

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

SEP 18 2013

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

5. Lease Serial No.
NMSF078459

6. If Indian, Allottee or Tribe Name

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an
abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2.

1. Type of Well

☐ Oil Well

☒ Gas Well

☐ Other

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No.

SAN JUAN 32-7 UNIT 203H

2. Name of Operator

Hilcorp Energy Company

9. API Well No.

30-045-27458

3a. Address

382 Road 3100, Aztec, NM 87410

3b. Phone No. (include area code)

505-599-3400

10. Field and Pool or Exploratory Area

Basin Fuitland Coal

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Surface Unit G (SW/NE) 1479' FNL & 1608' FEL, Sec. 22, T32N, R07W

Bottomhole Unit O (SW/SE) 370' FSL & 1739' FEL, Sec. 27, T32N, R07W

11. Country or Parish, State

San Juan, New Mexico

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Drill
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Lateral
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	Sidetrack

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof.

If the proposal is to deepen directionally or recomple horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once Testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Hilcorp Energy Company intends to utilize the existing wellbore, San Juan 32-7 Unit 203, and drill a lateral open hole sidetrack. The current wellbore is being used as a Pressure Observation Well, it will be converted to a producing Basin Fruitland Coal well. A RBP will be set @ 3040' and the window depth will be at 3015.5' MD/TVD. A 4-1/2" liner will be run inside the lateral and dropped off just outside the window. The 4-1/2" liner will be run outside the window, and not tied back into the pilot hole to allow production tubing to be run in the sump of the existing 7" casing. This allows produced water to be evacuated from the production casing. The whipstock will be recovered.

The C-102 and drilling plans are attached.

HOLD C104 FOR ~~AS~~ AS drilled C-102
directional
Survey

NM000

SEP 24 2018

DISTRICT III

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Priscilla Shorty

Title **Operations/Regulatory Technician - Sr.**

Signature

Priscilla Shorty

Date **9/17/2018**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Chip Harraden

Title **Geologist**

Date **9/18/18**

Conditions of approval, if any, are attached. Approval of this notice 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.

Office **BLM-FFO**

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.

NM000

AV

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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

¹ API Number 30-045-27458	² Pool Code 71629	³ Pool Name BASIN FRUITLAND COAL
⁴ Property Code 318434	⁵ Property Name SAN JUAN 32-7 UNIT	⁶ Well Number 203H
⁷ GRID No. 372171	⁸ Operator Name HILCORP ENERGY COMPANY	⁹ Elevation 6617'

¹⁰ Surface Location

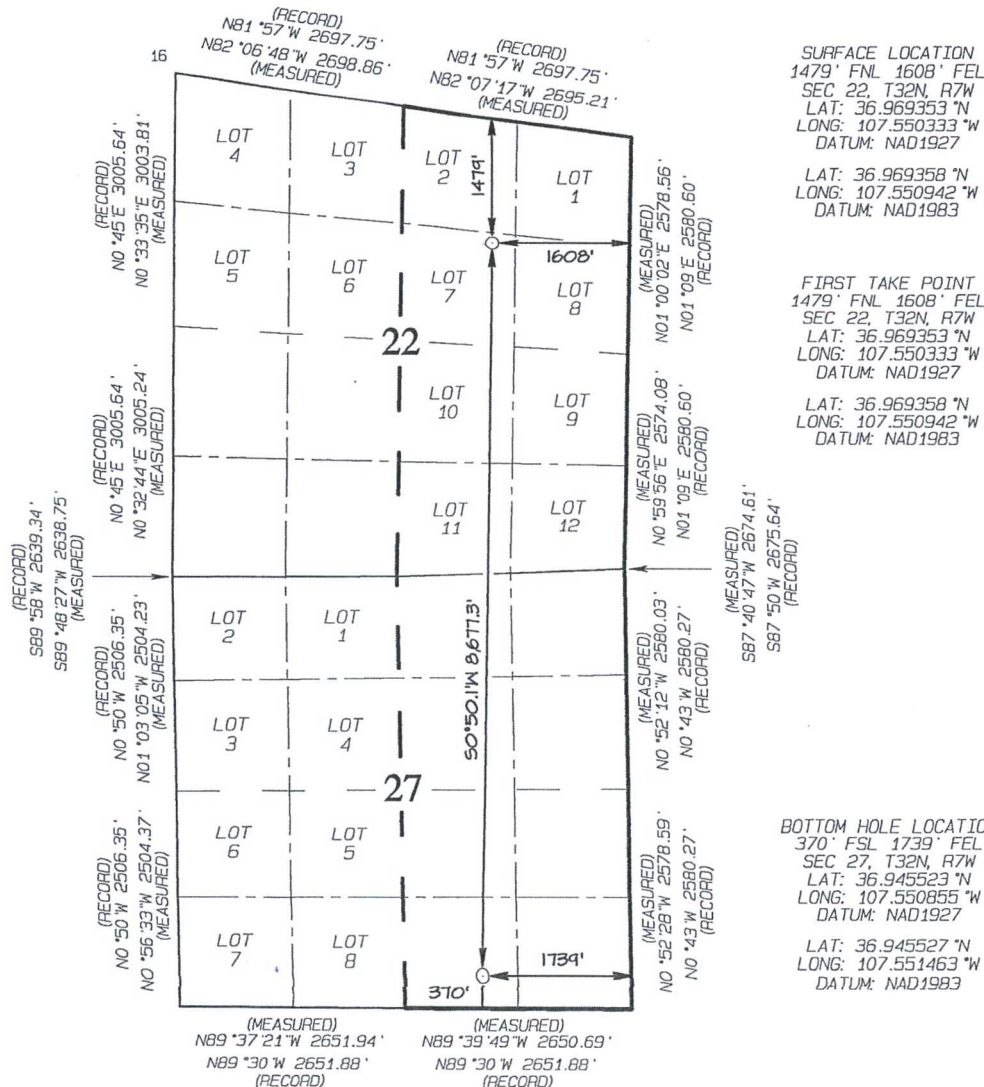
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	22	32N	7W	7	1479	NORTH	1608	EAST	SAN JUAN

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
0	27	32N	7W		370	SOUTH	1739	EAST	SAN JUAN

¹² Dedicated Acres 651.40	E/2 - Section 22 E/2 - Section 27	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



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 *Priscilla Shorty* Date *9/17/18*
Printed Name
Pshorty@hilcorp.com
E-mail Address

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: SEPTEMBER 4, 2018
Date of Survey: JUNE 11, 2018

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269



Hilcorp Energy Company

Technical Plan

1. Location

SAN JUAN 32-7 UNIT 203H ST (API: 3004527458)

SHL: 1479' FNL, 1608' FEL – Sec 22, T32N, R7W

BHL: 370' FSL, 1739' FEL – Sec 28, T32N, R7W

GL: 6,617'

2. Geological Markers

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

Formation	Depth (TVD)	Remarks
Ojo Alamo	2385'	Wet
Kirtland	2488'	Wet
Fruitland	2940'	Possible Gas/Water
Pictured Cliffs	3495'	Wet

See attached directional plan for anticipated formation tops in measured depth.

*Used SJ 32-7 Un 35 for tops; offsets were the Allison Un 24 which were approved during previous drill wells from NMOCD; log similar to offset near by; SJ 32-7 4-22

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 the minimum 2M standards.
- All equipment will have 3M pressure ratings.
- A rotating head will be rigged up on top of annular as seen in attached diagram.



Hilcorp Energy Company

San Juan 32-7 Unit 203H

4. Casing & Cement Program

A) The proposed casing program is outlined below:

Proposed Casing				
Casing	Hole Size	Casing Size	Weight/Grade	Set Depth
Surface (existing)	12-1/4"	9-5/8"	32#	0 - 227'
Intermediate (existing)	8-3/4"	7"	23#	0 - 3,205'
Prod Liner (Pre-drilled)	6-1/4"	4-1/2"	11.6# J-55/L-80	3,025' – 11,943.6' MD

The existing wellbore will be temporarily isolated with a RBP @ 3040'. The RBP will be recovered after drilling the lateral. Window depth is as follows:

Lat 1 – 3015.5' MD/ TVD

A 4-1/2" liner will be run inside the lateral and dropped off just outside the window.

The Whipstock and RBP will be recovered prior to producing the well.

The 4-1/2" liner will be run outside the window, and not tied back into the pilot hole to allow production tubing to be run in the sump of the existing 7" casing. This allows produced water to be evacuated from the production casing.

If the 6-1/4" hole is not drilled to total MD, the production liner setting depth and length will be adjusted accordingly.

B) Cement Information

There are no planned cmt jobs during the drilling of this well. Kick off plugs may be necessary if desired build rates are not achieved.

C) Centralizer Program

There are no centralizers being run on the 4-1/2" liner.



Hilcorp Energy Company

San Juan 32-7 Unit 203H

5. Drilling Fluids

A) The proposed drilling fluid program is outlined below:

Mud Program			
Interval	Mud Type	Weight (ppg)	Fluid Loss (cc)
Production	LSND Brine (if needed)*	8.5 - 10	4 - 14

In the production hole, Brine will be utilized only if a weighting agent is needed to raise MW (for either well control or wellbore stability purposes).

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

B) If brine is utilized, any cuttings drilled with brine will be hauled off to an approved disposal site. When brine is not utilized and cuttings pass tests for TCLP Metals (RCRCA 8) and TCLP Benzene, they will be hauled to the Bondad landfill.

6. Abnormal Pressures & Hazards

- No over-pressured intervals expected.
- Estimated Reservoir Pressure = 1500 psi.
- Maximum anticipated surface pressure = 1,300 psi
- No hydrogen sulfide gas is expected based on nearby well production.

7. Testing, Logging, Coring

Testing, Logging, Coring Procedure		
Evaluation Method	Start Depth	End depth
Mud Logs	KOP	TD
MWD Directional Surveys	KOP	TD
LWD GR	7" window	TD
Triple Combo	None Planned	
Temp Survey	None Planned	

8. Directional Plan

The planned wellbore directional plan and plot is attached.

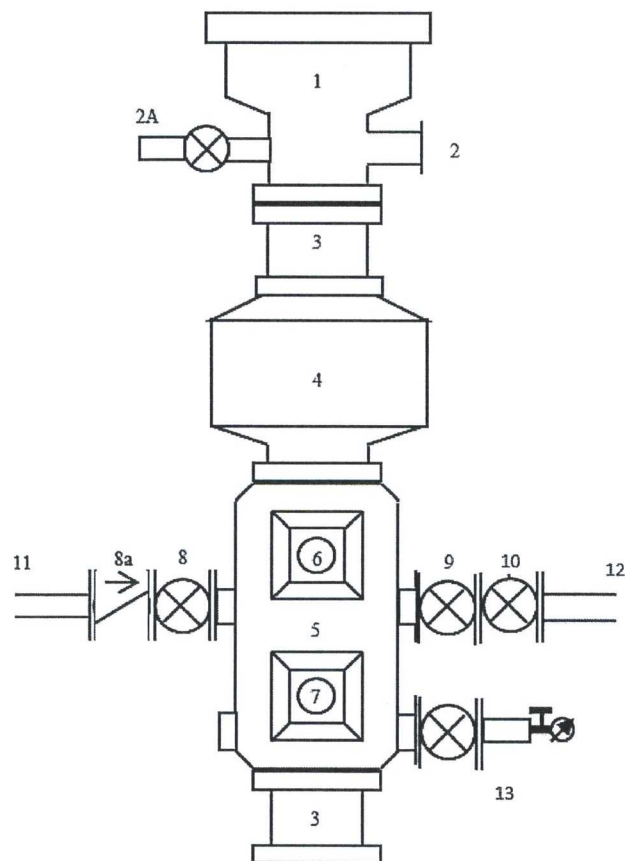
The planned directional plan is built off geological targets from offset wells. The production hole will be landed and drilled within target formation horizontally utilizing LWD equipment to help steer the wellbore. On site adjustments will be made to the directional plan as formation and hole indicates.



Hilcorp Energy Company

San Juan 32-7 Unit 203H
BOPE Schematic – Aztec 777

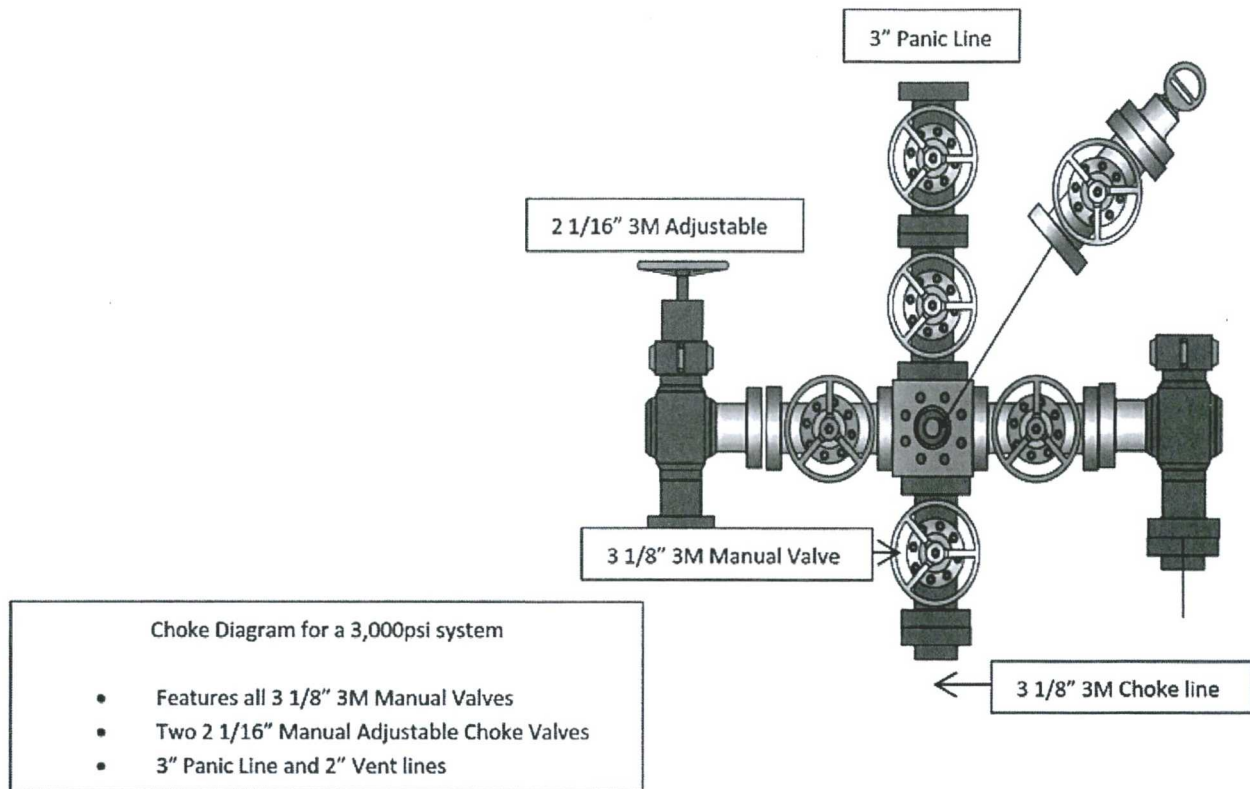
1. Rotating Head
2. Flow line
- 2A. Fill up line and valve
3. Spacer Spools (as needed)
4. 11" 3M Annular Preventer
5. 11" 3M Double Ram Preventer
6. Blind Rams
7. Pipe Rams
8. 3M Gate Valve (2")
- 8a. Check valve
9. 3M Manual Gate Valve (3")
10. 3M Manual Gate Valve (3")
11. Kill Line Connection, 2" hard line
12. Choke Line (3" Co-Flex)
13. Secondary outlet with valve, bull plug, needle valve, and pressure gauge





Hilcorp Energy Company

San Juan 32-7 Unit 203H
Choke Manifold Schematic – Aztec 777





Company: Hilcorp Energy Company
 Field: San Juan Co., NM (NAD27)
 Location: Sec.22-T32N-R07W
 Well: San Juan 32-7 Unit 203 ST
 Borehole: Lat 1
 Plan: Rev2



WELL DETAILS: San Juan 32-7 Unit 203 ST

+N/-S	+E/-W	North	GL 6617.00	KB @ 6632.00usft	Latitude	Longitude
0.00	0.00	2172235.13	Easting	582673.66	36.96935°N	107.55033°W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	3008.52	0.00	0.00	3008.52	0.00	0.00	0.00	0.00	0.00	FTP, Build 20°/100° DLS
2	3458.52	90.00	210.00	3295.00	-248.10	-143.24	20.00	210.00	250.16	LP, Begin Turn
3	4528.45	89.91	177.90	3295.83	-1272.94	-397.83	3.00	-90.16	1278.61	Hold Section
4	11936.61	89.91	177.90	3307.00	-8676.13	-126.66	0.00	0.00	8677.06	PBHL/TD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SJ 32-7 Unit 203 ST FTP	3008.52	0.00	0.00	36.96935°N	107.55033°W
SJ 32-7 Unit 203 ST PBHL/TD	3307.00	-8676.13	-126.66	36.94552°N	107.55085°W

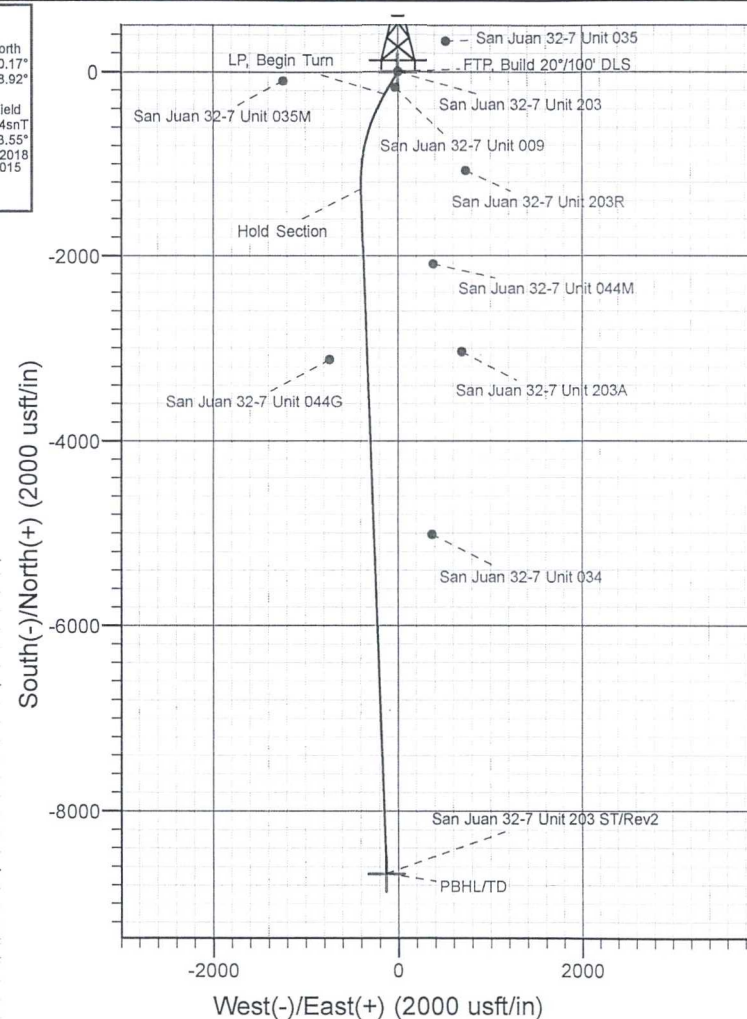
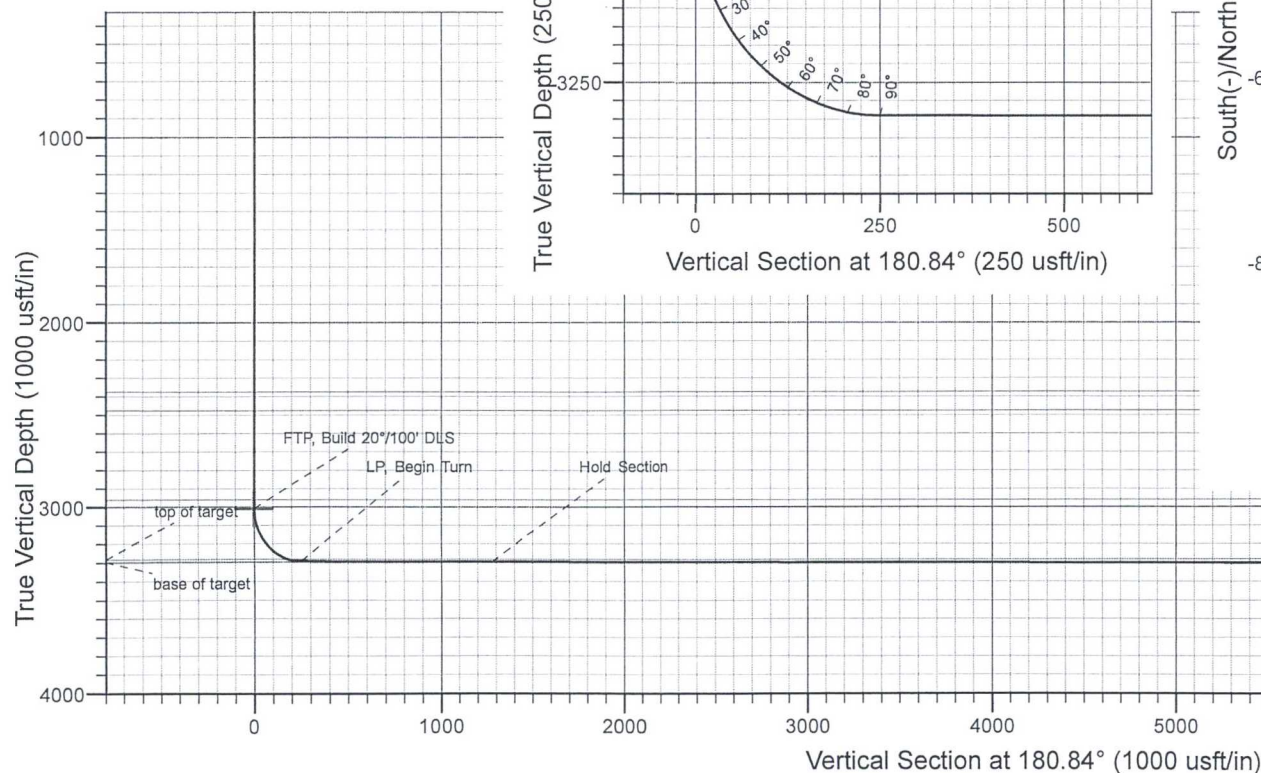
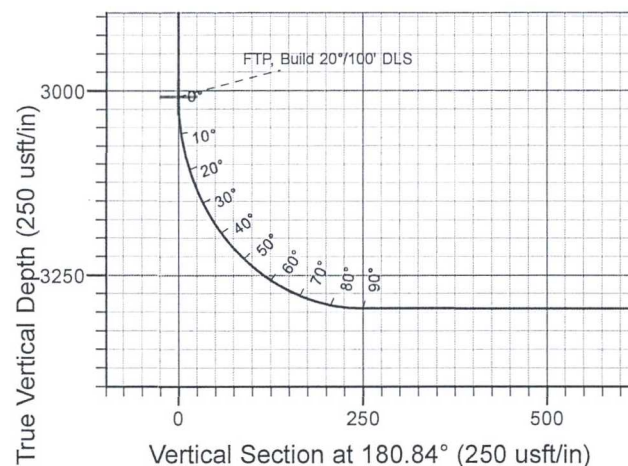
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2375.00	2375.00	Ojo Alamo
2476.00	2476.00	Kirtland
2962.00	2962.00	Fruitland
3282.00	3371.89	top of target
3297.00	5306.23	base of target



Azimuths to Grid North
 True North: -0.17°
 Magnetic North: 8.92°

Magnetic Field
 Strength: 50068.4nT
 Dip Angle: 63.55°
 Date: 08/02/2018
 Model: IGRF2015



San Juan 32-7 Unit 203 ST Rev2

Created By: J Rieke Date: 14:12, September 13 2018



Hilcorp Energy Company

San Juan Co., NM (NAD27)

Sec.22-T32N-R07W

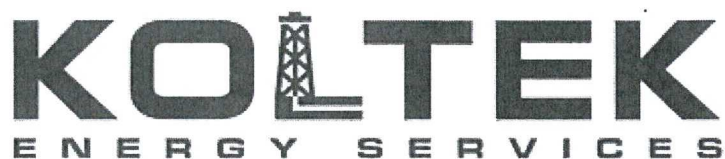
San Juan 32-7 Unit 203 ST

Lat 1

Plan: Rev2

Standard Planning Report - Geographic

13 September, 2018





Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Company:	Hilcorp Energy Company	TVD Reference:	KB @ 6632.00usft
Project:	San Juan Co., NM (NAD27)	MD Reference:	KB @ 6632.00usft
Site:	Sec.22-T32N-R07W	North Reference:	Grid
Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lat 1		
Design:	Rev2		

Project	San Juan Co., 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	Sec.22-T32N-R07W		
Site Position:		Northing:	2,172,455.60 usft
From:	Map	Easting:	582,510.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in
		Latitude:	36.96996°N
		Longitude:	107.55089°W
		Grid Convergence:	0.17 °

Well	San Juan 32-7 Unit 203 ST		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	36.96935°N
		Longitude:	107.55034°W
		Ground Level:	6,617.00 usft

Wellbore	Lat 1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	08/02/18	9.09
			Dip Angle
			(°)
			63.55
			Field Strength
			(nT)
			50,068

Design	Rev2		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			3,008.52
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	-7.00	0.00	0.00
			Direction
			(°)
			180.84

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100ft)	(°/100ft)	(°/100ft)		
3,008.52	0.00	0.00	3,008.52	0.00	0.00	0.00	0.00	0.00	0.00	
3,458.52	90.00	210.00	3,295.00	-248.10	-143.24	20.00	20.00	0.00	210.00	
4,528.45	89.91	177.90	3,295.83	-1,272.94	-397.83	3.00	-0.01	-3.00	-90.16	
11,936.61	89.91	177.90	3,307.00	-8,676.13	-126.66	0.00	0.00	0.00	0.00	SJ 32-7 Unit 203 ST F



Koltek Energy Services
Planning Report - Geographic



Database: EDM 5000.1 Single User Db
Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Site: Sec.22-T32N-R07W
Well: San Juan 32-7 Unit 203 ST
Wellbore: Lat 1
Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,008.52	0.00	0.00	3,008.52	0.00	0.00	2,172,235.13	582,673.66	36.96935°N	107.55034°W
FTP, Build 20°/100' DLS									
3,100.00	18.30	210.00	3,098.45	-12.54	-7.24	2,172,222.59	582,666.42	36.96932°N	107.55036°W
3,200.00	38.30	210.00	3,186.06	-53.39	-30.82	2,172,181.74	582,642.84	36.96921°N	107.55044°W
3,300.00	58.30	210.00	3,252.25	-117.71	-67.96	2,172,117.42	582,605.70	36.96903°N	107.55057°W
3,400.00	78.30	210.00	3,289.04	-197.77	-114.18	2,172,037.36	582,559.48	36.96881°N	107.55073°W
3,458.52	90.00	210.00	3,295.00	-248.10	-143.24	2,171,987.03	582,530.42	36.96867°N	107.55083°W
LP, Begin Turn									
3,500.00	90.00	208.76	3,295.00	-284.24	-163.59	2,171,950.89	582,510.07	36.96857°N	107.55090°W
3,600.00	89.99	205.76	3,295.01	-373.13	-209.38	2,171,862.00	582,464.28	36.96833°N	107.55106°W
3,700.00	89.98	202.76	3,295.04	-464.29	-250.45	2,171,770.84	582,423.21	36.96808°N	107.55120°W
3,800.00	89.97	199.76	3,295.08	-557.48	-286.70	2,171,677.65	582,386.96	36.96782°N	107.55132°W
3,900.00	89.96	196.76	3,295.14	-652.43	-318.03	2,171,582.70	582,355.64	36.96756°N	107.55143°W
4,000.00	89.95	193.76	3,295.21	-748.90	-344.34	2,171,486.23	582,329.33	36.96730°N	107.55152°W
4,100.00	89.95	190.76	3,295.30	-846.61	-365.56	2,171,388.52	582,308.10	36.96703°N	107.55160°W
4,200.00	89.94	187.76	3,295.40	-945.30	-381.64	2,171,289.83	582,292.02	36.96676°N	107.55165°W
4,300.00	89.93	184.76	3,295.52	-1,044.69	-392.54	2,171,190.44	582,281.12	36.96649°N	107.55169°W
4,400.00	89.92	181.76	3,295.64	-1,144.52	-398.22	2,171,090.61	582,275.44	36.96621°N	107.55171°W
4,500.00	89.92	178.76	3,295.78	-1,244.50	-398.66	2,170,990.63	582,275.00	36.96594°N	107.55171°W
4,528.45	89.91	177.90	3,295.83	-1,272.94	-397.83	2,170,962.19	582,275.83	36.96586°N	107.55171°W
Hold Section									
4,600.00	89.91	177.90	3,295.93	-1,344.44	-395.21	2,170,890.69	582,278.45	36.96566°N	107.55170°W
4,700.00	89.91	177.90	3,296.09	-1,444.38	-391.55	2,170,790.75	582,282.11	36.96539°N	107.55169°W
4,800.00	89.91	177.90	3,296.24	-1,544.31	-387.89	2,170,690.82	582,285.77	36.96512°N	107.55168°W
4,900.00	89.91	177.90	3,296.39	-1,644.24	-384.23	2,170,590.89	582,289.43	36.96484°N	107.55167°W
5,000.00	89.91	177.90	3,296.54	-1,744.18	-380.57	2,170,490.96	582,293.09	36.96457°N	107.55166°W
5,100.00	89.91	177.90	3,296.69	-1,844.11	-376.91	2,170,391.02	582,296.75	36.96429°N	107.55164°W
5,200.00	89.91	177.90	3,296.84	-1,944.04	-373.25	2,170,291.09	582,300.41	36.96402°N	107.55163°W
5,300.00	89.91	177.90	3,296.99	-2,043.97	-369.59	2,170,191.16	582,304.07	36.96374°N	107.55162°W
5,400.00	89.91	177.90	3,297.14	-2,143.91	-365.93	2,170,091.22	582,307.73	36.96347°N	107.55161°W
5,500.00	89.91	177.90	3,297.29	-2,243.84	-362.27	2,169,991.29	582,311.39	36.96319°N	107.55160°W
5,600.00	89.91	177.90	3,297.44	-2,343.77	-358.61	2,169,891.36	582,315.05	36.96292°N	107.55159°W
5,700.00	89.91	177.90	3,297.59	-2,443.71	-354.95	2,169,791.43	582,318.71	36.96264°N	107.55158°W
5,800.00	89.91	177.90	3,297.74	-2,543.64	-351.29	2,169,691.49	582,322.37	36.96237°N	107.55156°W
5,900.00	89.91	177.90	3,297.90	-2,643.57	-347.63	2,169,591.56	582,326.03	36.96210°N	107.55155°W
6,000.00	89.91	177.90	3,298.05	-2,743.50	-343.97	2,169,491.63	582,329.69	36.96182°N	107.55154°W
6,100.00	89.91	177.90	3,298.20	-2,843.44	-340.31	2,169,391.69	582,333.35	36.96155°N	107.55153°W
6,200.00	89.91	177.90	3,298.35	-2,943.37	-336.65	2,169,291.76	582,337.02	36.96127°N	107.55152°W
6,300.00	89.91	177.90	3,298.50	-3,043.30	-332.98	2,169,191.83	582,340.68	36.96100°N	107.55151°W
6,400.00	89.91	177.90	3,298.65	-3,143.24	-329.32	2,169,091.89	582,344.34	36.96072°N	107.55149°W
6,500.00	89.91	177.90	3,298.80	-3,243.17	-325.66	2,168,991.96	582,348.00	36.96045°N	107.55148°W
6,600.00	89.91	177.90	3,298.95	-3,343.10	-322.00	2,168,892.03	582,351.66	36.96017°N	107.55147°W
6,700.00	89.91	177.90	3,299.10	-3,443.03	-318.34	2,168,792.10	582,355.32	36.95990°N	107.55146°W
6,800.00	89.91	177.90	3,299.25	-3,542.97	-314.68	2,168,692.16	582,358.98	36.95962°N	107.55145°W
6,900.00	89.91	177.90	3,299.40	-3,642.90	-311.02	2,168,592.23	582,362.64	36.95935°N	107.55144°W
7,000.00	89.91	177.90	3,299.55	-3,742.83	-307.36	2,168,492.30	582,366.30	36.95908°N	107.55143°W
7,100.00	89.91	177.90	3,299.71	-3,842.77	-303.70	2,168,392.36	582,369.96	36.95880°N	107.55141°W
7,200.00	89.91	177.90	3,299.86	-3,942.70	-300.04	2,168,292.43	582,373.62	36.95853°N	107.55140°W
7,300.00	89.91	177.90	3,300.01	-4,042.63	-296.38	2,168,192.50	582,377.28	36.95825°N	107.55139°W
7,400.00	89.91	177.90	3,300.16	-4,142.56	-292.72	2,168,092.57	582,380.94	36.95798°N	107.55138°W
7,500.00	89.91	177.90	3,300.31	-4,242.50	-289.06	2,167,992.63	582,384.60	36.95770°N	107.55137°W
7,600.00	89.91	177.90	3,300.46	-4,342.43	-285.40	2,167,892.70	582,388.26	36.95743°N	107.55136°W
7,700.00	89.91	177.90	3,300.61	-4,442.36	-281.74	2,167,792.77	582,391.92	36.95715°N	107.55135°W
7,800.00	89.91	177.90	3,300.76	-4,542.30	-278.08	2,167,692.83	582,395.58	36.95688°N	107.55133°W



Koltek Energy Services
Planning Report - Geographic



Database: EDM 5000.1 Single User Db
Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Site: Sec.22-T32N-R07W
Well: San Juan 32-7 Unit 203 ST
Wellbore: Lat 1
Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
7,900.00	89.91	177.90	3,300.91	-4,642.23	-274.42	2,167,592.90	582,399.24	36.95660°N	107.55132°W
8,000.00	89.91	177.90	3,301.06	-4,742.16	-270.76	2,167,492.97	582,402.90	36.95633°N	107.55131°W
8,100.00	89.91	177.90	3,301.21	-4,842.09	-267.10	2,167,393.04	582,406.56	36.95606°N	107.55130°W
8,200.00	89.91	177.90	3,301.36	-4,942.03	-263.44	2,167,293.10	582,410.22	36.95578°N	107.55129°W
8,300.00	89.91	177.90	3,301.52	-5,041.96	-259.78	2,167,193.17	582,413.89	36.95551°N	107.55128°W
8,400.00	89.91	177.90	3,301.67	-5,141.89	-256.11	2,167,093.24	582,417.55	36.95523°N	107.55126°W
8,500.00	89.91	177.90	3,301.82	-5,241.83	-252.45	2,166,993.30	582,421.21	36.95496°N	107.55125°W
8,600.00	89.91	177.90	3,301.97	-5,341.76	-248.79	2,166,893.37	582,424.87	36.95468°N	107.55124°W
8,700.00	89.91	177.90	3,302.12	-5,441.69	-245.13	2,166,793.44	582,428.53	36.95441°N	107.55123°W
8,800.00	89.91	177.90	3,302.27	-5,541.62	-241.47	2,166,693.51	582,432.19	36.95413°N	107.55122°W
8,900.00	89.91	177.90	3,302.42	-5,641.56	-237.81	2,166,593.57	582,435.85	36.95386°N	107.55121°W
9,000.00	89.91	177.90	3,302.57	-5,741.49	-234.15	2,166,493.64	582,439.51	36.95359°N	107.55120°W
9,100.00	89.91	177.90	3,302.72	-5,841.42	-230.49	2,166,393.71	582,443.17	36.95331°N	107.55118°W
9,200.00	89.91	177.90	3,302.87	-5,941.36	-226.83	2,166,293.77	582,446.83	36.95304°N	107.55117°W
9,300.00	89.91	177.90	3,303.02	-6,041.29	-223.17	2,166,193.84	582,450.49	36.95276°N	107.55116°W
9,400.00	89.91	177.90	3,303.17	-6,141.22	-219.51	2,166,093.91	582,454.15	36.95249°N	107.55115°W
9,500.00	89.91	177.90	3,303.33	-6,241.15	-215.85	2,165,993.98	582,457.81	36.95221°N	107.55114°W
9,600.00	89.91	177.90	3,303.48	-6,341.09	-212.19	2,165,894.04	582,461.47	36.95194°N	107.55113°W
9,700.00	89.91	177.90	3,303.63	-6,441.02	-208.53	2,165,794.11	582,465.13	36.95166°N	107.55111°W
9,800.00	89.91	177.90	3,303.78	-6,540.95	-204.87	2,165,694.18	582,468.79	36.95139°N	107.55110°W
9,900.00	89.91	177.90	3,303.93	-6,640.89	-201.21	2,165,594.24	582,472.45	36.95111°N	107.55109°W
10,000.00	89.91	177.90	3,304.08	-6,740.82	-197.55	2,165,494.31	582,476.11	36.95084°N	107.55108°W
10,100.00	89.91	177.90	3,304.23	-6,840.75	-193.89	2,165,394.38	582,479.77	36.95057°N	107.55107°W
10,200.00	89.91	177.90	3,304.38	-6,940.68	-190.23	2,165,294.45	582,483.43	36.95029°N	107.55106°W
10,300.00	89.91	177.90	3,304.53	-7,040.62	-186.57	2,165,194.51	582,487.10	36.95002°N	107.55105°W
10,400.00	89.91	177.90	3,304.68	-7,140.55	-182.91	2,165,094.58	582,490.76	36.94974°N	107.55103°W
10,500.00	89.91	177.90	3,304.83	-7,240.48	-179.24	2,164,994.65	582,494.42	36.94947°N	107.55102°W
10,600.00	89.91	177.90	3,304.98	-7,340.42	-175.58	2,164,894.71	582,498.08	36.94919°N	107.55101°W
10,700.00	89.91	177.90	3,305.14	-7,440.35	-171.92	2,164,794.78	582,501.74	36.94892°N	107.55100°W
10,800.00	89.91	177.90	3,305.29	-7,540.28	-168.26	2,164,694.85	582,505.40	36.94864°N	107.55099°W
10,900.00	89.91	177.90	3,305.44	-7,640.21	-164.60	2,164,594.92	582,509.06	36.94837°N	107.55098°W
11,000.00	89.91	177.90	3,305.59	-7,740.15	-160.94	2,164,494.98	582,512.72	36.94809°N	107.55097°W
11,100.00	89.91	177.90	3,305.74	-7,840.08	-157.28	2,164,395.05	582,516.38	36.94782°N	107.55095°W
11,200.00	89.91	177.90	3,305.89	-7,940.01	-153.62	2,164,295.12	582,520.04	36.94755°N	107.55094°W
11,300.00	89.91	177.90	3,306.04	-8,039.95	-149.96	2,164,195.18	582,523.70	36.94727°N	107.55093°W
11,400.00	89.91	177.90	3,306.19	-8,139.88	-146.30	2,164,095.25	582,527.36	36.94700°N	107.55092°W
11,500.00	89.91	177.90	3,306.34	-8,239.81	-142.64	2,163,995.32	582,531.02	36.94672°N	107.55091°W
11,600.00	89.91	177.90	3,306.49	-8,339.74	-138.98	2,163,895.39	582,534.68	36.94645°N	107.55090°W
11,700.00	89.91	177.90	3,306.64	-8,439.68	-135.32	2,163,795.45	582,538.34	36.94617°N	107.55088°W
11,800.00	89.91	177.90	3,306.79	-8,539.61	-131.66	2,163,695.52	582,542.00	36.94590°N	107.55087°W
11,900.00	89.91	177.90	3,306.94	-8,639.54	-128.00	2,163,595.59	582,545.66	36.94562°N	107.55086°W
11,936.61	89.91	177.90	3,307.00	-8,676.13	-126.66	2,163,559.00	582,547.00	36.94552°N	107.55086°W

PBHL/TD



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Company:	Hilcorp Energy Company	TVD Reference:	KB @ 6632.00usft
Project:	San Juan Co., NM (NAD27)	MD Reference:	KB @ 6632.00usft
Site:	Sec.22-T32N-R07W	North Reference:	Grid
Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lat 1		
Design:	Rev2		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
SJ 32-7 Unit 203 ST FTI	0.00	0.00	3,008.52	0.00	0.00	2,172,235.13	582,673.66	36.96935°N	107.55034°W
- plan hits target center									
- Point									
SJ 32-7 Unit 203 ST PBI	0.00	0.01	3,307.00	-8,676.13	-126.66	2,163,559.00	582,547.00	36.94552°N	107.55086°W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
2,375.00	2,375.00	Ojo Alamo		0.00		
2,476.00	2,476.00	Kirtland		0.00		
2,962.00	2,962.00	Fruitland		0.00		
3,371.89	3,282.00	top of target		0.00		
5,306.23	3,297.00	base of target		0.00		

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	Comment	
3,008.52	3,008.52	0.00	0.00	FTP, Build 20°/100' DLS	
3,458.52	3,295.00	-248.10	-143.24	LP, Begin Turn	
4,528.45	3,295.83	-1,272.94	-397.83	Hold Section	
11,936.61	3,307.00	-8,676.13	-126.66	PBHL/TD	



Hilcorp Energy Company

San Juan Co., NM (NAD27)

Sec.22-T32N-R07W

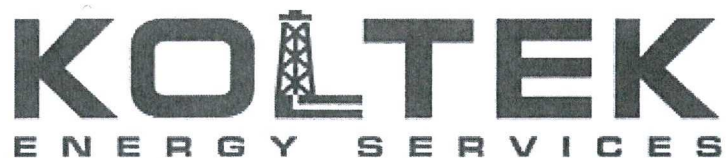
San Juan 32-7 Unit 203 ST

Lat 1

Rev2

Anticollision Report

13 September, 2018





Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Reference	Rev2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	09/13/18		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
-7.00	3,008.52	Pilot Hole (Original Hole)	MWD	MWD - Standard	
3,008.52	11,936.61	Rev2 (Lat 1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec.22-T32N-R07W						
San Juan 32-7 Unit 009 - Original Hole - Original Hole	3,334.23	3,137.46	56.99	7.81	1.159	Level 2, CC, ES, SF
San Juan 32-7 Unit 035 - Original Hole - Original Hole	3,008.52	3,039.52	616.72	569.67	13.107	CC, ES
San Juan 32-7 Unit 035 - Original Hole - Original Hole	3,025.00	3,055.99	617.14	569.91	13.066	SF
San Juan 32-7 Unit 035M - Original Hole - Original Hole	3,727.76	3,335.40	1,055.76	862.70	5.469	CC, ES
San Juan 32-7 Unit 035M - Original Hole - Original Hole	3,900.00	3,335.16	1,077.34	876.67	5.369	SF
San Juan 32-7 Unit 044G - Original Hole - Original Hole	6,368.66	3,186.60	410.51	311.93	4.164	CC, ES
San Juan 32-7 Unit 044G - Original Hole - Original Hole	6,400.00	3,186.65	411.71	312.55	4.152	SF
San Juan 32-7 Unit 044M - Original Hole - Original Hole	5,373.15	3,246.10	748.46	667.10	9.199	CC, ES
San Juan 32-7 Unit 044M - Original Hole - Original Hole	5,500.00	3,246.29	759.13	675.52	9.079	SF
San Juan 32-7 Unit 203 - Original Hole - Original Hole	2,393.00	2,385.06	0.00	-94.23	0.000	Level 1, CC, ES, SF
San Juan 32-7 Unit 203A - Original Hole - Original Hole	6,333.52	3,280.85	1,023.98	735.77	3.553	CC, ES
San Juan 32-7 Unit 203A - Original Hole - Original Hole	6,400.00	3,280.95	1,026.13	736.70	3.545	SF
San Juan 32-7 Unit 203R - Original Hole - Original Hole	4,151.17	3,253.41	1,120.43	976.02	7.759	CC
San Juan 32-7 Unit 203R - Original Hole - Original Hole	4,200.00	3,253.46	1,120.87	975.41	7.706	ES
San Juan 32-7 Unit 203R - Original Hole - Original Hole	4,400.00	3,253.71	1,131.78	982.75	7.594	SF
Sec.27-T32N-R07W						
San Juan 32-7 Unit 034 - Original Hole - Original Hole	8,294.12	3,269.51	626.80	491.33	4.627	CC
San Juan 32-7 Unit 034 - Original Hole - Original Hole	8,300.00	3,269.52	626.83	491.24	4.623	ES, SF

Offset Design	Sec.22-T32N-R07W - San Juan 32-7 Unit 009 - Original Hole - Original Hole											Offset Site Error:	0.00 usft
Survey Program:	5975-INC											Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		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	Warning
-7.00	-7.00	0.00	0.00	0.00	0.00	-168.94	-172.30	-33.67	223.31				
0.00	0.00	0.00	0.00	0.00	0.00	-168.94	-172.30	-33.67	219.05				
93.00	93.00	0.00	0.00	0.09	0.00	-168.94	-172.30	-33.67	179.63	179.54	0.09	2,044.479	
146.89	146.89	15.89	15.89	0.21	0.21	-168.94	-172.30	-33.67	175.56	175.14	0.42	417.480	
193.00	193.00	62.00	62.00	0.31	0.83	-168.94	-172.30	-33.67	175.56	174.42	1.14	154.262	
293.00	293.00	162.00	162.00	0.54	2.16	-168.94	-172.30	-33.67	175.56	172.87	2.69	65.163	
393.00	393.00	262.00	262.00	0.76	3.49	-168.94	-172.30	-33.67	175.56	171.31	4.25	41.305	
493.00	493.00	362.00	362.00	0.99	4.82	-168.94	-172.30	-33.67	175.56	169.75	5.81	30.236	

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 009 - Original Hole - Original Hole													Offset Site Error: 0.00 usft	
Survey Program: 5975-INC													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)			
593.00	593.00	462.00	462.00	1.21	6.15	-168.94	-172.30	-33.67	175.56	168.20	7.36	23.845		
693.00	693.00	562.00	562.00	1.44	7.48	-168.94	-172.30	-33.67	175.56	166.64	8.92	19.685		
793.00	793.00	662.00	662.00	1.66	8.81	-168.94	-172.30	-33.67	175.56	165.09	10.47	16.760		
893.00	893.00	762.00	762.00	1.89	10.15	-168.94	-172.30	-33.67	175.56	163.53	12.03	14.592		
993.00	993.00	862.00	862.00	2.11	11.48	-168.94	-172.30	-33.67	175.56	161.97	13.59	12.921		
1,093.00	1,093.00	962.00	962.00	2.34	12.81	-168.94	-172.30	-33.67	175.56	160.42	15.14	11.593		
1,193.00	1,193.00	1,062.00	1,062.00	2.56	14.14	-168.94	-172.30	-33.67	175.56	158.86	16.70	10.513		
1,293.00	1,293.00	1,162.00	1,162.00	2.78	15.47	-168.94	-172.30	-33.67	175.56	157.30	18.26	9.617		
1,393.00	1,393.00	1,262.00	1,262.00	3.01	16.80	-168.94	-172.30	-33.67	175.56	155.75	19.81	8.862		
1,493.00	1,493.00	1,362.00	1,362.00	3.23	18.13	-168.94	-172.30	-33.67	175.56	154.19	21.37	8.216		
1,593.00	1,593.00	1,462.00	1,462.00	3.46	19.46	-168.94	-172.30	-33.67	175.56	152.64	22.92	7.658		
1,693.00	1,693.00	1,562.00	1,562.00	3.68	20.80	-168.94	-172.30	-33.67	175.56	151.08	24.48	7.172		
1,793.00	1,793.00	1,662.00	1,662.00	3.91	22.13	-168.94	-172.30	-33.67	175.56	149.52	26.04	6.743		
1,893.00	1,893.00	1,762.00	1,762.00	4.13	23.46	-168.94	-172.30	-33.67	175.56	147.97	27.59	6.363		
1,993.00	1,993.00	1,862.00	1,862.00	4.36	24.79	-168.94	-172.30	-33.67	175.56	146.41	29.15	6.023		
2,093.00	2,093.00	1,962.00	1,962.00	4.58	26.12	-168.94	-172.30	-33.67	175.56	144.86	30.70	5.718		
2,193.00	2,193.00	2,062.00	2,062.00	4.81	27.45	-168.94	-172.30	-33.67	175.56	143.30	32.26	5.442		
2,293.00	2,293.00	2,162.00	2,162.00	5.03	28.78	-168.94	-172.30	-33.67	175.56	141.74	33.82	5.192		
2,393.00	2,393.00	2,262.00	2,262.00	5.26	30.12	-168.94	-172.30	-33.67	175.56	140.19	35.37	4.963		
2,493.00	2,493.00	2,362.00	2,362.00	5.48	31.45	-168.94	-172.30	-33.67	175.56	138.63	36.93	4.754		
2,593.00	2,593.00	2,462.00	2,462.00	5.71	32.78	-168.94	-172.30	-33.67	175.56	137.08	38.48	4.562		
2,693.00	2,693.00	2,562.00	2,562.00	5.93	34.11	-168.94	-172.30	-33.67	175.56	135.52	40.04	4.385		
2,793.00	2,793.00	2,662.00	2,662.00	6.16	35.44	-168.94	-172.30	-33.67	175.56	133.96	41.60	4.220		
2,893.00	2,893.00	2,762.00	2,762.00	6.38	36.77	-168.94	-172.30	-33.67	175.56	132.41	43.15	4.068		
2,993.00	2,993.00	2,862.00	2,862.00	6.61	38.10	-168.94	-172.30	-33.67	175.56	130.85	44.71	3.927		
3,008.52	3,008.52	2,877.52	2,877.52	6.64	38.31	-168.94	-172.30	-33.67	175.56	130.61	44.95	3.906		
3,025.00	3,024.99	2,893.99	2,893.99	6.66	38.53	-19.02	-172.30	-33.67	175.11	129.99	45.12	3.881		
3,050.00	3,049.86	2,918.86	2,918.86	6.67	38.86	-19.45	-172.30	-33.67	172.73	127.62	45.11	3.829		
3,075.00	3,074.40	2,943.40	2,943.40	6.68	39.19	-20.29	-172.30	-33.67	168.32	123.53	44.79	3.758		
3,100.00	3,098.45	2,967.45	2,967.45	6.70	39.51	-21.61	-172.30	-33.67	161.93	117.73	44.20	3.664		
3,125.00	3,121.82	2,990.82	2,990.82	6.73	39.82	-23.50	-172.30	-33.67	153.66	110.27	43.38	3.542		
3,150.00	3,144.32	3,013.32	3,013.32	6.76	40.12	-26.15	-172.30	-33.67	143.61	101.18	42.44	3.384		
3,175.00	3,165.79	3,034.79	3,034.79	6.79	40.40	-29.81	-172.30	-33.67	131.97	90.44	41.53	3.178		
3,200.00	3,186.06	3,055.06	3,055.06	6.83	40.67	-34.82	-172.30	-33.67	118.95	78.01	40.94	2.905		
3,225.00	3,204.98	3,073.98	3,073.98	6.88	40.93	-41.64	-172.30	-33.67	104.91	63.80	41.11	2.552		
3,250.00	3,222.40	3,091.40	3,091.40	6.92	41.16	-50.68	-172.30	-33.67	90.39	47.96	42.44	2.130		
3,275.00	3,238.20	3,107.20	3,107.20	7.03	41.37	-61.96	-172.30	-33.67	76.34	31.46	44.88	1.701		
3,300.00	3,252.25	3,121.25	3,121.25	7.17	41.56	-74.48	-172.30	-33.67	64.47	17.00	47.47	1.358 Level 3		
3,325.00	3,264.44	3,133.44	3,133.44	7.34	41.72	-86.25	-172.30	-33.67	57.60	8.62	48.98	1.176 Level 2		
3,334.23	3,268.46	3,137.46	3,137.46	7.41	41.77	-90.00	-172.30	-33.67	56.99	7.81	49.19	1.159 Level 2, CC, ES, SF		
3,350.00	3,274.69	3,143.69	3,143.69	7.54	41.85	-95.37	-172.30	-33.67	58.80	9.59	49.21	1.195 Level 2		
3,375.00	3,282.91	3,151.91	3,151.91	7.77	41.96	-100.87	-172.30	-33.67	68.55	19.62	48.93	1.401 Level 3		
3,400.00	3,289.04	3,158.04	3,158.04	8.03	42.04	-102.51	-172.30	-33.67	84.45	35.49	48.96	1.725		
3,425.00	3,293.04	3,162.04	3,162.04	8.31	42.10	-100.10	-172.30	-33.67	103.99	54.34	49.65	2.094		
3,450.00	3,294.87	3,163.87	3,163.87	8.61	42.12	-93.34	-172.30	-33.67	125.59	74.94	50.65	2.480		
3,458.52	3,295.00	3,164.00	3,164.00	8.72	42.12	-90.00	-172.30	-33.67	133.23	82.39	50.84	2.621		
3,500.00	3,295.00	3,164.00	3,164.00	9.23	42.12	-90.01	-172.30	-33.67	171.49	120.14	51.36	3.339		
3,600.00	3,295.01	3,164.01	3,164.01	10.55	42.12	-90.04	-172.30	-33.67	266.85	214.18	52.66	5.067		
3,700.00	3,295.04	3,164.04	3,164.04	12.01	42.12	-90.08	-172.30	-33.67	363.67	309.57	54.10	6.722		
3,800.00	3,295.08	3,164.08	3,164.08	13.56	42.13	-90.12	-172.30	-33.67	460.86	405.26	55.59	8.290		
3,900.00	3,295.14	3,164.14	3,164.14	15.14	42.13	-90.15	-172.30	-33.67	558.02	500.91	57.11	9.772		
4,000.00	3,295.21	3,164.21	3,164.21	16.74	42.13	-90.18	-172.30	-33.67	654.97	596.35	58.61	11.174		

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 009 - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 5975-INC												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
4,100.00	3,295.30	3,164.30	3,164.30	18.36	42.13	-90.19	-172.30	-33.67	751.56	691.47	60.09	12.506	
4,200.00	3,295.40	3,164.40	3,164.40	19.96	42.13	-90.21	-172.30	-33.67	847.71	786.16	61.54	13.774	
4,300.00	3,295.52	3,164.52	3,164.52	21.57	42.13	-90.22	-172.30	-33.67	943.32	880.37	62.95	14.985	
4,400.00	3,295.64	3,164.64	3,164.64	23.16	42.13	-90.23	-172.30	-33.67	1,038.31	974.00	64.31	16.145	
4,500.00	3,295.78	3,164.78	3,164.78	24.75	42.13	-90.23	-172.30	-33.67	1,132.62	1,067.00	65.63	17.258	
4,528.45	3,295.83	3,164.83	3,164.83	25.21	42.14	-90.23	-172.30	-33.67	1,159.32	1,093.32	65.99	17.567	
4,600.00	3,295.93	3,164.93	3,164.93	26.31	42.14	-90.25	-172.30	-33.67	1,226.63	1,159.47	67.16	18.263	
4,700.00	3,296.09	3,165.09	3,165.09	27.84	42.14	-90.27	-172.30	-33.67	1,321.46	1,252.69	68.77	19.215	
4,800.00	3,296.24	3,165.24	3,165.24	29.41	42.14	-90.29	-172.30	-33.67	1,417.00	1,346.58	70.42	20.122	
4,900.00	3,296.39	3,165.39	3,165.39	31.01	42.14	-90.31	-172.30	-33.67	1,513.11	1,441.02	72.09	20.988	
5,000.00	3,296.54	3,165.54	3,165.54	32.65	42.14	-90.33	-172.30	-33.67	1,609.70	1,535.91	73.79	21.814	
5,100.00	3,296.69	3,165.69	3,165.69	34.31	42.15	-90.35	-172.30	-33.67	1,706.68	1,631.17	75.51	22.601	
5,200.00	3,296.84	3,165.84	3,165.84	35.99	42.15	-90.38	-172.30	-33.67	1,803.99	1,726.74	77.25	23.352	
5,300.00	3,296.99	3,165.99	3,165.99	37.70	42.15	-90.40	-172.30	-33.67	1,901.58	1,822.57	79.00	24.069	
5,400.00	3,297.14	3,166.14	3,166.14	39.42	42.15	-90.42	-172.30	-33.67	1,999.41	1,918.63	80.77	24.754	
5,500.00	3,297.29	3,166.29	3,166.29	41.15	42.15	-90.44	-172.30	-33.67	2,097.44	2,014.89	82.55	25.408	
5,600.00	3,297.44	3,166.44	3,166.44	42.90	42.16	-90.46	-172.30	-33.67	2,195.65	2,111.31	84.34	26.034	
5,700.00	3,297.59	3,166.59	3,166.59	44.67	42.16	-90.48	-172.30	-33.67	2,294.01	2,207.88	86.14	26.632	
5,800.00	3,297.74	3,166.74	3,166.74	46.44	42.16	-90.50	-172.30	-33.67	2,392.51	2,304.57	87.94	27.205	
5,900.00	3,297.90	3,166.90	3,166.90	48.22	42.16	-90.53	-172.30	-33.67	2,491.13	2,401.38	89.76	27.755	
6,000.00	3,298.05	3,167.05	3,167.05	50.01	42.16	-90.55	-172.30	-33.67	2,589.86	2,498.28	91.57	28.282	
6,100.00	3,298.20	3,167.20	3,167.20	51.81	42.17	-90.57	-172.30	-33.67	2,688.68	2,595.28	93.40	28.787	
6,200.00	3,298.35	3,167.35	3,167.35	53.61	42.17	-90.59	-172.30	-33.67	2,787.58	2,692.35	95.23	29.273	
6,300.00	3,298.50	3,167.50	3,167.50	55.43	42.17	-90.61	-172.30	-33.67	2,886.56	2,789.50	97.06	29.740	
6,400.00	3,298.65	3,167.65	3,167.65	57.24	42.17	-90.63	-172.30	-33.67	2,985.61	2,886.71	98.90	30.189	
6,500.00	3,298.80	3,167.80	3,167.80	59.06	42.17	-90.65	-172.30	-33.67	3,084.72	2,983.98	100.74	30.621	
6,600.00	3,298.95	3,167.95	3,167.95	60.89	42.18	-90.68	-172.30	-33.67	3,183.88	3,081.30	102.58	31.037	
6,700.00	3,299.10	3,168.10	3,168.10	62.72	42.18	-90.70	-172.30	-33.67	3,283.10	3,178.67	104.43	31.438	
6,800.00	3,299.25	3,168.25	3,168.25	64.55	42.18	-90.72	-172.30	-33.67	3,382.36	3,276.08	106.28	31.824	
6,900.00	3,299.40	3,168.40	3,168.40	66.39	42.18	-90.74	-172.30	-33.67	3,481.66	3,373.53	108.14	32.197	
7,000.00	3,299.55	3,168.55	3,168.55	68.23	42.18	-90.76	-172.30	-33.67	3,581.01	3,471.02	109.99	32.557	
7,100.00	3,299.71	3,168.71	3,168.71	70.07	42.19	-90.78	-172.30	-33.67	3,680.38	3,568.54	111.85	32.905	
7,200.00	3,299.86	3,168.86	3,168.86	71.92	42.19	-90.80	-172.30	-33.67	3,779.79	3,666.09	113.71	33.241	
7,300.00	3,300.01	3,169.01	3,169.01	73.77	42.19	-90.82	-172.30	-33.67	3,879.24	3,763.67	115.57	33.567	
7,400.00	3,300.16	3,169.16	3,169.16	75.62	42.19	-90.85	-172.30	-33.67	3,978.71	3,861.27	117.43	33.881	
7,500.00	3,300.31	3,169.31	3,169.31	77.47	42.19	-90.87	-172.30	-33.67	4,078.20	3,958.91	119.30	34.186	
7,600.00	3,300.46	3,169.46	3,169.46	79.33	42.20	-90.89	-172.30	-33.67	4,177.72	4,056.56	121.16	34.481	
7,700.00	3,300.61	3,169.61	3,169.61	81.18	42.20	-90.91	-172.30	-33.67	4,277.26	4,154.23	123.03	34.767	
7,800.00	3,300.76	3,169.76	3,169.76	83.04	42.20	-90.93	-172.30	-33.67	4,376.82	4,251.93	124.90	35.044	
7,900.00	3,300.91	3,169.91	3,169.91	84.90	42.20	-90.95	-172.30	-33.67	4,476.41	4,349.64	126.77	35.313	
8,000.00	3,301.06	3,170.06	3,170.06	86.76	42.20	-90.97	-172.30	-33.67	4,576.01	4,447.37	128.64	35.573	
8,100.00	3,301.21	3,170.21	3,170.21	88.62	42.21	-91.00	-172.30	-33.67	4,675.62	4,545.12	130.51	35.827	
8,200.00	3,301.36	3,170.36	3,170.36	90.49	42.21	-91.02	-172.30	-33.67	4,775.26	4,642.88	132.38	36.072	
8,300.00	3,301.52	3,170.52	3,170.52	92.35	42.21	-91.04	-172.30	-33.67	4,874.91	4,740.65	134.25	36.311	
8,400.00	3,301.67	3,170.67	3,170.67	94.22	42.21	-91.06	-172.30	-33.67	4,974.57	4,838.44	136.13	36.544	
8,500.00	3,301.82	3,170.82	3,170.82	96.09	42.21	-91.08	-172.30	-33.67	5,074.24	4,936.24	138.00	36.769	
8,600.00	3,301.97	3,170.97	3,170.97	97.96	42.22	-91.10	-172.30	-33.67	5,173.93	5,034.05	139.88	36.989	
8,700.00	3,302.12	3,171.12	3,171.12	99.83	42.22	-91.12	-172.30	-33.67	5,273.63	5,131.88	141.75	37.203	
8,800.00	3,302.27	3,171.27	3,171.27	101.70	42.22	-91.15	-172.30	-33.67	5,373.34	5,229.71	143.63	37.411	
8,900.00	3,302.42	3,171.42	3,171.42	103.57	42.22	-91.17	-172.30	-33.67	5,473.06	5,327.56	145.51	37.614	
9,000.00	3,302.57	3,171.57	3,171.57	105.44	42.23	-91.19	-172.30	-33.67	5,572.80	5,425.41	147.39	37.811	
9,100.00	3,302.72	3,171.72	3,171.72	107.31	42.23	-91.21	-172.30	-33.67	5,672.54	5,523.27	149.26	38.003	

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 009 - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 5975-INC													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)						
9,200.00	3,302.87	3,171.87	3,171.87	109.19	42.23	-91.23	-172.30	-33.67	5,772.29	5,621.14	151.14	38.191		
9,300.00	3,303.02	3,172.02	3,172.02	111.06	42.23	-91.25	-172.30	-33.67	5,872.05	5,719.02	153.02	38.374		
9,400.00	3,303.17	3,172.17	3,172.17	112.94	42.23	-91.27	-172.30	-33.67	5,971.81	5,816.91	154.90	38.552		
9,500.00	3,303.33	3,172.33	3,172.33	114.81	42.24	-91.29	-172.30	-33.67	6,071.59	5,914.80	156.78	38.726		
9,600.00	3,303.48	3,172.48	3,172.48	116.69	42.24	-91.32	-172.30	-33.67	6,171.37	6,012.70	158.66	38.896		
9,700.00	3,303.63	3,172.63	3,172.63	118.56	42.24	-91.34	-172.30	-33.67	6,271.16	6,110.61	160.54	39.062		
9,800.00	3,303.78	3,172.78	3,172.78	120.44	42.24	-91.36	-172.30	-33.67	6,370.95	6,208.53	162.43	39.224		
9,900.00	3,303.93	3,172.93	3,172.93	122.32	42.24	-91.38	-172.30	-33.67	6,470.75	6,306.45	164.31	39.382		
10,000.00	3,304.08	3,173.08	3,173.08	124.20	42.25	-91.40	-172.30	-33.67	6,570.56	6,404.37	166.19	39.536		
10,100.00	3,304.23	3,173.23	3,173.23	126.08	42.25	-91.42	-172.30	-33.67	6,670.37	6,502.30	168.07	39.687		
10,200.00	3,304.38	3,173.38	3,173.38	127.96	42.25	-91.44	-172.30	-33.67	6,770.19	6,600.24	169.96	39.835		
10,300.00	3,304.53	3,173.53	3,173.53	129.84	42.25	-91.47	-172.30	-33.67	6,870.02	6,698.18	171.84	39.980		
10,400.00	3,304.68	3,173.68	3,173.68	131.72	42.25	-91.49	-172.30	-33.67	6,969.85	6,796.13	173.72	40.121		
10,500.00	3,304.83	3,173.83	3,173.83	133.60	42.26	-91.51	-172.30	-33.67	7,069.68	6,894.08	175.61	40.259		
10,600.00	3,304.98	3,173.98	3,173.98	135.48	42.26	-91.53	-172.30	-33.67	7,169.52	6,992.03	177.49	40.394		
10,700.00	3,305.14	3,174.14	3,174.14	137.36	42.26	-91.55	-172.30	-33.67	7,269.36	7,089.99	179.37	40.527		
10,800.00	3,305.29	3,174.29	3,174.29	139.24	42.26	-91.57	-172.30	-33.67	7,369.21	7,187.95	181.26	40.656		
10,900.00	3,305.44	3,174.44	3,174.44	141.12	42.26	-91.59	-172.30	-33.67	7,469.06	7,285.92	183.14	40.783		
11,000.00	3,305.59	3,174.59	3,174.59	143.00	42.27	-91.62	-172.30	-33.67	7,568.92	7,383.89	185.03	40.907		
11,100.00	3,305.74	3,174.74	3,174.74	144.89	42.27	-91.64	-172.30	-33.67	7,668.78	7,481.86	186.91	41.029		
11,200.00	3,305.89	3,174.89	3,174.89	146.77	42.27	-91.66	-172.30	-33.67	7,768.64	7,579.84	188.80	41.148		
11,300.00	3,306.04	3,175.04	3,175.04	148.65	42.27	-91.68	-172.30	-33.67	7,868.50	7,677.82	190.68	41.265		
11,400.00	3,306.19	3,175.19	3,175.19	150.54	42.27	-91.70	-172.30	-33.67	7,968.37	7,775.81	192.57	41.380		
11,500.00	3,306.34	3,175.34	3,175.34	152.42	42.28	-91.72	-172.30	-33.67	8,068.25	7,873.80	194.45	41.492		
11,600.00	3,306.49	3,175.49	3,175.49	154.30	42.28	-91.74	-172.30	-33.67	8,168.12	7,971.79	196.34	41.603		
11,700.00	3,306.64	3,175.64	3,175.64	156.19	42.28	-91.76	-172.30	-33.67	8,268.00	8,069.78	198.22	41.711		
11,800.00	3,306.79	3,175.79	3,175.79	158.07	42.28	-91.79	-172.30	-33.67	8,367.88	8,167.78	200.11	41.817		
11,900.00	3,306.94	3,175.94	3,175.94	159.96	42.28	-91.81	-172.30	-33.67	8,467.77	8,265.77	201.99	41.921		
11,936.61	3,307.00	3,176.00	3,176.00	160.65	42.28	-91.82	-172.30	-33.67	8,504.34	8,301.66	202.68	41.959		



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 035 - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 8315-INC													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)				Between Centres (usft)	Between Ellipses (usft)	
-7.00	-7.00	24.00	24.00	0.00	0.32	57.46	331.75	519.89	616.72					
0.00	0.00	31.00	31.00	0.00	0.41	57.46	331.75	519.89	616.72					
93.00	93.00	124.00	124.00	0.09	1.65	57.46	331.75	519.89	616.72	614.98	1.74	355.180		
193.00	193.00	224.00	224.00	0.31	2.98	57.46	331.75	519.89	616.72	613.43	3.29	187.412		
293.00	293.00	324.00	324.00	0.54	4.31	57.46	331.75	519.89	616.72	611.87	4.85	127.288		
393.00	393.00	424.00	424.00	0.76	5.64	57.46	331.75	519.89	616.72	610.32	6.40	96.371		
493.00	493.00	524.00	524.00	0.99	6.97	57.46	331.75	519.89	616.72	608.77	7.95	77.538		
593.00	593.00	624.00	624.00	1.21	8.30	57.46	331.75	519.89	616.72	607.21	9.51	64.862		
693.00	693.00	724.00	724.00	1.44	9.63	57.46	331.75	519.89	616.72	605.66	11.06	55.749		
793.00	793.00	824.00	824.00	1.66	10.96	57.46	331.75	519.89	616.72	604.10	12.62	48.881		
893.00	893.00	924.00	924.00	1.89	12.29	57.46	331.75	519.89	616.72	602.55	14.17	43.519		
993.00	993.00	1,024.00	1,024.00	2.11	13.62	57.46	331.75	519.89	616.72	600.99	15.73	39.218		
1,093.00	1,093.00	1,124.00	1,124.00	2.34	14.94	57.46	331.75	519.89	616.72	599.44	17.28	35.690		
1,193.00	1,193.00	1,224.00	1,224.00	2.56	16.27	57.46	331.75	519.89	616.72	597.89	18.83	32.744		
1,293.00	1,293.00	1,324.00	1,324.00	2.78	17.60	57.46	331.75	519.89	616.72	596.33	20.39	30.248		
1,393.00	1,393.00	1,424.00	1,424.00	3.01	18.93	57.46	331.75	519.89	616.72	594.78	21.94	28.105		
1,493.00	1,493.00	1,524.00	1,524.00	3.23	20.26	57.46	331.75	519.89	616.72	593.22	23.50	26.246		
1,593.00	1,593.00	1,624.00	1,624.00	3.46	21.59	57.46	331.75	519.89	616.72	591.67	25.05	24.618		
1,693.00	1,693.00	1,724.00	1,724.00	3.68	22.92	57.46	331.75	519.89	616.72	590.11	26.61	23.180		
1,793.00	1,793.00	1,824.00	1,824.00	3.91	24.25	57.46	331.75	519.89	616.72	588.56	28.16	21.900		
1,893.00	1,893.00	1,924.00	1,924.00	4.13	25.58	57.46	331.75	519.89	616.72	587.00	29.71	20.755		
1,993.00	1,993.00	2,024.00	2,024.00	4.36	26.91	57.46	331.75	519.89	616.72	585.45	31.27	19.723		
2,093.00	2,093.00	2,124.00	2,124.00	4.58	28.24	57.46	331.75	519.89	616.72	583.90	32.82	18.789		
2,193.00	2,193.00	2,224.00	2,224.00	4.81	29.57	57.46	331.75	519.89	616.72	582.34	34.38	17.939		
2,293.00	2,293.00	2,324.00	2,324.00	5.03	30.90	57.46	331.75	519.89	616.72	580.79	35.93	17.163		
2,393.00	2,393.00	2,424.00	2,424.00	5.26	32.23	57.46	331.75	519.89	616.72	579.23	37.49	16.452		
2,493.00	2,493.00	2,524.00	2,524.00	5.48	33.56	57.46	331.75	519.89	616.72	577.68	39.04	15.797		
2,593.00	2,593.00	2,624.00	2,624.00	5.71	34.89	57.46	331.75	519.89	616.72	576.12	40.60	15.192		
2,693.00	2,693.00	2,724.00	2,724.00	5.93	36.22	57.46	331.75	519.89	616.72	574.57	42.15	14.632		
2,793.00	2,793.00	2,824.00	2,824.00	6.16	37.55	57.46	331.75	519.89	616.72	573.02	43.70	14.111		
2,893.00	2,893.00	2,924.00	2,924.00	6.38	38.88	57.46	331.75	519.89	616.72	571.46	45.26	13.627		
2,993.00	2,993.00	3,024.00	3,024.00	6.61	40.21	57.46	331.75	519.89	616.72	569.91	46.81	13.174		
3,008.52	3,008.52	3,039.52	3,039.52	6.64	40.41	57.46	331.75	519.89	616.72	569.67	47.05	13.107 CC, ES		
3,025.00	3,024.99	3,055.99	3,055.99	6.66	40.63	-152.52	331.75	519.89	617.14	569.91	47.23	13.066 SF		
3,050.00	3,049.86	3,080.86	3,080.86	6.67	40.96	-152.42	331.75	519.89	619.38	572.14	47.24	13.111		
3,075.00	3,074.40	3,105.40	3,105.40	6.68	41.29	-152.23	331.75	519.89	623.54	576.58	46.97	13.276		
3,100.00	3,098.45	3,129.45	3,129.45	6.70	41.61	-151.93	331.75	519.89	629.61	583.18	46.42	13.562		
3,125.00	3,121.82	3,152.82	3,152.82	6.73	41.92	-151.52	331.75	519.89	637.54	591.91	45.62	13.974		
3,150.00	3,144.32	3,175.32	3,175.32	6.76	42.22	-150.95	331.75	519.89	647.29	602.69	44.60	14.514		
3,175.00	3,165.79	3,196.79	3,196.79	6.79	42.50	-150.21	331.75	519.89	658.81	615.42	43.39	15.184		
3,200.00	3,186.06	3,217.06	3,217.06	6.83	42.77	-149.25	331.75	519.89	672.02	629.96	42.06	15.976		
3,225.00	3,204.98	3,235.98	3,235.98	6.88	43.03	-148.00	331.75	519.89	686.85	646.13	40.72	16.868		
3,250.00	3,222.40	3,253.40	3,253.40	6.92	43.26	-146.39	331.75	519.89	703.20	663.71	39.49	17.809		
3,275.00	3,238.20	3,269.20	3,269.20	7.03	43.47	-144.32	331.75	519.89	720.95	682.41	38.54	18.705		
3,300.00	3,252.25	3,283.25	3,283.25	7.17	43.65	-141.62	331.75	519.89	739.99	701.88	38.12	19.413		
3,325.00	3,264.44	3,295.44	3,295.44	7.34	43.82	-138.09	331.75	519.89	760.18	721.70	38.48	19.756		
3,350.00	3,274.69	3,305.69	3,305.69	7.54	43.95	-133.43	331.75	519.89	781.37	741.49	39.88	19.593		
3,375.00	3,282.91	3,313.91	3,313.91	7.77	44.06	-127.22	331.75	519.89	803.40	760.93	42.47	18.918		
3,400.00	3,289.04	3,320.04	3,320.04	8.03	44.14	-118.96	331.75	519.89	826.10	780.02	46.08	17.927		
3,425.00	3,293.04	3,324.04	3,324.04	8.31	44.20	-108.19	331.75	519.89	849.30	799.33	49.98	16.993		
3,450.00	3,294.87	3,325.87	3,325.87	8.61	44.22	-94.93	331.75	519.89	872.83	820.19	52.64	16.581		
3,458.52	3,295.00	3,326.00	3,326.00	8.72	44.22	-90.00	331.75	519.89	880.89	827.95	52.94	16.640		

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 035 - Original Hole - Original Hole											Offset Site Error:	0.00 usft
Survey Program: 8315-INC											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)	
3,500.00	3,295.00	3,326.00	3,326.00	9.23	44.22	-90.01	331.75	519.89	920.10	866.65	53.45	17.213
3,600.00	3,295.01	3,326.01	3,326.01	10.55	44.22	-90.03	331.75	519.89	1,014.24	959.48	54.76	18.521
3,700.00	3,295.04	3,326.04	3,326.04	12.01	44.22	-90.05	331.75	519.89	1,107.75	1,051.56	56.20	19.712
3,800.00	3,295.08	3,326.08	3,326.08	13.56	44.22	-90.07	331.75	519.89	1,200.55	1,142.86	57.69	20.810
3,900.00	3,295.14	3,326.14	3,326.14	15.14	44.22	-90.09	331.75	519.89	1,292.57	1,233.36	59.20	21.832
4,000.00	3,295.21	3,326.21	3,326.21	16.74	44.23	-90.10	331.75	519.89	1,383.72	1,323.01	60.71	22.792
4,100.00	3,295.30	3,326.30	3,326.30	18.36	44.23	-90.11	331.75	519.89	1,473.96	1,411.77	62.19	23.700
4,200.00	3,295.40	3,326.40	3,326.40	19.96	44.23	-90.12	331.75	519.89	1,563.21	1,499.57	63.64	24.563
4,300.00	3,295.52	3,326.52	3,326.52	21.57	44.23	-90.13	331.75	519.89	1,651.40	1,586.35	65.05	25.387
4,400.00	3,295.64	3,326.64	3,326.64	23.16	44.23	-90.13	331.75	519.89	1,738.47	1,672.06	66.41	26.178
4,500.00	3,295.78	3,326.78	3,326.78	24.75	44.23	-90.14	331.75	519.89	1,824.37	1,756.64	67.73	26.937
4,528.45	3,295.83	3,326.83	3,326.83	25.21	44.23	-90.14	331.75	519.89	1,848.58	1,780.49	68.09	27.148
4,600.00	3,295.93	3,326.93	3,326.93	26.31	44.23	-90.15	331.75	519.89	1,909.72	1,840.46	69.26	27.572
4,700.00	3,296.09	3,327.09	3,327.09	27.84	44.24	-90.15	331.75	519.89	1,996.34	1,925.47	70.87	28.168
4,800.00	3,296.24	3,327.24	3,327.24	29.41	44.24	-90.16	331.75	519.89	2,084.15	2,011.63	72.52	28.740
4,900.00	3,296.39	3,327.39	3,327.39	31.01	44.24	-90.17	331.75	519.89	2,173.01	2,098.82	74.19	29.289
5,000.00	3,296.54	3,327.54	3,327.54	32.65	44.24	-90.18	331.75	519.89	2,262.81	2,186.92	75.89	29.817
5,100.00	3,296.69	3,327.69	3,327.69	34.31	44.24	-90.19	331.75	519.89	2,353.43	2,275.82	77.61	30.323
5,200.00	3,296.84	3,327.84	3,327.84	35.99	44.25	-90.20	331.75	519.89	2,444.78	2,365.43	79.35	30.810
5,300.00	3,296.99	3,327.99	3,327.99	37.70	44.25	-90.21	331.75	519.89	2,536.78	2,455.68	81.10	31.278
5,400.00	3,297.14	3,328.14	3,328.14	39.42	44.25	-90.22	331.75	519.89	2,629.37	2,546.50	82.87	31.729
5,500.00	3,297.29	3,328.29	3,328.29	41.15	44.25	-90.23	331.75	519.89	2,722.48	2,637.83	84.65	32.162
5,600.00	3,297.44	3,328.44	3,328.44	42.90	44.25	-90.23	331.75	519.89	2,816.06	2,729.62	86.44	32.579
5,700.00	3,297.59	3,328.59	3,328.59	44.67	44.26	-90.24	331.75	519.89	2,910.07	2,821.83	88.24	32.980
5,800.00	3,297.74	3,328.74	3,328.74	46.44	44.26	-90.25	331.75	519.89	3,004.47	2,914.43	90.04	33.367
5,900.00	3,297.90	3,328.90	3,328.90	48.22	44.26	-90.26	331.75	519.89	3,099.22	3,007.36	91.85	33.740
6,000.00	3,298.05	3,329.05	3,329.05	50.01	44.26	-90.27	331.75	519.89	3,194.29	3,100.61	93.67	34.100
6,100.00	3,298.20	3,329.20	3,329.20	51.81	44.26	-90.28	331.75	519.89	3,289.65	3,194.15	95.50	34.447
6,200.00	3,298.35	3,329.35	3,329.35	53.61	44.27	-90.29	331.75	519.89	3,385.27	3,287.95	97.33	34.782
6,300.00	3,298.50	3,329.50	3,329.50	55.43	44.27	-90.30	331.75	519.89	3,481.15	3,381.99	99.16	35.106
6,400.00	3,298.65	3,329.65	3,329.65	57.24	44.27	-90.30	331.75	519.89	3,577.25	3,476.25	101.00	35.418
6,500.00	3,298.80	3,329.80	3,329.80	59.06	44.27	-90.31	331.75	519.89	3,673.56	3,570.72	102.84	35.721
6,600.00	3,298.95	3,329.95	3,329.95	60.89	44.27	-90.32	331.75	519.89	3,770.06	3,665.37	104.69	36.013
6,700.00	3,299.10	3,330.10	3,330.10	62.72	44.28	-90.33	331.75	519.89	3,866.74	3,760.20	106.53	36.296
6,800.00	3,299.25	3,330.25	3,330.25	64.55	44.28	-90.34	331.75	519.89	3,963.58	3,855.20	108.39	36.569
6,900.00	3,299.40	3,330.40	3,330.40	66.39	44.28	-90.35	331.75	519.89	4,060.58	3,950.34	110.24	36.834
7,000.00	3,299.55	3,330.55	3,330.55	68.23	44.28	-90.36	331.75	519.89	4,157.72	4,045.62	112.09	37.091
7,100.00	3,299.71	3,330.71	3,330.71	70.07	44.28	-90.37	331.75	519.89	4,254.99	4,141.04	113.95	37.340
7,200.00	3,299.86	3,330.86	3,330.86	71.92	44.29	-90.38	331.75	519.89	4,352.38	4,236.57	115.81	37.582
7,300.00	3,300.01	3,331.01	3,331.01	73.77	44.29	-90.38	331.75	519.89	4,449.89	4,332.22	117.67	37.816
7,400.00	3,300.16	3,331.16	3,331.16	75.62	44.29	-90.39	331.75	519.89	4,547.51	4,427.97	119.54	38.043
7,500.00	3,300.31	3,331.31	3,331.31	77.47	44.29	-90.40	331.75	519.89	4,645.23	4,523.83	121.40	38.263
7,600.00	3,300.46	3,331.46	3,331.46	79.33	44.29	-90.41	331.75	519.89	4,743.05	4,619.78	123.27	38.478
7,700.00	3,300.61	3,331.61	3,331.61	81.18	44.30	-90.42	331.75	519.89	4,840.95	4,715.82	125.14	38.686
7,800.00	3,300.76	3,331.76	3,331.76	83.04	44.30	-90.43	331.75	519.89	4,938.94	4,811.93	127.00	38.888
7,900.00	3,300.91	3,331.91	3,331.91	84.90	44.30	-90.44	331.75	519.89	5,037.01	4,908.13	128.87	39.085
8,000.00	3,301.06	3,332.06	3,332.06	86.76	44.30	-90.45	331.75	519.89	5,135.15	5,004.40	130.75	39.276
8,100.00	3,301.21	3,332.21	3,332.21	88.62	44.30	-90.46	331.75	519.89	5,233.36	5,100.74	132.62	39.462
8,200.00	3,301.36	3,332.36	3,332.36	90.49	44.31	-90.46	331.75	519.89	5,331.64	5,197.15	134.49	39.643
8,300.00	3,301.52	3,332.52	3,332.52	92.35	44.31	-90.47	331.75	519.89	5,429.98	5,293.62	136.36	39.820
8,400.00	3,301.67	3,332.67	3,332.67	94.22	44.31	-90.48	331.75	519.89	5,528.38	5,390.14	138.24	39.991
8,500.00	3,301.82	3,332.82	3,332.82	96.09	44.31	-90.49	331.75	519.89	5,626.84	5,486.72	140.12	40.159

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Sec.22-T32N-R07W - San Juan 32-7 Unit 035 - Original Hole - Original Hole												Offset Well Error:	0.00 usft
Survey Program: 8315-INC													
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
8,600.00	3,301.97	3,332.97	3,332.97	97.96	44.31	-90.50	331.75	519.89	5,725.35	5,583.36	141.99	40.322	
8,700.00	3,302.12	3,333.12	3,333.12	99.83	44.32	-90.51	331.75	519.89	5,823.91	5,680.04	143.87	40.481	
8,800.00	3,302.27	3,333.27	3,333.27	101.70	44.32	-90.52	331.75	519.89	5,922.52	5,776.77	145.75	40.636	
8,900.00	3,302.42	3,333.42	3,333.42	103.57	44.32	-90.53	331.75	519.89	6,021.18	5,873.55	147.62	40.787	
9,000.00	3,302.57	3,333.57	3,333.57	105.44	44.32	-90.53	331.75	519.89	6,119.88	5,970.37	149.50	40.935	
9,100.00	3,302.72	3,333.72	3,333.72	107.31	44.33	-90.54	331.75	519.89	6,218.62	6,067.23	151.38	41.079	
9,200.00	3,302.87	3,333.87	3,333.87	109.19	44.33	-90.55	331.75	519.89	6,317.40	6,164.13	153.26	41.219	
9,300.00	3,303.02	3,334.02	3,334.02	111.06	44.33	-90.56	331.75	519.89	6,416.21	6,261.07	155.14	41.356	
9,400.00	3,303.17	3,334.17	3,334.17	112.94	44.33	-90.57	331.75	519.89	6,515.07	6,358.04	157.03	41.490	
9,500.00	3,303.33	3,334.33	3,334.33	114.81	44.33	-90.58	331.75	519.89	6,613.96	6,455.05	158.91	41.622	
9,600.00	3,303.48	3,334.48	3,334.48	116.69	44.34	-90.59	331.75	519.89	6,712.88	6,552.09	160.79	41.750	
9,700.00	3,303.63	3,334.63	3,334.63	118.56	44.34	-90.60	331.75	519.89	6,811.83	6,649.16	162.67	41.875	
9,800.00	3,303.78	3,334.78	3,334.78	120.44	44.34	-90.61	331.75	519.89	6,910.82	6,746.26	164.55	41.997	
9,900.00	3,303.93	3,334.93	3,334.93	122.32	44.34	-90.61	331.75	519.89	7,009.83	6,843.39	166.44	42.117	
10,000.00	3,304.08	3,335.08	3,335.08	124.20	44.34	-90.62	331.75	519.89	7,108.87	6,940.55	168.32	42.234	
10,100.00	3,304.23	3,335.23	3,335.23	126.08	44.35	-90.63	331.75	519.89	7,207.93	7,037.73	170.21	42.348	
10,200.00	3,304.38	3,335.38	3,335.38	127.96	44.35	-90.64	331.75	519.89	7,307.03	7,134.94	172.09	42.461	
10,300.00	3,304.53	3,335.53	3,335.53	129.84	44.35	-90.65	331.75	519.89	7,406.14	7,232.17	173.97	42.570	
10,400.00	3,304.68	3,335.68	3,335.68	131.72	44.35	-90.66	331.75	519.89	7,505.28	7,329.42	175.86	42.678	
10,500.00	3,304.83	3,335.83	3,335.83	133.60	44.35	-90.67	331.75	519.89	7,604.44	7,426.70	177.74	42.783	
10,600.00	3,304.98	3,335.98	3,335.98	135.48	44.36	-90.68	331.75	519.89	7,703.63	7,524.00	179.63	42.886	
10,700.00	3,305.14	3,336.14	3,336.14	137.36	44.36	-90.69	331.75	519.89	7,802.83	7,621.32	181.52	42.987	
10,800.00	3,305.29	3,336.29	3,336.29	139.24	44.36	-90.69	331.75	519.89	7,902.06	7,718.66	183.40	43.086	
10,900.00	3,305.44	3,336.44	3,336.44	141.12	44.36	-90.70	331.75	519.89	8,001.30	7,816.01	185.29	43.183	
11,000.00	3,305.59	3,336.59	3,336.59	143.00	44.36	-90.71	331.75	519.89	8,100.56	7,913.39	187.17	43.278	
11,100.00	3,305.74	3,336.74	3,336.74	144.89	44.37	-90.72	331.75	519.89	8,199.84	8,010.78	189.06	43.372	
11,200.00	3,305.89	3,336.89	3,336.89	146.77	44.37	-90.73	331.75	519.89	8,299.14	8,108.20	190.95	43.463	
11,300.00	3,306.04	3,337.04	3,337.04	148.65	44.37	-90.74	331.75	519.89	8,398.46	8,205.62	192.83	43.553	
11,400.00	3,306.19	3,337.19	3,337.19	150.54	44.37	-90.75	331.75	519.89	8,497.79	8,303.07	194.72	43.641	
11,500.00	3,306.34	3,337.34	3,337.34	152.42	44.37	-90.76	331.75	519.89	8,597.13	8,400.52	196.61	43.727	
11,600.00	3,306.49	3,337.49	3,337.49	154.30	44.38	-90.77	331.75	519.89	8,696.49	8,498.00	198.50	43.812	
11,700.00	3,306.64	3,337.64	3,337.64	156.19	44.38	-90.77	331.75	519.89	8,795.87	8,595.49	200.38	43.895	
11,800.00	3,306.79	3,337.79	3,337.79	158.07	44.38	-90.78	331.75	519.89	8,895.26	8,692.99	202.27	43.977	
11,900.00	3,306.94	3,337.94	3,337.94	159.96	44.38	-90.79	331.75	519.89	8,994.66	8,790.50	204.16	44.057	
11,936.61	3,307.00	3,338.00	3,338.00	160.65	44.38	-90.79	331.75	519.89	9,031.06	8,826.21	204.85	44.086	



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 156-INC													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		
-7.00	-7.00	33.53	33.53	0.00	1.02	-94.43	-95.99	-1,240.42	1,244.13					
0.00	0.00	40.60	40.60	0.00	1.24	-94.43	-96.03	-1,240.42	1,244.13					
93.00	93.00	134.60	134.60	0.09	4.10	-94.42	-95.93	-1,240.42	1,244.12	1,240.50	3.62	343.685		
162.38	162.38	203.39	203.38	0.24	7.56	-94.41	-95.76	-1,240.42	1,244.11	1,237.38	6.73	184.850		
193.00	193.00	234.00	234.00	0.31	9.38	-94.41	-95.76	-1,240.42	1,244.11	1,235.77	8.35	149.075		
293.00	293.00	334.20	334.19	0.54	15.12	-94.41	-95.71	-1,240.42	1,244.11	1,230.64	13.46	92.398		
393.00	393.00	434.12	434.11	0.76	20.28	-94.40	-95.55	-1,240.42	1,244.10	1,226.02	18.08	68.820		
493.00	493.00	534.05	534.03	0.99	25.43	-94.40	-95.47	-1,240.42	1,244.09	1,221.40	22.69	54.828		
545.97	545.97	586.99	586.97	1.11	28.16	-94.40	-95.46	-1,240.42	1,244.09	1,218.95	25.13	49.498		
593.00	593.00	633.98	633.96	1.21	30.59	-94.40	-95.47	-1,240.42	1,244.09	1,216.79	27.30	45.565		
693.00	693.00	733.92	733.89	1.44	35.75	-94.40	-95.55	-1,240.42	1,244.10	1,212.18	31.92	38.981		
793.00	793.00	833.86	833.83	1.66	40.90	-94.41	-95.70	-1,240.42	1,244.11	1,207.58	36.53	34.061		
893.00	893.00	933.89	933.85	1.89	46.09	-94.42	-95.89	-1,240.42	1,244.12	1,202.96	41.17	30.222		
993.00	993.00	1,033.98	1,033.94	2.11	51.29	-94.43	-96.01	-1,240.42	1,244.13	1,198.31	45.82	27.151		
1,093.00	1,093.00	1,134.06	1,134.02	2.34	56.48	-94.43	-96.04	-1,240.42	1,244.13	1,193.65	50.48	24.646		
1,193.00	1,193.00	1,234.14	1,234.10	2.56	61.68	-94.42	-95.98	-1,240.42	1,244.13	1,188.99	55.14	22.564		
1,293.00	1,293.00	1,334.22	1,334.17	2.78	66.88	-94.42	-95.83	-1,240.42	1,244.12	1,184.32	59.80	20.805		
1,313.93	1,313.93	1,355.17	1,355.12	2.83	67.97	-94.42	-95.79	-1,240.42	1,244.11	1,183.34	60.78	20.471		
1,393.00	1,393.00	1,433.78	1,433.72	3.01	73.39	-94.43	-96.01	-1,240.42	1,244.13	1,178.61	65.52	18.988		
1,493.00	1,493.00	1,533.98	1,533.92	3.23	80.59	-94.44	-96.21	-1,240.42	1,244.15	1,172.35	71.80	17.329		
1,593.00	1,593.00	1,634.17	1,634.10	3.46	87.78	-94.44	-96.21	-1,240.42	1,244.15	1,166.07	78.08	15.935		
1,693.00	1,693.00	1,734.34	1,734.27	3.68	94.97	-94.43	-96.01	-1,240.42	1,244.13	1,159.77	84.36	14.747		
1,793.00	1,793.00	1,834.62	1,834.55	3.91	101.94	-94.41	-95.56	-1,240.42	1,244.10	1,153.62	90.47	13.751		
1,893.00	1,893.00	1,934.39	1,934.31	4.13	108.39	-94.38	-95.10	-1,240.42	1,244.06	1,147.91	96.15	12.938		
1,993.00	1,993.00	2,034.18	2,034.09	4.36	114.84	-94.37	-94.87	-1,240.42	1,244.04	1,142.22	101.83	12.217		
2,041.88	2,041.88	2,082.96	2,082.86	4.47	118.00	-94.37	-94.85	-1,240.42	1,244.04	1,139.45	104.60	11.894		
2,093.00	2,093.00	2,133.98	2,133.88	4.58	121.30	-94.37	-94.88	-1,240.42	1,244.04	1,136.55	107.49	11.574		
2,193.00	2,193.00	2,233.80	2,233.68	4.81	127.75	-94.38	-95.11	-1,240.42	1,244.06	1,130.92	113.14	10.995		
2,293.00	2,293.00	2,333.63	2,333.50	5.03	134.21	-94.41	-95.58	-1,240.42	1,244.10	1,125.31	118.79	10.473		
2,393.00	2,393.00	2,433.99	2,433.85	5.26	139.81	-94.42	-95.90	-1,240.42	1,244.12	1,120.38	123.74	10.054		
2,493.00	2,493.00	2,534.08	2,533.94	5.48	145.00	-94.43	-96.01	-1,240.42	1,244.13	1,115.74	128.39	9.690		
2,593.00	2,593.00	2,634.17	2,634.02	5.71	150.19	-94.43	-96.03	-1,240.42	1,244.13	1,111.09	133.04	9.352		
2,693.00	2,693.00	2,734.25	2,734.10	5.93	155.38	-94.42	-95.97	-1,240.42	1,244.13	1,106.43	137.69	9.035		
2,793.00	2,793.00	2,834.33	2,834.17	6.16	160.58	-94.42	-95.82	-1,240.42	1,244.12	1,101.76	142.36	8.739		
2,817.85	2,817.85	2,859.00	2,858.85	6.21	161.86	-94.41	-95.76	-1,240.42	1,244.11	1,100.61	143.51	8.669		
2,893.00	2,893.00	2,934.02	2,933.86	6.38	166.74	-94.42	-95.90	-1,240.42	1,244.12	1,096.33	147.80	8.418		
2,993.00	2,993.00	3,034.11	3,033.95	6.61	173.27	-94.43	-96.01	-1,240.42	1,244.13	1,090.61	153.52	8.104		
3,008.52	3,008.52	3,049.64	3,049.48	6.64	174.28	-94.43	-96.02	-1,240.42	1,244.13	1,089.72	154.41	8.057		
3,025.00	3,024.99	3,066.13	3,065.96	6.66	175.35	55.64	-96.03	-1,240.42	1,243.86	1,062.39	181.48	6.854		
3,050.00	3,049.86	3,091.01	3,090.85	6.67	176.97	55.97	-96.03	-1,240.42	1,242.44	1,059.74	182.70	6.800		
3,075.00	3,074.40	3,115.58	3,115.42	6.68	178.57	56.59	-96.03	-1,240.42	1,239.81	1,056.23	183.58	6.754		
3,100.00	3,098.45	3,139.65	3,139.48	6.70	180.14	57.49	-96.03	-1,240.42	1,236.00	1,051.90	184.11	6.714		
3,125.00	3,121.82	3,163.03	3,162.86	6.73	181.66	58.68	-96.02	-1,240.42	1,231.08	1,046.76	184.32	6.679		
3,150.00	3,144.32	3,185.54	3,185.37	6.76	183.13	60.14	-96.00	-1,240.42	1,225.10	1,040.86	184.24	6.650		
3,175.00	3,165.79	3,207.00	3,206.83	6.79	184.53	61.87	-95.99	-1,240.42	1,218.16	1,034.24	183.92	6.623		
3,200.00	3,186.06	3,227.27	3,227.10	6.83	185.85	63.86	-95.97	-1,240.42	1,210.35	1,026.93	183.41	6.599		
3,225.00	3,204.98	3,246.18	3,246.01	6.88	187.08	66.08	-95.94	-1,240.42	1,201.77	1,018.99	182.78	6.575		
3,250.00	3,222.40	3,263.59	3,263.41	6.92	188.22	68.51	-95.92	-1,240.42	1,192.55	1,010.48	182.06	6.550		
3,275.00	3,238.20	3,279.36	3,279.18	7.03	189.24	71.10	-95.90	-1,240.42	1,182.80	1,001.47	181.33	6.523		
3,300.00	3,252.25	3,293.37	3,293.20	7.17	190.16	73.80	-95.88	-1,240.42	1,172.66	992.04	180.62	6.492		
3,325.00	3,264.44	3,305.53	3,305.36	7.34	190.95	76.56	-95.85	-1,240.42	1,162.27	982.28	179.99	6.457		
3,350.00	3,274.69	3,315.74	3,315.56	7.54	191.61	79.33	-95.84	-1,240.42	1,151.74	972.28	179.46	6.418		

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 035M - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 156-INC													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		
3,375.00	3,282.91	3,323.91	3,323.74	7.77	192.15	82.03	-95.82	-1,240.42	1,141.23	962.15	179.08	6.373		
3,400.00	3,289.04	3,330.00	3,329.82	8.03	192.54	84.63	-95.81	-1,240.42	1,130.84	951.99	178.86	6.323		
3,425.00	3,293.04	3,333.95	3,333.77	8.31	192.80	87.05	-95.80	-1,240.42	1,120.71	941.89	178.82	6.267		
3,450.00	3,294.87	3,335.73	3,335.56	8.61	192.92	89.28	-95.80	-1,240.42	1,110.93	931.95	178.98	6.207		
3,458.52	3,295.00	3,335.84	3,335.67	8.72	192.92	89.98	-95.80	-1,240.42	1,107.70	928.63	179.08	6.186		
3,500.00	3,295.00	3,335.77	3,335.60	9.23	192.92	89.98	-95.80	-1,240.42	1,093.20	911.83	181.36	6.028		
3,600.00	3,295.01	3,335.60	3,335.43	10.55	192.91	89.97	-95.80	-1,240.42	1,067.69	881.02	186.67	5.720		
3,700.00	3,295.04	3,335.45	3,335.27	12.01	192.90	89.96	-95.80	-1,240.42	1,056.32	864.61	191.71	5.510		
3,727.76	3,295.05	3,335.40	3,335.23	12.44	192.90	89.96	-95.80	-1,240.42	1,055.76	862.70	193.05	5.469 CC, ES		
3,800.00	3,295.08	3,335.30	3,335.12	13.56	192.89	89.95	-95.80	-1,240.42	1,059.59	863.20	196.39	5.395		
3,900.00	3,295.14	3,335.16	3,334.99	15.14	192.88	89.95	-95.80	-1,240.42	1,077.34	876.67	200.67	5.369 SF		
4,000.00	3,295.21	3,335.04	3,334.86	16.74	192.87	89.94	-95.80	-1,240.42	1,108.83	904.34	204.49	5.422		
4,100.00	3,295.30	3,334.93	3,334.75	18.36	192.86	89.94	-95.80	-1,240.42	1,152.87	945.02	207.85	5.547		
4,200.00	3,295.40	3,334.83	3,334.65	19.96	192.86	89.94	-95.80	-1,240.42	1,207.95	997.24	210.72	5.733		
4,300.00	3,295.52	3,334.74	3,334.56	21.57	192.85	89.94	-95.80	-1,240.42	1,272.52	1,059.43	213.09	5.972		
4,400.00	3,295.64	3,334.66	3,334.49	23.16	192.85	89.95	-95.80	-1,240.42	1,345.04	1,130.09	214.95	6.258		
4,500.00	3,295.78	3,334.60	3,334.43	24.75	192.84	89.96	-95.80	-1,240.42	1,424.11	1,207.81	216.30	6.584		
4,528.45	3,295.83	3,334.59	3,334.41	25.21	192.84	89.96	-95.80	-1,240.42	1,447.62	1,231.04	216.59	6.684		
4,600.00	3,295.93	3,334.55	3,334.38	26.31	192.84	89.95	-95.80	-1,240.42	1,507.81	1,290.06	217.75	6.924		
4,700.00	3,296.09	3,334.50	3,334.32	27.84	192.84	89.95	-95.80	-1,240.42	1,593.50	1,374.14	219.36	7.264		
4,800.00	3,296.24	3,334.45	3,334.27	29.41	192.83	89.95	-95.80	-1,240.42	1,680.77	1,459.77	221.00	7.605		
4,900.00	3,296.39	3,334.39	3,334.22	31.01	192.83	89.94	-95.80	-1,240.42	1,769.39	1,546.72	222.67	7.946		
5,000.00	3,296.54	3,334.34	3,334.17	32.65	192.83	89.94	-95.80	-1,240.42	1,859.17	1,634.80	224.36	8.287		
5,100.00	3,296.69	3,334.29	3,334.12	34.31	192.82	89.94	-95.80	-1,240.42	1,949.93	1,723.86	226.08	8.625		
5,200.00	3,296.84	3,334.24	3,334.06	35.99	192.82	89.93	-95.80	-1,240.42	2,041.57	1,813.76	227.81	8.962		
5,300.00	3,296.99	3,334.19	3,334.01	37.70	192.82	89.93	-95.80	-1,240.42	2,133.95	1,904.39	229.56	9.296		
5,400.00	3,297.14	3,334.14	3,333.96	39.42	192.81	89.93	-95.80	-1,240.42	2,226.99	1,995.67	231.32	9.627		
5,500.00	3,297.29	3,334.09	3,333.91	41.15	192.81	89.92	-95.80	-1,240.42	2,320.61	2,087.52	233.09	9.956		
5,600.00	3,297.44	3,334.03	3,333.86	42.90	192.81	89.92	-95.80	-1,240.42	2,414.75	2,179.87	234.88	10.281		
5,700.00	3,297.59	3,333.98	3,333.81	44.67	192.80	89.91	-95.80	-1,240.42	2,509.33	2,272.66	236.67	10.603		
5,800.00	3,297.74	3,333.93	3,333.76	46.44	192.80	89.91	-95.80	-1,240.42	2,604.32	2,365.85	238.47	10.921		
5,900.00	3,297.90	3,333.88	3,333.71	48.22	192.80	89.91	-95.80	-1,240.42	2,699.67	2,459.40	240.28	11.236		
6,000.00	3,298.05	3,333.83	3,333.66	50.01	192.79	89.90	-95.80	-1,240.42	2,795.35	2,553.26	242.09	11.547		
6,100.00	3,298.20	3,333.78	3,333.61	51.81	192.79	89.90	-95.80	-1,240.42	2,891.32	2,647.41	243.91	11.854		
6,200.00	3,298.35	3,333.73	3,333.55	53.61	192.79	89.90	-95.80	-1,240.42	2,987.56	2,741.82	245.73	12.158		
6,300.00	3,298.50	3,333.68	3,333.50	55.43	192.78	89.89	-95.80	-1,240.42	3,084.03	2,836.47	247.56	12.458		
6,400.00	3,298.65	3,333.63	3,333.45	57.24	192.78	89.89	-95.80	-1,240.42	3,180.72	2,931.33	249.40	12.754		
6,500.00	3,298.80	3,333.58	3,333.40	59.06	192.78	89.89	-95.80	-1,240.42	3,277.61	3,026.38	251.23	13.046		
6,600.00	3,298.95	3,333.53	3,333.35	60.89	192.77	89.88	-95.80	-1,240.42	3,374.68	3,121.61	253.07	13.335		
6,700.00	3,299.10	3,333.48	3,333.30	62.72	192.77	89.88	-95.80	-1,240.42	3,471.92	3,217.01	254.91	13.620		
6,800.00	3,299.25	3,333.43	3,333.25	64.55	192.77	89.87	-95.80	-1,240.42	3,569.31	3,312.55	256.76	13.901		
6,900.00	3,299.40	3,333.38	3,333.20	66.39	192.76	89.87	-95.80	-1,240.42	3,666.84	3,408.24	258.61	14.179		
7,000.00	3,299.55	3,333.33	3,333.15	68.23	192.76	89.87	-95.80	-1,240.42	3,764.50	3,504.05	260.46	14.453		
7,100.00	3,299.71	3,333.28	3,333.10	70.07	192.76	89.86	-95.80	-1,240.42	3,862.28	3,599.97	262.31	14.724		
7,200.00	3,299.86	3,333.23	3,333.05	71.92	192.75	89.86	-95.80	-1,240.42	3,960.18	3,696.01	264.17	14.991		
7,300.00	3,300.01	3,333.18	3,333.00	73.77	192.75	89.86	-95.80	-1,240.42	4,058.17	3,792.15	266.02	15.255		
7,400.00	3,300.16	3,333.13	3,332.95	75.62	192.75	89.85	-95.80	-1,240.42	4,156.26	3,888.38	267.88	15.515		
7,500.00	3,300.31	3,333.08	3,332.90	77.47	192.74	89.85	-95.80	-1,240.42	4,254.44	3,984.70	269.74	15.772		
7,600.00	3,300.46	3,333.03	3,332.85	79.33	192.74	89.85	-95.80	-1,240.42	4,352.70	4,081.10	271.60	16.026		
7,700.00	3,300.61	3,332.98	3,332.81	81.18	192.74	89.84	-95.80	-1,240.42	4,451.04	4,177.57	273.46	16.277		
7,800.00	3,300.76	3,332.93	3,332.76	83.04	192.73	89.84	-95.80	-1,240.42	4,549.45	4,274.12	275.33	16.524		
7,900.00	3,300.91	3,332.88	3,332.71	84.90	192.73	89.84	-95.80	-1,240.42	4,647.93	4,370.74	277.19	16.768		

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



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 035M - Original Hole - Original Hole												Offset Site Error: 0.00 usft
Survey Program: 156-INC												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)	
8,000.00	3,301.06	3,332.83	3,332.66	86.76	192.73	89.83	-95.80	-1,240.42	4,746.47	4,467.41	279.06	17.009
8,100.00	3,301.21	3,332.78	3,332.61	88.62	192.73	89.83	-95.80	-1,240.42	4,845.07	4,564.15	280.93	17.247
8,200.00	3,301.36	3,332.74	3,332.56	90.49	192.72	89.82	-95.80	-1,240.42	4,943.73	4,660.94	282.79	17.482
8,300.00	3,301.52	3,332.69	3,332.51	92.35	192.72	89.82	-95.80	-1,240.42	5,042.44	4,757.78	284.66	17.714
8,400.00	3,301.67	3,332.64	3,332.46	94.22	192.72	89.82	-95.80	-1,240.42	5,141.20	4,854.67	286.53	17.943
8,500.00	3,301.82	3,332.59	3,332.41	96.09	192.71	89.81	-95.80	-1,240.42	5,240.01	4,951.61	288.40	18.169
8,600.00	3,301.97	3,332.54	3,332.37	97.96	192.71	89.81	-95.80	-1,240.42	5,338.87	5,048.59	290.27	18.392
8,700.00	3,302.12	3,332.49	3,332.32	99.83	192.71	89.81	-95.80	-1,240.42	5,437.76	5,145.61	292.15	18.613
8,800.00	3,302.27	3,332.44	3,332.27	101.70	192.70	89.80	-95.80	-1,240.42	5,536.69	5,242.67	294.02	18.831
8,900.00	3,302.42	3,332.40	3,332.22	103.57	192.70	89.80	-95.80	-1,240.42	5,635.67	5,339.77	295.89	19.046
9,000.00	3,302.57	3,332.35	3,332.17	105.44	192.70	89.80	-95.80	-1,240.42	5,734.67	5,436.91	297.77	19.259
9,100.00	3,302.72	3,332.30	3,332.12	107.31	192.69	89.79	-95.80	-1,240.42	5,833.72	5,534.07	299.64	19.469
9,200.00	3,302.87	3,332.25	3,332.08	109.19	192.69	89.79	-95.80	-1,240.42	5,932.79	5,631.27	301.52	19.676
9,300.00	3,303.02	3,332.20	3,332.03	111.06	192.69	89.79	-95.80	-1,240.42	6,031.89	5,728.50	303.39	19.881
9,400.00	3,303.17	3,332.15	3,331.98	112.94	192.68	89.78	-95.80	-1,240.42	6,131.03	5,825.76	305.27	20.084
9,500.00	3,303.33	3,332.11	3,331.93	114.81	192.68	89.78	-95.80	-1,240.42	6,230.19	5,923.04	307.15	20.284
9,600.00	3,303.48	3,332.06	3,331.88	116.69	192.68	89.78	-95.80	-1,240.42	6,329.37	6,020.35	309.02	20.482
9,700.00	3,303.63	3,332.01	3,331.84	118.56	192.67	89.77	-95.80	-1,240.42	6,428.59	6,117.69	310.90	20.677
9,800.00	3,303.78	3,331.96	3,331.79	120.44	192.67	89.77	-95.80	-1,240.42	6,527.82	6,215.05	312.78	20.870
9,900.00	3,303.93	3,331.92	3,331.74	122.32	192.67	89.77	-95.80	-1,240.42	6,627.08	6,312.43	314.66	21.061
10,000.00	3,304.08	3,331.87	3,331.69	124.20	192.67	89.76	-95.80	-1,240.42	6,726.36	6,409.83	316.54	21.250
10,100.00	3,304.23	3,331.82	3,331.65	126.08	192.66	89.76	-95.80	-1,240.42	6,825.67	6,507.25	318.41	21.436
10,200.00	3,304.38	3,331.77	3,331.60	127.96	192.66	89.76	-95.80	-1,240.42	6,924.99	6,604.70	320.29	21.621
10,300.00	3,304.53	3,331.73	3,331.55	129.84	192.66	89.75	-95.80	-1,240.42	7,024.33	6,702.16	322.17	21.803
10,400.00	3,304.68	3,331.68	3,331.50	131.72	192.65	89.75	-95.81	-1,240.42	7,123.69	6,799.64	324.05	21.983
10,500.00	3,304.83	3,331.63	3,331.46	133.60	192.65	89.75	-95.81	-1,240.42	7,223.07	6,897.14	325.93	22.161
10,600.00	3,304.98	3,331.59	3,331.41	135.48	192.65	89.74	-95.81	-1,240.42	7,322.46	6,994.65	327.81	22.337
10,700.00	3,305.14	3,331.54	3,331.36	137.36	192.64	89.74	-95.81	-1,240.42	7,421.87	7,092.18	329.70	22.511
10,800.00	3,305.29	3,331.49	3,331.32	139.24	192.64	89.74	-95.81	-1,240.42	7,521.30	7,189.72	331.58	22.683
10,900.00	3,305.44	3,331.45	3,331.27	141.12	192.64	89.73	-95.81	-1,240.42	7,620.74	7,287.29	333.46	22.854
11,000.00	3,305.59	3,331.40	3,331.22	143.00	192.63	89.73	-95.81	-1,240.42	7,720.20	7,384.86	335.34	23.022
11,100.00	3,305.74	3,331.35	3,331.18	144.89	192.63	89.73	-95.81	-1,240.42	7,819.67	7,482.45	337.22	23.189
11,200.00	3,305.89	3,331.31	3,331.13	146.77	192.63	89.72	-95.81	-1,240.42	7,919.15	7,580.05	339.10	23.353
11,300.00	3,306.04	3,331.26	3,331.08	148.65	192.63	89.72	-95.81	-1,240.42	8,018.65	7,677.66	340.99	23.516
11,400.00	3,306.19	3,331.21	3,331.04	150.54	192.62	89.72	-95.81	-1,240.42	8,118.16	7,775.29	342.87	23.677
11,500.00	3,306.34	3,331.17	3,330.99	152.42	192.62	89.71	-95.81	-1,240.42	8,217.68	7,872.93	344.75	23.837
11,600.00	3,306.49	3,331.12	3,330.95	154.30	192.62	89.71	-95.81	-1,240.42	8,317.21	7,970.58	346.63	23.994
11,700.00	3,306.64	3,331.07	3,330.90	156.19	192.61	89.71	-95.81	-1,240.42	8,416.75	8,068.24	348.52	24.150
11,800.00	3,306.79	3,331.03	3,330.85	158.07	192.61	89.70	-95.81	-1,240.42	8,516.31	8,165.91	350.40	24.304
11,900.00	3,306.94	3,330.98	3,330.81	159.96	192.61	89.70	-95.81	-1,240.42	8,615.87	8,263.59	352.28	24.457
11,936.61	3,307.00	3,330.97	3,330.79	160.65	192.61	89.70	-95.81	-1,240.42	8,652.33	8,299.35	352.97	24.513



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 044G - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 8147-INC												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
-7.00	-7.00	0.00	0.00	0.00	0.00	-166.67	-3,126.94	-740.71	3,215.67				
0.00	0.00	0.00	0.00	0.00	0.00	-166.67	-3,126.94	-740.71	3,215.42				
93.00	93.00	0.00	0.00	0.09	0.00	-166.67	-3,126.94	-740.71	3,213.53	3,213.44	0.09	N/A	
134.15	134.15	22.15	22.15	0.18	0.30	-166.67	-3,126.94	-740.71	3,213.47	3,213.00	0.48	6,761.207	
193.00	193.00	81.00	81.00	0.31	1.08	-166.67	-3,126.94	-740.71	3,213.47	3,212.08	1.39	2,310.152	
293.00	293.00	181.00	181.00	0.54	2.41	-166.67	-3,126.94	-740.71	3,213.47	3,210.52	2.95	1,090.369	
393.00	393.00	281.00	281.00	0.76	3.74	-166.67	-3,126.94	-740.71	3,213.47	3,208.97	4.50	713.587	
493.00	493.00	381.00	381.00	0.99	5.07	-166.67	-3,126.94	-740.71	3,213.47	3,207.41	6.06	530.330	
593.00	593.00	481.00	481.00	1.21	6.40	-166.67	-3,126.94	-740.71	3,213.47	3,205.86	7.62	421.964	
693.00	693.00	581.00	581.00	1.44	7.74	-166.67	-3,126.94	-740.71	3,213.47	3,204.30	9.17	350.371	
793.00	793.00	681.00	681.00	1.66	9.07	-166.67	-3,126.94	-740.71	3,213.47	3,202.74	10.73	299.548	
893.00	893.00	781.00	781.00	1.89	10.40	-166.67	-3,126.94	-740.71	3,213.47	3,201.19	12.28	261.601	
993.00	993.00	881.00	881.00	2.11	11.73	-166.67	-3,126.94	-740.71	3,213.47	3,199.63	13.84	232.188	
1,093.00	1,093.00	981.00	981.00	2.34	13.06	-166.67	-3,126.94	-740.71	3,213.47	3,198.07	15.40	208.720	
1,193.00	1,193.00	1,081.00	1,081.00	2.56	14.39	-166.67	-3,126.94	-740.71	3,213.47	3,196.52	16.95	189.560	
1,293.00	1,293.00	1,181.00	1,181.00	2.78	15.72	-166.67	-3,126.94	-740.71	3,213.47	3,194.96	18.51	173.623	
1,393.00	1,393.00	1,281.00	1,281.00	3.01	17.05	-166.67	-3,126.94	-740.71	3,213.47	3,193.41	20.06	160.157	
1,493.00	1,493.00	1,381.00	1,381.00	3.23	18.39	-166.67	-3,126.94	-740.71	3,213.47	3,191.85	21.62	148.630	
1,593.00	1,593.00	1,481.00	1,481.00	3.46	19.72	-166.67	-3,126.94	-740.71	3,213.47	3,190.29	23.18	138.651	
1,693.00	1,693.00	1,581.00	1,581.00	3.68	21.05	-166.67	-3,126.94	-740.71	3,213.47	3,188.74	24.73	129.927	
1,793.00	1,793.00	1,681.00	1,681.00	3.91	22.38	-166.67	-3,126.94	-740.71	3,213.47	3,187.18	26.29	122.237	
1,893.00	1,893.00	1,781.00	1,781.00	4.13	23.71	-166.67	-3,126.94	-740.71	3,213.47	3,185.63	27.85	115.405	
1,993.00	1,993.00	1,881.00	1,881.00	4.36	25.04	-166.67	-3,126.94	-740.71	3,213.47	3,184.07	29.40	109.297	
2,093.00	2,093.00	1,981.00	1,981.00	4.58	26.37	-166.67	-3,126.94	-740.71	3,213.47	3,182.51	30.96	103.803	
2,193.00	2,193.00	2,081.00	2,081.00	4.81	27.71	-166.67	-3,126.94	-740.71	3,213.47	3,180.96	32.51	98.835	
2,293.00	2,293.00	2,181.00	2,181.00	5.03	29.04	-166.67	-3,126.94	-740.71	3,213.47	3,179.40	34.07	94.321	
2,393.00	2,393.00	2,281.00	2,281.00	5.26	30.37	-166.67	-3,126.94	-740.71	3,213.47	3,177.85	35.63	90.201	
2,493.00	2,493.00	2,381.00	2,381.00	5.48	31.70	-166.67	-3,126.94	-740.71	3,213.47	3,176.29	37.18	86.426	
2,593.00	2,593.00	2,481.00	2,481.00	5.71	33.03	-166.67	-3,126.94	-740.71	3,213.47	3,174.73	38.74	82.954	
2,693.00	2,693.00	2,581.00	2,581.00	5.93	34.36	-166.67	-3,126.94	-740.71	3,213.47	3,173.18	40.29	79.751	
2,793.00	2,793.00	2,681.00	2,681.00	6.16	35.69	-166.67	-3,126.94	-740.71	3,213.47	3,171.62	41.85	76.785	
2,893.00	2,893.00	2,781.00	2,781.00	6.38	37.03	-166.67	-3,126.94	-740.71	3,213.47	3,170.06	43.41	74.032	
2,993.00	2,993.00	2,881.00	2,881.00	6.61	38.36	-166.67	-3,126.94	-740.71	3,213.47	3,168.51	44.96	71.470	
3,093.00	3,093.00	2,981.00	2,981.00	6.84	39.69	-166.67	-3,126.94	-740.71	3,213.47	3,166.96	46.50	69.088	
3,193.00	3,193.00	2,981.00	2,981.00	6.66	38.78	-16.70	-3,126.94	-740.71	3,213.02	3,167.64	45.37	70.811	
3,050.00	3,049.86	2,937.86	2,937.86	6.67	39.11	-16.86	-3,126.94	-740.71	3,210.60	3,165.25	45.34	70.805	
3,075.00	3,074.40	2,962.40	2,962.40	6.68	39.44	-17.15	-3,126.94	-740.71	3,206.12	3,161.12	45.00	71.249	
3,100.00	3,098.45	2,986.45	2,986.45	6.70	39.76	-17.59	-3,126.94	-740.71	3,199.60	3,155.26	44.34	72.156	
3,125.00	3,121.82	3,009.82	3,009.82	6.73	40.07	-18.19	-3,126.94	-740.71	3,191.10	3,147.71	43.39	73.545	
3,150.00	3,144.32	3,032.32	3,032.32	6.76	40.37	-18.98	-3,126.94	-740.71	3,180.69	3,138.53	42.17	75.434	
3,175.00	3,165.79	3,053.79	3,053.79	6.79	40.66	-20.00	-3,126.94	-740.71	3,168.45	3,127.74	40.71	77.827	
3,200.00	3,186.06	3,074.06	3,074.06	6.83	40.93	-21.28	-3,126.94	-740.71	3,154.47	3,115.38	39.09	80.693	
3,225.00	3,204.98	3,092.98	3,092.98	6.88	41.18	-22.89	-3,126.94	-740.71	3,138.86	3,101.45	37.40	83.917	
3,250.00	3,222.40	3,110.40	3,110.40	6.92	41.41	-24.92	-3,126.94	-740.71	3,121.73	3,085.94	35.79	87.216	
3,275.00	3,238.20	3,126.20	3,126.20	7.03	41.62	-27.50	-3,126.94	-740.71	3,103.24	3,068.76	34.47	90.020	
3,300.00	3,252.25	3,140.25	3,140.25	7.17	41.81	-30.81	-3,126.94	-740.71	3,083.51	3,049.76	33.74	91.385	
3,325.00	3,264.44	3,152.44	3,152.44	7.34	41.97	-35.09	-3,126.94	-740.71	3,062.70	3,028.72	33.98	90.136	
3,350.00	3,274.69	3,162.69	3,162.69	7.54	42.11	-40.71	-3,126.94	-740.71	3,040.97	3,005.40	35.56	85.505	
3,375.00	3,282.91	3,170.91	3,170.91	7.77	42.22	-48.14	-3,126.94	-740.71	3,018.48	2,979.78	38.71	77.979	
3,400.00	3,289.04	3,177.04	3,177.04	8.03	42.30	-57.91	-3,126.94	-740.71	2,995.42	2,952.27	43.15	69.417	
3,425.00	3,293.04	3,181.04	3,181.04	8.31	42.35	-70.32	-3,126.94	-740.71	2,971.96	2,924.15	47.81	62.165	
3,450.00	3,294.87	3,182.87	3,182.87	8.61	42.38	-84.84	-3,126.94	-740.71	2,948.28	2,897.49	50.78	58.057	

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



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 044G - Original Hole - Original Hole													Offset Site Error: 0.00 usft
Survey Program: 8147-INC													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
3,458.52	3,295.00	3,183.00	3,183.00	8.72	42.38	-90.00	-3,126.94	-740.71	2,940.19	2,889.09	51.09	57.545	
3,500.00	3,295.00	3,183.00	3,183.00	9.23	42.38	-89.99	-3,126.94	-740.71	2,900.69	2,849.08	51.61	56.205	
3,600.00	3,295.01	3,183.01	3,183.01	10.55	42.38	-89.95	-3,126.94	-740.71	2,804.60	2,751.68	52.92	53.001	
3,700.00	3,295.04	3,183.04	3,183.04	12.01	42.38	-89.91	-3,126.94	-740.71	2,707.40	2,653.05	54.35	49.814	
3,800.00	3,295.08	3,183.08	3,183.08	13.56	42.38	-89.83	-3,126.94	-740.71	2,609.26	2,553.42	55.85	46.723	
3,900.00	3,295.14	3,183.14	3,183.14	15.14	42.38	-89.70	-3,126.94	-740.71	2,510.34	2,452.99	57.36	43.766	
4,000.00	3,295.21	3,183.21	3,183.21	16.74	42.38	-89.39	-3,126.94	-740.71	2,410.85	2,351.98	58.86	40.958	
4,100.00	3,295.30	3,183.30	3,183.30	18.36	42.38	-87.83	-3,126.94	-740.71	2,310.98	2,250.68	60.30	38.323	
4,200.00	3,295.40	3,183.40	3,183.40	19.96	42.38	-87.78	-3,126.94	-740.71	2,210.99	2,149.24	61.76	35.802	
4,300.00	3,295.52	3,183.52	3,183.52	21.57	42.38	-89.16	-3,126.94	-740.71	2,111.16	2,047.96	63.20	33.405	
4,400.00	3,295.64	3,183.64	3,183.64	23.16	42.39	-89.46	-3,126.94	-740.71	2,011.79	1,947.23	64.56	31.160	
4,500.00	3,295.78	3,183.78	3,183.78	24.75	42.39	-89.59	-3,126.94	-740.71	1,913.26	1,847.38	65.88	29.041	
4,528.45	3,295.83	3,183.83	3,183.83	25.21	42.39	-89.61	-3,126.94	-740.71	1,885.44	1,819.19	66.25	28.461	
4,600.00	3,295.93	3,183.93	3,183.93	26.31	42.39	-89.63	-3,126.94	-740.71	1,815.67	1,748.25	67.42	26.932	
4,700.00	3,296.09	3,184.09	3,184.09	27.84	42.39	-89.65	-3,126.94	-740.71	1,718.41	1,649.38	69.03	24.895	
4,800.00	3,296.24	3,184.24	3,184.24	29.41	42.39	-89.67	-3,126.94	-740.71	1,621.48	1,550.81	70.67	22.944	
4,900.00	3,296.39	3,184.39	3,184.39	31.01	42.40	-89.69	-3,126.94	-740.71	1,524.95	1,452.60	72.35	21.079	
5,000.00	3,296.54	3,184.54	3,184.54	32.65	42.40	-89.71	-3,126.94	-740.71	1,428.89	1,354.85	74.05	19.298	
5,100.00	3,296.69	3,184.69	3,184.69	34.31	42.40	-89.73	-3,126.94	-740.71	1,333.42	1,257.65	75.77	17.599	
5,200.00	3,296.84	3,184.84	3,184.84	35.99	42.40	-89.75	-3,126.94	-740.71	1,238.66	1,161.15	77.50	15.982	
5,300.00	3,296.99	3,184.99	3,184.99	37.70	42.40	-89.78	-3,126.94	-740.71	1,144.79	1,065.53	79.26	14.444	
5,400.00	3,297.14	3,185.14	3,185.14	39.42	42.41	-89.80	-3,126.94	-740.71	1,052.05	971.03	81.03	12.984	
5,500.00	3,297.29	3,185.29	3,185.29	41.15	42.41	-89.82	-3,126.94	-740.71	960.77	877.97	82.80	11.603	
5,600.00	3,297.44	3,185.44	3,185.44	42.90	42.41	-89.84	-3,126.94	-740.71	871.41	786.81	84.59	10.301	
5,700.00	3,297.59	3,185.59	3,185.59	44.67	42.41	-89.86	-3,126.94	-740.71	784.61	698.22	86.39	9.082	
5,800.00	3,297.74	3,185.74	3,185.74	46.44	42.41	-89.88	-3,126.94	-740.71	701.35	613.15	88.20	7.952	
5,900.00	3,297.90	3,185.90	3,185.90	48.22	42.42	-89.90	-3,126.94	-740.71	623.02	533.01	90.01	6.922	
6,000.00	3,298.05	3,186.05	3,186.05	50.01	42.42	-89.92	-3,126.94	-740.71	551.75	459.92	91.83	6.008	
6,100.00	3,298.20	3,186.20	3,186.20	51.81	42.42	-89.94	-3,126.94	-740.71	490.61	396.95	93.65	5.239	
6,200.00	3,298.35	3,186.35	3,186.35	53.61	42.42	-89.96	-3,126.94	-740.71	443.81	348.32	95.48	4.648	
6,300.00	3,298.50	3,186.50	3,186.50	55.43	42.42	-89.99	-3,126.94	-740.71	416.21	318.90	97.32	4.277	
6,368.66	3,298.60	3,186.60	3,186.60	56.67	42.43	-90.00	-3,126.94	-740.71	410.51	311.93	98.58	4.164 CC, ES	
6,400.00	3,298.65	3,186.65	3,186.65	57.24	42.43	-90.01	-3,126.94	-740.71	411.71	312.55	99.16	4.152 SF	
6,500.00	3,298.80	3,186.80	3,186.80	59.06	42.43	-90.03	-3,126.94	-740.71	431.01	330.02	101.00	4.268	
6,600.00	3,298.95	3,186.95	3,186.95	60.89	42.43	-90.05	-3,126.94	-740.71	471.21	368.37	102.84	4.582	
6,700.00	3,299.10	3,187.10	3,187.10	62.72	42.43	-90.07	-3,126.94	-740.71	527.55	422.86	104.69	5.039	
6,800.00	3,299.25	3,187.25	3,187.25	64.55	42.43	-90.09	-3,126.94	-740.71	595.47	488.93	106.54	5.589	
6,900.00	3,299.40	3,187.40	3,187.40	66.39	42.44	-90.11	-3,126.94	-740.71	671.45	563.06	108.39	6.195	
7,000.00	3,299.55	3,187.55	3,187.55	68.23	42.44	-90.13	-3,126.94	-740.71	753.07	642.82	110.25	6.831	
7,100.00	3,299.71	3,187.71	3,187.71	70.07	42.44	-90.15	-3,126.94	-740.71	838.68	726.57	112.11	7.481	
7,200.00	3,299.86	3,187.86	3,187.86	71.92	42.44	-90.18	-3,126.94	-740.71	927.18	813.21	113.97	8.135	
7,300.00	3,300.01	3,188.01	3,188.01	73.77	42.44	-90.20	-3,126.94	-740.71	1,017.80	901.97	115.83	8.787	
7,400.00	3,300.16	3,188.16	3,188.16	75.62	42.45	-90.22	-3,126.94	-740.71	1,110.04	992.35	117.69	9.432	
7,500.00	3,300.31	3,188.31	3,188.31	77.47	42.45	-90.24	-3,126.94	-740.71	1,203.52	1,083.96	119.56	10.067	
7,600.00	3,300.46	3,188.46	3,188.46	79.33	42.45	-90.26	-3,126.94	-740.71	1,297.97	1,176.55	121.42	10.690	
7,700.00	3,300.61	3,188.61	3,188.61	81.18	42.45	-90.28	-3,126.94	-740.71	1,393.20	1,269.91	123.29	11.300	
7,800.00	3,300.76	3,188.76	3,188.76	83.04	42.45	-90.30	-3,126.94	-740.71	1,489.05	1,363.89	125.16	11.897	
7,900.00	3,300.91	3,188.91	3,188.91	84.90	42.46	-90.32	-3,126.94	-740.71	1,585.41	1,458.38	127.03	12.481	
8,000.00	3,301.06	3,189.06	3,189.06	86.76	42.46	-90.34	-3,126.94	-740.71	1,682.20	1,553.30	128.90	13.051	
8,100.00	3,301.21	3,189.21	3,189.21	88.62	42.46	-90.36	-3,126.94	-740.71	1,779.35	1,648.57	130.77	13.607	
8,200.00	3,301.36	3,189.36	3,189.36	90.49	42.46	-90.39	-3,126.94	-740.71	1,876.79	1,744.15	132.64	14.149	
8,300.00	3,301.52	3,189.52	3,189.52	92.35	42.46	-90.41	-3,126.94	-740.71	1,974.49	1,839.97	134.52	14.678	

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 044G - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 8147-INC												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
8,400.00	3,301.67	3,189.67	3,189.67	94.22	42.47	90.43	-3,126.94	-740.71	2,072.41	1,936.02	136.39	15.194	
8,500.00	3,301.82	3,189.82	3,189.82	96.09	42.47	90.45	-3,126.94	-740.71	2,170.52	2,032.25	138.27	15.698	
8,600.00	3,301.97	3,189.97	3,189.97	97.96	42.47	90.47	-3,126.94	-740.71	2,268.79	2,128.65	140.14	16.189	
8,700.00	3,302.12	3,190.12	3,190.12	99.83	42.47	90.49	-3,126.94	-740.71	2,367.21	2,225.19	142.02	16.668	
8,800.00	3,302.27	3,190.27	3,190.27	101.70	42.47	90.51	-3,126.94	-740.71	2,465.75	2,321.86	143.90	17.135	
8,900.00	3,302.42	3,190.42	3,190.42	103.57	42.48	90.53	-3,126.94	-740.71	2,564.41	2,418.64	145.78	17.591	
9,000.00	3,302.57	3,190.57	3,190.57	105.44	42.48	90.55	-3,126.94	-740.71	2,663.17	2,515.52	147.66	18.036	
9,100.00	3,302.72	3,190.72	3,190.72	107.31	42.48	90.57	-3,126.94	-740.71	2,762.02	2,612.48	149.53	18.471	
9,200.00	3,302.87	3,190.87	3,190.87	109.19	42.48	90.60	-3,126.94	-740.71	2,860.95	2,709.53	151.41	18.895	
9,300.00	3,303.02	3,191.02	3,191.02	111.06	42.48	90.62	-3,126.94	-740.71	2,959.95	2,806.65	153.30	19.309	
9,400.00	3,303.17	3,191.17	3,191.17	112.94	42.49	90.64	-3,126.94	-740.71	3,059.01	2,903.84	155.18	19.713	
9,500.00	3,303.33	3,191.33	3,191.33	114.81	42.49	90.66	-3,126.94	-740.71	3,158.14	3,001.08	157.06	20.108	
9,600.00	3,303.48	3,191.48	3,191.48	116.69	42.49	90.68	-3,126.94	-740.71	3,257.31	3,098.37	158.94	20.494	
9,700.00	3,303.63	3,191.63	3,191.63	118.56	42.49	90.70	-3,126.94	-740.71	3,356.54	3,195.72	160.82	20.871	
9,800.00	3,303.78	3,191.78	3,191.78	120.44	42.49	90.72	-3,126.94	-740.71	3,455.81	3,293.11	162.70	21.240	
9,900.00	3,303.93	3,191.93	3,191.93	122.32	42.50	90.74	-3,126.94	-740.71	3,555.12	3,390.54	164.59	21.600	
10,000.00	3,304.08	3,192.08	3,192.08	124.20	42.50	90.76	-3,126.94	-740.71	3,654.47	3,488.00	166.47	21.953	
10,100.00	3,304.23	3,192.23	3,192.23	126.08	42.50	90.79	-3,126.94	-740.71	3,753.85	3,585.50	168.35	22.298	
10,200.00	3,304.38	3,192.38	3,192.38	127.96	42.50	90.81	-3,126.94	-740.71	3,853.27	3,683.03	170.24	22.635	
10,300.00	3,304.53	3,192.53	3,192.53	129.84	42.50	90.83	-3,126.94	-740.71	3,952.72	3,780.60	172.12	22.965	
10,400.00	3,304.68	3,192.68	3,192.68	131.72	42.51	90.85	-3,126.94	-740.71	4,052.19	3,878.18	174.00	23.288	
10,500.00	3,304.83	3,192.83	3,192.83	133.60	42.51	90.87	-3,126.94	-740.71	4,151.69	3,975.80	175.89	23.604	
10,600.00	3,304.98	3,192.98	3,192.98	135.48	42.51	90.89	-3,126.94	-740.71	4,251.21	4,073.43	177.77	23.914	
10,700.00	3,305.14	3,193.14	3,193.14	137.36	42.51	90.91	-3,126.94	-740.71	4,350.75	4,171.09	179.66	24.217	
10,800.00	3,305.29	3,193.29	3,193.29	139.24	42.51	90.93	-3,126.94	-740.71	4,450.31	4,268.77	181.54	24.514	
10,900.00	3,305.44	3,193.44	3,193.44	141.12	42.52	90.95	-3,126.94	-740.71	4,549.90	4,366.47	183.43	24.805	
11,000.00	3,305.59	3,193.59	3,193.59	143.00	42.52	90.97	-3,126.94	-740.71	4,649.50	4,464.18	185.31	25.090	
11,100.00	3,305.74	3,193.74	3,193.74	144.89	42.52	91.00	-3,126.94	-740.71	4,749.12	4,561.92	187.20	25.369	
11,200.00	3,305.89	3,193.89	3,193.89	146.77	42.52	91.02	-3,126.94	-740.71	4,848.75	4,659.66	189.09	25.643	
11,300.00	3,306.04	3,194.04	3,194.04	148.65	42.52	91.04	-3,126.94	-740.71	4,948.40	4,757.43	190.97	25.912	
11,400.00	3,306.19	3,194.19	3,194.19	150.54	42.53	91.06	-3,126.94	-740.71	5,048.06	4,855.20	192.86	26.175	
11,500.00	3,306.34	3,194.34	3,194.34	152.42	42.53	91.08	-3,126.94	-740.71	5,147.73	4,952.99	194.74	26.433	
11,600.00	3,306.49	3,194.49	3,194.49	154.30	42.53	91.10	-3,126.94	-740.71	5,247.42	5,050.79	196.63	26.687	
11,700.00	3,306.64	3,194.64	3,194.64	156.19	42.53	91.12	-3,126.94	-740.71	5,347.12	5,148.60	198.52	26.935	
11,800.00	3,306.79	3,194.79	3,194.79	158.07	42.53	91.14	-3,126.94	-740.71	5,446.83	5,246.43	200.40	27.179	
11,900.00	3,306.94	3,194.94	3,194.94	159.96	42.54	91.16	-3,126.94	-740.71	5,546.55	5,344.26	202.29	27.419	
11,936.61	3,307.00	3,195.00	3,195.00	160.65	42.54	91.17	-3,126.94	-740.71	5,583.06	5,380.08	202.98	27.505	



Koltek Energy Services

Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design												Offset Site Error: 0.00 usft	
Survey Program: 8247-INC												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
-7.00	-7.00	0.00	0.00	0.00	0.00	169.67	-2,089.68	381.05	2,124.93				
0.00	0.00	0.00	0.00	0.00	0.00	169.67	-2,089.68	381.05	2,124.75				
68.65	68.65	17.65	17.65	0.06	0.24	169.67	-2,089.68	381.05	2,124.13	2,123.83	0.30	7,084.071	
93.00	93.00	42.00	42.00	0.09	0.56	169.67	-2,089.68	381.05	2,124.13	2,123.49	0.65	3,282.912	
193.00	193.00	142.00	142.00	0.31	1.89	169.67	-2,089.68	381.05	2,124.13	2,121.93	2.20	964.136	
293.00	293.00	242.00	242.00	0.54	3.22	169.67	-2,089.68	381.05	2,124.13	2,120.38	3.76	565.039	
393.00	393.00	342.00	342.00	0.76	4.55	169.67	-2,089.68	381.05	2,124.13	2,118.82	5.32	399.620	
493.00	493.00	442.00	442.00	0.99	5.88	169.67	-2,089.68	381.05	2,124.13	2,117.26	6.87	309.122	
593.00	593.00	542.00	542.00	1.21	7.22	169.67	-2,089.68	381.05	2,124.13	2,115.71	8.43	252.044	
693.00	693.00	642.00	642.00	1.44	8.55	169.67	-2,089.68	381.05	2,124.13	2,114.15	9.98	212.759	
793.00	793.00	742.00	742.00	1.66	9.88	169.67	-2,089.68	381.05	2,124.13	2,112.59	11.54	184.069	
893.00	893.00	842.00	842.00	1.89	11.21	169.67	-2,089.68	381.05	2,124.13	2,111.04	13.10	162.197	
993.00	993.00	942.00	942.00	2.11	12.54	169.67	-2,089.68	381.05	2,124.13	2,109.48	14.65	144.971	
1,093.00	1,093.00	1,042.00	1,042.00	2.34	13.87	169.67	-2,089.68	381.05	2,124.13	2,107.93	16.21	131.053	
1,193.00	1,193.00	1,142.00	1,142.00	2.56	15.20	169.67	-2,089.68	381.05	2,124.13	2,106.37	17.76	119.573	
1,293.00	1,293.00	1,242.00	1,242.00	2.78	16.54	169.67	-2,089.68	381.05	2,124.13	2,104.81	19.32	109.942	
1,393.00	1,393.00	1,342.00	1,342.00	3.01	17.87	169.67	-2,089.68	381.05	2,124.13	2,103.26	20.88	101.747	
1,493.00	1,493.00	1,442.00	1,442.00	3.23	19.20	169.67	-2,089.68	381.05	2,124.13	2,101.70	22.43	94.689	
1,593.00	1,593.00	1,542.00	1,542.00	3.46	20.53	169.67	-2,089.68	381.05	2,124.13	2,100.15	23.99	88.547	
1,693.00	1,693.00	1,642.00	1,642.00	3.68	21.86	169.67	-2,089.68	381.05	2,124.13	2,098.59	25.54	83.153	
1,793.00	1,793.00	1,742.00	1,742.00	3.91	23.19	169.67	-2,089.68	381.05	2,124.13	2,097.03	27.10	78.378	
1,893.00	1,893.00	1,842.00	1,842.00	4.13	24.52	169.67	-2,089.68	381.05	2,124.13	2,095.48	28.66	74.122	
1,993.00	1,993.00	1,942.00	1,942.00	4.36	25.86	169.67	-2,089.68	381.05	2,124.13	2,093.92	30.21	70.305	
2,093.00	2,093.00	2,042.00	2,042.00	4.58	27.19	169.67	-2,089.68	381.05	2,124.13	2,092.36	31.77	66.861	
2,193.00	2,193.00	2,142.00	2,142.00	4.81	28.52	169.67	-2,089.68	381.05	2,124.13	2,090.81	33.33	63.739	
2,293.00	2,293.00	2,242.00	2,242.00	5.03	29.85	169.67	-2,089.68	381.05	2,124.13	2,089.25	34.88	60.895	
2,393.00	2,393.00	2,342.00	2,342.00	5.26	31.18	169.67	-2,089.68	381.05	2,124.13	2,087.70	36.44	58.295	
2,493.00	2,493.00	2,442.00	2,442.00	5.48	32.51	169.67	-2,089.68	381.05	2,124.13	2,086.14	37.99	55.907	
2,593.00	2,593.00	2,542.00	2,542.00	5.71	33.84	169.67	-2,089.68	381.05	2,124.13	2,084.58	39.55	53.708	
2,693.00	2,693.00	2,642.00	2,642.00	5.93	35.17	169.67	-2,089.68	381.05	2,124.13	2,083.03	41.11	51.674	
2,793.00	2,793.00	2,742.00	2,742.00	6.16	36.51	169.67	-2,089.68	381.05	2,124.13	2,081.47	42.66	49.790	
2,893.00	2,893.00	2,842.00	2,842.00	6.38	37.84	169.67	-2,089.68	381.05	2,124.13	2,079.92	44.22	48.037	
2,993.00	2,993.00	2,942.00	2,942.00	6.61	39.17	169.67	-2,089.68	381.05	2,124.13	2,078.36	45.77	46.404	
3,093.00	3,093.00	2,992.00	2,992.00	6.84	39.38	169.67	-2,089.68	381.05	2,124.13	2,078.12	46.02	46.161	
3,025.00	3,024.99	2,973.99	2,973.99	6.66	39.59	-40.39	-2,089.68	381.05	2,123.77	2,077.56	46.21	45.959	
3,050.00	3,049.86	2,998.86	2,998.86	6.67	39.93	-40.68	-2,089.68	381.05	2,121.85	2,075.54	46.31	45.817	
3,075.00	3,074.40	3,023.40	3,023.40	6.68	40.25	-41.24	-2,089.68	381.05	2,118.29	2,072.06	46.22	45.828	
3,100.00	3,098.45	3,047.45	3,047.45	6.70	40.57	-42.06	-2,089.68	381.05	2,113.12	2,067.15	45.96	45.973	
3,125.00	3,121.82	3,070.82	3,070.82	6.73	40.88	-43.17	-2,089.68	381.05	2,106.39	2,060.81	45.58	46.215	
3,150.00	3,144.32	3,093.32	3,093.32	6.76	41.18	-44.57	-2,089.68	381.05	2,098.16	2,053.04	45.12	46.504	
3,175.00	3,165.79	3,114.79	3,114.79	6.79	41.47	-46.29	-2,089.68	381.05	2,088.51	2,043.85	44.66	46.770	
3,200.00	3,186.06	3,135.06	3,135.06	6.83	41.74	-48.36	-2,089.68	381.05	2,077.53	2,033.25	44.28	46.921	
3,225.00	3,204.98	3,153.98	3,153.98	6.88	41.99	-50.79	-2,089.68	381.05	2,065.31	2,021.24	44.08	46.857	
3,250.00	3,222.40	3,171.40	3,171.40	6.92	42.22	-53.61	-2,089.68	381.05	2,051.98	2,007.84	44.14	46.488	
3,275.00	3,238.20	3,187.20	3,187.20	7.03	42.43	-56.82	-2,089.68	381.05	2,037.64	1,993.11	44.53	45.756	
3,300.00	3,252.25	3,201.25	3,201.25	7.17	42.62	-60.45	-2,089.68	381.05	2,022.44	1,977.16	45.27	44.670	
3,325.00	3,264.44	3,213.44	3,213.44	7.34	42.78	-64.47	-2,089.68	381.05	2,006.49	1,960.16	46.33	43.310	
3,350.00	3,274.69	3,223.69	3,223.69	7.54	42.92	-68.84	-2,089.68	381.05	1,989.95	1,942.35	47.59	41.811	
3,375.00	3,282.91	3,231.91	3,231.91	7.77	43.03	-73.52	-2,089.68	381.05	1,972.95	1,924.03	48.93	40.326	
3,400.00	3,289.04	3,238.04	3,238.04	8.03	43.11	-78.40	-2,089.68	381.05	1,955.65	1,905.49	50.16	38.991	
3,425.00	3,293.04	3,242.04	3,242.04	8.31	43.16	-83.38	-2,089.68	381.05	1,938.18	1,887.04	51.14	37.900	
3,450.00	3,294.87	3,243.87	3,243.87	8.61	43.19	-88.34	-2,089.68	381.05	1,920.69	1,868.92	51.78	37.097	



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 044M - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 8247-INC												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
3,458.52	3,295.00	3,244.00	3,244.00	8.72	43.19	-90.00	-2,089.68	381.05	1,914.76	1,862.85	51.91	36.889	
3,500.00	3,295.00	3,244.00	3,244.00	9.23	43.19	-90.00	-2,089.68	381.05	1,885.79	1,833.37	52.42	35.974	
3,600.00	3,295.01	3,244.01	3,244.01	10.55	43.19	-89.99	-2,089.68	381.05	1,815.25	1,761.52	53.73	33.786	
3,700.00	3,295.04	3,244.04	3,244.04	12.01	43.19	-89.98	-2,089.68	381.05	1,743.75	1,688.59	55.16	31.611	
3,800.00	3,295.08	3,244.08	3,244.08	13.56	43.19	-89.97	-2,089.68	381.05	1,671.38	1,614.72	56.66	29.500	
3,900.00	3,295.14	3,244.14	3,244.14	15.14	43.19	-89.96	-2,089.68	381.05	1,598.24	1,540.07	58.17	27.475	
4,000.00	3,295.21	3,244.21	3,244.21	16.74	43.19	-89.95	-2,089.68	381.05	1,524.42	1,464.74	59.68	25.544	
4,100.00	3,295.30	3,244.30	3,244.30	18.36	43.19	-89.94	-2,089.68	381.05	1,450.05	1,388.89	61.16	23.709	
4,200.00	3,295.40	3,244.40	3,244.40	19.96	43.19	-89.93	-2,089.68	381.05	1,375.25	1,312.64	62.61	21.966	
4,300.00	3,295.52	3,244.52	3,244.52	21.57	43.20	-89.92	-2,089.68	381.05	1,300.17	1,236.15	64.01	20.311	
4,400.00	3,295.64	3,244.64	3,244.64	23.16	43.20	-89.91	-2,089.68	381.05	1,224.98	1,159.60	65.38	18.737	
4,500.00	3,295.78	3,244.78	3,244.78	24.75	43.20	-89.90	-2,089.68	381.05	1,149.90	1,083.20	66.69	17.242	
4,528.45	3,295.83	3,244.83	3,244.83	25.21	43.20	-89.90	-2,089.68	381.05	1,128.59	1,061.53	67.06	16.830	
4,600.00	3,295.93	3,244.93	3,244.93	26.31	43.20	-89.91	-2,089.68	381.05	1,076.08	1,007.85	68.23	15.772	
4,700.00	3,296.09	3,245.09	3,245.09	27.84	43.20	-89.92	-2,089.68	381.05	1,006.64	936.80	69.84	14.414	
4,800.00	3,296.24	3,245.24	3,245.24	29.41	43.21	-89.93	-2,089.68	381.05	942.70	871.22	71.48	13.188	
4,900.00	3,296.39	3,245.39	3,245.39	31.01	43.21	-89.95	-2,089.68	381.05	885.47	812.31	73.16	12.104	
5,000.00	3,296.54	3,245.54	3,245.54	32.65	43.21	-89.96	-2,089.68	381.05	836.32	761.46	74.86	11.172	
5,100.00	3,296.69	3,245.69	3,245.69	34.31	43.21	-89.97	-2,089.68	381.05	796.74	720.17	76.58	10.404	
5,200.00	3,296.84	3,245.84	3,245.84	35.99	43.21	-89.98	-2,089.68	381.05	768.23	689.91	78.32	9.809	
5,300.00	3,296.99	3,245.99	3,245.99	37.70	43.22	-89.99	-2,089.68	381.05	752.03	671.96	80.07	9.392	
5,373.15	3,297.10	3,246.10	3,246.10	38.95	43.22	-90.00	-2,089.68	381.05	748.46	667.10	81.36	9.199 CC, ES	
5,400.00	3,297.14	3,246.14	3,246.14	39.42	43.22	-90.00	-2,089.68	381.05	748.94	667.10	81.84	9.152	
5,500.00	3,297.29	3,246.29	3,246.29	41.15	43.22	-90.01	-2,089.68	381.05	759.13	675.52	83.62	9.079 SF	
5,600.00	3,297.44	3,246.44	3,246.44	42.90	43.22	-90.03	-2,089.68	381.05	782.08	696.68	85.41	9.157	
5,700.00	3,297.59	3,246.59	3,246.59	44.67	43.22	-90.04	-2,089.68	381.05	816.71	729.51	87.20	9.366	
5,800.00	3,297.74	3,246.74	3,246.74	46.44	43.23	-90.05	-2,089.68	381.05	861.62	772.61	89.01	9.680	
5,900.00	3,297.90	3,246.90	3,246.90	48.22	43.23	-90.06	-2,089.68	381.05	915.29	824.47	90.82	10.078	
6,000.00	3,298.05	3,247.05	3,247.05	50.01	43.23	-90.07	-2,089.68	381.05	976.28	883.64	92.64	10.538	
6,100.00	3,298.20	3,247.20	3,247.20	51.81	43.23	-90.08	-2,089.68	381.05	1,043.31	948.85	94.47	11.044	
6,200.00	3,298.35	3,247.35	3,247.35	53.61	43.23	-90.10	-2,089.68	381.05	1,115.29	1,018.99	96.30	11.582	
6,300.00	3,298.50	3,247.50	3,247.50	55.43	43.24	-90.11	-2,089.68	381.05	1,191.32	1,093.19	98.13	12.140	
6,400.00	3,298.65	3,247.65	3,247.65	57.24	43.24	-90.12	-2,089.68	381.05	1,270.67	1,170.71	99.97	12.711	
6,500.00	3,298.80	3,247.80	3,247.80	59.06	43.24	-90.13	-2,089.68	381.05	1,352.77	1,250.96	101.81	13.287	
6,600.00	3,298.95	3,247.95	3,247.95	60.89	43.24	-90.14	-2,089.68	381.05	1,437.13	1,333.48	103.65	13.865	
6,700.00	3,299.10	3,248.10	3,248.10	62.72	43.24	-90.15	-2,089.68	381.05	1,523.39	1,417.89	105.50	14.439	
6,800.00	3,299.25	3,248.25	3,248.25	64.55	43.25	-90.16	-2,089.68	381.05	1,611.24	1,503.89	107.35	15.009	
6,900.00	3,299.40	3,248.40	3,248.40	66.39	43.25	-90.18	-2,089.68	381.05	1,700.43	1,591.22	109.21	15.571	
7,000.00	3,299.55	3,248.55	3,248.55	68.23	43.25	-90.19	-2,089.68	381.05	1,790.76	1,679.70	111.06	16.124	
7,100.00	3,299.71	3,248.71	3,248.71	70.07	43.25	-90.20	-2,089.68	381.05	1,882.07	1,769.15	112.92	16.667	
7,200.00	3,299.86	3,248.86	3,248.86	71.92	43.25	-90.21	-2,089.68	381.05	1,974.23	1,859.45	114.78	17.200	
7,300.00	3,300.01	3,249.01	3,249.01	73.77	43.26	-90.22	-2,089.68	381.05	2,067.11	1,950.47	116.64	17.722	
7,400.00	3,300.16	3,249.16	3,249.16	75.62	43.26	-90.23	-2,089.68	381.05	2,160.63	2,042.12	118.50	18.232	
7,500.00	3,300.31	3,249.31	3,249.31	77.47	43.26	-90.25	-2,089.68	381.05	2,254.70	2,134.33	120.37	18.731	
7,600.00	3,300.46	3,249.46	3,249.46	79.33	43.26	-90.26	-2,089.68	381.05	2,349.26	2,227.03	122.24	19.219	
7,700.00	3,300.61	3,249.61	3,249.61	81.18	43.26	-90.27	-2,089.68	381.05	2,444.26	2,320.16	124.10	19.695	
7,800.00	3,300.76	3,249.76	3,249.76	83.04	43.27	-90.28	-2,089.68	381.05	2,539.64	2,413.67	125.97	20.160	
7,900.00	3,300.91	3,249.91	3,249.91	84.90	43.27	-90.29	-2,089.68	381.05	2,635.37	2,507.52	127.84	20.614	
8,000.00	3,301.06	3,250.06	3,250.06	86.76	43.27	-90.30	-2,089.68	381.05	2,731.39	2,601.68	129.71	21.057	
8,100.00	3,301.21	3,250.21	3,250.21	88.62	43.27	-90.31	-2,089.68	381.05	2,827.70	2,696.11	131.59	21.489	
8,200.00	3,301.36	3,250.36	3,250.36	90.49	43.27	-90.33	-2,089.68	381.05	2,924.25	2,790.79	133.46	21.911	
8,300.00	3,301.52	3,250.52	3,250.52	92.35	43.28	-90.34	-2,089.68	381.05	3,021.03	2,885.70	135.33	22.323	

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



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 044M - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 8247-INC												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)	Separation Factor	
8,400.00	3,301.67	3,250.67	3,250.67	94.22	43.28	-90.35	-2,089.68	381.05	3,118.01	2,980.80	137.21	22.725	
8,500.00	3,301.82	3,250.82	3,250.82	96.09	43.28	-90.36	-2,089.68	381.05	3,215.18	3,076.09	139.08	23.117	
8,600.00	3,301.97	3,250.97	3,250.97	97.96	43.28	-90.37	-2,089.68	381.05	3,312.51	3,171.55	140.96	23.500	
8,700.00	3,302.12	3,251.12	3,251.12	99.83	43.28	-90.38	-2,089.68	381.05	3,410.00	3,267.16	142.84	23.873	
8,800.00	3,302.27	3,251.27	3,251.27	101.70	43.29	-90.40	-2,089.68	381.05	3,507.63	3,362.91	144.72	24.238	
8,900.00	3,302.42	3,251.42	3,251.42	103.57	43.29	-90.41	-2,089.68	381.05	3,605.39	3,458.80	146.59	24.594	
9,000.00	3,302.57	3,251.57	3,251.57	105.44	43.29	-90.42	-2,089.68	381.05	3,703.27	3,554.80	148.47	24.942	
9,100.00	3,302.72	3,251.72	3,251.72	107.31	43.29	-90.43	-2,089.68	381.05	3,801.26	3,650.91	150.35	25.282	
9,200.00	3,302.87	3,251.87	3,251.87	109.19	43.29	-90.44	-2,089.68	381.05	3,899.35	3,747.12	152.23	25.614	
9,300.00	3,303.02	3,252.02	3,252.02	111.06	43.30	-90.45	-2,089.68	381.05	3,997.54	3,843.42	154.11	25.939	
9,400.00	3,303.17	3,252.17	3,252.17	112.94	43.30	-90.46	-2,089.68	381.05	4,095.81	3,939.82	155.99	26.256	
9,500.00	3,303.33	3,252.33	3,252.33	114.81	43.30	-90.48	-2,089.68	381.05	4,194.17	4,036.29	157.88	26.566	
9,600.00	3,303.48	3,252.48	3,252.48	116.69	43.30	-90.49	-2,089.68	381.05	4,292.60	4,132.84	159.76	26.869	
9,700.00	3,303.63	3,252.63	3,252.63	118.56	43.30	-90.50	-2,089.68	381.05	4,391.10	4,229.46	161.64	27.166	
9,800.00	3,303.78	3,252.78	3,252.78	120.44	43.31	-90.51	-2,089.68	381.05	4,489.67	4,326.15	163.52	27.456	
9,900.00	3,303.93	3,252.93	3,252.93	122.32	43.31	-90.52	-2,089.68	381.05	4,588.30	4,422.90	165.41	27.739	
10,000.00	3,304.08	3,253.08	3,253.08	124.20	43.31	-90.53	-2,089.68	381.05	4,686.99	4,519.70	167.29	28.017	
10,100.00	3,304.23	3,253.23	3,253.23	126.08	43.31	-90.55	-2,089.68	381.05	4,785.73	4,616.56	169.17	28.289	
10,200.00	3,304.38	3,253.38	3,253.38	127.96	43.31	-90.56	-2,089.68	381.05	4,884.53	4,713.47	171.06	28.555	
10,300.00	3,304.53	3,253.53	3,253.53	129.84	43.32	-90.57	-2,089.68	381.05	4,983.37	4,810.43	172.94	28.815	
10,400.00	3,304.68	3,253.68	3,253.68	131.72	43.32	-90.58	-2,089.68	381.05	5,082.26	4,907.43	174.83	29.070	
10,500.00	3,304.83	3,253.83	3,253.83	133.60	43.32	-90.59	-2,089.68	381.05	5,181.19	5,004.48	176.71	29.320	
10,600.00	3,304.98	3,253.98	3,253.98	135.48	43.32	-90.60	-2,089.68	381.05	5,280.16	5,101.56	178.60	29.564	
10,700.00	3,305.14	3,254.14	3,254.14	137.36	43.32	-90.61	-2,089.68	381.05	5,379.17	5,198.69	180.48	29.804	
10,800.00	3,305.29	3,254.29	3,254.29	139.24	43.33	-90.63	-2,089.68	381.05	5,478.21	5,295.84	182.37	30.039	
10,900.00	3,305.44	3,254.44	3,254.44	141.12	43.33	-90.64	-2,089.68	381.05	5,577.29	5,393.04	184.26	30.269	
11,000.00	3,305.59	3,254.59	3,254.59	143.00	43.33	-90.65	-2,089.68	381.05	5,676.40	5,490.26	186.14	30.495	
11,100.00	3,305.74	3,254.74	3,254.74	144.89	43.33	-90.66	-2,089.68	381.05	5,775.55	5,587.52	188.03	30.716	
11,200.00	3,305.89	3,254.89	3,254.89	146.77	43.33	-90.67	-2,089.68	381.05	5,874.72	5,684.80	189.92	30.933	
11,300.00	3,306.04	3,255.04	3,255.04	148.65	43.34	-90.68	-2,089.68	381.05	5,973.92	5,782.11	191.80	31.146	
11,400.00	3,306.19	3,255.19	3,255.19	150.54	43.34	-90.70	-2,089.68	381.05	6,073.14	5,879.45	193.69	31.355	
11,500.00	3,306.34	3,255.34	3,255.34	152.42	43.34	-90.71	-2,089.68	381.05	6,172.39	5,976.81	195.58	31.560	
11,600.00	3,306.49	3,255.49	3,255.49	154.30	43.34	-90.72	-2,089.68	381.05	6,271.66	6,074.20	197.47	31.761	
11,700.00	3,306.64	3,255.64	3,255.64	156.19	43.34	-90.73	-2,089.68	381.05	6,370.96	6,171.61	199.35	31.958	
11,800.00	3,306.79	3,255.79	3,255.79	158.07	43.35	-90.74	-2,089.68	381.05	6,470.28	6,269.04	201.24	32.152	
11,900.00	3,306.94	3,255.94	3,255.94	159.96	43.35	-90.75	-2,089.68	381.05	6,569.62	6,366.49	203.13	32.342	
11,936.61	3,307.00	3,256.00	3,256.00	160.65	43.35	-90.76	-2,089.68	381.05	6,605.99	6,402.17	203.82	32.411	



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Sec.22-T32N-R07W - San Juan 32-7 Unit 203 - Original Hole - Original Hole												Offset Well Error:	0.00 usft
Survey Program: 230-INC													
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
-7.00	-7.00	0.00	0.00	0.00	0.00	-13.61	0.00	0.00	15.00				
0.00	0.00	0.00	0.00	0.00	0.00	-13.61	0.00	0.00	8.00				
29.17	29.17	21.17	21.17	0.03	0.32	-179.92	-0.04	0.00	0.04	-0.28	0.32	0.131	Level 1
93.00	93.00	85.00	85.00	0.09	1.27	-179.97	-0.12	0.00	0.12	-1.14	1.26	0.093	Level 1
154.97	154.97	146.97	146.97	0.23	2.20	-179.97	-0.12	0.00	0.12	-2.13	2.25	0.051	Level 1
193.00	193.00	185.00	185.00	0.31	2.77	-179.96	-0.08	0.00	0.08	-2.78	2.86	0.028	Level 1
293.00	293.00	285.00	285.00	0.54	5.45	-179.98	-0.21	0.00	0.21	-5.01	5.23	0.041	Level 1
304.45	304.45	296.45	296.45	0.56	5.86	-179.99	-0.25	0.00	0.25	-5.32	5.57	0.045	Level 1
393.00	393.00	385.01	385.01	0.76	9.09	-179.99	-0.48	0.00	0.48	-7.77	8.24	0.058	Level 1
408.14	408.14	400.15	400.15	0.80	9.64	-179.99	-0.50	0.00	0.50	-8.20	8.70	0.058	Level 1
493.00	493.00	485.01	485.01	0.99	12.73	-179.99	-0.58	0.00	0.58	-10.68	11.26	0.051	Level 1
528.65	528.65	520.65	520.65	1.07	14.03	-179.99	-0.58	0.00	0.58	-11.76	12.34	0.047	Level 1
593.00	593.00	585.00	585.00	1.21	16.37	-179.99	-0.52	0.00	0.52	-13.77	14.28	0.036	Level 1
663.32	663.32	655.31	655.31	1.37	18.93	-179.99	-0.37	0.00	0.37	-16.04	16.41	0.023	Level 1
693.00	693.00	684.99	684.99	1.44	20.01	-179.99	-0.29	0.00	0.29	-17.02	17.30	0.017	Level 1
793.00	793.00	785.00	785.00	1.66	23.99	-179.93	-0.05	0.00	0.05	-20.32	20.37	0.002	Level 1
807.79	807.79	799.79	799.79	1.69	24.74	-179.95	-0.08	0.00	0.08	-20.78	20.85	0.004	Level 1
893.00	893.00	885.01	885.01	1.89	29.07	-179.98	-0.21	0.00	0.21	-23.43	23.64	0.009	Level 1
909.14	909.14	901.16	901.15	1.92	29.89	-179.98	-0.23	0.00	0.23	-23.94	24.17	0.010	Level 1
993.00	993.00	985.02	985.01	2.11	34.16	-179.99	-0.30	0.00	0.30	-26.63	26.93	0.011	Level 1
1,012.65	1,012.65	1,004.67	1,004.66	2.15	35.16	-179.99	-0.31	0.00	0.31	-27.27	27.58	0.011	Level 1
1,093.00	1,093.00	1,085.02	1,085.00	2.34	39.24	-179.99	-0.31	0.00	0.31	-29.92	30.23	0.010	Level 1
1,145.87	1,145.87	1,137.88	1,137.87	2.45	41.93	-179.99	-0.29	0.00	0.29	-31.69	31.98	0.009	Level 1
1,193.00	1,193.00	1,185.01	1,185.00	2.56	44.32	-179.99	-0.25	0.00	0.25	-33.29	33.54	0.007	Level 1
1,261.87	1,261.87	1,253.88	1,253.87	2.71	47.83	-179.98	-0.16	0.00	0.16	-35.66	35.82	0.004	Level 1
1,293.00	1,293.00	1,285.00	1,284.99	2.78	49.41	-179.97	-0.11	0.00	0.11	-36.74	36.85	0.003	Level 1
1,377.41	1,377.41	1,369.42	1,369.40	2.97	53.69	-0.06	0.06	0.00	0.06	-39.58	39.64	0.002	Level 1
1,393.00	1,393.00	1,385.02	1,385.00	3.01	54.48	-0.04	0.09	0.00	0.09	-40.04	40.13	0.002	Level 1
1,466.58	1,466.58	1,458.60	1,458.58	3.18	58.20	-0.02	0.20	0.00	0.20	-42.24	42.44	0.005	Level 1
1,493.00	1,493.00	1,485.02	1,484.99	3.23	59.53	-0.02	0.23	0.00	0.23	-43.05	43.27	0.005	Level 1
1,569.68	1,569.68	1,561.70	1,561.67	3.41	63.41	-0.01	0.27	0.00	0.27	-45.42	45.69	0.006	Level 1
1,593.00	1,593.00	1,585.02	1,585.00	3.46	64.59	-0.01	0.27	0.00	0.27	-46.16	46.43	0.006	Level 1
1,693.00	1,693.00	1,685.04	1,685.00	3.68	69.65	-0.01	0.24	0.00	0.24	-49.36	49.60	0.005	Level 1
1,793.00	1,793.00	1,785.05	1,785.01	3.91	74.70	-0.03	0.11	0.00	0.11	-52.67	52.78	0.002	Level 1
1,827.17	1,827.17	1,819.23	1,819.19	3.99	76.43	-0.07	0.05	0.00	0.05	-53.84	53.89	0.001	Level 1
1,893.00	1,893.00	1,885.04	1,885.00	4.13	79.53	-13.61	0.00	0.00	0.00	-65.56	65.57	0.000	Level 1
1,993.00	1,993.00	1,985.05	1,985.00	4.36	84.05	-13.61	0.00	0.00	0.00	-69.19	69.19	0.000	Level 1
2,093.00	2,093.00	2,085.05	2,085.00	4.58	88.57	-13.61	0.00	0.00	0.00	-72.82	72.82	0.000	Level 1
2,193.00	2,193.00	2,185.05	2,185.00	4.81	93.09	-13.61	0.00	0.00	0.00	-76.45	76.45	0.000	Level 1
2,293.00	2,293.00	2,285.06	2,285.00	5.03	97.61	-13.61	0.00	0.00	0.00	-80.08	80.08	0.000	Level 1
2,393.00	2,393.00	2,385.06	2,385.00	5.26	102.13	-26.27	0.00	0.00	0.00	-94.23	94.23	0.000	Level 1, CC, ES, SF
2,408.00	2,408.00	2,400.06	2,400.00	5.29	102.92	-179.98	-0.03	0.00	0.03	-71.32	71.35	0.000	Level 1
2,493.00	2,493.00	2,485.07	2,485.00	5.48	107.36	-179.98	-0.18	0.00	0.18	-74.14	74.33	0.002	Level 1
2,508.42	2,508.42	2,500.49	2,500.43	5.52	108.17	-179.98	-0.21	0.00	0.21	-74.65	74.85	0.003	Level 1
2,593.00	2,593.00	2,585.07	2,585.01	5.71	112.59	-179.99	-0.30	0.00	0.30	-77.44	77.74	0.004	Level 1
2,610.27	2,610.27	2,602.34	2,602.28	5.75	113.49	-179.99	-0.31	0.00	0.31	-78.01	78.33	0.004	Level 1
2,693.00	2,693.00	2,685.08	2,685.01	5.93	117.82	-179.99	-0.35	0.00	0.35	-80.80	81.14	0.004	Level 1
2,722.29	2,722.29	2,714.37	2,714.30	6.00	119.35	-179.99	-0.35	0.00	0.35	-81.79	82.14	0.004	Level 1
2,793.00	2,793.00	2,785.07	2,785.00	6.16	123.04	-179.99	-0.32	0.00	0.32	-84.22	84.54	0.004	Level 1
2,858.60	2,858.60	2,850.67	2,850.60	6.30	126.47	-179.99	-0.27	0.00	0.27	-86.50	86.78	0.003	Level 1
2,893.00	2,893.00	2,885.07	2,884.99	6.38	128.27	-179.98	-0.23	0.00	0.23	-87.71	87.94	0.003	Level 1
2,961.90	2,961.90	2,953.96	2,953.88	6.54	131.87	-179.97	-0.13	0.00	0.13	-90.14	90.27	0.001	Level 1

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 230-INC												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	
2,993.00	2,993.00	2,985.06	2,984.98	6.61	133.50	-179.95	-0.07	0.00	0.08	-91.23	91.31	0.001	Level 1
3,008.52	3,008.52	3,000.58	3,000.50	6.64	134.31	-179.92	-0.04	0.00	0.05	-91.74	91.79	0.001	Level 1
3,009.60	3,009.60	3,001.66	3,001.59	6.64	134.37	-31.37	-0.04	0.00	0.04	-67.34	67.38	0.001	Level 1
3,025.00	3,024.99	3,017.05	3,016.97	6.66	135.17	-179.49	-0.01	0.00	0.47	-92.47	92.94	0.005	Level 1
3,050.00	3,049.86	3,041.93	3,041.85	6.67	136.45	179.61	0.04	0.00	3.03	-88.70	91.73	0.033	Level 1
3,075.00	3,074.40	3,066.47	3,066.40	6.68	137.72	179.71	0.07	0.00	7.74	-83.34	91.08	0.085	Level 1
3,100.00	3,098.45	3,090.52	3,090.44	6.70	138.96	179.80	0.09	0.00	14.56	-75.12	89.69	0.162	Level 1
3,125.00	3,121.82	3,113.90	3,113.82	6.73	140.16	179.87	0.10	0.00	23.44	-64.08	87.52	0.268	Level 1
3,150.00	3,144.32	3,136.42	3,136.33	6.76	141.32	179.91	0.09	0.00	34.31	-50.29	84.60	0.406	Level 1
3,175.00	3,165.79	3,157.92	3,157.83	6.79	142.43	179.94	0.08	0.00	47.09	-33.85	80.95	0.582	Level 1
3,200.00	3,186.06	3,178.23	3,178.14	6.83	143.48	179.97	0.05	0.00	61.69	-14.90	76.59	0.805	Level 1
3,225.00	3,204.98	3,197.20	3,197.12	6.88	144.46	179.99	0.02	0.00	77.99	6.42	71.56	1.090	Level 2
3,250.00	3,222.40	3,214.49	3,214.40	6.92	145.29	180.00	0.00	0.00	95.89	30.01	65.88	1.456	Level 3
3,275.00	3,238.20	3,230.29	3,230.20	7.03	146.01	180.00	0.00	0.00	115.26	55.65	59.60	1.934	
3,300.00	3,252.25	3,244.34	3,244.25	7.17	146.65	180.00	0.00	0.00	135.93	83.11	52.82	2.573	
3,325.00	3,264.44	3,256.53	3,256.44	7.34	147.20	180.00	0.00	0.00	157.74	112.14	45.60	3.459	
3,350.00	3,274.69	3,266.78	3,266.69	7.54	147.67	180.00	0.00	0.00	180.54	142.52	38.01	4.749	
3,375.00	3,282.91	3,275.00	3,274.91	7.77	148.04	180.00	0.00	0.00	204.14	173.97	30.17	6.767	
3,400.00	3,289.04	3,281.13	3,281.04	8.03	148.32	180.00	0.00	0.00	228.37	206.20	22.16	10.305	
3,425.00	3,293.04	3,285.13	3,285.04	8.31	148.50	180.00	0.00	0.00	253.04	238.86	14.17	17.856	
3,450.00	3,294.87	3,286.96	3,286.87	8.61	148.58	180.00	0.00	0.00	277.96	271.00	6.96	39.914	
3,458.52	3,295.00	3,287.09	3,287.00	8.72	148.59	0.00	0.00	0.00	286.48	280.56	5.92	48.382	
3,500.00	3,295.00	3,287.09	3,287.00	9.23	148.59	-90.17	0.00	0.00	327.96	184.62	143.33	2.288	
3,600.00	3,295.01	3,287.10	3,287.01	10.55	148.59	-90.19	0.00	0.00	427.86	280.44	147.42	2.902	
3,700.00	3,295.04	3,287.13	3,287.04	12.01	148.59	-90.21	0.00	0.00	527.54	376.17	151.37	3.485	
3,800.00	3,295.08	3,287.17	3,287.08	13.56	148.59	-90.22	0.00	0.00	626.88	471.79	155.09	4.042	
3,900.00	3,295.14	3,287.23	3,287.14	15.14	148.59	-90.23	0.00	0.00	725.82	567.28	158.54	4.578	
4,000.00	3,295.21	3,287.30	3,287.21	16.74	148.60	-90.24	0.00	0.00	824.27	662.59	161.68	5.098	
4,100.00	3,295.30	3,287.39	3,287.30	18.36	148.60	-90.24	0.00	0.00	922.16	757.68	164.48	5.607	
4,200.00	3,295.40	3,287.49	3,287.40	19.96	148.61	-90.24	0.00	0.00	1,019.43	852.50	166.93	6.107	
4,300.00	3,295.52	3,287.61	3,287.52	21.57	148.61	-90.24	0.00	0.00	1,116.00	946.98	169.02	6.603	
4,400.00	3,295.64	3,287.73	3,287.64	23.16	148.62	-90.25	0.00	0.00	1,211.81	1,041.07	170.74	7.097	
4,500.00	3,295.78	3,287.87	3,287.78	24.75	148.62	-90.24	0.00	0.00	1,306.80	1,134.71	172.09	7.594	
4,528.45	3,295.83	3,287.92	3,287.83	25.21	148.63	-90.24	0.00	0.00	1,333.66	1,161.25	172.40	7.736	
4,600.00	3,295.93	3,288.02	3,287.93	26.31	148.63	-90.26	0.00	0.00	1,401.33	1,227.75	173.58	8.073	
4,700.00	3,296.09	3,288.17	3,288.09	27.84	148.64	-90.28	0.00	0.00	1,496.51	1,321.32	175.19	8.542	
4,800.00	3,296.24	3,288.33	3,288.24	29.41	148.64	-90.30	0.00	0.00	1,592.28	1,415.44	176.84	9.004	
4,900.00	3,296.39	3,288.48	3,288.39	31.01	148.65	-90.32	0.00	0.00	1,688.54	1,510.02	178.52	9.459	
5,000.00	3,296.54	3,288.63	3,288.54	32.65	148.66	-90.34	0.00	0.00	1,785.21	1,604.99	180.22	9.906	
5,100.00	3,296.69	3,288.78	3,288.69	34.31	148.67	-90.36	0.00	0.00	1,882.23	1,700.28	181.95	10.345	
5,200.00	3,296.84	3,288.93	3,288.84	35.99	148.67	-90.38	0.00	0.00	1,979.55	1,795.86	183.69	10.776	
5,300.00	3,296.99	3,289.08	3,288.99	37.70	148.68	-90.39	0.00	0.00	2,077.12	1,891.67	185.45	11.200	
5,400.00	3,297.14	3,289.23	3,289.14	39.42	148.69	-90.41	0.00	0.00	2,174.91	1,987.69	187.22	11.617	
5,500.00	3,297.29	3,289.38	3,289.29	41.15	148.69	-90.43	0.00	0.00	2,272.90	2,083.89	189.01	12.026	
5,600.00	3,297.44	3,289.53	3,289.44	42.90	148.70	-90.45	0.00	0.00	2,371.05	2,180.25	190.80	12.427	
5,700.00	3,297.59	3,289.68	3,289.59	44.67	148.71	-90.47	0.00	0.00	2,469.35	2,276.75	192.60	12.821	
5,800.00	3,297.74	3,289.83	3,289.74	46.44	148.71	-90.49	0.00	0.00	2,567.78	2,373.37	194.41	13.208	
5,900.00	3,297.90	3,289.98	3,289.90	48.22	148.72	-90.51	0.00	0.00	2,666.33	2,470.10	196.23	13.588	
6,000.00	3,298.05	3,290.14	3,290.05	50.01	148.73	-90.53	0.00	0.00	2,764.98	2,566.93	198.05	13.961	
6,100.00	3,298.20	3,290.29	3,290.20	51.81	148.73	-90.55	0.00	0.00	2,863.73	2,663.85	199.88	14.327	
6,200.00	3,298.35	3,290.44	3,290.35	53.61	148.74	-90.57	0.00	0.00	2,962.56	2,760.85	201.71	14.687	
6,300.00	3,298.50	3,290.59	3,290.50	55.43	148.75	-90.59	0.00	0.00	3,061.47	2,857.91	203.55	15.040	

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 203 - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 230-INC												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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,400.00	3,298.65	3,290.74	3,290.65	57.24	148.75	-90.61	0.00	0.00	3,160.44	2,955.05	205.39	15.387	
6,500.00	3,298.80	3,290.89	3,290.80	59.06	148.76	-90.63	0.00	0.00	3,259.48	3,052.24	207.24	15.728	
6,600.00	3,298.95	3,291.04	3,290.95	60.89	148.77	-90.65	0.00	0.00	3,358.57	3,149.48	209.09	16.063	
6,700.00	3,299.10	3,291.19	3,291.10	62.72	148.77	-90.67	0.00	0.00	3,457.72	3,246.78	210.94	16.392	
6,800.00	3,299.25	3,291.34	3,291.25	64.55	148.78	-90.69	0.00	0.00	3,556.91	3,344.12	212.80	16.715	
6,900.00	3,299.40	3,291.49	3,291.40	66.39	148.79	-90.71	0.00	0.00	3,656.15	3,441.50	214.65	17.033	
7,000.00	3,299.55	3,291.64	3,291.55	68.23	148.80	-90.73	0.00	0.00	3,755.43	3,538.92	216.51	17.345	
7,100.00	3,299.71	3,291.79	3,291.71	70.07	148.80	-90.74	0.00	0.00	3,854.75	3,636.37	218.38	17.652	
7,200.00	3,299.86	3,291.95	3,291.86	71.92	148.81	-90.76	0.00	0.00	3,954.10	3,733.86	220.24	17.954	
7,300.00	3,300.01	3,292.10	3,292.01	73.77	148.82	-90.78	0.00	0.00	4,053.48	3,831.38	222.10	18.250	
7,400.00	3,300.16	3,292.25	3,292.16	75.62	148.82	-90.80	0.00	0.00	4,152.89	3,928.92	223.97	18.542	
7,500.00	3,300.31	3,292.40	3,292.31	77.47	148.83	-90.82	0.00	0.00	4,252.33	4,026.49	225.84	18.829	
7,600.00	3,300.46	3,292.55	3,292.46	79.33	148.84	-90.84	0.00	0.00	4,351.80	4,124.09	227.71	19.111	
7,700.00	3,300.61	3,292.70	3,292.61	81.18	148.84	-90.86	0.00	0.00	4,451.29	4,221.71	229.58	19.389	
7,800.00	3,300.76	3,292.85	3,292.76	83.04	148.85	-90.88	0.00	0.00	4,550.80	4,319.35	231.45	19.662	
7,900.00	3,300.91	3,293.00	3,292.91	84.90	148.86	-90.90	0.00	0.00	4,650.33	4,417.00	233.33	19.930	
8,000.00	3,301.06	3,293.15	3,293.06	86.76	148.86	-90.92	0.00	0.00	4,749.88	4,514.68	235.20	20.195	
8,100.00	3,301.21	3,293.30	3,293.21	88.62	148.87	-90.94	0.00	0.00	4,849.46	4,612.38	237.08	20.455	
8,200.00	3,301.36	3,293.45	3,293.36	90.49	148.88	-90.96	0.00	0.00	4,949.04	4,710.09	238.96	20.711	
8,300.00	3,301.52	3,293.60	3,293.52	92.35	148.88	-90.98	0.00	0.00	5,048.65	4,807.82	240.83	20.963	
8,400.00	3,301.67	3,293.76	3,293.67	94.22	148.89	-91.00	0.00	0.00	5,148.27	4,905.56	242.71	21.211	
8,500.00	3,301.82	3,293.91	3,293.82	96.09	148.90	-91.02	0.00	0.00	5,247.90	5,003.31	244.59	21.456	
8,600.00	3,301.97	3,294.06	3,293.97	97.96	148.91	-91.04	0.00	0.00	5,347.55	5,101.08	246.47	21.697	
8,700.00	3,302.12	3,294.21	3,294.12	99.83	148.91	-91.06	0.00	0.00	5,447.21	5,198.86	248.35	21.934	
8,800.00	3,302.27	3,294.36	3,294.27	101.70	148.92	-91.08	0.00	0.00	5,546.88	5,296.65	250.23	22.167	
8,900.00	3,302.42	3,294.51	3,294.42	103.57	148.93	-91.10	0.00	0.00	5,646.57	5,394.45	252.11	22.397	
9,000.00	3,302.57	3,294.66	3,294.57	105.44	148.93	-91.11	0.00	0.00	5,746.26	5,492.27	254.00	22.623	
9,100.00	3,302.72	3,294.81	3,294.72	107.31	148.94	-91.13	0.00	0.00	5,845.97	5,590.09	255.88	22.847	
9,200.00	3,302.87	3,294.96	3,294.87	109.19	148.95	-91.15	0.00	0.00	5,945.68	5,687.92	257.76	23.067	
9,300.00	3,303.02	3,295.11	3,295.02	111.06	148.95	-91.17	0.00	0.00	6,045.41	5,785.76	259.65	23.283	
9,400.00	3,303.17	3,295.26	3,295.17	112.94	148.96	-91.19	0.00	0.00	6,145.14	5,883.61	261.53	23.497	
9,500.00	3,303.33	3,295.41	3,295.33	114.81	148.97	-91.21	0.00	0.00	6,244.89	5,981.47	263.41	23.707	
9,600.00	3,303.48	3,295.57	3,295.48	116.69	148.97	-91.23	0.00	0.00	6,344.64	6,079.34	265.30	23.915	
9,700.00	3,303.63	3,295.72	3,295.63	118.56	148.98	-91.25	0.00	0.00	6,444.40	6,177.21	267.19	24.120	
9,800.00	3,303.78	3,295.87	3,295.78	120.44	148.99	-91.27	0.00	0.00	6,544.16	6,275.09	269.07	24.321	
9,900.00	3,303.93	3,296.02	3,295.93	122.32	148.99	-91.29	0.00	0.00	6,643.93	6,372.98	270.96	24.520	
10,000.00	3,304.08	3,296.17	3,296.08	124.20	149.00	-91.31	0.00	0.00	6,743.71	6,470.87	272.84	24.716	
10,100.00	3,304.23	3,296.32	3,296.23	126.08	149.01	-91.33	0.00	0.00	6,843.50	6,568.77	274.73	24.910	
10,200.00	3,304.38	3,296.47	3,296.38	127.96	149.01	-91.35	0.00	0.00	6,943.29	6,666.67	276.62	25.101	
10,300.00	3,304.53	3,296.62	3,296.53	129.84	149.02	-91.37	0.00	0.00	7,043.09	6,764.58	278.50	25.289	
10,400.00	3,304.68	3,296.77	3,296.68	131.72	149.03	-91.39	0.00	0.00	7,142.89	6,862.50	280.39	25.475	
10,500.00	3,304.83	3,296.92	3,296.83	133.60	149.04	-91.41	0.00	0.00	7,242.70	6,960.42	282.28	25.658	
10,600.00	3,304.98	3,297.07	3,296.98	135.48	149.04	-91.43	0.00	0.00	7,342.52	7,058.35	284.17	25.839	
10,700.00	3,305.14	3,297.22	3,297.14	137.36	149.05	-91.45	0.00	0.00	7,442.34	7,156.28	286.06	26.017	
10,800.00	3,305.29	3,297.38	3,297.29	139.24	149.06	-91.46	0.00	0.00	7,542.16	7,254.22	287.94	26.193	
10,900.00	3,305.44	3,297.53	3,297.44	141.12	149.06	-91.48	0.00	0.00	7,641.99	7,352.16	289.83	26.367	
11,000.00	3,305.59	3,297.68	3,297.59	143.00	149.07	-91.50	0.00	0.00	7,741.82	7,450.10	291.72	26.538	
11,100.00	3,305.74	3,297.83	3,297.74	144.89	149.08	-91.52	0.00	0.00	7,841.66	7,548.05	293.61	26.708	
11,200.00	3,305.89	3,297.98	3,297.89	146.77	149.08	-91.54	0.00	0.00	7,941.50	7,646.00	295.50	26.875	
11,300.00	3,306.04	3,298.13	3,298.04	148.65	149.09	-91.56	0.00	0.00	8,041.34	7,743.96	297.39	27.040	
11,400.00	3,306.19	3,298.28	3,298.19	150.54	149.10	-91.58	0.00	0.00	8,141.19	7,841.92	299.28	27.203	
11,500.00	3,306.34	3,298.43	3,298.34	152.42	149.10	-91.60	0.00	0.00	8,241.05	7,939.88	301.17	27.364	

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 230-INC												Offset Well Error:	0.00 usft
Sec.22-T32N-R07W - San Juan 32-7 Unit 203 - Original Hole - Original Hole													
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
11,600.00	3,306.49	3,298.58	3,298.49	154.30	149.11	-91.62	0.00	0.00	8,340.90	8,037.85	303.06	27.523	
11,700.00	3,306.64	3,298.73	3,298.64	156.19	149.12	-91.64	0.00	0.00	8,440.76	8,135.82	304.95	27.679	
11,800.00	3,306.79	3,298.88	3,298.79	158.07	149.12	-91.66	0.00	0.00	8,540.63	8,233.79	306.84	27.834	
11,900.00	3,306.94	3,299.03	3,298.94	159.96	149.13	-91.68	0.00	0.00	8,640.49	8,331.76	308.73	27.987	
11,936.61	3,307.00	3,299.09	3,299.00	160.65	149.13	-91.69	0.00	0.00	8,677.06	8,367.64	309.42	28.043	



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 92-INC												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
-7.00	-7.00	0.00	0.00	0.00	0.00	167.18	-3,039.32	691.53	3,117.10				
0.00	0.00	0.00	0.00	0.00	0.00	167.18	-3,039.32	691.53	3,117.05				
18.00	18.00	0.00	0.00	0.02	0.00	167.18	-3,039.32	691.53	3,117.00				
93.00	93.00	92.00	92.00	0.09	1.76	167.18	-3,039.32	691.53	3,117.04	3,115.46	1.58	1,969.489	
155.62	155.62	140.06	140.06	0.23	3.09	167.18	-3,039.24	691.53	3,116.93	3,114.08	2.84	1,096.067	
193.00	193.00	174.44	174.44	0.31	4.05	167.18	-3,039.23	691.53	3,116.92	3,113.19	3.73	835.798	
293.00	293.00	256.07	256.07	0.54	6.45	167.18	-3,039.39	691.53	3,117.13	3,111.19	5.94	524.613	
393.00	393.00	364.73	364.72	0.76	10.74	167.18	-3,039.92	691.53	3,117.60	3,108.12	9.47	329.144	
493.00	493.00	473.37	473.37	0.99	15.03	167.19	-3,040.13	691.53	3,117.79	3,104.78	13.01	239.642	
593.00	593.00	582.01	582.00	1.21	19.31	167.18	-3,040.03	691.53	3,117.70	3,101.15	16.55	188.365	
693.00	693.00	690.63	690.63	1.44	23.60	167.18	-3,039.63	691.53	3,117.34	3,097.24	20.09	155.139	
793.00	793.00	775.01	775.00	1.66	27.54	167.18	-3,039.32	691.53	3,117.00	3,093.70	23.29	133.821	
893.00	893.00	875.01	875.00	1.89	33.45	167.18	-3,039.32	691.53	3,117.00	3,089.14	27.86	111.894	
993.00	993.00	975.02	975.00	2.11	39.37	167.18	-3,039.32	691.53	3,117.00	3,084.57	32.43	96.117	
1,093.00	1,093.00	1,075.02	1,075.00	2.34	45.28	167.18	-3,039.32	691.53	3,117.00	3,079.99	37.01	84.228	
1,193.00	1,193.00	1,175.03	1,175.00	2.56	51.20	167.18	-3,039.32	691.53	3,117.00	3,075.41	41.59	74.951	
1,293.00	1,293.00	1,279.00	1,278.97	2.78	57.35	167.18	-3,039.32	691.53	3,117.00	3,070.65	46.34	67.259	
1,296.97	1,296.97	1,279.00	1,278.97	2.79	57.35	167.18	-3,039.32	691.53	3,117.00	3,070.64	46.35	67.246	
1,393.00	1,393.00	1,354.80	1,354.76	3.01	63.71	167.18	-3,039.90	691.53	3,117.63	3,066.65	50.98	61.149	
1,493.00	1,493.00	1,463.82	1,463.77	3.23	72.87	167.19	-3,040.46	691.53	3,118.14	3,060.55	57.58	54.152	
1,593.00	1,593.00	1,572.81	1,572.75	3.46	82.02	167.19	-3,040.71	691.53	3,118.35	3,054.16	64.20	48.576	
1,693.00	1,693.00	1,681.78	1,681.71	3.68	91.17	167.19	-3,040.63	691.53	3,118.28	3,047.46	70.82	44.030	
1,793.00	1,793.00	1,790.71	1,790.65	3.91	100.32	167.19	-3,040.23	691.53	3,117.92	3,040.47	77.46	40.253	
1,893.00	1,893.00	1,922.00	1,921.94	4.13	111.34	167.18	-3,039.32	691.53	3,117.35	3,031.93	85.42	36.494	
1,955.82	1,955.82	1,937.89	1,937.82	4.27	113.09	167.18	-3,039.32	691.53	3,117.00	3,030.24	86.76	35.927	
1,993.00	1,993.00	1,975.07	1,975.00	4.36	117.19	167.18	-3,039.32	691.53	3,117.00	3,027.35	89.64	34.771	
2,093.00	2,093.00	2,075.09	2,075.00	4.58	128.22	167.18	-3,039.32	691.53	3,117.00	3,019.58	97.42	31.997	
2,193.00	2,193.00	2,175.11	2,175.00	4.81	139.25	167.18	-3,039.32	691.53	3,117.00	3,011.79	105.20	29.629	
2,293.00	2,293.00	2,275.14	2,275.00	5.03	150.28	167.18	-3,039.32	691.53	3,117.00	3,004.00	113.00	27.584	
2,393.00	2,393.00	2,422.00	2,421.84	5.26	166.47	167.18	-3,039.32	691.53	3,117.35	2,992.99	124.36	25.067	
2,493.00	2,493.00	2,495.47	2,495.29	5.48	172.66	167.18	-3,038.75	691.53	3,116.51	2,987.60	128.91	24.176	
2,593.00	2,593.00	2,587.68	2,587.49	5.71	180.42	167.18	-3,038.25	691.53	3,115.98	2,981.42	134.56	23.157	
2,693.00	2,693.00	2,679.92	2,679.72	5.93	188.19	167.18	-3,037.99	691.53	3,115.70	2,975.49	140.21	22.221	
2,754.23	2,754.23	2,736.42	2,736.20	6.07	192.95	167.18	-3,037.94	691.53	3,115.66	2,971.98	143.67	21.686	
2,793.00	2,793.00	2,772.19	2,771.96	6.16	195.96	167.18	-3,037.96	691.53	3,115.68	2,969.81	145.87	21.360	
2,893.00	2,893.00	2,864.47	2,864.22	6.38	203.74	167.18	-3,038.17	691.53	3,115.90	2,964.38	151.52	20.565	
2,993.00	2,993.00	2,956.77	2,956.50	6.61	211.51	167.18	-3,038.62	691.53	3,116.37	2,959.20	157.17	19.828	
3,008.52	3,008.52	2,971.10	2,970.83	6.64	212.72	167.18	-3,038.71	691.53	3,116.46	2,958.42	158.05	19.719	
3,025.00	3,024.99	3,051.00	3,050.71	6.66	219.45	-42.90	-3,039.32	691.53	3,116.95	3,031.87	85.09	36.633	
3,050.00	3,049.86	3,051.00	3,050.71	6.67	219.45	-43.19	-3,039.32	691.53	3,114.85	3,028.99	85.86	36.277	
3,075.00	3,074.40	3,056.70	3,056.40	6.68	219.78	-43.69	-3,039.32	691.53	3,111.37	3,023.93	87.44	35.582	
3,100.00	3,098.45	3,080.75	3,080.45	6.70	221.18	-44.48	-3,039.32	691.53	3,106.39	3,015.95	90.43	34.350	
3,125.00	3,121.82	3,137.00	3,136.70	6.73	224.44	-45.73	-3,039.32	691.53	3,100.08	3,004.29	95.79	32.362	
3,150.00	3,144.32	3,137.00	3,136.70	6.76	224.44	-46.96	-3,039.32	691.53	3,091.99	2,991.65	100.34	30.816	
3,175.00	3,165.79	3,148.08	3,147.79	6.79	225.09	-48.54	-3,039.32	691.53	3,082.67	2,976.00	106.67	28.899	
3,200.00	3,186.06	3,168.36	3,168.06	6.83	226.27	-50.51	-3,039.32	691.53	3,072.06	2,957.11	114.95	26.725	
3,225.00	3,204.98	3,187.28	3,186.98	6.88	227.38	-52.81	-3,039.32	691.53	3,060.26	2,935.58	124.68	24.544	
3,250.00	3,222.40	3,204.70	3,204.40	6.92	228.40	-55.48	-3,039.32	691.53	3,047.36	2,911.65	135.70	22.456	
3,275.00	3,238.20	3,220.50	3,220.20	7.03	229.32	-58.51	-3,039.32	691.53	3,033.46	2,885.75	147.72	20.536	
3,300.00	3,252.25	3,234.55	3,234.25	7.17	230.14	-61.92	-3,039.32	691.53	3,018.71	2,858.41	160.30	18.832	
3,325.00	3,264.44	3,246.75	3,246.44	7.34	230.85	-65.70	-3,039.32	691.53	3,003.20	2,830.31	172.89	17.370	
3,350.00	3,274.69	3,256.99	3,256.69	7.54	231.45	-69.82	-3,039.32	691.53	2,987.09	2,802.26	184.83	16.161	

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Sec.22-T32N-R07W - San Juan 32-7 Unit 203A - Original Hole - Original Hole												Offset Well Error:	0.00 usft
Survey Program: 92-INC													
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
3,375.00	3,282.91	3,265.21	3,264.91	7.77	231.93	-74.23	-3,039.32	691.53	2,970.50	2,775.10	195.40	15.203	
3,400.00	3,289.04	3,271.35	3,271.04	8.03	232.29	-78.85	-3,039.32	691.53	2,953.57	2,749.66	203.90	14.485	
3,425.00	3,293.04	3,275.34	3,275.04	8.31	232.52	-83.61	-3,039.32	691.53	2,936.43	2,726.65	209.78	13.997	
3,450.00	3,294.87	3,277.18	3,276.87	8.61	232.63	-88.39	-3,039.32	691.53	2,919.23	2,706.54	212.69	13.725	
3,458.52	3,295.00	3,277.30	3,277.00	8.72	232.63	-90.00	-3,039.32	691.53	2,913.37	2,700.40	212.97	13.679	
3,500.00	3,295.00	3,277.30	3,277.00	9.23	232.63	-90.00	-3,039.32	691.53	2,884.73	2,669.00	215.73	13.372	
3,600.00	3,295.01	3,277.32	3,277.01	10.55	232.63	-89.99	-3,039.32	691.53	2,814.28	2,592.19	222.09	12.672	
3,700.00	3,295.04	3,277.35	3,277.04	12.01	232.64	-89.98	-3,039.32	691.53	2,741.91	2,513.84	228.08	12.022	
3,800.00	3,295.08	3,277.39	3,277.08	13.56	232.64	-89.97	-3,039.32	691.53	2,667.67	2,434.08	233.59	11.420	
3,900.00	3,295.14	3,277.45	3,277.14	15.14	232.64	-89.96	-3,039.32	691.53	2,591.60	2,353.02	238.59	10.862	
4,000.00	3,295.21	3,277.52	3,277.21	16.74	232.65	-89.94	-3,039.32	691.53	2,513.77	2,270.74	243.02	10.344	
4,100.00	3,295.30	3,277.61	3,277.30	18.36	232.65	-89.93	-3,039.32	691.53	2,434.22	2,187.34	246.87	9.860	
4,200.00	3,295.40	3,277.71	3,277.40	19.96	232.66	-89.91	-3,039.32	691.53	2,353.00	2,102.88	250.12	9.407	
4,300.00	3,295.52	3,277.82	3,277.52	21.57	232.66	-89.89	-3,039.32	691.53	2,270.19	2,017.44	252.75	8.982	
4,400.00	3,295.64	3,277.95	3,277.64	23.16	232.67	-89.88	-3,039.32	691.53	2,185.82	1,931.07	254.75	8.580	
4,500.00	3,295.78	3,278.09	3,277.78	24.75	232.68	-89.85	-3,039.32	691.53	2,099.97	1,843.85	256.12	8.199	
4,528.45	3,295.83	3,278.13	3,277.83	25.21	232.68	-89.85	-3,039.32	691.53	2,075.28	1,818.89	256.40	8.094	
4,600.00	3,295.93	3,278.24	3,277.93	26.31	232.69	-89.85	-3,039.32	691.53	2,013.36	1,755.79	257.57	7.817	
4,700.00	3,296.09	3,278.39	3,278.09	27.84	232.70	-89.86	-3,039.32	691.53	1,927.93	1,668.74	259.19	7.438	
4,800.00	3,296.24	3,278.54	3,278.24	29.41	232.71	-89.87	-3,039.32	691.53	1,843.96	1,583.12	260.84	7.069	
4,900.00	3,296.39	3,278.69	3,278.39	31.01	232.71	-89.88	-3,039.32	691.53	1,761.67	1,499.15	262.52	6.711	
5,000.00	3,296.54	3,278.84	3,278.54	32.65	232.72	-89.89	-3,039.32	691.53	1,681.31	1,417.08	264.23	6.363	
5,100.00	3,296.69	3,278.99	3,278.69	34.31	232.73	-89.90	-3,039.32	691.53	1,603.15	1,337.20	265.95	6.028	
5,200.00	3,296.84	3,279.14	3,278.84	35.99	232.74	-89.90	-3,039.32	691.53	1,527.54	1,259.84	267.70	5.706	
5,300.00	3,296.99	3,279.29	3,278.99	37.70	232.75	-89.91	-3,039.32	691.53	1,454.88	1,185.42	269.46	5.399	
5,400.00	3,297.14	3,279.45	3,279.14	39.42	232.76	-89.92	-3,039.32	691.53	1,385.63	1,114.40	271.23	5.109	
5,500.00	3,297.29	3,279.60	3,279.29	41.15	232.77	-89.93	-3,039.32	691.53	1,320.33	1,047.31	273.02	4.836	
5,600.00	3,297.44	3,279.75	3,279.44	42.90	232.78	-89.94	-3,039.32	691.53	1,259.59	984.78	274.82	4.583	
5,700.00	3,297.59	3,279.90	3,279.59	44.67	232.78	-89.95	-3,039.32	691.53	1,204.11	927.48	276.62	4.353	
5,800.00	3,297.74	3,280.05	3,279.74	46.44	232.79	-89.95	-3,039.32	691.53	1,154.63	876.20	278.43	4.147	
5,900.00	3,297.90	3,280.20	3,279.90	48.22	232.80	-89.96	-3,039.32	691.53	1,111.96	831.71	280.25	3.968	
6,000.00	3,298.05	3,280.35	3,280.05	50.01	232.81	-89.97	-3,039.32	691.53	1,076.92	794.84	282.08	3.818	
6,100.00	3,298.20	3,280.50	3,280.20	51.81	232.82	-89.98	-3,039.32	691.53	1,050.27	766.35	283.91	3.699	
6,200.00	3,298.35	3,280.65	3,280.35	53.61	232.83	-89.99	-3,039.32	691.53	1,032.64	746.90	285.75	3.614	
6,300.00	3,298.50	3,280.80	3,280.50	55.43	232.84	-90.00	-3,039.32	691.53	1,024.52	736.94	287.59	3.562	
6,333.52	3,298.55	3,280.85	3,280.55	56.03	232.84	-90.00	-3,039.32	691.53	1,023.98	735.77	288.21	3.553 CC, ES	
6,400.00	3,298.65	3,280.95	3,280.65	57.24	232.85	-90.01	-3,039.32	691.53	1,026.13	736.70	289.43	3.545 SF	
6,500.00	3,298.80	3,281.10	3,280.80	59.06	232.86	-90.01	-3,039.32	691.53	1,037.42	746.14	291.28	3.562	
6,600.00	3,298.95	3,281.26	3,280.95	60.89	232.86	-90.02	-3,039.32	691.53	1,058.08	764.95	293.13	3.610	
6,700.00	3,299.10	3,281.41	3,281.10	62.72	232.87	-90.03	-3,039.32	691.53	1,087.58	792.59	294.99	3.687	
6,800.00	3,299.25	3,281.56	3,281.25	64.55	232.88	-90.04	-3,039.32	691.53	1,125.22	828.38	296.85	3.791	
6,900.00	3,299.40	3,281.71	3,281.40	66.39	232.89	-90.05	-3,039.32	691.53	1,170.22	871.52	298.71	3.918	
7,000.00	3,299.55	3,281.86	3,281.55	68.23	232.90	-90.06	-3,039.32	691.53	1,221.77	921.20	300.57	4.065	
7,100.00	3,299.71	3,282.01	3,281.71	70.07	232.91	-90.06	-3,039.32	691.53	1,279.07	976.64	302.43	4.229	
7,200.00	3,299.86	3,282.16	3,281.86	71.92	232.92	-90.07	-3,039.32	691.53	1,341.39	1,037.09	304.30	4.408	
7,300.00	3,300.01	3,282.31	3,282.01	73.77	232.93	-90.08	-3,039.32	691.53	1,408.05	1,101.88	306.17	4.599	
7,400.00	3,300.16	3,282.46	3,282.16	75.62	232.93	-90.09	-3,039.32	691.53	1,478.48	1,170.44	308.04	4.800	
7,500.00	3,300.31	3,282.61	3,282.31	77.47	232.94	-90.10	-3,039.32	691.53	1,552.16	1,242.25	309.91	5.008	
7,600.00	3,300.46	3,282.76	3,282.46	79.33	232.95	-90.11	-3,039.32	691.53	1,628.65	1,316.87	311.78	5.224	
7,700.00	3,300.61	3,282.91	3,282.61	81.18	232.96	-90.12	-3,039.32	691.53	1,707.57	1,393.91	313.66	5.444	
7,800.00	3,300.76	3,283.07	3,282.76	83.04	232.97	-90.12	-3,039.32	691.53	1,788.60	1,473.07	315.53	5.668	
7,900.00	3,300.91	3,283.22	3,282.91	84.90	232.98	-90.13	-3,039.32	691.53	1,871.47	1,554.06	317.41	5.896	

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design Sec.22-T32N-R07W - San Juan 32-7 Unit 203A - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 92-INC												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
8,000.00	3,301.06	3,283.37	3,283.06	86.76	232.99	-90.14	-3,039.32	691.53	1,955.93	1,636.65	319.29	6.126	
8,100.00	3,301.21	3,283.52	3,283.21	88.62	233.00	-90.15	-3,039.32	691.53	2,041.81	1,720.64	321.17	6.357	
8,200.00	3,301.36	3,283.67	3,283.36	90.49	233.00	-90.16	-3,039.32	691.53	2,128.91	1,805.87	323.05	6.590	
8,300.00	3,301.52	3,283.82	3,283.52	92.35	233.01	-90.17	-3,039.32	691.53	2,217.11	1,892.18	324.93	6.823	
8,400.00	3,301.67	3,283.97	3,283.67	94.22	233.02	-90.17	-3,039.32	691.53	2,306.27	1,979.46	326.81	7.057	
8,500.00	3,301.82	3,284.12	3,283.82	96.09	233.03	-90.18	-3,039.32	691.53	2,396.28	2,067.59	328.69	7.290	
8,600.00	3,301.97	3,284.27	3,283.97	97.96	233.04	-90.19	-3,039.32	691.53	2,487.06	2,156.48	330.58	7.523	
8,700.00	3,302.12	3,284.42	3,284.12	99.83	233.05	-90.20	-3,039.32	691.53	2,578.52	2,246.06	332.46	7.756	
8,800.00	3,302.27	3,284.57	3,284.27	101.70	233.06	-90.21	-3,039.32	691.53	2,670.59	2,336.24	334.34	7.988	
8,900.00	3,302.42	3,284.72	3,284.42	103.57	233.07	-90.22	-3,039.32	691.53	2,763.21	2,426.98	336.23	8.218	
9,000.00	3,302.57	3,284.88	3,284.57	105.44	233.08	-90.23	-3,039.32	691.53	2,856.33	2,518.22	338.12	8.448	
9,100.00	3,302.72	3,285.03	3,284.72	107.31	233.08	-90.23	-3,039.32	691.53	2,949.90	2,609.90	340.00	8.676	
9,200.00	3,302.87	3,285.18	3,284.87	109.19	233.09	-90.24	-3,039.32	691.53	3,043.88	2,701.99	341.89	8.903	
9,300.00	3,303.02	3,285.33	3,285.02	111.06	233.10	-90.25	-3,039.32	691.53	3,138.23	2,794.46	343.78	9.129	
9,400.00	3,303.17	3,285.48	3,285.17	112.94	233.11	-90.26	-3,039.32	691.53	3,232.93	2,887.26	345.66	9.353	
9,500.00	3,303.33	3,285.63	3,285.33	114.81	233.12	-90.27	-3,039.32	691.53	3,327.93	2,980.38	347.55	9.575	
9,600.00	3,303.48	3,285.78	3,285.48	116.69	233.13	-90.28	-3,039.32	691.53	3,423.22	3,073.77	349.44	9.796	
9,700.00	3,303.63	3,285.93	3,285.63	118.56	233.14	-90.28	-3,039.32	691.53	3,518.76	3,167.43	351.33	10.016	
9,800.00	3,303.78	3,286.08	3,285.78	120.44	233.15	-90.29	-3,039.32	691.53	3,614.55	3,261.33	353.22	10.233	
9,900.00	3,303.93	3,286.23	3,285.93	122.32	233.15	-90.30	-3,039.32	691.53	3,710.56	3,355.45	355.11	10.449	
10,000.00	3,304.08	3,286.38	3,286.08	124.20	233.16	-90.31	-3,039.32	691.53	3,806.78	3,449.78	357.00	10.663	
10,100.00	3,304.23	3,286.53	3,286.23	126.08	233.17	-90.32	-3,039.32	691.53	3,903.19	3,544.30	358.89	10.876	
10,200.00	3,304.38	3,286.69	3,286.38	127.96	233.18	-90.33	-3,039.32	691.53	3,999.77	3,638.99	360.78	11.086	
10,300.00	3,304.53	3,286.84	3,286.53	129.84	233.19	-90.33	-3,039.32	691.53	4,096.52	3,733.84	362.67	11.295	
10,400.00	3,304.68	3,286.99	3,286.68	131.72	233.20	-90.34	-3,039.32	691.53	4,193.42	3,828.85	364.57	11.502	
10,500.00	3,304.83	3,287.14	3,286.83	133.60	233.21	-90.35	-3,039.32	691.53	4,290.46	3,924.00	366.46	11.708	
10,600.00	3,304.98	3,287.29	3,286.98	135.48	233.22	-90.36	-3,039.32	691.53	4,387.64	4,019.29	368.35	11.912	
10,700.00	3,305.14	3,287.44	3,287.14	137.36	233.22	-90.37	-3,039.32	691.53	4,484.94	4,114.69	370.24	12.113	
10,800.00	3,305.29	3,287.59	3,287.29	139.24	233.23	-90.38	-3,039.32	691.53	4,582.35	4,210.21	372.14	12.314	
10,900.00	3,305.44	3,287.74	3,287.44	141.12	233.24	-90.39	-3,039.32	691.53	4,679.88	4,305.85	374.03	12.512	
11,000.00	3,305.59	3,287.89	3,287.59	143.00	233.25	-90.39	-3,039.32	691.53	4,777.50	4,401.58	375.92	12.709	
11,100.00	3,305.74	3,288.04	3,287.74	144.89	233.26	-90.40	-3,039.32	691.53	4,875.23	4,497.41	377.82	12.904	
11,200.00	3,305.89	3,288.19	3,287.89	146.77	233.27	-90.41	-3,039.32	691.53	4,973.04	4,593.33	379.71	13.097	
11,300.00	3,306.04	3,288.34	3,288.04	148.65	233.28	-90.42	-3,039.32	691.53	5,070.94	4,689.33	381.60	13.289	
11,400.00	3,306.19	3,288.50	3,288.19	150.54	233.29	-90.43	-3,039.32	691.53	5,168.92	4,785.42	383.50	13.478	
11,500.00	3,306.34	3,288.65	3,288.34	152.42	233.30	-90.44	-3,039.32	691.53	5,266.97	4,881.58	385.39	13.667	
11,600.00	3,306.49	3,288.80	3,288.49	154.30	233.30	-90.44	-3,039.32	691.53	5,365.10	4,977.81	387.29	13.853	
11,700.00	3,306.64	3,288.95	3,288.64	156.19	233.31	-90.45	-3,039.32	691.53	5,463.29	5,074.11	389.18	14.038	
11,800.00	3,306.79	3,289.10	3,288.79	158.07	233.32	-90.46	-3,039.32	691.53	5,561.55	5,170.48	391.08	14.221	
11,900.00	3,306.94	3,289.25	3,288.94	159.96	233.33	-90.47	-3,039.32	691.53	5,659.87	5,266.90	392.97	14.403	
11,936.61	3,307.00	3,289.30	3,289.00	160.65	233.33	-90.47	-3,039.32	691.53	5,695.89	5,302.22	393.66	14.469	



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Sec.22-T32N-R07W - San Juan 32-7 Unit 203R - Original Hole - Original Hole												Offset Well Error:	0.00 usft
Survey Program: 370-INC													
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
-7.00	-7.00	0.00	0.00	0.00	0.00	145.80	-1,076.54	731.52	1,302.48				
0.00	0.00	0.00	0.00	0.00	0.00	145.80	-1,076.54	731.52	1,302.23				
46.91	46.91	2.60	2.60	0.04	0.04	145.80	-1,076.54	731.52	1,301.56	1,301.48	0.08	N/A	
93.00	93.00	49.28	49.28	0.09	0.74	145.81	-1,076.63	731.52	1,301.64	1,300.82	0.81	1,605.121	
193.00	193.00	150.56	150.56	0.31	2.25	145.81	-1,076.73	731.52	1,301.72	1,299.20	2.52	516.165	
293.00	293.00	251.85	251.85	0.54	3.77	145.81	-1,076.71	731.52	1,301.70	1,297.47	4.23	307.522	
393.00	393.00	353.13	353.13	0.76	5.29	145.80	-1,076.57	731.52	1,301.59	1,295.64	5.94	218.981	
410.75	410.75	370.00	370.00	0.80	5.54	145.80	-1,076.54	731.52	1,301.56	1,295.33	6.23	208.876	
493.00	493.00	447.82	447.82	0.99	8.29	145.81	-1,076.82	731.52	1,301.80	1,292.79	9.01	144.555	
593.00	593.00	549.81	549.81	1.21	11.89	145.82	-1,077.03	731.52	1,301.97	1,289.34	12.63	103.090	
693.00	693.00	651.79	651.79	1.44	15.49	145.82	-1,077.05	731.52	1,301.98	1,285.73	16.26	80.095	
793.00	793.00	753.76	753.76	1.66	19.10	145.81	-1,076.88	731.52	1,301.84	1,281.96	19.88	65.476	
893.00	893.00	853.00	853.00	1.89	22.60	145.80	-1,076.54	731.52	1,301.56	1,278.14	23.42	55.576	
993.00	993.00	952.41	952.41	2.11	26.34	145.80	-1,076.36	731.52	1,301.41	1,274.33	27.09	48.048	
1,093.00	1,093.00	1,051.48	1,051.47	2.34	30.07	145.80	-1,076.28	731.52	1,301.34	1,270.60	30.74	42.329	
1,143.49	1,143.49	1,101.49	1,101.48	2.45	31.96	145.80	-1,076.26	731.52	1,301.33	1,268.74	32.59	39.928	
1,193.00	1,193.00	1,150.54	1,150.54	2.56	33.80	145.80	-1,076.27	731.52	1,301.34	1,266.94	34.40	37.825	
1,293.00	1,293.00	1,249.62	1,249.60	2.78	37.53	145.80	-1,076.36	731.52	1,301.41	1,263.35	38.07	34.188	
1,393.00	1,393.00	1,350.00	1,349.98	3.01	41.31	145.80	-1,076.54	731.52	1,301.56	1,259.78	41.78	31.156	
1,493.00	1,493.00	1,449.60	1,449.58	3.23	45.20	145.81	-1,076.71	731.52	1,301.70	1,256.11	45.59	28.554	
1,593.00	1,593.00	1,550.54	1,550.52	3.46	49.13	145.81	-1,076.80	731.52	1,301.78	1,252.33	49.45	26.326	
1,693.00	1,693.00	1,651.48	1,651.46	3.68	53.06	145.81	-1,076.80	731.52	1,301.78	1,248.46	53.31	24.419	
1,793.00	1,793.00	1,752.42	1,752.40	3.91	57.00	145.81	-1,076.71	731.52	1,301.70	1,244.53	57.17	22.767	
1,893.00	1,893.00	1,854.00	1,853.98	4.13	60.96	145.80	-1,076.54	731.52	1,301.56	1,240.50	61.06	21.316	
1,927.36	1,927.36	1,885.38	1,885.36	4.21	62.44	145.80	-1,076.54	731.52	1,301.56	1,239.05	62.51	20.823	
1,993.00	1,993.00	1,951.02	1,951.00	4.36	65.53	145.80	-1,076.54	731.52	1,301.56	1,236.04	65.51	19.867	
2,093.00	2,093.00	2,051.03	2,051.00	4.58	70.24	145.80	-1,076.54	731.52	1,301.56	1,231.46	70.09	18.569	
2,193.00	2,193.00	2,151.03	2,151.00	4.81	74.95	145.80	-1,076.54	731.52	1,301.56	1,226.88	74.68	17.429	
2,293.00	2,293.00	2,251.03	2,251.00	5.03	79.66	145.80	-1,076.54	731.52	1,301.56	1,222.30	79.26	16.422	
2,393.00	2,393.00	2,351.04	2,351.00	5.26	84.37	145.80	-1,076.54	731.52	1,301.56	1,217.72	83.84	15.524	
2,493.00	2,493.00	2,451.04	2,451.00	5.48	89.08	145.80	-1,076.54	731.52	1,301.56	1,213.13	88.42	14.720	
2,593.00	2,593.00	2,551.04	2,551.00	5.71	93.79	145.80	-1,076.54	731.52	1,301.56	1,208.55	93.01	13.994	
2,693.00	2,693.00	2,651.04	2,651.00	5.93	98.50	145.80	-1,076.54	731.52	1,301.56	1,203.97	97.59	13.337	
2,793.00	2,793.00	2,751.05	2,751.00	6.16	103.21	145.80	-1,076.54	731.52	1,301.56	1,199.38	102.17	12.739	
2,893.00	2,893.00	2,851.05	2,851.00	6.38	107.92	145.80	-1,076.54	731.52	1,301.56	1,194.80	106.76	12.192	
2,993.00	2,993.00	2,951.05	2,951.00	6.61	112.64	145.80	-1,076.54	731.52	1,301.56	1,190.22	111.34	11.690	
3,008.52	3,008.52	2,966.57	2,966.52	6.64	113.37	145.80	-1,076.54	731.52	1,301.56	1,189.51	112.05	11.616	
3,025.00	3,024.99	2,983.05	2,982.99	6.66	114.14	-64.25	-1,076.54	731.52	1,301.35	1,213.06	88.29	14.740	
3,050.00	3,049.86	3,007.91	3,007.86	6.67	115.31	-64.55	-1,076.54	731.52	1,300.26	1,210.83	89.42	14.541	
3,075.00	3,074.40	3,032.46	3,032.40	6.68	116.47	-65.10	-1,076.54	731.52	1,298.23	1,207.39	90.84	14.291	
3,100.00	3,098.45	3,056.51	3,056.45	6.70	117.60	-65.90	-1,076.54	731.52	1,295.32	1,202.77	92.55	13.996	
3,125.00	3,121.82	3,079.87	3,079.82	6.73	118.70	-66.94	-1,076.54	731.52	1,291.56	1,196.99	94.57	13.657	
3,150.00	3,144.32	3,102.38	3,102.32	6.76	119.76	-68.20	-1,076.54	731.52	1,287.03	1,190.14	96.88	13.284	
3,175.00	3,165.79	3,123.85	3,123.79	6.79	120.77	-69.67	-1,076.54	731.52	1,281.79	1,182.31	99.48	12.885	
3,200.00	3,186.06	3,144.12	3,144.06	6.83	121.73	-71.32	-1,076.54	731.52	1,275.93	1,173.64	102.30	12.473	
3,225.00	3,204.98	3,163.04	3,162.98	6.88	122.62	-73.12	-1,076.54	731.52	1,269.56	1,164.29	105.27	12.060	
3,250.00	3,222.40	3,180.46	3,180.40	6.92	123.44	-75.04	-1,076.54	731.52	1,262.77	1,154.48	108.30	11.660	
3,275.00	3,238.20	3,196.26	3,196.20	7.03	124.19	-77.04	-1,076.54	731.52	1,255.68	1,144.41	111.27	11.285	
3,300.00	3,252.25	3,210.31	3,210.25	7.17	124.85	-79.07	-1,076.54	731.52	1,248.40	1,134.33	114.08	10.943	
3,325.00	3,264.44	3,222.50	3,222.44	7.34	125.42	-81.09	-1,076.54	731.52	1,241.05	1,124.43	116.61	10.642	
3,350.00	3,274.69	3,232.75	3,232.69	7.54	125.90	-83.05	-1,076.54	731.52	1,233.73	1,114.93	118.80	10.385	
3,375.00	3,282.91	3,240.97	3,240.91	7.77	126.29	-84.92	-1,076.54	731.52	1,226.55	1,105.97	120.58	10.172	

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



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 370-INC												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	
3,400.00	3,289.04	3,247.10	3,247.04	8.03	126.58	-86.65	-1,076.54	731.52	1,219.61	1,097.67	121.94	10.002	
3,425.00	3,293.04	3,251.10	3,251.04	8.31	126.77	-88.21	-1,076.54	731.52	1,213.00	1,090.11	122.89	9.871	
3,450.00	3,294.87	3,252.93	3,252.87	8.61	126.86	-89.58	-1,076.54	731.52	1,206.80	1,083.32	123.47	9.774	
3,458.52	3,295.00	3,253.06	3,253.00	8.72	126.86	-90.00	-1,076.54	731.52	1,204.79	1,081.19	123.60	9.747	
3,500.00	3,295.00	3,253.06	3,253.00	9.23	126.86	-90.00	-1,076.54	731.52	1,195.39	1,070.34	125.05	9.559	
3,600.00	3,295.01	3,253.08	3,253.01	10.55	126.86	-90.00	-1,076.54	731.52	1,174.76	1,046.30	128.47	9.145	
3,700.00	3,295.04	3,253.10	3,253.04	12.01	126.86	-90.00	-1,076.54	731.52	1,157.20	1,025.39	131.81	8.779	
3,800.00	3,295.08	3,253.15	3,253.08	13.56	126.87	-90.00	-1,076.54	731.52	1,142.89	1,007.89	135.01	8.466	
3,900.00	3,295.14	3,253.20	3,253.14	15.14	126.87	-90.00	-1,076.54	731.52	1,131.99	994.00	138.00	8.203	
4,000.00	3,295.21	3,253.28	3,253.21	16.74	126.87	-90.00	-1,076.54	731.52	1,124.64	983.89	140.75	7.990	
4,100.00	3,295.30	3,253.36	3,253.30	18.36	126.88	-90.00	-1,076.54	731.52	1,120.92	977.67	143.24	7.825	
4,151.17	3,295.35	3,253.41	3,253.35	19.18	126.88	-90.00	-1,076.54	731.52	1,120.43	976.02	144.41	7.759 CC	
4,200.00	3,295.40	3,253.46	3,253.40	19.96	126.88	-90.00	-1,076.54	731.52	1,120.87	975.41	145.46	7.706 ES	
4,300.00	3,295.52	3,253.58	3,253.52	21.57	126.89	-90.00	-1,076.54	731.52	1,124.51	977.12	147.39	7.630	
4,400.00	3,295.64	3,253.71	3,253.64	23.16	126.89	-90.01	-1,076.54	731.52	1,131.78	982.75	149.03	7.594 SF	
4,500.00	3,295.78	3,253.85	3,253.78	24.75	126.90	-90.01	-1,076.54	731.52	1,142.60	992.23	150.37	7.599	
4,528.45	3,295.83	3,253.89	3,253.83	25.21	126.90	-90.01	-1,076.54	731.52	1,146.30	995.61	150.70	7.607	
4,600.00	3,295.93	3,254.00	3,253.93	26.31	126.91	-90.02	-1,076.54	731.52	1,158.15	1,006.27	151.87	7.626	
4,700.00	3,296.09	3,254.15	3,254.09	27.84	126.91	-90.02	-1,076.54	731.52	1,181.78	1,028.29	153.49	7.700	
4,800.00	3,296.24	3,254.30	3,254.24	29.41	126.92	-90.03	-1,076.54	731.52	1,213.22	1,058.08	155.14	7.820	
4,900.00	3,296.39	3,254.45	3,254.39	31.01	126.93	-90.04	-1,076.54	731.52	1,251.88	1,095.06	156.82	7.983	
5,000.00	3,296.54	3,254.60	3,254.54	32.65	126.93	-90.05	-1,076.54	731.52	1,297.11	1,138.59	158.52	8.183	
5,100.00	3,296.69	3,254.75	3,254.69	34.31	126.94	-90.06	-1,076.54	731.52	1,348.25	1,188.01	160.25	8.414	
5,200.00	3,296.84	3,254.90	3,254.84	35.99	126.95	-90.06	-1,076.54	731.52	1,404.67	1,242.68	161.99	8.671	
5,300.00	3,296.99	3,255.05	3,254.99	37.70	126.95	-90.07	-1,076.54	731.52	1,465.74	1,301.99	163.75	8.951	
5,400.00	3,297.14	3,255.20	3,255.14	39.42	126.96	-90.08	-1,076.54	731.52	1,530.91	1,365.39	165.52	9.249	
5,500.00	3,297.29	3,255.35	3,255.29	41.15	126.97	-90.09	-1,076.54	731.52	1,599.68	1,432.38	167.30	9.561	
5,600.00	3,297.44	3,255.51	3,255.44	42.90	126.98	-90.09	-1,076.54	731.52	1,671.61	1,502.51	169.10	9.885	
5,700.00	3,297.59	3,255.66	3,255.59	44.67	126.98	-90.10	-1,076.54	731.52	1,746.30	1,575.40	170.90	10.218	
5,800.00	3,297.74	3,255.81	3,255.74	46.44	126.99	-90.11	-1,076.54	731.52	1,823.42	1,650.71	172.71	10.558	
5,900.00	3,297.90	3,255.96	3,255.90	48.22	127.00	-90.12	-1,076.54	731.52	1,902.67	1,728.14	174.53	10.902	
6,000.00	3,298.05	3,256.11	3,256.05	50.01	127.00	-90.12	-1,076.54	731.52	1,983.80	1,807.44	176.35	11.249	
6,100.00	3,298.20	3,256.26	3,256.20	51.81	127.01	-90.13	-1,076.54	731.52	2,066.58	1,888.40	178.18	11.598	
6,200.00	3,298.35	3,256.41	3,256.35	53.61	127.02	-90.14	-1,076.54	731.52	2,150.83	1,970.81	180.02	11.948	
6,300.00	3,298.50	3,256.56	3,256.50	55.43	127.03	-90.15	-1,076.54	731.52	2,236.37	2,054.51	181.86	12.297	
6,400.00	3,298.65	3,256.71	3,256.65	57.24	127.03	-90.15	-1,076.54	731.52	2,323.07	2,139.37	183.70	12.646	
6,500.00	3,298.80	3,256.86	3,256.80	59.06	127.04	-90.16	-1,076.54	731.52	2,410.80	2,225.25	185.55	12.993	
6,600.00	3,298.95	3,257.01	3,256.95	60.89	127.05	-90.17	-1,076.54	731.52	2,499.45	2,312.05	187.40	13.338	
6,700.00	3,299.10	3,257.16	3,257.10	62.72	127.05	-90.18	-1,076.54	731.52	2,588.92	2,399.67	189.25	13.680	
6,800.00	3,299.25	3,257.32	3,257.25	64.55	127.06	-90.18	-1,076.54	731.52	2,679.15	2,488.04	191.11	14.019	
6,900.00	3,299.40	3,257.47	3,257.40	66.39	127.07	-90.19	-1,076.54	731.52	2,770.04	2,577.08	192.97	14.355	
7,000.00	3,299.55	3,257.62	3,257.55	68.23	127.08	-90.20	-1,076.54	731.52	2,861.54	2,666.72	194.83	14.688	
7,100.00	3,299.71	3,257.77	3,257.71	70.07	127.08	-90.21	-1,076.54	731.52	2,953.59	2,756.90	196.69	15.017	
7,200.00	3,299.86	3,257.92	3,257.86	71.92	127.09	-90.22	-1,076.54	731.52	3,046.15	2,847.59	198.55	15.342	
7,300.00	3,300.01	3,258.07	3,258.01	73.77	127.10	-90.22	-1,076.54	731.52	3,139.16	2,938.74	200.42	15.663	
7,400.00	3,300.16	3,258.22	3,258.16	75.62	127.10	-90.23	-1,076.54	731.52	3,232.58	3,030.30	202.29	15.980	
7,500.00	3,300.31	3,258.37	3,258.31	77.47	127.11	-90.24	-1,076.54	731.52	3,326.39	3,122.24	204.16	16.293	
7,600.00	3,300.46	3,258.52	3,258.46	79.33	127.12	-90.25	-1,076.54	731.52	3,420.55	3,214.52	206.03	16.602	
7,700.00	3,300.61	3,258.67	3,258.61	81.18	127.13	-90.25	-1,076.54	731.52	3,515.04	3,307.13	207.90	16.907	
7,800.00	3,300.76	3,258.82	3,258.76	83.04	127.13	-90.26	-1,076.54	731.52	3,609.82	3,400.04	209.78	17.208	
7,900.00	3,300.91	3,258.97	3,258.91	84.90	127.14	-90.27	-1,076.54	731.52	3,704.87	3,493.22	211.65	17.505	
8,000.00	3,301.06	3,259.13	3,259.06	86.76	127.15	-90.28	-1,076.54	731.52	3,800.18	3,586.65	213.53	17.797	

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



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 370-INC												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	
8,100.00	3,301.21	3,259.28	3,259.21	88.62	127.15	-90.28	-1,076.54	731.52	3,895.72	3,680.32	215.41	18.086	
8,200.00	3,301.36	3,259.43	3,259.36	90.49	127.16	-90.29	-1,076.54	731.52	3,991.49	3,774.20	217.28	18.370	
8,300.00	3,301.52	3,259.58	3,259.52	92.35	127.17	-90.30	-1,076.54	731.52	4,087.45	3,868.29	219.16	18.650	
8,400.00	3,301.67	3,259.73	3,259.67	94.22	127.18	-90.31	-1,076.54	731.52	4,183.61	3,962.56	221.04	18.927	
8,500.00	3,301.82	3,259.88	3,259.82	96.09	127.18	-90.31	-1,076.54	731.52	4,279.94	4,057.01	222.92	19.199	
8,600.00	3,301.97	3,260.03	3,259.97	97.96	127.19	-90.32	-1,076.54	731.52	4,376.43	4,151.63	224.81	19.468	
8,700.00	3,302.12	3,260.18	3,260.12	99.83	127.20	-90.33	-1,076.54	731.52	4,473.08	4,246.39	226.69	19.732	
8,800.00	3,302.27	3,260.33	3,260.27	101.70	127.20	-90.34	-1,076.54	731.52	4,569.87	4,341.30	228.57	19.993	
8,900.00	3,302.42	3,260.48	3,260.42	103.57	127.21	-90.34	-1,076.54	731.52	4,666.80	4,436.35	230.45	20.250	
9,000.00	3,302.57	3,260.63	3,260.57	105.44	127.22	-90.35	-1,076.54	731.52	4,763.86	4,531.52	232.34	20.504	
9,100.00	3,302.72	3,260.78	3,260.72	107.31	127.22	-90.36	-1,076.54	731.52	4,861.03	4,626.81	234.22	20.754	
9,200.00	3,302.87	3,260.93	3,260.87	109.19	127.23	-90.37	-1,076.54	731.52	4,958.32	4,722.21	236.11	21.000	
9,300.00	3,303.02	3,261.09	3,261.02	111.06	127.24	-90.37	-1,076.54	731.52	5,055.71	4,817.72	237.99	21.243	
9,400.00	3,303.17	3,261.24	3,261.17	112.94	127.25	-90.38	-1,076.54	731.52	5,153.20	4,913.32	239.88	21.482	
9,500.00	3,303.33	3,261.39	3,261.33	114.81	127.25	-90.39	-1,076.54	731.52	5,250.79	5,009.02	241.77	21.718	
9,600.00	3,303.48	3,261.54	3,261.48	116.69	127.26	-90.40	-1,076.54	731.52	5,348.47	5,104.81	243.65	21.951	
9,700.00	3,303.63	3,261.69	3,261.63	118.56	127.27	-90.41	-1,076.54	731.52	5,446.23	5,200.69	245.54	22.180	
9,800.00	3,303.78	3,261.84	3,261.78	120.44	127.27	-90.41	-1,076.54	731.52	5,544.07	5,296.64	247.43	22.407	
9,900.00	3,303.93	3,261.99	3,261.93	122.32	127.28	-90.42	-1,076.54	731.52	5,641.98	5,392.67	249.32	22.630	
10,000.00	3,304.08	3,262.14	3,262.08	124.20	127.29	-90.43	-1,076.54	731.52	5,739.97	5,488.76	251.21	22.850	
10,100.00	3,304.23	3,262.29	3,262.23	126.08	127.30	-90.44	-1,076.54	731.52	5,838.03	5,584.93	253.10	23.066	
10,200.00	3,304.38	3,262.44	3,262.38	127.96	127.30	-90.44	-1,076.54	731.52	5,936.15	5,681.16	254.99	23.280	
10,300.00	3,304.53	3,262.59	3,262.53	129.84	127.31	-90.45	-1,076.54	731.52	6,034.33	5,777.46	256.88	23.491	
10,400.00	3,304.68	3,262.74	3,262.68	131.72	127.32	-90.46	-1,076.54	731.52	6,132.57	5,873.81	258.77	23.699	
10,500.00	3,304.83	3,262.90	3,262.83	133.60	127.32	-90.47	-1,076.54	731.52	6,230.87	5,970.21	260.66	23.905	
10,600.00	3,304.98	3,263.05	3,262.98	135.48	127.33	-90.47	-1,076.54	731.52	6,329.22	6,066.67	262.55	24.107	
10,700.00	3,305.14	3,263.20	3,263.14	137.36	127.34	-90.48	-1,076.54	731.52	6,427.62	6,163.19	264.44	24.307	
10,800.00	3,305.29	3,263.35	3,263.29	139.24	127.35	-90.49	-1,076.54	731.52	6,526.07	6,259.74	266.33	24.504	
10,900.00	3,305.44	3,263.50	3,263.44	141.12	127.35	-90.50	-1,076.54	731.52	6,624.57	6,356.35	268.22	24.698	
11,000.00	3,305.59	3,263.65	3,263.59	143.00	127.36	-90.50	-1,076.54	731.52	6,723.11	6,453.00	270.11	24.890	
11,100.00	3,305.74	3,263.80	3,263.74	144.89	127.37	-90.51	-1,076.54	731.52	6,821.69	6,549.69	272.00	25.079	
11,200.00	3,305.89	3,263.95	3,263.89	146.77	127.37	-90.52	-1,076.54	731.52	6,920.32	6,646.42	273.90	25.266	
11,300.00	3,306.04	3,264.10	3,264.04	148.65	127.38	-90.53	-1,076.54	731.52	7,018.98	6,743.19	275.79	25.451	
11,400.00	3,306.19	3,264.25	3,264.19	150.54	127.39	-90.53	-1,076.54	731.52	7,117.68	6,840.00	277.68	25.633	
11,500.00	3,306.34	3,264.40	3,264.34	152.42	127.40	-90.54	-1,076.54	731.52	7,216.42	6,936.85	279.57	25.812	
11,600.00	3,306.49	3,264.55	3,264.49	154.30	127.40	-90.55	-1,076.54	731.52	7,315.19	7,033.72	281.47	25.990	
11,700.00	3,306.64	3,264.71	3,264.64	156.19	127.41	-90.56	-1,076.54	731.52	7,413.99	7,130.63	283.36	26.165	
11,800.00	3,306.79	3,264.86	3,264.79	158.07	127.42	-90.57	-1,076.54	731.52	7,512.83	7,227.58	285.25	26.338	
11,900.00	3,306.94	3,265.01	3,264.94	159.96	127.42	-90.57	-1,076.54	731.52	7,611.69	7,324.55	287.14	26.508	
11,936.61	3,307.00	3,265.06	3,265.00	160.65	127.43	-90.58	-1,076.54	731.52	7,647.90	7,360.06	287.84	26.570	



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Sec.27-T32N-R07W - San Juan 32-7 Unit 034 - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 8243-INC												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Tooface (")	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)					
-7.00	-7.00	0.00	0.00	0.00	0.00	175.82	-5,013.14	366.39	5,026.66				
0.00	0.00	0.00	0.00	0.00	0.00	175.82	-5,013.14	366.39	5,026.61				
47.26	47.26	15.26	15.26	0.04	0.20	175.82	-5,013.14	366.39	5,026.51	5,026.26	0.25	N/A	
93.00	93.00	61.00	61.00	0.09	0.81	175.82	-5,013.14	366.39	5,026.51	5,025.61	0.90	5,585.108	
193.00	193.00	161.00	161.00	0.31	2.14	175.82	-5,013.14	366.39	5,026.51	5,024.06	2.46	2,046.538	
293.00	293.00	261.00	261.00	0.54	3.48	175.82	-5,013.14	366.39	5,026.51	5,022.50	4.01	1,252.799	
393.00	393.00	361.00	361.00	0.76	4.81	175.82	-5,013.14	366.39	5,026.51	5,020.94	5.57	902.694	
493.00	493.00	461.00	461.00	0.99	6.14	175.82	-5,013.14	366.39	5,026.51	5,019.39	7.12	705.528	
593.00	593.00	561.00	561.00	1.21	7.47	175.82	-5,013.14	366.39	5,026.51	5,017.83	8.68	579.052	
693.00	693.00	661.00	661.00	1.44	8.80	175.82	-5,013.14	366.39	5,026.51	5,016.28	10.24	491.028	
793.00	793.00	761.00	761.00	1.66	10.13	175.82	-5,013.14	366.39	5,026.51	5,014.72	11.79	426.235	
893.00	893.00	861.00	861.00	1.89	11.46	175.82	-5,013.14	366.39	5,026.51	5,013.16	13.35	376.548	
993.00	993.00	961.00	961.00	2.11	12.79	175.82	-5,013.14	366.39	5,026.51	5,011.61	14.91	337.235	
1,093.00	1,093.00	1,061.00	1,061.00	2.34	14.13	175.82	-5,013.14	366.39	5,026.51	5,010.05	16.46	305.355	
1,193.00	1,193.00	1,161.00	1,161.00	2.56	15.46	175.82	-5,013.14	366.39	5,026.51	5,008.49	18.02	278.982	
1,293.00	1,293.00	1,261.00	1,261.00	2.78	16.79	175.82	-5,013.14	366.39	5,026.51	5,006.94	19.57	256.803	
1,393.00	1,393.00	1,361.00	1,361.00	3.01	18.12	175.82	-5,013.14	366.39	5,026.51	5,005.38	21.13	237.890	
1,493.00	1,493.00	1,461.00	1,461.00	3.23	19.45	175.82	-5,013.14	366.39	5,026.51	5,003.83	22.69	221.572	
1,593.00	1,593.00	1,561.00	1,561.00	3.46	20.78	175.82	-5,013.14	366.39	5,026.51	5,002.27	24.24	207.349	
1,693.00	1,693.00	1,661.00	1,661.00	3.68	22.11	175.82	-5,013.14	366.39	5,026.51	5,000.71	25.80	194.842	
1,793.00	1,793.00	1,761.00	1,761.00	3.91	23.45	175.82	-5,013.14	366.39	5,026.51	4,999.16	27.35	183.758	
1,893.00	1,893.00	1,861.00	1,861.00	4.13	24.78	175.82	-5,013.14	366.39	5,026.51	4,997.60	28.91	173.867	
1,993.00	1,993.00	1,961.00	1,961.00	4.36	26.11	175.82	-5,013.14	366.39	5,026.51	4,996.05	30.47	164.986	
2,093.00	2,093.00	2,061.00	2,061.00	4.58	27.44	175.82	-5,013.14	366.39	5,026.51	4,994.49	32.02	156.969	
2,193.00	2,193.00	2,161.00	2,161.00	4.81	28.77	175.82	-5,013.14	366.39	5,026.51	4,992.93	33.58	149.694	
2,293.00	2,293.00	2,261.00	2,261.00	5.03	30.10	175.82	-5,013.14	366.39	5,026.51	4,991.38	35.13	143.064	
2,393.00	2,393.00	2,361.00	2,361.00	5.26	31.43	175.82	-5,013.14	366.39	5,026.51	4,989.82	36.69	136.997	
2,493.00	2,493.00	2,461.00	2,461.00	5.48	32.76	175.82	-5,013.14	366.39	5,026.51	4,988.27	38.25	131.423	
2,593.00	2,593.00	2,561.00	2,561.00	5.71	34.10	175.82	-5,013.14	366.39	5,026.51	4,986.71	39.80	126.285	
2,693.00	2,693.00	2,661.00	2,661.00	5.93	35.43	175.82	-5,013.14	366.39	5,026.51	4,985.15	41.36	121.533	
2,793.00	2,793.00	2,761.00	2,761.00	6.16	36.76	175.82	-5,013.14	366.39	5,026.51	4,983.60	42.92	117.127	
2,893.00	2,893.00	2,861.00	2,861.00	6.38	38.09	175.82	-5,013.14	366.39	5,026.51	4,982.04	44.47	113.028	
2,993.00	2,993.00	2,961.00	2,961.00	6.61	39.42	175.82	-5,013.14	366.39	5,026.51	4,980.48	46.03	109.207	
3,008.52	3,008.52	2,976.52	2,976.52	6.64	39.63	175.82	-5,013.14	366.39	5,026.51	4,980.24	46.27	108.637	
3,025.00	3,024.99	2,992.99	2,992.99	6.66	39.85	-34.23	-5,013.14	366.39	5,026.12	4,979.66	46.46	108.192	
3,050.00	3,049.86	3,017.86	3,017.86	6.67	40.18	-34.48	-5,013.14	366.39	5,024.03	4,977.52	46.51	108.013	
3,075.00	3,074.40	3,042.40	3,042.40	6.68	40.51	-34.96	-5,013.14	366.39	5,020.16	4,973.82	46.34	108.334	
3,100.00	3,098.45	3,066.45	3,066.45	6.70	40.83	-35.67	-5,013.14	366.39	5,014.54	4,968.58	45.95	109.122	
3,125.00	3,121.82	3,089.82	3,089.82	6.73	41.14	-36.63	-5,013.14	366.39	5,007.21	4,961.82	45.39	110.317	
3,150.00	3,144.32	3,112.32	3,112.32	6.76	41.44	-37.87	-5,013.14	366.39	4,998.23	4,953.53	44.70	111.821	
3,175.00	3,165.79	3,133.79	3,133.79	6.79	41.72	-39.41	-5,013.14	366.39	4,987.68	4,943.72	43.95	113.477	
3,200.00	3,186.06	3,154.06	3,154.06	6.83	41.99	-41.29	-5,013.14	366.39	4,975.64	4,932.39	43.25	115.050	
3,225.00	3,204.98	3,172.98	3,172.98	6.88	42.24	-43.56	-5,013.14	366.39	4,962.20	4,919.50	42.69	116.225	
3,250.00	3,222.40	3,190.40	3,190.40	6.92	42.48	-46.26	-5,013.14	366.39	4,947.48	4,905.06	42.42	116.626	
3,275.00	3,238.20	3,206.20	3,206.20	7.03	42.69	-49.45	-5,013.14	366.39	4,931.59	4,889.04	42.55	115.898	
3,300.00	3,252.25	3,220.25	3,220.25	7.17	42.87	-53.18	-5,013.14	366.39	4,914.66	4,871.48	43.17	113.835	
3,325.00	3,264.44	3,232.44	3,232.44	7.34	43.04	-57.52	-5,013.14	366.39	4,896.82	4,852.51	44.31	110.503	
3,350.00	3,274.69	3,242.69	3,242.69	7.54	43.17	-62.48	-5,013.14	366.39	4,878.21	4,832.32	45.90	106.282	
3,375.00	3,282.91	3,250.91	3,250.91	7.77	43.28	-68.08	-5,013.14	366.39	4,858.99	4,811.24	47.74	101.771	
3,400.00	3,289.04	3,257.04	3,257.04	8.03	43.36	-74.24	-5,013.14	366.39	4,839.29	4,789.72	49.58	97.613	
3,425.00	3,293.04	3,261.04	3,261.04	8.31	43.42	-80.83	-5,013.14	366.39	4,819.28	4,768.19	51.08	94.339	
3,450.00	3,294.87	3,262.87	3,262.87	8.61	43.44	-87.66	-5,013.14	366.39	4,799.10	4,747.10	52.01	92.278	

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



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Sec.27-T32N-R07W - San Juan 32-7 Unit 034 - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 8243-INC												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
3,458.52	3,295.00	3,263.00	3,263.00	8.72	43.44	-90.00	-5,013.14	366.39	4,792.22	4,740.06	52.16	91.878	
3,500.00	3,295.00	3,263.00	3,263.00	9.23	43.44	-89.99	-5,013.14	366.39	4,758.50	4,705.83	52.67	90.339	
3,600.00	3,295.01	3,263.01	3,263.01	10.55	43.44	-89.98	-5,013.14	366.39	4,675.60	4,621.62	53.98	86.616	
3,700.00	3,295.04	3,263.04	3,263.04	12.01	43.44	-89.97	-5,013.14	366.39	4,590.48	4,535.07	55.42	82.837	
3,800.00	3,295.08	3,263.08	3,263.08	13.56	43.44	-89.95	-5,013.14	366.39	4,503.27	4,446.36	56.91	79.129	
3,900.00	3,295.14	3,263.14	3,263.14	15.14	43.44	-89.92	-5,013.14	366.39	4,414.09	4,355.66	58.42	75.552	
4,000.00	3,295.21	3,263.21	3,263.21	16.74	43.45	-89.89	-5,013.14	366.39	4,323.06	4,263.13	59.93	72.135	
4,100.00	3,295.30	3,263.30	3,263.30	18.36	43.45	-89.86	-5,013.14	366.39	4,230.34	4,168.92	61.41	68.884	
4,200.00	3,295.40	3,263.40	3,263.40	19.96	43.45	-89.81	-5,013.14	366.39	4,136.05	4,073.19	62.86	65.798	
4,300.00	3,295.52	3,263.52	3,263.52	21.57	43.45	-89.75	-5,013.14	366.39	4,040.37	3,976.10	64.27	62.869	
4,400.00	3,295.64	3,263.64	3,263.64	23.16	43.45	-89.66	-5,013.14	366.39	3,943.46	3,877.83	65.63	60.088	
4,500.00	3,295.78	3,263.78	3,263.78	24.75	43.45	-89.53	-5,013.14	366.39	3,845.51	3,778.57	66.94	57.445	
4,528.45	3,295.83	3,263.83	3,263.83	25.21	43.45	-89.48	-5,013.14	366.39	3,817.48	3,750.17	67.31	56.717	
4,600.00	3,295.93	3,263.93	3,263.93	26.31	43.45	-89.49	-5,013.14	366.39	3,746.92	3,678.44	68.48	54.717	
4,700.00	3,296.09	3,264.09	3,264.09	27.84	43.46	-89.50	-5,013.14	366.39	3,648.36	3,578.28	70.09	52.054	
4,800.00	3,296.24	3,264.24	3,264.24	29.41	43.46	-89.52	-5,013.14	366.39	3,549.89	3,478.16	71.73	49.488	
4,900.00	3,296.39	3,264.39	3,264.39	31.01	43.46	-89.53	-5,013.14	366.39	3,451.51	3,378.10	73.41	47.019	
5,000.00	3,296.54	3,264.54	3,264.54	32.65	43.46	-89.55	-5,013.14	366.39	3,353.22	3,278.11	75.11	44.646	
5,100.00	3,296.69	3,264.69	3,264.69	34.31	43.46	-89.56	-5,013.14	366.39	3,255.04	3,178.21	76.83	42.368	
5,200.00	3,296.84	3,264.84	3,264.84	35.99	43.47	-89.57	-5,013.14	366.39	3,156.97	3,078.40	78.57	40.183	
5,300.00	3,296.99	3,264.99	3,264.99	37.70	43.47	-89.59	-5,013.14	366.39	3,059.02	2,978.70	80.32	38.086	
5,400.00	3,297.14	3,265.14	3,265.14	39.42	43.47	-89.60	-5,013.14	366.39	2,961.22	2,879.13	82.09	36.074	
5,500.00	3,297.29	3,265.29	3,265.29	41.15	43.47	-89.61	-5,013.14	366.39	2,863.56	2,779.69	83.87	34.144	
5,600.00	3,297.44	3,265.44	3,265.44	42.90	43.47	-89.63	-5,013.14	366.39	2,766.07	2,680.42	85.66	32.293	
5,700.00	3,297.59	3,265.59	3,265.59	44.67	43.48	-89.64	-5,013.14	366.39	2,668.77	2,581.32	87.45	30.516	
5,800.00	3,297.74	3,265.74	3,265.74	46.44	43.48	-89.66	-5,013.14	366.39	2,571.67	2,482.41	89.26	28.811	
5,900.00	3,297.90	3,265.90	3,265.90	48.22	43.48	-89.67	-5,013.14	366.39	2,474.81	2,383.74	91.07	27.174	
6,000.00	3,298.05	3,266.05	3,266.05	50.01	43.48	-89.68	-5,013.14	366.39	2,378.21	2,285.31	92.89	25.602	
6,100.00	3,298.20	3,266.20	3,266.20	51.81	43.48	-89.70	-5,013.14	366.39	2,281.89	2,187.18	94.72	24.092	
6,200.00	3,298.35	3,266.35	3,266.35	53.61	43.49	-89.71	-5,013.14	366.39	2,185.91	2,089.37	96.55	22.641	
6,300.00	3,298.50	3,266.50	3,266.50	55.43	43.49	-89.73	-5,013.14	366.39	2,090.31	1,991.93	98.38	21.247	
6,400.00	3,298.65	3,266.65	3,266.65	57.24	43.49	-89.74	-5,013.14	366.39	1,995.14	1,894.92	100.22	19.908	
6,500.00	3,298.80	3,266.80	3,266.80	59.06	43.49	-89.75	-5,013.14	366.39	1,900.46	1,798.40	102.06	18.621	
6,600.00	3,298.95	3,266.95	3,266.95	60.89	43.49	-89.77	-5,013.14	366.39	1,806.36	1,702.45	103.91	17.385	
6,700.00	3,299.10	3,267.10	3,267.10	62.72	43.50	-89.78	-5,013.14	366.39	1,712.92	1,607.17	105.75	16.197	
6,800.00	3,299.25	3,267.25	3,267.25	64.55	43.50	-89.79	-5,013.14	366.39	1,620.27	1,512.66	107.60	15.058	
6,900.00	3,299.40	3,267.40	3,267.40	66.39	43.50	-89.81	-5,013.14	366.39	1,528.54	1,419.09	109.46	13.965	
7,000.00	3,299.55	3,267.55	3,267.55	68.23	43.50	-89.82	-5,013.14	366.39	1,437.92	1,326.61	111.31	12.918	
7,100.00	3,299.71	3,267.71	3,267.71	70.07	43.50	-89.84	-5,013.14	366.39	1,348.63	1,235.46	113.17	11.917	
7,200.00	3,299.86	3,267.86	3,267.86	71.92	43.51	-89.85	-5,013.14	366.39	1,260.94	1,145.91	115.03	10.962	
7,300.00	3,300.01	3,268.01	3,268.01	73.77	43.51	-89.86	-5,013.14	366.39	1,175.23	1,058.33	116.89	10.054	
7,400.00	3,300.16	3,268.16	3,268.16	75.62	43.51	-89.88	-5,013.14	366.39	1,091.94	973.18	118.76	9.195	
7,500.00	3,300.31	3,268.31	3,268.31	77.47	43.51	-89.89	-5,013.14	366.39	1,011.69	891.06	120.62	8.387	
7,600.00	3,300.46	3,268.46	3,268.46	79.33	43.51	-89.90	-5,013.14	366.39	935.25	812.76	122.49	7.635	
7,700.00	3,300.61	3,268.61	3,268.61	81.18	43.52	-89.92	-5,013.14	366.39	863.63	739.28	124.36	6.945	
7,800.00	3,300.76	3,268.76	3,268.76	83.04	43.52	-89.93	-5,013.14	366.39	798.15	671.92	126.23	6.323	
7,900.00	3,300.91	3,268.91	3,268.91	84.90	43.52	-89.95	-5,013.14	366.39	740.41	612.32	128.10	5.780	
8,000.00	3,301.06	3,269.06	3,269.06	86.76	43.52	-89.96	-5,013.14	366.39	692.38	562.41	129.97	5.327	
8,100.00	3,301.21	3,269.21	3,269.21	88.62	43.53	-89.97	-5,013.14	366.39	656.17	524.33	131.84	4.977	
8,200.00	3,301.36	3,269.36	3,269.36	90.49	43.53	-89.99	-5,013.14	366.39	633.83	500.12	133.71	4.740	
8,294.12	3,301.51	3,269.51	3,269.51	92.24	43.53	-90.00	-5,013.14	366.39	626.80	491.33	135.48	4.627 CC	
8,300.00	3,301.52	3,269.52	3,269.52	92.35	43.53	-90.00	-5,013.14	366.39	626.83	491.24	135.59	4.623 ES, SF	

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



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 203 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6632.00usft
Reference Site:	Sec.22-T32N-R07W	MD Reference:	KB @ 6632.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 203 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lat 1	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev2	Offset TVD Reference:	Offset Datum

Offset Design Sec.27-T32N-R07W - San Juan 32-7 Unit 034 - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 8243-INC												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
8,400.00	3,301.67	3,269.67	3,269.67	94.22	43.53	-90.01	-5,013.14	366.39	635.68	498.22	137.46	4.624	
8,500.00	3,301.82	3,269.82	3,269.82	96.09	43.53	-90.03	-5,013.14	366.39	659.75	520.41	139.34	4.735	
8,600.00	3,301.97	3,269.97	3,269.97	97.96	43.54	-90.04	-5,013.14	366.39	697.45	556.24	141.22	4.939	
8,700.00	3,302.12	3,270.12	3,270.12	99.83	43.54	-90.06	-5,013.14	366.39	746.74	603.65	143.09	5.219	
8,800.00	3,302.27	3,270.27	3,270.27	101.70	43.54	-90.07	-5,013.14	366.39	805.48	660.51	144.97	5.556	
8,900.00	3,302.42	3,270.42	3,270.42	103.57	43.54	-90.08	-5,013.14	366.39	871.76	724.91	146.85	5.936	
9,000.00	3,302.57	3,270.57	3,270.57	105.44	43.54	-90.10	-5,013.14	366.39	944.00	795.28	148.73	6.347	
9,100.00	3,302.72	3,270.72	3,270.72	107.31	43.55	-90.11	-5,013.14	366.39	1,020.94	870.33	150.61	6.779	
9,200.00	3,302.87	3,270.87	3,270.87	109.19	43.55	-90.12	-5,013.14	366.39	1,101.59	949.10	152.49	7.224	
9,300.00	3,303.02	3,271.02	3,271.02	111.06	43.55	-90.14	-5,013.14	366.39	1,185.19	1,030.82	154.37	7.678	
9,400.00	3,303.17	3,271.17	3,271.17	112.94	43.55	-90.15	-5,013.14	366.39	1,271.16	1,114.91	156.25	8.135	
9,500.00	3,303.33	3,271.33	3,271.33	114.81	43.55	-90.17	-5,013.14	366.39	1,359.05	1,200.92	158.13	8.594	
9,600.00	3,303.48	3,271.48	3,271.48	116.69	43.56	-90.18	-5,013.14	366.39	1,448.52	1,288.50	160.02	9.052	
9,700.00	3,303.63	3,271.63	3,271.63	118.56	43.56	-90.19	-5,013.14	366.39	1,539.28	1,377.38	161.90	9.508	
9,800.00	3,303.78	3,271.78	3,271.78	120.44	43.56	-90.21	-5,013.14	366.39	1,631.12	1,467.34	163.78	9.959	
9,900.00	3,303.93	3,271.93	3,271.93	122.32	43.56	-90.22	-5,013.14	366.39	1,723.87	1,558.20	165.66	10.406	
10,000.00	3,304.08	3,272.08	3,272.08	124.20	43.56	-90.24	-5,013.14	366.39	1,817.39	1,649.84	167.55	10.847	
10,100.00	3,304.23	3,272.23	3,272.23	126.08	43.57	-90.25	-5,013.14	366.39	1,911.56	1,742.13	169.43	11.282	
10,200.00	3,304.38	3,272.38	3,272.38	127.96	43.57	-90.26	-5,013.14	366.39	2,006.30	1,834.99	171.32	11.711	
10,300.00	3,304.53	3,272.53	3,272.53	129.84	43.57	-90.28	-5,013.14	366.39	2,101.53	1,928.33	173.20	12.133	
10,400.00	3,304.68	3,272.68	3,272.68	131.72	43.57	-90.29	-5,013.14	366.39	2,197.18	2,022.09	175.09	12.549	
10,500.00	3,304.83	3,272.83	3,272.83	133.60	43.57	-90.30	-5,013.14	366.39	2,293.20	2,116.23	176.97	12.958	
10,600.00	3,304.98	3,272.98	3,272.98	135.48	43.58	-90.32	-5,013.14	366.39	2,389.55	2,210.69	178.86	13.360	
10,700.00	3,305.14	3,273.14	3,273.14	137.36	43.58	-90.33	-5,013.14	366.39	2,486.19	2,305.44	180.74	13.755	
10,800.00	3,305.29	3,273.29	3,273.29	139.24	43.58	-90.35	-5,013.14	366.39	2,583.08	2,400.45	182.63	14.144	
10,900.00	3,305.44	3,273.44	3,273.44	141.12	43.58	-90.36	-5,013.14	366.39	2,680.20	2,495.68	184.52	14.526	
11,000.00	3,305.59	3,273.59	3,273.59	143.00	43.58	-90.37	-5,013.14	366.39	2,777.53	2,591.12	186.40	14.901	
11,100.00	3,305.74	3,273.74	3,273.74	144.89	43.59	-90.39	-5,013.14	366.39	2,875.03	2,686.75	188.29	15.269	
11,200.00	3,305.89	3,273.89	3,273.89	146.77	43.59	-90.40	-5,013.14	366.39	2,972.71	2,782.53	190.18	15.631	
11,300.00	3,306.04	3,274.04	3,274.04	148.65	43.59	-90.41	-5,013.14	366.39	3,070.53	2,878.47	192.06	15.987	
11,400.00	3,306.19	3,274.19	3,274.19	150.54	43.59	-90.43	-5,013.14	366.39	3,168.49	2,974.54	193.95	16.337	
11,500.00	3,306.34	3,274.34	3,274.34	152.42	43.59	-90.44	-5,013.14	366.39	3,266.58	3,070.74	195.84	16.680	
11,600.00	3,306.49	3,274.49	3,274.49	154.30	43.60	-90.46	-5,013.14	366.39	3,364.77	3,167.05	197.73	17.017	
11,700.00	3,306.64	3,274.64	3,274.64	156.19	43.60	-90.47	-5,013.14	366.39	3,463.07	3,263.46	199.61	17.349	
11,800.00	3,306.79	3,274.79	3,274.79	158.07	43.60	-90.48	-5,013.14	366.39	3,561.47	3,359.96	201.50	17.675	
11,900.00	3,306.94	3,274.94	3,274.94	159.96	43.60	-90.50	-5,013.14	366.39	3,659.95	3,456.56	203.39	17.995	
11,936.61	3,307.00	3,275.00	3,275.00	160.65	43.60	-90.50	-5,013.14	366.39	3,696.03	3,491.94	204.08	18.111	



Koltek Energy Services
Anticollision Report



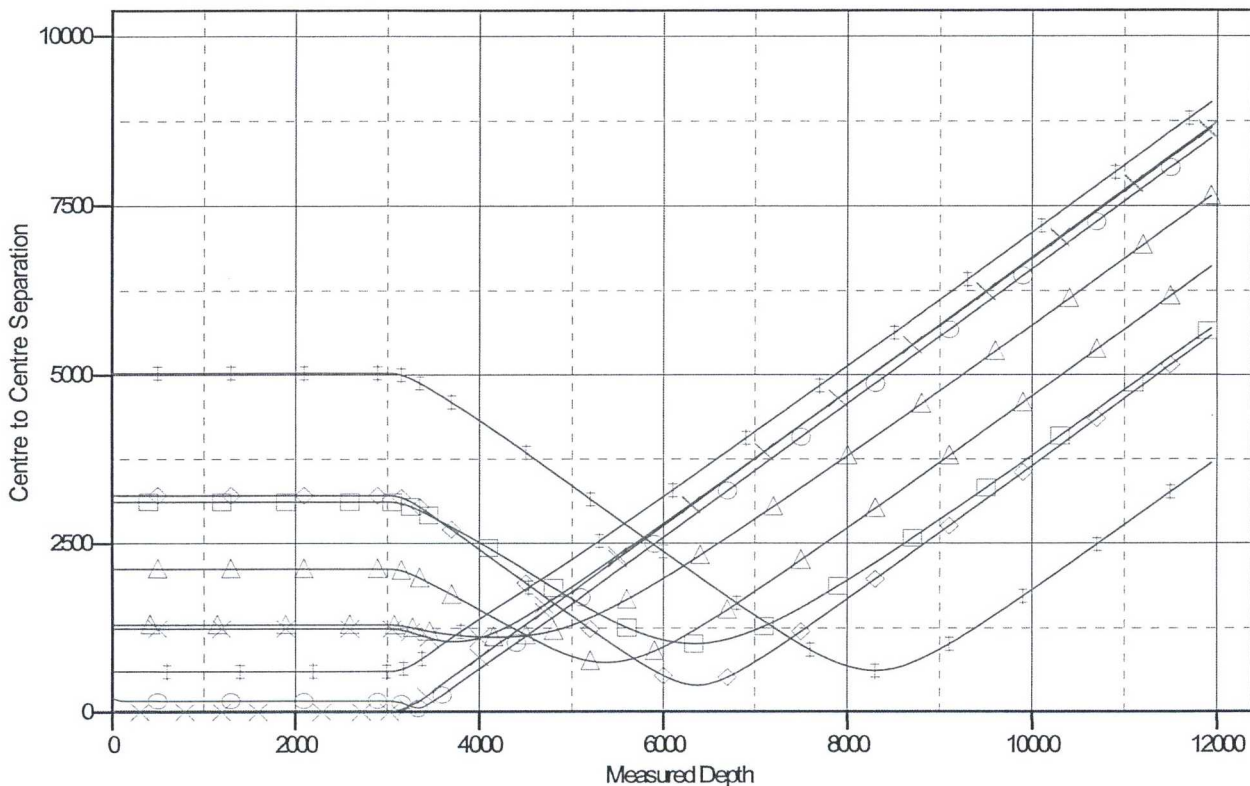
Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB @ 6632.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 107.83334°W

Coordinates are relative to: San Juan 32-7 Unit 203 ST
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: 0.17°

Ladder Plot



LEGEND

San Juan 32-7 Unit035M, Original Hole, Original Hole V0
San Juan 32-7 Unit203A, Original Hole, Original Hole V0
San Juan 32-7 Unit009, Original Hole, Original Hole V0
San Juan 32-7 Unit044M, Original Hole, Original Hole V0
San Juan 32-7 Unit044G, Original Hole, Original Hole V0
San Juan 32-7 Unit203, Original Hole, Original Hole V0
San Juan 32-7 Unit035, Original Hole, Original Hole V0
San Juan 32-7 Unit203R, Original Hole, Original Hole V0
San Juan 32-7 Unit034, Original Hole, Original Hole V0



Koltek Energy Services
Anticollision Report



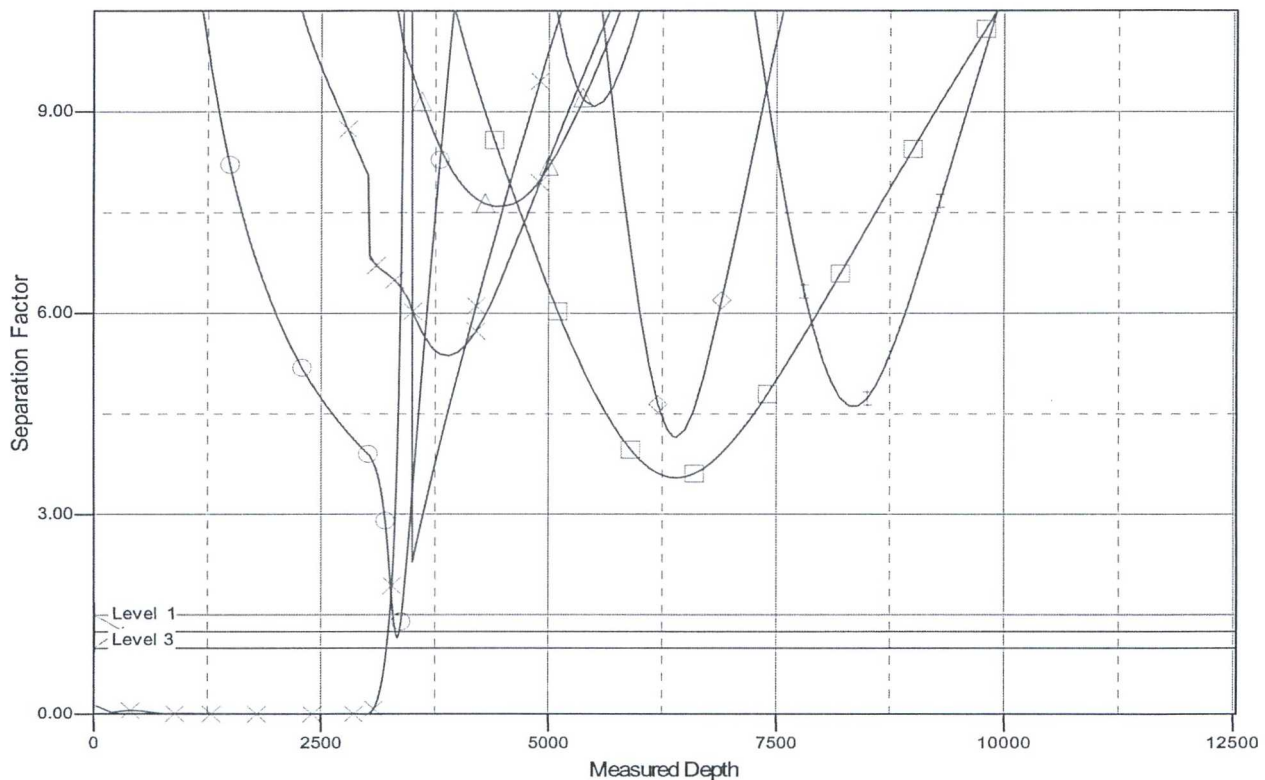
Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.22-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 203 ST
Well Error: 0.00 usft
Reference Wellbore: Lat 1
Reference Design: Rev2

Local Co-ordinate Reference: Well San Juan 32-7 Unit 203 ST
TVD Reference: KB @ 6632.00usft
MD Reference: KB @ 6632.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB @ 6632.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 107.83334°W

Coordinates are relative to: San Juan 32-7 Unit 203 ST
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: 0.17°

Separation Factor Plot



LEGEND

San Juan 32-7 Unit035M, Original Hole, Original Hole V0
San Juan 32-7 Unit203A, Original Hole, Original Hole V0
San Juan 32-7 Unit009, Original Hole, Original Hole V0
San Juan 32-7 Unit044M, Original Hole, Original Hole V0
San Juan 32-7 Unit044G, Original Hole, Original Hole V0
San Juan 32-7 Unit203, Original Hole, Original Hole V0
San Juan 32-7 Unit035, Original Hole, Original Hole V0
San Juan 32-7 Unit203R, Original Hole, Original Hole V0
San Juan 32-7 Unit034, Original Hole, Original Hole V0