46	4,915.02	579.70	534.98	44.72	12.963	
11,500.00	6,071.65	6,081.71	6,050.13	163.54	13.59	83.51	1,696.46	4,915.03	679.57	634.68	44.88	15.140	
11,600.00	6,071.91	6,081.20	6,049.62	166.51	13.59	82.64	1,696.47	4,915.03	779.46	734.42	45.05	17.304	
11,700.00	6,072.18	6,080.69	6,049.12	169.48	13.58	81.76	1,696.47	4,915.04	879.39	834.19	45.19	19.458	
11,800.00	6,072.45	6,080.19	6,048.61	172.46	13.58	80.89	1,696.47	4,915.04	979.32	933.99	45.33	21.605	
11,900.00	6,072.71	6,079.68	6,048.10	175.43	13.58	80.02	1,696.48	4,915.04	1,079.27	1,033.82	45.45	23.745	
12,000.00	6,072.98	6,079.17	6,047.59	178.40	13.58	79.16	1,696.48	4,915.05	1,179.23	1,133.66	45.57	25.879	
12,100.00	6,073.24	6,078.66	6,047.09	181.38	13.58	78.30	1,696.49	4,915.05	1,279.19	1,233.52	45.67	28.008	
12,200.00	6,073.51	6,078.16	6,046.58	184.36	13.58	77.45	1,696.49	4,915.05	1,379.16	1,333.39	45.77	30.132	
12,300.00	6,073.78	6,077.65	6,046.07	187.33	13.58	76.61	1,696.49	4,915.06	1,479.13	1,433.27	45.86	32.251	
12,400.00	6,074.04	6,077.14	6,045.57	190.31	13.58	75.76	1,696.50	4,915.06	1,579.11	1,533.16	45.95	34.365	
12,500.00	6,074.31	6,076.64	6,045.06	193.29	13.58	74.93	1,696.50	4,915.07	1,679.09	1,633.05	46.03	36.474	
12,600.00	6,074.58	6,076.13	6,044.55	196.27	13.58	74.10	1,696.51	4,915.07	1,779.07	1,732.95	46.11	38.579	
12,700.00	6,074.84	6,075.62	6,044.04	199.26	13.57	73.28	1,696.51	4,915.07	1,879.05	1,832.86	46.19	40.680	
12,800.00	6,075.11	6,075.11	6,043.54	202.24	13.57	72.46	1,696.52	4,915.08	1,979.03	1,932.77	46.27	42.775	
12,900.00	6,075.37	6,074.61	6,043.03	205.22	13.57	71.65	1,696.52	4,915.08	2,079.02	2,032.68	46.34	44.867	
13,000.00	6,075.64	6,074.10	6,042.52	208.21	13.57	70.85	1,696.52	4,915.09	2,179.01	2,132.60	46.41	46.953	
13,100.00	6,075.91	6,073.59	6,042.02	211.19	13.57	70.06	1,696.53	4,915.09	2,278.99	2,232.52	46.48	49.035	
13,200.00	6,076.17	6,073.09	6,041.51	214.18	13.57	69.27	1,696.53	4,915.09	2,378.98	2,332.44	46.54	51.112	
13,300.00	6,076.44	6,072.58	6,041.00	217.16	13.57	68.49	1,696.54	4,915.10	2,478.97	2,432.36	46.61	53.185	
13,400.00	6,076.70	6,072.07	6,040.50	220.15	13.57	67.72	1,696.54	4,915.10	2,578.96	2,532.29	46.68	55.253	
13,500.00	6,076.97	6,071.56	6,039.99	223.14	13.57	66.96	1,696.55	4,915.11	2,678.95	2,632.21	46.74	57.316	
13,600.00	6,077.24	6,071.06	6,039.48	226.13	13.57	66.21	1,696.55	4,915.11	2,778.95	2,732.14	46.80	59.374	
13,700.00	6,077.50	6,070.55	6,038.97	229.12	13.56	65.46	1,696.55	4,915.11	2,878.94	2,832.07	46.87	61.427	
13,800.00	6,077.77	6,070.04	6,038.47	232.11	13.56	64.73	1,696.56	4,915.12	2,978.93	2,932.00	46.93	63.476	
13,887.55	6,078.00	6,069.60	6,038.02	234.72	13.56	64.09	1,696.56	4,915.12	3,066.47	3,019.49	46.99	65.265	



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Fed 2B - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 7125-UNKNOWN												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			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	31.00	31.00	0.00	0.62	-20.86	626.53	-238.71	670.46	669.84	0.62	1,081.042	
100.00	100.00	131.00	131.00	0.18	2.62	-20.86	626.53	-238.71	670.46	667.66	2.80	239.499	
200.00	200.00	231.00	231.00	0.54	4.62	-20.86	626.53	-238.71	670.46	665.30	5.16	129.987	
300.00	300.00	331.00	331.00	0.90	6.62	-20.86	626.53	-238.71	670.46	662.94	7.52	89.200	
400.00	400.00	431.00	431.00	1.25	8.62	-20.86	626.53	-238.71	670.46	660.59	9.87	67.896	
500.00	500.00	531.00	531.00	1.61	10.62	-20.86	626.53	-238.71	670.46	658.23	12.23	54.806	
600.00	599.98	630.98	630.98	1.97	12.62	-25.67	626.53	-238.71	668.89	654.30	14.59	45.840	
700.00	699.84	730.84	730.84	2.33	14.62	-25.91	626.53	-238.71	664.17	647.22	16.95	39.184	
800.00	799.45	830.45	830.45	2.70	16.61	-26.31	626.53	-238.71	656.34	637.04	19.31	33.998	
900.00	898.70	929.70	929.70	3.06	18.59	-26.89	626.53	-238.71	645.43	623.77	21.66	29.805	
1,000.00	997.47	1,028.47	1,028.47	3.44	20.57	-27.66	626.53	-238.71	631.49	607.49	24.00	26.313	
1,100.00	1,095.62	1,126.62	1,126.62	3.83	22.53	-28.65	626.53	-238.71	614.60	588.26	26.34	23.337	
1,200.00	1,193.06	1,224.06	1,224.06	4.25	24.48	-29.88	626.53	-238.71	594.85	566.19	28.66	20.752	
1,300.00	1,289.64	1,320.64	1,320.64	4.68	26.41	-31.40	626.53	-238.71	572.39	541.40	30.99	18.472	
1,400.00	1,385.27	1,416.27	1,416.27	5.14	28.33	-33.25	626.53	-238.71	547.37	514.07	33.30	16.436	
1,500.00	1,480.00	1,511.00	1,511.00	5.63	30.22	-35.29	626.53	-238.71	520.48	484.87	35.62	14.613	
1,600.00	1,574.64	1,605.64	1,605.64	6.14	32.11	-37.41	626.53	-238.71	493.96	456.02	37.94	13.020	
1,700.00	1,669.28	1,700.28	1,700.28	6.65	34.01	-39.76	626.53	-238.71	468.17	427.89	40.28	11.622	
1,800.00	1,763.91	1,794.91	1,794.91	7.17	35.90	-42.37	626.53	-238.71	443.24	400.59	42.65	10.394	
1,900.00	1,858.55	1,889.55	1,889.55	7.70	37.79	-45.27	626.53	-238.71	419.31	374.28	45.03	9.312	
2,000.00	1,953.18	1,984.18	1,984.18	8.23	39.68	-48.49	626.53	-238.71	396.57	349.13	47.44	8.359	
2,100.00	2,047.82	2,078.82	2,078.82	8.77	41.58	-52.06	626.53	-238.71	375.25	325.37	49.88	7.523	
2,200.00	2,142.45	2,173.45	2,173.45	9.31	43.47	-56.02	626.53	-238.71	355.58	303.23	52.34	6.793	
2,300.00	2,237.09	2,268.09	2,268.09	9.86	45.36	-60.39	626.53	-238.71	337.86	283.03	54.84	6.161	
2,400.00	2,331.73	2,362.73	2,362.73	10.40	47.25	-65.17	626.53	-238.71	322.42	265.07	57.35	5.622	
2,500.00	2,426.36	2,457.36	2,457.36	10.95	49.15	-70.34	626.53	-238.71	309.59	249.70	59.88	5.170	
2,600.00	2,521.00	2,552.00	2,552.00	11.50	51.04	-75.88	626.53	-238.71	299.71	237.29	62.42	4.802	
2,700.00	2,615.63	2,646.63	2,646.63	12.05	52.93	-81.69	626.53	-238.71	293.07	228.14	64.94	4.513	
2,800.00	2,710.27	2,741.27	2,741.27	12.61	54.83	-87.68	626.53	-238.71	289.91	222.48	67.43	4.300	
2,838.31	2,746.52	2,777.52	2,777.52	12.82	55.55	-90.00	626.53	-238.71	289.65	221.28	68.37	4.237 CC	
2,900.00	2,804.90	2,835.90	2,835.90	13.16	56.72	-93.73	626.53	-238.71	290.33	220.46	69.87	4.155 ES	
3,000.00	2,899.54	2,930.54	2,930.54	13.72	58.61	-99.69	626.53	-238.71	294.32	222.07	72.25	4.073	
3,100.00	2,994.17	3,025.17	3,025.17	14.27	60.50	-105.44	626.53	-238.71	301.74	227.16	74.58	4.046 SF	
3,200.00	3,088.81	3,119.81	3,119.81	14.83	62.40	-110.90	626.53	-238.71	312.34	235.48	76.86	4.064	
3,300.00	3,183.45	3,214.45	3,214.45	15.39	64.29	-115.99	626.53	-238.71	325.81	246.72	79.09	4.120	
3,400.00	3,278.08	3,309.08	3,309.08	15.95	66.18	-120.67	626.53	-238.71	341.81	260.52	81.29	4.205	
3,500.00	3,372.72	3,403.72	3,403.72	16.51	68.07	-124.94	626.53	-238.71	360.01	276.54	83.47	4.313	
3,600.00	3,467.35	3,498.35	3,498.35	17.07	69.97	-128.80	626.53	-238.71	380.09	294.45	85.64	4.438	
3,700.00	3,561.99	3,592.99	3,592.99	17.63	71.86	-132.29	626.53	-238.71	401.77	313.96	87.81	4.575	
3,800.00	3,656.62	3,687.62	3,687.62	18.19	73.75	-135.43	626.53	-238.71	424.80	334.82	89.98	4.721	
3,900.00	3,751.26	3,782.26	3,782.26	18.75	75.65	-138.26	626.53	-238.71	448.98	356.82	92.16	4.872	
4,000.00	3,845.90	3,876.90	3,876.90	19.31	77.54	-140.81	626.53	-238.71	474.13	379.79	94.34	5.026	
4,100.00	3,940.53	3,971.53	3,971.53	19.87	79.43	-143.10	626.53	-238.71	500.10	403.57	96.53	5.181	
4,200.00	4,035.17	4,066.17	4,066.17	20.43	81.32	-145.18	626.53	-238.71	526.78	428.05	98.73	5.336	
4,300.00	4,129.80	4,160.80	4,160.80	20.99	83.22	-147.06	626.53	-238.71	554.05	453.12	100.93	5.489	
4,400.00	4,224.44	4,255.44	4,255.44	21.56	85.11	-148.76	626.53	-238.71	581.84	478.70	103.14	5.641	
4,500.00	4,319.07	4,350.07	4,350.07	22.12	87.00	-150.32	626.53	-238.71	610.08	504.72	105.36	5.790	
4,600.00	4,413.71	4,444.71	4,444.71	22.68	88.89	-151.73	626.53	-238.71	638.70	531.11	107.59	5.937	
4,700.00	4,508.34	4,539.34	4,539.34	23.25	90.79	-153.03	626.53	-238.71	667.66	557.84	109.82	6.080	
4,800.00	4,602.98	4,633.98	4,633.98	23.81	92.68	-154.23	626.53	-238.71	696.91	584.86	112.05	6.219	
4,900.00	4,697.62	4,728.62	4,728.62	24.37	94.57	-155.32	626.53	-238.71	726.43	612.13	114.30	6.356	
5,000.00	4,792.25	4,823.25	4,823.25	24.94	96.47	-156.34	626.53	-238.71	756.17	639.63	116.54	6.488	

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design													Trieb Fed Pad - Trieb Fed 2B - OH - OH		Offset Site Error: 0.00 usft	
Survey Program: 7125-UNKNOWN													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			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				
5,100.00	4,886.89	4,917.89	4,917.89	25.50	98.36	-157.28	626.53	-238.71	786.12	667.33	118.79	6.618				
5,200.00	4,981.52	5,012.52	5,012.52	26.06	100.25	-158.15	626.53	-238.71	816.24	695.20	121.04	6.743				
5,300.00	5,076.16	5,107.16	5,107.16	26.63	102.14	-158.95	626.53	-238.71	846.53	723.23	123.30	6.866				
5,400.00	5,170.79	5,201.79	5,201.79	27.19	104.04	-159.71	626.53	-238.71	876.96	751.40	125.56	6.984				
5,500.00	5,265.43	5,296.43	5,296.43	27.76	105.93	-160.41	626.53	-238.71	907.52	779.70	127.82	7.100				
5,600.00	5,360.06	5,391.06	5,391.06	28.32	107.82	-161.07	626.53	-238.71	938.20	808.12	130.09	7.212				
5,700.00	5,454.58	5,485.58	5,485.58	28.89	109.71	-176.29	626.53	-238.71	969.86	837.51	132.35	7.328				
5,800.00	5,547.66	5,578.66	5,578.66	29.45	111.57	162.92	626.53	-238.71	1,005.91	871.30	134.61	7.473				
5,900.00	5,637.51	5,668.51	5,668.51	29.98	113.37	148.38	626.53	-238.71	1,046.25	909.44	136.81	7.647				
6,000.00	5,722.36	5,753.36	5,753.36	30.50	115.07	138.25	626.53	-238.71	1,090.68	951.76	138.92	7.851				
6,100.00	5,800.57	5,831.57	5,831.57	31.00	116.63	130.72	626.53	-238.71	1,139.20	998.31	140.90	8.085				
6,200.00	5,870.60	5,901.60	5,901.60	31.50	118.03	124.56	626.53	-238.71	1,191.88	1,049.17	142.72	8.351				
6,300.00	5,931.11	5,962.11	5,962.11	32.00	119.24	118.94	626.53	-238.71	1,248.72	1,104.36	144.36	8.650				
6,400.00	5,980.92	6,011.92	6,011.92	32.54	120.24	113.29	626.53	-238.71	1,309.53	1,163.72	145.80	8.981				
6,500.00	6,019.04	6,050.04	6,050.04	33.15	121.00	107.24	626.53	-238.71	1,373.89	1,226.86	147.04	9.344				
6,600.00	6,044.75	6,075.75	6,075.75	33.88	121.52	100.62	626.53	-238.71	1,441.12	1,293.08	148.03	9.735				
6,700.00	6,057.54	6,088.54	6,088.54	34.79	121.77	93.47	626.53	-238.71	1,510.25	1,361.48	148.77	10.151				
6,800.00	6,059.15	6,090.15	6,090.15	35.91	121.80	90.16	626.53	-238.71	1,580.60	1,431.32	149.28	10.588				
6,900.00	6,059.41	6,090.41	6,090.41	37.29	121.81	90.17	626.53	-238.71	1,653.72	1,503.96	149.76	11.043				
7,000.00	6,059.68	6,090.68	6,090.68	38.92	121.81	90.18	626.53	-238.71	1,729.54	1,579.31	150.23	11.513				
7,100.00	6,059.94	6,090.94	6,090.94	40.76	121.82	90.20	626.53	-238.71	1,807.70	1,657.03	150.68	11.997				
7,200.00	6,060.21	6,091.21	6,091.21	42.78	121.82	90.21	626.53	-238.71	1,887.93	1,736.83	151.11	12.494				
7,300.00	6,060.48	6,091.48	6,091.48	44.94	121.83	90.23	626.53	-238.71	1,969.97	1,818.46	151.51	13.002				
7,400.00	6,060.74	6,091.74	6,091.74	47.22	121.83	90.24	626.53	-238.71	2,053.60	1,901.71	151.90	13.520				
7,500.00	6,061.01	6,092.01	6,092.01	49.59	121.84	90.25	626.53	-238.71	2,138.64	1,986.39	152.25	14.047				
7,600.00	6,061.27	6,092.27	6,092.27	52.04	121.85	90.27	626.53	-238.71	2,224.93	2,072.33	152.59	14.581				
7,700.00	6,061.54	6,092.54	6,092.54	54.56	121.85	90.28	626.53	-238.71	2,312.31	2,159.41	152.91	15.122				
7,800.00	6,061.81	6,092.81	6,092.81	57.13	121.86	90.29	626.53	-238.71	2,400.69	2,247.48	153.20	15.670				
7,900.00	6,062.07	6,093.07	6,093.07	59.75	121.86	90.31	626.53	-238.71	2,489.94	2,336.46	153.48	16.223				
8,000.00	6,062.34	6,093.34	6,093.34	62.40	121.87	90.32	626.53	-238.71	2,579.98	2,426.24	153.74	16.782				
8,100.00	6,062.60	6,093.60	6,093.60	65.09	121.87	90.34	626.53	-238.71	2,670.73	2,516.75	153.98	17.345				
8,200.00	6,062.87	6,093.87	6,093.87	67.81	121.88	90.35	626.53	-238.71	2,762.12	2,607.91	154.21	17.911				
8,300.00	6,063.14	6,094.14	6,094.14	70.55	121.88	90.36	626.53	-238.71	2,854.08	2,699.66	154.42	18.482				
8,400.00	6,063.40	6,094.40	6,094.40	73.32	121.89	90.38	626.53	-238.71	2,946.57	2,791.94	154.63	19.056				
8,500.00	6,063.67	6,094.67	6,094.67	76.11	121.89	90.39	626.53	-238.71	3,039.54	2,884.72	154.82	19.633				
8,600.00	6,063.93	6,094.93	6,094.93	78.91	121.90	90.41	626.53	-238.71	3,132.94	2,977.93	155.00	20.212				
8,700.00	6,064.20	6,095.20	6,095.20	81.73	121.90	90.42	626.53	-238.71	3,226.73	3,071.55	155.18	20.794				
8,800.00	6,064.47	6,095.47	6,095.47	84.57	121.91	90.43	626.53	-238.71	3,320.89	3,165.55	155.34	21.378				
8,900.00	6,064.73	6,095.73	6,095.73	87.41	121.91	90.45	626.53	-238.71	3,415.37	3,259.88	155.50	21.964				
9,000.00	6,065.00	6,096.00	6,096.00	90.27	121.92	90.46	626.53	-238.71	3,510.17	3,354.52	155.65	22.552				
9,100.00	6,065.26	6,096.26	6,096.26	93.14	121.93	90.47	626.53	-238.71	3,605.24	3,449.45	155.79	23.142				
9,200.00	6,065.53	6,096.53	6,096.53	96.01	121.93	90.49	626.53	-238.71	3,700.58	3,544.65	155.93	23.733				
9,300.00	6,065.80	6,096.80	6,096.80	98.90	121.94	90.50	626.53	-238.71	3,796.15	3,640.10	156.06	24.326				
9,400.00	6,066.06	6,097.06	6,097.06	101.79	121.94	90.52	626.53	-238.71	3,891.95	3,735.77	156.18	24.919				
9,500.00	6,066.33	6,097.33	6,097.33	104.69	121.95	90.53	626.53	-238.71	3,987.95	3,831.65	156.30	25.514				
9,600.00	6,066.59	6,097.59	6,097.59	107.60	121.95	90.54	626.53	-238.71	4,084.15	3,927.73	156.42	26.110				
9,700.00	6,066.86	6,097.86	6,097.86	110.51	121.96	90.56	626.53	-238.71	4,180.52	4,023.99	156.53	26.707				
9,800.00	6,067.13	6,098.13	6,098.13	113.42	121.96	90.57	626.53	-238.71	4,277.06	4,120.42	156.64	27.305				
9,900.00	6,067.39	6,098.39	6,098.39	116.35	121.97	90.59	626.53	-238.71	4,373.76	4,217.01	156.75	27.903				
10,000.00	6,067.66	6,098.66	6,098.66	119.27	121.97	90.60	626.53	-238.71	4,470.60	4,313.75	156.85	28.502				
10,100.00	6,067.92	6,098.92	6,098.92	122.20	121.98	90.61	626.53	-238.71	4,567.57	4,410.62	156.95	29.102				
10,200.00	6,068.19	6,099.19	6,099.19	125.14	121.98	90.63	626.53	-238.71	4,664.68	4,507.63	157.05	29.702				

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Fed 2B - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 7125-UNKNOWN												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
10,300.00	6,068.46	6,099.46	6,099.46	128.08	121.99	90.64	626.53	-238.71	4,761.90	4,604.76	157.14	30.303	
10,400.00	6,068.72	6,099.72	6,099.72	131.02	121.99	90.65	626.53	-238.71	4,859.24	4,702.01	157.24	30.904	
10,500.00	6,068.99	6,099.99	6,099.99	133.96	122.00	90.67	626.53	-238.71	4,956.68	4,799.36	157.33	31.506	
10,600.00	6,069.25	6,100.25	6,100.25	136.91	122.01	90.68	626.53	-238.71	5,054.23	4,896.81	157.42	32.108	
10,700.00	6,069.52	6,100.52	6,100.52	139.86	122.01	90.70	626.53	-238.71	5,151.87	4,994.36	157.50	32.710	
10,800.00	6,069.79	6,100.79	6,100.79	142.81	122.02	90.71	626.53	-238.71	5,249.59	5,092.00	157.59	33.312	
10,900.00	6,070.05	6,101.05	6,101.05	145.77	122.02	90.72	626.53	-238.71	5,347.40	5,189.73	157.67	33.915	
11,000.00	6,070.32	6,101.32	6,101.32	148.73	122.03	90.74	626.53	-238.71	5,445.29	5,287.54	157.75	34.518	
11,100.00	6,070.58	6,101.58	6,101.58	151.69	122.03	90.75	626.53	-238.71	5,543.26	5,385.42	157.83	35.121	
11,200.00	6,070.85	6,101.85	6,101.85	154.65	122.04	90.76	626.53	-238.71	5,641.29	5,483.38	157.91	35.724	
11,300.00	6,071.12	6,102.12	6,102.12	157.61	122.04	90.78	626.53	-238.71	5,739.40	5,581.41	157.99	36.327	
11,400.00	6,071.38	6,102.38	6,102.38	160.58	122.05	90.79	626.53	-238.71	5,837.57	5,679.50	158.07	36.931	
11,500.00	6,071.65	6,102.65	6,102.65	163.54	122.05	90.81	626.53	-238.71	5,935.80	5,777.65	158.14	37.534	
11,600.00	6,071.91	6,102.91	6,102.91	166.51	122.06	90.82	626.53	-238.71	6,034.08	5,875.86	158.22	38.137	
11,700.00	6,072.18	6,103.18	6,103.18	169.48	122.06	90.83	626.53	-238.71	6,132.43	5,974.13	158.30	38.740	
11,800.00	6,072.45	6,103.45	6,103.45	172.46	122.07	90.85	626.53	-238.71	6,230.82	6,072.45	158.37	39.344	
11,900.00	6,072.71	6,103.71	6,103.71	175.43	122.07	90.86	626.53	-238.71	6,329.27	6,170.83	158.44	39.947	
12,000.00	6,072.98	6,103.98	6,103.98	178.40	122.08	90.88	626.53	-238.71	6,427.76	6,269.25	158.52	40.550	
12,100.00	6,073.24	6,104.24	6,104.24	181.38	122.08	90.89	626.53	-238.71	6,526.30	6,367.72	158.59	41.153	
12,200.00	6,073.51	6,104.51	6,104.51	184.36	122.09	90.90	626.53	-238.71	6,624.89	6,466.23	158.66	41.756	
12,300.00	6,073.78	6,104.78	6,104.78	187.33	122.10	90.92	626.53	-238.71	6,723.51	6,564.78	158.73	42.358	
12,400.00	6,074.04	6,105.04	6,105.04	190.31	122.10	90.93	626.53	-238.71	6,822.18	6,663.38	158.80	42.961	
12,500.00	6,074.31	6,105.31	6,105.31	193.29	122.11	90.94	626.53	-238.71	6,920.88	6,762.01	158.87	43.563	
12,600.00	6,074.58	6,105.58	6,105.58	196.27	122.11	90.96	626.53	-238.71	7,019.62	6,860.68	158.94	44.165	
12,700.00	6,074.84	6,105.84	6,105.84	199.26	122.12	90.97	626.53	-238.71	7,118.40	6,959.39	159.01	44.767	
12,800.00	6,075.11	6,106.11	6,106.11	202.24	122.12	90.99	626.53	-238.71	7,217.21	7,058.13	159.08	45.369	
12,900.00	6,075.37	6,106.37	6,106.37	205.22	122.13	91.00	626.53	-238.71	7,316.05	7,156.90	159.15	45.970	
13,000.00	6,075.64	6,106.64	6,106.64	208.21	122.13	91.01	626.53	-238.71	7,414.92	7,255.70	159.22	46.571	
13,100.00	6,075.91	6,106.91	6,106.91	211.19	122.14	91.03	626.53	-238.71	7,513.82	7,354.54	159.29	47.172	
13,200.00	6,076.17	6,107.17	6,107.17	214.18	122.14	91.04	626.53	-238.71	7,612.76	7,453.40	159.35	47.772	
13,300.00	6,076.44	6,107.44	6,107.44	217.16	122.15	91.05	626.53	-238.71	7,711.71	7,552.29	159.42	48.373	
13,400.00	6,076.70	6,107.70	6,107.70	220.15	122.15	91.07	626.53	-238.71	7,810.70	7,651.21	159.49	48.973	
13,500.00	6,076.97	6,107.97	6,107.97	223.14	122.16	91.08	626.53	-238.71	7,909.71	7,750.15	159.56	49.572	
13,600.00	6,077.24	6,108.24	6,108.24	226.13	122.16	91.10	626.53	-238.71	8,008.75	7,849.12	159.63	50.171	
13,700.00	6,077.50	6,108.50	6,108.50	229.12	122.17	91.11	626.53	-238.71	8,107.81	7,948.11	159.70	50.770	
13,800.00	6,077.77	6,108.77	6,108.77	232.11	122.18	91.12	626.53	-238.71	8,206.89	8,047.12	159.76	51.369	
13,887.55	6,078.00	6,109.00	6,109.00	234.72	122.18	91.14	626.53	-238.71	8,293.65	8,133.83	159.82	51.893	



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 601 1H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		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)	Offset Wellbore Centre +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	54.63	8.73	12.31	15.09	15.09	0.00	N/A	
100.00	100.00	100.00	100.00	0.18	0.18	54.63	8.73	12.31	15.09	14.73	0.36	42.097	
200.00	200.00	200.00	200.00	0.54	0.54	54.63	8.73	12.31	15.09	14.02	1.08	14.032	
300.00	300.00	300.00	300.00	0.90	0.90	54.63	8.73	12.31	15.09	13.30	1.79	8.419	
400.00	400.00	400.00	400.00	1.25	1.25	54.63	8.73	12.31	15.09	12.58	2.51	6.014	
500.00	500.00	500.00	500.00	1.61	1.61	54.63	8.73	12.31	15.09	11.86	3.23	4.677 CC	
600.00	599.98	599.61	599.59	1.97	1.97	50.51	10.43	12.68	15.25	11.30	3.95	3.859	
700.00	699.84	699.22	699.06	2.33	2.33	52.28	15.50	13.79	15.75	11.06	4.69	3.357	
800.00	799.45	798.82	798.28	2.70	2.69	54.99	23.94	15.64	16.61	11.18	5.43	3.057	
900.00	898.70	898.72	897.56	3.06	3.05	61.08	34.76	18.01	17.22	11.07	6.15	2.800	
996.92	994.43	995.52	993.76	3.43	3.41	76.67	45.32	20.32	16.97	10.12	6.85	2.478	
1,000.00	997.47	998.59	996.81	3.44	3.42	77.34	45.65	20.40	16.97	10.10	6.87	2.470 ES	
1,100.00	1,095.62	1,098.25	1,095.84	3.83	3.80	103.54	56.52	22.78	18.56	10.93	7.63	2.433	
1,200.00	1,193.06	1,197.56	1,194.53	4.25	4.17	128.98	67.35	25.15	25.20	16.80	8.40	3.001	
1,300.00	1,289.64	1,296.41	1,292.76	4.68	4.54	145.50	78.14	27.51	37.42	28.27	9.15	4.090	
1,400.00	1,385.27	1,394.67	1,390.41	5.14	4.92	155.14	88.85	29.86	54.31	44.42	9.89	5.493	
1,500.00	1,480.00	1,492.36	1,487.49	5.63	5.29	160.93	99.51	32.20	74.71	64.08	10.63	7.031	
1,600.00	1,574.64	1,589.98	1,584.50	6.14	5.66	164.32	110.15	34.53	95.84	84.47	11.36	8.433	
1,700.00	1,669.28	1,687.60	1,681.51	6.65	6.03	166.48	120.80	36.86	117.17	105.06	12.11	9.677	
1,800.00	1,763.91	1,785.22	1,778.52	7.17	6.41	167.98	131.45	39.20	138.61	125.76	12.85	10.783	
1,900.00	1,858.55	1,882.84	1,875.53	7.70	6.78	169.07	142.10	41.53	160.12	146.52	13.61	11.769	
2,000.00	1,953.18	1,980.46	1,972.54	8.23	7.16	169.91	152.74	43.86	181.67	167.31	14.36	12.652	
2,100.00	2,047.82	2,078.08	2,069.55	8.77	7.53	170.56	163.39	46.19	203.25	188.14	15.11	13.447	
2,200.00	2,142.45	2,175.70	2,166.56	9.31	7.91	171.10	174.04	48.53	224.85	208.98	15.87	14.166	
2,300.00	2,237.09	2,273.32	2,263.56	9.86	8.28	171.53	184.69	50.86	246.47	229.84	16.63	14.819	
2,400.00	2,331.73	2,370.94	2,360.57	10.40	8.66	171.90	195.33	53.19	268.10	250.70	17.39	15.414	
2,500.00	2,426.36	2,468.56	2,457.58	10.95	9.03	172.21	205.98	55.53	289.73	271.58	18.16	15.958	
2,600.00	2,521.00	2,566.18	2,554.59	11.50	9.41	172.48	216.63	57.86	311.38	292.46	18.92	16.458	
2,700.00	2,615.63	2,663.80	2,651.60	12.05	9.79	172.72	227.27	60.19	333.03	313.34	19.68	16.919	
2,800.00	2,710.27	2,761.42	2,748.61	12.61	10.16	172.92	237.92	62.53	354.68	334.23	20.45	17.344	
2,900.00	2,804.90	2,859.04	2,845.62	13.16	10.54	173.11	248.57	64.86	376.34	355.12	21.22	17.739	
3,000.00	2,899.54	2,956.66	2,942.63	13.72	10.91	173.27	259.22	67.19	398.00	376.02	21.98	18.105	
3,100.00	2,994.17	3,054.28	3,039.64	14.27	11.29	173.41	269.86	69.52	419.67	396.92	22.75	18.446	
3,200.00	3,088.81	3,151.90	3,136.65	14.83	11.67	173.54	280.51	71.86	441.33	417.81	23.52	18.765	
3,300.00	3,183.45	3,249.52	3,233.66	15.39	12.04	173.66	291.16	74.19	463.00	438.71	24.29	19.064	
3,400.00	3,278.08	3,347.14	3,330.67	15.95	12.42	173.77	301.81	76.52	484.67	459.61	25.06	19.343	
3,500.00	3,372.72	3,444.76	3,427.68	16.51	12.80	173.87	312.45	78.86	506.34	480.52	25.83	19.606	
3,600.00	3,467.35	3,542.38	3,524.69	17.07	13.17	173.96	323.10	81.19	528.02	501.42	26.60	19.853	
3,700.00	3,561.99	3,640.00	3,621.70	17.63	13.55	174.05	333.75	83.52	549.69	522.32	27.37	20.087	
3,800.00	3,656.62	3,737.62	3,718.71	18.19	13.93	174.12	344.39	85.86	571.37	543.23	28.14	20.307	
3,900.00	3,751.26	3,835.24	3,815.72	18.75	14.30	174.19	355.04	88.19	593.04	564.13	28.91	20.515	
4,000.00	3,845.90	3,932.86	3,912.73	19.31	14.68	174.26	365.69	90.52	614.72	585.04	29.68	20.712	
4,100.00	3,940.53	4,030.48	4,009.74	19.87	15.06	174.32	376.34	92.86	636.40	605.95	30.45	20.900	
4,200.00	4,035.17	4,128.10	4,106.74	20.43	15.44	174.38	386.98	95.19	658.07	626.85	31.22	21.077	
4,300.00	4,129.80	4,225.72	4,203.75	20.99	15.81	174.44	397.63	97.52	679.75	647.76	31.99	21.247	
4,400.00	4,224.44	4,323.34	4,300.76	21.56	16.19	174.49	408.28	99.85	701.43	668.67	32.77	21.408	
4,500.00	4,319.07	4,420.96	4,397.77	22.12	16.57	174.53	418.93	102.19	723.11	689.57	33.54	21.561	
4,600.00	4,413.71	4,518.57	4,494.78	22.68	16.94	174.58	429.57	104.52	744.79	710.48	34.31	21.708	
4,700.00	4,508.34	4,616.19	4,591.79	23.25	17.32	174.62	440.22	106.85	766.47	731.39	35.08	21.847	
4,800.00	4,602.98	4,713.81	4,688.80	23.81	17.70	174.66	450.87	109.19	788.16	752.30	35.86	21.981	
4,900.00	4,697.62	4,811.43	4,785.81	24.37	18.08	174.70	461.51	111.52	809.84	773.21	36.63	22.109	
5,000.00	4,792.25	4,909.05	4,882.82	24.94	18.45	174.74	472.16	113.85	831.52	794.12	37.40	22.232	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 601 1H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			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	
5,100.00	4,886.89	5,006.67	4,979.83	25.50	18.83	174.77	482.81	116.19	853.20	815.03	38.17	22.350	
5,200.00	4,981.52	5,104.29	5,076.84	26.06	19.21	174.80	493.46	118.52	874.88	835.94	38.95	22.463	
5,300.00	5,076.16	5,201.91	5,173.85	26.63	19.59	174.83	504.10	120.85	896.57	856.84	39.72	22.571	
5,400.00	5,170.79	5,299.53	5,270.86	27.19	19.96	174.86	514.75	123.18	918.25	877.75	40.49	22.676	
5,500.00	5,265.43	5,397.13	5,367.84	27.76	20.34	174.89	525.40	125.53	939.93	898.66	41.27	22.776	
5,600.00	5,360.06	5,493.49	5,463.11	28.32	20.72	174.49	535.85	134.80	961.67	919.63	42.05	22.871	
5,700.00	5,454.58	5,586.99	5,553.56	28.89	21.08	159.20	545.77	156.01	983.68	940.85	42.83	22.966	
5,800.00	5,547.66	5,678.42	5,638.62	29.45	21.44	138.36	555.10	188.04	1,005.63	962.01	43.62	23.054	
5,900.00	5,637.31	5,768.31	5,717.63	29.98	21.80	123.67	563.76	229.89	1,026.98	982.56	44.43	23.117	
6,000.00	5,722.36	5,856.95	5,789.84	30.50	22.18	113.48	571.67	280.60	1,047.27	1,001.99	45.28	23.129	
6,100.00	5,800.57	5,944.62	5,854.60	31.00	22.61	106.20	578.76	339.18	1,066.04	1,019.81	46.23	23.058	
6,200.00	5,870.60	6,031.54	5,911.31	31.50	23.15	100.87	584.97	404.69	1,082.88	1,035.52	47.37	22.862	
6,300.00	5,931.11	6,117.89	5,959.43	32.00	23.84	96.92	590.23	476.13	1,097.44	1,048.68	48.76	22.506	
6,400.00	5,980.92	6,203.83	5,998.50	32.54	24.73	94.02	594.49	552.50	1,109.42	1,058.93	50.50	21.970	
6,500.00	6,019.04	6,289.48	6,028.11	33.15	25.84	91.98	597.72	632.75	1,118.58	1,065.93	52.65	21.246	
6,600.00	6,044.75	6,374.94	6,047.96	33.88	27.14	90.69	599.87	715.80	1,124.73	1,069.51	55.22	20.368	
6,700.00	6,057.54	6,460.31	6,057.84	34.79	28.60	90.07	600.93	800.53	1,127.75	1,069.58	58.17	19.387	
6,800.00	6,059.15	6,553.60	6,059.14	35.91	30.38	90.00	601.05	893.80	1,128.07	1,066.38	61.70	18.284	
6,900.00	6,059.41	6,653.60	6,059.41	37.29	32.42	90.00	601.05	993.80	1,128.07	1,062.34	65.73	17.163	
7,000.00	6,059.68	6,753.60	6,059.68	38.92	34.61	90.00	601.05	1,093.80	1,128.07	1,058.03	70.05	16.105	
7,100.00	6,059.94	6,853.60	6,059.94	40.76	36.92	90.00	601.05	1,193.80	1,128.07	1,053.47	74.60	15.122	
7,200.00	6,060.21	6,953.60	6,060.21	42.78	39.32	90.00	601.05	1,293.80	1,128.07	1,048.72	79.35	14.216	
7,300.00	6,060.48	7,053.60	6,060.48	44.94	41.80	90.00	601.05	1,393.80	1,128.07	1,043.81	84.26	13.387	
7,400.00	6,060.74	7,153.60	6,060.74	47.22	44.35	90.00	601.05	1,493.80	1,128.07	1,038.76	89.31	12.631	
7,500.00	6,061.01	7,253.60	6,061.01	49.59	46.95	90.00	601.05	1,593.80	1,128.07	1,033.60	94.47	11.940	
7,600.00	6,061.27	7,353.60	6,061.27	52.04	49.60	90.00	601.05	1,693.80	1,128.07	1,028.34	99.73	11.311	
7,700.00	6,061.54	7,453.60	6,061.54	54.56	52.29	90.00	601.05	1,793.80	1,128.07	1,023.00	105.08	10.736	
7,800.00	6,061.81	7,553.60	6,061.81	57.13	55.01	90.00	601.05	1,893.80	1,128.07	1,017.59	110.49	10.210	
7,900.00	6,062.07	7,653.60	6,062.07	59.75	57.76	90.00	601.05	1,993.80	1,128.07	1,012.12	115.96	9.728	
8,000.00	6,062.34	7,753.60	6,062.34	62.40	60.54	90.00	601.05	2,093.80	1,128.07	1,006.59	121.48	9.286	
8,100.00	6,062.60	7,853.60	6,062.61	65.09	63.34	90.00	601.05	2,193.80	1,128.07	1,001.02	127.05	8.879	
8,200.00	6,062.87	7,953.60	6,062.87	67.81	66.15	90.00	601.05	2,293.80	1,128.07	995.41	132.66	8.504	
8,300.00	6,063.14	8,053.60	6,063.14	70.55	68.99	90.00	601.05	2,393.80	1,128.07	989.77	138.30	8.157	
8,400.00	6,063.40	8,153.60	6,063.40	73.32	71.83	90.00	601.05	2,493.80	1,128.07	984.10	143.98	7.835	
8,500.00	6,063.67	8,253.60	6,063.67	76.11	74.69	90.00	601.05	2,593.80	1,128.07	978.40	149.68	7.537	
8,600.00	6,063.93	8,353.60	6,063.94	78.91	77.57	90.00	601.05	2,693.80	1,128.07	972.67	155.40	7.259	
8,700.00	6,064.20	8,453.60	6,064.20	81.73	80.45	90.00	601.05	2,793.80	1,128.07	966.92	161.15	7.000	
8,800.00	6,064.47	8,553.60	6,064.47	84.57	83.34	90.00	601.05	2,893.80	1,128.07	961.16	166.92	6.758	
8,900.00	6,064.73	8,653.60	6,064.74	87.41	86.24	90.00	601.05	2,993.80	1,128.07	955.37	172.70	6.532	
9,000.00	6,065.00	8,753.60	6,065.00	90.27	89.15	90.00	601.05	3,093.80	1,128.07	949.57	178.50	6.320	
9,100.00	6,065.26	8,853.60	6,065.27	93.14	92.06	90.00	601.05	3,193.80	1,128.07	943.76	184.31	6.120	
9,200.00	6,065.53	8,953.60	6,065.53	96.01	94.98	90.00	601.05	3,293.80	1,128.07	937.93	190.14	5.933	
9,300.00	6,065.80	9,053.60	6,065.80	98.90	97.90	90.00	601.05	3,393.79	1,128.07	932.09	195.98	5.756	
9,400.00	6,066.06	9,153.60	6,066.07	101.79	100.83	90.00	601.05	3,493.79	1,128.07	926.24	201.83	5.589	
9,500.00	6,066.33	9,253.60	6,066.33	104.69	103.77	90.00	601.05	3,593.79	1,128.07	920.38	207.69	5.432	
9,600.00	6,066.59	9,353.60	6,066.60	107.60	106.71	90.00	601.05	3,693.79	1,128.07	914.52	213.56	5.282	
9,700.00	6,066.86	9,453.60	6,066.87	110.51	109.65	90.00	601.05	3,793.79	1,128.07	908.64	219.43	5.141	
9,800.00	6,067.13	9,553.60	6,067.13	113.42	112.60	90.00	601.05	3,893.79	1,128.07	902.75	225.32	5.007	
9,900.00	6,067.39	9,653.60	6,067.40	116.35	115.55	90.00	601.05	3,993.79	1,128.07	896.86	231.21	4.879	
10,000.00	6,067.66	9,753.60	6,067.66	119.27	118.50	90.00	601.05	4,093.79	1,128.07	890.97	237.11	4.758	
10,100.00	6,067.92	9,853.60	6,067.93	122.20	121.46	90.00	601.05	4,193.79	1,128.07	885.06	243.01	4.642	
10,200.00	6,068.19	9,953.60	6,068.20	125.14	124.42	90.00	601.05	4,293.79	1,128.07	879.15	248.92	4.532	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 601 1H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,300.00	6,068.46	10,053.60	6,068.46	128.08	127.38	90.00	601.05	4,393.79	1,128.07	873.24	254.84	4.427	
10,400.00	6,068.72	10,153.60	6,068.73	131.02	130.34	90.00	601.05	4,493.79	1,128.07	867.32	260.76	4.326	
10,500.00	6,068.99	10,253.60	6,068.99	133.96	133.30	90.00	601.05	4,593.79	1,128.07	861.39	266.68	4.230	
10,600.00	6,069.25	10,353.60	6,069.26	136.91	136.27	90.00	601.05	4,693.79	1,128.07	855.46	272.61	4.138	
10,700.00	6,069.52	10,453.60	6,069.53	139.86	139.24	90.00	601.05	4,793.79	1,128.07	849.53	278.54	4.050	
10,800.00	6,069.79	10,553.60	6,069.79	142.81	142.21	90.00	601.05	4,893.79	1,128.07	843.59	284.48	3.965	
10,900.00	6,070.05	10,653.60	6,070.06	145.77	145.19	90.00	601.05	4,993.79	1,128.07	837.65	290.42	3.884	
11,000.00	6,070.32	10,753.60	6,070.33	148.73	148.16	90.00	601.05	5,093.79	1,128.07	831.71	296.36	3.806	
11,100.00	6,070.58	10,853.60	6,070.59	151.69	151.14	90.00	601.05	5,193.79	1,128.07	825.76	302.31	3.732	
11,200.00	6,070.85	10,953.60	6,070.86	154.65	154.11	90.00	601.05	5,293.79	1,128.07	819.81	308.26	3.660	
11,300.00	6,071.12	11,053.60	6,071.12	157.61	157.09	90.00	601.05	5,393.79	1,128.07	813.86	314.21	3.590	
11,400.00	6,071.38	11,153.60	6,071.39	160.58	160.07	90.00	601.05	5,493.79	1,128.07	807.91	320.17	3.523	
11,500.00	6,071.65	11,253.60	6,071.66	163.54	163.05	90.00	601.05	5,593.79	1,128.07	801.95	326.12	3.459	
11,600.00	6,071.91	11,353.60	6,071.92	166.51	166.03	90.00	601.05	5,693.79	1,128.07	795.99	332.08	3.397	
11,700.00	6,072.18	11,453.60	6,072.19	169.48	169.02	90.00	601.05	5,793.79	1,128.07	790.03	338.04	3.337	
11,800.00	6,072.45	11,553.60	6,072.46	172.46	172.00	90.00	601.05	5,893.79	1,128.07	784.06	344.01	3.279	
11,900.00	6,072.71	11,653.60	6,072.72	175.43	174.98	90.00	601.05	5,993.79	1,128.07	778.10	349.97	3.223	
12,000.00	6,072.98	11,753.60	6,072.99	178.40	177.97	90.00	601.05	6,093.79	1,128.07	772.13	355.94	3.169	
12,100.00	6,073.24	11,853.60	6,073.25	181.38	180.96	90.00	601.05	6,193.78	1,128.07	766.16	361.91	3.117	
12,200.00	6,073.51	11,953.60	6,073.52	184.36	183.94	90.00	601.05	6,293.78	1,128.07	760.19	367.88	3.066	
12,300.00	6,073.78	12,053.60	6,073.79	187.33	186.93	90.00	601.05	6,393.78	1,128.07	754.21	373.86	3.017	
12,400.00	6,074.04	12,153.60	6,074.05	190.31	189.92	90.00	601.05	6,493.78	1,128.07	748.24	379.83	2.970	
12,500.00	6,074.31	12,253.60	6,074.32	193.29	192.91	90.00	601.05	6,593.78	1,128.07	742.26	385.81	2.924	
12,600.00	6,074.58	12,353.60	6,074.59	196.27	195.90	90.00	601.05	6,693.78	1,128.07	736.29	391.78	2.879	
12,700.00	6,074.84	12,453.60	6,074.85	199.26	198.89	90.00	601.05	6,793.78	1,128.07	730.31	397.76	2.836	
12,800.00	6,075.11	12,553.60	6,075.12	202.24	201.88	90.00	601.05	6,893.78	1,128.07	724.33	403.74	2.794	
12,900.00	6,075.37	12,653.60	6,075.38	205.22	204.87	90.00	601.05	6,993.78	1,128.07	718.35	409.72	2.753	
13,000.00	6,075.64	12,753.60	6,075.65	208.21	207.87	90.00	601.05	7,093.78	1,128.07	712.36	415.71	2.714	
13,100.00	6,075.91	12,853.60	6,075.92	211.19	210.86	90.00	601.05	7,193.78	1,128.07	706.38	421.69	2.675	
13,200.00	6,076.17	12,953.60	6,076.18	214.18	213.85	90.00	601.05	7,293.78	1,128.07	700.40	427.68	2.638	
13,300.00	6,076.44	13,053.60	6,076.45	217.16	216.85	90.00	601.05	7,393.78	1,128.07	694.41	433.66	2.601	
13,400.00	6,076.70	13,153.60	6,076.72	220.15	219.84	90.00	601.05	7,493.78	1,128.07	688.42	439.65	2.566	
13,500.00	6,076.97	13,253.60	6,076.98	223.14	222.84	90.00	601.05	7,593.78	1,128.07	682.43	445.64	2.531	
13,600.00	6,077.24	13,353.60	6,077.25	226.13	225.83	90.00	601.05	7,693.78	1,128.07	676.45	451.62	2.498	
13,700.00	6,077.50	13,453.60	6,077.51	229.12	228.83	90.00	601.05	7,793.78	1,128.07	670.46	457.61	2.465	
13,800.00	6,077.77	13,553.60	6,077.78	232.11	231.82	90.00	601.05	7,893.78	1,128.07	664.47	463.60	2.433	
13,843.40	6,077.88	13,597.01	6,077.90	233.40	233.12	90.00	601.05	7,937.18	1,128.07	661.87	466.20	2.420	
13,887.55	6,078.00	13,636.27	6,078.00	234.72	234.30	90.00	601.05	7,976.44	1,128.08	659.45	468.63	2.407 SF	

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 602 1H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			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	132.79	-52.06	56.24	76.63				
100.00	100.00	100.00	100.00	0.18	0.18	132.79	-52.06	56.24	76.63	76.27	0.36	213.770	
200.00	200.00	200.00	200.00	0.54	0.54	132.79	-52.06	56.24	76.63	75.56	1.08	71.257	
300.00	300.00	300.00	300.00	0.90	0.90	132.79	-52.06	56.24	76.63	74.84	1.79	42.754	
400.00	400.00	400.00	400.00	1.25	1.25	132.79	-52.06	56.24	76.63	74.12	2.51	30.539	
500.00	500.00	500.00	500.00	1.61	1.61	132.79	-52.06	56.24	76.63	73.40	3.23	23.752 CC, ES	
600.00	599.98	597.79	597.77	1.97	1.95	129.71	-53.70	56.54	79.11	75.18	3.93	20.108	
700.00	699.84	694.89	694.74	2.33	2.27	134.07	-58.57	57.44	86.91	82.25	4.66	18.659	
800.00	799.45	790.66	790.16	2.70	2.60	139.72	-66.54	58.91	100.79	95.39	5.40	18.661	
900.00	898.70	884.46	883.30	3.06	2.94	145.29	-77.39	60.90	121.38	115.23	6.15	19.736	
1,000.00	997.47	978.99	976.88	3.44	3.29	150.15	-90.56	63.33	148.08	141.24	6.85	21.627	
1,100.00	1,095.62	1,073.51	1,070.43	3.83	3.65	153.99	-103.84	65.78	178.72	171.20	7.52	23.768	
1,200.00	1,193.06	1,166.84	1,162.80	4.25	4.01	157.00	-116.96	68.20	212.99	204.79	8.20	25.985	
1,300.00	1,289.64	1,258.86	1,253.89	4.68	4.37	159.40	-129.89	70.58	250.77	241.90	8.87	28.269	
1,400.00	1,385.27	1,349.48	1,343.57	5.14	4.72	161.33	-142.63	72.93	291.94	282.40	9.54	30.591	
1,500.00	1,480.00	1,438.83	1,432.00	5.63	5.08	163.04	-155.18	75.24	335.91	325.70	10.21	32.887	
1,600.00	1,574.64	1,528.03	1,520.29	6.14	5.44	164.48	-167.72	77.55	380.38	369.50	10.88	34.967	
1,700.00	1,669.28	1,617.24	1,608.58	6.65	5.80	165.61	-180.26	79.86	425.00	413.45	11.55	36.803	
1,800.00	1,763.91	1,706.45	1,696.87	7.17	6.16	166.53	-192.80	82.17	469.73	457.50	12.22	38.430	
1,900.00	1,858.55	1,795.66	1,785.17	7.70	6.52	167.29	-205.33	84.49	514.54	501.63	12.90	39.879	
2,000.00	1,953.18	1,884.86	1,873.46	8.23	6.88	167.93	-217.87	86.80	559.40	545.82	13.59	41.176	
2,100.00	2,047.82	1,974.07	1,961.75	8.77	7.24	168.48	-230.41	89.11	604.32	590.05	14.27	42.343	
2,200.00	2,142.45	2,063.28	2,050.04	9.31	7.61	168.95	-242.95	91.42	649.28	634.31	14.96	43.396	
2,300.00	2,237.09	2,152.49	2,138.33	9.86	7.97	169.36	-255.48	93.73	694.26	678.61	15.65	44.352	
2,400.00	2,331.73	2,241.69	2,226.63	10.40	8.34	169.72	-268.02	96.04	739.27	722.92	16.35	45.223	
2,500.00	2,426.36	2,330.90	2,314.92	10.95	8.70	170.03	-280.56	98.35	784.30	767.26	17.04	46.019	
2,600.00	2,521.00	2,420.11	2,403.21	11.50	9.07	170.32	-293.10	100.66	829.35	811.61	17.74	46.749	
2,700.00	2,615.63	2,509.32	2,491.50	12.05	9.43	170.57	-305.63	102.97	874.41	855.97	18.44	47.420	
2,800.00	2,710.27	2,598.52	2,579.79	12.61	9.80	170.80	-318.17	105.28	919.49	900.35	19.14	48.040	
2,900.00	2,804.90	2,687.73	2,668.08	13.16	10.17	171.01	-330.71	107.59	964.57	944.73	19.84	48.614	
3,000.00	2,899.54	2,776.94	2,756.38	13.72	10.54	171.20	-343.25	109.90	1,009.67	989.12	20.54	49.147	
3,100.00	2,994.17	2,866.15	2,844.67	14.27	10.90	171.37	-355.79	112.21	1,054.77	1,033.52	21.25	49.642	
3,200.00	3,088.81	2,955.35	2,932.96	14.83	11.27	171.53	-368.32	114.53	1,099.88	1,077.93	21.95	50.104	
3,300.00	3,183.45	3,044.56	3,021.25	15.39	11.64	171.68	-380.86	116.84	1,145.00	1,122.34	22.66	50.536	
3,400.00	3,278.08	3,133.77	3,109.54	15.95	12.01	171.81	-393.40	119.15	1,190.12	1,166.75	23.36	50.941	
3,500.00	3,372.72	3,222.98	3,197.84	16.51	12.37	171.94	-405.94	121.46	1,235.24	1,211.17	24.07	51.320	
3,600.00	3,467.35	3,312.18	3,286.13	17.07	12.74	172.06	-418.47	123.77	1,280.37	1,255.60	24.78	51.677	
3,700.00	3,561.99	3,401.39	3,374.42	17.63	13.11	172.16	-431.01	126.08	1,325.51	1,300.02	25.48	52.013	
3,800.00	3,656.62	3,490.60	3,462.71	18.19	13.48	172.27	-443.55	128.39	1,370.65	1,344.45	26.19	52.330	
3,900.00	3,751.26	3,579.81	3,551.00	18.75	13.85	172.36	-456.09	130.70	1,415.79	1,388.89	26.90	52.630	
4,000.00	3,845.90	3,669.01	3,639.29	19.31	14.22	172.45	-468.62	133.01	1,460.93	1,433.32	27.61	52.914	
4,100.00	3,940.53	3,758.22	3,727.59	19.87	14.59	172.53	-481.16	135.32	1,506.08	1,477.76	28.32	53.182	
4,200.00	4,035.17	3,847.43	3,815.88	20.43	14.95	172.61	-493.70	137.63	1,551.23	1,522.20	29.03	53.437	
4,300.00	4,129.80	3,936.64	3,904.17	20.99	15.32	172.69	-506.24	139.94	1,596.38	1,566.64	29.74	53.679	
4,400.00	4,224.44	4,025.84	3,992.46	21.56	15.69	172.76	-518.78	142.25	1,641.54	1,611.09	30.45	53.910	
4,500.00	4,319.07	4,115.05	4,080.75	22.12	16.06	172.83	-531.31	144.57	1,686.69	1,655.53	31.16	54.129	
4,600.00	4,413.71	4,204.26	4,169.05	22.68	16.43	172.89	-543.85	146.88	1,731.85	1,699.98	31.87	54.338	
4,700.00	4,508.34	4,293.47	4,257.34	23.25	16.80	172.95	-556.39	149.19	1,777.01	1,744.42	32.58	54.538	
4,800.00	4,602.98	4,382.67	4,345.63	23.81	17.17	173.01	-568.93	151.50	1,822.17	1,788.87	33.29	54.728	
4,900.00	4,697.62	4,471.88	4,433.92	24.37	17.54	173.06	-581.46	153.81	1,867.33	1,833.32	34.01	54.911	
5,000.00	4,792.25	4,561.09	4,522.21	24.94	17.91	173.11	-594.00	156.12	1,912.49	1,877.77	34.72	55.085	
5,100.00	4,886.89	4,650.30	4,610.50	25.50	18.28	173.16	-606.54	158.43	1,957.66	1,922.23	35.43	55.252	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 602 1H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		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
5,200.00	4,981.52	4,739.50	4,698.80	26.06	18.65	173.21	-619.08	160.74	2,002.82	1,966.68	36.14	55.412	
5,300.00	5,076.16	4,828.71	4,787.09	26.63	19.02	173.25	-631.61	163.05	2,047.99	2,011.13	36.86	55.566	
5,400.00	5,170.79	4,917.92	4,875.38	27.19	19.39	173.30	-644.15	165.36	2,093.16	2,055.59	37.57	55.714	
5,500.00	5,265.43	5,007.13	4,963.67	27.76	19.76	173.34	-656.69	167.67	2,138.32	2,100.04	38.28	55.856	
5,600.00	5,360.06	5,096.33	5,051.96	28.32	20.12	173.38	-669.23	169.98	2,183.49	2,144.50	39.00	55.992	
5,700.00	5,454.58	5,185.49	5,140.20	28.89	20.49	157.86	-681.76	172.29	2,228.55	2,188.84	39.71	56.119	
5,800.00	5,547.66	5,273.63	5,227.44	29.45	20.86	136.24	-694.15	174.58	2,272.74	2,232.31	40.43	56.220	
5,900.00	5,637.51	5,359.07	5,312.00	29.98	21.21	121.09	-706.15	176.79	2,315.44	2,274.31	41.13	56.299	
6,000.00	5,722.36	5,441.75	5,393.82	30.50	21.56	110.68	-717.77	179.40	2,356.30	2,314.47	41.83	56.333	
6,100.00	5,800.57	5,530.28	5,480.74	31.00	21.93	103.34	-730.11	190.33	2,394.87	2,352.25	42.63	56.182	
6,200.00	5,870.60	5,626.61	5,573.02	31.50	22.33	98.07	-743.19	214.42	2,430.50	2,386.92	43.58	55.771	
6,300.00	5,931.11	5,733.42	5,670.54	32.00	22.78	94.33	-757.01	255.45	2,462.51	2,417.74	44.77	55.008	
6,400.00	5,980.92	5,853.97	5,771.97	32.54	23.29	91.81	-771.37	318.74	2,490.17	2,443.87	46.30	53.779	
6,500.00	6,019.04	5,991.94	5,873.25	33.15	23.95	90.30	-785.68	411.01	2,512.69	2,464.30	48.38	51.931	
6,600.00	6,044.75	6,150.41	5,965.50	33.88	24.99	89.65	-798.69	538.81	2,529.15	2,477.84	51.31	49.294	
6,700.00	6,057.54	6,329.85	6,033.53	34.79	26.94	89.66	-808.22	704.07	2,538.59	2,483.13	55.46	45.776	
6,800.00	6,059.15	6,522.89	6,059.01	35.91	30.05	90.00	-811.69	894.80	2,540.82	2,480.00	60.82	41.776	
6,900.00	6,059.41	6,622.89	6,059.27	37.29	31.97	90.00	-811.65	994.80	2,540.78	2,475.97	64.81	39.204	
7,000.00	6,059.68	6,722.89	6,059.54	38.92	34.06	90.00	-811.61	1,094.79	2,540.74	2,471.66	69.08	36.779	
7,100.00	6,059.94	6,822.89	6,059.81	40.76	36.28	90.00	-811.57	1,194.79	2,540.70	2,467.10	73.60	34.521	
7,200.00	6,060.21	6,922.89	6,060.08	42.78	38.61	90.00	-811.53	1,294.79	2,540.66	2,462.34	78.32	32.440	
7,300.00	6,060.48	7,022.89	6,060.35	44.94	41.04	90.00	-811.50	1,394.79	2,540.62	2,457.41	83.21	30.534	
7,400.00	6,060.74	7,122.89	6,060.62	47.22	43.54	90.00	-811.46	1,494.79	2,540.58	2,452.35	88.24	28.793	
7,500.00	6,061.01	7,222.89	6,060.88	49.59	46.11	90.00	-811.42	1,594.79	2,540.54	2,447.16	93.38	27.206	
7,600.00	6,061.27	7,322.89	6,061.15	52.04	48.73	90.00	-811.38	1,694.79	2,540.50	2,441.88	98.63	25.759	
7,700.00	6,061.54	7,422.89	6,061.42	54.56	51.39	90.00	-811.34	1,794.79	2,540.46	2,436.51	103.96	24.438	
7,800.00	6,061.81	7,522.89	6,061.69	57.13	54.09	90.00	-811.30	1,894.79	2,540.42	2,431.07	109.36	23.230	
7,900.00	6,062.07	7,622.89	6,061.96	59.75	56.82	90.00	-811.26	1,994.79	2,540.39	2,425.56	114.82	22.125	
8,000.00	6,062.34	7,722.89	6,062.23	62.40	59.57	90.00	-811.22	2,094.79	2,540.35	2,420.01	120.34	21.110	
8,100.00	6,062.60	7,822.89	6,062.49	65.09	62.36	90.00	-811.18	2,194.79	2,540.31	2,414.41	125.90	20.177	
8,200.00	6,062.87	7,922.89	6,062.76	67.81	65.16	90.00	-811.14	2,294.79	2,540.27	2,408.76	131.51	19.317	
8,300.00	6,063.14	8,022.89	6,063.03	70.55	67.98	90.00	-811.11	2,394.79	2,540.23	2,403.09	137.14	18.522	
8,400.00	6,063.40	8,122.89	6,063.30	73.32	70.81	90.00	-811.07	2,494.79	2,540.19	2,397.38	142.81	17.787	
8,500.00	6,063.67	8,222.89	6,063.57	76.11	73.67	90.00	-811.03	2,594.79	2,540.15	2,391.64	148.51	17.104	
8,600.00	6,063.93	8,322.89	6,063.83	78.91	76.53	90.00	-810.99	2,694.79	2,540.11	2,385.88	154.24	16.469	
8,700.00	6,064.20	8,422.89	6,064.10	81.73	79.40	90.00	-810.95	2,794.79	2,540.07	2,380.09	159.98	15.877	
8,800.00	6,064.47	8,522.89	6,064.37	84.57	82.29	90.00	-810.91	2,894.79	2,540.03	2,374.29	165.74	15.325	
8,900.00	6,064.73	8,622.89	6,064.64	87.41	85.18	90.00	-810.87	2,994.79	2,540.00	2,368.47	171.53	14.808	
9,000.00	6,065.00	8,722.89	6,064.91	90.27	88.08	90.00	-810.83	3,094.79	2,539.96	2,362.63	177.32	14.324	
9,100.00	6,065.26	8,822.89	6,065.18	93.14	90.99	90.00	-810.79	3,194.79	2,539.92	2,356.78	183.14	13.869	
9,200.00	6,065.53	8,922.89	6,065.44	96.01	93.90	90.00	-810.75	3,294.79	2,539.88	2,350.92	188.96	13.441	
9,300.00	6,065.80	9,022.89	6,065.71	98.90	96.82	90.00	-810.72	3,394.79	2,539.84	2,345.04	194.80	13.038	
9,400.00	6,066.06	9,122.89	6,065.98	101.79	99.75	90.00	-810.68	3,494.79	2,539.80	2,339.15	200.65	12.658	
9,500.00	6,066.33	9,222.89	6,066.25	104.69	102.68	90.00	-810.64	3,594.79	2,539.76	2,333.25	206.51	12.299	
9,600.00	6,066.59	9,322.89	6,066.52	107.60	105.61	90.00	-810.60	3,694.79	2,539.72	2,327.35	212.37	11.959	
9,700.00	6,066.86	9,422.89	6,066.78	110.51	108.55	90.00	-810.56	3,794.78	2,539.68	2,321.43	218.25	11.637	
9,800.00	6,067.13	9,522.89	6,067.05	113.42	111.50	90.00	-810.52	3,894.78	2,539.64	2,315.51	224.13	11.331	
9,900.00	6,067.39	9,622.89	6,067.32	116.35	114.44	90.00	-810.48	3,994.78	2,539.60	2,309.58	230.02	11.041	
10,000.00	6,067.66	9,722.89	6,067.59	119.27	117.39	90.00	-810.44	4,094.78	2,539.57	2,303.64	235.92	10.764	
10,100.00	6,067.92	9,822.89	6,067.86	122.20	120.35	90.00	-810.40	4,194.78	2,539.53	2,297.70	241.83	10.501	
10,200.00	6,068.19	9,922.89	6,068.13	125.14	123.30	90.00	-810.36	4,294.78	2,539.49	2,291.75	247.74	10.251	
10,300.00	6,068.46	10,022.89	6,068.39	128.08	126.26	90.00	-810.32	4,394.78	2,539.45	2,285.80	253.65	10.012	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 602 1H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			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	
10,400.00	6,068.72	10,122.89	6,068.66	131.02	129.22	90.00	-810.29	4,494.78	2,539.41	2,279.84	259.57	9.783	
10,500.00	6,068.99	10,222.89	6,068.93	133.96	132.19	90.00	-810.25	4,594.78	2,539.37	2,273.88	265.49	9.565	
10,600.00	6,069.25	10,322.89	6,069.20	136.91	135.15	90.00	-810.21	4,694.78	2,539.33	2,267.91	271.42	9.356	
10,700.00	6,069.52	10,422.89	6,069.47	139.86	138.12	90.00	-810.17	4,794.78	2,539.29	2,261.94	277.35	9.155	
10,800.00	6,069.79	10,522.89	6,069.73	142.81	141.09	90.00	-810.13	4,894.78	2,539.25	2,255.96	283.29	8.963	
10,900.00	6,070.05	10,622.89	6,070.00	145.77	144.06	90.00	-810.09	4,994.78	2,539.21	2,249.98	289.23	8.779	
11,000.00	6,070.32	10,722.89	6,070.27	148.73	147.03	90.00	-810.05	5,094.78	2,539.18	2,244.00	295.17	8.602	
11,100.00	6,070.58	10,822.89	6,070.54	151.69	150.01	90.00	-810.01	5,194.78	2,539.14	2,238.02	301.12	8.432	
11,200.00	6,070.85	10,922.89	6,070.81	154.65	152.98	90.00	-809.97	5,294.78	2,539.10	2,232.03	307.07	8.269	
11,300.00	6,071.12	11,022.89	6,071.08	157.61	155.96	90.00	-809.93	5,394.78	2,539.06	2,226.04	313.02	8.111	
11,400.00	6,071.38	11,122.89	6,071.34	160.58	158.94	90.00	-809.90	5,494.78	2,539.02	2,220.04	318.98	7.960	
11,500.00	6,071.65	11,222.89	6,071.61	163.54	161.92	90.00	-809.86	5,594.78	2,538.98	2,214.05	324.93	7.814	
11,600.00	6,071.91	11,322.89	6,071.88	166.51	164.90	90.00	-809.82	5,694.78	2,538.94	2,208.05	330.89	7.673	
11,700.00	6,072.18	11,422.89	6,072.15	169.48	167.88	90.00	-809.78	5,794.78	2,538.90	2,202.05	336.86	7.537	
11,800.00	6,072.45	11,522.89	6,072.42	172.46	170.86	90.00	-809.74	5,894.78	2,538.86	2,196.04	342.82	7.406	
11,900.00	6,072.71	11,622.89	6,072.68	175.43	173.85	90.00	-809.70	5,994.78	2,538.82	2,190.04	348.79	7.279	
12,000.00	6,072.98	11,722.89	6,072.95	178.40	176.83	90.00	-809.66	6,094.78	2,538.78	2,184.03	354.75	7.156	
12,100.00	6,073.24	11,822.89	6,073.22	181.38	179.82	90.00	-809.62	6,194.78	2,538.75	2,178.02	360.72	7.038	
12,200.00	6,073.51	11,922.89	6,073.49	184.36	182.80	90.00	-809.58	6,294.78	2,538.71	2,172.01	366.69	6.923	
12,300.00	6,073.78	12,022.89	6,073.76	187.33	185.79	90.00	-809.54	6,394.77	2,538.67	2,166.00	372.67	6.812	
12,400.00	6,074.04	12,122.89	6,074.03	190.31	188.78	90.00	-809.50	6,494.77	2,538.63	2,159.99	378.64	6.705	
12,500.00	6,074.31	12,222.89	6,074.29	193.29	191.77	90.00	-809.47	6,594.77	2,538.59	2,153.97	384.62	6.600	
12,600.00	6,074.58	12,322.89	6,074.56	196.27	194.76	90.00	-809.43	6,694.77	2,538.55	2,147.95	390.60	6.499	
12,700.00	6,074.84	12,422.89	6,074.83	199.26	197.75	90.00	-809.39	6,794.77	2,538.51	2,141.94	396.57	6.401	
12,800.00	6,075.11	12,522.89	6,075.10	202.24	200.74	90.00	-809.35	6,894.77	2,538.47	2,135.92	402.56	6.306	
12,900.00	6,075.37	12,622.89	6,075.37	205.22	203.73	90.00	-809.31	6,994.77	2,538.43	2,129.90	408.54	6.213	
13,000.00	6,075.64	12,722.89	6,075.63	208.21	206.72	90.00	-809.27	7,094.77	2,538.39	2,123.88	414.52	6.124	
13,100.00	6,075.91	12,822.89	6,075.90	211.19	209.71	90.00	-809.23	7,194.77	2,538.36	2,117.85	420.50	6.036	
13,200.00	6,076.17	12,922.89	6,076.17	214.18	212.70	90.00	-809.19	7,294.77	2,538.32	2,111.83	426.49	5.952	
13,300.00	6,076.44	13,022.89	6,076.44	217.16	215.70	90.00	-809.15	7,394.77	2,538.28	2,105.80	432.47	5.869	
13,400.00	6,076.70	13,122.89	6,076.71	220.15	218.69	90.00	-809.11	7,494.77	2,538.24	2,099.78	438.46	5.789	
13,500.00	6,076.97	13,222.89	6,076.98	223.14	221.69	90.00	-809.08	7,594.77	2,538.20	2,093.75	444.45	5.711	
13,600.00	6,077.24	13,322.89	6,077.24	226.13	224.68	90.00	-809.04	7,694.77	2,538.16	2,087.72	450.44	5.635	
13,700.00	6,077.50	13,422.89	6,077.51	229.12	227.68	90.00	-809.00	7,794.77	2,538.12	2,081.69	456.43	5.561	
13,800.00	6,077.77	13,522.89	6,077.78	232.11	230.67	90.00	-808.96	7,894.77	2,538.08	2,075.67	462.41	5.489	
13,880.90	6,077.98	13,603.59	6,078.00	234.53	233.09	90.00	-808.93	7,975.47	2,538.06	2,070.80	467.26	5.432	
13,887.55	6,078.00	13,604.82	6,078.00	234.72	233.13	90.00	-808.93	7,976.71	2,538.06	2,070.58	467.48	5.429 SF	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 602 2H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	127.29	-31.68	41.60	52.28				
100.00	100.00	100.00	100.00	0.18	0.18	127.29	-31.68	41.60	52.28	51.92	0.36	145.850	
200.00	200.00	200.00	200.00	0.54	0.54	127.29	-31.68	41.60	52.28	51.21	1.08	48.617	
300.00	300.00	300.00	300.00	0.90	0.90	127.29	-31.68	41.60	52.28	50.49	1.79	29.170	
400.00	400.00	400.00	400.00	1.25	1.25	127.29	-31.68	41.60	52.28	49.77	2.51	20.836	
500.00	500.00	500.00	500.00	1.61	1.61	127.29	-31.68	41.60	52.28	49.06	3.23	16.206 CC, ES	
600.00	599.98	598.73	598.71	1.97	1.95	125.42	-33.37	41.67	54.40	50.46	3.93	13.833	
700.00	699.84	696.75	696.60	2.33	2.28	132.72	-38.42	41.89	61.45	56.80	4.65	13.207	
800.00	799.45	793.38	792.87	2.70	2.61	141.47	-46.67	42.25	74.85	69.45	5.40	13.859	
900.00	898.70	887.98	886.80	3.06	2.95	149.24	-57.88	42.73	95.47	89.32	6.16	15.507	
1,000.00	997.47	979.96	977.72	3.44	3.29	155.21	-71.75	43.34	123.38	116.48	6.90	17.885	
1,100.00	1,095.62	1,068.80	1,065.07	3.83	3.64	159.53	-87.91	44.04	158.21	150.60	7.61	20.789	
1,200.00	1,193.06	1,154.06	1,148.39	4.25	3.99	162.62	-105.95	44.82	199.52	191.23	8.30	24.049	
1,300.00	1,289.64	1,235.38	1,227.33	4.68	4.34	164.83	-125.45	45.67	246.85	237.91	8.95	27.592	
1,400.00	1,385.27	1,312.47	1,301.62	5.14	4.69	166.43	-146.01	46.56	299.78	290.22	9.56	31.356	
1,500.00	1,480.00	1,385.45	1,371.42	5.63	5.04	167.77	-167.30	47.48	357.46	347.32	10.14	35.251	
1,600.00	1,574.64	1,455.64	1,438.01	6.14	5.39	168.85	-189.44	48.44	417.53	406.85	10.68	39.092	
1,700.00	1,669.28	1,523.25	1,501.63	6.65	5.74	169.67	-212.31	49.44	479.60	468.40	11.20	42.823	
1,800.00	1,763.91	1,588.36	1,562.37	7.17	6.10	170.30	-235.75	50.45	543.53	531.83	11.70	46.467	
1,900.00	1,858.55	1,654.21	1,623.26	7.70	6.48	170.82	-260.79	51.54	609.14	596.95	12.19	49.956	
2,000.00	1,953.18	1,729.12	1,692.35	8.23	6.92	171.31	-289.70	52.80	675.27	662.51	12.75	52.957	
2,100.00	2,047.82	1,804.03	1,761.45	8.77	7.36	171.71	-318.61	54.05	741.41	728.09	13.32	55.668	
2,200.00	2,142.45	1,878.93	1,830.54	9.31	7.82	172.04	-347.51	55.31	807.57	793.67	13.89	58.122	
2,300.00	2,237.09	1,953.84	1,899.64	9.86	8.27	172.33	-376.42	56.56	873.74	859.26	14.48	60.350	
2,400.00	2,331.73	2,028.75	1,968.73	10.40	8.74	172.57	-405.33	57.81	939.93	924.86	15.07	62.378	
2,500.00	2,426.36	2,103.66	2,037.83	10.95	9.20	172.78	-434.24	59.07	1,006.12	990.45	15.66	64.230	
2,600.00	2,521.00	2,178.57	2,106.92	11.50	9.67	172.97	-463.14	60.32	1,072.32	1,056.05	16.27	65.924	
2,700.00	2,615.63	2,253.48	2,176.01	12.05	10.15	173.13	-492.05	61.58	1,138.52	1,121.65	16.87	67.479	
2,800.00	2,710.27	2,328.39	2,245.11	12.61	10.62	173.28	-520.96	62.83	1,204.73	1,187.25	17.48	68.910	
2,900.00	2,804.90	2,403.29	2,314.20	13.16	11.10	173.41	-549.87	64.09	1,270.95	1,252.85	18.10	70.231	
3,000.00	2,899.54	2,478.20	2,383.30	13.72	11.58	173.53	-578.77	65.34	1,337.16	1,318.45	18.71	71.451	
3,100.00	2,994.17	2,553.11	2,452.39	14.27	12.06	173.64	-607.68	66.60	1,403.38	1,384.05	19.34	72.582	
3,200.00	3,088.81	2,628.02	2,521.49	14.83	12.54	173.73	-636.59	67.85	1,469.60	1,449.65	19.96	73.632	
3,300.00	3,183.45	2,702.93	2,590.58	15.39	13.02	173.82	-665.49	69.11	1,535.83	1,515.24	20.58	74.610	
3,400.00	3,278.08	2,777.84	2,659.68	15.95	13.51	173.90	-694.40	70.36	1,602.05	1,580.84	21.21	75.521	
3,500.00	3,372.72	2,852.74	2,728.77	16.51	13.99	173.98	-723.31	71.62	1,668.28	1,646.44	21.84	76.373	
3,600.00	3,467.35	2,927.65	2,797.87	17.07	14.48	174.05	-752.22	72.87	1,734.51	1,712.04	22.48	77.171	
3,700.00	3,561.99	3,002.56	2,866.96	17.63	14.96	174.11	-781.12	74.13	1,800.74	1,777.63	23.11	77.919	
3,800.00	3,656.62	3,077.47	2,936.06	18.19	15.45	174.17	-810.03	75.38	1,866.97	1,843.23	23.75	78.621	
3,900.00	3,751.26	3,152.38	3,005.15	18.75	15.94	174.23	-838.94	76.64	1,933.21	1,908.82	24.38	79.281	
4,000.00	3,845.90	3,227.29	3,074.25	19.31	16.43	174.28	-867.85	77.89	1,999.44	1,974.42	25.02	79.904	
4,100.00	3,940.53	3,302.20	3,143.34	19.87	16.92	174.33	-896.75	79.15	2,065.68	2,040.01	25.66	80.492	
4,200.00	4,035.17	3,377.10	3,212.43	20.43	17.41	174.37	-925.66	80.40	2,131.91	2,105.61	26.30	81.046	
4,300.00	4,129.80	3,452.01	3,281.53	20.99	17.90	174.42	-954.57	81.66	2,198.15	2,171.20	26.95	81.571	
4,400.00	4,224.44	3,526.92	3,350.62	21.56	18.39	174.46	-983.48	82.91	2,264.38	2,236.79	27.59	82.069	
4,500.00	4,319.07	3,601.83	3,419.72	22.12	18.88	174.49	-1,012.38	84.16	2,330.62	2,302.39	28.24	82.541	
4,600.00	4,413.71	3,676.74	3,488.81	22.68	19.37	174.53	-1,041.29	85.42	2,396.86	2,367.98	28.88	82.989	
4,700.00	4,508.34	3,751.65	3,557.91	23.25	19.86	174.56	-1,070.20	86.67	2,463.10	2,433.57	29.53	83.414	
4,800.00	4,602.98	3,826.56	3,627.00	23.81	20.36	174.60	-1,099.11	87.93	2,529.34	2,499.16	30.18	83.819	
4,900.00	4,697.62	3,901.46	3,696.10	24.37	20.85	174.63	-1,128.01	89.18	2,595.58	2,564.75	30.82	84.205	
5,000.00	4,792.25	3,976.37	3,765.19	24.94	21.34	174.66	-1,156.92	90.44	2,661.82	2,630.34	31.47	84.573	
5,100.00	4,886.89	4,051.28	3,834.29	25.50	21.83	174.68	-1,185.83	91.69	2,728.06	2,695.93	32.12	84.924	

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 602 2H - OH - Plan #2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		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
5,200.00	4,981.52	4,126.19	3,903.38	26.06	22.33	174.71	-1,214.74	92.95	2,794.30	2,761.52	32.77	85.259	
5,300.00	5,076.16	4,201.10	3,972.48	26.63	22.82	174.74	-1,243.64	94.20	2,860.54	2,827.11	33.43	85.579	
5,400.00	5,170.79	4,276.01	4,041.57	27.19	23.32	174.76	-1,272.55	95.46	2,926.78	2,892.70	34.08	85.886	
5,500.00	5,265.43	4,350.92	4,110.67	27.76	23.81	174.78	-1,301.46	96.71	2,993.02	2,958.29	34.73	86.179	
5,600.00	5,360.06	4,425.82	4,179.76	28.32	24.30	174.80	-1,330.37	97.97	3,059.26	3,023.88	35.38	86.460	
5,700.00	5,454.58	4,500.68	4,248.80	28.89	24.80	157.48	-1,359.25	99.22	3,125.44	3,089.40	36.04	86.726	
5,800.00	5,547.66	4,574.62	4,317.01	29.45	25.29	132.86	-1,387.79	100.46	3,190.77	3,154.08	36.69	86.966	
5,900.00	5,637.51	4,646.23	4,383.06	29.98	25.76	114.93	-1,415.42	101.66	3,254.18	3,216.86	37.33	87.182	
6,000.00	5,722.36	4,714.10	4,445.67	30.50	26.21	102.04	-1,441.61	102.80	3,314.78	3,276.84	37.94	87.359	
6,100.00	5,800.57	4,776.93	4,503.62	31.00	26.62	92.56	-1,465.86	103.85	3,371.84	3,333.29	38.56	87.452	
6,200.00	5,870.60	4,833.49	4,555.78	31.50	27.00	85.42	-1,487.68	104.80	3,424.76	3,385.57	39.19	87.384	
6,300.00	5,931.11	4,882.67	4,601.15	32.00	27.32	79.94	-1,506.66	105.62	3,473.05	3,433.15	39.90	87.052	
6,400.00	5,980.92	4,923.52	4,638.83	32.54	27.59	75.70	-1,522.43	106.30	3,516.30	3,475.58	40.72	86.356	
6,500.00	6,019.04	4,955.24	4,668.09	33.15	27.80	72.43	-1,534.67	106.84	3,554.17	3,512.48	41.70	85.234	
6,600.00	6,044.75	4,977.22	4,688.36	33.88	27.95	69.95	-1,543.15	107.20	3,586.36	3,543.51	42.86	83.685	
6,700.00	6,057.54	4,989.03	4,699.25	34.79	28.02	68.14	-1,547.71	107.40	3,612.58	3,568.41	44.17	81.783	
6,800.00	6,059.15	4,992.01	4,702.00	35.91	28.04	67.54	-1,548.86	107.45	3,633.92	3,588.30	45.62	79.655	
6,900.00	6,059.41	4,993.93	4,703.78	37.29	28.06	67.57	-1,549.60	107.48	3,656.96	3,609.75	47.21	77.466	
7,000.00	6,059.68	4,995.85	4,705.55	38.92	28.07	67.60	-1,550.34	107.52	3,682.57	3,633.67	48.90	75.304	
7,100.00	6,059.94	4,997.77	4,707.32	40.76	28.08	67.63	-1,551.08	107.55	3,710.70	3,660.02	50.68	73.222	
7,200.00	6,060.21	4,999.69	4,709.09	42.78	28.09	67.66	-1,551.82	107.58	3,741.29	3,688.79	52.51	71.255	
7,300.00	6,060.48	5,001.61	4,710.86	44.94	28.11	67.70	-1,552.56	107.61	3,774.28	3,719.92	54.37	69.421	
7,400.00	6,060.74	5,003.53	4,712.63	47.22	28.12	67.73	-1,553.31	107.64	3,809.62	3,753.37	56.25	67.731	
7,500.00	6,061.01	7,631.17	6,061.03	49.59	53.09	90.00	-2,114.92	1,596.13	3,844.05	3,747.59	96.46	39.853	
7,600.00	6,061.27	7,731.17	6,061.29	52.04	55.35	90.00	-2,114.86	1,696.13	3,843.98	3,742.34	101.65	37.817	
7,700.00	6,061.54	7,831.17	6,061.56	54.56	57.71	90.00	-2,114.80	1,796.13	3,843.92	3,737.00	106.93	35.949	
7,800.00	6,061.81	7,931.17	6,061.83	57.13	60.13	90.00	-2,114.74	1,896.13	3,843.86	3,731.58	112.28	34.234	
7,900.00	6,062.07	8,031.17	6,062.09	59.75	62.62	90.00	-2,114.68	1,996.12	3,843.80	3,726.10	117.70	32.657	
8,000.00	6,062.34	8,131.17	6,062.36	62.40	65.16	90.00	-2,114.62	2,096.12	3,843.74	3,720.57	123.18	31.205	
8,100.00	6,062.60	8,231.17	6,062.63	65.09	67.75	90.00	-2,114.56	2,196.12	3,843.68	3,714.98	128.70	29.865	
8,200.00	6,062.87	8,331.17	6,062.89	67.81	70.38	90.00	-2,114.50	2,296.12	3,843.62	3,709.35	134.27	28.626	
8,300.00	6,063.14	8,431.17	6,063.16	70.55	73.04	90.00	-2,114.44	2,396.12	3,843.56	3,703.69	139.87	27.479	
8,400.00	6,063.40	8,531.17	6,063.43	73.32	75.73	90.00	-2,114.38	2,496.12	3,843.50	3,697.99	145.51	26.414	
8,500.00	6,063.67	8,631.17	6,063.69	76.11	78.45	90.00	-2,114.32	2,596.12	3,843.44	3,692.26	151.18	25.423	
8,600.00	6,063.93	8,731.17	6,063.96	78.91	81.19	90.00	-2,114.26	2,696.12	3,843.38	3,686.51	156.87	24.500	
8,700.00	6,064.20	8,831.17	6,064.23	81.73	83.95	90.00	-2,114.19	2,796.12	3,843.32	3,680.73	162.59	23.638	
8,800.00	6,064.47	8,931.17	6,064.49	84.57	86.73	90.00	-2,114.13	2,896.12	3,843.26	3,674.93	168.33	22.832	
8,900.00	6,064.73	9,031.17	6,064.76	87.41	89.53	90.00	-2,114.07	2,996.12	3,843.20	3,669.11	174.09	22.076	
9,000.00	6,065.00	9,131.17	6,065.02	90.27	92.34	90.00	-2,114.01	3,096.12	3,843.14	3,663.27	179.87	21.367	
9,100.00	6,065.26	9,231.17	6,065.29	93.14	95.17	90.00	-2,113.95	3,196.12	3,843.08	3,657.42	185.66	20.700	
9,200.00	6,065.53	9,331.17	6,065.56	96.01	98.00	90.00	-2,113.89	3,296.12	3,843.02	3,651.56	191.46	20.072	
9,300.00	6,065.80	9,431.17	6,065.82	98.90	100.85	90.00	-2,113.83	3,396.12	3,842.96	3,645.68	197.28	19.480	
9,400.00	6,066.06	9,531.17	6,066.09	101.79	103.71	90.00	-2,113.77	3,496.12	3,842.90	3,639.79	203.11	18.920	
9,500.00	6,066.33	9,631.17	6,066.36	104.69	106.57	90.00	-2,113.71	3,596.12	3,842.84	3,633.88	208.95	18.391	
9,600.00	6,066.59	9,731.17	6,066.62	107.60	109.45	90.00	-2,113.65	3,696.12	3,842.77	3,627.97	214.80	17.890	
9,700.00	6,066.86	9,831.17	6,066.89	110.51	112.33	90.00	-2,113.59	3,796.12	3,842.71	3,622.05	220.66	17.414	
9,800.00	6,067.13	9,931.17	6,067.16	113.42	115.22	90.00	-2,113.53	3,896.12	3,842.65	3,616.12	226.53	16.963	
9,900.00	6,067.39	10,031.17	6,067.42	116.35	118.12	90.00	-2,113.47	3,996.12	3,842.59	3,610.18	232.41	16.534	
10,000.00	6,067.66	10,131.17	6,067.69	119.27	121.02	90.00	-2,113.41	4,096.12	3,842.53	3,604.24	238.29	16.125	
10,100.00	6,067.92	10,231.17	6,067.96	122.20	123.92	90.00	-2,113.35	4,196.12	3,842.47	3,598.29	244.18	15.736	
10,200.00	6,068.19	10,331.17	6,068.22	125.14	126.84	90.00	-2,113.29	4,296.12	3,842.41	3,592.33	250.08	15.365	
10,300.00	6,068.46	10,431.17	6,068.49	128.08	129.75	90.00	-2,113.23	4,396.12	3,842.35	3,586.37	255.98	15.010	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 602 2H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		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	
10,400.00	6,068.72	10,531.17	6,068.75	131.02	132.67	90.00	-2,113.17	4,496.12	3,842.29	3,580.40	261.89	14.671	
10,500.00	6,068.99	10,631.17	6,069.02	133.96	135.60	90.00	-2,113.11	4,596.11	3,842.23	3,574.42	267.81	14.347	
10,600.00	6,069.25	10,731.17	6,069.29	136.91	138.53	90.00	-2,113.05	4,696.11	3,842.17	3,568.45	273.72	14.037	
10,700.00	6,069.52	10,831.17	6,069.55	139.86	141.46	90.00	-2,112.98	4,796.11	3,842.11	3,562.46	279.65	13.739	
10,800.00	6,069.79	10,931.17	6,069.82	142.81	144.40	90.00	-2,112.92	4,896.11	3,842.05	3,556.48	285.57	13.454	
10,900.00	6,070.05	11,031.17	6,070.09	145.77	147.34	90.00	-2,112.86	4,996.11	3,841.99	3,550.48	291.50	13.180	
11,000.00	6,070.32	11,131.17	6,070.35	148.73	150.28	90.00	-2,112.80	5,096.11	3,841.93	3,544.49	297.44	12.917	
11,100.00	6,070.58	11,231.17	6,070.62	151.69	153.22	90.00	-2,112.74	5,196.11	3,841.87	3,538.49	303.38	12.664	
11,200.00	6,070.85	11,331.17	6,070.89	154.65	156.17	90.00	-2,112.68	5,296.11	3,841.81	3,532.49	309.32	12.420	
11,300.00	6,071.12	11,431.17	6,071.15	157.61	159.12	90.00	-2,112.62	5,396.11	3,841.75	3,526.49	315.26	12.186	
11,400.00	6,071.38	11,531.17	6,071.42	160.58	162.07	90.00	-2,112.56	5,496.11	3,841.69	3,520.48	321.21	11.960	
11,500.00	6,071.65	11,631.17	6,071.69	163.54	165.03	90.00	-2,112.50	5,596.11	3,841.63	3,514.47	327.16	11.742	
11,600.00	6,071.91	11,731.17	6,071.95	166.51	167.99	90.00	-2,112.44	5,696.11	3,841.56	3,508.45	333.11	11.532	
11,700.00	6,072.18	11,831.17	6,072.22	169.48	170.94	90.00	-2,112.38	5,796.11	3,841.50	3,502.44	339.06	11.330	
11,800.00	6,072.45	11,931.17	6,072.48	172.46	173.90	90.00	-2,112.32	5,896.11	3,841.44	3,496.42	345.02	11.134	
11,900.00	6,072.71	12,031.17	6,072.75	175.43	176.87	90.00	-2,112.26	5,996.11	3,841.38	3,490.40	350.98	10.945	
12,000.00	6,072.98	12,131.17	6,073.02	178.40	179.83	90.00	-2,112.20	6,096.11	3,841.32	3,484.38	356.94	10.762	
12,100.00	6,073.24	12,231.17	6,073.28	181.38	182.80	90.00	-2,112.14	6,196.11	3,841.26	3,478.36	362.91	10.585	
12,200.00	6,073.51	12,331.17	6,073.55	184.36	185.76	90.00	-2,112.08	6,296.11	3,841.20	3,472.33	368.87	10.413	
12,300.00	6,073.78	12,431.17	6,073.82	187.33	188.73	90.00	-2,112.02	6,396.11	3,841.14	3,466.30	374.84	10.247	
12,400.00	6,074.04	12,531.17	6,074.08	190.31	191.70	90.00	-2,111.96	6,496.11	3,841.08	3,460.27	380.81	10.087	
12,500.00	6,074.31	12,631.17	6,074.35	193.29	194.67	90.00	-2,111.90	6,596.11	3,841.02	3,454.24	386.78	9.931	
12,600.00	6,074.58	12,731.17	6,074.62	196.27	197.64	90.00	-2,111.83	6,696.11	3,840.96	3,448.21	392.75	9.780	
12,700.00	6,074.84	12,831.17	6,074.88	199.26	200.62	90.00	-2,111.77	6,796.11	3,840.90	3,442.17	398.72	9.633	
12,800.00	6,075.11	12,931.17	6,075.15	202.24	203.59	90.00	-2,111.71	6,896.11	3,840.84	3,436.14	404.70	9.491	
12,900.00	6,075.37	13,031.17	6,075.42	205.22	206.57	90.00	-2,111.65	6,996.11	3,840.78	3,430.10	410.68	9.352	
13,000.00	6,075.64	13,131.17	6,075.68	208.21	209.54	90.00	-2,111.59	7,096.11	3,840.72	3,424.06	416.65	9.218	
13,100.00	6,075.91	13,231.17	6,075.95	211.19	212.52	90.00	-2,111.53	7,196.10	3,840.66	3,418.02	422.63	9.087	
13,200.00	6,076.17	13,331.17	6,076.21	214.18	215.50	90.00	-2,111.47	7,296.10	3,840.60	3,411.98	428.61	8.961	
13,300.00	6,076.44	13,431.17	6,076.48	217.16	218.48	90.00	-2,111.41	7,396.10	3,840.54	3,405.94	434.60	8.837	
13,400.00	6,076.70	13,531.17	6,076.75	220.15	221.46	90.00	-2,111.35	7,496.10	3,840.48	3,399.90	440.58	8.717	
13,500.00	6,076.97	13,631.17	6,077.01	223.14	224.44	90.00	-2,111.29	7,596.10	3,840.41	3,393.85	446.56	8.600	
13,600.00	6,077.24	13,731.17	6,077.28	226.13	227.42	90.00	-2,111.23	7,696.10	3,840.35	3,387.81	452.55	8.486	
13,700.00	6,077.50	13,831.17	6,077.55	229.12	230.41	90.00	-2,111.17	7,796.10	3,840.29	3,381.76	458.53	8.375	
13,800.00	6,077.77	13,931.17	6,077.81	232.11	233.38	90.00	-2,111.11	7,896.10	3,840.24	3,375.72	464.51	8.267	
13,872.53	6,077.96	14,001.38	6,078.00	234.28	235.48	90.00	-2,111.07	7,966.31	3,840.20	3,371.40	468.80	8.192	
13,887.55	6,078.00	14,001.38	6,078.00	234.72	235.48	90.00	-2,111.07	7,966.31	3,840.23	3,370.96	469.27	8.183 SF	



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 1H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			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	-35.69	20.39	-14.65	25.10				
100.00	100.00	100.00	100.00	0.18	0.18	-35.69	20.39	-14.65	25.10	24.74	0.36	70.024	
200.00	200.00	200.00	200.00	0.54	0.54	-35.69	20.39	-14.65	25.10	24.03	1.08	23.341	
300.00	300.00	300.00	300.00	0.90	0.90	-35.69	20.39	-14.65	25.10	23.31	1.79	14.005	
400.00	400.00	400.00	400.00	1.25	1.25	-35.69	20.39	-14.65	25.10	22.59	2.51	10.003	
500.00	500.00	500.00	500.00	1.61	1.61	-35.69	20.39	-14.65	25.10	21.88	3.23	7.780 CC	
600.00	599.98	599.15	599.13	1.97	1.97	-42.00	21.98	-15.27	25.46	21.50	3.96	6.429 ES	
700.00	699.84	698.27	698.11	2.33	2.33	-46.45	26.77	-17.16	26.65	21.93	4.71	5.653	
800.00	799.45	797.59	797.07	2.70	2.69	-53.12	34.60	-20.24	28.79	23.34	5.45	5.282	
900.00	893.70	897.42	896.47	3.06	3.05	-63.65	43.23	-23.63	30.27	24.12	6.15	4.922	
1,000.00	997.47	997.07	995.68	3.44	3.41	-78.88	51.85	-27.02	31.82	24.95	6.87	4.633 SF	
1,100.00	1,095.62	1,096.39	1,094.58	3.83	3.78	-97.36	60.44	-30.40	35.64	28.02	7.61	4.682	
1,200.00	1,193.06	1,195.27	1,193.04	4.25	4.15	-115.26	68.99	-33.76	43.75	35.37	8.38	5.222	
1,300.00	1,289.64	1,293.60	1,290.94	4.68	4.52	-129.49	77.49	-37.10	56.91	47.77	9.14	6.224	
1,400.00	1,385.27	1,391.25	1,388.16	5.14	4.88	-139.75	85.93	-40.42	74.89	64.98	9.90	7.564	
1,500.00	1,480.00	1,488.25	1,484.74	5.63	5.24	-146.96	94.32	-43.72	96.74	86.09	10.65	9.083	
1,600.00	1,574.64	1,585.17	1,581.24	6.14	5.61	-151.64	102.70	-47.02	119.83	108.43	11.40	10.514	
1,700.00	1,669.28	1,682.09	1,677.74	6.65	5.97	-154.80	111.08	-50.31	143.43	131.28	12.14	11.810	
1,800.00	1,763.91	1,779.01	1,774.24	7.17	6.34	-157.07	119.46	-53.61	167.32	154.43	12.89	12.976	
1,900.00	1,858.55	1,875.92	1,870.74	7.70	6.70	-158.77	127.83	-56.90	191.40	177.76	13.65	14.024	
2,000.00	1,953.18	1,972.84	1,967.24	8.23	7.06	-160.09	136.21	-60.20	215.61	201.21	14.40	14.969	
2,100.00	2,047.82	2,069.76	2,063.74	8.77	7.43	-161.14	144.59	-63.50	239.90	224.74	15.16	15.823	
2,200.00	2,142.45	2,166.68	2,160.24	9.31	7.80	-162.00	152.97	-66.79	264.26	248.33	15.92	16.598	
2,300.00	2,237.09	2,263.60	2,256.74	9.86	8.16	-162.71	161.35	-70.09	288.66	271.97	16.68	17.303	
2,400.00	2,331.73	2,360.52	2,353.24	10.40	8.53	-163.32	169.73	-73.38	313.09	295.65	17.45	17.947	
2,500.00	2,426.36	2,457.44	2,449.75	10.95	8.89	-163.83	178.11	-76.68	337.56	319.35	18.21	18.538	
2,600.00	2,521.00	2,554.36	2,546.25	11.50	9.26	-164.28	186.49	-79.97	362.04	343.07	18.97	19.081	
2,700.00	2,615.63	2,651.28	2,642.75	12.05	9.62	-164.67	194.87	-83.27	386.55	366.81	19.74	19.582	
2,800.00	2,710.27	2,748.20	2,739.25	12.61	9.99	-165.01	203.25	-86.57	411.07	390.56	20.51	20.046	
2,900.00	2,804.90	2,845.12	2,835.75	13.16	10.35	-165.32	211.63	-89.86	435.60	414.33	21.27	20.476	
3,000.00	2,899.54	2,942.04	2,932.25	13.72	10.72	-165.59	220.01	-93.16	460.14	438.10	22.04	20.876	
3,100.00	2,994.17	3,038.96	3,028.75	14.27	11.09	-165.83	228.39	-96.45	484.69	461.88	22.81	21.249	
3,200.00	3,088.81	3,135.88	3,125.25	14.83	11.45	-166.05	236.77	-99.75	509.25	485.67	23.58	21.597	
3,300.00	3,183.45	3,232.80	3,221.75	15.39	11.82	-166.26	245.15	-103.04	533.82	509.47	24.35	21.924	
3,400.00	3,278.08	3,329.72	3,318.25	15.95	12.19	-166.44	253.53	-106.34	558.39	533.27	25.12	22.230	
3,500.00	3,372.72	3,426.64	3,414.75	16.51	12.55	-166.61	261.91	-109.64	582.96	557.07	25.89	22.518	
3,600.00	3,467.35	3,523.56	3,511.25	17.07	12.92	-166.76	270.29	-112.93	607.54	580.88	26.66	22.789	
3,700.00	3,561.99	3,620.48	3,607.75	17.63	13.28	-166.90	278.67	-116.23	632.13	604.69	27.43	23.044	
3,800.00	3,656.62	3,717.40	3,704.25	18.19	13.65	-167.03	287.05	-119.52	656.71	628.51	28.20	23.286	
3,900.00	3,751.26	3,814.32	3,800.75	18.75	14.02	-167.16	295.43	-122.82	681.30	652.33	28.97	23.514	
4,000.00	3,845.90	3,911.24	3,897.25	19.31	14.38	-167.27	303.81	-126.11	705.89	676.15	29.75	23.731	
4,100.00	3,940.53	4,008.16	3,993.75	19.87	14.75	-167.38	312.19	-129.41	730.49	699.97	30.52	23.936	
4,200.00	4,035.17	4,105.08	4,090.25	20.43	15.12	-167.47	320.57	-132.71	755.09	723.80	31.29	24.131	
4,300.00	4,129.80	4,202.00	4,186.75	20.99	15.48	-167.57	328.95	-136.00	779.69	747.62	32.06	24.317	
4,400.00	4,224.44	4,298.92	4,283.26	21.56	15.85	-167.65	337.33	-139.30	804.29	771.45	32.84	24.494	
4,500.00	4,319.07	4,395.84	4,379.76	22.12	16.22	-167.74	345.71	-142.59	828.89	795.28	33.61	24.663	
4,600.00	4,413.71	4,492.76	4,476.26	22.68	16.58	-167.81	354.09	-145.89	853.49	819.11	34.38	24.824	
4,700.00	4,508.34	4,589.68	4,572.76	23.25	16.95	-167.89	362.47	-149.18	878.10	842.94	35.16	24.977	
4,800.00	4,602.98	4,686.60	4,669.26	23.81	17.32	-167.95	370.85	-152.48	902.71	866.78	35.93	25.125	
4,900.00	4,697.62	4,783.52	4,765.76	24.37	17.68	-168.02	379.22	-155.78	927.31	890.61	36.70	25.266	
5,000.00	4,792.25	4,880.44	4,862.26	24.94	18.05	-168.08	387.60	-159.07	951.92	914.45	37.48	25.401	
5,100.00	4,886.89	4,977.36	4,958.76	25.50	18.42	-168.14	395.98	-162.37	976.53	938.28	38.25	25.530	

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Survey Program: 0-MWD+HDGM											Offset Site Error: 0.00 usft	
Trieb Fed Pad - Trieb Federal Com 603 1H - OH - Plan #2											Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)				Between Centres (usft)
5,200.00	4,981.52	5,074.28	5,055.26	26.06	18.78	-168.20	404.36	-165.66	1,001.14	962.12	39.02	25.654
5,300.00	5,076.16	5,171.20	5,151.76	26.63	19.15	-168.25	412.74	-168.96	1,025.76	985.96	39.80	25.774
5,400.00	5,170.79	5,268.11	5,248.26	27.19	19.52	-168.30	421.12	-172.25	1,050.37	1,009.80	40.57	25.889
5,500.00	5,265.43	5,365.03	5,344.76	27.76	19.88	-168.35	429.50	-175.55	1,074.98	1,033.63	41.35	25.999
5,600.00	5,360.06	5,440.49	5,419.79	28.32	20.17	-168.29	436.02	-179.88	1,100.30	1,058.34	41.96	26.225
5,700.00	5,454.58	5,500.00	5,478.43	28.89	20.40	177.42	441.11	-188.53	1,128.75	1,086.33	42.42	26.607
5,800.00	5,547.66	5,566.29	5,542.65	29.45	20.67	157.55	446.67	-203.88	1,163.12	1,120.15	42.98	27.064
5,900.00	5,637.51	5,616.54	5,590.24	29.98	20.88	143.25	450.80	-219.45	1,203.91	1,160.55	43.36	27.764
6,000.00	5,722.36	5,650.00	5,621.27	30.50	21.01	132.28	453.49	-231.66	1,251.18	1,207.64	43.54	28.737
6,100.00	5,800.57	5,684.34	5,652.50	31.00	21.16	123.46	456.19	-245.69	1,304.54	1,260.78	43.76	29.809
6,200.00	5,870.60	5,700.00	5,666.51	31.50	21.23	114.82	457.40	-252.58	1,363.33	1,319.56	43.77	31.147
6,300.00	5,931.11	5,700.00	5,666.51	32.00	21.23	105.84	457.40	-252.58	1,426.47	1,382.84	43.63	32.696
6,400.00	5,980.92	5,715.27	5,680.02	32.54	21.30	98.01	458.57	-259.60	1,492.24	1,448.34	43.90	33.994
6,500.00	6,019.04	5,700.00	5,666.51	33.15	21.23	89.15	457.40	-252.58	1,559.59	1,515.75	43.84	35.577
6,600.00	6,044.75	5,700.00	5,666.51	33.88	21.23	81.83	457.40	-252.58	1,626.64	1,582.40	44.24	36.770
6,700.00	6,057.54	5,700.00	5,666.51	34.79	21.23	75.48	457.40	-252.58	1,692.34	1,647.51	44.83	37.753
6,800.00	6,059.15	5,675.04	5,644.11	35.91	21.12	72.07	455.46	-241.74	1,756.11	1,710.93	45.18	38.868
6,900.00	6,059.41	5,650.00	5,621.27	37.29	21.01	71.18	453.49	-231.66	1,822.35	1,776.76	45.59	39.970
7,000.00	6,059.68	5,650.00	5,621.27	38.92	21.01	71.18	453.49	-231.66	1,891.11	1,844.74	46.37	40.782
7,100.00	6,059.94	5,650.00	5,621.27	40.76	21.01	71.18	453.49	-231.66	1,962.56	1,915.43	47.12	41.646
7,200.00	6,060.21	5,623.99	5,597.20	42.78	20.91	70.24	451.40	-222.04	2,035.86	1,988.33	47.53	42.831
7,300.00	6,060.48	5,600.00	5,574.70	44.94	20.81	69.38	449.45	-213.96	2,111.50	2,063.54	47.96	44.031
7,400.00	6,060.74	5,600.00	5,574.70	47.22	20.81	69.38	449.45	-213.96	2,188.66	2,140.03	48.63	45.003
7,500.00	6,061.01	5,600.00	5,574.70	49.59	20.81	69.38	449.45	-213.96	2,267.61	2,218.34	49.27	46.025
7,600.00	6,061.27	5,600.00	5,574.70	52.04	20.81	69.38	449.45	-213.96	2,348.16	2,298.30	49.87	47.090
7,700.00	6,061.54	5,579.32	5,555.10	54.56	20.72	68.64	447.75	-207.60	2,429.81	2,379.58	50.23	48.375
7,800.00	6,061.81	5,572.15	5,548.25	57.13	20.69	68.38	447.16	-205.52	2,512.83	2,462.14	50.69	49.569
7,900.00	6,062.07	5,550.00	5,527.01	59.75	20.60	67.60	445.32	-199.56	2,597.17	2,546.17	51.00	50.926
8,000.00	6,062.34	5,550.00	5,527.01	62.40	20.60	67.60	445.32	-199.56	2,682.21	2,630.73	51.47	52.109
8,100.00	6,062.60	5,550.00	5,527.01	65.09	20.60	67.60	445.32	-199.56	2,768.25	2,716.33	51.92	53.321
8,200.00	6,062.87	5,550.00	5,527.01	67.81	20.60	67.60	445.32	-199.56	2,855.20	2,802.86	52.33	54.561
8,300.00	6,063.14	5,550.00	5,527.01	70.55	20.60	67.60	445.32	-199.56	2,942.97	2,890.26	52.72	55.825
8,400.00	6,063.40	5,550.00	5,527.01	73.32	20.60	67.60	445.32	-199.56	3,031.51	2,978.43	53.08	57.111
8,500.00	6,063.67	5,550.00	5,527.01	76.11	20.60	67.60	445.32	-199.56	3,120.74	3,067.32	53.42	58.417
8,600.00	6,063.93	5,528.28	5,506.00	78.91	20.52	66.83	443.50	-194.35	3,210.22	3,156.62	53.60	59.892
8,700.00	6,064.20	5,524.06	5,501.90	81.73	20.50	66.68	443.14	-193.41	3,300.51	3,246.63	53.88	61.258
8,800.00	6,064.47	5,500.00	5,478.43	84.57	20.40	65.84	441.11	-188.53	3,391.64	3,337.62	54.02	62.788
8,900.00	6,064.73	5,500.00	5,478.43	87.41	20.40	65.84	441.11	-188.53	3,482.81	3,428.51	54.30	64.145
9,000.00	6,065.00	5,500.00	5,478.43	90.27	20.40	65.84	441.11	-188.53	3,574.46	3,519.90	54.56	65.516
9,100.00	6,065.26	5,500.00	5,478.43	93.14	20.40	65.84	441.11	-188.53	3,666.54	3,611.73	54.81	66.900
9,200.00	6,065.53	5,500.00	5,478.43	96.01	20.40	65.84	441.11	-188.53	3,759.03	3,703.99	55.04	68.294
9,300.00	6,065.80	5,500.00	5,478.43	98.90	20.40	65.84	441.11	-188.53	3,851.89	3,796.63	55.26	69.699
9,400.00	6,066.06	5,500.00	5,478.43	101.79	20.40	65.84	441.11	-188.53	3,945.10	3,889.63	55.48	71.112
9,500.00	6,066.33	5,500.00	5,478.43	104.69	20.40	65.84	441.11	-188.53	4,038.64	3,982.96	55.68	72.535
9,600.00	6,066.59	5,500.00	5,478.43	107.60	20.40	65.84	441.11	-188.53	4,132.48	4,076.61	55.87	73.964
9,700.00	6,066.86	5,500.00	5,478.43	110.51	20.40	65.84	441.11	-188.53	4,226.60	4,170.55	56.05	75.401
9,800.00	6,067.13	5,500.00	5,478.43	113.42	20.40	65.84	441.11	-188.53	4,320.99	4,264.76	56.23	76.845
9,900.00	6,067.39	5,500.00	5,478.43	116.35	20.40	65.84	441.11	-188.53	4,415.62	4,359.22	56.40	78.294
10,000.00	6,067.66	5,500.00	5,478.43	119.27	20.40	65.84	441.11	-188.53	4,510.49	4,453.93	56.56	79.748
10,100.00	6,067.92	5,500.00	5,478.43	122.20	20.40	65.84	441.11	-188.53	4,605.57	4,548.86	56.71	81.207
10,200.00	6,068.19	5,500.00	5,478.43	125.14	20.40	65.84	441.11	-188.53	4,700.86	4,643.99	56.86	82.670
10,300.00	6,068.46	5,477.64	5,456.48	128.08	20.31	65.06	439.20	-184.71	4,795.95	4,739.03	56.91	84.270

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design													Trieb Fed Pad - Trieb Federal Com 603 1H - OH - Plan #2		Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			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				
10,400.00	6,068.72	5,475.63	5,454.50	131.02	20.31	64.99	439.03	-184.40	4,891.53	4,834.49	57.04	85.752				
10,500.00	6,068.99	5,473.69	5,452.59	133.96	20.30	64.93	438.86	-184.11	4,987.29	4,930.12	57.17	87.236				
10,600.00	6,069.25	5,450.00	5,429.20	136.91	20.21	64.12	436.83	-180.94	5,083.57	5,026.36	57.20	88.868				
10,700.00	6,069.52	5,450.00	5,429.20	139.86	20.21	64.12	436.83	-180.94	5,179.57	5,122.24	57.33	90.344				
10,800.00	6,069.79	5,450.00	5,429.20	142.81	20.21	64.12	436.83	-180.94	5,275.72	5,218.26	57.46	91.822				
10,900.00	6,070.05	5,450.00	5,429.20	145.77	20.21	64.12	436.83	-180.94	5,372.01	5,314.43	57.58	93.302				
11,000.00	6,070.32	5,450.00	5,429.20	148.73	20.21	64.12	436.83	-180.94	5,468.43	5,410.74	57.69	94.784				
11,100.00	6,070.58	5,450.00	5,429.20	151.69	20.21	64.12	436.83	-180.94	5,564.99	5,507.18	57.81	96.268				
11,200.00	6,070.85	5,450.00	5,429.20	154.65	20.21	64.12	436.83	-180.94	5,661.66	5,603.74	57.92	97.753				
11,300.00	6,071.12	5,450.00	5,429.20	157.61	20.21	64.12	436.83	-180.94	5,758.44	5,700.41	58.03	99.240				
11,400.00	6,071.38	5,450.00	5,429.20	160.58	20.21	64.12	436.83	-180.94	5,855.33	5,797.20	58.13	100.727				
11,500.00	6,071.65	5,450.00	5,429.20	163.54	20.21	64.12	436.83	-180.94	5,952.33	5,894.09	58.23	102.216				
11,600.00	6,071.91	5,450.00	5,429.20	166.51	20.21	64.12	436.83	-180.94	6,049.42	5,991.09	58.33	103.705				
11,700.00	6,072.18	5,450.00	5,429.20	169.48	20.21	64.12	436.83	-180.94	6,146.61	6,088.17	58.43	105.194				
11,800.00	6,072.45	5,450.00	5,429.20	172.46	20.21	64.12	436.83	-180.94	6,243.88	6,185.35	58.53	106.683				
11,900.00	6,072.71	5,450.00	5,429.20	175.43	20.21	64.12	436.83	-180.94	6,341.24	6,282.62	58.62	108.173				
12,000.00	6,072.98	5,450.00	5,429.20	178.40	20.21	64.12	436.83	-180.94	6,438.68	6,379.97	58.71	109.663				
12,100.00	6,073.24	5,450.00	5,429.20	181.38	20.21	64.12	436.83	-180.94	6,536.20	6,477.39	58.80	111.152				
12,200.00	6,073.51	5,450.00	5,429.20	184.36	20.21	64.12	436.83	-180.94	6,633.79	6,574.90	58.89	112.642				
12,300.00	6,073.78	5,450.00	5,429.20	187.33	20.21	64.12	436.83	-180.94	6,731.45	6,672.47	58.98	114.131				
12,400.00	6,074.04	5,450.00	5,429.20	190.31	20.21	64.12	436.83	-180.94	6,829.18	6,770.12	59.07	115.619				
12,500.00	6,074.31	5,450.00	5,429.20	193.29	20.21	64.12	436.83	-180.94	6,926.98	6,867.83	59.15	117.106				
12,600.00	6,074.58	5,450.00	5,429.20	196.27	20.21	64.12	436.83	-180.94	7,024.83	6,965.60	59.23	118.593				
12,700.00	6,074.84	5,450.00	5,429.20	199.26	20.21	64.12	436.83	-180.94	7,122.75	7,063.43	59.32	120.079				
12,800.00	6,075.11	5,450.00	5,429.20	202.24	20.21	64.12	436.83	-180.94	7,220.72	7,161.33	59.40	121.564				
12,900.00	6,075.37	5,450.00	5,429.20	205.22	20.21	64.12	436.83	-180.94	7,318.75	7,259.27	59.48	123.048				
13,000.00	6,075.64	5,450.00	5,429.20	208.21	20.21	64.12	436.83	-180.94	7,416.83	7,357.28	59.56	124.531				
13,100.00	6,075.91	5,450.00	5,429.20	211.19	20.21	64.12	436.83	-180.94	7,514.97	7,455.33	59.64	126.012				
13,200.00	6,076.17	5,450.00	5,429.20	214.18	20.21	64.12	436.83	-180.94	7,613.15	7,553.43	59.71	127.492				
13,300.00	6,076.44	5,450.00	5,429.20	217.16	20.21	64.12	436.83	-180.94	7,711.37	7,651.58	59.79	128.971				
13,400.00	6,076.70	5,450.00	5,429.20	220.15	20.21	64.12	436.83	-180.94	7,809.65	7,749.78	59.87	130.448				
13,500.00	6,076.97	5,450.00	5,429.20	223.14	20.21	64.12	436.83	-180.94	7,907.96	7,848.02	59.94	131.924				
13,600.00	6,077.24	5,450.00	5,429.20	226.13	20.21	64.12	436.83	-180.94	8,006.32	7,946.30	60.02	133.397				
13,700.00	6,077.50	5,450.00	5,429.20	229.12	20.21	64.12	436.83	-180.94	8,104.72	8,044.62	60.09	134.870				
13,800.00	6,077.77	5,450.00	5,429.20	232.11	20.21	64.12	436.83	-180.94	8,203.15	8,142.98	60.17	136.340				
13,887.55	6,078.00	5,450.00	5,429.20	234.72	20.21	64.12	436.83	-180.94	8,289.36	8,229.13	60.23	137.626				



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	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	143.82	-20.02	14.64	24.81					
100.00	100.00	100.00	100.00	0.18	0.18	143.82	-20.02	14.64	24.81	24.45	0.36	69.200		
200.00	200.00	200.00	200.00	0.54	0.54	143.82	-20.02	14.64	24.81	23.73	1.08	23.067		
300.00	300.00	300.00	300.00	0.90	0.90	143.82	-20.02	14.64	24.81	23.01	1.79	13.840		
400.00	400.00	400.00	400.00	1.25	1.25	143.82	-20.02	14.64	24.81	22.30	2.51	9.886		
500.00	500.00	500.00	500.00	1.61	1.61	143.82	-20.02	14.64	24.81	21.58	3.23	7.689 CC, ES		
600.00	599.98	599.29	599.27	1.97	1.95	144.07	-21.71	14.32	27.41	23.47	3.94	6.961 SF		
700.00	699.84	697.88	697.72	2.33	2.28	154.35	-26.73	13.34	36.08	31.41	4.67	7.726		
800.00	799.45	795.05	794.53	2.70	2.62	163.33	-34.93	11.75	51.87	46.44	5.43	9.558		
900.00	898.70	890.16	888.96	3.06	2.96	169.33	-46.06	9.59	74.85	68.67	6.18	12.111		
1,000.00	997.47	984.51	982.29	3.44	3.31	173.11	-59.64	6.96	104.18	97.30	6.88	15.144		
1,100.00	1,095.62	1,078.74	1,075.45	3.83	3.67	175.39	-73.45	4.28	137.33	129.79	7.54	18.207		
1,200.00	1,193.06	1,171.74	1,167.41	4.25	4.03	176.85	-87.09	1.64	173.88	165.67	8.21	21.173		
1,300.00	1,289.64	1,263.40	1,258.05	4.68	4.39	177.84	-100.53	-0.97	213.72	204.84	8.88	24.069		
1,400.00	1,385.27	1,353.61	1,347.25	5.14	4.75	178.53	-113.75	-3.53	256.77	247.22	9.55	26.901		
1,500.00	1,480.00	1,442.53	1,435.17	5.63	5.11	179.05	-126.79	-6.06	302.46	292.25	10.21	29.627		
1,600.00	1,574.64	1,531.31	1,522.95	6.14	5.47	179.45	-139.81	-8.58	348.44	337.58	10.87	32.068		
1,700.00	1,669.28	1,620.08	1,610.73	6.65	5.83	179.75	-152.82	-11.11	394.44	382.91	11.53	34.212		
1,800.00	1,763.91	1,708.86	1,698.51	7.17	6.19	179.98	-165.84	-13.63	440.44	428.25	12.20	36.106		
1,900.00	1,858.55	1,797.64	1,786.29	7.70	6.55	-179.82	-178.86	-16.15	486.45	473.58	12.87	37.790		
2,000.00	1,953.18	1,886.42	1,874.08	8.23	6.91	-179.67	-191.87	-18.68	532.47	518.91	13.55	39.294		
2,100.00	2,047.82	1,975.19	1,961.86	8.77	7.28	-179.53	-204.89	-21.20	578.48	564.25	14.23	40.645		
2,200.00	2,142.45	2,063.97	2,049.64	9.31	7.65	-179.42	-217.91	-23.73	624.50	609.58	14.92	41.865		
2,300.00	2,237.09	2,152.75	2,137.42	9.86	8.01	-179.32	-230.92	-26.25	670.51	654.91	15.60	42.970		
2,400.00	2,331.73	2,241.52	2,225.20	10.40	8.38	-179.23	-243.94	-28.77	716.53	700.24	16.29	43.976		
2,500.00	2,426.36	2,330.30	2,312.98	10.95	8.75	-179.16	-256.96	-31.30	762.56	745.57	16.98	44.896		
2,600.00	2,521.00	2,419.08	2,400.76	11.50	9.11	-179.09	-269.97	-33.82	808.58	790.90	17.68	45.739		
2,700.00	2,615.63	2,507.85	2,488.54	12.05	9.48	-179.03	-282.99	-36.34	854.60	836.23	18.37	46.515		
2,800.00	2,710.27	2,596.63	2,576.33	12.61	9.85	-178.98	-296.01	-38.87	900.62	881.55	19.07	47.230		
2,900.00	2,804.90	2,685.41	2,664.11	13.16	10.22	-178.93	-309.02	-41.39	946.65	926.88	19.77	47.893		
3,000.00	2,899.54	2,774.18	2,751.89	13.72	10.59	-178.88	-322.04	-43.92	992.67	972.21	20.46	48.507		
3,100.00	2,994.17	2,862.96	2,839.67	14.27	10.96	-178.84	-335.05	-46.44	1,038.70	1,017.53	21.16	49.079		
3,200.00	3,088.81	2,951.74	2,927.45	14.83	11.33	-178.81	-348.07	-48.96	1,084.72	1,062.86	21.86	49.612		
3,300.00	3,183.45	3,040.51	3,015.23	15.39	11.70	-178.77	-361.09	-51.49	1,130.75	1,108.18	22.56	50.111		
3,400.00	3,278.08	3,129.29	3,103.01	15.95	12.07	-178.74	-374.10	-54.01	1,176.77	1,153.51	23.27	50.578		
3,500.00	3,372.72	3,218.07	3,190.79	16.51	12.44	-178.71	-387.12	-56.54	1,222.80	1,198.83	23.97	51.016		
3,600.00	3,467.35	3,306.85	3,278.57	17.07	12.81	-178.69	-400.14	-59.06	1,268.82	1,244.15	24.67	51.428		
3,700.00	3,561.99	3,395.62	3,366.36	17.63	13.18	-178.66	-413.15	-61.58	1,314.85	1,289.47	25.38	51.815		
3,800.00	3,656.62	3,484.40	3,454.14	18.19	13.55	-178.64	-426.17	-64.11	1,360.88	1,334.80	26.08	52.181		
3,900.00	3,751.26	3,573.18	3,541.92	18.75	13.92	-178.62	-439.19	-66.63	1,406.90	1,380.12	26.78	52.527		
4,000.00	3,845.90	3,661.95	3,629.70	19.31	14.29	-178.60	-452.20	-69.16	1,452.93	1,425.44	27.49	52.854		
4,100.00	3,940.53	3,750.73	3,717.48	19.87	14.66	-178.58	-465.22	-71.68	1,498.96	1,470.76	28.19	53.164		
4,200.00	4,035.17	3,839.51	3,805.26	20.43	15.03	-178.56	-478.24	-74.20	1,544.98	1,516.08	28.90	53.458		
4,300.00	4,129.80	3,928.28	3,893.04	20.99	15.40	-178.54	-491.25	-76.73	1,591.01	1,561.41	29.61	53.738		
4,400.00	4,224.44	4,017.06	3,980.82	21.56	15.77	-178.53	-504.27	-79.25	1,637.04	1,606.73	30.31	54.004		
4,500.00	4,319.07	4,105.84	4,068.60	22.12	16.15	-178.51	-517.28	-81.77	1,683.07	1,652.05	31.02	54.257		
4,600.00	4,413.71	4,194.61	4,156.39	22.68	16.52	-178.50	-530.30	-84.30	1,729.09	1,697.37	31.73	54.498		
4,700.00	4,508.34	4,283.39	4,244.17	23.25	16.89	-178.49	-543.32	-86.82	1,775.12	1,742.69	32.43	54.729		
4,800.00	4,602.98	4,372.17	4,331.95	23.81	17.26	-178.47	-556.33	-89.35	1,821.15	1,788.01	33.14	54.949		
4,900.00	4,697.62	4,460.94	4,419.73	24.37	17.63	-178.46	-569.35	-91.87	1,867.18	1,833.33	33.85	55.159		
5,000.00	4,792.25	4,549.72	4,507.51	24.94	18.00	-178.45	-582.37	-94.39	1,913.21	1,878.65	34.56	55.361		
5,100.00	4,886.89	4,638.50	4,595.29	25.50	18.37	-178.44	-595.38	-96.92	1,959.23	1,923.97	35.27	55.553		

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 2H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			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	
5,200.00	4,981.52	4,727.27	4,683.07	26.06	18.75	-178.43	-608.40	-99.44	2,005.26	1,969.28	35.98	55.738	
5,300.00	5,076.16	4,816.05	4,770.85	26.63	19.12	-178.42	-621.42	-101.97	2,051.29	2,014.60	36.69	55.916	
5,400.00	5,170.79	4,904.83	4,858.64	27.19	19.49	-178.41	-634.43	-104.49	2,097.32	2,059.92	37.39	56.086	
5,500.00	5,265.43	4,993.61	4,946.42	27.76	19.86	-178.40	-647.45	-107.01	2,143.34	2,105.24	38.10	56.250	
5,600.00	5,360.06	5,082.38	5,034.20	28.32	20.23	-178.39	-660.47	-109.54	2,189.37	2,150.56	38.81	56.408	
5,700.00	5,454.58	5,170.97	5,121.80	28.89	20.60	165.98	-673.45	-112.06	2,235.60	2,196.08	39.52	56.566	
5,800.00	5,547.66	5,257.87	5,207.72	29.45	20.97	144.00	-686.20	-114.53	2,282.54	2,242.33	40.22	56.756	
5,900.00	5,637.51	5,341.34	5,290.25	29.98	21.32	128.29	-698.43	-116.90	2,329.68	2,288.80	40.88	56.983	
6,000.00	5,722.36	5,419.75	5,367.78	30.50	21.65	117.14	-709.93	-119.13	2,376.55	2,335.03	41.52	57.238	
6,100.00	5,800.57	5,466.86	5,414.30	31.00	21.84	108.49	-716.83	-121.83	2,423.19	2,381.26	41.93	57.792	
6,200.00	5,870.60	5,500.00	5,446.87	31.50	21.98	101.45	-721.66	-125.57	2,469.76	2,427.48	42.28	58.416	
6,300.00	5,931.11	5,528.16	5,474.38	32.00	22.10	95.59	-725.74	-129.95	2,515.93	2,473.24	42.69	58.938	
6,400.00	5,980.92	5,550.00	5,495.59	32.54	22.20	90.54	-728.88	-134.09	2,561.28	2,518.08	43.20	59.295	
6,500.00	6,019.04	5,550.00	5,495.59	33.15	22.20	85.77	-728.88	-134.09	2,605.21	2,561.51	43.71	59.609	
6,600.00	6,044.75	5,550.00	5,495.59	33.88	22.20	81.73	-728.88	-134.09	2,647.13	2,602.70	44.43	59.576	
6,700.00	6,057.54	5,550.00	5,495.59	34.79	22.20	78.41	-728.88	-134.09	2,686.33	2,640.96	45.38	59.202	
6,800.00	6,059.15	5,550.00	5,495.59	35.91	22.20	77.15	-728.88	-134.09	2,723.23	2,676.73	46.50	58.567	
6,900.00	6,059.41	5,550.00	5,495.59	37.29	22.20	77.15	-728.88	-134.09	2,762.58	2,714.85	47.73	57.881	
7,000.00	6,059.68	5,528.75	5,474.96	38.92	22.11	76.67	-725.82	-130.05	2,804.72	2,755.88	48.84	57.423	
7,100.00	6,059.94	5,522.73	5,469.09	40.76	22.08	76.54	-724.95	-129.02	2,849.82	2,799.68	50.14	56.841	
7,200.00	6,060.21	5,517.26	5,463.75	42.78	22.06	76.42	-724.16	-128.12	2,897.63	2,846.17	51.45	56.314	
7,300.00	6,060.48	5,500.00	5,446.87	44.94	21.98	76.03	-721.66	-125.57	2,948.11	2,895.43	52.67	55.969	
7,400.00	6,060.74	5,500.00	5,446.87	47.22	21.98	76.03	-721.66	-125.57	3,000.92	2,946.89	54.03	55.539	
7,500.00	6,061.01	5,500.00	5,446.87	49.59	21.98	76.03	-721.66	-125.57	3,056.10	3,000.73	55.37	55.195	
7,600.00	6,061.27	5,500.00	5,446.87	52.04	21.98	76.03	-721.66	-125.57	3,113.51	3,056.83	56.67	54.936	
7,700.00	6,061.54	5,500.00	5,446.87	54.56	21.98	76.03	-721.66	-125.57	3,173.03	3,115.09	57.94	54.760	
7,800.00	6,061.81	5,500.00	5,446.87	57.13	21.98	76.03	-721.66	-125.57	3,234.55	3,175.38	59.17	54.662	
7,900.00	6,062.07	5,500.00	5,446.87	59.75	21.98	76.03	-721.66	-125.57	3,297.96	3,237.60	60.36	54.638	
8,000.00	6,062.34	5,500.00	5,446.87	62.40	21.98	76.03	-721.66	-125.57	3,363.14	3,301.64	61.50	54.683	
8,100.00	6,062.60	5,500.00	5,446.87	65.09	21.98	76.03	-721.66	-125.57	3,430.01	3,367.41	62.60	54.793	
8,200.00	6,062.87	5,500.00	5,446.87	67.81	21.98	76.03	-721.66	-125.57	3,498.45	3,434.80	63.65	54.963	
8,300.00	6,063.14	5,479.11	5,426.36	70.55	21.90	75.56	-718.62	-123.03	3,568.10	3,503.62	64.49	55.332	
8,400.00	6,063.40	5,476.88	5,424.16	73.32	21.89	75.51	-718.29	-122.80	3,639.37	3,573.94	65.43	55.621	
8,500.00	6,063.67	5,474.78	5,422.09	76.11	21.88	75.47	-717.98	-122.58	3,711.96	3,645.63	66.34	55.958	
8,600.00	6,063.93	5,472.79	5,420.14	78.91	21.87	75.42	-717.69	-122.39	3,785.80	3,718.60	67.20	56.337	
8,700.00	6,064.20	5,470.91	5,418.29	81.73	21.86	75.38	-717.42	-122.20	3,860.81	3,792.78	68.02	56.757	
8,800.00	6,064.47	5,450.00	5,397.67	84.57	21.77	74.91	-714.36	-120.51	3,937.17	3,868.52	68.65	57.352	
8,900.00	6,064.73	5,450.00	5,397.67	87.41	21.77	74.91	-714.36	-120.51	4,014.28	3,944.87	69.42	57.830	
9,000.00	6,065.00	5,450.00	5,397.67	90.27	21.77	74.91	-714.36	-120.51	4,092.40	4,022.25	70.15	58.341	
9,100.00	6,065.26	5,450.00	5,397.67	93.14	21.77	74.91	-714.36	-120.51	4,171.44	4,100.60	70.84	58.882	
9,200.00	6,065.53	5,450.00	5,397.67	96.01	21.77	74.91	-714.36	-120.51	4,251.37	4,179.86	71.51	59.452	
9,300.00	6,065.80	5,450.00	5,397.67	98.90	21.77	74.91	-714.36	-120.51	4,332.13	4,259.98	72.14	60.048	
9,400.00	6,066.06	5,450.00	5,397.67	101.79	21.77	74.91	-714.36	-120.51	4,413.68	4,340.93	72.75	60.668	
9,500.00	6,066.33	5,450.00	5,397.67	104.69	21.77	74.91	-714.36	-120.51	4,495.97	4,422.64	73.33	61.311	
9,600.00	6,066.59	5,450.00	5,397.67	107.60	21.77	74.91	-714.36	-120.51	4,578.97	4,505.09	73.88	61.975	
9,700.00	6,066.86	5,450.00	5,397.67	110.51	21.77	74.91	-714.36	-120.51	4,662.64	4,588.22	74.41	62.659	
9,800.00	6,067.13	5,450.00	5,397.67	113.42	21.77	74.91	-714.36	-120.51	4,746.94	4,672.02	74.92	63.361	
9,900.00	6,067.39	5,450.00	5,397.67	116.35	21.77	74.91	-714.36	-120.51	4,831.83	4,756.43	75.40	64.080	
10,000.00	6,067.66	5,450.00	5,397.67	119.27	21.77	74.91	-714.36	-120.51	4,917.30	4,841.43	75.87	64.815	
10,100.00	6,067.92	5,450.00	5,397.67	122.20	21.77	74.91	-714.36	-120.51	5,003.30	4,926.99	76.31	65.565	
10,200.00	6,068.19	5,450.00	5,397.67	125.14	21.77	74.91	-714.36	-120.51	5,089.82	5,013.08	76.74	66.329	
10,300.00	6,068.46	5,450.00	5,397.67	128.08	21.77	74.91	-714.36	-120.51	5,176.82	5,099.68	77.14	67.106	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			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		
10,400.00	6,068.72	5,450.00	5,397.67	131.02	21.77	74.91	-714.36	-120.51	5,264.28	5,186.75	77.54	67.895		
10,500.00	6,068.99	5,450.00	5,397.67	133.96	21.77	74.91	-714.36	-120.51	5,352.19	5,274.28	77.91	68.696		
10,600.00	6,069.25	5,450.00	5,397.67	136.91	21.77	74.91	-714.36	-120.51	5,440.51	5,362.23	78.27	69.508		
10,700.00	6,069.52	5,450.00	5,397.67	139.86	21.77	74.91	-714.36	-120.51	5,529.22	5,450.61	78.62	70.330		
10,800.00	6,069.79	5,450.00	5,397.67	142.81	21.77	74.91	-714.36	-120.51	5,618.32	5,539.37	78.95	71.161		
10,900.00	6,070.05	5,450.00	5,397.67	145.77	21.77	74.91	-714.36	-120.51	5,707.78	5,628.51	79.27	72.001		
11,000.00	6,070.32	5,450.00	5,397.67	148.73	21.77	74.91	-714.36	-120.51	5,797.58	5,718.00	79.58	72.850		
11,100.00	6,070.58	5,450.00	5,397.67	151.69	21.77	74.91	-714.36	-120.51	5,887.71	5,807.83	79.88	73.707		
11,200.00	6,070.85	5,450.00	5,397.67	154.65	21.77	74.91	-714.36	-120.51	5,978.16	5,897.99	80.17	74.572		
11,300.00	6,071.12	5,450.00	5,397.67	157.61	21.77	74.91	-714.36	-120.51	6,068.90	5,988.46	80.44	75.443		
11,400.00	6,071.38	5,450.00	5,397.67	160.58	21.77	74.91	-714.36	-120.51	6,159.94	6,079.23	80.71	76.321		
11,500.00	6,071.65	5,450.00	5,397.67	163.54	21.77	74.91	-714.36	-120.51	6,251.24	6,170.27	80.97	77.206		
11,600.00	6,071.91	5,450.00	5,397.67	166.51	21.77	74.91	-714.36	-120.51	6,342.81	6,261.59	81.22	78.097		
11,700.00	6,072.18	5,450.00	5,397.67	169.48	21.77	74.91	-714.36	-120.51	6,434.63	6,353.17	81.46	78.993		
11,800.00	6,072.45	5,450.00	5,397.67	172.46	21.77	74.91	-714.36	-120.51	6,526.69	6,445.00	81.69	79.894		
11,900.00	6,072.71	5,450.00	5,397.67	175.43	21.77	74.91	-714.36	-120.51	6,618.98	6,537.06	81.92	80.801		
12,000.00	6,072.98	5,450.00	5,397.67	178.40	21.77	74.91	-714.36	-120.51	6,711.49	6,629.35	82.14	81.712		
12,100.00	6,073.24	5,450.00	5,397.67	181.38	21.77	74.91	-714.36	-120.51	6,804.21	6,721.87	82.35	82.628		
12,200.00	6,073.51	5,450.00	5,397.67	184.36	21.77	74.91	-714.36	-120.51	6,897.14	6,814.59	82.55	83.548		
12,300.00	6,073.78	5,450.00	5,397.67	187.33	21.77	74.91	-714.36	-120.51	6,990.26	6,907.51	82.75	84.472		
12,400.00	6,074.04	5,437.32	5,385.15	190.31	21.72	74.63	-712.51	-119.78	7,083.45	7,000.61	82.84	85.504		
12,500.00	6,074.31	5,436.87	5,384.71	193.29	21.72	74.62	-712.44	-119.76	7,176.93	7,093.91	83.03	86.440		
12,600.00	6,074.58	5,436.44	5,384.28	196.27	21.72	74.61	-712.38	-119.73	7,270.59	7,187.38	83.21	87.379		
12,700.00	6,074.84	5,436.02	5,383.86	199.26	21.71	74.60	-712.32	-119.71	7,364.41	7,281.03	83.38	88.322		
12,800.00	6,075.11	5,435.61	5,383.46	202.24	21.71	74.59	-712.25	-119.70	7,458.39	7,374.84	83.55	89.267		
12,900.00	6,075.37	5,435.21	5,383.06	205.22	21.71	74.58	-712.20	-119.68	7,552.52	7,468.81	83.72	90.216		
13,000.00	6,075.64	5,422.70	5,370.70	208.21	21.66	74.30	-710.36	-119.21	7,646.92	7,563.14	83.78	91.276		
13,100.00	6,075.91	5,422.70	5,370.70	211.19	21.66	74.30	-710.36	-119.21	7,741.34	7,657.40	83.94	92.227		
13,200.00	6,076.17	5,422.70	5,370.70	214.18	21.66	74.30	-710.36	-119.21	7,835.89	7,751.80	84.09	93.180		
13,300.00	6,076.44	5,422.70	5,370.70	217.16	21.66	74.30	-710.36	-119.21	7,930.59	7,846.34	84.25	94.136		
13,400.00	6,076.70	5,422.70	5,370.70	220.15	21.66	74.30	-710.36	-119.21	8,025.41	7,941.01	84.39	95.094		
13,500.00	6,076.97	5,422.70	5,370.70	223.14	21.66	74.30	-710.36	-119.21	8,120.35	8,035.81	84.54	96.054		
13,600.00	6,077.24	5,422.70	5,370.70	226.13	21.66	74.30	-710.36	-119.21	8,215.42	8,130.74	84.68	97.016		
13,700.00	6,077.50	5,422.70	5,370.70	229.12	21.66	74.30	-710.36	-119.21	8,310.60	8,225.78	84.82	97.980		
13,800.00	6,077.77	5,422.70	5,370.70	232.11	21.66	74.30	-710.36	-119.21	8,405.89	8,320.94	84.95	98.945		
13,887.55	6,078.00	5,422.70	5,370.70	234.72	21.66	74.30	-710.36	-119.21	8,489.41	8,404.34	85.07	99.792		



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Trieb Fed Pad - Trieb Federal Com 603 3H - OH - Plan #2														
Reference		Offset		Semi Major Axis			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)	Offset Wellbore Centre +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	-4.60	29.12	-2.34	29.22					
100.00	100.00	100.00	100.00	0.18	0.18	-4.60	29.12	-2.34	29.22	28.86	0.36	81.509		
200.00	200.00	200.00	200.00	0.54	0.54	-4.60	29.12	-2.34	29.22	28.14	1.08	27.170		
300.00	300.00	300.00	300.00	0.90	0.90	-4.60	29.12	-2.34	29.22	27.43	1.79	16.302		
400.00	400.00	400.00	400.00	1.25	1.25	-4.60	29.12	-2.34	29.22	26.71	2.51	11.644		
500.00	500.00	500.00	500.00	1.61	1.61	-4.60	29.12	-2.34	29.22	25.99	3.23	9.057 CC		
500.51	500.51	500.50	500.50	1.61	1.61	-9.34	29.12	-2.34	29.22	25.99	3.23	9.046		
600.00	599.98	598.99	598.97	1.97	1.97	-10.10	30.82	-2.59	29.22	25.26	3.96	7.376		
700.00	699.84	697.97	697.82	2.33	2.33	-12.37	35.89	-3.32	29.27	24.54	4.72	6.196		
800.00	799.45	796.94	796.41	2.70	2.69	-16.13	44.34	-4.54	29.45	23.95	5.50	5.357		
900.00	898.70	895.89	894.63	3.06	3.05	-21.28	56.16	-6.24	29.91	23.64	6.27	4.769 ES		
1,000.00	997.47	994.80	992.34	3.44	3.42	-27.59	71.31	-8.42	30.84	23.80	7.04	4.379		
1,100.00	1,095.62	1,093.67	1,089.43	3.83	3.81	-34.67	89.79	-11.08	32.46	24.65	7.81	4.156		
1,200.00	1,193.06	1,192.50	1,185.78	4.25	4.22	-42.04	111.57	-14.21	34.93	26.35	8.59	4.069 SF		
1,300.00	1,289.64	1,291.28	1,281.26	4.68	4.65	-49.19	136.60	-17.82	38.40	29.02	9.39	4.091		
1,400.00	1,385.27	1,390.00	1,375.75	5.14	5.11	-55.74	164.86	-21.89	42.92	32.69	10.23	4.194		
1,500.00	1,480.00	1,489.59	1,470.44	5.63	5.59	-62.17	195.42	-26.29	47.95	36.81	11.13	4.307		
1,600.00	1,574.64	1,589.33	1,565.25	6.14	6.09	-67.64	226.06	-30.70	53.36	41.27	12.09	4.412		
1,700.00	1,669.28	1,689.06	1,660.06	6.65	6.59	-72.07	256.69	-35.11	59.17	46.07	13.10	4.518		
1,800.00	1,763.91	1,788.80	1,754.87	7.17	7.11	-75.70	287.32	-39.52	65.26	51.13	14.13	4.619		
1,900.00	1,858.55	1,888.54	1,849.69	7.70	7.63	-78.70	317.96	-43.93	71.58	56.40	15.18	4.715		
2,000.00	1,953.18	1,988.27	1,944.50	8.23	8.16	-81.20	348.59	-48.34	78.06	61.81	16.25	4.804		
2,100.00	2,047.82	2,088.01	2,039.31	8.77	8.69	-83.32	379.23	-52.75	84.66	67.34	17.32	4.887		
2,200.00	2,142.45	2,187.74	2,134.13	9.31	9.22	-85.13	409.86	-57.16	91.36	72.95	18.41	4.964		
2,300.00	2,237.09	2,287.48	2,228.94	9.86	9.75	-86.70	440.50	-61.57	98.14	78.65	19.49	5.034		
2,400.00	2,331.73	2,387.22	2,323.75	10.40	10.29	-88.06	471.13	-65.98	104.99	84.40	20.59	5.100		
2,500.00	2,426.36	2,486.95	2,418.56	10.95	10.83	-89.25	501.76	-70.39	111.88	90.20	21.68	5.161		
2,600.00	2,521.00	2,586.69	2,513.38	11.50	11.37	-90.30	532.40	-74.80	118.82	96.04	22.78	5.217		
2,700.00	2,615.63	2,686.43	2,608.19	12.05	11.92	-91.24	563.03	-79.21	125.79	101.92	23.88	5.269		
2,800.00	2,710.27	2,786.16	2,703.00	12.61	12.46	-92.08	593.67	-83.62	132.80	107.82	24.98	5.317		
2,900.00	2,804.90	2,885.90	2,797.81	13.16	13.01	-92.83	624.30	-88.04	139.83	113.75	26.08	5.362		
3,000.00	2,899.54	2,985.64	2,892.63	13.72	13.56	-93.52	654.94	-92.45	146.88	119.70	27.18	5.404		
3,100.00	2,994.17	3,085.37	2,987.44	14.27	14.10	-94.14	685.57	-96.86	153.95	125.66	28.28	5.443		
3,200.00	3,088.81	3,185.11	3,082.25	14.83	14.65	-94.70	716.20	-101.27	161.03	131.65	29.39	5.480		
3,300.00	3,183.45	3,284.85	3,177.07	15.39	15.20	-95.22	746.84	-105.68	168.13	137.64	30.49	5.514		
3,400.00	3,278.08	3,384.58	3,271.88	15.95	15.75	-95.69	777.47	-110.09	175.25	143.65	31.60	5.546		
3,500.00	3,372.72	3,484.32	3,366.69	16.51	16.30	-96.13	808.11	-114.50	182.37	149.67	32.70	5.577		
3,600.00	3,467.35	3,584.06	3,461.50	17.07	16.85	-96.54	838.74	-118.91	189.50	155.70	33.81	5.605		
3,700.00	3,561.99	3,683.79	3,556.32	17.63	17.40	-96.91	869.38	-123.32	196.65	161.73	34.92	5.632		
3,800.00	3,656.62	3,783.53	3,651.13	18.19	17.95	-97.26	900.01	-127.73	203.80	167.77	36.02	5.657		
3,900.00	3,751.26	3,883.27	3,745.94	18.75	18.51	-97.59	930.64	-132.14	210.96	173.82	37.13	5.681		
4,000.00	3,845.90	3,983.00	3,840.76	19.31	19.06	-97.89	961.28	-136.55	218.12	179.88	38.24	5.704		
4,100.00	3,940.53	4,082.74	3,935.57	19.87	19.61	-98.18	991.91	-140.96	225.29	185.94	39.35	5.726		
4,200.00	4,035.17	4,182.48	4,030.38	20.43	20.16	-98.45	1,022.55	-145.37	232.46	192.01	40.46	5.746		
4,300.00	4,129.80	4,282.21	4,125.19	20.99	20.72	-98.70	1,053.18	-149.78	239.64	198.08	41.56	5.766		
4,400.00	4,224.44	4,381.95	4,220.01	21.56	21.27	-98.93	1,083.82	-154.19	246.83	204.15	42.67	5.784		
4,500.00	4,319.07	4,481.69	4,314.82	22.12	21.83	-99.16	1,114.45	-158.60	254.02	210.23	43.78	5.802		
4,600.00	4,413.71	4,581.42	4,409.63	22.68	22.38	-99.37	1,145.08	-163.02	261.21	216.31	44.89	5.819		
4,700.00	4,508.34	4,681.16	4,504.45	23.25	22.93	-99.57	1,175.72	-167.43	268.40	222.40	46.00	5.835		
4,800.00	4,602.98	4,780.90	4,599.26	23.81	23.49	-99.76	1,206.35	-171.84	275.60	228.49	47.11	5.850		
4,900.00	4,697.62	4,880.63	4,694.07	24.37	24.04	-99.94	1,236.99	-176.25	282.80	234.58	48.22	5.865		
5,000.00	4,792.25	4,980.37	4,788.88	24.94	24.60	-100.11	1,267.62	-180.66	290.00	240.67	49.33	5.879		

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 3H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			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	
5,100.00	4,886.89	5,080.11	4,883.70	25.50	25.15	-100.27	1,298.26	-185.07	297.21	246.77	50.44	5.892	
5,200.00	4,981.52	5,179.84	4,978.51	26.06	25.71	-100.43	1,328.89	-189.48	304.42	252.87	51.55	5.905	
5,300.00	5,076.16	5,279.58	5,073.32	26.63	26.26	-100.57	1,359.52	-193.89	311.63	258.97	52.66	5.918	
5,400.00	5,170.79	5,379.32	5,168.14	27.19	26.82	-100.72	1,390.16	-198.30	318.84	265.07	53.77	5.930	
5,500.00	5,265.43	5,479.05	5,262.95	27.76	27.37	-100.85	1,420.79	-202.71	326.05	271.17	54.88	5.941	
5,600.00	5,360.06	5,578.79	5,357.76	28.32	27.93	-100.98	1,451.43	-207.12	333.27	277.28	55.99	5.952	
5,700.00	5,454.58	5,663.01	5,437.78	28.89	28.40	-114.36	1,477.28	-211.56	343.94	287.06	56.88	6.047	
5,800.00	5,547.66	5,726.47	5,497.62	29.45	28.76	-132.60	1,496.61	-219.99	374.63	317.48	57.15	6.555	
5,900.00	5,637.51	5,781.75	5,548.98	29.98	29.09	-144.94	1,513.19	-231.85	425.46	368.44	57.02	7.461	
6,000.00	5,722.36	5,826.61	5,589.93	30.50	29.35	-153.25	1,526.41	-244.51	493.00	436.35	56.66	8.702	
6,100.00	5,800.57	5,850.00	5,610.97	31.00	29.49	-159.63	1,533.19	-252.17	573.64	517.88	55.76	10.288	
6,200.00	5,870.60	5,883.95	5,641.05	31.50	29.70	-164.99	1,542.89	-264.57	663.18	607.35	55.83	11.878	
6,300.00	5,931.11	5,900.00	5,655.06	32.00	29.79	-172.54	1,547.41	-270.94	758.89	703.26	55.63	13.642	
6,400.00	5,980.92	5,900.00	5,655.06	32.54	29.79	157.46	1,547.41	-270.94	857.83	802.57	55.26	15.525	
6,500.00	6,019.04	5,900.00	5,655.06	33.15	29.79	47.62	1,547.41	-270.94	957.62	902.34	55.28	17.324	
6,600.00	6,044.75	5,900.00	5,655.06	33.88	29.79	30.17	1,547.41	-270.94	1,056.36	1,000.78	55.58	19.005	
6,700.00	6,057.54	5,900.00	5,655.06	34.79	29.79	25.46	1,547.41	-270.94	1,152.65	1,096.56	56.09	20.551	
6,800.00	6,059.15	5,873.43	5,631.78	35.91	29.63	24.04	1,539.91	-260.56	1,245.39	1,189.39	56.00	22.239	
6,900.00	6,059.41	5,850.00	5,610.97	37.29	29.49	23.76	1,533.19	-252.17	1,338.63	1,282.63	56.00	23.903	
7,000.00	6,059.68	5,850.00	5,610.97	38.92	29.49	23.76	1,533.19	-252.17	1,432.26	1,375.76	56.51	25.347	
7,100.00	6,059.94	5,850.00	5,610.97	40.76	29.49	23.76	1,533.19	-252.17	1,526.70	1,469.78	56.92	26.821	
7,200.00	6,060.21	5,827.89	5,591.10	42.78	29.36	23.52	1,526.78	-244.91	1,621.31	1,564.47	56.84	28.523	
7,300.00	6,060.48	5,818.72	5,582.79	44.94	29.31	23.42	1,524.10	-242.09	1,716.49	1,659.50	56.99	30.118	
7,400.00	6,060.74	5,800.00	5,565.74	47.22	29.19	23.23	1,518.60	-236.67	1,812.15	1,755.20	56.95	31.820	
7,500.00	6,061.01	5,800.00	5,565.74	49.59	29.19	23.23	1,518.60	-236.67	1,907.94	1,850.73	57.21	33.350	
7,600.00	6,061.27	5,800.00	5,565.74	52.04	29.19	23.23	1,518.60	-236.67	2,004.15	1,946.71	57.44	34.893	
7,700.00	6,061.54	5,800.00	5,565.74	54.56	29.19	23.23	1,518.60	-236.67	2,100.71	2,043.07	57.63	36.449	
7,800.00	6,061.81	5,800.00	5,565.74	57.13	29.19	23.23	1,518.60	-236.67	2,197.57	2,139.76	57.81	38.014	
7,900.00	6,062.07	5,775.98	5,543.67	59.75	29.05	23.01	1,511.47	-230.42	2,294.18	2,236.55	57.63	39.808	
8,000.00	6,062.34	5,770.40	5,538.52	62.40	29.02	22.96	1,509.81	-229.08	2,391.28	2,333.58	57.71	41.438	
8,100.00	6,062.60	5,750.00	5,519.59	65.09	28.90	22.79	1,503.70	-224.53	2,488.77	2,431.19	57.58	43.223	
8,200.00	6,062.87	5,750.00	5,519.59	67.81	28.90	22.79	1,503.70	-224.53	2,586.11	2,528.39	57.71	44.809	
8,300.00	6,063.14	5,750.00	5,519.59	70.55	28.90	22.79	1,503.70	-224.53	2,683.64	2,625.80	57.84	46.401	
8,400.00	6,063.40	5,750.00	5,519.59	73.32	28.90	22.79	1,503.70	-224.53	2,781.34	2,723.39	57.95	47.997	
8,500.00	6,063.67	5,750.00	5,519.59	76.11	28.90	22.79	1,503.70	-224.53	2,879.20	2,821.15	58.05	49.597	
8,600.00	6,063.93	5,750.00	5,519.59	78.91	28.90	22.79	1,503.70	-224.53	2,977.21	2,919.06	58.15	51.201	
8,700.00	6,064.20	5,750.00	5,519.59	81.73	28.90	22.79	1,503.70	-224.53	3,075.34	3,017.10	58.24	52.808	
8,800.00	6,064.47	5,750.00	5,519.59	84.57	28.90	22.79	1,503.70	-224.53	3,173.59	3,115.27	58.32	54.417	
8,900.00	6,064.73	5,750.00	5,519.59	87.41	28.90	22.79	1,503.70	-224.53	3,271.94	3,213.55	58.40	56.028	
9,000.00	6,065.00	5,729.33	5,500.29	90.27	28.78	22.62	1,497.47	-220.50	3,370.03	3,311.78	58.26	57.848	
9,100.00	6,065.26	5,726.28	5,497.44	93.14	28.76	22.60	1,496.55	-219.96	3,468.46	3,410.16	58.30	59.494	
9,200.00	6,065.53	5,723.37	5,494.71	96.01	28.74	22.58	1,495.67	-219.45	3,566.97	3,508.62	58.34	61.140	
9,300.00	6,065.80	5,700.00	5,472.75	98.90	28.61	22.41	1,488.58	-215.80	3,665.89	3,607.71	58.18	63.013	
9,400.00	6,066.06	5,700.00	5,472.75	101.79	28.61	22.41	1,488.58	-215.80	3,764.43	3,706.19	58.25	64.630	
9,500.00	6,066.33	5,700.00	5,472.75	104.69	28.61	22.41	1,488.58	-215.80	3,863.06	3,804.74	58.31	66.248	
9,600.00	6,066.59	5,700.00	5,472.75	107.60	28.61	22.41	1,488.58	-215.80	3,961.75	3,903.37	58.38	67.866	
9,700.00	6,066.86	5,700.00	5,472.75	110.51	28.61	22.41	1,488.58	-215.80	4,060.50	4,002.06	58.44	69.484	
9,800.00	6,067.13	5,700.00	5,472.75	113.42	28.61	22.41	1,488.58	-215.80	4,159.31	4,100.82	58.50	71.101	
9,900.00	6,067.39	5,700.00	5,472.75	116.35	28.61	22.41	1,488.58	-215.80	4,258.18	4,199.63	58.56	72.719	
10,000.00	6,067.66	5,700.00	5,472.75	119.27	28.61	22.41	1,488.58	-215.80	4,357.10	4,298.49	58.61	74.336	
10,100.00	6,067.92	5,700.00	5,472.75	122.20	28.61	22.41	1,488.58	-215.80	4,456.07	4,397.40	58.67	75.952	
10,200.00	6,068.19	5,700.00	5,472.75	125.14	28.61	22.41	1,488.58	-215.80	4,555.09	4,496.36	58.72	77.568	

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 3H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			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		
10,300.00	6,068.46	5,700.00	5,472.75	128.08	28.61	22.41	1,488.58	-215.80	4,654.14	4,595.37	58.78	79.182		
10,400.00	6,068.72	5,700.00	5,472.75	131.02	28.61	22.41	1,488.58	-215.80	4,753.24	4,694.41	58.83	80.795		
10,500.00	6,068.99	5,700.00	5,472.75	133.96	28.61	22.41	1,488.58	-215.80	4,852.37	4,793.49	58.88	82.407		
10,600.00	6,069.25	5,700.00	5,472.75	136.91	28.61	22.41	1,488.58	-215.80	4,951.54	4,892.61	58.93	84.018		
10,700.00	6,069.52	5,700.00	5,472.75	139.86	28.61	22.41	1,488.58	-215.80	5,050.74	4,991.76	58.99	85.627		
10,800.00	6,069.79	5,700.00	5,472.75	142.81	28.61	22.41	1,488.58	-215.80	5,149.97	5,090.94	59.04	87.234		
10,900.00	6,070.05	5,700.00	5,472.75	145.77	28.61	22.41	1,488.58	-215.80	5,249.23	5,190.15	59.09	88.840		
11,000.00	6,070.32	5,700.00	5,472.75	148.73	28.61	22.41	1,488.58	-215.80	5,348.52	5,289.38	59.14	90.443		
11,100.00	6,070.58	5,700.00	5,472.75	151.69	28.61	22.41	1,488.58	-215.80	5,447.84	5,388.65	59.19	92.045		
11,200.00	6,070.85	5,700.00	5,472.75	154.65	28.61	22.41	1,488.58	-215.80	5,547.17	5,487.94	59.24	93.645		
11,300.00	6,071.12	5,700.00	5,472.75	157.61	28.61	22.41	1,488.58	-215.80	5,646.54	5,587.25	59.29	95.243		
11,400.00	6,071.38	5,700.00	5,472.75	160.58	28.61	22.41	1,488.58	-215.80	5,745.92	5,686.59	59.34	96.838		
11,500.00	6,071.65	5,700.00	5,472.75	163.54	28.61	22.41	1,488.58	-215.80	5,845.33	5,785.94	59.38	98.431		
11,600.00	6,071.91	5,700.00	5,472.75	166.51	28.61	22.41	1,488.58	-215.80	5,944.75	5,885.32	59.43	100.022		
11,700.00	6,072.18	5,700.00	5,472.75	169.48	28.61	22.41	1,488.58	-215.80	6,044.20	5,984.71	59.48	101.610		
11,800.00	6,072.45	5,677.21	5,451.23	172.46	28.48	22.25	1,481.63	-212.96	6,143.25	6,083.90	59.35	103.501		
11,900.00	6,072.71	5,676.12	5,450.20	175.43	28.47	22.24	1,481.29	-212.85	6,242.69	6,183.30	59.40	105.102		
12,000.00	6,072.98	5,675.06	5,449.19	178.40	28.47	22.24	1,480.97	-212.73	6,342.15	6,282.71	59.44	106.700		
12,100.00	6,073.24	5,674.03	5,448.22	181.38	28.46	22.23	1,480.65	-212.63	6,441.62	6,382.14	59.48	108.295		
12,200.00	6,073.51	5,673.02	5,447.27	184.36	28.46	22.22	1,480.35	-212.52	6,541.11	6,481.58	59.53	109.887		
12,300.00	6,073.78	5,650.00	5,425.44	187.33	28.32	22.08	1,473.30	-210.52	6,640.98	6,581.58	59.40	111.797		
12,400.00	6,074.04	5,650.00	5,425.44	190.31	28.32	22.08	1,473.30	-210.52	6,740.46	6,681.01	59.45	113.372		
12,500.00	6,074.31	5,650.00	5,425.44	193.29	28.32	22.08	1,473.30	-210.52	6,839.96	6,780.45	59.51	114.944		
12,600.00	6,074.58	5,650.00	5,425.44	196.27	28.32	22.08	1,473.30	-210.52	6,939.47	6,879.91	59.56	116.512		
12,700.00	6,074.84	5,650.00	5,425.44	199.26	28.32	22.08	1,473.30	-210.52	7,039.00	6,979.38	59.61	118.078		
12,800.00	6,075.11	5,650.00	5,425.44	202.24	28.32	22.08	1,473.30	-210.52	7,138.53	7,078.87	59.67	119.640		
12,900.00	6,075.37	5,650.00	5,425.44	205.22	28.32	22.08	1,473.30	-210.52	7,238.08	7,178.36	59.72	121.200		
13,000.00	6,075.64	5,650.00	5,425.44	208.21	28.32	22.08	1,473.30	-210.52	7,337.65	7,277.87	59.77	122.756		
13,100.00	6,075.91	5,650.00	5,425.44	211.19	28.32	22.08	1,473.30	-210.52	7,437.22	7,377.39	59.83	124.309		
13,200.00	6,076.17	5,650.00	5,425.44	214.18	28.32	22.08	1,473.30	-210.52	7,536.81	7,476.92	59.88	125.858		
13,300.00	6,076.44	5,650.00	5,425.44	217.16	28.32	22.08	1,473.30	-210.52	7,636.40	7,576.47	59.94	127.404		
13,400.00	6,076.70	5,650.00	5,425.44	220.15	28.32	22.08	1,473.30	-210.52	7,736.01	7,676.02	59.99	128.947		
13,500.00	6,076.97	5,650.00	5,425.44	223.14	28.32	22.08	1,473.30	-210.52	7,835.63	7,775.58	60.05	130.487		
13,600.00	6,077.24	5,650.00	5,425.44	226.13	28.32	22.08	1,473.30	-210.52	7,935.26	7,875.15	60.11	132.023		
13,700.00	6,077.50	5,650.00	5,425.44	229.12	28.32	22.08	1,473.30	-210.52	8,034.89	7,974.73	60.16	133.555		
13,800.00	6,077.77	5,650.00	5,425.44	232.11	28.32	22.08	1,473.30	-210.52	8,134.54	8,074.32	60.22	135.084		
13,887.55	6,078.00	5,650.00	5,425.44	234.72	28.32	22.08	1,473.30	-210.52	8,221.78	8,161.51	60.27	136.419		



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 4H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)				Between Centres (usft)	Between Ellipses (usft)
0.00	0.00	0.00	0.00	0.00	0.00	144.06	-40.41	29.29	49.91				
100.00	100.00	100.00	100.00	0.18	0.18	144.06	-40.41	29.29	49.91	49.55	0.36	139.223	
200.00	200.00	200.00	200.00	0.54	0.54	144.06	-40.41	29.29	49.91	48.83	1.08	46.408	
300.00	300.00	300.00	300.00	0.90	0.90	144.06	-40.41	29.29	49.91	48.12	1.79	27.845	
400.00	400.00	400.00	400.00	1.25	1.25	144.06	-40.41	29.29	49.91	47.40	2.51	19.889	
500.00	500.00	500.00	500.00	1.61	1.61	144.06	-40.41	29.29	49.91	46.68	3.23	15.469 CC, ES	
600.00	599.98	598.63	598.61	1.97	1.95	141.78	-42.09	29.08	52.54	48.60	3.94	13.350	
700.00	699.84	696.55	696.39	2.33	2.28	147.80	-47.10	28.45	60.91	56.25	4.66	13.068 SF	
800.00	799.45	793.07	792.56	2.70	2.61	154.68	-55.27	27.42	75.88	70.47	5.41	14.029	
900.00	898.70	887.57	886.39	3.06	2.95	160.61	-66.38	26.02	97.89	91.73	6.16	15.891	
1,000.00	997.47	979.44	977.20	3.44	3.29	165.12	-80.12	24.30	126.85	119.95	6.90	18.394	
1,100.00	1,095.62	1,068.16	1,064.44	3.83	3.64	168.38	-96.13	22.28	162.46	154.85	7.60	21.365	
1,200.00	1,193.06	1,153.30	1,147.65	4.25	3.99	170.74	-114.00	20.04	204.34	196.05	8.29	24.657	
1,300.00	1,289.64	1,234.49	1,226.47	4.68	4.34	172.45	-133.32	17.61	252.11	243.17	8.94	28.214	
1,400.00	1,385.27	1,311.46	1,300.66	5.14	4.68	173.72	-153.68	15.05	305.39	295.84	9.55	31.982	
1,500.00	1,480.00	1,384.31	1,370.34	5.63	5.03	174.75	-174.76	12.40	363.34	353.22	10.13	35.878	
1,600.00	1,574.64	1,454.37	1,436.82	6.14	5.38	175.57	-196.68	9.64	423.63	412.97	10.67	39.715	
1,700.00	1,669.28	1,521.86	1,500.32	6.65	5.73	176.21	-219.32	6.79	485.86	474.68	11.18	43.440	
1,800.00	1,763.91	1,586.84	1,560.95	7.17	6.09	176.72	-242.52	3.88	549.91	538.23	11.68	47.075	
1,900.00	1,858.55	1,657.74	1,626.63	7.70	6.49	177.19	-269.02	0.54	615.36	603.15	12.21	50.403	
2,000.00	1,953.18	1,733.15	1,696.45	8.23	6.92	177.60	-297.30	-3.01	680.94	668.17	12.77	53.318	
2,100.00	2,047.82	1,808.56	1,766.27	8.77	7.37	177.93	-325.58	-6.57	746.54	733.20	13.34	55.948	
2,200.00	2,142.45	1,883.98	1,836.09	9.31	7.81	178.21	-353.86	-10.12	812.15	798.23	13.92	58.329	
2,300.00	2,237.09	1,959.39	1,905.90	9.86	8.27	178.45	-382.14	-13.68	877.77	863.26	14.51	60.489	
2,400.00	2,331.73	2,034.80	1,975.72	10.40	8.73	178.65	-410.43	-17.24	943.40	928.29	15.11	62.455	
2,500.00	2,426.36	2,110.21	2,045.54	10.95	9.19	178.83	-438.71	-20.79	1,009.03	993.32	15.70	64.250	
2,600.00	2,521.00	2,185.63	2,115.36	11.50	9.65	178.99	-466.99	-24.35	1,074.67	1,058.36	16.31	65.893	
2,700.00	2,615.63	2,261.04	2,185.18	12.05	10.12	179.13	-495.27	-27.90	1,140.31	1,123.39	16.92	67.400	
2,800.00	2,710.27	2,336.45	2,254.99	12.61	10.59	179.25	-523.55	-31.46	1,205.95	1,188.42	17.53	68.787	
2,900.00	2,804.90	2,411.87	2,324.81	13.16	11.06	179.36	-551.83	-35.02	1,271.60	1,253.45	18.15	70.067	
3,000.00	2,899.54	2,487.28	2,394.63	13.72	11.53	179.46	-580.12	-38.57	1,337.25	1,318.48	18.77	71.250	
3,100.00	2,994.17	2,562.69	2,464.45	14.27	12.00	179.55	-608.40	-42.13	1,402.90	1,383.51	19.39	72.346	
3,200.00	3,088.81	2,638.10	2,534.27	14.83	12.48	179.63	-636.68	-45.69	1,468.56	1,448.54	20.02	73.364	
3,300.00	3,183.45	2,713.52	2,604.09	15.39	12.95	179.71	-664.96	-49.24	1,534.21	1,513.57	20.65	74.312	
3,400.00	3,278.08	2,788.93	2,673.90	15.95	13.43	179.78	-693.24	-52.80	1,599.87	1,578.60	21.28	75.196	
3,500.00	3,372.72	2,864.34	2,743.72	16.51	13.91	179.84	-721.52	-56.35	1,665.53	1,643.62	21.91	76.022	
3,600.00	3,467.35	2,939.75	2,813.54	17.07	14.39	179.90	-749.80	-59.91	1,731.19	1,708.65	22.54	76.796	
3,700.00	3,561.99	3,015.17	2,883.36	17.63	14.87	179.96	-778.09	-63.47	1,796.85	1,773.67	23.18	77.521	
3,800.00	3,656.62	3,090.58	2,953.18	18.19	15.35	179.99	-806.37	-67.02	1,862.51	1,838.70	23.82	78.203	
3,900.00	3,751.26	3,165.99	3,022.99	18.75	15.83	179.95	-834.65	-70.58	1,928.18	1,903.72	24.46	78.844	
4,000.00	3,845.90	3,241.40	3,092.81	19.31	16.31	179.90	-862.93	-74.13	1,993.84	1,968.74	25.10	79.448	
4,100.00	3,940.53	3,316.82	3,162.63	19.87	16.79	179.86	-891.21	-77.69	2,059.50	2,033.76	25.74	80.018	
4,200.00	4,035.17	3,392.23	3,232.45	20.43	17.28	179.82	-919.49	-81.25	2,125.17	2,098.79	26.38	80.557	
4,300.00	4,129.80	3,467.64	3,302.27	20.99	17.76	179.78	-947.78	-84.80	2,190.83	2,163.81	27.02	81.067	
4,400.00	4,224.44	3,543.05	3,372.08	21.56	18.24	179.75	-976.06	-88.36	2,256.50	2,228.83	27.67	81.550	
4,500.00	4,319.07	3,618.47	3,441.90	22.12	18.73	179.72	-1,004.34	-91.91	2,322.16	2,293.85	28.32	82.008	
4,600.00	4,413.71	3,693.88	3,511.72	22.68	19.21	179.69	-1,032.62	-95.47	2,387.83	2,358.86	28.96	82.444	
4,700.00	4,508.34	3,769.29	3,581.54	23.25	19.69	179.66	-1,060.90	-99.03	2,453.49	2,423.88	29.61	82.857	
4,800.00	4,602.98	3,844.70	3,651.36	23.81	20.18	179.63	-1,089.18	-102.58	2,519.16	2,488.90	30.26	83.251	
4,900.00	4,697.62	3,920.12	3,721.18	24.37	20.66	179.60	-1,117.46	-106.14	2,584.83	2,553.92	30.91	83.626	
5,000.00	4,792.25	3,995.53	3,790.99	24.94	21.15	179.58	-1,145.75	-109.70	2,650.50	2,618.94	31.56	83.983	
5,100.00	4,886.89	4,070.94	3,860.81	25.50	21.64	179.56	-1,174.03	-113.25	2,716.16	2,683.95	32.21	84.324	

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 603 4H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			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	
5,200.00	4,981.52	4,146.36	3,930.63	26.06	22.12	-179.53	-1,202.31	-116.81	2,781.83	2,748.97	32.86	84.650	
5,300.00	5,076.16	4,221.77	4,000.45	26.63	22.61	-179.51	-1,230.59	-120.36	2,847.50	2,813.98	33.52	84.962	
5,400.00	5,170.79	4,297.18	4,070.27	27.19	23.09	-179.49	-1,258.87	-123.92	2,913.17	2,879.00	34.17	85.260	
5,500.00	5,265.43	4,372.59	4,140.08	27.76	23.58	-179.47	-1,287.15	-127.48	2,978.84	2,944.01	34.82	85.545	
5,600.00	5,360.06	4,448.01	4,209.90	28.32	24.07	-179.45	-1,315.44	-131.03	3,044.51	3,009.03	35.48	85.818	
5,700.00	5,454.58	4,523.21	4,279.52	28.89	24.55	163.25	-1,343.64	-134.58	3,110.29	3,074.16	36.13	86.088	
5,800.00	5,547.66	4,596.68	4,347.54	29.45	25.03	138.46	-1,371.19	-138.04	3,176.20	3,139.43	36.76	86.393	
5,900.00	5,637.51	4,666.92	4,412.58	29.98	25.48	120.13	-1,397.54	-141.36	3,241.22	3,203.86	37.37	86.740	
6,000.00	5,722.36	4,732.58	4,473.37	30.50	25.91	106.68	-1,422.16	-144.45	3,304.45	3,266.51	37.93	87.109	
6,100.00	5,800.57	4,792.37	4,528.72	31.00	26.29	96.55	-1,444.58	-147.27	3,365.07	3,326.59	38.48	87.454	
6,200.00	5,870.60	4,845.13	4,577.57	31.50	26.63	88.70	-1,464.37	-149.76	3,422.42	3,383.40	39.03	87.695	
6,300.00	5,931.11	4,889.84	4,618.96	32.00	26.92	82.51	-1,481.13	-151.87	3,475.91	3,436.29	39.62	87.726	
6,400.00	5,980.92	4,925.61	4,652.08	32.54	27.15	77.57	-1,494.55	-153.55	3,525.03	3,484.71	40.32	87.436	
6,500.00	6,019.04	4,951.76	4,676.29	33.15	27.32	73.63	-1,504.36	-154.79	3,569.28	3,528.13	41.15	86.742	
6,600.00	6,044.75	4,967.78	4,691.11	33.88	27.43	70.50	-1,510.36	-155.54	3,608.21	3,566.07	42.14	85.625	
6,700.00	6,057.54	4,973.35	4,696.27	34.79	27.46	68.09	-1,512.45	-155.80	3,641.39	3,598.11	43.28	84.131	
6,800.00	6,059.15	4,969.95	4,693.13	35.91	27.44	67.18	-1,511.18	-155.64	3,669.73	3,625.18	44.55	82.374	
6,900.00	6,059.41	4,965.48	4,688.99	37.29	27.41	67.11	-1,509.50	-155.43	3,699.66	3,653.71	45.95	80.512	
7,000.00	6,059.68	4,961.02	4,684.85	38.92	27.38	67.04	-1,507.83	-155.22	3,732.03	3,684.57	47.46	78.640	
7,100.00	6,059.94	4,956.55	4,680.72	40.76	27.35	66.96	-1,506.15	-155.01	3,766.77	3,717.74	49.04	76.816	
7,200.00	6,060.21	4,952.08	4,676.58	42.78	27.32	66.89	-1,504.47	-154.80	3,803.82	3,753.15	50.67	75.077	
7,300.00	6,060.48	4,947.61	4,672.44	44.94	27.30	66.82	-1,502.80	-154.59	3,843.11	3,790.78	52.32	73.448	
7,400.00	6,060.74	4,943.14	4,668.30	47.22	27.27	66.75	-1,501.12	-154.38	3,884.57	3,830.57	54.00	71.942	
7,500.00	6,061.01	4,938.67	4,664.17	49.59	27.24	66.67	-1,499.45	-154.17	3,928.13	3,872.47	55.67	70.564	
7,600.00	6,061.27	4,934.20	4,660.03	52.04	27.21	66.60	-1,497.77	-153.96	3,973.73	3,916.40	57.33	69.313	
7,700.00	6,061.54	4,929.73	4,655.89	54.56	27.18	66.53	-1,496.09	-153.75	4,021.30	3,962.32	58.97	68.189	
7,800.00	6,061.81	4,925.26	4,651.75	57.13	27.15	66.46	-1,494.42	-153.54	4,070.76	4,010.17	60.59	67.185	
7,900.00	6,062.07	4,920.79	4,647.62	59.75	27.12	66.38	-1,492.74	-153.33	4,122.05	4,059.87	62.18	66.295	
8,000.00	6,062.34	4,916.32	4,643.48	62.40	27.09	66.31	-1,491.07	-153.12	4,175.09	4,111.36	63.73	65.512	
8,100.00	6,062.60	4,911.85	4,639.34	65.09	27.06	66.24	-1,489.39	-152.90	4,229.84	4,164.59	65.24	64.831	
8,200.00	6,062.87	4,907.38	4,635.20	67.81	27.04	66.16	-1,487.71	-152.69	4,286.21	4,219.49	66.72	64.244	
8,300.00	6,063.14	4,902.92	4,631.06	70.55	27.01	66.09	-1,486.04	-152.48	4,344.15	4,276.00	68.15	63.744	
8,400.00	6,063.40	4,898.45	4,626.93	73.32	26.98	66.02	-1,484.36	-152.27	4,403.59	4,334.05	69.54	63.325	
8,500.00	6,063.67	4,893.98	4,622.79	76.11	26.95	65.95	-1,482.69	-152.06	4,464.48	4,393.60	70.89	62.982	
8,600.00	6,063.93	4,889.51	4,618.65	78.91	26.92	65.87	-1,481.01	-151.85	4,526.75	4,454.57	72.19	62.708	
8,700.00	6,064.20	4,885.04	4,614.51	81.73	26.89	65.80	-1,479.33	-151.64	4,590.36	4,516.91	73.45	62.500	
8,800.00	6,064.47	4,880.57	4,610.38	84.57	26.86	65.73	-1,477.66	-151.43	4,655.24	4,580.57	74.66	62.352	
8,900.00	6,064.73	4,876.10	4,606.24	87.41	26.83	65.66	-1,475.98	-151.22	4,721.34	4,645.50	75.83	62.259	
9,000.00	6,065.00	4,871.63	4,602.10	90.27	26.80	65.58	-1,474.31	-151.01	4,788.61	4,711.65	76.96	62.219	
9,100.00	6,065.26	4,867.16	4,597.96	93.14	26.78	65.51	-1,472.63	-150.80	4,857.00	4,778.95	78.05	62.227	
9,200.00	6,065.53	4,862.69	4,593.83	96.01	26.75	65.44	-1,470.95	-150.59	4,926.48	4,847.37	79.10	62.280	
9,300.00	6,065.80	4,858.22	4,589.69	98.90	26.72	65.37	-1,469.28	-150.38	4,996.98	4,916.87	80.11	62.375	
9,400.00	6,066.06	4,853.75	4,585.55	101.79	26.69	65.29	-1,467.60	-150.17	5,068.47	4,987.39	81.08	62.509	
9,500.00	6,066.33	4,849.28	4,581.41	104.69	26.66	65.22	-1,465.92	-149.95	5,140.91	5,058.89	82.02	62.679	
9,600.00	6,066.59	4,844.82	4,577.27	107.60	26.63	65.15	-1,464.25	-149.74	5,214.26	5,131.34	82.92	62.884	
9,700.00	6,066.86	4,840.35	4,573.14	110.51	26.60	65.08	-1,462.57	-149.53	5,288.47	5,204.69	83.78	63.121	
9,800.00	6,067.13	4,835.88	4,569.00	113.42	26.57	65.00	-1,460.90	-149.32	5,363.52	5,278.91	84.61	63.388	
9,900.00	6,067.39	4,831.41	4,564.86	116.35	26.54	64.93	-1,459.22	-149.11	5,439.37	5,353.96	85.41	63.682	
10,000.00	6,067.66	4,826.94	4,560.72	119.27	26.52	64.86	-1,457.54	-148.90	5,515.99	5,429.81	86.18	64.004	
10,100.00	6,067.92	4,822.47	4,556.59	122.20	26.49	64.78	-1,455.87	-148.69	5,593.34	5,506.42	86.92	64.350	
10,200.00	6,068.19	4,818.00	4,552.45	125.14	26.46	64.71	-1,454.19	-148.48	5,671.40	5,583.77	87.63	64.719	
10,300.00	6,068.46	4,813.53	4,548.31	128.08	26.43	64.64	-1,452.52	-148.27	5,750.13	5,661.82	88.31	65.111	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:		0.00 usft
Trieb Fed Pad - Trieb Federal Com 603 4H - OH - Plan #2													Offset Well Error:		0.00 usft
Survey Program: 0-MWD+HDGM															
Reference		Offset		Semi Major Axis			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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,400.00	6,068.72	4,809.06	4,544.17	131.02	26.40	64.57	-1,450.84	-148.06	5,829.51	5,740.54	88.97	65.523			
10,500.00	6,068.99	4,804.59	4,540.04	133.96	26.37	64.49	-1,449.16	-147.85	5,909.51	5,819.91	89.60	65.955			
10,600.00	6,069.25	4,800.12	4,535.90	136.91	26.34	64.42	-1,447.49	-147.64	5,990.11	5,899.91	90.21	66.405			
10,700.00	6,069.52	4,795.65	4,531.76	139.86	26.31	64.35	-1,445.81	-147.43	6,071.29	5,980.50	90.79	66.873			
10,800.00	6,069.79	4,791.18	4,527.62	142.81	26.28	64.28	-1,444.14	-147.21	6,153.01	6,061.66	91.35	67.358			
10,900.00	6,070.05	4,786.71	4,523.48	145.77	26.26	64.20	-1,442.46	-147.00	6,235.27	6,143.38	91.89	67.858			
11,000.00	6,070.32	4,782.25	4,519.35	148.73	26.23	64.13	-1,440.78	-146.79	6,318.03	6,225.63	92.40	68.374			
11,100.00	6,070.58	4,777.78	4,515.21	151.69	26.20	64.06	-1,439.11	-146.58	6,401.28	6,308.38	92.90	68.903			
11,200.00	6,070.85	4,773.31	4,511.07	154.65	26.17	63.99	-1,437.43	-146.37	6,485.01	6,391.63	93.38	69.446			
11,300.00	6,071.12	4,768.84	4,506.93	157.61	26.14	63.91	-1,435.76	-146.16	6,569.18	6,475.34	93.84	70.002			
11,400.00	6,071.38	4,764.37	4,502.80	160.58	26.11	63.84	-1,434.08	-145.95	6,653.79	6,559.51	94.29	70.570			
11,500.00	6,071.65	4,759.90	4,498.66	163.54	26.08	63.77	-1,432.40	-145.74	6,738.82	6,644.11	94.71	71.150			
11,600.00	6,071.91	4,755.43	4,494.52	166.51	26.05	63.70	-1,430.73	-145.53	6,824.25	6,729.13	95.12	71.741			
11,700.00	6,072.18	4,750.96	4,490.38	169.48	26.02	63.63	-1,429.05	-145.32	6,910.07	6,814.55	95.52	72.342			
11,800.00	6,072.45	4,746.49	4,486.25	172.46	26.00	63.55	-1,427.37	-145.11	6,996.27	6,900.37	95.90	72.954			
11,900.00	6,072.71	4,742.02	4,482.11	175.43	25.97	63.48	-1,425.70	-144.90	7,082.82	6,986.55	96.27	73.576			
12,000.00	6,072.98	4,737.55	4,477.97	178.40	25.94	63.41	-1,424.02	-144.69	7,169.72	7,073.10	96.62	74.206			
12,100.00	6,073.24	4,733.08	4,473.83	181.38	25.91	63.34	-1,422.35	-144.48	7,256.96	7,160.00	96.96	74.846			
12,200.00	6,073.51	4,728.61	4,469.69	184.36	25.88	63.26	-1,420.67	-144.26	7,344.51	7,247.23	97.29	75.494			
12,300.00	6,073.78	4,724.15	4,465.56	187.33	25.85	63.19	-1,418.99	-144.05	7,432.38	7,334.78	97.60	76.150			
12,400.00	6,074.04	4,719.68	4,461.42	190.31	25.82	63.12	-1,417.32	-143.84	7,520.55	7,422.65	97.91	76.815			
12,500.00	6,074.31	4,715.21	4,457.28	193.29	25.79	63.05	-1,415.64	-143.63	7,609.01	7,510.82	98.20	77.486			
12,600.00	6,074.58	4,710.74	4,453.14	196.27	25.76	62.97	-1,413.97	-143.42	7,697.75	7,599.27	98.48	78.165			
12,700.00	6,074.84	4,706.27	4,449.01	199.26	25.74	62.90	-1,412.29	-143.21	7,786.76	7,688.01	98.75	78.851			
12,800.00	6,075.11	4,701.80	4,444.87	202.24	25.71	62.83	-1,410.61	-143.00	7,876.04	7,777.02	99.02	79.544			
12,900.00	6,075.37	4,697.33	4,440.73	205.22	25.68	62.76	-1,408.94	-142.79	7,965.56	7,866.29	99.27	80.243			
13,000.00	6,075.64	4,692.86	4,436.59	208.21	25.65	62.69	-1,407.26	-142.58	8,055.33	7,955.81	99.51	80.948			
13,100.00	6,075.91	4,688.39	4,432.46	211.19	25.62	62.61	-1,405.59	-142.37	8,145.33	8,045.58	99.75	81.659			
13,200.00	6,076.17	4,683.92	4,428.32	214.18	25.59	62.54	-1,403.91	-142.16	8,235.56	8,135.59	99.98	82.376			
13,300.00	6,076.44	4,679.45	4,424.18	217.16	25.56	62.47	-1,402.23	-141.95	8,326.01	8,225.82	100.19	83.099			
13,400.00	6,076.70	4,674.98	4,420.04	220.15	25.53	62.40	-1,400.56	-141.74	8,416.68	8,316.28	100.41	83.826			
13,500.00	6,076.97	4,670.51	4,415.90	223.14	25.50	62.33	-1,398.88	-141.52	8,507.55	8,406.94	100.61	84.560			
13,600.00	6,077.24	4,666.05	4,411.77	226.13	25.48	62.25	-1,397.21	-141.31	8,598.63	8,497.82	100.81	85.298			
13,700.00	6,077.50	4,661.58	4,407.63	229.12	25.45	62.18	-1,395.53	-141.10	8,689.90	8,588.90	101.00	86.041			
13,800.00	6,077.77	4,657.11	4,403.49	232.11	25.42	62.11	-1,393.85	-140.89	8,781.35	8,680.17	101.18	86.788			
13,887.55	6,078.00	4,653.19	4,399.87	234.72	25.39	62.05	-1,392.39	-140.71	8,861.57	8,760.23	101.34	87.446			



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			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)	Offset Wellbore Centre +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	112.72	-11.29	26.95	29.21					
100.00	100.00	100.00	100.00	0.18	0.18	112.72	-11.29	26.95	29.21	28.86	0.36	81.495		
200.00	200.00	200.00	200.00	0.54	0.54	112.72	-11.29	26.95	29.21	28.14	1.08	27.165		
300.00	300.00	300.00	300.00	0.90	0.90	112.72	-11.29	26.95	29.21	27.42	1.79	16.299		
400.00	400.00	400.00	400.00	1.25	1.25	112.72	-11.29	26.95	29.21	26.70	2.51	11.642		
500.00	500.00	500.00	500.00	1.61	1.61	112.72	-11.29	26.95	29.21	25.99	3.23	9.055 CC		
600.00	599.98	599.98	599.98	1.97	1.97	111.17	-11.29	26.95	29.80	25.86	3.94	7.558 ES		
700.00	699.84	699.84	699.84	2.33	2.33	119.87	-11.29	26.95	32.06	27.40	4.66	6.881 SF		
800.00	799.45	799.45	799.45	2.70	2.69	131.50	-11.29	26.95	37.19	31.81	5.38	6.912		
900.00	898.70	898.70	898.70	3.06	3.04	142.75	-11.29	26.95	46.19	40.09	6.10	7.569		
1,000.00	997.47	997.47	997.47	3.44	3.40	151.77	-11.29	26.95	59.44	52.61	6.83	8.708		
1,100.00	1,095.62	1,095.62	1,095.62	3.83	3.75	158.37	-11.29	26.95	76.82	69.28	7.55	10.178		
1,200.00	1,193.06	1,193.06	1,193.06	4.25	4.10	163.08	-11.29	26.95	98.13	89.86	8.27	11.868		
1,300.00	1,289.64	1,289.64	1,289.64	4.68	4.44	166.46	-11.29	26.95	123.17	114.18	8.99	13.704		
1,400.00	1,385.27	1,385.27	1,385.27	5.14	4.79	168.92	-11.29	26.95	151.80	142.09	9.71	15.639		
1,500.00	1,480.00	1,480.00	1,480.00	5.63	5.13	170.80	-11.29	26.95	183.36	172.94	10.42	17.591		
1,600.00	1,574.64	1,574.64	1,574.64	6.14	5.47	172.17	-11.29	26.95	215.36	204.22	11.13	19.341		
1,700.00	1,669.28	1,669.28	1,669.28	6.65	5.80	173.19	-11.29	26.95	247.44	235.59	11.85	20.881		
1,800.00	1,763.91	1,763.91	1,763.91	7.17	6.14	173.98	-11.29	26.95	279.57	267.00	12.57	22.244		
1,900.00	1,858.55	1,858.55	1,858.55	7.70	6.48	174.60	-11.29	26.95	311.74	298.45	13.29	23.457		
2,000.00	1,953.18	1,953.18	1,953.18	8.23	6.82	175.10	-11.29	26.95	343.93	329.92	14.01	24.543		
2,100.00	2,047.82	2,047.82	2,047.82	8.77	7.16	175.52	-11.29	26.95	376.15	361.41	14.74	25.521		
2,200.00	2,142.45	2,142.45	2,142.45	9.31	7.50	175.88	-11.29	26.95	408.38	392.91	15.47	26.404		
2,300.00	2,237.09	2,237.09	2,237.09	9.86	7.84	176.18	-11.29	26.95	440.62	424.43	16.20	27.207		
2,400.00	2,331.73	2,331.73	2,331.73	10.40	8.18	176.44	-11.29	26.95	472.88	455.95	16.93	27.939		
2,500.00	2,426.36	2,426.36	2,426.36	10.95	8.52	176.67	-11.29	26.95	505.14	487.48	17.66	28.608		
2,600.00	2,521.00	2,521.00	2,521.00	11.50	8.86	176.87	-11.29	26.95	537.40	519.01	18.39	29.224		
2,700.00	2,615.63	2,615.63	2,615.63	12.05	9.20	177.05	-11.29	26.95	569.67	550.55	19.12	29.791		
2,800.00	2,710.27	2,710.27	2,710.27	12.61	9.54	177.20	-11.29	26.95	601.95	582.09	19.86	30.315		
2,900.00	2,804.90	2,804.90	2,804.90	13.16	9.88	177.35	-11.29	26.95	634.23	613.64	20.59	30.801		
3,000.00	2,899.54	2,899.54	2,899.54	13.72	10.21	177.48	-11.29	26.95	666.51	645.19	21.33	31.253		
3,100.00	2,994.17	2,994.17	2,994.17	14.27	10.55	177.59	-11.29	26.95	698.80	676.74	22.06	31.674		
3,200.00	3,088.81	3,088.81	3,088.81	14.83	10.89	177.70	-11.29	26.95	731.09	708.29	22.80	32.067		
3,300.00	3,183.45	3,183.45	3,183.45	15.39	11.23	177.80	-11.29	26.95	763.38	739.84	23.54	32.435		
3,400.00	3,278.08	3,278.08	3,278.08	15.95	11.57	177.89	-11.29	26.95	795.67	771.40	24.27	32.780		
3,500.00	3,372.72	3,372.72	3,372.72	16.51	11.91	177.97	-11.29	26.95	827.96	802.95	25.01	33.105		
3,600.00	3,467.35	3,467.35	3,467.35	17.07	12.25	178.04	-11.29	26.95	860.26	834.51	25.75	33.410		
3,700.00	3,561.99	3,561.99	3,561.99	17.63	12.59	178.12	-11.29	26.95	892.55	866.07	26.49	33.698		
3,800.00	3,656.62	3,656.62	3,656.62	18.19	12.93	178.18	-11.29	26.95	924.85	897.63	27.23	33.970		
3,900.00	3,751.26	3,751.26	3,751.26	18.75	13.27	178.24	-11.29	26.95	957.15	929.19	27.96	34.228		
4,000.00	3,845.90	3,845.90	3,845.90	19.31	13.61	178.30	-11.29	26.95	989.45	960.75	28.70	34.472		
4,100.00	3,940.53	3,940.53	3,940.53	19.87	13.95	178.35	-11.29	26.95	1,021.75	992.31	29.44	34.703		
4,200.00	4,035.17	4,035.17	4,035.17	20.43	14.29	178.40	-11.29	26.95	1,054.05	1,023.87	30.18	34.923		
4,300.00	4,129.80	4,129.80	4,129.80	20.99	14.62	178.45	-11.29	26.95	1,086.35	1,055.43	30.92	35.133		
4,400.00	4,224.44	4,224.44	4,224.44	21.56	14.96	178.50	-11.29	26.95	1,118.66	1,086.99	31.66	35.332		
4,500.00	4,319.07	4,319.07	4,319.07	22.12	15.30	178.54	-11.29	26.95	1,150.96	1,118.56	32.40	35.522		
4,600.00	4,413.71	4,413.71	4,413.71	22.68	15.64	178.58	-11.29	26.95	1,183.26	1,150.12	33.14	35.703		
4,700.00	4,508.34	4,508.34	4,508.34	23.25	15.98	178.62	-11.29	26.95	1,215.57	1,181.68	33.88	35.876		
4,800.00	4,602.98	4,602.98	4,602.98	23.81	16.32	178.65	-11.29	26.95	1,247.87	1,213.25	34.62	36.042		
4,900.00	4,697.62	4,697.62	4,697.62	24.37	16.66	178.69	-11.29	26.95	1,280.17	1,244.81	35.36	36.201		
5,000.00	4,792.25	4,792.25	4,792.25	24.94	17.00	178.72	-11.29	26.95	1,312.48	1,276.38	36.10	36.353		
5,100.00	4,886.89	4,886.89	4,886.89	25.50	17.34	178.75	-11.29	26.95	1,344.79	1,307.94	36.85	36.498		

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



Scientific Drilling, Intl Anticollision Report



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Strat Test 600 #1 - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		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)		
5,200.00	4,981.52	4,981.52	4,981.52	26.06	17.68	178.78	-11.29	26.95	1,377.09	1,339.51	37.59	36.638	
5,300.00	5,076.16	5,076.16	5,076.16	26.63	18.02	178.81	-11.29	26.95	1,409.40	1,371.07	38.33	36.773	
5,400.00	5,170.79	5,170.79	5,170.79	27.19	18.36	178.83	-11.29	26.95	1,441.70	1,402.64	39.07	36.902	
5,500.00	5,265.43	5,265.43	5,265.43	27.76	18.70	178.86	-11.29	26.95	1,474.01	1,434.20	39.81	37.026	
5,600.00	5,360.06	5,360.06	5,360.06	28.32	19.04	178.88	-11.29	26.95	1,506.32	1,465.77	40.55	37.146	
5,700.00	5,454.58	5,454.58	5,454.58	28.89	19.37	164.13	-11.29	26.95	1,538.74	1,497.45	41.29	37.264	
5,800.00	5,547.66	5,547.66	5,547.66	29.45	19.71	143.79	-11.29	26.95	1,571.59	1,529.56	42.03	37.395	
5,900.00	5,637.51	5,637.51	5,637.51	29.98	20.03	129.83	-11.29	26.95	1,604.68	1,561.94	42.74	37.545	
6,000.00	5,722.36	5,722.36	5,722.36	30.50	20.33	120.47	-11.29	26.95	1,638.07	1,594.64	43.43	37.718	
6,100.00	5,800.57	5,800.57	5,800.57	31.00	20.61	113.94	-11.29	26.95	1,671.96	1,627.86	44.10	37.912	
6,200.00	5,870.60	5,870.60	5,870.60	31.50	20.87	109.09	-11.29	26.95	1,706.72	1,661.95	44.77	38.120	
6,300.00	5,931.11	5,931.11	5,931.11	32.00	21.08	105.18	-11.29	26.95	1,742.69	1,697.22	45.47	38.326	
6,400.00	5,980.92	5,980.92	5,980.92	32.54	21.26	101.74	-11.29	26.95	1,780.15	1,733.93	46.22	38.516	
6,500.00	6,019.04	6,019.04	6,019.04	33.15	21.40	98.44	-11.29	26.95	1,819.20	1,772.17	47.03	38.678	
6,600.00	6,044.75	6,044.75	6,044.75	33.88	21.49	95.11	-11.29	26.95	1,859.76	1,811.84	47.92	38.813	
6,700.00	6,057.54	6,057.54	6,057.54	34.79	21.54	91.66	-11.29	26.95	1,901.46	1,852.62	48.84	38.933	
6,800.00	6,059.15	6,059.15	6,059.15	35.91	21.54	90.08	-11.29	26.95	1,944.34	1,894.56	49.78	39.057	
6,900.00	6,059.41	6,059.41	6,059.41	37.29	21.54	90.08	-11.29	26.95	1,990.94	1,940.17	50.77	39.218	
7,000.00	6,059.68	6,059.68	6,059.68	38.92	21.54	90.09	-11.29	26.95	2,041.37	1,989.60	51.77	39.430	
7,100.00	6,059.94	6,059.94	6,059.94	40.76	21.54	90.10	-11.29	26.95	2,095.37	2,042.59	52.78	39.703	
7,200.00	6,060.21	6,060.21	6,060.21	42.78	21.54	90.11	-11.29	26.95	2,152.66	2,098.90	53.76	40.040	
7,300.00	6,060.48	6,060.48	6,060.48	44.94	21.55	90.12	-11.29	26.95	2,212.99	2,158.27	54.72	40.442	
7,400.00	6,060.74	6,060.74	6,060.74	47.22	21.55	90.13	-11.29	26.95	2,276.11	2,220.47	55.64	40.907	
7,500.00	6,061.01	6,061.01	6,061.01	49.59	21.55	90.14	-11.29	26.95	2,341.81	2,285.29	56.52	41.434	
7,600.00	6,061.27	6,061.27	6,061.27	52.04	21.55	90.15	-11.29	26.95	2,409.86	2,352.51	57.35	42.019	
7,700.00	6,061.54	6,061.54	6,061.54	54.56	21.55	90.15	-11.29	26.95	2,480.08	2,421.94	58.14	42.658	
7,800.00	6,061.81	6,061.81	6,061.81	57.13	21.55	90.16	-11.29	26.95	2,552.29	2,493.41	58.88	43.348	
7,900.00	6,062.07	6,062.07	6,062.07	59.75	21.55	90.17	-11.29	26.95	2,626.32	2,566.74	59.58	44.084	
8,000.00	6,062.34	6,062.34	6,062.34	62.40	21.55	90.18	-11.29	26.95	2,702.02	2,641.79	60.23	44.862	
8,100.00	6,062.60	6,062.60	6,062.60	65.09	21.55	90.19	-11.29	26.95	2,779.26	2,718.42	60.84	45.679	
8,200.00	6,062.87	6,062.87	6,062.87	67.81	21.55	90.20	-11.29	26.95	2,857.91	2,796.49	61.42	46.533	
8,300.00	6,063.14	6,063.14	6,063.14	70.55	21.56	90.21	-11.29	26.95	2,937.86	2,875.90	61.96	47.419	
8,400.00	6,063.40	6,063.40	6,063.40	73.32	21.56	90.22	-11.29	26.95	3,019.00	2,956.54	62.46	48.336	
8,500.00	6,063.67	6,063.67	6,063.67	76.11	21.56	90.22	-11.29	26.95	3,101.25	3,038.32	62.93	49.279	
8,600.00	6,063.93	6,063.93	6,063.93	78.91	21.56	90.23	-11.29	26.95	3,184.51	3,121.14	63.38	50.249	
8,700.00	6,064.20	6,064.20	6,064.20	81.73	21.56	90.24	-11.29	26.95	3,268.71	3,204.92	63.79	51.241	
8,800.00	6,064.47	6,064.47	6,064.47	84.57	21.56	90.25	-11.29	26.95	3,353.78	3,289.60	64.18	52.254	
8,900.00	6,064.73	6,064.73	6,064.73	87.41	21.56	90.26	-11.29	26.95	3,439.65	3,375.10	64.55	53.287	
9,000.00	6,065.00	6,065.00	6,065.00	90.27	21.56	90.27	-11.29	26.95	3,526.27	3,461.38	64.90	54.338	
9,100.00	6,065.26	6,065.26	6,065.26	93.14	21.56	90.28	-11.29	26.95	3,613.58	3,548.36	65.22	55.405	
9,200.00	6,065.53	6,065.53	6,065.53	96.01	21.56	90.29	-11.29	26.95	3,701.53	3,636.00	65.53	56.487	
9,300.00	6,065.80	6,065.80	6,065.80	98.90	21.56	90.29	-11.29	26.95	3,790.08	3,724.26	65.82	57.583	
9,400.00	6,066.06	6,066.06	6,066.06	101.79	21.57	90.30	-11.29	26.95	3,879.18	3,813.09	66.09	58.692	
9,500.00	6,066.33	6,066.33	6,066.33	104.69	21.57	90.31	-11.29	26.95	3,968.81	3,902.45	66.35	59.813	
9,600.00	6,066.59	6,066.59	6,066.59	107.60	21.57	90.32	-11.29	26.95	4,058.92	3,992.32	66.60	60.945	
9,700.00	6,066.86	6,066.86	6,066.86	110.51	21.57	90.33	-11.29	26.95	4,149.48	4,082.64	66.83	62.087	
9,800.00	6,067.13	6,067.13	6,067.13	113.42	21.57	90.34	-11.29	26.95	4,240.46	4,173.41	67.06	63.238	
9,900.00	6,067.39	6,067.39	6,067.39	116.35	21.57	90.35	-11.29	26.95	4,331.85	4,264.58	67.27	64.398	
10,000.00	6,067.66	6,067.66	6,067.66	119.27	21.57	90.36	-11.29	26.95	4,423.60	4,356.13	67.47	65.565	
10,100.00	6,067.92	6,067.92	6,067.92	122.20	21.57	90.36	-11.29	26.95	4,515.71	4,448.05	67.66	66.740	
10,200.00	6,068.19	6,068.19	6,068.19	125.14	21.57	90.37	-11.29	26.95	4,608.14	4,540.30	67.84	67.922	
10,300.00	6,068.46	6,068.46	6,068.46	128.08	21.57	90.38	-11.29	26.95	4,700.89	4,632.87	68.02	69.110	

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



Scientific Drilling, Intl

Anticollision Report



Company: Hilcorp Energy Corp.
 Project: San Juan, NM NAD27
 Reference Site: Trieb Fed Pad
 Site Error: 0.00 usft
 Reference Well: Trieb Federal Com 601 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
 TVD Reference: GI 6050' @ 6050.00usft
 MD Reference: GI 6050' @ 6050.00usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: Grand Junction District
 Offset TVD Reference: Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Strat Test 600 #1 - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			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	
10,400.00	6,068.72	6,068.72	6,068.72	131.02	21.58	90.39	-11.29	26.95	4,793.93	4,725.74	68.19	70.304	
10,500.00	6,068.99	6,068.99	6,068.99	133.96	21.58	90.40	-11.29	26.95	4,887.24	4,818.89	68.35	71.504	
10,600.00	6,069.25	6,069.25	6,069.25	136.91	21.58	90.41	-11.29	26.95	4,980.81	4,912.30	68.50	72.708	
10,700.00	6,069.52	6,069.52	6,069.52	139.86	21.58	90.42	-11.29	26.95	5,074.63	5,005.97	68.65	73.917	
10,800.00	6,069.79	6,069.79	6,069.79	142.81	21.58	90.43	-11.29	26.95	5,168.67	5,099.88	68.80	75.130	
10,900.00	6,070.05	6,070.05	6,070.05	145.77	21.58	90.43	-11.29	26.95	5,262.94	5,194.01	68.93	76.348	
11,000.00	6,070.32	6,070.32	6,070.32	148.73	21.58	90.44	-11.29	26.95	5,357.42	5,288.35	69.07	77.569	
11,100.00	6,070.58	6,070.58	6,070.58	151.69	21.58	90.45	-11.29	26.95	5,452.09	5,382.89	69.20	78.793	
11,200.00	6,070.85	6,070.85	6,070.85	154.65	21.58	90.46	-11.29	26.95	5,546.95	5,477.63	69.32	80.020	
11,300.00	6,071.12	6,071.12	6,071.12	157.61	21.58	90.47	-11.29	26.95	5,641.99	5,572.55	69.44	81.251	
11,400.00	6,071.38	6,071.38	6,071.38	160.58	21.58	90.48	-11.29	26.95	5,737.19	5,667.64	69.56	82.484	
11,500.00	6,071.65	6,071.65	6,071.65	163.54	21.59	90.49	-11.29	26.95	5,832.56	5,762.89	69.67	83.719	
11,600.00	6,071.91	6,071.91	6,071.91	166.51	21.59	90.50	-11.29	26.95	5,928.08	5,858.30	69.78	84.956	
11,700.00	6,072.18	6,072.18	6,072.18	169.48	21.59	90.51	-11.29	26.95	6,023.74	5,953.86	69.88	86.196	
11,800.00	6,072.45	6,072.45	6,072.45	172.46	21.59	90.51	-11.29	26.95	6,119.55	6,049.56	69.99	87.437	
11,900.00	6,072.71	6,072.71	6,072.71	175.43	21.59	90.52	-11.29	26.95	6,215.48	6,145.39	70.09	88.680	
12,000.00	6,072.98	6,072.98	6,072.98	178.40	21.59	90.53	-11.29	26.95	6,311.54	6,241.35	70.19	89.925	
12,100.00	6,073.24	6,073.24	6,073.24	181.38	21.59	90.54	-11.29	26.95	6,407.72	6,337.44	70.28	91.170	
12,200.00	6,073.51	6,073.51	6,073.51	184.36	21.59	90.55	-11.29	26.95	6,504.02	6,433.64	70.38	92.418	
12,300.00	6,073.78	6,073.78	6,073.78	187.33	21.59	90.56	-11.29	26.95	6,600.43	6,529.96	70.47	93.666	
12,400.00	6,074.04	6,074.04	6,074.04	190.31	21.59	90.57	-11.29	26.95	6,696.94	6,626.38	70.56	94.915	
12,500.00	6,074.31	6,074.31	6,074.31	193.29	21.60	90.58	-11.29	26.95	6,793.55	6,722.91	70.65	96.164	
12,600.00	6,074.58	6,074.58	6,074.58	196.27	21.60	90.58	-11.29	26.95	6,890.26	6,819.53	70.73	97.415	
12,700.00	6,074.84	6,074.84	6,074.84	199.26	21.60	90.59	-11.29	26.95	6,987.07	6,916.25	70.82	98.666	
12,800.00	6,075.11	6,075.11	6,075.11	202.24	21.60	90.60	-11.29	26.95	7,083.96	7,013.06	70.90	99.917	
12,900.00	6,075.37	6,075.37	6,075.37	205.22	21.60	90.61	-11.29	26.95	7,180.93	7,109.96	70.98	101.169	
13,000.00	6,075.64	6,075.64	6,075.64	208.21	21.60	90.62	-11.29	26.95	7,277.99	7,206.93	71.06	102.421	
13,100.00	6,075.91	6,075.91	6,075.91	211.19	21.60	90.63	-11.29	26.95	7,375.13	7,303.99	71.14	103.674	
13,200.00	6,076.17	6,076.17	6,076.17	214.18	21.60	90.64	-11.29	26.95	7,472.34	7,401.13	71.22	104.926	
13,300.00	6,076.44	6,076.44	6,076.44	217.16	21.60	90.65	-11.29	26.95	7,569.63	7,498.34	71.29	106.178	
13,400.00	6,076.70	6,076.70	6,076.70	220.15	21.60	90.65	-11.29	26.95	7,666.98	7,595.62	71.37	107.431	
13,500.00	6,076.97	6,076.97	6,076.97	223.14	21.60	90.66	-11.29	26.95	7,764.41	7,692.96	71.44	108.683	
13,600.00	6,077.24	6,077.24	6,077.24	226.13	21.61	90.67	-11.29	26.95	7,861.89	7,790.38	71.51	109.935	
13,700.00	6,077.50	6,077.50	6,077.50	229.12	21.61	90.68	-11.29	26.95	7,959.44	7,887.86	71.59	111.186	
13,800.00	6,077.77	6,077.77	6,077.77	232.11	21.61	90.69	-11.29	26.95	8,057.05	7,985.39	71.66	112.438	
13,887.55	6,078.00	6,078.00	6,078.00	234.72	21.61	90.70	-11.29	26.95	8,142.55	8,070.83	71.72	113.533	



Scientific Drilling, Intl
Anticollision Report



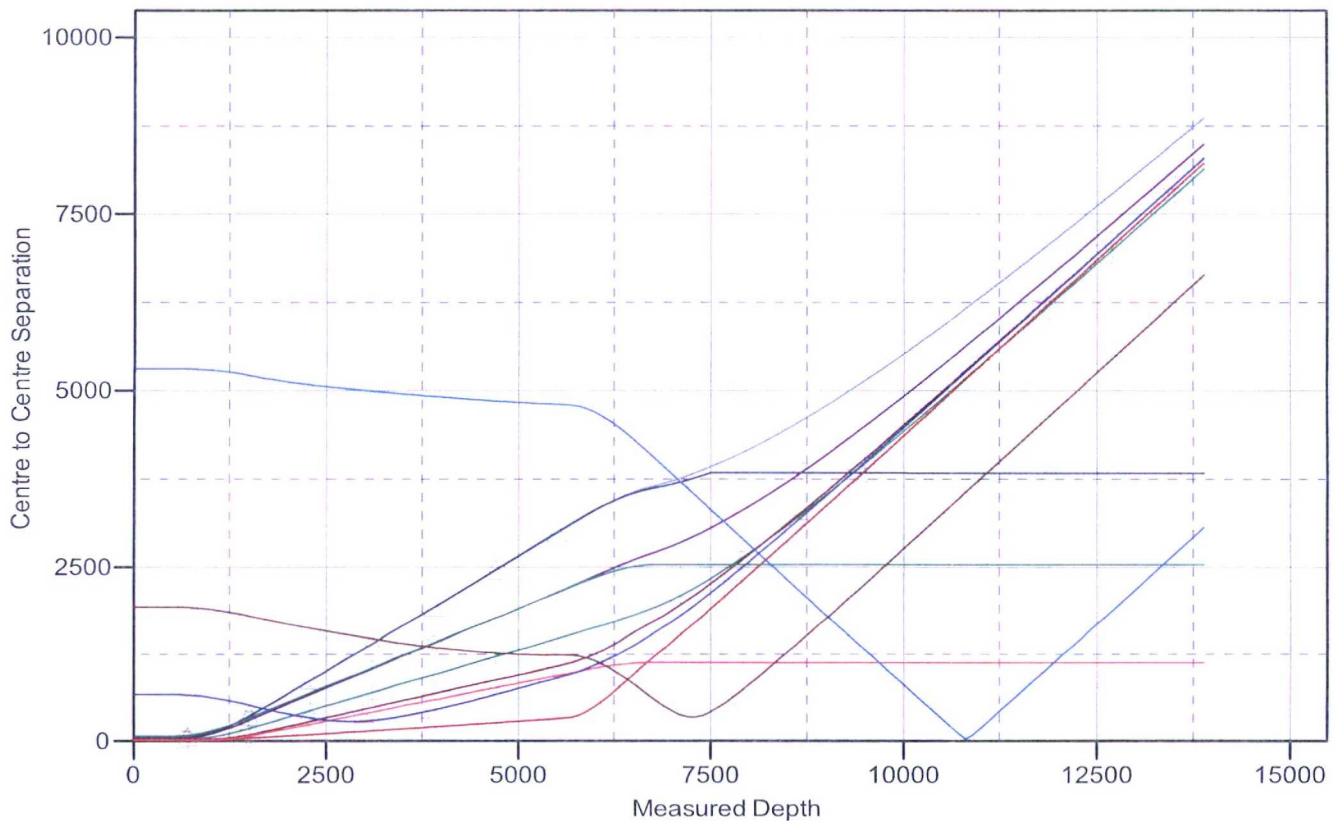
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Reference Depths are relative to GI 6050' @ 6050.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -107.833334

Coordinates are relative to: Trieb Federal Com 601 2H - Slot A02
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: -0.03°

Ladder Plot



LEGEND

- | | | |
|---|--|-------------------------|
| Trieb Federal Strat Test 600 #1, OH, Plan #1 V0 | Trieb Federal Com 603 1H, OH, Plan #2 V0 | Grenier A3N, OH, OH V0 |
| Trieb Federal Com 603 4H, OH, Plan #2 V0 | Trieb Federal Com 602 2H, OH, Plan #2 V0 | Grenier A3M, OH, OH V0 |
| Trieb Federal Com 603 3H, OH, Plan #2 V0 | Trieb Federal Com 602 1H, OH, Plan #2 V0 | Trieb Fed 2B, OH, OH V0 |
| Trieb Federal Com 603 2H, OH, Plan #2 V0 | Trieb Federal Com 601 1H, OH, Plan #2 V0 | |



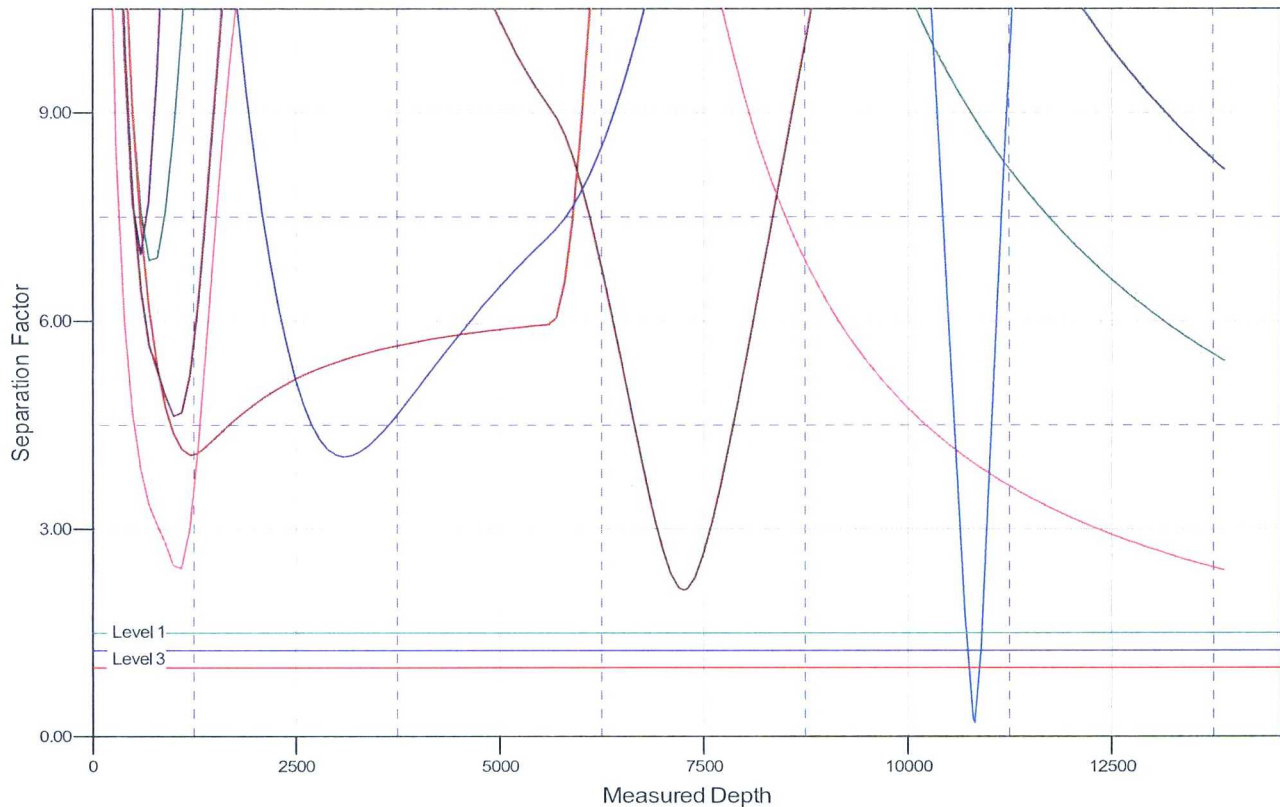
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Reference Site: Trieb Fed Pad
Site Error: 0.00 usft
Reference Well: Trieb Federal Com 601 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Offset Datum

Reference Depths are relative to GI 6050' @ 6050.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: Trieb Federal Com 601 2H - Slot A02
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: -0.03°

Separation Factor Plot



LEGEND

- | | | |
|---|--|-------------------------|
| Trieb Federal Strat Test 600 #1, OH, Plan #1 V0 | Trieb Federal Com 603 1H, OH, Plan #2 V0 | Grenier A3N, OH, OH V0 |
| Trieb Federal Com 603 4H, OH, Plan #2 V0 | Trieb Federal Com 602 2H, OH, Plan #2 V0 | Grenier A3M, OH, OH V0 |
| Trieb Federal Com 603 3H, OH, Plan #2 V0 | Trieb Federal Com 602 1H, OH, Plan #2 V0 | Trieb Fed 2B, OH, OH V0 |
| Trieb Federal Com 603 2H, OH, Plan #2 V0 | Trieb Federal Com 601 1H, OH, Plan #2 V0 | |



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: Trieb Fed Pad
Well: Trieb Federal Com 601 2H
Wellbore: OH
Design: Plan #2

PROJECT DETAILS: San Juan, NM NAD27

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico West 3003
System Datum: Mean Sea Level
Local North: True



Scientific Drilling



Azimuths to True North
Magnetic North: 0.02

Magnetic Field
Strength: 48007.1 nT
Dip Angle: 66.00°
Date: 6/12/2014
Model: IGRF14

WELL DETAILS: Trieb Federal Com 601 2H

GI 6050' @ 6050.00usft
+N/-S 0.00 +E/-W 0.00 Northing 2099209.37 Easting 485861.43 Latitude 36.7690890 Longitude -107.8816050 A02

Plan: Plan #2 (Trieb Federal Com 601 2H/OH)

Created By: Janie Collins Date: 14:07, November 09 2018

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Trieb 601 2H LP	6059.00	1729.12	838.91	2100938.07	486701.21	36.7738387	-107.8787406
Trieb 601 2H BHL	6078.00	1729.12	7981.33	2100934.47	493843.63	36.7738356	-107.8543536

SECTION DETAILS

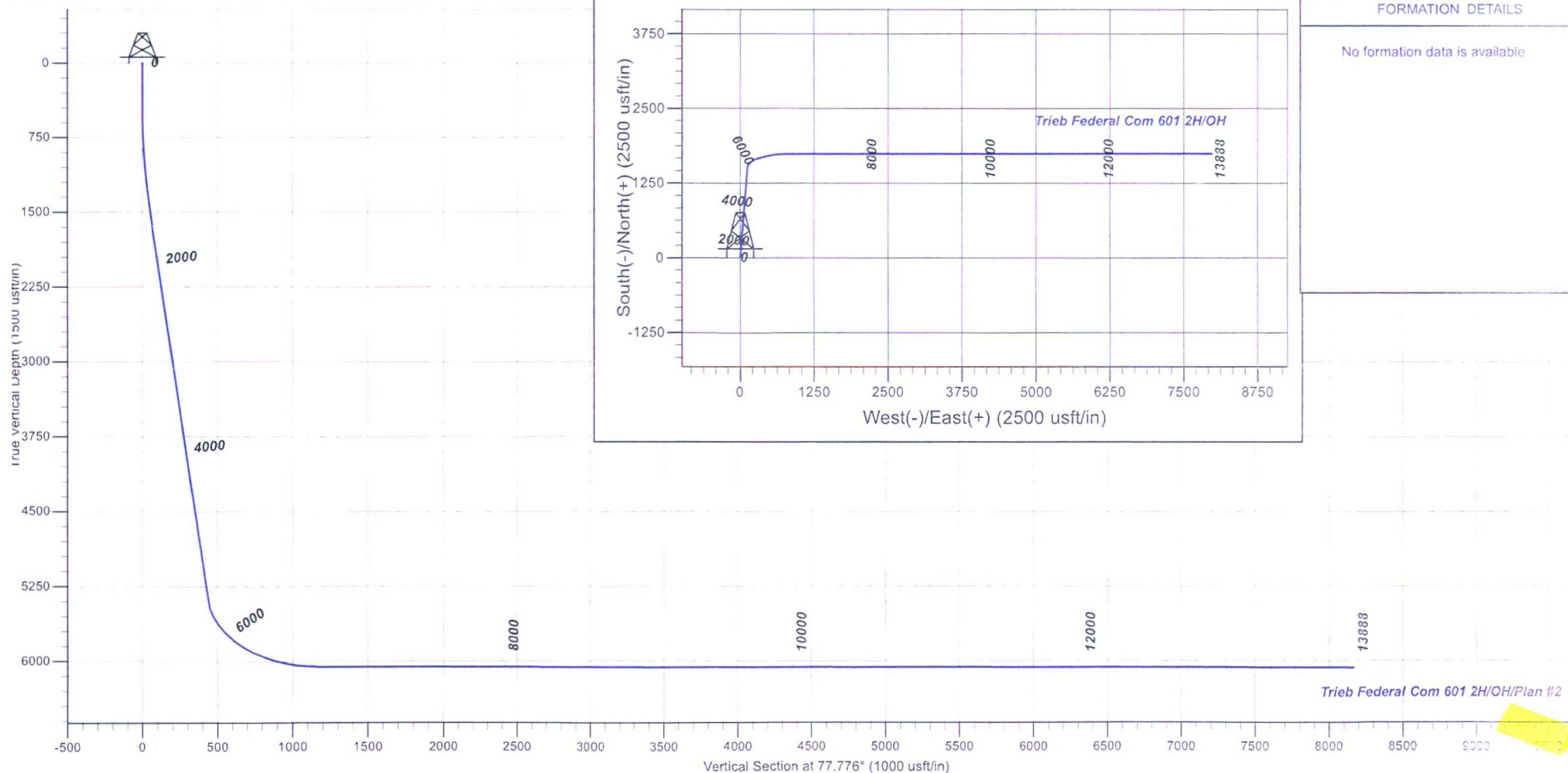
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	
1442.60	18.85	4.739	1425.69	153.15	12.70	2.00	4.74	44.84	
5641.03	18.85	4.739	5398.89	1505.13	124.77	0.00	0.00	440.63	
6745.10	89.85	90.000	6059.00	1729.12	838.91	8.00	85.56	1186.00	Trieb 601 2H LP
13887.55	89.85	90.000	6078.00	1729.12	7981.33	0.00	0.00	8166.48	Trieb 601 2H BHL

CASING DETAILS

No casing data is available

FORMATION DETAILS

No formation data is available





Hilcorp Energy Corp.

San Juan, NM NAD27

Trieb Fed Pad

Trieb Federal Com 601 2H - Slot A02

OH

Plan: Plan #2

Standard Planning Report

09 November, 2018



Scientific Drilling

www.scientificdrilling.com



Scientific Drilling, Intl Planning Report



Database: Grand Junction District
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: Trieb Fed Pad
Well: Trieb Federal Com 601 2H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: 'Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	San Juan, NM NAD27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site	Trieb Fed Pad				
Site Position:		Northing:	2,099,223.94 usft	Latitude:	36.7691290
From:	Map	Easting:	485,838.88 usft	Longitude:	-107.8816820
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-0.03 °

Well	Trieb Federal Com 601 2H - Slot A02					
Well Position	+N/-S	-14.56 usft	Northing:	2,099,209.37 usft	Latitude:	36.7690890
	+E/-W	22.56 usft	Easting:	485,861.43 usft	Longitude:	-107.8816050
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,050.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/12/2018	9.02	63.30	49,807

Design	Plan #2			
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	77.776

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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,442.60	18.85	4.739	1,425.69	153.15	12.70	2.00	2.00	0.00	4.74	
5,641.03	18.85	4.739	5,398.89	1,505.13	124.77	0.00	0.00	0.00	0.00	
6,745.10	89.85	90.000	6,059.00	1,729.12	838.91	8.00	6.43	7.72	85.56	Trieb 601 2H LP
13,887.55	89.85	90.000	6,078.00	1,729.12	7,981.33	0.00	0.00	0.00	0.00	Trieb 601 2H BHL



Scientific Drilling, Intl Planning Report



Database: Grand Junction District
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: Trieb Fed Pad
Well: Trieb Federal Com 601 2H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	2.00	4.739	599.98	1.74	0.14	0.51	2.00	2.00	0.00
700.00	4.00	4.739	699.84	6.95	0.58	2.04	2.00	2.00	0.00
800.00	6.00	4.739	799.45	15.64	1.30	4.58	2.00	2.00	0.00
900.00	8.00	4.739	898.70	27.78	2.30	8.13	2.00	2.00	0.00
1,000.00	10.00	4.739	997.47	43.37	3.60	12.70	2.00	2.00	0.00
1,100.00	12.00	4.739	1,095.62	62.39	5.17	18.26	2.00	2.00	0.00
1,200.00	14.00	4.739	1,193.06	84.81	7.03	24.83	2.00	2.00	0.00
1,300.00	16.00	4.739	1,289.64	110.60	9.17	32.38	2.00	2.00	0.00
1,400.00	18.00	4.739	1,385.27	139.73	11.58	40.91	2.00	2.00	0.00
1,442.60	18.85	4.739	1,425.69	153.15	12.70	44.84	2.00	2.00	0.00
1,500.00	18.85	4.739	1,480.00	171.64	14.23	50.25	0.00	0.00	0.00
1,600.00	18.85	4.739	1,574.64	203.84	16.90	59.67	0.00	0.00	0.00
1,700.00	18.85	4.739	1,669.28	236.04	19.57	69.10	0.00	0.00	0.00
1,800.00	18.85	4.739	1,763.91	268.24	22.24	78.53	0.00	0.00	0.00
1,900.00	18.85	4.739	1,858.55	300.44	24.91	87.95	0.00	0.00	0.00
2,000.00	18.85	4.739	1,953.18	332.65	27.57	97.38	0.00	0.00	0.00
2,100.00	18.85	4.739	2,047.82	364.85	30.24	106.81	0.00	0.00	0.00
2,200.00	18.85	4.739	2,142.45	397.05	32.91	116.24	0.00	0.00	0.00
2,300.00	18.85	4.739	2,237.09	429.25	35.58	125.66	0.00	0.00	0.00
2,400.00	18.85	4.739	2,331.73	461.46	38.25	135.09	0.00	0.00	0.00
2,500.00	18.85	4.739	2,426.36	493.66	40.92	144.52	0.00	0.00	0.00
2,600.00	18.85	4.739	2,521.00	525.86	43.59	153.94	0.00	0.00	0.00
2,700.00	18.85	4.739	2,615.63	558.06	46.26	163.37	0.00	0.00	0.00
2,800.00	18.85	4.739	2,710.27	590.26	48.93	172.80	0.00	0.00	0.00
2,900.00	18.85	4.739	2,804.90	622.47	51.60	182.23	0.00	0.00	0.00
3,000.00	18.85	4.739	2,899.54	654.67	54.27	191.65	0.00	0.00	0.00
3,100.00	18.85	4.739	2,994.17	686.87	56.94	201.08	0.00	0.00	0.00
3,200.00	18.85	4.739	3,088.81	719.07	59.61	210.51	0.00	0.00	0.00
3,300.00	18.85	4.739	3,183.45	751.27	62.28	219.93	0.00	0.00	0.00
3,400.00	18.85	4.739	3,278.08	783.48	64.95	229.36	0.00	0.00	0.00
3,500.00	18.85	4.739	3,372.72	815.68	67.62	238.79	0.00	0.00	0.00
3,600.00	18.85	4.739	3,467.35	847.88	70.28	248.22	0.00	0.00	0.00
3,700.00	18.85	4.739	3,561.99	880.08	72.95	257.64	0.00	0.00	0.00
3,800.00	18.85	4.739	3,656.62	912.29	75.62	267.07	0.00	0.00	0.00
3,900.00	18.85	4.739	3,751.26	944.49	78.29	276.50	0.00	0.00	0.00
4,000.00	18.85	4.739	3,845.90	976.69	80.96	285.92	0.00	0.00	0.00
4,100.00	18.85	4.739	3,940.53	1,008.89	83.63	295.35	0.00	0.00	0.00
4,200.00	18.85	4.739	4,035.17	1,041.09	86.30	304.78	0.00	0.00	0.00
4,300.00	18.85	4.739	4,129.80	1,073.30	88.97	314.21	0.00	0.00	0.00
4,400.00	18.85	4.739	4,224.44	1,105.50	91.64	323.63	0.00	0.00	0.00
4,500.00	18.85	4.739	4,319.07	1,137.70	94.31	333.06	0.00	0.00	0.00
4,600.00	18.85	4.739	4,413.71	1,169.90	96.98	342.49	0.00	0.00	0.00
4,700.00	18.85	4.739	4,508.34	1,202.10	99.65	351.91	0.00	0.00	0.00
4,800.00	18.85	4.739	4,602.98	1,234.31	102.32	361.34	0.00	0.00	0.00
4,900.00	18.85	4.739	4,697.62	1,266.51	104.99	370.77	0.00	0.00	0.00
5,000.00	18.85	4.739	4,792.25	1,298.71	107.66	380.20	0.00	0.00	0.00
5,100.00	18.85	4.739	4,886.89	1,330.91	110.32	389.62	0.00	0.00	0.00
5,200.00	18.85	4.739	4,981.52	1,363.11	112.99	399.05	0.00	0.00	0.00



Scientific Drilling, Intl

Planning Report



Scientific Drilling

Database: Grand Junction District
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: Trieb Fed Pad
Well: Trieb Federal Com 601 2H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well Trieb Federal Com 601 2H - Slot A02
GI 6050' @ 0050.00usft
GI 6050' @ 6050.00usft
True
Minimum Curvature

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)
5,300.00	18.85	4.739	5,076.16	1,395.32	115.66	408.48	0.00	0.00	0.00
5,400.00	18.85	4.739	5,170.79	1,427.52	118.33	417.90	0.00	0.00	0.00
5,500.00	18.85	4.739	5,265.43	1,459.72	121.00	427.33	0.00	0.00	0.00
5,600.00	18.85	4.739	5,360.06	1,491.92	123.67	436.76	0.00	0.00	0.00
5,641.03	18.85	4.739	5,398.89	1,505.13	124.77	440.63	0.00	0.00	0.00
5,700.00	19.76	18.773	5,454.58	1,524.08	128.77	448.55	8.00	1.55	23.80
5,800.00	23.42	38.263	5,547.66	1,555.74	146.54	472.62	8.00	3.65	19.49
5,900.00	28.80	51.806	5,637.51	1,586.29	177.83	509.67	8.00	5.38	13.54
6,000.00	35.12	61.116	5,722.36	1,615.12	222.02	558.96	8.00	6.32	9.31
6,100.00	41.96	67.810	5,800.57	1,641.69	278.25	619.54	8.00	6.84	6.69
6,200.00	49.09	72.901	5,870.60	1,665.46	345.43	690.23	8.00	7.13	5.09
6,300.00	56.40	76.986	5,931.11	1,685.98	422.25	769.65	8.00	7.31	4.08
6,400.00	63.83	80.424	5,980.92	1,702.85	507.21	856.26	8.00	7.43	3.44
6,500.00	71.33	83.447	6,019.04	1,715.74	598.67	948.37	8.00	7.50	3.02
6,600.00	78.87	86.212	6,044.75	1,724.40	694.83	1,044.19	8.00	7.54	2.76
6,700.00	86.43	88.836	6,057.54	1,728.67	793.84	1,141.86	8.00	7.57	2.62
6,745.10	89.85	90.000	6,059.00	1,729.12	838.91	1,186.00	8.00	7.57	2.58
6,800.00	89.85	90.000	6,059.15	1,729.12	893.80	1,239.65	0.00	0.00	0.00
6,900.00	89.85	90.000	6,059.41	1,729.12	993.80	1,337.38	0.00	0.00	0.00
7,000.00	89.85	90.000	6,059.68	1,729.12	1,093.80	1,435.12	0.00	0.00	0.00
7,100.00	89.85	90.000	6,059.94	1,729.12	1,193.80	1,532.85	0.00	0.00	0.00
7,200.00	89.85	90.000	6,060.21	1,729.12	1,293.80	1,630.58	0.00	0.00	0.00
7,300.00	89.85	90.000	6,060.48	1,729.12	1,393.80	1,728.31	0.00	0.00	0.00
7,400.00	89.85	90.000	6,060.74	1,729.12	1,493.80	1,826.05	0.00	0.00	0.00
7,500.00	89.85	90.000	6,061.01	1,729.12	1,593.80	1,923.78	0.00	0.00	0.00
7,600.00	89.85	90.000	6,061.27	1,729.12	1,693.80	2,021.51	0.00	0.00	0.00
7,700.00	89.85	90.000	6,061.54	1,729.12	1,793.80	2,119.24	0.00	0.00	0.00
7,800.00	89.85	90.000	6,061.81	1,729.12	1,893.80	2,216.98	0.00	0.00	0.00
7,900.00	89.85	90.000	6,062.07	1,729.12	1,993.80	2,314.71	0.00	0.00	0.00
8,000.00	89.85	90.000	6,062.34	1,729.12	2,093.80	2,412.44	0.00	0.00	0.00
8,100.00	89.85	90.000	6,062.60	1,729.12	2,193.80	2,510.17	0.00	0.00	0.00
8,200.00	89.85	90.000	6,062.87	1,729.12	2,293.80	2,607.91	0.00	0.00	0.00
8,300.00	89.85	90.000	6,063.14	1,729.12	2,393.80	2,705.64	0.00	0.00	0.00
8,400.00	89.85	90.000	6,063.40	1,729.12	2,493.80	2,803.37	0.00	0.00	0.00
8,500.00	89.85	90.000	6,063.67	1,729.12	2,593.80	2,901.10	0.00	0.00	0.00
8,600.00	89.85	90.000	6,063.93	1,729.12	2,693.80	2,998.84	0.00	0.00	0.00
8,700.00	89.85	90.000	6,064.20	1,729.12	2,793.80	3,096.57	0.00	0.00	0.00
8,800.00	89.85	90.000	6,064.47	1,729.12	2,893.80	3,194.30	0.00	0.00	0.00
8,900.00	89.85	90.000	6,064.73	1,729.12	2,993.80	3,292.03	0.00	0.00	0.00
9,000.00	89.85	90.000	6,065.00	1,729.12	3,093.80	3,389.77	0.00	0.00	0.00
9,100.00	89.85	90.000	6,065.26	1,729.12	3,193.79	3,487.50	0.00	0.00	0.00
9,200.00	89.85	90.000	6,065.53	1,729.12	3,293.79	3,585.23	0.00	0.00	0.00
9,300.00	89.85	90.000	6,065.80	1,729.12	3,393.79	3,682.96	0.00	0.00	0.00
9,400.00	89.85	90.000	6,066.06	1,729.12	3,493.79	3,780.69	0.00	0.00	0.00
9,500.00	89.85	90.000	6,066.33	1,729.12	3,593.79	3,878.43	0.00	0.00	0.00
9,600.00	89.85	90.000	6,066.59	1,729.12	3,693.79	3,976.16	0.00	0.00	0.00
9,700.00	89.85	90.000	6,066.86	1,729.12	3,793.79	4,073.89	0.00	0.00	0.00
9,800.00	89.85	90.000	6,067.13	1,729.12	3,893.79	4,171.62	0.00	0.00	0.00
9,900.00	89.85	90.000	6,067.39	1,729.12	3,993.79	4,269.36	0.00	0.00	0.00
10,000.00	89.85	90.000	6,067.66	1,729.12	4,093.79	4,367.09	0.00	0.00	0.00
10,100.00	89.85	90.000	6,067.92	1,729.12	4,193.79	4,464.82	0.00	0.00	0.00
10,200.00	89.85	90.000	6,068.19	1,729.12	4,293.79	4,562.55	0.00	0.00	0.00
10,300.00	89.85	90.000	6,068.46	1,729.12	4,393.79	4,660.29	0.00	0.00	0.00
10,400.00	89.85	90.000	6,068.72	1,729.12	4,493.79	4,758.02	0.00	0.00	0.00



Scientific Drilling, Intl Planning Report



Database: Grand Junction District
Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: Trieb Fed Pad
Well: Trieb Federal Com 601 2H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 601 2H - Slot A02
TVD Reference: GI 6050' @ 6050.00usft
MD Reference: GI 6050' @ 6050.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

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)
10,500.00	89.85	90.000	6,068.99	1,729.12	4,593.79	4,855.75	0.00	0.00	0.00
10,600.00	89.85	90.000	6,069.25	1,729.12	4,693.79	4,953.48	0.00	0.00	0.00
10,700.00	89.85	90.000	6,069.52	1,729.12	4,793.79	5,051.22	0.00	0.00	0.00
10,800.00	89.85	90.000	6,069.79	1,729.12	4,893.79	5,148.95	0.00	0.00	0.00
10,900.00	89.85	90.000	6,070.05	1,729.12	4,993.79	5,246.68	0.00	0.00	0.00
11,000.00	89.85	90.000	6,070.32	1,729.12	5,093.79	5,344.41	0.00	0.00	0.00
11,100.00	89.85	90.000	6,070.58	1,729.12	5,193.79	5,442.15	0.00	0.00	0.00
11,200.00	89.85	90.000	6,070.85	1,729.12	5,293.79	5,539.88	0.00	0.00	0.00
11,300.00	89.85	90.000	6,071.12	1,729.12	5,393.79	5,637.61	0.00	0.00	0.00
11,400.00	89.85	90.000	6,071.38	1,729.12	5,493.79	5,735.34	0.00	0.00	0.00
11,500.00	89.85	90.000	6,071.65	1,729.12	5,593.79	5,833.07	0.00	0.00	0.00
11,600.00	89.85	90.000	6,071.91	1,729.12	5,693.79	5,930.81	0.00	0.00	0.00
11,700.00	89.85	90.000	6,072.18	1,729.12	5,793.79	6,028.54	0.00	0.00	0.00
11,800.00	89.85	90.000	6,072.45	1,729.12	5,893.79	6,126.27	0.00	0.00	0.00
11,900.00	89.85	90.000	6,072.71	1,729.12	5,993.79	6,224.00	0.00	0.00	0.00
12,000.00	89.85	90.000	6,072.98	1,729.12	6,093.78	6,321.74	0.00	0.00	0.00
12,100.00	89.85	90.000	6,073.24	1,729.12	6,193.78	6,419.47	0.00	0.00	0.00
12,200.00	89.85	90.000	6,073.51	1,729.12	6,293.78	6,517.20	0.00	0.00	0.00
12,300.00	89.85	90.000	6,073.78	1,729.12	6,393.78	6,614.93	0.00	0.00	0.00
12,400.00	89.85	90.000	6,074.04	1,729.12	6,493.78	6,712.67	0.00	0.00	0.00
12,500.00	89.85	90.000	6,074.31	1,729.12	6,593.78	6,810.40	0.00	0.00	0.00
12,600.00	89.85	90.000	6,074.58	1,729.12	6,693.78	6,908.13	0.00	0.00	0.00
12,700.00	89.85	90.000	6,074.84	1,729.12	6,793.78	7,005.86	0.00	0.00	0.00
12,800.00	89.85	90.000	6,075.11	1,729.12	6,893.78	7,103.60	0.00	0.00	0.00
12,900.00	89.85	90.000	6,075.37	1,729.12	6,993.78	7,201.33	0.00	0.00	0.00
13,000.00	89.85	90.000	6,075.64	1,729.12	7,093.78	7,299.06	0.00	0.00	0.00
13,100.00	89.85	90.000	6,075.91	1,729.12	7,193.78	7,396.79	0.00	0.00	0.00
13,200.00	89.85	90.000	6,076.17	1,729.12	7,293.78	7,494.53	0.00	0.00	0.00
13,300.00	89.85	90.000	6,076.44	1,729.12	7,393.78	7,592.26	0.00	0.00	0.00
13,400.00	89.85	90.000	6,076.70	1,729.12	7,493.78	7,689.99	0.00	0.00	0.00
13,500.00	89.85	90.000	6,076.97	1,729.12	7,593.78	7,787.72	0.00	0.00	0.00
13,600.00	89.85	90.000	6,077.24	1,729.12	7,693.78	7,885.45	0.00	0.00	0.00
13,700.00	89.85	90.000	6,077.50	1,729.12	7,793.78	7,983.19	0.00	0.00	0.00
13,800.00	89.85	90.000	6,077.77	1,729.12	7,893.78	8,080.92	0.00	0.00	0.00
13,887.55	89.85	90.000	6,078.00	1,729.12	7,981.33	8,166.48	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Trieb 601 2H LP	0.00	0.000	6,059.00	1,729.12	838.91	2,100,938.07	486,701.21	36.7738387	-107.8787407
- plan hits target center									
- Point									
Trieb 601 2H BHL	0.00	0.000	6,078.00	1,729.12	7,981.33	2,100,934.47	493,843.63	36.7738356	-107.8543537
- plan hits target center									
- Point									

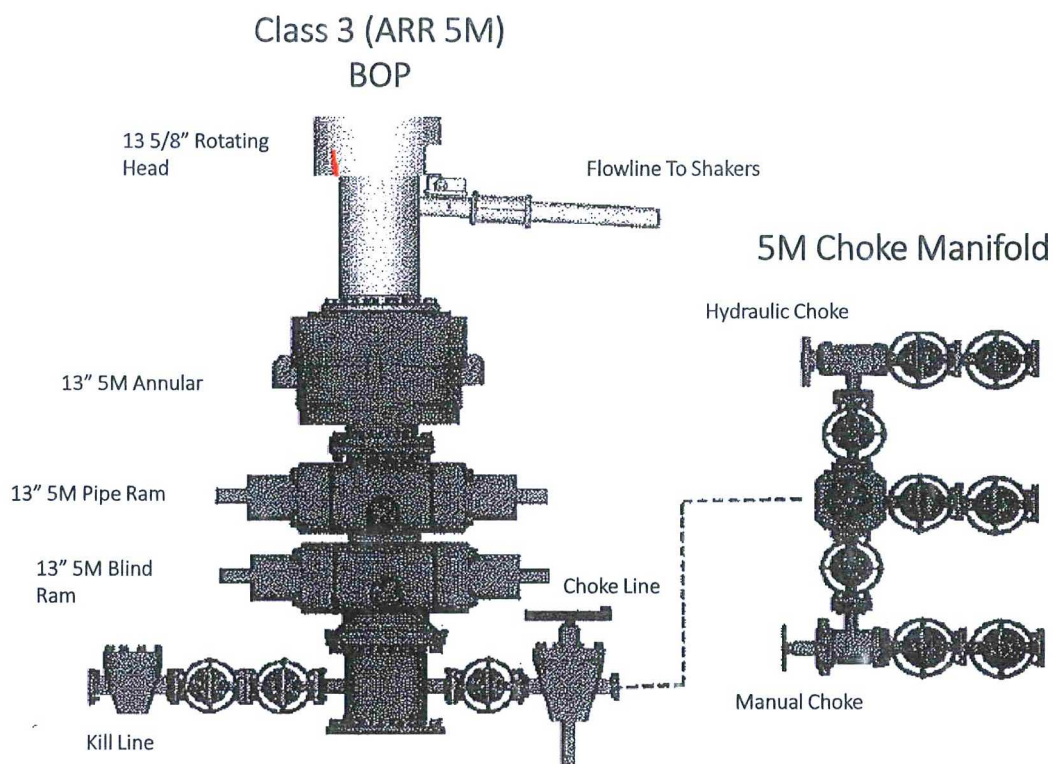


Hilcorp Energy Company

Trieb Federal Com 601 2H

BOPE & Choke Manifold Schematic

13-5/8" BOPE



Directions from the Intersection of US Hwy 550 & State Hwy 173
in Aztec, NM to Hilcorp Energy Company Trieb Federal Com 601 #1H
2492' FNL & 405' FEL, Section 33, T30N, R10W, N.M.P.M., San Juan County, NM

Latitude: 36.769118°N Longitude: 107.882183°W Datum: NAD1983

From the intersection of US Hwy 550 & State Hwy 173 in Aztec, NM, travel Easterly on State Hwy 173 for 1.0 mile to fork in roadway;

Go Left (Easterly) remaining on State Hwy 173 for 3.2 miles to State Hwy 575 on right-hand side of roadway @ Mile Marker 4.2;

Go Right (South-easterly) exiting State Hwy 173 onto State Hwy 575 for 3.1 miles to fork in roadway;

Go Left (Northerly) exiting State Hwy 575 onto existing roadway for 0.1 mile to fork in roadway;

Go Right (South-easterly) for 0.2 mile to existing Hilcorp Trieb Federal Com #2B location, with begin proposed access on south edge of existing wellpad continuing for an additional 295.3' to staked Trieb Federal Com 601 #1H location.