

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 DV Corp, Well Name and Number Trieb Federal 603 com #1H

API# 30-045-35908, 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.

Brenda Bonnell
NMOCD Approved by Signature

8/1/19
Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

NMOC

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

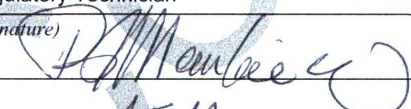
JUL 20 2019

DISTRICT III

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMSF0078204A
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 603 1H
3a. Address 1111 Travis Street Houston TX 77002	3b. Phone No. (include area code) (713)209-2400	9. API Well No. 30-045-35908
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface ^H LOT 8 / 2481 FNL / 432 FEL / LAT 36.76915 / LONG -107.882274 At proposed prod. zone ^G SWNE / 1990 FNL / 2338 FEL / LAT 36.770435 / LONG -107.906511		10. Field and Pool, or Exploratory BASIN MANCOS
11. Sec., T. R. M. or Blk. and Survey or Area SEC 33 / T30N / R10W / NMP		
14. Distance in miles and direction from nearest town or post office* 3 miles		12. County or Parish SAN JUAN
13. State NM		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 167 feet	16. No of acres in lease 319.26	17. Spacing Unit dedicated to this well 958.52
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 649 feet	19. Proposed Depth 6078 feet / 12712 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) AFM	Date 7/19/19
Title FARMINGTON		

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
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 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

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30.045.35908	*Pool Code 97232	*Pool Name BASIN MANCOS
*Property Code 305995	*Property Name TRIEB FEDERAL COM 603 COM	*Well Number 1H
*OGRID No. 372171	*Operator Name HILCORP ENERGY COMPANY	*Elevation 6050'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	33	30N	10W	8	2481	NORTH	432	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	32	30N	10W		1990	NORTH	2338	EAST	SAN JUAN

¹² Dedicated Acres 958.52	E/2 - Section 32 Entire Section 33	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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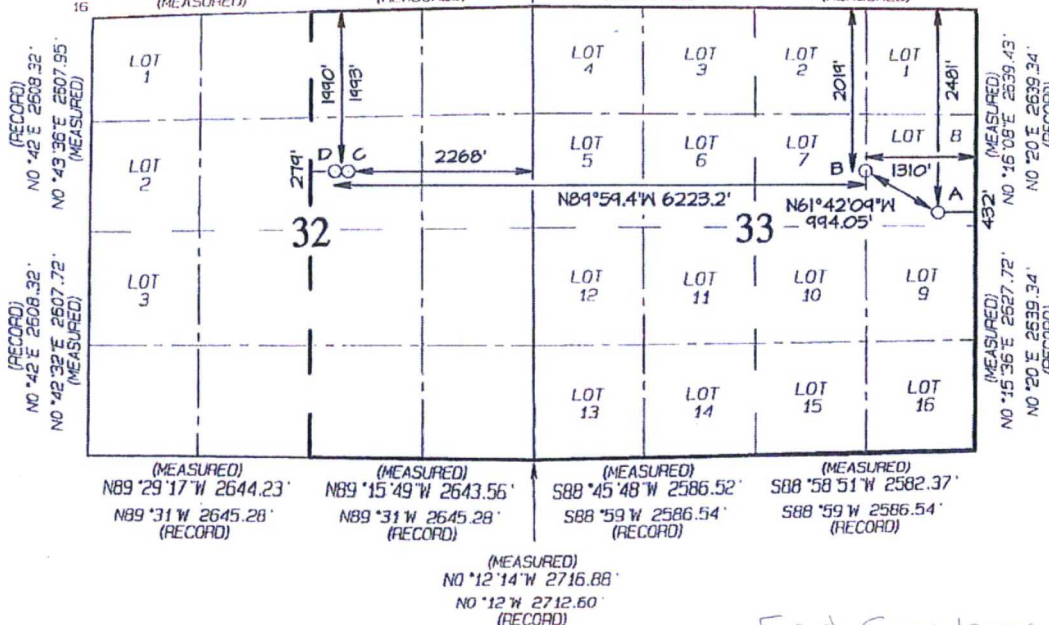
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE
BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

D BOTTOM HOLE (LATERAL) 1990' FNL 2338' FEL SEC 32, T30N, R10W LAT: 36.770430°N LONG: 107.905891°W DATUM: NAD1927 LAT: 36.770435°N LONG: 107.905511°W DATUM: NAD1983	C LAST TAKE POINT 1993' FNL 2268' FEL SEC 32, T30N, R10W LAT: 36.770430°N LONG: 107.905649°W DATUM: NAD1927 LAT: 36.770435°N LONG: 107.906269°W DATUM: NAD1983	B FIRST TAKE POINT 2019' FNL 1310' FEL SEC 33, T30N, R10W LAT: 36.770438°N LONG: 107.894644°W DATUM: NAD1927 LAT: 36.770443°N LONG: 107.885264°W DATUM: NAD1983	A SURFACE LOCATION 2481' FNL 432' FEL SEC 33, T30N, R10W LAT: 36.769145°N LONG: 107.881655°W DATUM: NAD1927 LAT: 36.769150°N LONG: 107.882274°W DATUM: NAD1983
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D N89°59.4'W 70.9'	C N89°59.4'W 6152.3'	B N61°42'09"W 944.05'	A
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(RECORD)
NO *12'W 2712.60'
NO *10'04'W 2709.14'
(MEASURED)

(RECORD) S88°16'W 2603.70' S88°20'33"W 2602.60' (MEASURED)	(RECORD) S88°16'W 2603.70' S88°17'13"W 2604.19' (MEASURED)	(RECORD) N89°22'W 2610.96' N89°24'17"W 2600.50' (MEASURED)	(RECORD) N89°22'W 2610.96' N89°20'18"W 2609.61' (MEASURED)
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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 27, 2018
Date of Survey: JULY 20, 2018

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
15269

JASON C. EDWARDS
Certificate Number 15269



Hilcorp Energy Company

Technical Plan

1. Location

TRIEB FEDERAL COM 603 1H

SHL: 2481' FNL, 432' FEL -- T 30N, R 10W, Sec 33

BHL: 1990' FNL, 2338' FEL -- T 30N, R 10W, Sec 32

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'	1358'	Wet
Kirtland	1484'	1488'	Wet
Fruitland	2116'	2122'	Possible Gas/Water
Pictured Cliffs	2612'	2620'	Wet
Lewis Shale	3500'	3512'	
Massive Cliffhouse	3947'	3961'	Possible Gas/Water
Menefee	4358'	4374'	Possible Gas/Water
Point Lookout	4852'	4870'	Possible Gas/Water
Mancos	5282'	5302'	Oil/Gas
Mancos Lateral Target	6051'	6223'	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



Hilcorp Energy Company

Trieb Federal Com 603 1H

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' - 5,320' (MD)
Production	8-1/2"	5-1/2"	20.0#, P-110, BTC, New	0' - 12712' (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	4314'	904	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%	1784 ft ³	Surface
	5320'	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	12712'	1712	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%	2337 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 - 5320'
Production	Oil Based Mud	10 - 12	6-8	70/30 - 75/25	5320 - 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.



Hilcorp Energy Company

Trieb Federal Com 603 1H

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 603 1H

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 603 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 603 1H - Slot A01
TVD Reference: GL 6050 @ 6050.00usft
MD Reference: GL 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	12,711.72	Plan #2 (OH)		MWD+HDGM	OWSG MWD + HDGM

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						
Trieb Fed 2B - OH - OH	5,726.33	5,720.71	169.15	33.81	1.250	Level 2, CC, ES, SF
Trieb Fed 2N - OH - OH	6,877.29	6,080.19	730.87	571.35	4.582	CC
Trieb Fed 2N - OH - OH	6,900.00	6,080.26	731.22	571.27	4.571	ES, SF
Trieb Federal Com 601 1H - OH - Plan #2	500.00	500.00	29.36	26.14	9.101	CC, ES
Trieb Federal Com 601 1H - OH - Plan #2	900.00	900.14	42.63	36.52	6.978	SF
Trieb Federal Com 601 2H - OH - Plan #2	500.00	500.00	25.10	21.88	7.780	CC
Trieb Federal Com 601 2H - OH - Plan #2	600.00	600.66	25.47	21.51	6.435	ES
Trieb Federal Com 601 2H - OH - Plan #2	1,000.00	1,002.20	31.88	25.01	4.640	SF
Trieb Federal Com 602 1H - OH - Plan #2	500.00	500.00	101.35	98.12	31.414	CC, ES
Trieb Federal Com 602 1H - OH - Plan #2	800.00	788.46	128.96	123.57	23.926	SF
Trieb Federal Com 602 2H - OH - Plan #2	500.00	500.00	76.64	73.41	23.755	CC, ES
Trieb Federal Com 602 2H - OH - Plan #2	700.00	695.36	88.12	83.47	18.953	SF
Trieb Federal Com 603 2H - OH - Plan #2	500.00	500.00	49.91	46.68	15.469	CC, ES
Trieb Federal Com 603 2H - OH - Plan #2	12,711.72	12,805.16	1,304.71	888.72	3.136	SF
Trieb Federal Com 603 3H - OH - Plan #2	500.00	500.00	15.09	11.86	4.677	CC
Trieb Federal Com 603 3H - OH - Plan #2	600.00	599.76	15.47	11.52	3.919	ES
Trieb Federal Com 603 3H - OH - Plan #2	12,711.72	12,904.15	1,185.25	770.39	2.857	SF
Trieb Federal Com 603 4H - OH - Plan #2	500.00	500.00	75.01	71.78	23.250	CC, ES
Trieb Federal Com 603 4H - OH - Plan #2	12,711.72	13,056.80	2,556.20	2,141.96	6.171	SF
Trieb Federal Strat Test 600 #1 - OH - Plan #1	500.00	500.00	52.28	49.05	16.204	CC, ES
Trieb Federal Strat Test 600 #1 - OH - Plan #1	1,000.00	998.61	83.31	76.50	12.232	SF

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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)						
0.00	0.00	31.00	31.00	0.00	0.62	-20.29	606.14	-224.06	646.23	645.61	0.62	1,041.969					
100.00	100.00	131.00	131.00	0.18	2.62	-20.29	606.14	-224.06	646.23	643.43	2.80	230.843					
200.00	200.00	231.00	231.00	0.54	4.62	-20.29	606.14	-224.06	646.23	641.07	5.16	125.289					
300.00	300.00	331.00	331.00	0.90	6.62	-20.29	606.14	-224.06	646.23	638.71	7.52	85.976					
400.00	400.00	431.00	431.00	1.25	8.62	-20.29	606.14	-224.06	646.23	636.35	9.87	65.442					
500.00	500.00	531.00	531.00	1.61	10.62	-20.29	606.14	-224.06	646.23	633.99	12.23	52.825					
600.00	599.98	630.98	630.98	1.97	12.62	1.19	606.14	-224.06	644.48	629.89	14.59	44.169					

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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		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)							
700.00	699.84	730.84	730.84	2.33	14.62	1.20	606.14	-224.06	639.25	622.30	16.95	37.715			
800.00	799.47	830.47	830.47	2.70	16.61	1.22	606.14	-224.06	630.73	611.43	19.31	32.670			
900.00	899.04	930.04	930.04	3.06	18.60	1.24	606.14	-224.06	621.44	599.79	21.65	28.698			
1,000.00	998.61	1,029.61	1,029.61	3.42	20.59	1.25	606.14	-224.06	612.16	588.15	24.00	25.502			
1,100.00	1,098.17	1,129.17	1,129.17	3.80	22.58	1.27	606.14	-224.06	602.87	576.51	26.36	22.875			
1,200.00	1,197.74	1,228.74	1,228.74	4.17	24.57	1.29	606.14	-224.06	593.58	564.87	28.71	20.677			
1,300.00	1,297.31	1,328.31	1,328.31	4.54	26.57	1.31	606.14	-224.06	584.29	553.23	31.06	18.813			
1,400.00	1,396.88	1,427.88	1,427.88	4.91	28.56	1.34	606.14	-224.06	575.00	541.59	33.41	17.210			
1,500.00	1,496.44	1,527.44	1,527.44	5.29	30.55	1.36	606.14	-224.06	565.71	529.95	35.76	15.818			
1,600.00	1,596.01	1,627.01	1,627.01	5.66	32.54	1.38	606.14	-224.06	556.43	518.31	38.12	14.598			
1,700.00	1,695.58	1,726.58	1,726.58	6.04	34.53	1.40	606.14	-224.06	547.14	506.67	40.47	13.520			
1,800.00	1,795.15	1,826.15	1,826.15	6.41	36.52	1.43	606.14	-224.06	537.85	495.03	42.82	12.560			
1,900.00	1,894.71	1,925.71	1,925.71	6.79	38.51	1.45	606.14	-224.06	528.56	483.39	45.18	11.700			
2,000.00	1,994.28	2,025.28	2,025.28	7.17	40.51	1.48	606.14	-224.06	519.27	471.75	47.53	10.925			
2,100.00	2,093.85	2,124.85	2,124.85	7.54	42.50	1.51	606.14	-224.06	509.99	460.10	49.88	10.224			
2,200.00	2,193.42	2,224.42	2,224.42	7.92	44.49	1.53	606.14	-224.06	500.70	448.46	52.24	9.585			
2,300.00	2,292.98	2,323.98	2,323.98	8.30	46.48	1.56	606.14	-224.06	491.41	436.82	54.59	9.002			
2,400.00	2,392.55	2,423.55	2,423.55	8.67	48.47	1.59	606.14	-224.06	482.13	425.18	56.94	8.467			
2,500.00	2,492.12	2,523.12	2,523.12	9.05	50.46	1.62	606.14	-224.06	472.84	413.54	59.30	7.974			
2,600.00	2,591.69	2,622.69	2,622.69	9.43	52.45	1.66	606.14	-224.06	463.55	401.90	61.65	7.519			
2,700.00	2,691.25	2,722.25	2,722.25	9.81	54.45	1.69	606.14	-224.06	454.26	390.26	64.01	7.097			
2,800.00	2,790.82	2,821.82	2,821.82	10.18	56.44	1.73	606.14	-224.06	444.98	378.62	66.36	6.706			
2,900.00	2,890.39	2,921.39	2,921.39	10.56	58.43	1.76	606.14	-224.06	435.69	366.98	68.71	6.341			
3,000.00	2,989.96	3,020.96	3,020.96	10.94	60.42	1.80	606.14	-224.06	426.41	355.34	71.07	6.000			
3,100.00	3,089.52	3,120.52	3,120.52	11.32	62.41	1.84	606.14	-224.06	417.12	343.70	73.42	5.681			
3,200.00	3,189.09	3,220.09	3,220.09	11.70	64.40	1.88	606.14	-224.06	407.83	332.06	75.78	5.382			
3,300.00	3,288.66	3,319.66	3,319.66	12.07	66.39	1.93	606.14	-224.06	398.55	320.42	78.13	5.101			
3,400.00	3,388.23	3,419.23	3,419.23	12.45	68.38	1.97	606.14	-224.06	389.26	308.78	80.48	4.836			
3,500.00	3,487.79	3,518.79	3,518.79	12.83	70.38	2.02	606.14	-224.06	379.98	297.14	82.84	4.587			
3,600.00	3,587.36	3,618.36	3,618.36	13.21	72.37	2.07	606.14	-224.06	370.69	285.50	85.19	4.351			
3,700.00	3,686.93	3,717.93	3,717.93	13.58	74.36	2.12	606.14	-224.06	361.41	273.86	87.55	4.128			
3,800.00	3,786.50	3,817.50	3,817.50	13.96	76.35	2.18	606.14	-224.06	352.12	262.22	89.90	3.917			
3,900.00	3,886.06	3,917.06	3,917.06	14.34	78.34	2.24	606.14	-224.06	342.84	250.58	92.26	3.716			
4,000.00	3,985.63	4,016.63	4,016.63	14.72	80.33	2.30	606.14	-224.06	333.56	238.95	94.61	3.526			
4,100.00	4,085.20	4,116.20	4,116.20	15.10	82.32	2.37	606.14	-224.06	324.27	227.31	96.96	3.344			
4,200.00	4,184.77	4,215.77	4,215.77	15.48	84.32	2.44	606.14	-224.06	314.99	215.67	99.32	3.172			
4,300.00	4,284.33	4,315.33	4,315.33	15.85	86.31	2.51	606.14	-224.06	305.71	204.04	101.67	3.007			
4,400.00	4,383.90	4,414.90	4,414.90	16.23	88.30	2.59	606.14	-224.06	296.43	192.40	104.03	2.850			
4,500.00	4,483.47	4,514.47	4,514.47	16.61	90.29	2.67	606.14	-224.06	287.15	180.76	106.38	2.699			
4,600.00	4,583.04	4,614.04	4,614.04	16.99	92.28	2.76	606.14	-224.06	277.87	169.13	108.74	2.555			
4,700.00	4,682.60	4,713.60	4,713.60	17.37	94.27	2.86	606.14	-224.06	268.59	157.50	111.09	2.418			
4,800.00	4,782.17	4,813.17	4,813.17	17.74	96.26	2.96	606.14	-224.06	259.31	145.86	113.45	2.286			
4,900.00	4,881.74	4,912.74	4,912.74	18.12	98.25	3.07	606.14	-224.06	250.03	134.23	115.80	2.159			
5,000.00	4,981.31	5,012.31	5,012.31	18.50	100.25	3.19	606.14	-224.06	240.75	122.60	118.16	2.038			
5,100.00	5,080.87	5,111.87	5,111.87	18.88	102.24	3.32	606.14	-224.06	231.48	110.97	120.51	1.921			
5,200.00	5,180.44	5,211.44	5,211.44	19.26	104.23	3.46	606.14	-224.06	222.20	99.34	122.87	1.809			
5,300.00	5,280.01	5,311.01	5,311.01	19.64	106.22	3.61	606.14	-224.06	212.93	87.71	125.22	1.700			
5,400.00	5,379.57	5,410.57	5,410.57	20.01	108.21	11.32	606.14	-224.06	203.64	76.06	127.58	1.596			
5,500.00	5,478.43	5,509.43	5,509.43	20.40	110.19	50.97	606.14	-224.06	192.09	62.16	129.93	1.478 Level 3			
5,600.00	5,574.70	5,605.70	5,605.70	20.81	112.11	68.91	606.14	-224.06	178.80	46.52	132.28	1.352 Level 3			
5,700.00	5,666.51	5,697.51	5,697.51	21.23	113.95	85.53	606.14	-224.06	169.69	35.01	134.68	1.260 Level 3			
5,726.33	5,689.71	5,720.71	5,720.71	21.35	114.41	90.00	606.14	-224.06	169.15	33.81	135.34	1.250 Level 2, CC, ES, 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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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		
5,800.00	5,752.07	5,783.07	5,783.07	21.69	115.66	102.21	606.14	-224.06	174.28	37.13	137.15	1.271	Level 3	
5,900.00	5,829.71	5,860.71	5,860.71	22.22	117.21	116.37	606.14	-224.06	200.70	61.27	139.44	1.439	Level 3	
6,000.00	5,897.93	5,928.93	5,928.93	22.90	118.58	126.25	606.14	-224.06	249.68	108.37	141.31	1.767		
6,100.00	5,955.40	5,986.40	5,986.40	23.78	119.73	131.77	606.14	-224.06	316.58	173.81	142.77	2.217		
6,200.00	6,001.00	6,032.00	6,032.00	24.91	120.64	133.07	606.14	-224.06	396.32	252.45	143.87	2.755		
6,300.00	6,033.84	6,064.84	6,064.84	26.32	121.30	129.26	606.14	-224.06	484.88	340.25	144.64	3.352		
6,400.00	6,053.28	6,084.28	6,084.28	27.97	121.69	116.52	606.14	-224.06	579.14	434.05	145.09	3.992		
6,500.00	6,059.03	6,090.03	6,090.03	29.82	121.80	90.86	606.14	-224.06	676.43	531.20	145.23	4.658		
6,600.00	6,059.34	6,090.34	6,090.34	31.84	121.81	90.99	606.14	-224.06	774.67	629.42	145.25	5.333		
6,700.00	6,059.65	6,090.65	6,090.65	34.00	121.81	91.12	606.14	-224.06	873.31	728.04	145.27	6.012		
6,800.00	6,059.95	6,090.95	6,090.95	36.29	121.82	91.25	606.14	-224.06	972.23	826.94	145.28	6.692		
6,900.00	6,060.26	6,091.26	6,091.26	38.67	121.83	91.37	606.14	-224.06	1,071.34	926.04	145.30	7.373		
7,000.00	6,060.56	6,091.56	6,091.56	41.14	121.83	91.50	606.14	-224.06	1,170.61	1,025.29	145.32	8.056		
7,100.00	6,060.87	6,091.87	6,091.87	43.68	121.84	91.63	606.14	-224.06	1,269.99	1,124.66	145.34	8.738		
7,200.00	6,061.17	6,092.17	6,092.17	46.27	121.84	91.76	606.14	-224.06	1,369.47	1,224.11	145.36	9.421		
7,300.00	6,061.48	6,092.48	6,092.48	48.91	121.85	91.89	606.14	-224.06	1,469.01	1,323.64	145.38	10.105		
7,400.00	6,061.78	6,092.78	6,092.78	51.60	121.86	92.02	606.14	-224.06	1,568.61	1,423.22	145.40	10.788		
7,500.00	6,062.09	6,093.09	6,093.09	54.31	121.86	92.15	606.14	-224.06	1,668.26	1,522.84	145.42	11.472		
7,600.00	6,062.39	6,093.39	6,093.39	57.06	121.87	92.28	606.14	-224.06	1,767.95	1,622.51	145.44	12.156		
7,700.00	6,062.70	6,093.70	6,093.70	59.83	121.87	92.41	606.14	-224.06	1,867.68	1,722.21	145.47	12.839		
7,800.00	6,063.00	6,094.00	6,094.00	62.63	121.88	92.54	606.14	-224.06	1,967.43	1,821.93	145.49	13.523		
7,900.00	6,063.31	6,094.31	6,094.31	65.44	121.89	92.67	606.14	-224.06	2,067.20	1,921.68	145.52	14.206		
8,000.00	6,063.61	6,094.61	6,094.61	68.27	121.89	92.80	606.14	-224.06	2,167.00	2,021.45	145.54	14.889		
8,100.00	6,063.92	6,094.92	6,094.92	71.11	121.90	92.93	606.14	-224.06	2,266.81	2,121.24	145.57	15.572		
8,200.00	6,064.23	6,095.23	6,095.23	73.97	121.90	93.05	606.14	-224.06	2,366.64	2,221.04	145.60	16.255		
8,300.00	6,064.53	6,095.53	6,095.53	76.84	121.91	93.18	606.14	-224.06	2,466.48	2,320.85	145.63	16.937		
8,400.00	6,064.84	6,095.84	6,095.84	79.72	121.92	93.31	606.14	-224.06	2,566.34	2,420.68	145.66	17.619		
8,500.00	6,065.14	6,096.14	6,096.14	82.61	121.92	93.44	606.14	-224.06	2,666.20	2,520.51	145.69	18.301		
8,600.00	6,065.45	6,096.45	6,096.45	85.51	121.93	93.57	606.14	-224.06	2,766.08	2,620.36	145.72	18.982		
8,700.00	6,065.75	6,096.75	6,096.75	88.42	121.94	93.70	606.14	-224.06	2,865.96	2,720.21	145.75	19.663		
8,800.00	6,066.06	6,097.06	6,097.06	91.33	121.94	93.83	606.14	-224.06	2,965.85	2,820.07	145.79	20.344		
8,900.00	6,066.36	6,097.36	6,097.36	94.25	121.95	93.96	606.14	-224.06	3,065.75	2,919.93	145.82	21.024		
9,000.00	6,066.67	6,097.67	6,097.67	97.17	121.95	94.09	606.14	-224.06	3,165.66	3,019.80	145.86	21.704		
9,100.00	6,066.97	6,097.97	6,097.97	100.10	121.96	94.21	606.14	-224.06	3,265.57	3,119.68	145.89	22.384		
9,200.00	6,067.28	6,098.28	6,098.28	103.04	121.97	94.34	606.14	-224.06	3,365.48	3,219.56	145.93	23.063		
9,300.00	6,067.58	6,098.58	6,098.58	105.98	121.97	94.47	606.14	-224.06	3,465.41	3,319.44	145.97	23.741		
9,400.00	6,067.89	6,098.89	6,098.89	108.92	121.98	94.60	606.14	-224.06	3,565.33	3,419.33	146.00	24.419		
9,500.00	6,068.19	6,099.19	6,099.19	111.86	121.98	94.73	606.14	-224.06	3,665.26	3,519.22	146.04	25.097		
9,600.00	6,068.50	6,099.50	6,099.50	114.81	121.99	94.86	606.14	-224.06	3,765.19	3,619.11	146.08	25.774		
9,700.00	6,068.80	6,099.80	6,099.80	117.77	122.00	94.99	606.14	-224.06	3,865.13	3,719.01	146.12	26.451		
9,800.00	6,069.11	6,100.11	6,100.11	120.72	122.00	95.11	606.14	-224.06	3,965.07	3,818.90	146.17	27.127		
9,900.00	6,069.42	6,100.42	6,100.42	123.68	122.01	95.24	606.14	-224.06	4,065.01	3,918.80	146.21	27.803		
10,000.00	6,069.72	6,100.72	6,100.72	126.64	122.01	95.37	606.14	-224.06	4,164.96	4,018.71	146.25	28.478		
10,100.00	6,070.03	6,101.03	6,101.03	129.60	122.02	95.50	606.14	-224.06	4,264.91	4,118.61	146.30	29.152		
10,200.00	6,070.33	6,101.33	6,101.33	132.57	122.03	95.63	606.14	-224.06	4,364.86	4,218.52	146.34	29.826		
10,300.00	6,070.64	6,101.64	6,101.64	135.54	122.03	95.75	606.14	-224.06	4,464.81	4,318.42	146.39	30.500		
10,400.00	6,070.94	6,101.94	6,101.94	138.51	122.04	95.88	606.14	-224.06	4,564.77	4,418.33	146.44	31.173		
10,500.00	6,071.25	6,102.25	6,102.25	141.48	122.04	96.01	606.14	-224.06	4,664.72	4,518.24	146.48	31.845		
10,600.00	6,071.55	6,102.55	6,102.55	144.45	122.05	96.14	606.14	-224.06	4,764.68	4,618.15	146.53	32.516		
10,700.00	6,071.86	6,102.86	6,102.86	147.42	122.06	96.27	606.14	-224.06	4,864.64	4,718.06	146.58	33.188		
10,800.00	6,072.16	6,103.16	6,103.16	150.40	122.06	96.39	606.14	-224.06	4,964.60	4,817.97	146.63	33.858		
10,900.00	6,072.47	6,103.47	6,103.47	153.38	122.07	96.52	606.14	-224.06	5,064.57	4,917.88	146.68	34.528		

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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		
11,000.00	6,072.77	6,103.77	6,103.77	156.35	122.08	96.65	606.14	-224.06	5,164.53	5,017.80	146.73	35.197		
11,100.00	6,073.08	6,104.08	6,104.08	159.33	122.08	96.78	606.14	-224.06	5,264.50	5,117.71	146.79	35.865		
11,200.00	6,073.38	6,104.38	6,104.38	162.31	122.09	96.91	606.14	-224.06	5,364.46	5,217.62	146.84	36.533		
11,300.00	6,073.69	6,104.69	6,104.69	165.30	122.09	97.03	606.14	-224.06	5,464.43	5,317.54	146.89	37.200		
11,400.00	6,074.00	6,105.00	6,105.00	168.28	122.10	97.16	606.14	-224.06	5,564.40	5,417.45	146.95	37.867		
11,500.00	6,074.30	6,105.30	6,105.30	171.26	122.11	97.29	606.14	-224.06	5,664.37	5,517.37	147.00	38.533		
11,600.00	6,074.61	6,105.61	6,105.61	174.25	122.11	97.41	606.14	-224.06	5,764.34	5,617.28	147.06	39.198		
11,700.00	6,074.91	6,105.91	6,105.91	177.23	122.12	97.54	606.14	-224.06	5,864.32	5,717.20	147.12	39.862		
11,800.00	6,075.22	6,106.22	6,106.22	180.22	122.12	97.67	606.14	-224.06	5,964.29	5,817.12	147.17	40.526		
11,900.00	6,075.52	6,106.52	6,106.52	183.21	122.13	97.80	606.14	-224.06	6,064.26	5,917.03	147.23	41.189		
12,000.00	6,075.83	6,106.83	6,106.83	186.19	122.14	97.92	606.14	-224.06	6,164.24	6,016.95	147.29	41.851		
12,100.00	6,076.13	6,107.13	6,107.13	189.18	122.14	98.05	606.14	-224.06	6,264.21	6,116.86	147.35	42.512		
12,200.00	6,076.44	6,107.44	6,107.44	192.17	122.15	98.18	606.14	-224.06	6,364.19	6,216.78	147.41	43.173		
12,300.00	6,076.74	6,107.74	6,107.74	195.16	122.15	98.30	606.14	-224.06	6,464.17	6,316.70	147.47	43.833		
12,400.00	6,077.05	6,108.05	6,108.05	198.15	122.16	98.43	606.14	-224.06	6,564.15	6,416.61	147.53	44.492		
12,500.00	6,077.35	6,108.35	6,108.35	201.15	122.17	98.56	606.14	-224.06	6,664.12	6,516.53	147.60	45.151		
12,600.00	6,077.66	6,108.66	6,108.66	204.14	122.17	98.68	606.14	-224.06	6,764.10	6,616.44	147.66	45.809		
12,700.00	6,077.96	6,108.96	6,108.96	207.13	122.18	98.81	606.14	-224.06	6,864.08	6,716.36	147.72	46.466		
12,711.72	6,078.00	6,109.00	6,109.00	207.48	122.18	98.82	606.14	-224.06	6,875.80	6,728.07	147.73	46.542		



Scientific Drilling, Intl Anticollision Report



Company:	Hilcorp Energy Corp.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 7010-UNKNOWN												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
0.00	0.00	20.00	20.00	0.00	0.40	-101.64	-260.26	-1,263.85	1,290.37	1,289.97	0.40	3.224.323	
100.00	100.00	120.00	120.00	0.18	2.40	-101.64	-260.26	-1,263.85	1,290.37	1,287.79	2.58	500.254	
200.00	200.00	220.00	220.00	0.54	4.40	-101.64	-260.26	-1,263.85	1,290.37	1,285.43	4.94	261.320	
300.00	300.00	320.00	320.00	0.90	6.40	-101.64	-260.26	-1,263.85	1,290.37	1,283.08	7.30	176.851	
400.00	400.00	420.00	420.00	1.25	8.40	-101.64	-260.26	-1,263.85	1,290.37	1,280.72	9.65	133.650	
500.00	500.00	520.00	520.00	1.61	10.40	-101.64	-260.26	-1,263.85	1,290.37	1,278.36	12.01	107.412	
600.00	599.98	619.98	619.98	1.97	12.40	-80.25	-260.26	-1,263.85	1,290.08	1,275.71	14.37	89.773	
700.00	699.84	719.84	719.84	2.33	14.40	-80.49	-260.26	-1,263.85	1,289.20	1,272.47	16.73	77.082	
800.00	799.47	819.47	819.47	2.70	16.39	-80.88	-260.26	-1,263.85	1,287.82	1,268.74	19.08	67.500	
900.00	899.04	919.04	919.04	3.06	18.38	-81.29	-260.26	-1,263.85	1,286.37	1,264.94	21.44	60.012	
1,000.00	998.61	1,018.61	1,018.61	3.42	20.37	-81.70	-260.26	-1,263.85	1,284.99	1,261.20	23.79	54.004	
1,100.00	1,098.17	1,118.17	1,118.17	3.80	22.36	-82.11	-260.26	-1,263.85	1,283.68	1,257.52	26.16	49.078	
1,200.00	1,197.74	1,217.74	1,217.74	4.17	24.35	-82.52	-260.26	-1,263.85	1,282.43	1,253.91	28.52	44.968	
1,300.00	1,297.31	1,317.31	1,317.31	4.54	26.35	-82.93	-260.26	-1,263.85	1,281.25	1,250.36	30.88	41.488	
1,400.00	1,396.88	1,416.88	1,416.88	4.91	28.34	-83.34	-260.26	-1,263.85	1,280.13	1,246.88	33.25	38.503	
1,500.00	1,496.44	1,516.44	1,516.44	5.29	30.33	-83.75	-260.26	-1,263.85	1,279.08	1,243.47	35.61	35.916	
1,600.00	1,596.01	1,616.01	1,616.01	5.66	32.32	-84.16	-260.26	-1,263.85	1,278.10	1,240.12	37.98	33.652	
1,700.00	1,695.58	1,715.58	1,715.58	6.04	34.31	-84.58	-260.26	-1,263.85	1,277.18	1,236.84	40.35	31.656	
1,800.00	1,795.15	1,815.15	1,815.15	6.41	36.30	-84.99	-260.26	-1,263.85	1,276.34	1,233.62	42.71	29.881	
1,900.00	1,894.71	1,914.71	1,914.71	6.79	38.29	-85.40	-260.26	-1,263.85	1,275.55	1,230.47	45.08	28.295	
2,000.00	1,994.28	2,014.28	2,014.28	7.17	40.29	-85.82	-260.26	-1,263.85	1,274.84	1,227.39	47.45	26.868	
2,100.00	2,093.85	2,113.85	2,113.85	7.54	42.28	-86.23	-260.26	-1,263.85	1,274.19	1,224.38	49.82	25.577	
2,200.00	2,193.42	2,213.42	2,213.42	7.92	44.27	-86.65	-260.26	-1,263.85	1,273.61	1,221.43	52.19	24.406	
2,300.00	2,292.98	2,312.98	2,312.98	8.30	46.26	-87.06	-260.26	-1,263.85	1,273.10	1,218.55	54.55	23.337	
2,400.00	2,392.55	2,412.55	2,412.55	8.67	48.25	-87.48	-260.26	-1,263.85	1,272.66	1,215.73	56.92	22.358	
2,500.00	2,492.12	2,512.12	2,512.12	9.05	50.24	-87.90	-260.26	-1,263.85	1,272.28	1,212.99	59.29	21.458	
2,600.00	2,591.69	2,611.69	2,611.69	9.43	52.23	-88.31	-260.26	-1,263.85	1,271.97	1,210.31	61.66	20.629	
2,700.00	2,691.25	2,711.25	2,711.25	9.81	54.23	-88.73	-260.26	-1,263.85	1,271.73	1,207.70	64.03	19.862	
2,800.00	2,790.82	2,810.82	2,810.82	10.18	56.22	-89.14	-260.26	-1,263.85	1,271.56	1,205.16	66.40	19.150	
2,900.00	2,890.39	2,910.39	2,910.39	10.56	58.21	-89.56	-260.26	-1,263.85	1,271.45	1,202.68	68.77	18.489	
3,000.00	2,989.96	3,009.96	3,009.96	10.94	60.20	-89.98	-260.26	-1,263.85	1,271.41	1,200.28	71.14	17.873	
3,005.18	2,995.11	3,015.11	3,015.11	10.96	60.30	-90.00	-260.26	-1,263.85	1,271.41	1,200.16	71.26	17.842	
3,100.00	3,089.52	3,109.52	3,109.52	11.32	62.19	-90.40	-260.26	-1,263.85	1,271.45	1,197.94	73.51	17.297	
3,200.00	3,189.09	3,209.09	3,209.09	11.70	64.18	-90.81	-260.26	-1,263.85	1,271.54	1,195.67	75.88	16.758	
3,300.00	3,288.66	3,308.66	3,308.66	12.07	66.17	-91.23	-260.26	-1,263.85	1,271.71	1,193.46	78.25	16.253	
3,400.00	3,388.23	3,408.23	3,408.23	12.45	68.16	-91.65	-260.26	-1,263.85	1,271.94	1,191.33	80.61	15.778	
3,500.00	3,487.79	3,507.79	3,507.79	12.83	70.16	-92.06	-260.26	-1,263.85	1,272.25	1,189.26	82.98	15.331	
3,600.00	3,587.36	3,607.36	3,607.36	13.21	72.15	-92.48	-260.26	-1,263.85	1,272.62	1,187.26	85.35	14.910	
3,700.00	3,686.93	3,706.93	3,706.93	13.58	74.14	-92.89	-260.26	-1,263.85	1,273.05	1,185.33	87.72	14.512	
3,800.00	3,786.50	3,806.50	3,806.50	13.96	76.13	-93.31	-260.26	-1,263.85	1,273.56	1,183.46	90.09	14.136	
3,900.00	3,886.06	3,906.06	3,906.06	14.34	78.12	-93.72	-260.26	-1,263.85	1,274.13	1,181.67	92.46	13.780	
4,000.00	3,985.63	4,005.63	4,005.63	14.72	80.11	-94.14	-260.26	-1,263.85	1,274.77	1,179.94	94.83	13.442	
4,100.00	4,085.20	4,105.20	4,105.20	15.10	82.10	-94.55	-260.26	-1,263.85	1,275.48	1,178.28	97.20	13.122	
4,200.00	4,184.77	4,204.77	4,204.77	15.48	84.10	-94.97	-260.26	-1,263.85	1,276.25	1,176.68	99.57	12.818	
4,300.00	4,284.33	4,304.33	4,304.33	15.85	86.09	-95.38	-260.26	-1,263.85	1,277.09	1,175.15	101.94	12.528	
4,400.00	4,383.90	4,403.90	4,403.90	16.23	88.08	-95.79	-260.26	-1,263.85	1,278.00	1,173.69	104.31	12.252	
4,500.00	4,483.47	4,503.47	4,503.47	16.61	90.07	-96.21	-260.26	-1,263.85	1,278.98	1,172.30	106.68	11.989	
4,600.00	4,583.04	4,603.04	4,603.04	16.99	92.06	-96.62	-260.26	-1,263.85	1,280.02	1,170.97	109.05	11.738	
4,700.00	4,682.60	4,702.60	4,702.60	17.37	94.05	-97.03	-260.26	-1,263.85	1,281.13	1,169.71	111.42	11.499	
4,800.00	4,782.17	4,802.17	4,802.17	17.74	96.04	-97.44	-260.26	-1,263.85	1,282.30	1,168.52	113.79	11.269	
4,900.00	4,881.74	4,901.74	4,901.74	18.12	98.03	-97.85	-260.26	-1,263.85	1,283.54	1,167.39	116.15	11.050	
5,000.00	4,981.31	5,001.31	5,001.31	18.50	100.03	-98.26	-260.26	-1,263.85	1,284.85	1,166.33	118.52	10.840	

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 603 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 603 1H - Slot A01
TVD Reference: GL 6050 @ 6050.00usft
MD Reference: GL 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 2N - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 7010-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	5,080.87	5,100.87	5,100.87	18.88	102.02	-98.67	-260.26	-1,263.85	1,286.22	1,165.33	120.89	10.639	
5,200.00	5,180.44	5,200.44	5,200.44	19.26	104.01	-99.07	-260.26	-1,263.85	1,287.66	1,164.40	123.26	10.447	
5,300.00	5,280.01	5,300.01	5,300.01	19.64	106.00	-99.48	-260.26	-1,263.85	1,289.17	1,163.54	125.63	10.262	
5,400.00	5,379.57	5,399.57	5,399.57	20.01	107.99	-92.43	-260.26	-1,263.85	1,290.68	1,162.68	128.00	10.084	
5,500.00	5,478.43	5,498.43	5,498.43	20.40	109.97	-57.05	-260.26	-1,263.85	1,285.21	1,154.84	130.36	9.859	
5,600.00	5,574.70	5,594.70	5,594.70	20.81	111.89	-48.86	-260.26	-1,263.85	1,268.23	1,135.54	132.70	9.557	
5,700.00	5,666.51	5,686.51	5,686.51	21.23	113.73	-47.26	-260.26	-1,263.85	1,240.44	1,105.48	134.96	9.191	
5,800.00	5,752.07	5,772.07	5,772.07	21.69	115.44	-48.66	-260.26	-1,263.85	1,202.87	1,065.74	137.13	8.772	
5,900.00	5,829.71	5,849.71	5,849.71	22.22	116.99	-52.13	-260.26	-1,263.85	1,156.89	1,017.70	139.19	8.312	
6,000.00	5,897.93	5,917.93	5,917.93	22.90	118.36	-57.34	-260.26	-1,263.85	1,104.23	963.08	141.15	7.823	
6,100.00	5,955.40	5,975.40	5,975.40	23.78	119.51	-63.94	-260.26	-1,263.85	1,046.94	903.90	143.05	7.319	
6,200.00	6,001.00	6,021.00	6,021.00	24.91	120.42	-71.39	-260.26	-1,263.85	987.42	842.49	144.93	6.813	
6,300.00	6,033.84	6,053.84	6,053.84	26.32	121.08	-78.85	-260.26	-1,263.85	928.29	781.43	146.86	6.321	
6,400.00	6,053.28	6,073.28	6,073.28	27.97	121.47	-85.41	-260.26	-1,263.85	872.38	723.52	148.86	5.860	
6,500.00	6,059.03	6,079.03	6,079.03	29.82	121.58	-89.91	-260.26	-1,263.85	822.51	671.58	150.93	5.450	
6,600.00	6,059.34	6,079.34	6,079.34	31.84	121.59	-89.93	-260.26	-1,263.85	781.71	628.55	153.15	5.104	
6,700.00	6,059.65	6,079.65	6,079.65	34.00	121.59	-89.96	-260.26	-1,263.85	752.07	596.53	155.53	4.835	
6,800.00	6,059.95	6,079.95	6,079.95	36.29	121.60	-89.98	-260.26	-1,263.85	734.95	577.07	157.87	4.655	
6,877.29	6,060.19	6,080.19	6,080.19	38.13	121.60	-90.00	-260.26	-1,263.85	730.87	571.35	159.52	4.582 CC	
6,900.00	6,060.26	6,080.26	6,080.26	38.67	121.61	-90.01	-260.26	-1,263.85	731.22	571.27	159.95	4.571 ES SF	
7,000.00	6,060.56	6,080.56	6,080.56	41.14	121.61	-90.03	-260.26	-1,263.85	741.10	579.50	161.60	4.586	
7,100.00	6,060.87	6,080.87	6,080.87	43.68	121.62	-90.05	-260.26	-1,263.85	764.05	601.31	162.74	4.695	
7,200.00	6,061.17	6,081.17	6,081.17	46.27	121.62	-90.08	-260.26	-1,263.85	798.94	635.58	163.37	4.891	
7,300.00	6,061.48	6,081.48	6,081.48	48.91	121.63	-90.10	-260.26	-1,263.85	844.31	680.73	163.57	5.162	
7,400.00	6,061.78	6,081.78	6,081.78	51.60	121.64	-90.13	-260.26	-1,263.85	898.55	735.09	163.46	5.497	
7,500.00	6,062.09	6,082.09	6,082.09	54.31	121.64	-90.15	-260.26	-1,263.85	960.17	797.03	163.14	5.886	
7,600.00	6,062.39	6,082.39	6,082.39	57.06	121.65	-90.17	-260.26	-1,263.85	1,027.85	865.16	162.69	6.318	
7,700.00	6,062.70	6,082.70	6,082.70	59.83	121.65	-90.20	-260.26	-1,263.85	1,100.46	938.28	162.18	6.786	
7,800.00	6,063.00	6,083.00	6,083.00	62.63	121.66	-90.22	-260.26	-1,263.85	1,177.10	1,015.46	161.64	7.282	
7,900.00	6,063.31	6,083.31	6,083.31	65.44	121.67	-90.24	-260.26	-1,263.85	1,257.02	1,095.92	161.10	7.803	
8,000.00	6,063.61	6,083.61	6,083.61	68.27	121.67	-90.27	-260.26	-1,263.85	1,339.64	1,179.06	160.58	8.342	
8,100.00	6,063.92	6,083.92	6,083.92	71.11	121.68	-90.29	-260.26	-1,263.85	1,424.49	1,264.40	160.09	8.898	
8,200.00	6,064.23	6,084.23	6,084.23	73.97	121.68	-90.32	-260.26	-1,263.85	1,511.20	1,351.56	159.63	9.467	
8,300.00	6,064.53	6,084.53	6,084.53	76.84	121.69	-90.34	-260.26	-1,263.85	1,599.45	1,440.25	159.20	10.047	
8,400.00	6,064.84	6,084.84	6,084.84	79.72	121.70	-90.36	-260.26	-1,263.85	1,689.02	1,530.21	158.81	10.636	
8,500.00	6,065.14	6,085.14	6,085.14	82.61	121.70	-90.39	-260.26	-1,263.85	1,779.70	1,621.25	158.45	11,232	
8,600.00	6,065.45	6,085.45	6,085.45	85.51	121.71	-90.41	-260.26	-1,263.85	1,871.33	1,713.22	158.11	11,836	
8,700.00	6,065.75	6,085.75	6,085.75	88.42	121.72	-90.44	-260.26	-1,263.85	1,963.77	1,805.97	157.80	12,444	
8,800.00	6,066.06	6,086.06	6,086.06	91.33	121.72	-90.46	-260.26	-1,263.85	2,056.93	1,899.41	157.52	13,058	
8,900.00	6,066.36	6,086.36	6,086.36	94.25	121.73	-90.48	-260.26	-1,263.85	2,150.69	1,993.43	157.26	13,676	
9,000.00	6,066.67	6,086.67	6,086.67	97.17	121.73	-90.51	-260.26	-1,263.85	2,245.00	2,087.98	157.02	14,297	
9,100.00	6,066.97	6,086.97	6,086.97	100.10	121.74	-90.53	-260.26	-1,263.85	2,339.78	2,182.97	156.80	14,922	
9,200.00	6,067.28	6,087.28	6,087.28	103.04	121.75	-90.56	-260.26	-1,263.85	2,434.97	2,278.37	156.60	15,549	
9,300.00	6,067.58	6,087.58	6,087.58	105.98	121.75	-90.58	-260.26	-1,263.85	2,530.54	2,374.12	156.42	16,178	
9,400.00	6,067.89	6,087.89	6,087.89	108.92	121.76	-90.60	-260.26	-1,263.85	2,626.44	2,470.19	156.25	16,809	
9,500.00	6,068.19	6,088.19	6,088.19	111.86	121.76	-90.63	-260.26	-1,263.85	2,722.63	2,566.54	156.09	17,443	
9,600.00	6,068.50	6,088.50	6,088.50	114.81	121.77	-90.65	-260.26	-1,263.85	2,819.09	2,663.14	155.95	18,077	
9,700.00	6,068.80	6,088.80	6,088.80	117.77	121.78	-90.68	-260.26	-1,263.85	2,915.78	2,759.97	155.81	18,713	
9,800.00	6,069.11	6,089.11	6,089.11	120.72	121.78	-90.70	-260.26	-1,263.85	3,012.69	2,857.00	155.69	19,350	
9,900.00	6,069.42	6,089.42	6,089.42	123.68	121.79	-90.72	-260.26	-1,263.85	3,109.80	2,954.22	155.58	19,988	
10,000.00	6,069.72	6,089.72	6,089.72	126.64	121.79	-90.75	-260.26	-1,263.85	3,207.08	3,051.61	155.48	20,627	
10,100.00	6,070.03	6,090.03	6,090.03	129.60	121.80	-90.77	-260.26	-1,263.85	3,304.53	3,149.15	155.38	21,267	

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Trieb Fed Pad - Trieb Fed 2N - OH - OH											Offset Site Error: 0.00 usft	
Survey Program: 7010-UNKNOWN											Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance				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 Centras (usft)	Between Ellipses (usft)		
10,200.00	6,070.33	6,090.33	6,090.33	132.57	121.81	-90.80	-260.26	-1,263.85	3,402.13	3,246.83	155.30	21.907
10,300.00	6,070.64	6,090.64	6,090.64	135.54	121.81	-90.82	-260.26	-1,263.85	3,499.86	3,344.64	155.22	22.548
10,400.00	6,070.94	6,090.94	6,090.94	138.51	121.82	-90.84	-260.26	-1,263.85	3,597.71	3,442.57	155.15	23.189
10,500.00	6,071.25	6,091.25	6,091.25	141.48	121.82	-90.87	-260.26	-1,263.85	3,695.68	3,540.60	155.08	23.831
10,600.00	6,071.55	6,091.55	6,091.55	144.45	121.83	-90.89	-260.26	-1,263.85	3,793.76	3,638.74	155.02	24.473
10,700.00	6,071.86	6,091.86	6,091.86	147.42	121.84	-90.91	-260.26	-1,263.85	3,891.93	3,736.97	154.96	25.115
10,800.00	6,072.16	6,092.16	6,092.16	150.40	121.84	-90.94	-260.26	-1,263.85	3,990.20	3,835.28	154.91	25.757
10,900.00	6,072.47	6,092.47	6,092.47	153.38	121.85	-90.96	-260.26	-1,263.85	4,088.55	3,933.68	154.87	26.400
11,000.00	6,072.77	6,092.77	6,092.77	156.35	121.86	-90.99	-260.26	-1,263.85	4,186.97	4,032.14	154.83	27.042
11,100.00	6,073.08	6,093.08	6,093.08	159.33	121.86	-91.01	-260.26	-1,263.85	4,285.47	4,130.68	154.79	27.685
11,200.00	6,073.38	6,093.38	6,093.38	162.31	121.87	-91.03	-260.26	-1,263.85	4,384.04	4,229.28	154.76	28.327
11,300.00	6,073.69	6,093.69	6,093.69	165.30	121.87	-91.06	-260.26	-1,263.85	4,482.67	4,327.94	154.74	28.970
11,400.00	6,074.00	6,094.00	6,094.00	168.28	121.88	-91.08	-260.26	-1,263.85	4,581.36	4,426.65	154.71	29.612
11,500.00	6,074.30	6,094.30	6,094.30	171.26	121.89	-91.11	-260.26	-1,263.85	4,680.11	4,525.42	154.69	30.254
11,600.00	6,074.61	6,094.61	6,094.61	174.25	121.89	-91.13	-260.26	-1,263.85	4,778.91	4,624.23	154.67	30.896
11,700.00	6,074.91	6,094.91	6,094.91	177.23	121.90	-91.15	-260.26	-1,263.85	4,877.75	4,723.09	154.66	31.538
11,800.00	6,075.22	6,095.22	6,095.22	180.22	121.90	-91.18	-260.26	-1,263.85	4,976.65	4,822.00	154.65	32.180
11,900.00	6,075.52	6,095.52	6,095.52	183.21	121.91	-91.20	-260.26	-1,263.85	5,075.58	4,920.94	154.64	32.821
12,000.00	6,075.83	6,095.83	6,095.83	186.19	121.92	-91.23	-260.26	-1,263.85	5,174.56	5,019.92	154.64	33.463
12,100.00	6,076.13	6,096.13	6,096.13	189.18	121.92	-91.25	-260.26	-1,263.85	5,273.58	5,118.94	154.63	34.103
12,200.00	6,076.44	6,096.44	6,096.44	192.17	121.93	-91.27	-260.26	-1,263.85	5,372.63	5,217.99	154.64	34.744
12,300.00	6,076.74	6,096.74	6,096.74	195.16	121.93	-91.30	-260.26	-1,263.85	5,471.71	5,317.08	154.64	35.384
12,400.00	6,077.05	6,097.05	6,097.05	198.15	121.94	-91.32	-260.26	-1,263.85	5,570.83	5,416.19	154.64	36.024
12,500.00	6,077.35	6,097.35	6,097.35	201.15	121.95	-91.35	-260.26	-1,263.85	5,669.98	5,515.33	154.65	36.663
12,600.00	6,077.66	6,097.66	6,097.66	204.14	121.95	-91.37	-260.26	-1,263.85	5,769.16	5,614.51	154.66	37.302
12,700.00	6,077.96	6,097.96	6,097.96	207.13	121.96	-91.39	-260.26	-1,263.85	5,868.37	5,713.70	154.67	37.941
12,711.72	6,078.00	6,098.00	6,098.00	207.48	121.96	-91.40	-260.26	-1,263.85	5,880.00	5,725.33	154.67	38.016



Scientific Drilling, Intl Anticollision Report



Company:	Hilcorp Energy Corp.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	113.38	-11.65	26.95	29.36					
100.00	100.00	100.00	100.00	0.18	0.18	113.38	-11.65	26.95	29.36	29.00	0.36	81.909		
200.00	200.00	200.00	200.00	0.54	0.54	113.38	-11.65	26.95	29.36	28.29	1.08	27.303		
300.00	300.00	300.00	300.00	0.90	0.90	113.38	-11.65	26.95	29.36	27.57	1.79	16.382		
400.00	400.00	400.00	400.00	1.25	1.25	113.38	-14.65	26.95	29.36	26.85	2.51	11.701		
500.00	500.00	500.00	500.00	1.61	1.61	113.38	-11.65	26.95	29.36	26.14	3.23	9.101 CC, ES		
600.00	599.98	600.19	600.17	1.97	1.97	133.93	-9.94	27.33	30.26	26.32	3.94	7.675		
700.00	699.84	700.31	700.15	2.33	2.33	131.47	-4.81	28.45	33.00	28.34	4.66	7.082		
800.00	799.47	800.31	799.76	2.70	2.70	127.96	3.71	30.32	37.55	32.17	5.38	6.978		
900.00	899.04	900.14	898.97	3.06	3.06	122.91	14.53	32.69	42.63	36.52	6.11	6.978 SF		
1,000.00	998.61	999.94	998.15	3.42	3.43	118.87	25.41	35.07	47.96	41.12	6.85	7.007		
1,100.00	1,098.17	1,099.75	1,097.34	3.80	3.80	115.65	36.30	37.46	53.49	45.91	7.59	7.050		
1,200.00	1,197.74	1,199.56	1,196.52	4.17	4.18	113.04	47.19	39.84	59.16	50.83	8.33	7.099		
1,300.00	1,297.31	1,299.36	1,295.70	4.54	4.56	110.89	58.07	42.23	64.93	55.84	9.08	7.150		
1,400.00	1,396.88	1,399.17	1,394.88	4.91	4.93	109.10	68.96	44.61	70.77	60.94	9.83	7.199		
1,500.00	1,496.44	1,498.98	1,494.07	5.29	5.31	107.58	79.84	47.00	76.67	66.09	10.58	7.245		
1,600.00	1,596.01	1,598.78	1,593.25	5.66	5.70	106.27	90.73	49.38	82.62	71.28	11.33	7.289		
1,700.00	1,695.58	1,698.59	1,692.43	6.04	6.08	105.14	101.61	51.77	88.60	76.51	12.09	7.330		
1,800.00	1,795.15	1,798.40	1,791.61	6.41	6.46	104.16	112.50	54.16	94.61	81.77	12.84	7.368		
1,900.00	1,894.71	1,898.20	1,890.80	6.79	6.84	103.29	123.39	56.54	100.65	87.06	13.59	7.404		
2,000.00	1,994.28	1,998.01	1,989.98	7.17	7.22	102.52	134.27	58.93	106.71	92.36	14.35	7.437		
2,100.00	2,093.85	2,097.82	2,089.16	7.54	7.61	101.84	145.16	61.31	112.79	97.68	15.10	7.467		
2,200.00	2,193.42	2,197.62	2,188.34	7.92	7.99	101.22	156.04	63.70	118.88	103.02	15.86	7.496		
2,300.00	2,292.98	2,297.43	2,287.53	8.30	8.37	100.67	166.93	66.08	124.98	108.37	16.61	7.522		
2,400.00	2,392.55	2,397.24	2,386.71	8.67	8.76	100.16	177.81	68.47	131.10	113.73	17.37	7.547		
2,500.00	2,492.12	2,497.04	2,485.89	9.05	9.14	99.70	188.70	70.85	137.22	119.09	18.13	7.570		
2,600.00	2,591.69	2,596.85	2,585.07	9.43	9.53	99.28	199.59	73.24	143.35	124.47	18.88	7.592		
2,700.00	2,691.25	2,696.66	2,684.26	9.81	9.91	98.90	210.47	75.62	149.49	129.85	19.64	7.612		
2,800.00	2,790.82	2,796.46	2,783.44	10.18	10.30	98.54	221.36	78.01	155.63	135.24	20.39	7.631		
2,900.00	2,890.39	2,896.27	2,882.62	10.56	10.68	98.22	232.24	80.39	161.78	140.63	21.15	7.649		
3,000.00	2,989.96	2,996.08	2,981.80	10.94	11.07	97.91	243.13	82.78	167.94	146.03	21.91	7.666		
3,100.00	3,089.52	3,095.88	3,080.99	11.32	11.45	97.63	254.02	85.16	174.10	151.43	22.66	7.681		
3,200.00	3,189.09	3,195.69	3,180.17	11.70	11.84	97.37	264.90	87.55	180.26	156.84	23.42	7.696		
3,300.00	3,288.66	3,295.50	3,279.35	12.07	12.22	97.12	275.79	89.93	186.42	162.25	24.18	7.710		
3,400.00	3,388.23	3,395.30	3,378.53	12.45	12.61	96.89	286.67	92.32	192.59	167.66	24.93	7.724		
3,500.00	3,487.79	3,495.11	3,477.72	12.83	12.99	96.67	297.56	94.71	198.77	173.07	25.69	7.737		
3,600.00	3,587.36	3,594.92	3,576.90	13.21	13.38	96.47	308.44	97.09	204.94	178.49	26.45	7.749		
3,700.00	3,686.93	3,694.72	3,676.08	13.58	13.76	96.28	319.33	99.48	211.12	183.91	27.21	7.760		
3,800.00	3,786.50	3,794.53	3,775.26	13.96	14.15	96.10	330.22	101.86	217.30	189.34	27.96	7.771		
3,900.00	3,886.06	3,894.34	3,874.45	14.34	14.53	95.93	341.10	104.25	223.48	194.76	28.72	7.781		
4,000.00	3,985.63	3,994.14	3,973.63	14.72	14.92	95.77	351.99	106.63	229.66	200.19	29.48	7.791		
4,100.00	4,085.20	4,093.95	4,072.81	15.10	15.30	95.62	362.87	109.02	235.85	205.61	30.23	7.801		
4,200.00	4,184.77	4,193.76	4,171.99	15.48	15.69	95.47	373.76	111.40	242.04	211.04	30.99	7.810		
4,300.00	4,284.33	4,293.56	4,271.18	15.85	16.07	95.34	384.64	113.79	248.22	216.48	31.75	7.818		
4,400.00	4,383.90	4,393.37	4,370.36	16.23	16.46	95.20	395.53	116.17	254.41	221.91	32.51	7.827		
4,500.00	4,483.47	4,493.18	4,469.54	16.61	16.85	95.08	406.42	118.56	260.60	227.34	33.26	7.835		
4,600.00	4,583.04	4,592.98	4,568.72	16.99	17.23	94.96	417.30	120.94	266.80	232.78	34.02	7.842		
4,700.00	4,682.60	4,692.79	4,667.91	17.37	17.62	94.85	428.19	123.33	272.99	238.21	34.78	7.849		
4,800.00	4,782.17	4,792.60	4,767.09	17.74	18.00	94.74	439.07	125.71	279.18	243.65	35.54	7.856		
4,900.00	4,881.74	4,892.40	4,866.27	18.12	18.39	94.64	449.96	128.10	285.38	249.09	36.29	7.863		
5,000.00	4,981.31	4,992.21	4,965.45	18.50	18.77	94.54	460.85	130.49	291.58	254.52	37.05	7.870		
5,100.00	5,080.87	5,092.02	5,064.64	18.88	19.16	94.44	471.73	132.87	297.77	259.96	37.81	7.876		

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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		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		
5,200.00	5,180.44	5,191.82	5,163.82	19.26	19.55	94.35	482.62	135.26	303.97	265.40	38.57	7.882		
5,300.00	5,280.01	5,291.63	5,263.00	19.64	19.93	94.26	493.50	137.64	310.17	270.85	39.32	7.888		
5,400.00	5,379.57	5,391.43	5,362.18	20.01	20.32	101.62	504.39	140.03	316.43	276.35	40.08	7.895		
5,500.00	5,478.43	5,460.41	5,430.56	20.40	20.59	137.78	511.89	144.81	334.92	294.48	40.45	8.280		
5,600.00	5,574.70	5,522.27	5,491.23	20.81	20.83	147.69	518.55	154.71	374.57	334.07	40.50	9.249		
5,700.00	5,666.51	5,574.21	5,541.37	21.23	21.03	151.60	524.05	167.06	432.73	392.40	40.33	10.731		
5,800.00	5,752.07	5,614.81	5,579.87	21.69	21.19	152.70	528.27	179.24	505.91	465.86	40.05	12.632		
5,900.00	5,829.71	5,650.00	5,612.63	22.22	21.33	151.65	531.86	191.56	590.43	550.48	39.95	14.780		
6,000.00	5,897.93	5,663.30	5,624.85	22.90	21.38	145.72	533.20	196.64	682.61	643.05	39.56	17.255		
6,100.00	5,955.40	5,673.53	5,634.19	23.78	21.42	128.94	534.23	200.70	779.54	740.09	39.45	19.760		
6,200.00	6,001.00	5,676.26	5,636.66	24.91	21.43	76.90	534.50	201.80	878.58	839.13	39.45	22.273		
6,300.00	6,033.84	5,672.75	5,633.47	26.32	21.42	29.24	534.15	200.38	977.58	938.04	39.54	24.724		
6,400.00	6,053.28	5,650.00	5,612.63	27.97	21.33	12.88	531.86	191.56	1,075.00	1,035.58	39.43	27.267		
6,500.00	6,059.03	5,650.00	5,612.63	29.82	21.33	7.81	531.86	191.56	1,168.71	1,128.75	39.95	29.251		
6,600.00	6,059.34	5,650.00	5,612.63	31.84	21.33	7.81	531.86	191.56	1,261.68	1,221.21	40.46	31.183		
6,700.00	6,059.65	5,625.47	5,589.85	34.00	21.23	7.13	529.37	182.80	1,355.00	1,314.52	40.48	33.471		
6,800.00	6,059.95	5,600.00	5,565.90	36.29	21.13	6.48	526.74	174.55	1,449.30	1,408.83	40.48	35.807		
6,900.00	6,060.26	5,600.00	5,565.90	38.67	21.13	6.48	526.74	174.55	1,543.71	1,502.90	40.82	37.821		
7,000.00	6,060.56	5,600.00	5,565.90	41.14	21.13	6.48	526.74	174.55	1,638.79	1,597.68	41.10	39.868		
7,100.00	6,060.87	5,600.00	5,565.90	43.68	21.13	6.48	526.74	174.55	1,734.42	1,693.06	41.35	41.943		
7,200.00	6,061.17	5,577.81	5,544.81	46.27	21.05	5.96	524.43	168.05	1,830.03	1,788.72	41.31	44.301		
7,300.00	6,061.48	5,570.35	5,537.67	48.91	21.02	5.79	523.64	166.02	1,926.16	1,884.73	41.43	46.494		
7,400.00	6,061.78	5,550.00	5,518.11	51.60	20.94	5.36	521.50	160.85	2,022.74	1,981.35	41.39	48.866		
7,500.00	6,062.09	5,550.00	5,518.11	54.31	20.94	5.36	521.50	160.85	2,119.28	2,077.72	41.57	50.987		
7,600.00	6,062.39	5,550.00	5,518.11	57.06	20.94	5.36	521.50	160.85	2,216.13	2,174.41	41.72	53.121		
7,700.00	6,062.70	5,550.00	5,518.11	59.83	20.94	5.36	521.50	160.85	2,313.24	2,271.38	41.86	55.266		
7,800.00	6,063.00	5,550.00	5,518.11	62.63	20.94	5.36	521.50	160.85	2,410.59	2,368.61	41.98	57.419		
7,900.00	6,063.31	5,550.00	5,518.11	65.44	20.94	5.36	521.50	160.85	2,508.15	2,466.05	42.10	59.579		
8,000.00	6,063.61	5,530.32	5,499.06	68.27	20.86	4.96	519.41	156.38	2,605.54	2,563.51	42.04	61.980		
8,100.00	6,063.92	5,525.91	5,494.78	71.11	20.84	4.88	518.94	155.45	2,703.28	2,661.18	42.11	64.202		
8,200.00	6,064.23	5,521.74	5,490.72	73.97	20.83	4.80	518.49	154.60	2,801.15	2,758.98	42.17	66.425		
8,300.00	6,064.53	5,500.00	5,469.49	76.84	20.74	4.40	516.16	150.54	2,899.42	2,857.32	42.09	68.881		
8,400.00	6,064.84	5,500.00	5,469.49	79.72	20.74	4.40	516.16	150.54	2,997.41	2,955.22	42.18	71.054		
8,500.00	6,065.14	5,500.00	5,469.49	82.61	20.74	4.40	516.16	150.54	3,095.52	3,053.25	42.27	73.230		
8,600.00	6,065.45	5,500.00	5,469.49	85.51	20.74	4.40	516.16	150.54	3,193.76	3,151.41	42.35	75.407		
8,700.00	6,065.75	5,500.00	5,469.49	88.42	20.74	4.40	516.16	150.54	3,292.10	3,249.67	42.43	77.585		
8,800.00	6,066.06	5,500.00	5,469.49	91.33	20.74	4.40	516.16	150.54	3,390.54	3,348.03	42.51	79.764		
8,900.00	6,066.36	5,500.00	5,469.49	94.25	20.74	4.40	516.16	150.54	3,489.07	3,446.49	42.58	81.942		
9,000.00	6,066.67	5,500.00	5,469.49	97.17	20.74	4.40	516.16	150.54	3,587.68	3,545.02	42.65	84.119		
9,100.00	6,066.97	5,500.00	5,469.49	100.10	20.74	4.40	516.16	150.54	3,686.36	3,643.64	42.72	86.295		
9,200.00	6,067.28	5,500.00	5,469.49	103.04	20.74	4.40	516.16	150.54	3,785.11	3,742.33	42.78	88.469		
9,300.00	6,067.58	5,500.00	5,469.49	105.98	20.74	4.40	516.16	150.54	3,883.93	3,841.08	42.85	90.641		
9,400.00	6,067.89	5,500.00	5,469.49	108.92	20.74	4.40	516.16	150.54	3,982.80	3,939.89	42.91	92.811		
9,500.00	6,068.19	5,500.00	5,469.49	111.86	20.74	4.40	516.16	150.54	4,081.73	4,038.76	42.98	94.979		
9,600.00	6,068.50	5,500.00	5,469.49	114.81	20.74	4.40	516.16	150.54	4,180.72	4,137.68	43.04	97.143		
9,700.00	6,068.80	5,500.00	5,469.49	117.77	20.74	4.40	516.16	150.54	4,279.74	4,236.65	43.10	99.304		
9,800.00	6,069.11	5,476.97	5,446.88	120.72	20.65	4.00	513.68	146.94	4,378.39	4,335.37	43.02	101.778		
9,900.00	6,069.42	5,475.08	5,445.02	123.68	20.64	3.97	513.48	146.68	4,477.43	4,434.36	43.07	103.960		
10,000.00	6,069.72	5,473.26	5,443.22	126.64	20.64	3.94	513.28	146.43	4,576.51	4,533.39	43.12	106.137		
10,100.00	6,070.03	5,450.00	5,420.27	129.60	20.55	3.57	510.76	143.66	4,675.99	4,632.95	43.04	108.633		
10,200.00	6,070.33	5,450.00	5,420.27	132.57	20.55	3.57	510.76	143.66	4,775.08	4,731.97	43.11	110.777		
10,300.00	6,070.64	5,450.00	5,420.27	135.54	20.55	3.57	510.76	143.66	4,874.20	4,831.04	43.17	112.916		

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 603 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 603 1H - Slot A01
TVD Reference: GL 6050 @ 6050.00usft
MD Reference: GL 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		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)		Between Centres (usft)	Between Ellipses (usft)				Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	
10,400.00	6,070.94	5,450.00	5,420.27	138.51	20.55	3.57	510.76	143.66	4,973.36	4,930.14	43.23	115.051		
10,500.00	6,071.25	5,450.00	5,420.27	141.48	20.55	3.57	510.76	143.66	5,072.56	5,029.27	43.29	117.182		
10,600.00	6,071.55	5,450.00	5,420.27	144.45	20.55	3.57	510.76	143.66	5,171.78	5,128.43	43.35	119.307		
10,700.00	6,071.86	5,450.00	5,420.27	147.42	20.55	3.57	510.76	143.66	5,271.03	5,227.62	43.41	121.426		
10,800.00	6,072.16	5,450.00	5,420.27	150.40	20.55	3.57	510.76	143.66	5,370.32	5,326.85	43.47	123.541		
10,900.00	6,072.47	5,450.00	5,420.27	153.38	20.55	3.57	510.76	143.66	5,469.62	5,426.09	43.53	125.650		
11,000.00	6,072.77	5,450.00	5,420.27	156.35	20.55	3.57	510.76	143.66	5,568.95	5,525.36	43.59	127.753		
11,100.00	6,073.08	5,450.00	5,420.27	159.33	20.55	3.57	510.76	143.66	5,668.31	5,624.66	43.65	129.851		
11,200.00	6,073.38	5,450.00	5,420.27	162.31	20.55	3.57	510.76	143.66	5,767.69	5,723.97	43.71	131.942		
11,300.00	6,073.69	5,450.00	5,420.27	165.30	20.55	3.57	510.76	143.66	5,867.09	5,823.31	43.78	134.028		
11,400.00	6,074.00	5,450.00	5,420.27	168.28	20.55	3.57	510.76	143.66	5,966.51	5,922.67	43.84	136.107		
11,500.00	6,074.30	5,450.00	5,420.27	171.26	20.55	3.57	510.76	143.66	6,065.94	6,022.04	43.90	138.180		
11,600.00	6,074.61	5,450.00	5,420.27	174.25	20.55	3.57	510.76	143.66	6,165.40	6,121.44	43.96	140.245		
11,700.00	6,074.91	5,450.00	5,420.27	177.23	20.55	3.57	510.76	143.66	6,264.87	6,220.85	44.02	142.306		
11,800.00	6,075.22	5,450.00	5,420.27	180.22	20.55	3.57	510.76	143.66	6,364.36	6,320.28	44.09	144.360		
11,900.00	6,075.52	5,450.00	5,420.27	183.21	20.55	3.57	510.76	143.66	6,463.87	6,419.72	44.15	146.406		
12,000.00	6,075.83	5,450.00	5,420.27	186.19	20.55	3.57	510.76	143.66	6,563.39	6,519.18	44.21	148.446		
12,100.00	6,076.13	5,450.00	5,420.27	189.18	20.55	3.57	510.76	143.66	6,662.93	6,618.65	44.28	150.479		
12,200.00	6,076.44	5,450.00	5,420.27	192.17	20.55	3.57	510.76	143.66	6,762.47	6,718.13	44.34	152.504		
12,300.00	6,076.74	5,450.00	5,420.27	195.16	20.55	3.57	510.76	143.66	6,862.04	6,817.63	44.41	154.523		
12,400.00	6,077.05	5,450.00	5,420.27	198.15	20.55	3.57	510.76	143.66	6,961.61	6,917.14	44.47	156.534		
12,500.00	6,077.35	5,450.00	5,420.27	201.15	20.55	3.57	510.76	143.66	7,061.20	7,016.66	44.54	158.538		
12,600.00	6,077.66	5,450.00	5,420.27	204.14	20.55	3.57	510.76	143.66	7,160.80	7,116.19	44.61	160.535		
12,700.00	6,077.96	5,450.00	5,420.27	207.13	20.55	3.57	510.76	143.66	7,260.41	7,215.73	44.67	162.524		
12,711.72	6,078.00	5,450.00	5,420.27	207.48	20.55	3.57	510.76	143.66	7,272.08	7,227.40	44.68	162.757		



Scientific Drilling, Intl Anticollision Report



Company:	Hilcorp Energy Corp.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 601 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		
0.00	0.00	0.00	0.00	0.00	0.00	144.31	-20.39	14.65	25.10					
100.00	100.00	100.00	100.00	0.18	0.18	144.31	-20.39	14.65	25.10	24.74	0.36	70.024		
200.00	200.00	200.00	200.00	0.54	0.54	144.31	-20.39	14.65	25.10	24.03	1.08	23.341		
300.00	300.00	300.00	300.00	0.90	0.90	144.31	-20.39	14.65	25.10	23.31	1.79	14.005		
400.00	400.00	400.00	400.00	1.25	1.25	144.31	-20.39	14.65	25.10	22.59	2.51	10.003		
500.00	500.00	500.00	500.00	1.61	1.61	144.31	-20.39	14.65	25.10	21.88	3.23	7.780 CC		
600.00	599.98	600.66	600.64	1.97	1.97	164.17	-18.62	14.79	25.47	21.51	3.96	6.435 ES		
700.00	699.84	701.29	701.13	2.33	2.34	159.61	-13.34	15.23	26.67	21.97	4.70	5.678		
800.00	799.47	801.84	801.28	2.70	2.70	152.78	-4.55	15.96	28.83	23.40	5.43	5.307		
900.00	899.04	902.22	900.90	3.06	3.07	142.08	7.71	16.97	30.30	24.15	6.15	4.925		
1,000.00	998.61	1,002.20	999.63	3.42	3.45	126.68	23.37	18.27	31.88	25.01	6.87	4.640 SF		
1,100.00	1,098.17	1,101.54	1,097.13	3.80	3.84	108.11	42.32	19.84	35.79	28.16	7.63	4.690		
1,200.00	1,197.74	1,200.00	1,193.06	4.17	4.25	90.27	64.42	21.68	44.00	35.55	8.45	5.207		
1,300.00	1,297.31	1,297.40	1,287.14	4.54	4.67	76.15	89.50	23.75	57.21	47.93	9.28	6.164		
1,400.00	1,396.88	1,393.50	1,379.08	4.91	5.11	65.98	117.35	26.06	75.11	65.03	10.08	7.451		
1,500.00	1,496.44	1,489.43	1,470.00	5.29	5.58	58.82	147.85	28.59	96.88	86.05	10.83	8.943		
1,600.00	1,596.01	1,586.35	1,561.72	5.66	6.07	54.16	179.06	31.18	119.97	108.41	11.56	10.379		
1,700.00	1,695.58	1,683.27	1,653.44	6.04	6.56	51.00	210.27	33.76	143.57	131.29	12.28	11.690		
1,800.00	1,795.15	1,780.19	1,745.16	6.41	7.07	48.74	241.48	36.35	167.47	154.46	13.01	12.877		
1,900.00	1,894.71	1,877.11	1,836.88	6.79	7.58	47.04	272.69	38.94	191.55	177.82	13.73	13.948		
2,000.00	1,994.28	1,974.03	1,928.60	7.17	8.09	45.73	303.90	41.53	215.76	201.29	14.46	14.916		
2,100.00	2,093.85	2,070.95	2,020.32	7.54	8.61	44.67	335.11	44.11	240.05	224.85	15.20	15.793		
2,200.00	2,193.42	2,167.87	2,112.04	7.92	9.14	43.82	366.32	46.70	264.40	248.46	15.94	16.590		
2,300.00	2,292.98	2,264.79	2,203.76	8.30	9.66	43.10	397.53	49.29	288.80	272.12	16.68	17.315		
2,400.00	2,392.55	2,361.70	2,295.48	8.67	10.19	42.50	428.74	51.87	313.24	295.82	17.42	17.978		
2,500.00	2,492.12	2,458.62	2,387.21	9.05	10.72	41.98	459.95	54.46	337.70	319.53	18.17	18.586		
2,600.00	2,591.69	2,555.54	2,478.93	9.43	11.26	41.54	491.16	57.05	362.19	343.27	18.92	19.144		
2,700.00	2,691.25	2,652.46	2,570.65	9.81	11.79	41.15	522.37	59.64	386.70	367.03	19.67	19.659		
2,800.00	2,790.82	2,749.38	2,662.37	10.18	12.33	40.81	553.58	62.22	411.22	390.79	20.42	20.135		
2,900.00	2,890.39	2,846.30	2,754.09	10.56	12.86	40.50	584.79	64.81	435.75	414.57	21.18	20.575		
3,000.00	2,989.96	2,943.22	2,845.81	10.94	13.40	40.23	616.00	67.40	460.29	438.36	21.93	20.985		
3,100.00	3,089.52	3,040.14	2,937.53	11.32	13.94	39.98	647.21	69.98	484.84	462.15	22.69	21.367		
3,200.00	3,189.09	3,137.06	3,029.25	11.70	14.48	39.76	678.42	72.57	509.40	485.95	23.45	21.723		
3,300.00	3,288.66	3,233.98	3,120.97	12.07	15.02	39.56	709.63	75.16	533.96	509.75	24.21	22.056		
3,400.00	3,388.23	3,330.90	3,212.69	12.45	15.56	39.38	740.84	77.75	558.53	533.56	24.97	22.368		
3,500.00	3,487.79	3,427.82	3,304.41	12.83	16.10	39.21	772.05	80.33	583.11	557.38	25.73	22.661		
3,600.00	3,587.36	3,524.74	3,396.13	13.21	16.64	39.06	803.26	82.92	607.69	581.19	26.49	22.936		
3,700.00	3,686.93	3,621.66	3,487.85	13.58	17.19	38.92	834.47	85.51	632.27	605.01	27.26	23.196		
3,800.00	3,786.50	3,718.58	3,579.57	13.96	17.73	38.79	865.68	88.09	656.86	628.84	28.02	23.441		
3,900.00	3,886.06	3,815.50	3,671.29	14.34	18.27	38.66	896.89	90.68	681.45	652.66	28.79	23.672		
4,000.00	3,985.63	3,912.42	3,763.01	14.72	18.82	38.55	928.10	93.27	706.04	676.49	29.55	23.892		
4,100.00	4,085.20	4,009.34	3,854.73	15.10	19.36	38.44	959.31	95.86	730.64	700.32	30.32	24.099		
4,200.00	4,184.77	4,106.26	3,946.45	15.48	19.91	38.35	990.52	98.44	755.23	724.15	31.08	24.296		
4,300.00	4,284.33	4,203.18	4,038.18	15.85	20.45	38.25	1,021.73	101.03	779.83	747.98	31.85	24.484		
4,400.00	4,383.90	4,300.10	4,129.90	16.23	20.99	38.17	1,052.94	103.62	804.43	771.82	32.62	24.662		
4,500.00	4,483.47	4,397.02	4,221.62	16.61	21.54	38.08	1,084.15	106.20	829.04	795.65	33.39	24.832		
4,600.00	4,583.04	4,493.94	4,313.34	16.99	22.09	38.01	1,115.36	108.79	853.64	819.49	34.15	24.994		
4,700.00	4,682.60	4,590.86	4,405.06	17.37	22.63	37.93	1,146.57	111.38	878.25	843.32	34.92	25.148		
4,800.00	4,782.17	4,687.78	4,496.78	17.74	23.18	37.87	1,177.78	113.97	902.85	867.16	35.69	25.296		
4,900.00	4,881.74	4,784.70	4,588.50	18.12	23.72	37.80	1,208.99	116.55	927.46	891.00	36.46	25.437		
5,000.00	4,981.31	4,881.62	4,680.22	18.50	24.27	37.74	1,240.20	119.14	952.07	914.84	37.23	25.573		
5,100.00	5,080.87	4,978.54	4,771.94	18.88	24.82	37.68	1,271.41	121.73	976.68	938.68	38.00	25.702		

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 601 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		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	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)										
5,200.00	5,180.44	5,075.46	4,863.66	19.26	25.36	37.62	1,302.62	124.31	1,001.29	962.52	38.77	25.827			
5,300.00	5,280.01	5,172.38	4,955.38	19.64	25.91	37.57	1,333.83	126.90	1,025.90	986.36	39.54	25.946			
5,400.00	5,379.57	5,269.29	5,047.10	20.01	26.46	44.78	1,365.04	129.49	1,050.53	1,010.22	40.31	26.061			
5,500.00	5,478.43	5,365.30	5,137.95	20.40	27.00	79.23	1,395.96	132.05	1,077.32	1,036.20	41.12	26.201			
5,600.00	5,574.70	5,458.41	5,226.07	20.81	27.52	87.69	1,425.94	134.54	1,107.59	1,065.61	41.98	26.385			
5,700.00	5,666.51	5,546.82	5,309.74	21.23	28.02	90.71	1,454.41	136.90	1,141.44	1,098.54	42.90	26.607			
5,800.00	5,752.07	5,628.81	5,387.33	21.69	28.48	91.79	1,480.81	139.09	1,179.16	1,135.26	43.90	26.860			
5,900.00	5,829.71	5,677.61	5,433.47	22.22	28.76	90.96	1,496.51	141.32	1,221.78	1,177.04	44.74	27.306			
6,000.00	5,897.93	5,711.31	5,465.21	22.90	28.95	88.72	1,507.31	144.73	1,270.51	1,224.88	45.63	27.845			
6,100.00	5,955.40	5,734.93	5,487.35	23.78	29.08	85.19	1,514.84	148.06	1,324.88	1,278.27	46.61	28.427			
6,200.00	6,001.00	5,750.00	5,501.41	24.91	29.17	80.47	1,519.63	150.58	1,384.01	1,336.32	47.69	29.021			
6,300.00	6,033.84	5,750.00	5,501.41	26.32	29.17	74.34	1,519.63	150.58	1,446.71	1,397.95	48.76	29.669			
6,400.00	6,053.28	5,750.00	5,501.41	27.97	29.17	67.87	1,519.63	150.58	1,511.56	1,461.59	49.97	30.251			
6,500.00	6,059.03	5,750.00	5,501.41	29.82	29.17	62.13	1,519.63	150.58	1,577.11	1,525.86	51.25	30.773			
6,600.00	6,059.34	5,750.00	5,501.41	31.84	29.17	62.13	1,519.63	150.58	1,644.74	1,592.22	52.51	31.320			
6,700.00	6,059.65	5,750.00	5,501.41	34.00	29.17	62.13	1,519.63	150.58	1,715.53	1,661.83	53.70	31.945			
6,800.00	6,059.95	5,732.67	5,485.24	36.29	29.07	61.32	1,514.13	147.71	1,788.87	1,734.29	54.58	32.773			
6,900.00	6,060.26	5,727.67	5,480.55	38.67	29.04	61.08	1,512.53	146.95	1,864.75	1,809.21	55.54	33.574			
7,000.00	6,060.56	5,723.10	5,476.28	41.14	29.02	60.87	1,511.08	146.29	1,942.78	1,886.36	56.42	34.431			
7,100.00	6,060.87	5,718.92	5,472.35	43.68	28.99	60.67	1,509.74	145.72	2,022.72	1,965.48	57.24	35.340			
7,200.00	6,061.17	5,700.00	5,454.58	46.27	28.89	59.79	1,503.69	143.41	2,104.53	2,046.75	57.78	36.422			
7,300.00	6,061.48	5,700.00	5,454.58	48.91	28.89	59.79	1,503.69	143.41	2,187.58	2,129.07	58.51	37.389			
7,400.00	6,061.78	5,700.00	5,454.58	51.60	28.89	59.79	1,503.69	143.41	2,272.00	2,212.83	59.18	38.394			
7,500.00	6,062.09	5,700.00	5,454.58	54.31	28.89	59.79	1,503.69	143.41	2,357.64	2,297.85	59.79	39.433			
7,600.00	6,062.39	5,700.00	5,454.58	57.06	28.89	59.79	1,503.69	143.41	2,444.37	2,384.02	60.35	40.504			
7,700.00	6,062.70	5,700.00	5,454.58	59.83	28.89	59.79	1,503.69	143.41	2,532.08	2,471.21	60.87	41.601			
7,800.00	6,063.00	5,700.00	5,454.58	62.63	28.89	59.79	1,503.69	143.41	2,620.67	2,559.33	61.34	42.722			
7,900.00	6,063.31	5,700.00	5,454.58	65.44	28.89	59.79	1,503.69	143.41	2,710.05	2,648.27	61.78	43.865			
8,000.00	6,063.61	5,700.00	5,454.58	68.27	28.89	59.79	1,503.69	143.41	2,800.15	2,737.96	62.19	45.027			
8,100.00	6,063.92	5,700.00	5,454.58	71.11	28.89	59.79	1,503.69	143.41	2,890.90	2,828.34	62.56	46.207			
8,200.00	6,064.23	5,700.00	5,454.58	73.97	28.89	59.79	1,503.69	143.41	2,982.25	2,919.33	62.91	47.401			
8,300.00	6,064.53	5,700.00	5,454.58	76.84	28.89	59.79	1,503.69	143.41	3,074.13	3,010.89	63.24	48.610			
8,400.00	6,064.84	5,700.00	5,454.58	79.72	28.89	59.79	1,503.69	143.41	3,166.50	3,102.96	63.54	49.831			
8,500.00	6,065.14	5,700.00	5,454.58	82.61	28.89	59.79	1,503.69	143.41	3,259.33	3,195.50	63.83	51.064			
8,600.00	6,065.45	5,700.00	5,454.58	85.51	28.89	59.79	1,503.69	143.41	3,352.57	3,288.47	64.09	52.306			
8,700.00	6,065.75	5,700.00	5,454.58	88.42	28.89	59.79	1,503.69	143.41	3,446.18	3,381.84	64.34	53.558			
8,800.00	6,066.06	5,679.17	5,434.95	91.33	28.77	58.82	1,497.02	141.44	3,539.80	3,475.49	64.31	55.041			
8,900.00	6,066.36	5,677.84	5,433.69	94.25	28.76	58.75	1,496.59	141.34	3,634.05	3,569.53	64.52	56.327			
9,000.00	6,066.67	5,676.57	5,432.50	97.17	28.75	58.70	1,496.18	141.24	3,728.59	3,663.88	64.71	57.620			
9,100.00	6,066.97	5,675.37	5,431.35	100.10	28.75	58.64	1,495.79	141.15	3,823.40	3,758.51	64.89	58.919			
9,200.00	6,067.28	5,674.21	5,430.26	103.04	28.74	58.59	1,495.42	141.07	3,918.47	3,853.41	65.06	60.224			
9,300.00	6,067.58	5,673.11	5,429.22	105.98	28.73	58.53	1,495.07	140.99	4,013.78	3,948.55	65.23	61.534			
9,400.00	6,067.89	5,672.05	5,428.22	108.92	28.73	58.49	1,494.73	140.91	4,109.31	4,043.93	65.38	62.848			
9,500.00	6,068.19	5,650.00	5,407.38	111.86	28.60	57.46	1,487.64	139.71	4,205.40	4,140.14	65.26	64.442			
9,600.00	6,068.50	5,650.00	5,407.38	114.81	28.60	57.46	1,487.64	139.71	4,301.29	4,235.88	65.41	65.755			
9,700.00	6,068.80	5,650.00	5,407.38	117.77	28.60	57.46	1,487.64	139.71	4,397.37	4,331.81	65.56	67.072			
9,800.00	6,069.11	5,650.00	5,407.38	120.72	28.60	57.46	1,487.64	139.71	4,493.62	4,427.92	65.70	68.393			
9,900.00	6,069.42	5,650.00	5,407.38	123.68	28.60	57.46	1,487.64	139.71	4,590.03	4,524.19	65.84	69.716			
10,000.00	6,069.72	5,650.00	5,407.38	126.64	28.60	57.46	1,487.64	139.71	4,686.60	4,620.63	65.97	71.042			
10,100.00	6,070.03	5,650.00	5,407.38	129.60	28.60	57.46	1,487.64	139.71	4,783.30	4,717.20	66.10	72.369			
10,200.00	6,070.33	5,650.00	5,407.38	132.57	28.60	57.46	1,487.64	139.71	4,880.13	4,813.92	66.22	73.699			
10,300.00	6,070.64	5,650.00	5,407.38	135.54	28.60	57.46	1,487.64	139.71	4,977.09	4,910.76	66.33	75.031			

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Trieb Fed Pad - Trieb Federal Com 601 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
10,400.00	6,070.94	5,650.00	5,407.38	138.51	28.60	57.46	1,487.64	139.71	5,074.17	5,007.73	66.45	76.364	
10,500.00	6,071.25	5,650.00	5,407.38	141.48	28.60	57.46	1,487.64	139.71	5,171.36	5,104.81	66.56	77.699	
10,600.00	6,071.55	5,650.00	5,407.38	144.45	28.60	57.46	1,487.64	139.71	5,268.66	5,202.00	66.66	79.035	
10,700.00	6,071.86	5,650.00	5,407.38	147.42	28.60	57.46	1,487.64	139.71	5,366.05	5,299.29	66.77	80.371	
10,800.00	6,072.16	5,650.00	5,407.38	150.40	28.60	57.46	1,487.64	139.71	5,463.54	5,396.68	66.87	81.709	
10,900.00	6,072.47	5,650.00	5,407.38	153.38	28.60	57.46	1,487.64	139.71	5,561.12	5,494.16	66.96	83.047	
11,000.00	6,072.77	5,650.00	5,407.38	156.35	28.60	57.46	1,487.64	139.71	5,658.78	5,591.72	67.06	84.386	
11,100.00	6,073.08	5,650.00	5,407.38	159.33	28.60	57.46	1,487.64	139.71	5,756.52	5,689.37	67.15	85.725	
11,200.00	6,073.38	5,650.00	5,407.38	162.31	28.60	57.46	1,487.64	139.71	5,854.34	5,787.10	67.24	87.064	
11,300.00	6,073.69	5,650.00	5,407.38	165.30	28.60	57.46	1,487.64	139.71	5,952.23	5,884.90	67.33	88.403	
11,400.00	6,074.00	5,650.00	5,407.38	168.28	28.60	57.46	1,487.64	139.71	6,050.19	5,982.78	67.42	89.743	
11,500.00	6,074.30	5,650.00	5,407.38	171.26	28.60	57.46	1,487.64	139.71	6,148.22	6,080.72	67.50	91.082	
11,600.00	6,074.61	5,650.00	5,407.38	174.25	28.60	57.46	1,487.64	139.71	6,246.31	6,178.72	67.59	92.421	
11,700.00	6,074.91	5,650.00	5,407.38	177.23	28.60	57.46	1,487.64	139.71	6,344.46	6,276.79	67.67	93.759	
11,800.00	6,075.22	5,650.00	5,407.38	180.22	28.60	57.46	1,487.64	139.71	6,442.66	6,374.92	67.75	95.098	
11,900.00	6,075.52	5,650.00	5,407.38	183.21	28.60	57.46	1,487.64	139.71	6,540.92	6,473.10	67.83	96.435	
12,000.00	6,075.83	5,650.00	5,407.38	186.19	28.60	57.46	1,487.64	139.71	6,639.23	6,571.33	67.91	97.772	
12,100.00	6,076.13	5,650.00	5,407.38	189.18	28.60	57.46	1,487.64	139.71	6,737.60	6,669.61	67.98	99.109	
12,200.00	6,076.44	5,650.00	5,407.38	192.17	28.60	57.46	1,487.64	139.71	6,836.00	6,767.95	68.06	100.444	
12,300.00	6,076.74	5,650.00	5,407.38	195.16	28.60	57.46	1,487.64	139.71	6,934.46	6,866.33	68.13	101.779	
12,400.00	6,077.05	5,650.00	5,407.38	198.15	28.60	57.46	1,487.64	139.71	7,032.96	6,964.75	68.21	103.113	
12,500.00	6,077.35	5,650.00	5,407.38	201.15	28.60	57.46	1,487.64	139.71	7,131.50	7,063.22	68.28	104.446	
12,600.00	6,077.66	5,650.00	5,407.38	204.14	28.60	57.46	1,487.64	139.71	7,230.08	7,161.73	68.35	105.777	
12,700.00	6,077.96	5,650.00	5,407.38	207.13	28.60	57.46	1,487.64	139.71	7,328.70	7,260.27	68.42	107.108	
12,711.72	6,078.00	5,650.00	5,407.38	207.48	28.60	57.46	1,487.64	139.71	7,340.26	7,271.82	68.43	107.264	



Scientific Drilling, Intl Anticollision Report



Company:	Hilcorp Energy Corp.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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	135.62	-72.44	70.88	101.35					
100.00	100.00	100.00	100.00	0.18	0.18	135.62	-72.44	70.88	101.35	100.99	0.36	282.730		
200.00	200.00	200.00	200.00	0.54	0.54	135.62	-72.44	70.88	101.35	100.28	1.08	94.243		
300.00	300.00	300.00	300.00	0.90	0.90	135.62	-72.44	70.88	101.35	99.56	1.79	56.546		
400.00	400.00	400.00	400.00	1.25	1.25	135.62	-72.44	70.88	101.35	98.84	2.51	40.390		
500.00	500.00	500.00	500.00	1.61	1.61	135.62	-72.44	70.88	101.35	98.12	3.23	31.414 CC, ES		
600.00	599.98	597.04	597.02	1.97	1.95	157.94	-74.06	71.18	104.38	100.44	3.93	26.543		
700.00	699.84	693.39	693.25	2.33	2.27	160.19	-78.86	72.06	113.56	108.91	4.65	24.407		
800.00	799.47	788.46	787.97	2.70	2.60	163.20	-86.71	73.51	128.96	123.57	5.39	23.926 SF		
900.00	899.04	882.20	881.07	3.06	2.93	166.21	-97.48	75.50	148.35	142.23	6.12	24.246		
1,000.00	998.61	978.10	976.00	3.42	3.28	168.89	-110.82	77.95	170.30	163.49	6.81	25.011		
1,100.00	1,098.17	1,075.34	1,072.24	3.80	3.65	171.01	-124.48	80.47	192.69	185.20	7.48	25.745		
1,200.00	1,197.74	1,172.58	1,168.49	4.17	4.03	172.69	-138.15	82.99	215.27	207.10	8.17	26.347		
1,300.00	1,297.31	1,269.82	1,264.73	4.54	4.41	174.05	-151.82	85.51	238.00	229.14	8.86	26.863		
1,400.00	1,396.88	1,367.07	1,360.98	4.91	4.79	175.18	-165.48	88.03	260.83	251.28	9.55	27.305		
1,500.00	1,496.44	1,464.31	1,457.22	5.29	5.18	176.12	-179.15	90.55	283.74	273.49	10.25	27.687		
1,600.00	1,596.01	1,561.55	1,553.46	5.66	5.57	176.92	-192.82	93.07	306.71	295.77	10.95	28.019		
1,700.00	1,695.58	1,658.79	1,649.71	6.04	5.96	177.61	-206.48	95.59	329.74	318.09	11.65	28.310		
1,800.00	1,795.15	1,756.03	1,745.95	6.41	6.36	178.21	-220.15	98.10	352.80	340.45	12.35	28.567		
1,900.00	1,894.71	1,853.28	1,842.20	6.79	6.75	178.74	-233.82	100.62	375.89	362.84	13.05	28.795		
2,000.00	1,994.28	1,950.52	1,938.44	7.17	7.15	179.20	-247.49	103.14	399.01	385.25	13.76	28.999		
2,100.00	2,093.85	2,047.76	2,034.68	7.54	7.54	179.62	-261.15	105.66	422.16	407.69	14.47	29.182		
2,200.00	2,193.42	2,145.00	2,130.93	7.92	7.94	179.99	-274.82	108.18	445.32	430.14	15.17	29.348		
2,300.00	2,292.98	2,242.25	2,227.17	8.30	8.34	-179.68	-288.49	110.70	468.50	452.61	15.88	29.497		
2,400.00	2,392.55	2,339.49	2,323.42	8.67	8.74	-179.37	-302.15	113.22	491.69	475.10	16.59	29.634		
2,500.00	2,492.12	2,436.73	2,419.66	9.05	9.14	-179.10	-315.82	115.74	514.89	497.59	17.30	29.759		
2,600.00	2,591.69	2,533.97	2,515.90	9.43	9.54	-178.85	-329.49	118.26	538.10	520.09	18.01	29.873		
2,700.00	2,691.25	2,631.21	2,612.15	9.81	9.94	-178.61	-343.15	120.77	561.33	542.60	18.72	29.979		
2,800.00	2,790.82	2,728.46	2,708.39	10.18	10.34	-178.40	-356.82	123.29	584.56	565.12	19.44	30.076		
2,900.00	2,890.39	2,825.70	2,804.64	10.56	10.74	-178.20	-370.49	125.81	607.80	587.65	20.15	30.166		
3,000.00	2,989.96	2,922.94	2,900.88	10.94	11.14	-178.02	-384.15	128.33	631.04	610.18	20.86	30.250		
3,100.00	3,089.52	3,020.18	2,997.12	11.32	11.54	-177.85	-397.82	130.85	654.29	632.72	21.57	30.328		
3,200.00	3,189.09	3,117.43	3,093.37	11.70	11.94	-177.70	-411.49	133.37	677.54	655.26	22.29	30.400		
3,300.00	3,288.66	3,214.67	3,189.61	12.07	12.34	-177.55	-425.16	135.89	700.80	677.80	23.00	30.468		
3,400.00	3,388.23	3,311.91	3,285.86	12.45	12.74	-177.41	-438.82	138.41	724.07	700.35	23.71	30.532		
3,500.00	3,487.79	3,409.15	3,382.10	12.83	13.14	-177.28	-452.49	140.93	747.33	722.90	24.43	30.592		
3,600.00	3,587.36	3,506.39	3,478.35	13.21	13.54	-177.16	-466.16	143.44	770.60	745.46	25.14	30.648		
3,700.00	3,686.93	3,603.64	3,574.59	13.58	13.95	-177.05	-479.82	145.96	793.88	768.02	25.86	30.702		
3,800.00	3,786.50	3,700.88	3,670.83	13.96	14.35	-176.94	-493.49	148.48	817.15	790.58	26.57	30.752		
3,900.00	3,886.06	3,798.12	3,767.08	14.34	14.75	-176.84	-507.16	151.00	840.43	813.14	27.29	30.799		
4,000.00	3,985.63	3,895.36	3,863.32	14.72	15.15	-176.74	-520.82	153.52	863.71	835.71	28.00	30.844		
4,100.00	4,085.20	3,992.61	3,959.57	15.10	15.55	-176.65	-534.49	156.04	887.00	858.28	28.72	30.886		
4,200.00	4,184.77	4,089.85	4,055.81	15.48	15.96	-176.56	-548.16	158.56	910.28	880.85	29.43	30.927		
4,300.00	4,284.33	4,187.09	4,152.05	15.85	16.36	-176.48	-561.82	161.08	933.57	903.42	30.15	30.965		
4,400.00	4,383.90	4,284.33	4,248.30	16.23	16.76	-176.40	-575.49	163.60	956.86	925.99	30.86	31.002		
4,500.00	4,483.47	4,381.57	4,344.54	16.61	17.16	-176.33	-589.16	166.11	980.15	948.57	31.58	31.037		
4,600.00	4,583.04	4,478.82	4,440.79	16.99	17.57	-176.26	-602.82	168.63	1,003.44	971.14	32.30	31.070		
4,700.00	4,682.60	4,576.06	4,537.03	17.37	17.97	-176.19	-616.49	171.15	1,026.73	993.72	33.01	31.101		
4,800.00	4,782.17	4,673.30	4,633.27	17.74	18.37	-176.12	-630.16	173.67	1,050.03	1,016.30	33.73	31.132		
4,900.00	4,881.74	4,770.54	4,729.52	18.12	18.78	-176.06	-643.83	176.19	1,073.32	1,038.88	34.44	31.161		
5,000.00	4,981.31	4,867.79	4,825.76	18.50	19.18	-176.00	-657.49	178.71	1,096.62	1,061.46	35.16	31.188		
5,100.00	5,080.87	4,965.03	4,922.01	18.88	19.58	-175.95	-671.16	181.23	1,119.92	1,084.04	35.88	31.215		

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

Company:	Hilcorp Energy Corp.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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		
5,200.00	5,180.44	5,062.27	5,018.25	19.26	19.98	-175.89	-684.83	183.75	1,143.22	1,106.62	36.59	31.241		
5,300.00	5,280.01	5,159.51	5,114.49	19.64	20.39	-175.84	-698.49	186.27	1,166.52	1,129.21	37.31	31.255		
5,400.00	5,379.57	5,256.75	5,210.73	20.01	20.79	-168.15	-712.16	188.78	1,189.84	1,151.81	38.03	31.289		
5,500.00	5,478.43	5,353.08	5,306.08	20.40	21.19	-130.26	-725.70	191.28	1,215.45	1,176.71	38.75	31.369		
5,600.00	5,574.70	5,435.67	5,387.81	20.81	21.53	-118.83	-737.30	193.69	1,244.91	1,205.53	39.38	31.616		
5,700.00	5,666.51	5,490.01	5,441.37	21.23	21.76	-112.74	-744.91	198.66	1,279.94	1,240.15	39.79	32.164		
5,800.00	5,752.07	5,534.90	5,485.23	21.69	21.95	-108.17	-751.13	205.84	1,321.14	1,280.99	40.15	32.906		
5,900.00	5,829.71	5,569.48	5,518.68	22.22	22.09	-103.75	-755.88	213.26	1,368.43	1,327.97	40.46	33.821		
6,000.00	5,897.93	5,600.00	5,547.86	22.90	22.22	-99.13	-760.01	221.16	1,421.38	1,380.55	40.83	34.812		
6,100.00	5,955.40	5,600.00	5,547.86	23.78	22.22	-92.87	-760.01	221.16	1,479.15	1,438.14	41.02	36.060		
6,200.00	6,001.00	5,617.14	5,564.09	24.91	22.29	-87.07	-762.32	226.14	1,540.49	1,498.93	41.56	37.067		
6,300.00	6,033.84	5,618.04	5,564.95	26.32	22.29	-80.38	-762.44	226.41	1,604.22	1,562.11	42.10	38.102		
6,400.00	6,053.28	5,600.00	5,547.86	27.97	22.22	-73.00	-760.01	221.16	1,669.00	1,626.39	42.60	39.175		
6,500.00	6,059.03	5,600.00	5,547.86	29.82	22.22	-67.59	-760.01	221.16	1,733.09	1,689.65	43.44	39.898		
6,600.00	6,059.34	5,600.00	5,547.86	31.84	22.22	-67.59	-760.01	221.16	1,798.73	1,754.40	44.32	40.583		
6,700.00	6,059.65	5,600.00	5,547.86	34.00	22.22	-67.59	-760.01	221.16	1,867.42	1,822.22	45.19	41.321		
6,800.00	6,059.95	5,576.07	5,525.00	36.29	22.12	-66.63	-756.77	214.86	1,938.38	1,892.59	45.80	42.324		
6,900.00	6,060.26	5,568.33	5,517.57	38.67	22.09	-66.32	-755.72	212.99	2,011.90	1,965.36	46.54	43.232		
7,000.00	6,060.56	5,550.00	5,499.88	41.14	22.01	-65.58	-753.21	208.88	2,087.63	2,040.49	47.13	44.293		
7,100.00	6,060.87	5,550.00	5,499.88	43.68	22.01	-65.58	-753.21	208.88	2,165.08	2,117.21	47.87	45.230		
7,200.00	6,061.17	5,550.00	5,499.88	46.27	22.01	-65.58	-753.21	208.88	2,244.32	2,195.76	48.56	46.218		
7,300.00	6,061.48	5,550.00	5,499.88	48.91	22.01	-65.58	-753.21	208.88	2,325.16	2,275.96	49.21	47.254		
7,400.00	6,061.78	5,550.00	5,499.88	51.60	22.01	-65.58	-753.21	208.88	2,407.44	2,357.63	49.81	48.333		
7,500.00	6,062.09	5,550.00	5,499.88	54.31	22.01	-65.58	-753.21	208.88	2,491.02	2,440.64	50.37	49.451		
7,600.00	6,062.39	5,528.54	5,479.05	57.06	21.92	-64.73	-750.25	204.65	2,575.40	2,524.69	50.71	50.787		
7,700.00	6,062.70	5,524.32	5,474.94	59.83	21.90	-64.56	-749.67	203.90	2,661.04	2,609.88	51.17	52.006		
7,800.00	6,063.00	5,520.37	5,471.08	62.63	21.89	-64.40	-749.12	203.21	2,747.64	2,696.04	51.60	53.253		
7,900.00	6,063.31	5,500.00	5,451.17	65.44	21.80	-63.59	-746.30	200.02	2,835.31	2,783.46	51.85	54.683		
8,000.00	6,063.61	5,500.00	5,451.17	68.27	21.80	-63.59	-746.30	200.02	2,923.46	2,871.20	52.26	55.942		
8,100.00	6,063.92	5,500.00	5,451.17	71.11	21.80	-63.59	-746.30	200.02	3,012.36	2,959.71	52.64	57.224		
8,200.00	6,064.23	5,500.00	5,451.17	73.97	21.80	-63.59	-746.30	200.02	3,101.93	3,048.93	53.00	58.526		
8,300.00	6,064.53	5,500.00	5,451.17	76.84	21.80	-63.59	-746.30	200.02	3,192.12	3,138.78	53.34	59.847		
8,400.00	6,064.84	5,500.00	5,451.17	79.72	21.80	-63.59	-746.30	200.02	3,282.87	3,229.22	53.66	61.185		
8,500.00	6,065.14	5,500.00	5,451.17	82.61	21.80	-63.59	-746.30	200.02	3,374.15	3,320.20	53.95	62.538		
8,600.00	6,065.45	5,500.00	5,451.17	85.51	21.80	-63.59	-746.30	200.02	3,465.91	3,411.68	54.24	63.904		
8,700.00	6,065.75	5,500.00	5,451.17	88.42	21.80	-63.59	-746.30	200.02	3,558.12	3,503.62	54.50	65.283		
8,800.00	6,066.06	5,500.00	5,451.17	91.33	21.80	-63.59	-746.30	200.02	3,650.74	3,595.98	54.75	66.674		
8,900.00	6,066.36	5,500.00	5,451.17	94.25	21.80	-63.59	-746.30	200.02	3,743.73	3,688.74	54.99	68.075		
9,000.00	6,066.67	5,500.00	5,451.17	97.17	21.80	-63.59	-746.30	200.02	3,837.08	3,781.86	55.22	69.485		
9,100.00	6,066.97	5,500.00	5,451.17	100.10	21.80	-63.59	-746.30	200.02	3,930.76	3,875.32	55.44	70.904		
9,200.00	6,067.28	5,500.00	5,451.17	103.04	21.80	-63.59	-746.30	200.02	4,024.73	3,969.09	55.64	72.331		
9,300.00	6,067.58	5,500.00	5,451.17	105.98	21.80	-63.59	-746.30	200.02	4,119.00	4,063.16	55.84	73.765		
9,400.00	6,067.89	5,500.00	5,451.17	108.92	21.80	-63.59	-746.30	200.02	4,213.53	4,157.50	56.03	75.205		
9,500.00	6,068.19	5,477.96	5,429.53	111.86	21.71	-62.72	-743.23	197.20	4,307.92	4,251.89	56.03	76.883		
9,600.00	6,068.50	5,476.37	5,427.96	114.81	21.70	-62.66	-743.00	197.03	4,402.87	4,346.68	56.19	78.353		
9,700.00	6,068.80	5,474.84	5,426.46	117.77	21.70	-62.60	-742.79	196.86	4,498.04	4,441.69	56.35	79.828		
9,800.00	6,069.11	5,473.38	5,425.02	120.72	21.69	-62.54	-742.59	196.70	4,593.40	4,536.91	56.49	81.307		
9,900.00	6,069.42	5,471.96	5,423.63	123.68	21.68	-62.48	-742.39	196.55	4,688.96	4,632.32	56.64	82.790		
10,000.00	6,069.72	5,450.00	5,401.97	126.64	21.59	-61.63	-739.31	194.60	4,785.02	4,728.42	56.61	84.527		
10,100.00	6,070.03	5,450.00	5,401.97	129.60	21.59	-61.63	-739.31	194.60	4,880.89	4,824.13	56.75	86.002		
10,200.00	6,070.33	5,450.00	5,401.97	132.57	21.59	-61.63	-739.31	194.60	4,976.91	4,920.02	56.89	87.481		
10,300.00	6,070.64	5,450.00	5,401.97	135.54	21.59	-61.63	-739.31	194.60	5,073.09	5,016.07	57.03	88.962		

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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	6,070.94	5,450.00	5,401.97	138.51	21.59	-61.63	-739.31	194.60	5,169.42	5,112.26	57.15	90.446		
10,500.00	6,071.25	5,450.00	5,401.97	141.48	21.59	-61.63	-739.31	194.60	5,265.88	5,208.60	57.28	91.931		
10,600.00	6,071.55	5,450.00	5,401.97	144.45	21.59	-61.63	-739.31	194.60	5,362.47	5,305.07	57.40	93.419		
10,700.00	6,071.86	5,450.00	5,401.97	147.42	21.59	-61.63	-739.31	194.60	5,459.18	5,401.66	57.52	94.908		
10,800.00	6,072.16	5,450.00	5,401.97	150.40	21.59	-61.63	-739.31	194.60	5,556.01	5,498.38	57.64	96.398		
10,900.00	6,072.47	5,450.00	5,401.97	153.38	21.59	-61.63	-739.31	194.60	5,652.95	5,595.21	57.75	97.889		
11,000.00	6,072.77	5,450.00	5,401.97	156.35	21.59	-61.63	-739.31	194.60	5,750.00	5,692.14	57.86	99.381		
11,100.00	6,073.08	5,450.00	5,401.97	159.33	21.59	-61.63	-739.31	194.60	5,847.14	5,789.18	57.96	100.874		
11,200.00	6,073.38	5,450.00	5,401.97	162.31	21.59	-61.63	-739.31	194.60	5,944.38	5,886.31	58.07	102.368		
11,300.00	6,073.69	5,450.00	5,401.97	165.30	21.59	-61.63	-739.31	194.60	6,041.71	5,983.54	58.17	103.861		
11,400.00	6,074.00	5,450.00	5,401.97	168.28	21.59	-61.63	-739.31	194.60	6,139.13	6,080.86	58.27	105.355		
11,500.00	6,074.30	5,450.00	5,401.97	171.26	21.59	-61.63	-739.31	194.60	6,236.63	6,178.26	58.37	106.849		
11,600.00	6,074.61	5,450.00	5,401.97	174.25	21.59	-61.63	-739.31	194.60	6,334.20	6,275.74	58.46	108.342		
11,700.00	6,074.91	5,450.00	5,401.97	177.23	21.59	-61.63	-739.31	194.60	6,431.85	6,373.29	58.56	109.836		
11,800.00	6,075.22	5,450.00	5,401.97	180.22	21.59	-61.63	-739.31	194.60	6,529.57	6,470.92	58.65	111.329		
11,900.00	6,075.52	5,450.00	5,401.97	183.21	21.59	-61.63	-739.31	194.60	6,627.36	6,568.62	58.74	112.821		
12,000.00	6,075.83	5,450.00	5,401.97	186.19	21.59	-61.63	-739.31	194.60	6,725.21	6,666.38	58.83	114.313		
12,100.00	6,076.13	5,450.00	5,401.97	189.18	21.59	-61.63	-739.31	194.60	6,823.13	6,764.21	58.92	115.804		
12,200.00	6,076.44	5,450.00	5,401.97	192.17	21.59	-61.63	-739.31	194.60	6,921.11	6,862.10	59.01	117.294		
12,300.00	6,076.74	5,450.00	5,401.97	195.16	21.59	-61.63	-739.31	194.60	7,019.14	6,960.05	59.09	118.783		
12,400.00	6,077.05	5,450.00	5,401.97	198.15	21.59	-61.63	-739.31	194.60	7,117.23	7,058.05	59.18	120.271		
12,500.00	6,077.35	5,450.00	5,401.97	201.15	21.59	-61.63	-739.31	194.60	7,215.37	7,156.11	59.26	121.757		
12,600.00	6,077.66	5,450.00	5,401.97	204.14	21.59	-61.63	-739.31	194.60	7,313.56	7,254.22	59.34	123.243		
12,700.00	6,077.96	5,450.00	5,401.97	207.13	21.59	-61.63	-739.31	194.60	7,411.80	7,352.37	59.42	124.727		
12,711.72	6,078.00	5,450.00	5,401.97	207.48	21.59	-61.63	-739.31	194.60	7,423.31	7,363.88	59.43	124.900		



Scientific Drilling, Intl

Anticollision Report



Company:	Hilcorp Energy Corp.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	132.79	-52.06	56.24	76.64				
100.00	100.00	100.00	100.00	0.18	0.18	132.79	-52.06	56.24	76.64	76.28	0.36	213.793	
200.00	200.00	200.00	200.00	0.54	0.54	132.79	-52.06	56.24	76.64	75.56	1.08	71.264	
300.00	300.00	300.00	300.00	0.90	0.90	132.79	-52.06	56.24	76.64	74.85	1.79	42.759	
400.00	400.00	400.00	400.00	1.25	1.25	132.79	-52.06	56.24	76.64	74.13	2.51	30.542	
500.00	500.00	500.00	500.00	1.61	1.61	132.79	-52.06	56.24	76.64	73.41	3.23	23.755 CC, ES	
600.00	599.98	598.02	598.00	1.97	1.95	155.62	-53.74	56.31	79.45	75.52	3.93	20.207	
700.00	699.84	695.36	695.21	2.33	2.28	159.17	-58.71	56.53	88.12	83.47	4.65	18.953 SF	
800.00	799.47	791.41	790.91	2.70	2.61	163.69	-66.86	56.88	102.92	97.54	5.39	19.106	
900.00	899.04	886.12	884.95	3.06	2.94	167.97	-78.02	57.37	121.79	115.67	6.12	19.902	
1,000.00	998.61	979.44	977.20	3.42	3.29	171.67	-92.05	57.98	144.01	137.16	6.85	21.025	
1,100.00	1,098.17	1,071.19	1,067.41	3.80	3.65	174.79	-108.76	58.70	169.55	161.98	7.57	22.408	
1,200.00	1,197.74	1,161.24	1,155.39	4.17	4.02	177.40	-127.97	59.54	198.30	190.03	8.27	23.969	
1,300.00	1,297.31	1,249.46	1,240.94	4.54	4.40	179.58	-149.45	60.47	230.17	221.21	8.96	25.686	
1,400.00	1,396.88	1,335.75	1,323.94	4.91	4.80	-178.59	-172.99	61.49	265.04	255.41	9.63	27.527	
1,500.00	1,496.44	1,420.01	1,404.27	5.29	5.21	-177.05	-198.39	62.59	302.79	292.52	10.27	29.469	
1,600.00	1,596.01	1,500.00	1,479.82	5.66	5.62	-175.77	-224.67	63.73	343.31	332.41	10.89	31.513	
1,700.00	1,695.58	1,582.19	1,556.63	6.04	6.07	-174.63	-253.85	65.00	386.45	374.94	11.50	33.596	
1,800.00	1,795.15	1,663.54	1,631.87	6.41	6.53	-173.63	-284.78	66.34	432.01	419.91	12.10	35.700	
1,900.00	1,894.71	1,751.99	1,713.45	6.79	7.05	-172.74	-318.91	67.82	478.24	465.51	12.74	37.542	
2,000.00	1,994.28	1,840.44	1,795.03	7.17	7.58	-172.00	-353.04	69.31	524.55	511.17	13.39	39.189	
2,100.00	2,093.85	1,928.88	1,876.61	7.54	8.12	-171.38	-387.18	70.79	570.92	556.88	14.04	40.667	
2,200.00	2,193.42	2,017.33	1,958.20	7.92	8.67	-170.85	-421.31	72.27	617.32	602.62	14.70	41.997	
2,300.00	2,292.98	2,105.78	2,039.78	8.30	9.22	-170.40	-455.44	73.75	663.77	648.40	15.37	43.199	
2,400.00	2,392.55	2,194.22	2,121.36	8.67	9.77	-170.00	-489.57	75.23	710.24	694.20	16.04	44.288	
2,500.00	2,492.12	2,282.67	2,202.94	9.05	10.33	-169.66	-523.70	76.71	756.74	740.02	16.71	45.279	
2,600.00	2,591.69	2,371.12	2,284.52	9.43	10.89	-169.35	-557.83	78.20	803.25	785.86	17.39	46.183	
2,700.00	2,691.25	2,459.56	2,366.10	9.81	11.46	-169.08	-591.97	79.68	849.78	831.71	18.08	47.010	
2,800.00	2,790.82	2,548.01	2,447.69	10.18	12.02	-168.83	-626.10	81.16	896.33	877.56	18.76	47.770	
2,900.00	2,890.39	2,636.45	2,529.27	10.56	12.59	-168.61	-660.23	82.64	942.88	923.43	19.45	48.470	
3,000.00	2,989.96	2,724.90	2,610.85	10.94	13.16	-168.41	-694.36	84.12	989.45	969.30	20.15	49.116	
3,100.00	3,089.52	2,813.35	2,692.43	11.32	13.74	-168.23	-728.49	85.60	1,036.02	1,015.18	20.84	49.714	
3,200.00	3,189.09	2,901.79	2,774.01	11.70	14.31	-168.07	-762.62	87.08	1,082.61	1,061.07	21.54	50.269	
3,300.00	3,288.66	2,990.24	2,855.60	12.07	14.88	-167.91	-796.76	88.57	1,129.19	1,106.96	22.24	50.784	
3,400.00	3,388.23	3,078.69	2,937.18	12.45	15.46	-167.77	-830.89	90.05	1,175.79	1,152.85	22.94	51.265	
3,500.00	3,487.79	3,167.13	3,018.76	12.83	16.04	-167.64	-865.02	91.53	1,222.39	1,198.75	23.64	51.714	
3,600.00	3,587.36	3,255.58	3,100.34	13.21	16.61	-167.52	-899.15	93.01	1,268.99	1,244.65	24.34	52.134	
3,700.00	3,686.93	3,344.02	3,181.92	13.58	17.19	-167.41	-933.28	94.49	1,315.60	1,290.55	25.05	52.528	
3,800.00	3,786.50	3,432.47	3,263.50	13.96	17.77	-167.31	-967.41	95.97	1,362.21	1,336.46	25.75	52.898	
3,900.00	3,886.06	3,520.92	3,345.09	14.34	18.35	-167.21	-1,001.55	97.46	1,408.83	1,382.37	26.46	53.247	
4,000.00	3,985.63	3,609.36	3,426.67	14.72	18.93	-167.12	-1,035.68	98.94	1,455.44	1,428.28	27.17	53.575	
4,100.00	4,085.20	3,697.81	3,508.25	15.10	19.51	-167.04	-1,069.81	100.42	1,502.06	1,474.19	27.88	53.884	
4,200.00	4,184.77	3,786.26	3,589.83	15.48	20.09	-166.96	-1,103.94	101.90	1,548.69	1,520.10	28.59	54.177	
4,300.00	4,284.33	3,874.70	3,671.41	15.85	20.67	-166.88	-1,138.07	103.38	1,595.31	1,566.02	29.30	54.454	
4,400.00	4,383.90	3,963.15	3,752.99	16.23	21.25	-166.81	-1,172.20	104.86	1,641.94	1,611.93	30.01	54.716	
4,500.00	4,483.47	4,051.60	3,834.58	16.61	21.84	-166.74	-1,206.34	106.34	1,688.57	1,657.85	30.72	54.965	
4,600.00	4,583.04	4,140.04	3,916.16	16.99	22.42	-166.68	-1,240.47	107.83	1,735.20	1,703.77	31.43	55.202	
4,700.00	4,682.60	4,228.49	3,997.74	17.37	23.00	-166.62	-1,274.60	109.31	1,781.83	1,749.68	32.15	55.427	
4,800.00	4,782.17	4,316.93	4,079.32	17.74	23.58	-166.56	-1,308.73	110.79	1,828.46	1,795.60	32.86	55.641	
4,900.00	4,881.74	4,405.38	4,160.90	18.12	24.17	-166.51	-1,342.86	112.27	1,875.10	1,841.52	33.58	55.845	
5,000.00	4,981.31	4,493.83	4,242.49	18.50	24.75	-166.46	-1,376.99	113.75	1,921.74	1,887.44	34.29	56.040	
5,100.00	5,080.87	4,582.27	4,324.07	18.88	25.34	-166.41	-1,411.13	115.23	1,968.37	1,933.37	35.01	56.226	

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 603 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 603 1H - Slot A01
TVD Reference: GL 6050 @ 6050.00usft
MD Reference: GL 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				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)
5,200.00	5,180.44	4,670.72	4,405.65	19.26	25.92	-166.36	-1,445.26	116.72	2,015.01	1,979.29	35.72	56.404
5,300.00	5,280.01	4,759.17	4,487.23	19.64	26.50	-166.31	-1,479.39	118.20	2,061.65	2,025.21	36.44	56.574
5,400.00	5,379.57	4,847.61	4,568.81	20.01	27.09	-158.40	-1,513.52	119.68	2,108.30	2,071.14	37.16	56.736
5,500.00	5,478.43	4,935.29	4,649.68	20.40	27.67	-118.12	-1,547.35	121.15	2,155.73	2,117.85	37.89	56.901
5,600.00	5,574.70	5,020.44	4,728.22	20.81	28.23	-104.45	-1,580.21	122.57	2,203.94	2,165.32	38.62	57.070
5,700.00	5,666.51	5,101.40	4,802.91	21.23	28.77	-96.72	-1,611.46	123.93	2,252.33	2,212.98	39.36	57.230
5,800.00	5,752.07	5,176.61	4,872.28	21.69	29.26	-91.18	-1,640.48	125.19	2,300.52	2,260.41	40.11	57.354
5,900.00	5,829.71	5,244.59	4,934.98	22.22	29.71	-86.73	-1,666.72	126.33	2,348.22	2,307.31	40.91	57.397
6,000.00	5,897.93	5,304.03	4,989.81	22.90	30.11	-82.86	-1,689.65	127.32	2,395.23	2,353.44	41.80	57.309
6,100.00	5,955.40	5,353.77	5,035.68	23.78	30.44	-79.35	-1,708.85	128.16	2,441.37	2,398.57	42.80	57.039
6,200.00	6,001.00	5,392.83	5,071.71	24.91	30.69	-76.02	-1,723.92	128.81	2,486.41	2,442.45	43.96	56.565
6,300.00	6,033.84	5,420.46	5,097.20	26.32	30.88	-72.80	-1,734.58	129.27	2,530.06	2,484.80	45.26	55.896
6,400.00	6,053.28	5,436.12	5,111.64	27.97	30.98	-69.66	-1,740.63	129.54	2,571.95	2,525.26	46.69	55.083
6,500.00	6,059.03	5,439.59	5,114.84	29.82	31.00	-66.96	-1,741.97	129.59	2,611.62	2,563.44	48.19	54.198
6,600.00	6,059.34	5,438.21	5,113.57	31.84	30.99	-66.93	-1,741.43	129.57	2,652.22	2,602.48	49.75	53.316
6,700.00	6,059.65	5,436.83	5,112.30	34.00	30.99	-66.90	-1,740.90	129.55	2,695.92	2,644.56	51.36	52.493
6,800.00	6,059.95	5,435.44	5,111.02	36.29	30.98	-66.86	-1,740.37	129.53	2,742.57	2,689.58	52.99	51.753
6,900.00	6,060.26	5,434.06	5,109.75	38.67	30.97	-66.83	-1,739.83	129.50	2,792.02	2,737.39	54.63	51.108
7,000.00	6,060.56	5,432.68	5,108.47	41.14	30.96	-66.80	-1,739.30	129.48	2,844.13	2,787.88	56.25	50.565
7,100.00	6,060.87	5,431.30	5,107.20	43.68	30.95	-66.76	-1,738.77	129.46	2,898.75	2,840.92	57.83	50.122
7,200.00	6,061.17	5,429.92	5,105.93	46.27	30.94	-66.73	-1,738.24	129.43	2,955.75	2,896.37	59.38	49.778
7,300.00	6,061.48	5,428.54	5,104.65	48.91	30.93	-66.70	-1,737.70	129.41	3,014.99	2,954.11	60.87	49.528
7,400.00	6,061.78	5,427.16	5,103.38	51.60	30.92	-66.67	-1,737.17	129.39	3,076.33	3,014.02	62.32	49.366
7,500.00	6,062.09	5,425.78	5,102.10	54.31	30.91	-66.63	-1,736.64	129.36	3,139.67	3,075.96	63.70	49.286
7,600.00	6,062.39	5,424.40	5,100.83	57.06	30.90	-66.60	-1,736.10	129.34	3,204.87	3,139.84	65.03	49.282
7,700.00	6,062.70	5,423.01	5,099.56	59.83	30.89	-66.57	-1,735.57	129.32	3,271.83	3,205.52	66.30	49.348
7,800.00	6,063.00	5,421.63	5,098.28	62.63	30.89	-66.53	-1,735.04	129.29	3,340.43	3,272.92	67.51	49.479
7,900.00	6,063.31	5,420.25	5,097.01	65.44	30.88	-66.50	-1,734.50	129.27	3,410.60	3,341.93	68.67	49.669
8,000.00	6,063.61	5,418.87	5,095.73	68.27	30.87	-66.47	-1,733.97	129.25	3,482.22	3,412.45	69.76	49.914
8,100.00	6,063.92	5,417.49	5,094.46	71.11	30.86	-66.44	-1,733.44	129.22	3,555.20	3,484.40	70.81	50.208
8,200.00	6,064.23	5,416.11	5,093.19	73.97	30.85	-66.40	-1,732.91	129.20	3,629.48	3,557.68	71.80	50.549
8,300.00	6,064.53	5,414.73	5,091.91	76.84	30.84	-66.37	-1,732.37	129.18	3,704.97	3,632.22	72.74	50.932
8,400.00	6,064.84	5,413.35	5,090.64	79.72	30.83	-66.34	-1,731.84	129.15	3,781.59	3,707.95	73.64	51.353
8,500.00	6,065.14	5,411.97	5,089.37	82.61	30.82	-66.30	-1,731.31	129.13	3,859.28	3,784.79	74.49	51.810
8,600.00	6,065.45	5,410.58	5,088.09	85.51	30.81	-66.27	-1,730.77	129.11	3,937.98	3,862.68	75.30	52.300
8,700.00	6,065.75	5,409.20	5,086.82	88.42	30.80	-66.24	-1,730.24	129.09	4,017.63	3,941.56	76.06	52.820
8,800.00	6,066.06	5,407.82	5,085.54	91.33	30.79	-66.21	-1,729.71	129.06	4,098.16	4,021.37	76.79	53.369
8,900.00	6,066.36	5,406.44	5,084.27	94.25	30.78	-66.17	-1,729.17	129.04	4,179.54	4,102.06	77.48	53.943
9,000.00	6,066.67	5,405.06	5,083.00	97.17	30.78	-66.14	-1,728.64	129.02	4,261.71	4,183.57	78.14	54.542
9,100.00	6,066.97	5,403.68	5,081.72	100.10	30.77	-66.11	-1,728.11	128.99	4,344.63	4,265.87	78.76	55.162
9,200.00	6,067.28	5,402.30	5,080.45	103.04	30.76	-66.07	-1,727.58	128.97	4,428.25	4,348.90	79.35	55.804
9,300.00	6,067.58	5,400.92	5,079.17	105.98	30.75	-66.04	-1,727.04	128.95	4,512.54	4,432.62	79.92	56.465
9,400.00	6,067.89	5,399.54	5,077.90	108.92	30.74	-66.01	-1,726.51	128.92	4,597.46	4,517.00	80.45	57.143
9,500.00	6,068.19	5,398.16	5,076.63	111.86	30.73	-65.98	-1,725.98	128.90	4,682.97	4,602.00	80.97	57.839
9,600.00	6,068.50	5,396.77	5,075.35	114.81	30.72	-65.94	-1,725.44	128.88	4,769.05	4,687.59	81.45	58.550
9,700.00	6,068.80	5,395.39	5,074.08	117.77	30.71	-65.91	-1,724.91	128.85	4,855.66	4,773.74	81.92	59.275
9,800.00	6,069.11	5,394.01	5,072.80	120.72	30.70	-65.88	-1,724.38	128.83	4,942.77	4,860.41	82.36	60.015
9,900.00	6,069.42	5,392.63	5,071.53	123.68	30.69	-65.84	-1,723.85	128.81	5,030.37	4,947.58	82.78	60.767
10,000.00	6,069.72	5,391.25	5,070.26	126.64	30.68	-65.81	-1,723.31	128.78	5,118.41	5,035.23	83.18	61.531
10,100.00	6,070.03	5,389.87	5,068.98	129.60	30.67	-65.78	-1,722.78	128.76	5,206.89	5,123.32	83.57	62.306
10,200.00	6,070.33	5,388.49	5,067.71	132.57	30.67	-65.75	-1,722.25	128.74	5,295.78	5,211.84	83.94	63.092
10,300.00	6,070.64	5,387.11	5,066.44	135.54	30.66	-65.71	-1,721.71	128.72	5,385.06	5,300.77	84.29	63.888

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor							
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)							
10,400.00	6,070.94	5,385.73	5,065.16	138.51	30.65	-65.68	-1,721.18	128.69	5,474.71	5,390.08	84.62	64.694						
10,500.00	6,071.25	5,384.34	5,063.89	141.48	30.64	-65.65	-1,720.65	128.67	5,564.71	5,479.76	84.95	65.508						
10,600.00	6,071.55	5,382.96	5,062.61	144.45	30.63	-65.61	-1,720.11	128.65	5,655.05	5,569.79	85.26	66.331						
10,700.00	6,071.86	5,381.58	5,061.34	147.42	30.62	-65.58	-1,719.58	128.62	5,745.70	5,660.15	85.55	67.161						
10,800.00	6,072.16	5,380.20	5,060.07	150.40	30.61	-65.55	-1,719.05	128.60	5,836.67	5,750.83	85.83	67.999						
10,900.00	6,072.47	5,378.82	5,058.79	153.38	30.60	-65.52	-1,718.52	128.58	5,927.92	5,841.81	86.11	68.844						
11,000.00	6,072.77	5,377.44	5,057.52	156.35	30.59	-65.48	-1,717.98	128.55	6,019.45	5,933.08	86.37	69.695						
11,100.00	6,073.08	5,376.06	5,056.24	159.33	30.58	-65.45	-1,717.45	128.53	6,111.24	6,024.62	86.62	70.553						
11,200.00	6,073.38	5,374.68	5,054.97	162.31	30.57	-65.42	-1,716.92	128.51	6,203.29	6,116.43	86.86	71.417						
11,300.00	6,073.69	5,373.30	5,053.70	165.30	30.57	-65.38	-1,716.38	128.48	6,295.58	6,208.49	87.09	72.286						
11,400.00	6,074.00	5,371.91	5,052.42	168.28	30.56	-65.35	-1,715.85	128.46	6,388.10	6,300.79	87.32	73.161						
11,500.00	6,074.30	5,370.53	5,051.15	171.26	30.55	-65.32	-1,715.32	128.44	6,480.85	6,393.32	87.53	74.040						
11,600.00	6,074.61	5,369.15	5,049.87	174.25	30.54	-65.29	-1,714.78	128.41	6,573.81	6,486.07	87.74	74.925						
11,700.00	6,074.91	5,367.77	5,048.60	177.23	30.53	-65.25	-1,714.25	128.39	6,666.97	6,579.03	87.94	75.814						
11,800.00	6,075.22	5,366.39	5,047.33	180.22	30.52	-65.22	-1,713.72	128.37	6,760.32	6,672.19	88.13	76.708						
11,900.00	6,075.52	5,365.01	5,046.05	183.21	30.51	-65.19	-1,713.19	128.35	6,853.86	6,765.55	88.32	77.605						
12,000.00	6,075.83	5,363.63	5,044.78	186.19	30.50	-65.15	-1,712.65	128.32	6,947.59	6,859.09	88.50	78.507						
12,100.00	6,076.13	5,362.25	5,043.51	189.18	30.49	-65.12	-1,712.12	128.30	7,041.48	6,952.81	88.67	79.412						
12,200.00	6,076.44	5,360.87	5,042.23	192.17	30.48	-65.09	-1,711.59	128.28	7,135.54	7,046.70	88.84	80.321						
12,300.00	6,076.74	5,359.49	5,040.96	195.16	30.47	-65.06	-1,711.05	128.25	7,229.76	7,140.76	89.00	81.234						
12,400.00	6,077.05	5,358.10	5,039.68	198.15	30.46	-65.02	-1,710.52	128.23	7,324.13	7,234.98	89.16	82.149						
12,500.00	6,077.35	5,356.72	5,038.41	201.15	30.46	-64.99	-1,709.99	128.21	7,418.65	7,329.35	89.31	83.068						
12,600.00	6,077.66	5,355.34	5,037.14	204.14	30.45	-64.96	-1,709.46	128.18	7,513.32	7,423.86	89.46	83.989						
12,700.00	6,077.96	5,353.96	5,035.86	207.13	30.44	-64.92	-1,708.92	128.16	7,608.11	7,518.51	89.60	84.913						
12,711.72	6,078.00	5,353.80	5,035.71	207.48	30.44	-64.92	-1,708.86	128.16	7,619.23	7,529.62	89.62	85.022						



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 603 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 603 1H - Slot A01
TVD Reference: GL 6050 @ 6050.00usft
MD Reference: GL 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			
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	598.71	598.70	1.97	1.95	167.34	-42.08	28.97	52.80	48.87	3.93	13.422			
700.00	699.84	696.78	696.62	2.33	2.28	171.70	-47.04	28.00	61.73	57.07	4.65	13.261			
800.00	799.47	793.59	793.07	2.70	2.61	176.67	-55.16	26.43	76.90	71.51	5.40	14.250			
900.00	899.04	889.11	887.91	3.06	2.95	-178.97	-66.31	24.27	96.04	89.91	6.13	15.661			
1,000.00	998.61	985.23	983.00	3.42	3.31	-175.39	-80.13	21.59	117.95	111.12	6.84	17.253			
1,100.00	1,098.17	1,082.51	1,079.19	3.80	3.68	-172.85	-94.39	18.82	140.44	132.92	7.52	18.679			
1,200.00	1,197.74	1,179.79	1,175.38	4.17	4.06	-171.01	-108.65	16.06	163.11	154.90	8.21	19.871			
1,300.00	1,297.31	1,277.07	1,271.57	4.54	4.44	-169.62	-122.92	13.29	185.91	177.01	8.90	20.885			
1,400.00	1,396.88	1,374.35	1,367.76	4.91	4.83	-168.53	-137.18	10.53	208.79	199.19	9.60	21.752			
1,500.00	1,496.44	1,471.63	1,463.94	5.29	5.22	-167.66	-151.44	7.76	231.72	221.42	10.30	22.501			
1,600.00	1,596.01	1,568.91	1,560.13	5.66	5.62	-166.94	-165.71	4.99	254.70	243.70	11.00	23.153			
1,700.00	1,695.58	1,666.19	1,656.32	6.04	6.01	-166.35	-179.97	2.23	277.71	266.00	11.71	23.724			
1,800.00	1,795.15	1,763.47	1,752.51	6.41	6.41	-165.84	-194.23	-0.54	300.74	288.33	12.41	24.228			
1,900.00	1,894.71	1,860.75	1,848.70	6.79	6.81	-165.41	-208.50	-3.30	323.79	310.67	13.12	24.676			
2,000.00	1,994.28	1,958.03	1,944.89	7.17	7.21	-165.03	-222.76	-6.07	346.86	333.03	13.83	25.077			
2,100.00	2,093.85	2,055.31	2,041.08	7.54	7.61	-164.70	-237.02	-8.83	369.94	355.39	14.54	25.438			
2,200.00	2,193.42	2,152.59	2,137.27	7.92	8.01	-164.41	-251.29	-11.60	393.03	377.77	15.26	25.763			
2,300.00	2,292.98	2,249.87	2,233.45	8.30	8.41	-164.15	-265.55	-14.37	416.12	400.15	15.97	26.059			
2,400.00	2,392.55	2,347.15	2,329.64	8.67	8.82	-163.92	-279.81	-17.13	439.23	422.54	16.68	26.328			
2,500.00	2,492.12	2,444.43	2,425.83	9.05	9.22	-163.71	-294.08	-19.90	462.34	444.94	17.40	26.574			
2,600.00	2,591.69	2,541.71	2,522.02	9.43	9.62	-163.53	-308.34	-22.66	485.45	467.34	18.11	26.801			
2,700.00	2,691.25	2,638.99	2,618.21	9.81	10.03	-163.35	-322.60	-25.43	508.58	489.75	18.83	27.009			
2,800.00	2,790.82	2,736.27	2,714.40	10.18	10.43	-163.20	-336.87	-28.19	531.70	512.15	19.55	27.202			
2,900.00	2,890.39	2,833.55	2,810.59	10.56	10.84	-163.05	-351.13	-30.96	554.83	534.56	20.26	27.381			
3,000.00	2,989.96	2,930.83	2,906.77	10.94	11.24	-162.92	-365.39	-33.72	577.96	556.98	20.98	27.547			
3,100.00	3,089.52	3,028.11	3,002.96	11.32	11.65	-162.80	-379.65	-36.49	601.09	579.39	21.70	27.701			
3,200.00	3,189.09	3,125.39	3,099.15	11.70	12.05	-162.69	-393.92	-39.26	624.23	601.81	22.42	27.846			
3,300.00	3,288.66	3,222.67	3,195.34	12.07	12.46	-162.58	-408.18	-42.02	647.37	624.23	23.14	27.981			
3,400.00	3,388.23	3,319.95	3,291.53	12.45	12.86	-162.49	-422.44	-44.79	670.51	646.65	23.85	28.108			
3,500.00	3,487.79	3,417.23	3,387.72	12.83	13.27	-162.40	-436.71	-47.55	693.65	669.07	24.57	28.227			
3,600.00	3,587.36	3,514.51	3,483.91	13.21	13.67	-162.31	-450.97	-50.32	716.79	691.50	25.29	28.339			
3,700.00	3,686.93	3,611.79	3,580.10	13.58	14.08	-162.23	-465.23	-53.08	739.94	713.92	26.01	28.445			
3,800.00	3,786.50	3,709.07	3,676.28	13.96	14.49	-162.16	-479.50	-55.85	763.08	736.35	26.73	28.545			
3,900.00	3,886.06	3,806.35	3,772.47	14.34	14.89	-162.09	-493.76	-58.61	786.23	758.78	27.45	28.640			
4,000.00	3,985.63	3,903.63	3,868.66	14.72	15.30	-162.02	-508.02	-61.38	809.38	781.21	28.17	28.729			
4,100.00	4,085.20	4,000.91	3,964.85	15.10	15.71	-161.96	-522.29	-64.15	832.53	803.63	28.89	28.814			
4,200.00	4,184.77	4,098.19	4,061.04	15.48	16.11	-161.90	-536.55	-66.91	855.68	826.06	29.61	28.895			
4,300.00	4,284.33	4,195.47	4,157.23	15.85	16.52	-161.84	-550.81	-69.68	878.83	848.49	30.33	28.972			
4,400.00	4,383.90	4,292.74	4,253.42	16.23	16.93	-161.79	-565.08	-72.44	901.98	870.93	31.05	29.045			
4,500.00	4,483.47	4,390.02	4,349.51	16.61	17.33	-161.74	-579.34	-75.21	925.13	893.36	31.78	29.115			
4,600.00	4,583.04	4,487.30	4,445.79	16.99	17.74	-161.69	-593.60	-77.97	948.28	915.79	32.50	29.181			
4,700.00	4,682.60	4,584.58	4,541.98	17.37	18.15	-161.64	-607.87	-80.74	971.44	938.22	33.22	29.245			
4,800.00	4,782.17	4,681.86	4,638.17	17.74	18.56	-161.60	-622.13	-83.51	994.59	960.65	33.94	29.306			
4,900.00	4,881.74	4,779.14	4,734.36	18.12	18.96	-161.56	-636.39	-86.27	1,017.75	983.09	34.66	29.364			
5,000.00	4,981.31	4,876.42	4,830.55	18.50	19.37	-161.52	-650.65	-89.04	1,040.90	1,005.52	35.38	29.420			
5,100.00	5,080.87	4,973.70	4,926.74	18.88	19.78	-161.48	-664.92	-91.80	1,064.06	1,027.96	36.10	29.473			

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Trieb Fed Pad - Trieb Federal Com 603 2H - 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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,180.44	5,070.98	5,022.93	19.26	20.19	-161.44	-679.18	-94.57	1,087.21	1,050.39	36.82	29.524	
5,300.00	5,280.01	5,168.26	5,119.11	19.64	20.59	-161.41	-693.44	-97.33	1,110.37	1,072.82	37.55	29.574	
5,400.00	5,379.57	5,265.54	5,215.30	20.01	21.00	-153.73	-707.71	-100.10	1,133.53	1,095.26	38.27	29.621	
5,500.00	5,478.43	5,362.37	5,311.04	20.40	21.41	-116.00	-721.90	-102.85	1,157.00	1,118.00	39.00	29.666	
5,600.00	5,574.70	5,462.19	5,409.69	20.81	21.82	-105.22	-736.53	-106.78	1,180.85	1,141.06	39.79	29.678	
5,700.00	5,666.51	5,573.19	5,517.97	21.23	22.29	-100.33	-752.59	-124.56	1,204.19	1,163.49	40.70	29.584	
5,800.00	5,752.07	5,689.40	5,626.97	21.69	22.78	-97.41	-768.75	-161.04	1,226.30	1,184.59	41.71	29.400	
5,900.00	5,829.71	5,811.05	5,733.26	22.22	23.29	-95.42	-784.52	-217.77	1,246.60	1,203.74	42.86	29.085	
6,000.00	5,897.93	5,938.08	5,832.45	22.90	23.85	-93.94	-799.23	-295.48	1,264.52	1,220.26	44.26	28.568	
6,100.00	5,955.40	6,069.94	5,919.38	23.78	24.54	-92.77	-812.12	-393.55	1,279.53	1,233.43	46.10	27.756	
6,200.00	6,001.00	6,205.55	5,988.70	24.91	25.52	-91.82	-822.41	-509.41	1,291.15	1,242.59	48.56	26.588	
6,300.00	6,033.84	6,343.30	6,035.74	26.32	27.03	-91.01	-829.39	-638.45	1,299.03	1,247.24	51.80	25.080	
6,400.00	6,053.28	6,481.21	6,057.53	27.97	29.11	-90.33	-832.63	-774.38	1,302.98	1,247.23	55.76	23.368	
6,500.00	6,059.03	6,593.01	6,059.21	29.82	31.11	-90.01	-832.88	-886.15	1,303.61	1,243.84	59.78	21.808	
6,600.00	6,059.34	6,693.01	6,059.51	31.84	33.11	-90.01	-832.93	-986.15	1,303.63	1,239.71	63.91	20.396	
6,700.00	6,059.65	6,793.01	6,059.81	34.00	35.26	-90.01	-832.98	-1,086.15	1,303.65	1,235.31	68.33	19.078	
6,800.00	6,059.95	6,893.01	6,060.11	36.29	37.54	-90.01	-833.03	-1,186.15	1,303.66	1,230.68	72.98	17.863	
6,900.00	6,060.26	6,993.01	6,060.41	38.67	39.92	-90.01	-833.08	-1,286.14	1,303.68	1,225.86	77.82	16.753	
7,000.00	6,060.56	7,093.01	6,060.72	41.14	42.38	-90.01	-833.13	-1,386.14	1,303.70	1,220.89	82.81	15.743	
7,100.00	6,060.87	7,193.01	6,061.02	43.68	44.91	-90.01	-833.18	-1,486.14	1,303.72	1,215.79	87.93	14.826	
7,200.00	6,061.17	7,293.01	6,061.32	46.27	47.50	-90.01	-833.23	-1,586.14	1,303.74	1,210.57	93.16	13.994	
7,300.00	6,061.48	7,393.01	6,061.62	48.91	50.14	-90.01	-833.28	-1,686.14	1,303.75	1,205.27	98.48	13.239	
7,400.00	6,061.78	7,493.01	6,061.92	51.60	52.82	-90.01	-833.33	-1,786.14	1,303.77	1,199.89	103.88	12.551	
7,500.00	6,062.09	7,593.01	6,062.23	54.31	55.53	-90.01	-833.38	-1,886.14	1,303.79	1,194.45	109.34	11.924	
7,600.00	6,062.39	7,693.01	6,062.53	57.06	58.28	-90.01	-833.43	-1,986.14	1,303.81	1,188.95	114.86	11.351	
7,700.00	6,062.70	7,793.01	6,062.83	59.83	61.05	-90.01	-833.48	-2,086.14	1,303.82	1,183.40	120.43	10.827	
7,800.00	6,063.00	7,893.01	6,063.13	62.63	63.84	-90.01	-833.53	-2,186.14	1,303.84	1,177.81	126.03	10.345	
7,900.00	6,063.31	7,993.01	6,063.44	65.44	66.65	-90.01	-833.58	-2,286.14	1,303.86	1,172.18	131.68	9.902	
8,000.00	6,063.61	8,093.01	6,063.74	68.27	69.48	-90.01	-833.63	-2,386.14	1,303.88	1,166.52	137.36	9.493	
8,100.00	6,063.92	8,193.01	6,064.04	71.11	72.32	-90.01	-833.68	-2,486.14	1,303.90	1,160.83	143.06	9.114	
8,200.00	6,064.23	8,293.01	6,064.34	73.97	75.17	-90.01	-833.73	-2,586.14	1,303.91	1,155.12	148.79	8.763	
8,300.00	6,064.53	8,393.01	6,064.64	76.84	78.04	-90.01	-833.78	-2,686.14	1,303.93	1,149.39	154.54	8.437	
8,400.00	6,064.84	8,493.01	6,064.95	79.72	80.92	-90.00	-833.83	-2,786.14	1,303.95	1,143.63	160.32	8.134	
8,500.00	6,065.14	8,593.01	6,065.25	82.61	83.81	-90.00	-833.88	-2,886.14	1,303.97	1,137.86	166.11	7.850	
8,600.00	6,065.45	8,693.01	6,065.55	85.51	86.70	-90.00	-833.93	-2,986.14	1,303.98	1,132.07	171.91	7.585	
8,700.00	6,065.75	8,793.01	6,065.85	88.42	89.61	-90.00	-833.98	-3,086.14	1,304.00	1,126.27	177.73	7.337	
8,800.00	6,066.06	8,893.01	6,066.15	91.33	92.52	-90.00	-834.03	-3,186.14	1,304.02	1,120.46	183.56	7.104	
8,900.00	6,066.36	8,993.01	6,066.46	94.25	95.43	-90.00	-834.08	-3,286.14	1,304.04	1,114.63	189.41	6.885	
9,000.00	6,066.67	9,093.01	6,066.76	97.17	98.36	-90.00	-834.13	-3,386.14	1,304.06	1,108.79	195.27	6.678	
9,100.00	6,066.97	9,193.01	6,067.06	100.10	101.28	-90.00	-834.18	-3,486.13	1,304.07	1,102.94	201.13	6.484	
9,200.00	6,067.28	9,293.01	6,067.36	103.04	104.22	-90.00	-834.23	-3,586.13	1,304.09	1,097.09	207.01	6.300	
9,300.00	6,067.58	9,393.01	6,067.67	105.98	107.15	-90.00	-834.28	-3,686.13	1,304.11	1,091.22	212.89	6.126	
9,400.00	6,067.89	9,493.01	6,067.97	108.92	110.09	-90.00	-834.33	-3,786.13	1,304.13	1,085.35	218.78	5.961	
9,500.00	6,068.19	9,593.01	6,068.27	111.86	113.04	-90.00	-834.38	-3,886.13	1,304.14	1,079.47	224.68	5.805	
9,600.00	6,068.50	9,693.01	6,068.57	114.81	115.99	-90.00	-834.43	-3,986.13	1,304.16	1,073.58	230.58	5.656	
9,700.00	6,068.80	9,793.01	6,068.87	117.77	118.94	-90.00	-834.48	-4,086.13	1,304.18	1,067.69	236.49	5.515	
9,800.00	6,069.11	9,893.01	6,069.18	120.72	121.89	-90.00	-834.53	-4,186.13	1,304.20	1,061.79	242.40	5.380	
9,900.00	6,069.42	9,993.01	6,069.48	123.68	124.85	-90.00	-834.58	-4,286.13	1,304.22	1,055.89	248.33	5.252	
10,000.00	6,069.72	10,093.01	6,069.78	126.64	127.81	-90.00	-834.63	-4,386.13	1,304.23	1,049.98	254.25	5.130	
10,100.00	6,070.03	10,193.01	6,070.08	129.60	130.77	-90.00	-834.68	-4,486.13	1,304.25	1,044.07	260.18	5.013	
10,200.00	6,070.33	10,293.01	6,070.39	132.57	133.73	-90.00	-834.73	-4,586.13	1,304.27	1,038.15	266.11	4.901	
10,300.00	6,070.64	10,393.01	6,070.69	135.54	136.70	-90.00	-834.78	-4,686.13	1,304.29	1,032.23	272.05	4.794	

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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 +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor					
10,400.00	6,070.94	10,493.01	6,070.99	138.51	139.67	-90.00	-834.83	-4,786.13	1,304.30	1,026.31	277.99	4.692					
10,500.00	6,071.25	10,593.01	6,071.29	141.48	142.64	-90.00	-834.88	-4,886.13	1,304.32	1,020.38	283.94	4.594					
10,600.00	6,071.55	10,693.01	6,071.59	144.45	145.61	-90.00	-834.93	-4,986.13	1,304.34	1,014.45	289.89	4.499					
10,700.00	6,071.86	10,793.01	6,071.90	147.42	148.58	-90.00	-834.98	-5,086.13	1,304.36	1,008.52	295.84	4.409					
10,800.00	6,072.16	10,893.01	6,072.20	150.40	151.56	-90.00	-835.03	-5,186.13	1,304.38	1,002.59	301.79	4.322					
10,900.00	6,072.47	10,993.01	6,072.50	153.38	154.53	-90.00	-835.08	-5,286.13	1,304.39	996.65	307.75	4.239					
11,000.00	6,072.77	11,093.01	6,072.80	156.35	157.51	-90.00	-835.13	-5,386.13	1,304.41	990.71	313.71	4.158					
11,100.00	6,073.08	11,193.01	6,073.10	159.33	160.49	-90.00	-835.17	-5,486.13	1,304.43	984.76	319.67	4.081					
11,200.00	6,073.38	11,293.01	6,073.41	162.31	163.47	-90.00	-835.22	-5,586.12	1,304.45	978.82	325.63	4.006					
11,300.00	6,073.69	11,393.01	6,073.71	165.30	166.45	-90.00	-835.27	-5,686.12	1,304.46	972.87	331.60	3.934					
11,400.00	6,074.00	11,493.01	6,074.01	168.28	169.43	-90.00	-835.32	-5,786.12	1,304.48	966.92	337.56	3.864					
11,500.00	6,074.30	11,593.01	6,074.31	171.26	172.42	-90.00	-835.37	-5,886.12	1,304.50	960.97	343.53	3.797					
11,600.00	6,074.61	11,693.01	6,074.62	174.25	175.40	-90.00	-835.42	-5,986.12	1,304.52	955.01	349.50	3.732					
11,700.00	6,074.91	11,793.01	6,074.92	177.23	178.38	-90.00	-835.47	-6,086.12	1,304.54	949.06	355.48	3.670					
11,800.00	6,075.22	11,893.01	6,075.22	180.22	181.37	-90.00	-835.52	-6,186.12	1,304.55	943.10	361.45	3.609					
11,900.00	6,075.52	11,993.01	6,075.52	183.21	184.36	-90.00	-835.57	-6,286.12	1,304.57	937.14	367.43	3.551					
12,000.00	6,075.83	12,093.01	6,075.82	186.19	187.34	-90.00	-835.62	-6,386.12	1,304.59	931.18	373.40	3.494					
12,100.00	6,076.13	12,193.01	6,076.13	189.18	190.33	-90.00	-835.67	-6,486.12	1,304.61	925.22	379.38	3.439					
12,200.00	6,076.44	12,293.01	6,076.43	192.17	193.32	-90.00	-835.72	-6,586.12	1,304.62	919.26	385.36	3.385					
12,300.00	6,076.74	12,393.01	6,076.73	195.16	196.31	-90.00	-835.77	-6,686.12	1,304.64	913.30	391.35	3.334					
12,400.00	6,077.05	12,493.01	6,077.03	198.15	199.30	-90.00	-835.82	-6,786.12	1,304.66	907.33	397.33	3.284					
12,500.00	6,077.35	12,593.01	6,077.33	201.15	202.29	-90.00	-835.87	-6,886.12	1,304.68	901.36	403.31	3.235					
12,600.00	6,077.66	12,693.01	6,077.64	204.14	205.28	-90.00	-835.92	-6,986.12	1,304.70	895.40	409.30	3.188					
12,700.00	6,077.96	12,793.01	6,077.94	207.13	208.27	-90.00	-835.97	-7,086.12	1,304.71	889.43	415.28	3.142					
12,711.72	6,078.00	12,805.16	6,077.98	207.48	208.64	-90.00	-835.98	-7,098.27	1,304.71	888.72	416.00	3.136 SF					



Scientific Drilling, Intl

Anticollision Report



Company:	Hilcorp Energy Corp.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Trieb Fed Pad - Trieb Federal Com 603 3H - 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)	+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	54.61	8.74	12.30	15.09	15.09	0.00	N/A		
100.00	100.00	100.00	100.00	0.18	0.18	54.61	8.74	12.30	15.09	14.73	0.36	42.091		
200.00	200.00	200.00	200.00	0.54	0.54	54.61	8.74	12.30	15.09	14.01	1.08	14.030		
300.00	300.00	300.00	300.00	0.90	0.90	54.61	8.74	12.30	15.09	13.30	1.79	8.418		
400.00	400.00	400.00	400.00	1.25	1.25	54.61	8.74	12.30	15.09	12.58	2.51	6.013		
500.00	500.00	500.00	500.00	1.61	1.61	54.61	8.74	12.30	15.09	11.86	3.23	4.677 CC		
600.00	599.98	599.76	599.74	1.97	1.97	76.61	10.46	12.05	15.47	11.52	3.95	3.919 ES		
700.00	699.84	699.51	699.35	2.33	2.33	78.06	15.61	11.31	16.60	11.93	4.67	3.555		
800.00	799.47	799.24	798.69	2.70	2.69	79.48	24.19	10.08	18.55	13.15	5.40	3.435		
900.00	899.04	898.86	897.57	3.06	3.06	74.24	36.18	8.35	21.85	15.70	6.16	3.550		
1,000.00	998.61	998.14	995.63	3.42	3.43	64.30	51.50	6.14	27.33	20.38	6.95	3.934		
1,100.00	1,098.17	1,096.85	1,092.54	3.80	3.82	53.99	70.06	3.47	35.88	28.13	7.75	4.629		
1,200.00	1,197.74	1,194.77	1,187.97	4.17	4.23	45.49	91.72	0.35	48.01	39.46	8.55	5.614		
1,300.00	1,297.31	1,291.67	1,281.63	4.54	4.65	39.11	116.32	-3.19	63.78	54.45	9.33	6.837		
1,400.00	1,396.88	1,387.35	1,373.23	4.91	5.09	34.45	143.68	-7.13	83.10	73.02	10.08	8.244		
1,500.00	1,496.44	1,484.36	1,465.46	5.29	5.56	31.12	173.43	-11.41	104.81	94.02	10.79	9.716		
1,600.00	1,596.01	1,581.82	1,558.11	5.66	6.05	28.92	203.36	-15.72	126.79	115.30	11.49	11.032		
1,700.00	1,695.58	1,679.28	1,650.76	6.04	6.54	27.37	233.30	-20.03	148.90	136.70	12.20	12.202		
1,800.00	1,795.15	1,776.73	1,743.40	6.41	7.05	26.22	263.23	-24.34	171.08	158.16	12.92	13.243		
1,900.00	1,894.71	1,874.19	1,836.05	6.79	7.55	25.33	293.17	-28.65	193.32	179.68	13.64	14.173		
2,000.00	1,994.28	1,971.65	1,928.70	7.17	8.07	24.63	323.10	-32.96	215.59	201.22	14.37	15.007		
2,100.00	2,093.85	2,069.11	2,021.34	7.54	8.58	24.06	353.03	-37.27	237.88	222.79	15.10	15.758		
2,200.00	2,193.42	2,166.57	2,113.99	7.92	9.11	23.58	382.97	-41.58	260.20	244.37	15.83	16.438		
2,300.00	2,292.98	2,264.02	2,206.64	8.30	9.63	23.18	412.90	-45.89	282.52	265.96	16.57	17.054		
2,400.00	2,392.55	2,361.48	2,299.29	8.67	10.15	22.84	442.84	-50.20	304.86	287.56	17.31	17.616		
2,500.00	2,492.12	2,458.94	2,391.93	9.05	10.68	22.55	472.77	-54.51	327.21	309.16	18.05	18.131		
2,600.00	2,591.69	2,556.40	2,484.58	9.43	11.21	22.29	502.71	-58.82	349.57	330.77	18.79	18.602		
2,700.00	2,691.25	2,653.86	2,577.23	9.81	11.74	22.07	532.64	-63.13	371.93	352.39	19.54	19.036		
2,800.00	2,790.82	2,751.31	2,669.87	10.18	12.27	21.87	562.58	-67.44	394.29	374.01	20.29	19.437		
2,900.00	2,890.39	2,848.77	2,762.52	10.56	12.81	21.69	592.51	-71.75	416.66	395.63	21.03	19.808		
3,000.00	2,989.96	2,946.23	2,855.17	10.94	13.34	21.53	622.44	-76.06	439.04	417.25	21.79	20.153		
3,100.00	3,089.52	3,043.69	2,947.81	11.32	13.87	21.39	652.38	-80.37	461.41	438.87	22.54	20.473		
3,200.00	3,189.09	3,141.15	3,040.46	11.70	14.41	21.25	682.31	-84.68	483.79	460.50	23.29	20.772		
3,300.00	3,288.66	3,238.60	3,133.11	12.07	14.95	21.13	712.25	-88.99	506.17	482.13	24.04	21.051		
3,400.00	3,388.23	3,336.06	3,225.75	12.45	15.48	21.02	742.18	-93.30	528.55	503.75	24.80	21.313		
3,500.00	3,487.79	3,433.52	3,318.40	12.83	16.02	20.92	772.12	-97.61	550.94	525.38	25.56	21.558		
3,600.00	3,587.36	3,530.98	3,411.05	13.21	16.56	20.83	802.05	-101.92	573.33	547.01	26.31	21.789		
3,700.00	3,686.93	3,628.44	3,503.69	13.58	17.10	20.75	831.99	-106.23	595.71	568.64	27.07	22.006		
3,800.00	3,786.50	3,725.90	3,596.34	13.96	17.64	20.67	861.92	-110.54	618.10	590.27	27.83	22.211		
3,900.00	3,886.06	3,823.35	3,688.99	14.34	18.17	20.59	891.85	-114.85	640.49	611.90	28.59	22.405		
4,000.00	3,985.63	3,920.81	3,781.63	14.72	18.71	20.52	921.79	-119.16	662.88	633.53	29.35	22.588		
4,100.00	4,085.20	4,018.27	3,874.28	15.10	19.25	20.46	951.72	-123.47	685.27	655.17	30.11	22.762		
4,200.00	4,184.77	4,115.73	3,966.93	15.48	19.79	20.40	981.66	-127.78	707.66	676.80	30.87	22.927		
4,300.00	4,284.33	4,213.19	4,059.57	15.85	20.33	20.34	1,011.59	-132.09	730.06	698.43	31.63	23.083		
4,400.00	4,383.90	4,310.64	4,152.22	16.23	20.88	20.29	1,041.53	-136.40	752.45	720.06	32.39	23.232		
4,500.00	4,483.47	4,408.10	4,244.87	16.61	21.42	20.24	1,071.46	-140.71	774.84	741.70	33.15	23.374		
4,600.00	4,583.04	4,505.56	4,337.52	16.99	21.96	20.19	1,101.40	-145.02	797.24	763.33	33.91	23.509		
4,700.00	4,682.60	4,603.02	4,430.16	17.37	22.50	20.15	1,131.33	-149.33	819.63	784.96	34.67	23.638		
4,800.00	4,782.17	4,700.48	4,522.81	17.74	23.04	20.10	1,161.27	-153.64	842.03	806.59	35.44	23.762		
4,900.00	4,881.74	4,797.93	4,615.46	18.12	23.58	20.06	1,191.20	-157.95	864.43	828.23	36.20	23.880		
5,000.00	4,981.31	4,895.39	4,708.10	18.50	24.12	20.02	1,221.13	-162.26	886.82	849.86	36.96	23.993		
5,100.00	5,080.87	4,992.85	4,800.75	18.88	24.67	19.99	1,251.07	-166.57	909.22	871.49	37.73	24.101		

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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							
5,200.00	5,180.44	5,090.31	4,893.40	19.26	25.21	19.95	1,281.00	-170.87	931.62	893.13	38.49	24.204							
5,300.00	5,280.01	5,187.77	4,986.04	19.64	25.75	19.92	1,310.94	-175.18	954.01	914.76	39.25	24.304							
5,400.00	5,379.57	5,285.23	5,078.69	20.01	26.29	27.17	1,340.87	-179.49	976.41	936.39	40.02	24.399							
5,500.00	5,478.43	5,382.36	5,171.03	20.40	26.83	62.01	1,370.71	-183.79	998.53	957.73	40.81	24.468							
5,600.00	5,574.70	5,477.56	5,261.53	20.81	27.36	71.30	1,399.95	-188.00	1,020.20	978.56	41.65	24.496							
5,700.00	5,666.51	5,568.99	5,348.44	21.23	27.87	75.55	1,428.03	-192.04	1,041.81	999.26	42.55	24.485							
5,800.00	5,752.07	5,658.48	5,433.49	21.69	28.37	78.32	1,455.51	-196.53	1,064.12	1,020.54	43.58	24.416							
5,900.00	5,829.71	5,760.12	5,528.99	22.22	28.96	80.56	1,486.35	-212.07	1,087.00	1,042.09	44.91	24.203							
6,000.00	5,897.93	5,872.09	5,630.60	22.90	29.62	82.46	1,519.14	-245.42	1,109.77	1,063.24	46.53	23.852							
6,100.00	5,955.40	5,997.33	5,736.83	23.78	30.39	84.24	1,553.39	-301.89	1,131.65	1,083.21	48.44	23.363							
6,200.00	6,001.00	6,139.17	5,843.74	24.91	31.29	85.97	1,587.81	-388.13	1,151.60	1,100.94	50.67	22.728							
6,300.00	6,033.84	6,300.49	5,942.98	26.32	32.43	87.62	1,619.71	-510.80	1,168.31	1,115.00	53.31	21.916							
6,400.00	6,053.28	6,481.98	6,020.28	27.97	34.01	89.03	1,644.46	-672.59	1,180.20	1,123.61	56.58	20.857							
6,500.00	6,059.03	6,679.61	6,057.66	29.82	36.29	89.94	1,656.27	-865.65	1,185.73	1,125.07	60.66	19.548							
6,600.00	6,059.34	6,801.30	6,059.24	31.84	38.01	90.00	1,656.60	-987.31	1,185.91	1,121.15	64.76	18.312							
6,700.00	6,059.65	6,901.30	6,059.55	34.00	39.63	90.00	1,656.56	-1,087.31	1,185.89	1,116.88	69.02	17.183							
6,800.00	6,059.95	7,001.30	6,059.86	36.29	41.44	90.00	1,656.52	-1,187.31	1,185.88	1,112.36	73.52	16.130							
6,900.00	6,060.26	7,101.30	6,060.17	38.67	43.41	90.00	1,656.47	-1,287.31	1,185.87	1,107.64	78.23	15.159							
7,000.00	6,060.56	7,201.30	6,060.47	41.14	45.51	90.00	1,656.43	-1,387.31	1,185.86	1,102.75	83.11	14.269							
7,100.00	6,060.87	7,301.30	6,060.78	43.68	47.72	90.00	1,656.39	-1,487.31	1,185.85	1,097.72	88.13	13.456							
7,200.00	6,061.17	7,401.30	6,061.09	46.27	50.03	90.00	1,656.34	-1,587.31	1,185.84	1,092.57	93.26	12.715							
7,300.00	6,061.48	7,501.30	6,061.39	48.91	52.42	90.00	1,656.30	-1,687.31	1,185.83	1,087.32	98.50	12.039							
7,400.00	6,061.78	7,601.30	6,061.70	51.60	54.88	90.00	1,656.26	-1,787.31	1,185.82	1,081.99	103.82	11.421							
7,500.00	6,062.09	7,701.30	6,062.01	54.31	57.39	90.00	1,656.21	-1,887.31	1,185.80	1,076.58	109.22	10.857							
7,600.00	6,062.39	7,801.30	6,062.32	57.06	59.96	90.00	1,656.17	-1,987.31	1,185.79	1,071.11	114.68	10.340							
7,700.00	6,062.70	7,901.30	6,062.62	59.83	62.57	90.00	1,656.13	-2,087.31	1,185.78	1,065.59	120.19	9.866							
7,800.00	6,063.00	8,001.30	6,062.93	62.63	65.22	90.00	1,656.08	-2,187.31	1,185.77	1,060.02	125.75	9.430							
7,900.00	6,063.31	8,101.30	6,063.24	65.44	67.90	90.00	1,656.04	-2,287.31	1,185.76	1,054.41	131.35	9.028							
8,000.00	6,063.61	8,201.30	6,063.55	68.27	70.61	90.00	1,656.00	-2,387.31	1,185.75	1,048.77	136.98	8.656							
8,100.00	6,063.92	8,301.30	6,063.85	71.11	73.34	90.00	1,655.95	-2,487.30	1,185.74	1,043.09	142.65	8.312							
8,200.00	6,064.23	8,401.30	6,064.16	73.97	76.10	90.00	1,655.91	-2,587.30	1,185.72	1,037.38	148.34	7.993							
8,300.00	6,064.53	8,501.30	6,064.47	76.84	78.87	90.00	1,655.87	-2,687.30	1,185.71	1,031.65	154.06	7.696							
8,400.00	6,064.84	8,601.30	6,064.78	79.72	81.67	90.00	1,655.82	-2,787.30	1,185.70	1,025.90	159.80	7.420							
8,500.00	6,065.14	8,701.30	6,065.08	82.61	84.48	90.00	1,655.78	-2,887.30	1,185.69	1,020.12	165.57	7.161							
8,600.00	6,065.45	8,801.30	6,065.39	85.51	87.30	90.00	1,655.73	-2,987.30	1,185.68	1,014.33	171.35	6.920							
8,700.00	6,065.75	8,901.30	6,065.70	88.42	90.14	90.00	1,655.69	-3,087.30	1,185.67	1,008.53	177.14	6.693							
8,800.00	6,066.06	9,001.30	6,066.00	91.33	92.99	90.00	1,655.65	-3,187.30	1,185.66	1,002.70	182.95	6.481							
8,900.00	6,066.36	9,101.30	6,066.31	94.25	95.84	90.00	1,655.60	-3,287.30	1,185.65	996.87	188.78	6.281							
9,000.00	6,066.67	9,201.30	6,066.62	97.17	98.71	90.00	1,655.56	-3,387.30	1,185.63	991.02	194.61	6.092							
9,100.00	6,066.97	9,301.30	6,066.93	100.10	101.59	90.00	1,655.52	-3,487.30	1,185.62	985.16	200.46	5.915							
9,200.00	6,067.28	9,401.30	6,067.23	103.04	104.47	90.00	1,655.47	-3,587.30	1,185.61	979.30	206.31	5.747							
9,300.00	6,067.58	9,501.30	6,067.54	105.98	107.36	90.00	1,655.43	-3,687.30	1,185.60	973.42	212.18	5.588							
9,400.00	6,067.89	9,601.30	6,067.85	108.92	110.26	90.00	1,655.39	-3,787.30	1,185.59	967.53	218.05	5.437							
9,500.00	6,068.19	9,701.30	6,068.16	111.86	113.17	90.00	1,655.34	-3,887.30	1,185.58	961.64	223.94	5.294							
9,600.00	6,068.50	9,801.30	6,068.46	114.81	116.08	90.00	1,655.30	-3,987.30	1,185.57	955.74	229.83	5.159							
9,700.00	6,068.80	9,901.30	6,068.77	117.77	118.99	90.00	1,655.26	-4,087.30	1,185.55	949.83	235.72	5.029							
9,800.00	6,069.11	10,001.30	6,069.08	120.72	121.91	90.00	1,655.21	-4,187.30	1,185.54	943.92	241.63	4.907							
9,900.00	6,069.42	10,101.30	6,069.39	123.68	124.83	90.00	1,655.17	-4,287.30	1,185.53	938.00	247.53	4.789							
10,000.00	6,069.72	10,201.30	6,069.69	126.64	127.76	90.00	1,655.13	-4,387.30	1,185.52	932.07	253.45	4.678							
10,100.00	6,070.03	10,301.30	6,070.00	129.60	130.69	90.00	1,655.08	-4,487.30	1,185.51	926.14	259.37	4.571							
10,200.00	6,070.33	10,401.30	6,070.31	132.57	133.63	90.00	1,655.04	-4,587.29	1,185.50	920.21	265.29	4.469							
10,300.00	6,070.64	10,501.30	6,070.61	135.54	136.57	90.00	1,655.00	-4,687.29	1,185.49	914.27	271.22	4.371							

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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		
10,400.00	6,070.94	10,601.30	6,070.92	138.51	139.51	90.00	1,654.95	-4,787.29	1,185.48	908.33	277.15	4.277		
10,500.00	6,071.25	10,701.30	6,071.23	141.48	142.46	90.00	1,654.91	-4,887.29	1,185.46	902.38	283.08	4.188		
10,600.00	6,071.55	10,801.30	6,071.54	144.45	145.40	90.00	1,654.87	-4,987.29	1,185.45	896.43	289.02	4.102		
10,700.00	6,071.86	10,901.30	6,071.84	147.42	148.36	90.00	1,654.82	-5,087.29	1,185.44	890.48	294.96	4.019		
10,800.00	6,072.16	11,001.30	6,072.15	150.40	151.31	90.00	1,654.78	-5,187.29	1,185.43	884.52	300.91	3.939		
10,900.00	6,072.47	11,101.30	6,072.46	153.38	154.26	90.00	1,654.74	-5,287.29	1,185.42	878.56	306.86	3.863		
11,000.00	6,072.77	11,201.30	6,072.77	156.35	157.22	90.00	1,654.69	-5,387.29	1,185.41	872.60	312.81	3.790		
11,100.00	6,073.08	11,301.30	6,073.07	159.33	160.18	90.00	1,654.65	-5,487.29	1,185.40	866.63	318.76	3.719		
11,200.00	6,073.38	11,401.30	6,073.38	162.31	163.14	90.00	1,654.61	-5,587.29	1,185.38	860.66	324.72	3.650		
11,300.00	6,073.69	11,501.30	6,073.69	165.30	166.10	90.00	1,654.56	-5,687.29	1,185.37	854.69	330.68	3.585		
11,400.00	6,074.00	11,601.30	6,074.00	168.28	169.07	90.00	1,654.52	-5,787.29	1,185.36	848.72	336.64	3.521		
11,500.00	6,074.30	11,701.30	6,074.30	171.26	172.04	90.00	1,654.48	-5,887.29	1,185.35	842.75	342.60	3.460		
11,600.00	6,074.61	11,801.30	6,074.61	174.25	175.00	90.00	1,654.43	-5,987.29	1,185.34	836.77	348.57	3.401		
11,700.00	6,074.91	11,901.30	6,074.92	177.23	177.97	90.00	1,654.39	-6,087.29	1,185.33	830.79	354.54	3.343		
11,800.00	6,075.22	12,001.30	6,075.23	180.22	180.94	90.00	1,654.35	-6,187.29	1,185.32	824.81	360.51	3.288		
11,900.00	6,075.52	12,101.30	6,075.53	183.21	183.92	90.00	1,654.30	-6,287.29	1,185.31	818.83	366.48	3.234		
12,000.00	6,075.83	12,201.30	6,075.84	186.19	186.89	90.00	1,654.26	-6,387.29	1,185.29	812.85	372.45	3.182		
12,100.00	6,076.13	12,301.30	6,076.15	189.18	189.86	90.00	1,654.21	-6,487.29	1,185.28	806.86	378.42	3.132		
12,200.00	6,076.44	12,401.30	6,076.45	192.17	192.84	90.00	1,654.17	-6,587.29	1,185.27	800.87	384.40	3.083		
12,300.00	6,076.74	12,501.30	6,076.76	195.16	195.82	90.00	1,654.13	-6,687.28	1,185.26	794.89	390.37	3.036		
12,400.00	6,077.05	12,601.30	6,077.07	198.15	198.80	90.00	1,654.08	-6,787.28	1,185.25	788.90	396.35	2.990		
12,500.00	6,077.35	12,701.30	6,077.38	201.15	201.77	90.00	1,654.04	-6,887.28	1,185.24	782.90	402.33	2.946		
12,600.00	6,077.66	12,801.27	6,077.68	204.14	204.75	90.00	1,654.00	-6,987.25	1,185.23	776.91	408.31	2.903		
12,700.00	6,077.96	12,901.27	6,077.99	207.13	207.73	90.00	1,653.96	-7,087.25	1,185.22	770.92	414.29	2.861		
12,702.98	6,077.97	12,904.15	6,078.00	207.22	207.82	90.00	1,653.96	-7,090.13	1,185.22	770.75	414.47	2.860		
12,711.72	6,078.00	12,904.15	6,078.00	207.48	207.82	90.00	1,653.96	-7,090.13	1,185.25	770.39	414.86	2.857 SF		



Scientific Drilling, Intl Anticollision Report



Company:	Hilcorp Energy Corp.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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		
0.00	0.00	0.00	0.00	0.00	0.00	144.15	-60.80	43.93	75.01					
100.00	100.00	100.00	100.00	0.18	0.18	144.15	-60.80	43.93	75.01	74.65	0.36	209.247		
200.00	200.00	200.00	200.00	0.54	0.54	144.15	-60.80	43.93	75.01	73.93	1.08	69.749		
300.00	300.00	300.00	300.00	0.90	0.90	144.15	-60.80	43.93	75.01	73.22	1.79	41.849		
400.00	400.00	400.00	400.00	1.25	1.25	144.15	-60.80	43.93	75.01	72.50	2.51	29.892		
500.00	500.00	500.00	500.00	1.61	1.61	144.15	-60.80	43.93	75.01	71.78	3.23	23.250 CC, ES		
600.00	599.98	598.01	597.99	1.97	1.95	166.76	-62.46	43.73	77.97	74.03	3.93	19.825		
700.00	699.84	695.37	695.22	2.33	2.28	169.70	-67.40	43.10	86.99	82.34	4.65	18.701		
800.00	799.47	791.47	790.97	2.70	2.61	173.42	-75.50	42.09	102.17	96.78	5.39	18.959		
900.00	899.04	886.29	885.12	3.06	2.94	177.02	-86.60	40.69	121.23	115.11	6.12	19.810		
1,000.00	998.61	979.74	977.50	3.42	3.29	-179.76	-100.56	38.93	143.47	136.62	6.85	20.948		
1,100.00	1,098.17	1,071.67	1,067.89	3.80	3.65	-176.96	-117.20	36.84	168.89	161.32	7.57	22.320		
1,200.00	1,197.74	1,161.93	1,156.05	4.17	4.02	-174.56	-136.33	34.44	197.42	189.14	8.28	23.856		
1,300.00	1,297.31	1,250.38	1,241.83	4.54	4.41	-172.50	-157.75	31.74	228.99	220.02	8.97	25.540		
1,400.00	1,396.88	1,336.93	1,325.07	4.91	4.80	-170.75	-181.23	28.79	263.51	253.87	9.64	27.343		
1,500.00	1,496.44	1,421.47	1,405.66	5.29	5.21	-169.24	-206.57	25.61	300.88	290.59	10.29	29.245		
1,600.00	1,596.01	1,500.00	1,479.82	5.66	5.61	-168.00	-232.21	22.38	341.01	330.10	10.91	31.263		
1,700.00	1,695.58	1,584.26	1,558.56	6.04	6.07	-166.82	-261.96	18.64	383.73	372.20	11.53	33.291		
1,800.00	1,795.15	1,669.97	1,637.96	6.41	6.56	-165.78	-293.99	14.61	428.47	416.32	12.15	35.262		
1,900.00	1,894.71	1,759.07	1,720.45	6.79	7.08	-164.90	-327.41	10.41	473.44	460.64	12.80	36.992		
2,000.00	1,994.28	1,848.17	1,802.93	7.17	7.60	-164.17	-360.82	6.21	518.49	505.03	13.45	38.538		
2,100.00	2,093.85	1,937.27	1,885.42	7.54	8.13	-163.55	-394.24	2.01	563.59	549.47	14.12	39.924		
2,200.00	2,193.42	2,026.37	1,967.91	7.92	8.67	-163.02	-427.65	-2.19	608.74	593.95	14.79	41.172		
2,300.00	2,292.98	2,115.47	2,050.40	8.30	9.22	-162.57	-461.06	-6.39	653.92	638.46	15.46	42.299		
2,400.00	2,392.55	2,204.57	2,132.89	8.67	9.77	-162.18	-494.48	-10.60	699.13	683.00	16.14	43.321		
2,500.00	2,492.12	2,293.66	2,215.38	9.05	10.32	-161.83	-527.89	-14.80	744.37	727.55	16.82	44.250		
2,600.00	2,591.69	2,382.76	2,297.87	9.43	10.87	-161.53	-561.31	-19.00	789.62	772.11	17.51	45.098		
2,700.00	2,691.25	2,471.86	2,380.36	9.81	11.43	-161.25	-594.72	-23.20	834.89	816.69	18.20	45.875		
2,800.00	2,790.82	2,560.96	2,462.85	10.18	11.99	-161.01	-628.14	-27.40	880.18	861.28	18.89	46.588		
2,900.00	2,890.39	2,650.06	2,545.34	10.56	12.55	-160.78	-661.55	-31.60	925.47	905.88	19.59	47.244		
3,000.00	2,989.96	2,739.16	2,627.83	10.94	13.11	-160.58	-694.96	-35.81	970.78	950.49	20.29	47.851		
3,100.00	3,089.52	2,828.26	2,710.32	11.32	13.68	-160.40	-728.38	-40.01	1,016.09	995.11	20.99	48.412		
3,200.00	3,189.09	2,917.36	2,792.80	11.70	14.24	-160.23	-761.79	-44.21	1,061.42	1,039.72	21.69	48.933		
3,300.00	3,288.66	3,006.46	2,875.29	12.07	14.81	-160.08	-795.21	-48.41	1,106.74	1,084.35	22.40	49.418		
3,400.00	3,388.23	3,095.55	2,957.78	12.45	15.38	-159.94	-828.62	-52.61	1,152.08	1,128.98	23.10	49.870		
3,500.00	3,487.79	3,184.65	3,040.27	12.83	15.95	-159.81	-862.03	-56.81	1,197.42	1,173.61	23.81	50.292		
3,600.00	3,587.36	3,273.75	3,122.76	13.21	16.52	-159.69	-895.45	-61.01	1,242.76	1,218.24	24.52	50.687		
3,700.00	3,686.93	3,362.85	3,205.25	13.58	17.09	-159.57	-928.86	-65.22	1,288.11	1,262.88	25.23	51.057		
3,800.00	3,786.50	3,451.95	3,287.74	13.96	17.66	-159.47	-962.28	-69.42	1,333.46	1,307.52	25.94	51.405		
3,900.00	3,886.06	3,541.05	3,370.23	14.34	18.23	-159.37	-995.69	-73.62	1,378.82	1,352.16	26.65	51.733		
4,000.00	3,985.63	3,630.15	3,452.72	14.72	18.80	-159.28	-1,029.11	-77.82	1,424.17	1,396.81	27.37	52.042		
4,100.00	4,085.20	3,719.25	3,535.21	15.10	19.37	-159.19	-1,062.52	-82.02	1,469.54	1,441.45	28.08	52.333		
4,200.00	4,184.77	3,808.35	3,617.70	15.48	19.95	-159.11	-1,095.93	-86.22	1,514.90	1,486.10	28.80	52.608		
4,300.00	4,284.33	3,897.45	3,700.19	15.85	20.52	-159.04	-1,129.35	-90.42	1,560.26	1,530.75	29.51	52.869		
4,400.00	4,383.90	3,986.54	3,782.67	16.23	21.09	-158.96	-1,162.76	-94.63	1,605.63	1,575.40	30.23	53.116		
4,500.00	4,483.47	4,075.64	3,865.16	16.61	21.67	-158.90	-1,196.18	-98.83	1,651.00	1,620.06	30.95	53.351		
4,600.00	4,583.04	4,164.74	3,947.65	16.99	22.24	-158.83	-1,229.59	-103.03	1,696.37	1,664.71	31.66	53.574		
4,700.00	4,682.60	4,253.84	4,030.14	17.37	22.81	-158.77	-1,263.01	-107.23	1,741.75	1,709.36	32.38	53.786		
4,800.00	4,782.17	4,342.94	4,112.63	17.74	23.39	-158.71	-1,296.42	-111.43	1,787.12	1,754.02	33.10	53.988		
4,900.00	4,881.74	4,432.04	4,195.12	18.12	23.96	-158.66	-1,329.83	-115.63	1,832.50	1,798.67	33.82	54.180		
5,000.00	4,981.31	4,521.14	4,277.61	18.50	24.54	-158.60	-1,363.25	-119.83	1,877.87	1,843.33	34.54	54.364		
5,100.00	5,080.87	4,610.24	4,360.10	18.88	25.12	-158.55	-1,396.66	-124.04	1,923.25	1,887.99	35.26	54.540		

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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+HDDM													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	5,180.44	4,699.34	4,442.59	19.26	25.69	-158.51	-1,430.08	-128.24	1,968.63	1,932.65	35.98	54.707		
5,300.00	5,280.01	4,788.44	4,525.08	19.64	26.27	-158.46	-1,463.49	-132.44	2,014.01	1,977.30	36.71	54.868		
5,400.00	5,379.57	4,877.54	4,607.57	20.01	26.84	-150.58	-1,496.91	-136.64	2,059.39	2,021.96	37.43	55.021		
5,500.00	5,478.43	4,966.39	4,689.83	20.40	27.42	-110.53	-1,530.23	-140.83	2,104.56	2,066.39	38.17	55.141		
5,600.00	5,574.70	5,053.59	4,770.56	20.81	27.98	-97.33	-1,562.93	-144.94	2,148.87	2,109.94	38.93	55.205		
5,700.00	5,666.51	5,137.43	4,848.18	21.23	28.52	-90.27	-1,594.37	-148.90	2,191.83	2,152.13	39.70	55.204		
5,800.00	5,752.07	5,216.27	4,921.17	21.69	29.03	-85.57	-1,623.94	-152.61	2,233.18	2,192.66	40.52	55.114		
5,900.00	5,829.71	5,288.59	4,988.13	22.22	29.50	-82.08	-1,651.06	-156.02	2,272.81	2,231.41	41.40	54.900		
6,000.00	5,897.93	5,352.98	5,047.74	22.90	29.92	-79.28	-1,675.21	-159.06	2,310.74	2,268.36	42.39	54.518		
6,100.00	5,955.40	5,408.17	5,098.84	23.78	30.28	-76.89	-1,695.91	-161.66	2,347.03	2,303.51	43.52	53.930		
6,200.00	6,001.00	5,453.11	5,140.44	24.91	30.57	-74.72	-1,712.76	-163.78	2,381.73	2,336.90	44.83	53.124		
6,300.00	6,033.84	5,486.91	5,171.74	26.32	30.79	-72.65	-1,725.44	-165.38	2,414.85	2,368.52	46.33	52.127		
6,400.00	6,053.28	5,508.92	5,192.11	27.97	30.93	-70.61	-1,733.69	-166.41	2,446.28	2,398.32	47.97	51.000		
6,500.00	6,059.03	5,518.79	5,201.25	29.82	30.99	-68.82	-1,737.39	-166.88	2,475.86	2,426.17	49.69	49.827		
6,600.00	6,059.34	5,523.80	5,205.89	31.84	31.02	-68.94	-1,739.27	-167.12	2,506.83	2,455.35	51.49	48.689		
6,700.00	6,059.65	5,528.81	5,210.53	34.00	31.06	-69.06	-1,741.15	-167.35	2,541.36	2,488.01	53.35	47.637		
6,800.00	6,059.95	7,144.89	6,059.90	36.29	42.95	-90.00	-2,084.49	-1,185.51	2,555.13	2,481.74	73.39	34.817		
6,900.00	6,060.26	7,244.89	6,060.20	38.67	44.55	-90.00	-2,084.54	-1,285.51	2,555.14	2,477.11	78.04	32.743		
7,000.00	6,060.56	7,344.89	6,060.51	41.14	46.34	-90.00	-2,084.59	-1,385.51	2,555.16	2,472.30	82.86	30.836		
7,100.00	6,060.87	7,444.89	6,060.81	43.68	48.30	-90.00	-2,084.64	-1,485.51	2,555.18	2,467.34	87.84	29.090		
7,200.00	6,061.17	7,544.89	6,061.12	46.27	50.40	-90.00	-2,084.69	-1,585.51	2,555.20	2,462.27	92.93	27.495		
7,300.00	6,061.48	7,644.89	6,061.42	48.91	52.62	-90.00	-2,084.74	-1,685.51	2,555.22	2,457.08	98.13	26.038		
7,400.00	6,061.78	7,744.89	6,061.73	51.60	54.94	-90.00	-2,084.79	-1,785.51	2,555.23	2,451.81	103.43	24.706		
7,500.00	6,062.09	7,844.89	6,062.03	54.31	57.34	-90.00	-2,084.84	-1,885.51	2,555.25	2,446.46	108.79	23.487		
7,600.00	6,062.39	7,944.89	6,062.34	57.06	59.82	-90.00	-2,084.89	-1,985.51	2,555.27	2,441.05	114.22	22.371		
7,700.00	6,062.70	8,044.89	6,062.65	59.83	62.35	-90.00	-2,084.94	-2,085.51	2,555.29	2,435.58	119.71	21.345		
7,800.00	6,063.00	8,144.89	6,062.95	62.63	64.93	-90.00	-2,084.99	-2,185.51	2,555.31	2,430.06	125.25	20.401		
7,900.00	6,063.31	8,244.89	6,063.26	65.44	67.56	-90.00	-2,085.04	-2,285.51	2,555.33	2,424.49	130.83	19.531		
8,000.00	6,063.61	8,344.89	6,063.56	68.27	70.22	-90.00	-2,085.09	-2,385.51	2,555.34	2,418.89	136.45	18.727		
8,100.00	6,063.92	8,444.89	6,063.87	71.11	72.91	-90.00	-2,085.15	-2,485.51	2,555.36	2,413.26	142.10	17.983		
8,200.00	6,064.23	8,544.89	6,064.17	73.97	75.64	-90.00	-2,085.20	-2,585.51	2,555.38	2,407.60	147.78	17.292		
8,300.00	6,064.53	8,644.89	6,064.48	76.84	78.38	-90.00	-2,085.25	-2,685.51	2,555.40	2,401.91	153.49	16.649		
8,400.00	6,064.84	8,744.89	6,064.78	79.72	81.15	-90.00	-2,085.30	-2,785.50	2,555.42	2,396.20	159.22	16.050		
8,500.00	6,065.14	8,844.89	6,065.09	82.61	83.93	-90.00	-2,085.35	-2,885.50	2,555.43	2,390.47	164.97	15.491		
8,600.00	6,065.45	8,944.89	6,065.39	85.51	86.74	-90.00	-2,085.40	-2,985.50	2,555.45	2,384.72	170.74	14.967		
8,700.00	6,065.75	9,044.89	6,065.70	88.42	89.55	-90.00	-2,085.45	-3,085.50	2,555.47	2,378.95	176.52	14.477		
8,800.00	6,066.06	9,144.89	6,066.00	91.33	92.38	-90.00	-2,085.50	-3,185.50	2,555.49	2,373.16	182.32	14.016		
8,900.00	6,066.36	9,244.89	6,066.31	94.25	95.23	-90.00	-2,085.55	-3,285.50	2,555.51	2,367.37	188.14	13.583		
9,000.00	6,066.67	9,344.89	6,066.61	97.17	98.08	-90.00	-2,085.60	-3,385.50	2,555.52	2,361.56	193.97	13.175		
9,100.00	6,066.97	9,444.89	6,066.92	100.10	100.95	-90.00	-2,085.65	-3,485.50	2,555.54	2,355.74	199.81	12.790		
9,200.00	6,067.28	9,544.89	6,067.23	103.04	103.82	-90.00	-2,085.70	-3,585.50	2,555.56	2,349.91	205.66	12.426		
9,300.00	6,067.58	9,644.89	6,067.53	105.98	106.70	-90.00	-2,085.75	-3,685.50	2,555.58	2,344.06	211.52	12.082		
9,400.00	6,067.89	9,744.89	6,067.84	108.92	109.59	-90.00	-2,085.80	-3,785.50	2,555.60	2,338.21	217.38	11.756		
9,500.00	6,068.19	9,844.89	6,068.14	111.86	112.48	-90.00	-2,085.85	-3,885.50	2,555.62	2,332.35	223.26	11.447		
9,600.00	6,068.50	9,944.89	6,068.45	114.81	115.38	-90.00	-2,085.90	-3,985.50	2,555.63	2,326.49	229.14	11.153		
9,700.00	6,068.80	10,044.89	6,068.75	117.77	118.29	-90.00	-2,085.95	-4,085.50	2,555.65	2,320.62	235.04	10.873		
9,800.00	6,069.11	10,144.89	6,069.06	120.72	121.20	-90.00	-2,086.00	-4,185.50	2,555.67	2,314.74	240.93	10.607		
9,900.00	6,069.42	10,244.89	6,069.36	123.68	124.12	-90.00	-2,086.05	-4,285.50	2,555.69	2,308.85	246.84	10.354		
10,000.00	6,069.72	10,344.89	6,069.67	126.64	127.04	-90.00	-2,086.10	-4,385.50	2,555.71	2,302.96	252.75	10.112		
10,100.00	6,070.03	10,444.89	6,069.97	129.60	129.97	-90.00	-2,086.15	-4,485.50	2,555.72	2,297.06	258.66	9.881		
10,200.00	6,070.33	10,544.89	6,070.28	132.57	132.90	-90.00	-2,086.20	-4,585.50	2,555.74	2,291.16	264.58	9.660		
10,300.00	6,070.64	10,644.89	6,070.58	135.54	135.84	-90.00	-2,086.25	-4,685.50	2,555.76	2,285.26	270.50	9.448		

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



Scientific Drilling, Intl
Anticollision Report

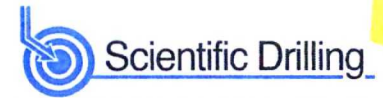


Company:	Hilcorp Energy Corp.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	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		
10,400.00	6,070.94	10,744.89	6,070.89	138.51	138.77	-90.00	-2,086.30	-4,785.50	2,555.78	2,279.35	276.43	9.246		
10,500.00	6,071.25	10,844.89	6,071.19	141.48	141.71	-90.00	-2,086.35	-4,885.49	2,555.80	2,273.43	282.36	9.051		
10,600.00	6,071.55	10,944.89	6,071.50	144.45	144.66	-90.00	-2,086.40	-4,985.49	2,555.82	2,267.52	288.30	8.865		
10,700.00	6,071.86	11,044.89	6,071.81	147.42	147.60	-90.00	-2,086.45	-5,085.49	2,555.83	2,261.59	294.24	8.686		
10,800.00	6,072.16	11,144.89	6,072.11	150.40	150.55	-90.00	-2,086.50	-5,185.49	2,555.85	2,255.67	300.18	8.514		
10,900.00	6,072.47	11,244.89	6,072.42	153.38	153.51	-90.00	-2,086.55	-5,285.49	2,555.87	2,249.74	306.13	8.349		
11,000.00	6,072.77	11,344.89	6,072.72	156.35	156.46	-90.00	-2,086.60	-5,385.49	2,555.89	2,243.81	312.08	8.190		
11,100.00	6,073.08	11,444.89	6,073.03	159.33	159.42	-90.00	-2,086.65	-5,485.49	2,555.91	2,237.88	318.03	8.037		
11,200.00	6,073.38	11,544.89	6,073.33	162.31	162.37	-90.00	-2,086.70	-5,585.49	2,555.92	2,231.94	323.98	7.889		
11,300.00	6,073.69	11,644.89	6,073.64	165.30	165.34	-90.00	-2,086.75	-5,685.49	2,555.94	2,226.01	329.94	7.747		
11,400.00	6,074.00	11,744.89	6,073.94	168.28	168.30	-90.00	-2,086.80	-5,785.49	2,555.96	2,220.06	335.90	7.609		
11,500.00	6,074.30	11,844.89	6,074.25	171.26	171.26	-90.00	-2,086.85	-5,885.49	2,555.98	2,214.12	341.86	7.477		
11,600.00	6,074.61	11,944.89	6,074.55	174.25	174.23	-90.00	-2,086.90	-5,985.49	2,556.00	2,208.18	347.82	7.349		
11,700.00	6,074.91	12,044.89	6,074.86	177.23	177.19	-90.00	-2,086.95	-6,085.49	2,556.02	2,202.23	353.78	7.225		
11,800.00	6,075.22	12,144.89	6,075.16	180.22	180.16	-90.00	-2,087.00	-6,185.49	2,556.03	2,196.28	359.75	7.105		
11,900.00	6,075.52	12,244.89	6,075.47	183.21	183.13	-90.00	-2,087.05	-6,285.49	2,556.05	2,190.33	365.72	6.989		
12,000.00	6,075.83	12,344.89	6,075.77	186.19	186.10	-90.00	-2,087.10	-6,385.49	2,556.07	2,184.38	371.69	6.877		
12,100.00	6,076.13	12,444.89	6,076.08	189.18	189.08	-90.00	-2,087.15	-6,485.49	2,556.09	2,178.42	377.66	6.768		
12,200.00	6,076.44	12,544.89	6,076.38	192.17	192.05	-90.00	-2,087.20	-6,585.49	2,556.11	2,172.47	383.64	6.663		
12,300.00	6,076.74	12,644.89	6,076.69	195.16	195.03	-90.00	-2,087.26	-6,685.49	2,556.12	2,166.51	389.61	6.561		
12,400.00	6,077.05	12,744.89	6,077.00	198.15	198.00	-90.00	-2,087.31	-6,785.49	2,556.14	2,160.55	395.59	6.462		
12,500.00	6,077.35	12,844.89	6,077.30	201.15	200.98	-90.00	-2,087.36	-6,885.49	2,556.16	2,154.59	401.57	6.365		
12,600.00	6,077.66	12,944.89	6,077.61	204.14	203.96	-90.00	-2,087.41	-6,985.48	2,556.18	2,148.63	407.55	6.272		
12,700.00	6,077.96	13,045.08	6,077.91	207.13	206.94	-90.00	-2,087.45	-7,085.68	2,556.19	2,142.66	413.53	6.181		
12,711.72	6,078.00	13,056.80	6,077.95	207.48	207.29	-90.00	-2,087.46	-7,097.40	2,556.20	2,141.96	414.23	6.171 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 603 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 603 1H - Slot A01
TVD Reference: GL 6050 @ 6050.00usft
MD Reference: GL 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		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)		Between Centres (usft)	Between Ellipses (usft)				Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)
0.00	0.00	0.00	0.00	0.00	0.00	127.29	-31.67	41.59	52.28					
100.00	100.00	100.00	100.00	0.18	0.18	127.29	-31.67	41.59	52.28	51.92	0.36	145.834		
200.00	200.00	200.00	200.00	0.54	0.54	127.29	-31.67	41.59	52.28	51.20	1.08	48.611		
300.00	300.00	300.00	300.00	0.90	0.90	127.29	-31.67	41.59	52.28	50.49	1.79	29.167		
400.00	400.00	400.00	400.00	1.25	1.25	127.29	-31.67	41.59	52.28	49.77	2.51	20.833		
500.00	500.00	500.00	500.00	1.61	1.61	127.29	-31.67	41.59	52.28	49.05	3.23	16.204	CC, ES	
600.00	599.98	599.98	599.98	1.97	1.97	149.71	-31.67	41.59	53.78	49.83	3.94	13.640		
700.00	699.84	699.84	699.84	2.33	2.33	152.26	-31.67	41.59	58.36	53.70	4.66	12.521		
800.00	799.47	799.47	799.47	2.70	2.69	155.66	-31.67	41.59	66.02	60.64	5.38	12.271		
900.00	899.04	899.04	899.04	3.06	3.04	158.60	-31.67	41.59	74.59	68.49	6.10	12.237		
1,000.00	998.61	998.61	998.61	3.42	3.40	160.93	-31.67	41.59	83.31	76.50	6.81	12.232	SF	
1,100.00	1,098.17	1,098.17	1,098.17	3.80	3.76	162.82	-31.67	41.59	92.15	84.62	7.53	12.241		
1,200.00	1,197.74	1,197.74	1,197.74	4.17	4.11	164.37	-31.67	41.59	101.06	92.82	8.24	12.258		
1,300.00	1,297.31	1,297.31	1,297.31	4.54	4.47	165.68	-31.67	41.59	110.04	101.08	8.96	12.278		
1,400.00	1,396.88	1,396.88	1,396.88	4.91	4.83	166.78	-31.67	41.59	119.07	109.39	9.68	12.300		
1,500.00	1,496.44	1,496.44	1,496.44	5.29	5.19	167.73	-31.67	41.59	128.13	117.73	10.40	12.322		
1,600.00	1,596.01	1,596.01	1,596.01	5.66	5.54	168.56	-31.67	41.59	137.23	126.11	11.12	12.344		
1,700.00	1,695.58	1,695.58	1,695.58	6.04	5.90	169.28	-31.67	41.59	146.35	134.51	11.84	12.365		
1,800.00	1,795.15	1,795.15	1,795.15	6.41	6.26	169.91	-31.67	41.59	155.48	142.93	12.55	12.385		
1,900.00	1,894.71	1,894.71	1,894.71	6.79	6.61	170.48	-31.67	41.59	164.64	151.37	13.27	12.404		
2,000.00	1,994.28	1,994.28	1,994.28	7.17	6.97	170.99	-31.67	41.59	173.81	159.82	13.99	12.422		
2,100.00	2,093.85	2,093.85	2,093.85	7.54	7.33	171.44	-31.67	41.59	182.99	168.28	14.71	12.439		
2,200.00	2,193.42	2,193.42	2,193.42	7.92	7.68	171.86	-31.67	41.59	192.19	176.76	15.43	12.456		
2,300.00	2,292.98	2,292.98	2,292.98	8.30	8.04	172.23	-31.67	41.59	201.39	185.24	16.15	12.471		
2,400.00	2,392.55	2,392.55	2,392.55	8.67	8.40	172.57	-31.67	41.59	210.60	193.73	16.87	12.485		
2,500.00	2,492.12	2,492.12	2,492.12	9.05	8.75	172.88	-31.67	41.59	219.82	202.23	17.59	12.498		
2,600.00	2,591.69	2,591.69	2,591.69	9.43	9.11	173.17	-31.67	41.59	229.04	210.73	18.31	12.511		
2,700.00	2,691.25	2,691.25	2,691.25	9.81	9.47	173.44	-31.67	41.59	238.27	219.24	19.03	12.523		
2,800.00	2,790.82	2,790.82	2,790.82	10.18	9.83	173.68	-31.67	41.59	247.50	227.75	19.75	12.534		
2,900.00	2,890.39	2,890.39	2,890.39	10.56	10.18	173.91	-31.67	41.59	256.74	236.27	20.47	12.545		
3,000.00	2,989.96	2,989.96	2,989.96	10.94	10.54	174.12	-31.67	41.59	265.98	244.79	21.18	12.555		
3,100.00	3,089.52	3,089.52	3,089.52	11.32	10.90	174.32	-31.67	41.59	275.22	253.32	21.90	12.565		
3,200.00	3,189.09	3,189.09	3,189.09	11.70	11.25	174.51	-31.67	41.59	284.47	261.84	22.62	12.574		
3,300.00	3,288.66	3,288.66	3,288.66	12.07	11.61	174.68	-31.67	41.59	293.72	270.37	23.34	12.583		
3,400.00	3,388.23	3,388.23	3,388.23	12.45	11.97	174.84	-31.67	41.59	302.97	278.91	24.06	12.591		
3,500.00	3,487.79	3,487.79	3,487.79	12.83	12.32	175.00	-31.67	41.59	312.22	287.44	24.78	12.599		
3,600.00	3,587.36	3,587.36	3,587.36	13.21	12.68	175.14	-31.67	41.59	321.48	295.98	25.50	12.606		
3,700.00	3,686.93	3,686.93	3,686.93	13.58	13.04	175.28	-31.67	41.59	330.74	304.52	26.22	12.613		
3,800.00	3,786.50	3,786.50	3,786.50	13.96	13.39	175.41	-31.67	41.59	340.00	313.06	26.94	12.620		
3,900.00	3,886.06	3,886.06	3,886.06	14.34	13.75	175.53	-31.67	41.59	349.26	321.60	27.66	12.627		
4,000.00	3,985.63	3,985.63	3,985.63	14.72	14.11	175.64	-31.67	41.59	358.52	330.14	28.38	12.633		
4,100.00	4,085.20	4,085.20	4,085.20	15.10	14.47	175.75	-31.67	41.59	367.79	338.69	29.10	12.639		
4,200.00	4,184.77	4,184.77	4,184.77	15.48	14.82	175.86	-31.67	41.59	377.05	347.23	29.82	12.644		
4,300.00	4,284.33	4,284.33	4,284.33	15.85	15.18	175.96	-31.67	41.59	386.32	355.78	30.54	12.650		
4,400.00	4,383.90	4,383.90	4,383.90	16.23	15.54	176.05	-31.67	41.59	395.59	364.33	31.26	12.655		
4,500.00	4,483.47	4,483.47	4,483.47	16.61	15.89	176.14	-31.67	41.59	404.86	372.88	31.98	12.660		
4,600.00	4,583.04	4,583.04	4,583.04	16.99	16.25	176.23	-31.67	41.59	414.13	381.43	32.70	12.665		
4,700.00	4,682.60	4,682.60	4,682.60	17.37	16.61	176.31	-31.67	41.59	423.40	389.98	33.42	12.670		
4,800.00	4,782.17	4,782.17	4,782.17	17.74	16.96	176.39	-31.67	41.59	432.67	398.53	34.14	12.674		
4,900.00	4,881.74	4,881.74	4,881.74	18.12	17.32	176.47	-31.67	41.59	441.95	407.09	34.86	12.678		
5,000.00	4,981.31	4,981.31	4,981.31	18.50	17.68	176.54	-31.67	41.59	451.22	415.64	35.58	12.683		
5,100.00	5,080.87	5,080.87	5,080.87	18.88	18.03	176.61	-31.67	41.59	460.49	424.20	36.30	12.687		

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 603 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well Trieb Federal Com 603 1H - Slot A01
TVD Reference: GL 6050 @ 6050.00usft
MD Reference: GL 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	
5,200.00	5,180.44	5,180.44	5,180.44	19.26	18.39	176.68	-31.67	41.59	469.77	432.75	37.02	12.690	
5,300.00	5,280.01	5,280.01	5,280.01	19.64	18.75	176.74	-31.67	41.59	479.04	441.31	37.74	12.694	
5,400.00	5,379.57	5,379.57	5,379.57	20.01	19.10	-175.68	-31.67	41.59	488.35	449.89	38.46	12.698	
5,500.00	5,478.43	5,478.43	5,478.43	20.40	19.46	-139.36	-31.67	41.59	501.09	461.91	39.17	12.791	
5,600.00	5,574.70	5,574.70	5,574.70	20.81	19.80	-130.23	-31.67	41.59	519.92	480.04	39.88	13.037	
5,700.00	5,666.51	5,666.51	5,666.51	21.23	20.13	-127.26	-31.67	41.59	545.72	505.16	40.56	13.455	
5,800.00	5,752.07	5,752.07	5,752.07	21.69	20.44	-126.26	-31.67	41.59	579.62	538.41	41.21	14.064	
5,900.00	5,829.71	5,829.71	5,829.71	22.22	20.72	-125.69	-31.67	41.59	622.61	580.78	41.83	14.884	
6,000.00	5,897.93	5,897.93	5,897.93	22.90	20.96	-124.67	-31.67	41.59	675.18	632.77	42.41	15.921	
6,100.00	5,955.40	5,955.40	5,955.40	23.78	21.17	-122.50	-31.67	41.59	737.16	694.22	42.94	17.169	
6,200.00	6,001.00	6,001.00	6,001.00	24.91	21.33	-118.50	-31.67	41.59	807.73	764.33	43.40	18.611	
6,300.00	6,033.84	6,033.84	6,033.84	26.32	21.45	-111.93	-31.67	41.59	885.53	841.74	43.78	20.224	
6,400.00	6,053.28	6,053.28	6,053.28	27.97	21.52	-102.02	-31.67	41.59	968.81	924.73	44.08	21.979	
6,500.00	6,059.03	6,059.03	6,059.03	29.82	21.54	-90.32	-31.67	41.59	1,055.61	1,011.33	44.28	23.840	
6,600.00	6,059.34	6,059.34	6,059.34	31.84	21.54	-90.36	-31.67	41.59	1,144.53	1,100.10	44.43	25.759	
6,700.00	6,059.65	6,059.65	6,059.65	34.00	21.54	-90.39	-31.67	41.59	1,235.15	1,190.58	44.57	27.710	
6,800.00	6,059.95	6,059.95	6,059.95	36.29	21.54	-90.43	-31.67	41.59	1,327.12	1,282.41	44.71	29.686	
6,900.00	6,060.26	6,060.26	6,060.26	38.67	21.55	-90.46	-31.67	41.59	1,420.17	1,375.35	44.82	31.683	
7,000.00	6,060.56	6,060.56	6,060.56	41.14	21.55	-90.50	-31.67	41.59	1,514.11	1,469.18	44.93	33.696	
7,100.00	6,060.87	6,060.87	6,060.87	43.68	21.55	-90.53	-31.67	41.59	1,608.78	1,563.75	45.04	35.722	
7,200.00	6,061.17	6,061.17	6,061.17	46.27	21.55	-90.57	-31.67	41.59	1,704.06	1,658.93	45.13	37.760	
7,300.00	6,061.48	6,061.48	6,061.48	48.91	21.55	-90.60	-31.67	41.59	1,799.85	1,754.63	45.22	39.806	
7,400.00	6,061.78	6,061.78	6,061.78	51.60	21.55	-90.64	-31.67	41.59	1,896.08	1,850.78	45.30	41.859	
7,500.00	6,062.09	6,062.09	6,062.09	54.31	21.55	-90.67	-31.67	41.59	1,992.67	1,947.30	45.37	43.918	
7,600.00	6,062.39	6,062.39	6,062.39	57.06	21.55	-90.71	-31.67	41.59	2,089.59	2,044.15	45.44	45.981	
7,700.00	6,062.70	6,062.70	6,062.70	59.83	21.55	-90.74	-31.67	41.59	2,186.79	2,141.27	45.51	48.048	
7,800.00	6,063.00	6,063.00	6,063.00	62.63	21.55	-90.78	-31.67	41.59	2,284.22	2,238.65	45.58	50.117	
7,900.00	6,063.31	6,063.31	6,063.31	65.44	21.56	-90.81	-31.67	41.59	2,381.87	2,336.23	45.64	52.189	
8,000.00	6,063.61	6,063.61	6,063.61	68.27	21.56	-90.84	-31.67	41.59	2,479.71	2,434.01	45.70	54.262	
8,100.00	6,063.92	6,063.92	6,063.92	71.11	21.56	-90.88	-31.67	41.59	2,577.71	2,531.96	45.76	56.335	
8,200.00	6,064.23	6,064.23	6,064.23	73.97	21.56	-90.91	-31.67	41.59	2,675.86	2,630.05	45.81	58.409	
8,300.00	6,064.53	6,064.53	6,064.53	76.84	21.56	-90.95	-31.67	41.59	2,774.15	2,728.28	45.87	60.482	
8,400.00	6,064.84	6,064.84	6,064.84	79.72	21.56	-90.98	-31.67	41.59	2,872.55	2,826.63	45.92	62.555	
8,500.00	6,065.14	6,065.14	6,065.14	82.61	21.56	-91.02	-31.67	41.59	2,971.05	2,925.08	45.97	64.627	
8,600.00	6,065.45	6,065.45	6,065.45	85.51	21.56	-91.05	-31.67	41.59	3,069.66	3,023.64	46.02	66.697	
8,700.00	6,065.75	6,065.75	6,065.75	88.42	21.56	-91.09	-31.67	41.59	3,168.35	3,122.28	46.07	68.766	
8,800.00	6,066.06	6,066.06	6,066.06	91.33	21.57	-91.12	-31.67	41.59	3,267.12	3,221.00	46.12	70.833	
8,900.00	6,066.36	6,066.36	6,066.36	94.25	21.57	-91.16	-31.67	41.59	3,365.97	3,319.79	46.17	72.898	
9,000.00	6,066.67	6,066.67	6,066.67	97.17	21.57	-91.19	-31.67	41.59	3,464.88	3,418.65	46.22	74.961	
9,100.00	6,066.97	6,066.97	6,066.97	100.10	21.57	-91.23	-31.67	41.59	3,563.85	3,517.58	46.27	77.021	
9,200.00	6,067.28	6,067.28	6,067.28	103.04	21.57	-91.26	-31.67	41.59	3,662.87	3,616.55	46.32	79.078	
9,300.00	6,067.58	6,067.58	6,067.58	105.98	21.57	-91.30	-31.67	41.59	3,761.95	3,715.58	46.37	81.133	
9,400.00	6,067.89	6,067.89	6,067.89	108.92	21.57	-91.33	-31.67	41.59	3,861.08	3,814.66	46.42	83.184	
9,500.00	6,068.19	6,068.19	6,068.19	111.86	21.57	-91.37	-31.67	41.59	3,960.25	3,913.78	46.46	85.232	
9,600.00	6,068.50	6,068.50	6,068.50	114.81	21.57	-91.40	-31.67	41.59	4,059.46	4,012.95	46.51	87.277	
9,700.00	6,068.80	6,068.80	6,068.80	117.77	21.58	-91.44	-31.67	41.59	4,158.71	4,112.15	46.56	89.318	
9,800.00	6,069.11	6,069.11	6,069.11	120.72	21.58	-91.47	-31.67	41.59	4,257.99	4,211.38	46.61	91.355	
9,900.00	6,069.42	6,069.42	6,069.42	123.68	21.58	-91.51	-31.67	41.59	4,357.31	4,310.65	46.66	93.388	
10,000.00	6,069.72	6,069.72	6,069.72	126.64	21.58	-91.54	-31.67	41.59	4,456.65	4,409.95	46.71	95.417	
10,100.00	6,070.03	6,070.03	6,070.03	129.60	21.58	-91.58	-31.67	41.59	4,556.03	4,509.27	46.76	97.442	
10,200.00	6,070.33	6,070.33	6,070.33	132.57	21.58	-91.61	-31.67	41.59	4,655.43	4,608.62	46.81	99.463	
10,300.00	6,070.64	6,070.64	6,070.64	135.54	21.58	-91.64	-31.67	41.59	4,754.86	4,708.00	46.86	101.479	

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.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

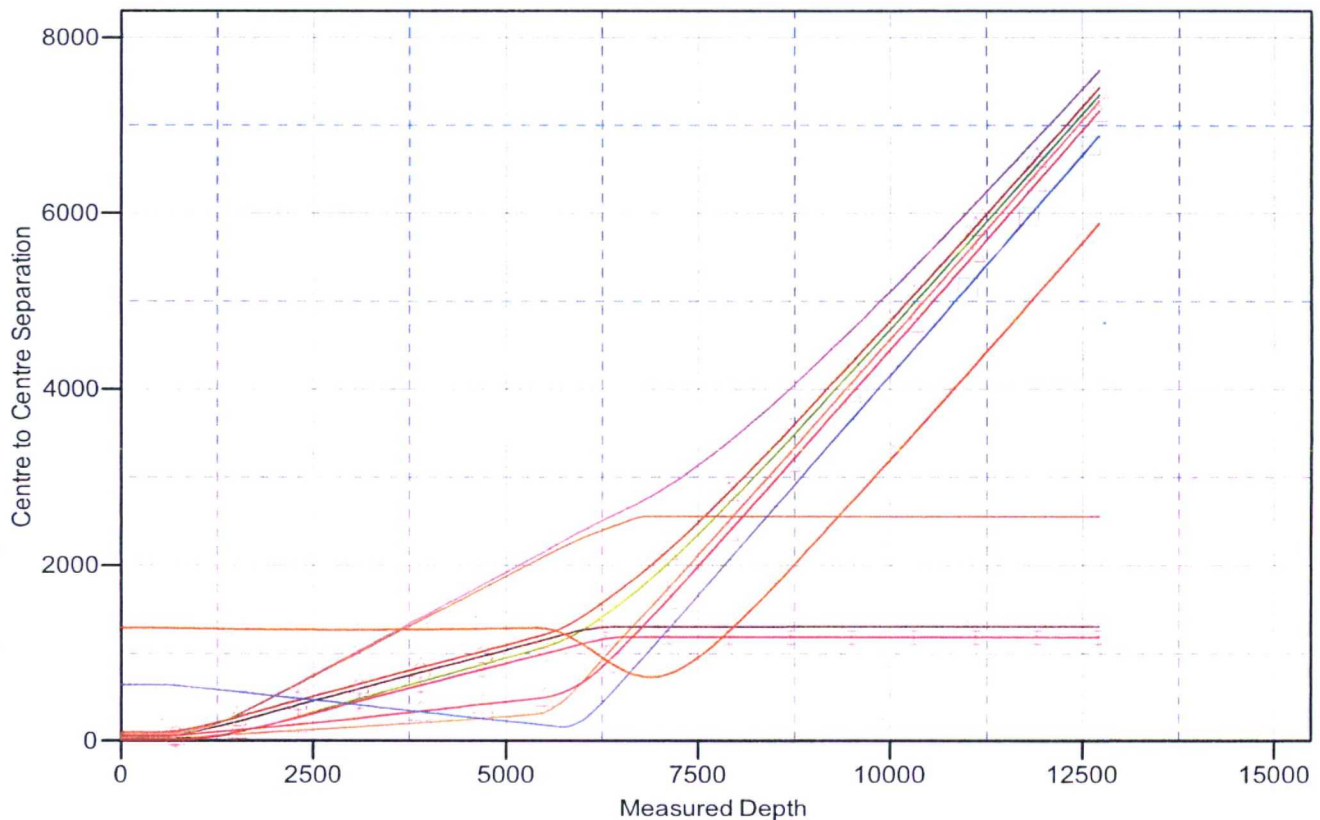
Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,400.00	6,070.94	6,070.94	6,070.94	138.51	21.58	-91.68	-31.67	41.59	4,854.31	4,807.40	46.91	103.491	
10,500.00	6,071.25	6,071.25	6,071.25	141.48	21.58	-91.71	-31.67	41.59	4,953.78	4,906.82	46.96	105.499	
10,600.00	6,071.55	6,071.55	6,071.55	144.45	21.59	-91.75	-31.67	41.59	5,053.27	5,006.27	47.01	107.501	
10,700.00	6,071.86	6,071.86	6,071.86	147.42	21.59	-91.78	-31.67	41.59	5,152.79	5,105.73	47.06	109.499	
10,800.00	6,072.16	6,072.16	6,072.16	150.40	21.59	-91.82	-31.67	41.59	5,252.32	5,205.21	47.11	111.492	
10,900.00	6,072.47	6,072.47	6,072.47	153.38	21.59	-91.85	-31.67	41.59	5,351.87	5,304.71	47.16	113.479	
11,000.00	6,072.77	6,072.77	6,072.77	156.35	21.59	-91.89	-31.67	41.59	5,451.43	5,404.22	47.21	115.462	
11,100.00	6,073.08	6,073.08	6,073.08	159.33	21.59	-91.92	-31.67	41.59	5,551.01	5,503.75	47.27	117.440	
11,200.00	6,073.38	6,073.38	6,073.38	162.31	21.59	-91.96	-31.67	41.59	5,650.61	5,603.29	47.32	119.412	
11,300.00	6,073.69	6,073.69	6,073.69	165.30	21.59	-91.99	-31.67	41.59	5,750.22	5,702.85	47.37	121.379	
11,400.00	6,074.00	6,074.00	6,074.00	168.28	21.59	-92.03	-31.67	41.59	5,849.84	5,802.42	47.43	123.340	
11,500.00	6,074.30	6,074.30	6,074.30	171.26	21.60	-92.06	-31.67	41.59	5,949.48	5,902.00	47.48	125.296	
11,600.00	6,074.61	6,074.61	6,074.61	174.25	21.60	-92.10	-31.67	41.59	6,049.13	6,001.59	47.54	127.246	
11,700.00	6,074.91	6,074.91	6,074.91	177.23	21.60	-92.13	-31.67	41.59	6,148.79	6,101.19	47.59	129.191	
11,800.00	6,075.22	6,075.22	6,075.22	180.22	21.60	-92.17	-31.67	41.59	6,248.46	6,200.81	47.65	131.129	
11,900.00	6,075.52	6,075.52	6,075.52	183.21	21.60	-92.20	-31.67	41.59	6,348.14	6,300.43	47.71	133.062	
12,000.00	6,075.83	6,075.83	6,075.83	186.19	21.60	-92.24	-31.67	41.59	6,447.83	6,400.06	47.77	134.990	
12,100.00	6,076.13	6,076.13	6,076.13	189.18	21.60	-92.27	-31.67	41.59	6,547.53	6,499.70	47.82	136.911	
12,200.00	6,076.44	6,076.44	6,076.44	192.17	21.60	-92.31	-31.67	41.59	6,647.24	6,599.35	47.88	138.826	
12,300.00	6,076.74	6,076.74	6,076.74	195.16	21.60	-92.34	-31.67	41.59	6,746.95	6,699.01	47.94	140.735	
12,400.00	6,077.05	6,077.05	6,077.05	198.15	21.61	-92.37	-31.67	41.59	6,846.68	6,798.68	48.00	142.638	
12,500.00	6,077.35	6,077.35	6,077.35	201.15	21.61	-92.41	-31.67	41.59	6,946.41	6,898.35	48.06	144.535	
12,600.00	6,077.66	6,077.66	6,077.66	204.14	21.61	-92.44	-31.67	41.59	7,046.15	6,998.03	48.12	146.426	
12,700.00	6,077.96	6,077.96	6,077.96	207.13	21.61	-92.48	-31.67	41.59	7,145.90	7,097.72	48.18	148.310	
12,711.72	6,078.00	6,078.00	6,078.00	207.48	21.61	-92.48	-31.67	41.59	7,157.59	7,109.40	48.19	148.530	

Company:	Hilcorp Energy Corp.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction District
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

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

Coordinates are relative to: Trieb Federal Com 603 1H - Slot A01
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: -0.03°

Ladder Plot



LEGEND

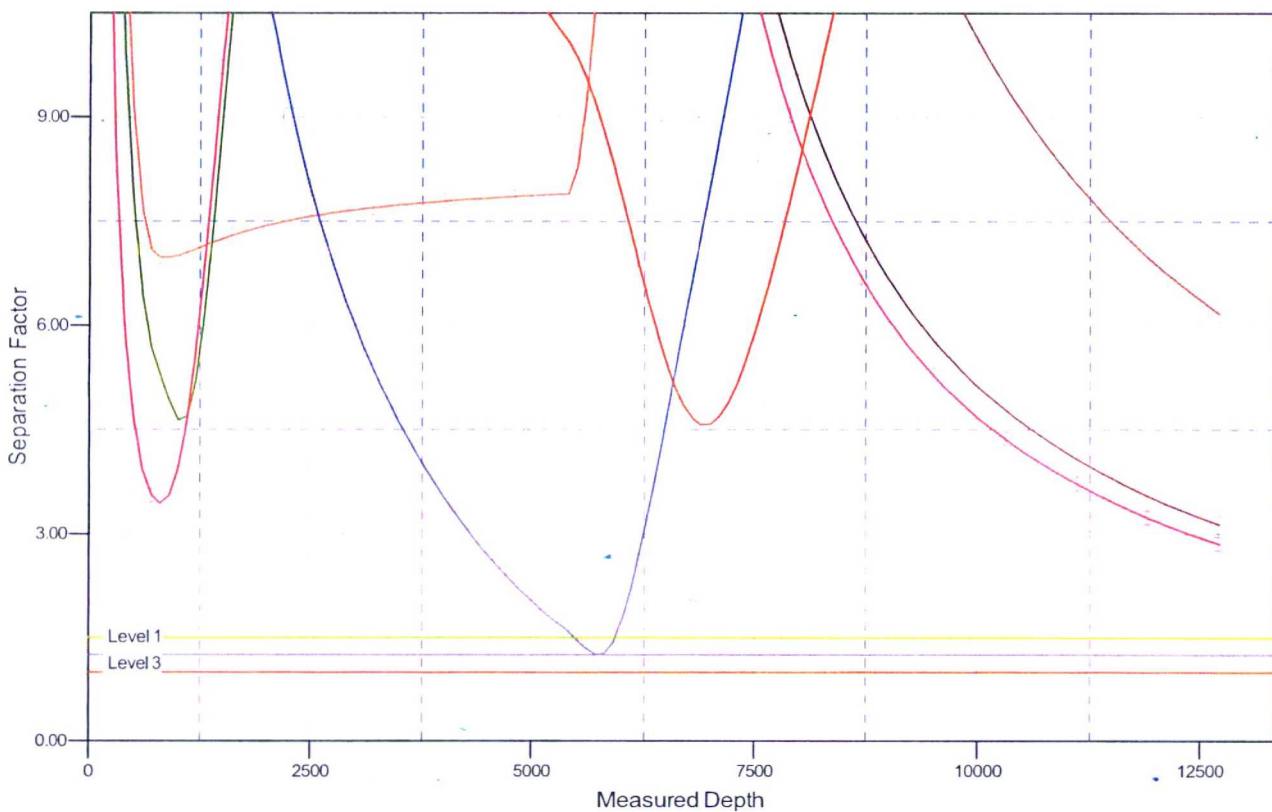
- | | | |
|--|---|-------------------------|
| Trieb Federal Com 601 1H, OH, Plan #2 V0 | Trieb Federal Com 603 2H, OH, Plan #2 V0 | Trieb Fed 2B, OH, OH V0 |
| Trieb Federal Com 601 2H, OH, Plan #2 V0 | Trieb Federal Com 603 3H, OH, Plan #2 V0 | Trieb Fed 2N, OH, OH V0 |
| Trieb Federal Com 602 1H,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

Company:	Hilcorp Energy Corp.	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Project:	San Juan, NM NAD27	TVD Reference:	GL 6050 @ 6050.00usft
Reference Site:	Trieb Fed Pad	MD Reference:	GL 6050 @ 6050.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH	Database:	Grand Junction District
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

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

Coordinates are relative to: Trieb Federal Com 603 1H - Slot A01
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 Com 601 1H, OH, Plan #2 V0	Trieb Federal Com 603 2H, OH, Plan #2 V0	Trieb Fed 2B, OH, OH V0
Trieb Federal Com 601 2H, OH, Plan #2 V0	Trieb Federal Com 603 3H, OH, Plan #2 V0	Trieb Fed 2N, OH, OH V0
Trieb Federal Com 602 1H, OH, Plan #2 V0	Trieb Federal Com 603 4H, OH, Plan #2 V0	
Trieb Federal Com 602 2H, OH, Plan #2 V0	Trieb Federal Strat Test 600 #1, OH, Plan #1 V0	



Company: Hilcorp Energy Corp.
Project: San Juan, NM NAD27
Site: Trieb Fed Pad
Well: Trieb Federal Com 603 1H
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



Azimuths to True North
Magnetic North: 9.02'

Magnetic Field
Strength: 49807.1snT
Dip Angle: 63.30'
Date: 9/12/2018
Model: HDGM

WELL DETAILS: Trieb Federal Com 603 1H

GL 6050 @ 6050.00usft
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 2099229.77 485846.79 36.7691450 -107.8816550 A01

Plan: Plan #2 (Trieb Federal Com 603 1H/OH)

Created By: Janie Collins Date: 13:56, November 09 2018

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Trieb 603 1H LP	6059.00	470.73	-875.38	2099700.94	484971.65	36.7704380	-107.8846438
Trieb 603 1H BHL	6078.00	468.74	-7098.49	2099702.09	478748.54	36.7704301	-107.9058909

SECTION DETAILS

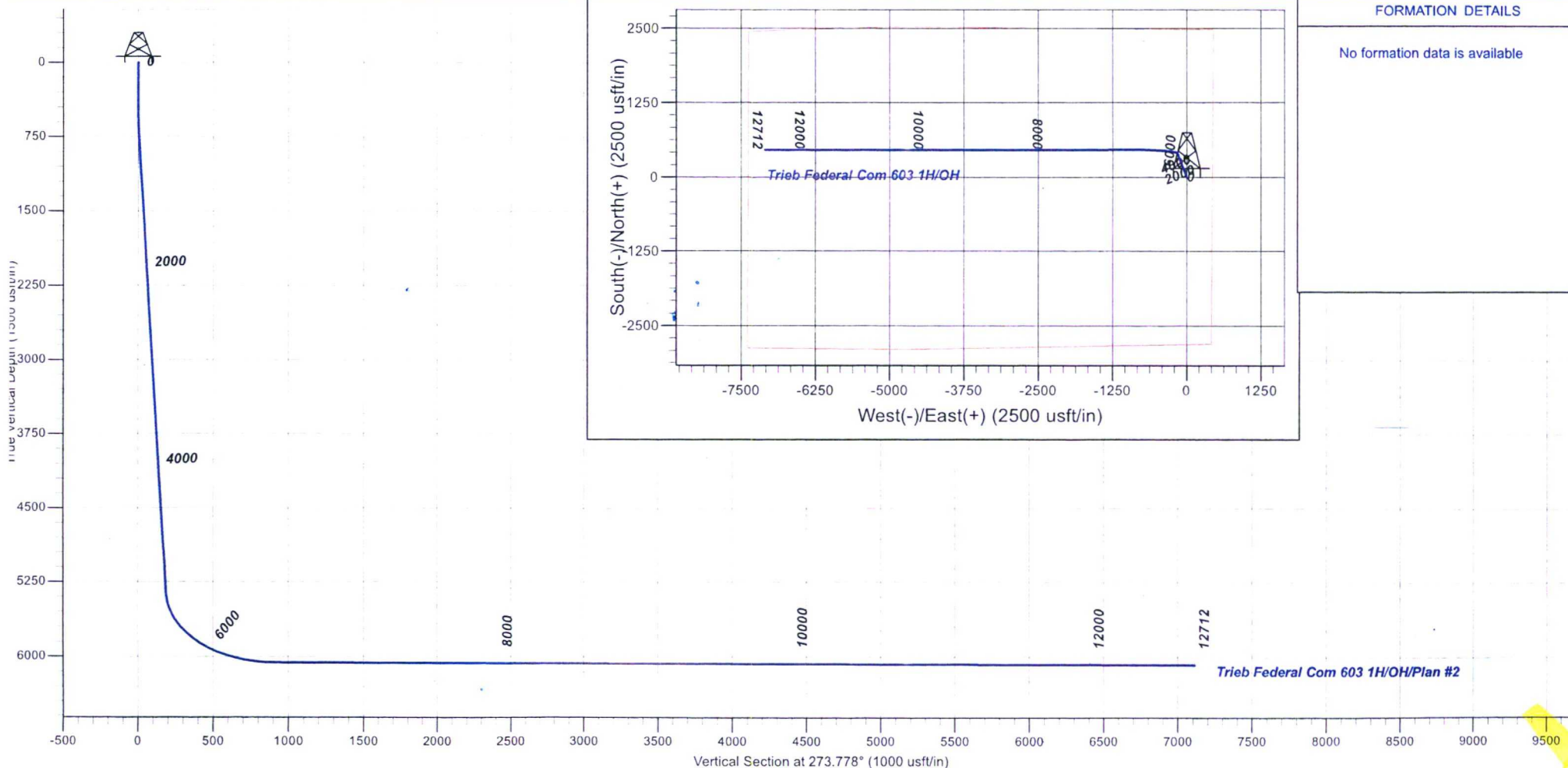
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	
766.54	5.33	338.530	766.16	11.53	-4.54	2.00	338.53	5.28	
5390.10	5.33	338.530	5369.72	411.28	-161.76	0.00	0.00	188.50	
6488.58	89.83	269.982	6059.00	470.73	-875.38	8.00	-68.65	904.50	Trieb 603 1H LP
12711.72	89.83	269.982	6078.00	468.74	-7098.49	0.00	0.00	7113.95	Trieb 603 1H 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 603 1H - Slot A01

OH

Plan: Plan #2

Standard Planning Report

09 November, 2018



Scientific Drilling

www.scientificdrilling.com





Scientific Drilling, Intl Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Company:	Hilcorp Energy Corp.	TVD Reference:	GL 6050 @ 6050.00usft
Project:	San Juan, NM NAD27	MD Reference:	GL 6050 @ 6050.00usft
Site:	Trieb Fed Pad	North Reference:	True
Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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 603 1H - Slot A01					
Well Position	+N/-S	5.83 usft	Northing:	2,099,229.76 usft	Latitude:	36.7691450
	+E/-W	7.91 usft	Easting:	485,846.79 usft	Longitude:	-107.8816550
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,050.00 usft

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

Design	Plan #2
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Audit Notes:	
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Version:	Phase:	PLAN	Tie On Depth:	0.00
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	273.778

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	
766.54	5.33	338.530	766.16	11.53	-4.54	2.00	2.00	0.00	338.53	
5,390.10	5.33	338.530	5,369.72	411.28	-161.76	0.00	0.00	0.00	0.00	
6,488.58	89.83	269.982	6,059.00	470.73	-875.38	8.00	7.69	-6.24	-68.65	Trieb 603 1H LP
12,711.72	89.83	269.982	6,078.00	468.74	-7,098.49	0.00	0.00	0.00	0.00	Trieb 603 1H BHL



Scientific Drilling, Intl Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Company:	Hilcorp Energy Corp.	TVD Reference:	GL 6050 @ 6050.00usft
Project:	San Juan, NM NAD27	MD Reference:	GL 6050 @ 6050.00usft
Site:	Trieb Fed Pad	North Reference:	True
Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	338.530	599.98	1.62	-0.64	0.74	2.00	2.00	0.00
700.00	4.00	338.530	699.84	6.49	-2.55	2.98	2.00	2.00	0.00
766.54	5.33	338.530	766.16	11.53	-4.54	5.28	2.00	2.00	0.00
800.00	5.33	338.530	799.47	14.42	-5.67	6.61	0.00	0.00	0.00
900.00	5.33	338.530	899.04	23.07	-9.07	10.57	0.00	0.00	0.00
1,000.00	5.33	338.530	998.61	31.72	-12.47	14.54	0.00	0.00	0.00
1,100.00	5.33	338.530	1,098.17	40.36	-15.87	18.50	0.00	0.00	0.00
1,200.00	5.33	338.530	1,197.74	49.01	-19.27	22.46	0.00	0.00	0.00
1,300.00	5.33	338.530	1,297.31	57.65	-22.68	26.42	0.00	0.00	0.00
1,400.00	5.33	338.530	1,396.88	66.30	-26.08	30.39	0.00	0.00	0.00
1,500.00	5.33	338.530	1,496.44	74.95	-29.48	34.35	0.00	0.00	0.00
1,600.00	5.33	338.530	1,596.01	83.59	-32.88	38.31	0.00	0.00	0.00
1,700.00	5.33	338.530	1,695.58	92.24	-36.28	42.28	0.00	0.00	0.00
1,800.00	5.33	338.530	1,795.15	100.88	-39.68	46.24	0.00	0.00	0.00
1,900.00	5.33	338.530	1,894.71	109.53	-43.08	50.20	0.00	0.00	0.00
2,000.00	5.33	338.530	1,994.28	118.18	-46.48	54.16	0.00	0.00	0.00
2,100.00	5.33	338.530	2,093.85	126.82	-49.88	58.13	0.00	0.00	0.00
2,200.00	5.33	338.530	2,193.42	135.47	-53.28	62.09	0.00	0.00	0.00
2,300.00	5.33	338.530	2,292.98	144.11	-56.68	66.05	0.00	0.00	0.00
2,400.00	5.33	338.530	2,392.55	152.76	-60.08	70.01	0.00	0.00	0.00
2,500.00	5.33	338.530	2,492.12	161.41	-63.48	73.98	0.00	0.00	0.00
2,600.00	5.33	338.530	2,591.69	170.05	-66.88	77.94	0.00	0.00	0.00
2,700.00	5.33	338.530	2,691.25	178.70	-70.28	81.90	0.00	0.00	0.00
2,800.00	5.33	338.530	2,790.82	187.34	-73.68	85.87	0.00	0.00	0.00
2,900.00	5.33	338.530	2,890.39	195.99	-77.08	89.83	0.00	0.00	0.00
3,000.00	5.33	338.530	2,989.96	204.64	-80.48	93.79	0.00	0.00	0.00
3,100.00	5.33	338.530	3,089.52	213.28	-83.88	97.75	0.00	0.00	0.00
3,200.00	5.33	338.530	3,189.09	221.93	-87.28	101.72	0.00	0.00	0.00
3,300.00	5.33	338.530	3,288.66	230.57	-90.68	105.68	0.00	0.00	0.00
3,400.00	5.33	338.530	3,388.23	239.22	-94.08	109.64	0.00	0.00	0.00
3,500.00	5.33	338.530	3,487.79	247.87	-97.48	113.60	0.00	0.00	0.00
3,600.00	5.33	338.530	3,587.36	256.51	-100.89	117.57	0.00	0.00	0.00
3,700.00	5.33	338.530	3,686.93	265.16	-104.29	121.53	0.00	0.00	0.00
3,800.00	5.33	338.530	3,786.50	273.80	-107.69	125.49	0.00	0.00	0.00
3,900.00	5.33	338.530	3,886.06	282.45	-111.09	129.46	0.00	0.00	0.00
4,000.00	5.33	338.530	3,985.63	291.10	-114.49	133.42	0.00	0.00	0.00
4,100.00	5.33	338.530	4,085.20	299.74	-117.89	137.38	0.00	0.00	0.00
4,200.00	5.33	338.530	4,184.77	308.39	-121.29	141.34	0.00	0.00	0.00
4,300.00	5.33	338.530	4,284.33	317.03	-124.69	145.31	0.00	0.00	0.00
4,400.00	5.33	338.530	4,383.90	325.68	-128.09	149.27	0.00	0.00	0.00
4,500.00	5.33	338.530	4,483.47	334.33	-131.49	153.23	0.00	0.00	0.00
4,600.00	5.33	338.530	4,583.04	342.97	-134.89	157.19	0.00	0.00	0.00
4,700.00	5.33	338.530	4,682.60	351.62	-138.29	161.16	0.00	0.00	0.00
4,800.00	5.33	338.530	4,782.17	360.26	-141.69	165.12	0.00	0.00	0.00
4,900.00	5.33	338.530	4,881.74	368.91	-145.09	169.08	0.00	0.00	0.00
5,000.00	5.33	338.530	4,981.31	377.56	-148.49	173.05	0.00	0.00	0.00
5,100.00	5.33	338.530	5,080.87	386.20	-151.89	177.01	0.00	0.00	0.00
5,200.00	5.33	338.530	5,180.44	394.85	-155.29	180.97	0.00	0.00	0.00



Scientific Drilling, Intl Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Company:	Hilcorp Energy Corp.	TVD Reference:	GL 6050 @ 6050.00usft
Project:	San Juan, NM NAD27	MD Reference:	GL 6050 @ 6050.00usft
Site:	Trieb Fed Pad	North Reference:	True
Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	5.33	338.530	5,280.01	403.49	-158.69	184.93	0.00	0.00	0.00	
5,390.10	5.33	338.530	5,369.72	411.28	-161.76	188.50	0.00	0.00	0.00	
5,400.00	5.67	331.040	5,379.57	412.14	-162.16	188.96	8.00	3.40	-75.66	
5,500.00	11.82	294.494	5,478.43	420.72	-173.89	201.23	8.00	6.15	-36.55	
5,600.00	19.36	284.277	5,574.70	429.07	-199.31	227.15	8.00	7.54	-10.22	
5,700.00	27.16	279.713	5,666.51	437.02	-237.94	266.22	8.00	7.80	-4.56	
5,800.00	35.05	277.080	5,752.07	444.42	-289.01	317.67	8.00	7.89	-2.63	
5,900.00	42.97	275.316	5,829.71	451.13	-351.54	380.50	8.00	7.92	-1.76	
6,000.00	50.91	274.012	5,897.93	457.01	-424.31	453.50	8.00	7.94	-1.30	
6,100.00	58.87	272.974	5,955.40	461.95	-505.90	535.23	8.00	7.95	-1.04	
6,200.00	66.83	272.097	6,001.00	465.86	-594.72	624.12	8.00	7.96	-0.88	
6,300.00	74.80	271.319	6,033.84	468.66	-689.04	718.43	8.00	7.97	-0.78	
6,400.00	82.77	270.598	6,053.28	470.29	-787.04	816.32	8.00	7.97	-0.72	
6,488.58	89.83	269.982	6,059.00	470.73	-875.38	904.50	8.00	7.97	-0.70	
6,500.00	89.83	269.982	6,059.03	470.73	-886.80	915.89	0.00	0.00	0.00	
6,600.00	89.83	269.982	6,059.34	470.70	-986.80	1,015.67	0.00	0.00	0.00	
6,700.00	89.83	269.982	6,059.65	470.67	-1,086.80	1,115.45	0.00	0.00	0.00	
6,800.00	89.83	269.982	6,059.95	470.63	-1,186.80	1,215.23	0.00	0.00	0.00	
6,900.00	89.83	269.982	6,060.26	470.60	-1,286.80	1,315.01	0.00	0.00	0.00	
7,000.00	89.83	269.982	6,060.56	470.57	-1,386.79	1,414.79	0.00	0.00	0.00	
7,100.00	89.83	269.982	6,060.87	470.54	-1,486.79	1,514.57	0.00	0.00	0.00	
7,200.00	89.83	269.982	6,061.17	470.50	-1,586.79	1,614.35	0.00	0.00	0.00	
7,300.00	89.83	269.982	6,061.48	470.47	-1,686.79	1,714.13	0.00	0.00	0.00	
7,400.00	89.83	269.982	6,061.78	470.44	-1,786.79	1,813.91	0.00	0.00	0.00	
7,500.00	89.83	269.982	6,062.09	470.41	-1,886.79	1,913.69	0.00	0.00	0.00	
7,600.00	89.83	269.982	6,062.39	470.38	-1,986.79	2,013.47	0.00	0.00	0.00	
7,700.00	89.83	269.982	6,062.70	470.34	-2,086.79	2,113.25	0.00	0.00	0.00	
7,800.00	89.83	269.982	6,063.03	470.31	-2,186.79	2,213.03	0.00	0.00	0.00	
7,900.00	89.83	269.982	6,063.31	470.28	-2,286.79	2,312.81	0.00	0.00	0.00	
8,000.00	89.83	269.982	6,063.61	470.25	-2,386.79	2,412.59	0.00	0.00	0.00	
8,100.00	89.83	269.982	6,063.92	470.22	-2,486.79	2,512.37	0.00	0.00	0.00	
8,200.00	89.83	269.982	6,064.23	470.18	-2,586.79	2,612.15	0.00	0.00	0.00	
8,300.00	89.83	269.982	6,064.53	470.15	-2,686.79	2,711.93	0.00	0.00	0.00	
8,400.00	89.83	269.982	6,064.84	470.12	-2,786.79	2,811.71	0.00	0.00	0.00	
8,500.00	89.83	269.982	6,065.14	470.09	-2,886.79	2,911.49	0.00	0.00	0.00	
8,600.00	89.83	269.982	6,065.45	470.06	-2,986.79	3,011.27	0.00	0.00	0.00	
8,700.00	89.83	269.982	6,065.75	470.02	-3,086.79	3,111.05	0.00	0.00	0.00	
8,800.00	89.83	269.982	6,066.06	469.99	-3,186.79	3,210.83	0.00	0.00	0.00	
8,900.00	89.83	269.982	6,066.36	469.96	-3,286.79	3,310.61	0.00	0.00	0.00	
9,000.00	89.83	269.982	6,066.67	469.93	-3,386.79	3,410.39	0.00	0.00	0.00	
9,100.00	89.83	269.982	6,066.97	469.90	-3,486.79	3,510.17	0.00	0.00	0.00	
9,200.00	89.83	269.982	6,067.28	469.86	-3,586.78	3,609.95	0.00	0.00	0.00	
9,300.00	89.83	269.982	6,067.58	469.83	-3,686.78	3,709.73	0.00	0.00	0.00	
9,400.00	89.83	269.982	6,067.89	469.80	-3,786.78	3,809.51	0.00	0.00	0.00	
9,500.00	89.83	269.982	6,068.19	469.77	-3,886.78	3,909.29	0.00	0.00	0.00	
9,600.00	89.83	269.982	6,068.50	469.73	-3,986.78	4,009.07	0.00	0.00	0.00	
9,700.00	89.83	269.982	6,068.80	469.70	-4,086.78	4,108.85	0.00	0.00	0.00	
9,800.00	89.83	269.982	6,069.11	469.67	-4,186.78	4,208.63	0.00	0.00	0.00	
9,900.00	89.83	269.982	6,069.42	469.64	-4,286.78	4,308.41	0.00	0.00	0.00	
10,000.00	89.83	269.982	6,069.72	469.61	-4,386.78	4,408.19	0.00	0.00	0.00	
10,100.00	89.83	269.982	6,070.03	469.57	-4,486.78	4,507.97	0.00	0.00	0.00	
10,200.00	89.83	269.982	6,070.33	469.54	-4,586.78	4,607.75	0.00	0.00	0.00	
10,300.00	89.83	269.982	6,070.64	469.51	-4,686.78	4,707.53	0.00	0.00	0.00	
10,400.00	89.83	269.982	6,070.94	469.48	-4,786.78	4,807.31	0.00	0.00	0.00	



Scientific Drilling, Intl Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Trieb Federal Com 603 1H - Slot A01
Company:	Hilcorp Energy Corp.	TVD Reference:	GL 6050 @ 6050.00usft
Project:	San Juan, NM NAD27	MD Reference:	GL 6050 @ 6050.00usft
Site:	Trieb Fed Pad	North Reference:	True
Well:	Trieb Federal Com 603 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	89.83	269.982	6,071.25	469.45	-4,886.78	4,907.09	0.00	0.00	0.00
10,600.00	89.83	269.982	6,071.55	469.41	-4,986.78	5,006.87	0.00	0.00	0.00
10,700.00	89.83	269.982	6,071.86	469.38	-5,086.78	5,106.65	0.00	0.00	0.00
10,800.00	89.83	269.982	6,072.16	469.35	-5,186.78	5,206.43	0.00	0.00	0.00
10,900.00	89.83	269.982	6,072.47	469.32	-5,286.78	5,306.21	0.00	0.00	0.00
11,000.00	89.83	269.982	6,072.77	469.29	-5,386.78	5,405.99	0.00	0.00	0.00
11,100.00	89.83	269.982	6,073.08	469.25	-5,486.78	5,505.77	0.00	0.00	0.00
11,200.00	89.83	269.982	6,073.38	469.22	-5,586.78	5,605.55	0.00	0.00	0.00
11,300.00	89.83	269.982	6,073.69	469.19	-5,686.77	5,705.33	0.00	0.00	0.00
11,400.00	89.83	269.982	6,074.00	469.16	-5,786.77	5,805.11	0.00	0.00	0.00
11,500.00	89.83	269.982	6,074.30	469.13	-5,886.77	5,904.89	0.00	0.00	0.00
11,600.00	89.83	269.982	6,074.61	469.09	-5,986.77	6,004.67	0.00	0.00	0.00
11,700.00	89.83	269.982	6,074.91	469.06	-6,086.77	6,104.45	0.00	0.00	0.00
11,800.00	89.83	269.982	6,075.22	469.03	-6,186.77	6,204.23	0.00	0.00	0.00
11,900.00	89.83	269.982	6,075.52	469.00	-6,286.77	6,304.01	0.00	0.00	0.00
12,000.00	89.83	269.982	6,075.83	468.96	-6,386.77	6,403.79	0.00	0.00	0.00
12,100.00	89.83	269.982	6,076.13	468.93	-6,486.77	6,503.57	0.00	0.00	0.00
12,200.00	89.83	269.982	6,076.44	468.90	-6,586.77	6,603.35	0.00	0.00	0.00
12,300.00	89.83	269.982	6,076.74	468.87	-6,686.77	6,703.13	0.00	0.00	0.00
12,400.00	89.83	269.982	6,077.05	468.84	-6,786.77	6,802.91	0.00	0.00	0.00
12,500.00	89.83	269.982	6,077.35	468.80	-6,886.77	6,902.69	0.00	0.00	0.00
12,600.00	89.83	269.982	6,077.66	468.77	-6,986.77	7,002.47	0.00	0.00	0.00
12,700.00	89.83	269.982	6,077.96	468.74	-7,086.77	7,102.25	0.00	0.00	0.00
12,711.72	89.83	269.982	6,078.00	468.74	-7,098.49	7,113.95	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Trieb 603 1H LP - plan hits target center - Point	0.00	0.000	6,059.00	470.73	-875.38	2,099,700.94	484,971.65	36.7704380	-107.8846438
Trieb 603 1H BHL - plan hits target center - Point	0.00	0.000	6,078.00	468.74	-7,098.49	2,099,702.08	478,748.54	36.7704301	-107.9058910



Hilcorp Energy Company

Trieb Federal Com 603 1H

BOPE & Choke Manifold Schematic

13-5/8" BOPE

