

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

Heather Riley, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-4 or 3160-5 form.

Operator Signature Date: 9/26/18

Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf_Owner	UL	Sec	Twp	N/S	Rng	W/E
30-045-28238-00-00	SAN JUAN 32 7 UNIT	211	HILCORP ENERGY COMPANY	M	T	San Juan	F	K	35	32	N	7	W

Application Type:

☐ P&A ☐ Drilling/Casing Change ☐ Location Change

☒ **Recomplete/DHC** (For hydraulic fracturing operations review EPA Underground injection control Guidance #84; Submit Gas Capture Plan form prior to spudding or initiating recompletion operations)

☐ **Other:**

Conditions of Approval:

- Notify NMOCD 24 Hours prior to commencing activities
- Hold C-104 for DHC
- Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- Please note in the future closed loop notifications can be made in the Notice of Intent sundry for the work being performed.

** Well # and BHL will be updated when "As Drilled" C-102 is rec'd.



NMOCD Approved by Signature

10/23/18
Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

5. Lease Serial No.

NMSF078542

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

2. Name of Operator

Hilcorp Energy Company

3a. Address

382 Road 3100, Aztec, NM 87410

3b. Phone No. (include area code)

505-599-3400

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

8. Well Name and No.

SAN JUAN 32-7 UNIT 211H

9. API Well No.

30-045-28238

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

Surface Unit K (NE/SW) 1296' FNL & 1678' FWL, Sec. 35, T32N, R07W

Bottomhole Unit P (SE/SE) 1049' FSL & 842' FEL, Sec. 36, T32N, R07W

10. Field and Pool or Exploratory Area

Basin Fruitland Coal

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 <u>Drill</u>
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	<u>Lateral</u>
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	<u>Sidetrack</u>

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 recompleat 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 recompleat 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 111, 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 @ 3030' and the window depth will be at 2999.52' 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.

NMOCD

OCT 15 2018

HOLD C104 FOR DHC

DISTRICT III

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

Amanda Walker

Title Operations/Regulatory Technician - Sr.

Signature

Date 9/26/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title PE

Date 10/11/18

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 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.

(Instruction on page 2)

NMOCD

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 30-045-28238	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 211H
⁷ GRID No. 372171	⁸ Operator Name HILCORP ENERGY COMPANY	⁹ Elevation 6543'

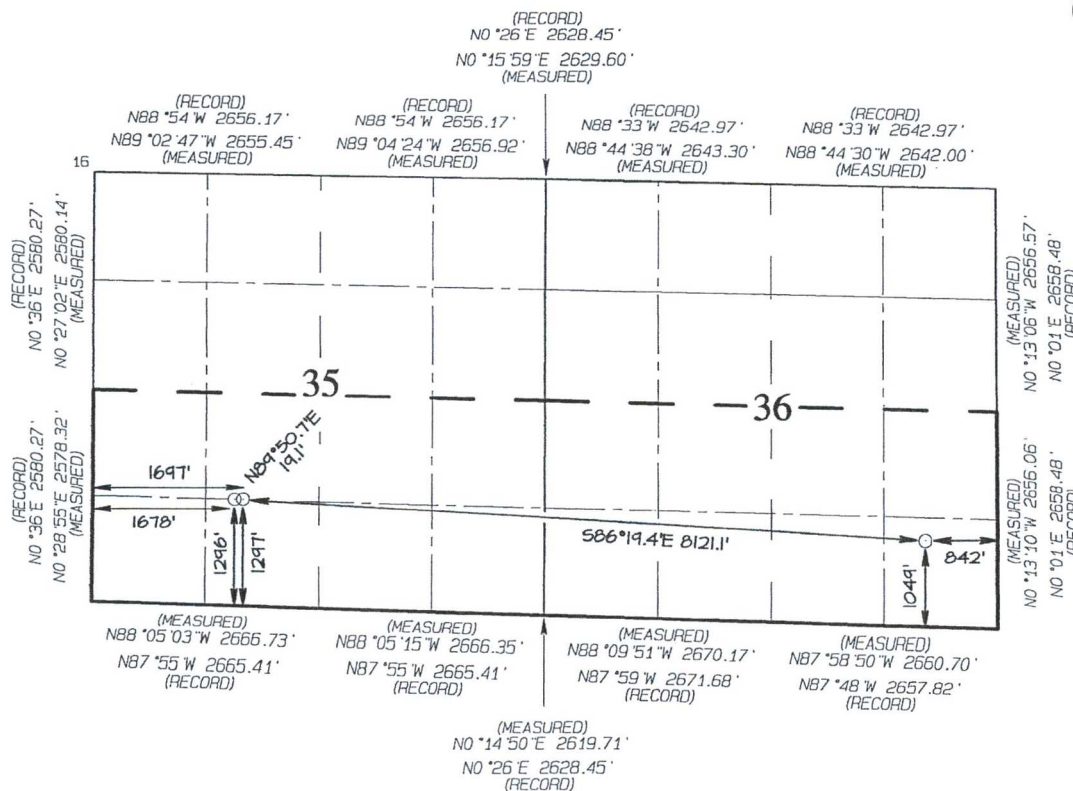
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	35	32N	7W		1296	SOUTH	1678	WEST	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
P	36	32N	7W		1049	SOUTH	842	EAST	SAN JUAN
¹² Dedicated Acres 640.00	S/2 - Section 35 S/2 - Section 36				¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.		

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



SURFACE LOCATION
1296' FSL 1678' FWL
SEC 35, T32N, R7W
LAT: 36.933687°N
LONG: 107.539230°W
DATUM: NAD1927

LAT: 36.933692°N
LONG: 107.539903°W
DATUM: NAD1983

FIRST TAKE POINT
1297' FSL 1697' FWL
SEC 35, T32N, R7W
LAT: 36.933687°N
LONG: 107.539230°W
DATUM: NAD1927

LAT: 36.933692°N
LONG: 107.539838°W
DATUM: NAD1983

BOTTOM-HOLE LOCATION
1049' FSL 842' FEL
SEC 36, T32N, R7W
LAT: 36.932184°N
LONG: 107.511508°W
DATUM: NAD1927

LAT: 36.932190°N
LONG: 107.512114°W
DATUM: NAD1983

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.

Amanda Walker 9/26/18
Signature Date

Amanda Walker
Printed Name
mwalker@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 17, 2018
Date of Survey: JUNE 11, 2018

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269



Hilcorp Energy Company

San Juan 32-7 Unit 211H ST

Hilcorp Energy Company

Technical Plan

1. Location

SAN JUAN 32-7 UNIT 211H ST (API# 3004528238)

SHL: 1296' FSL, 1678' FWL – Sec 35, T32N, R7W

BHL: 1049' FSL, 842' FEL – Sec 36, T32N, R7W

GL: 6,543'

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	2,380'	Wet
Kirtland	2,495'	Wet
Fruitland	3,120'	Possible Gas/Water
Pictured Cliffs	3,390'	Wet

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

*tops for the 211 were on the NMOCD website those were used

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 211H ST

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 - 277'
Intermediate (existing)	8-3/4"	7"	23#	0 - 3,201'
Prod Liner (Pre-drilled)	6-1/4"	4-1/2"	11.6# J-55/L-80	3,010' - 11,335.01' MD

The existing wellbore will be temporarily isolated with a RBP @ 3030'. The RBP will be recovered after drilling the lateral. Window depth is as follows:

Lat 1 – 2999.52' 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 211H ST

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

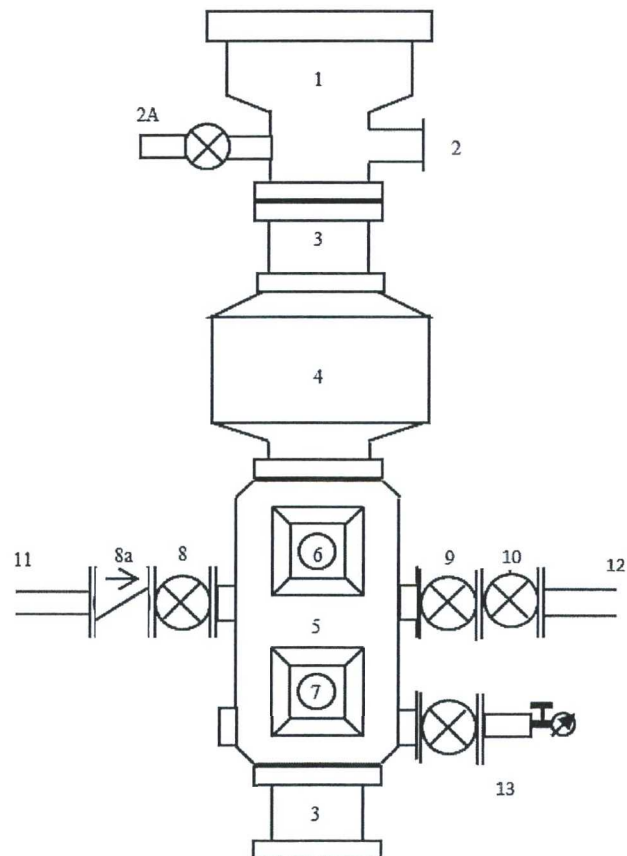
The planned wellbore directional plan and plot is attached.

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.

San Juan 32-7 Unit 211H ST
BOPE Schematic – Aztec 777



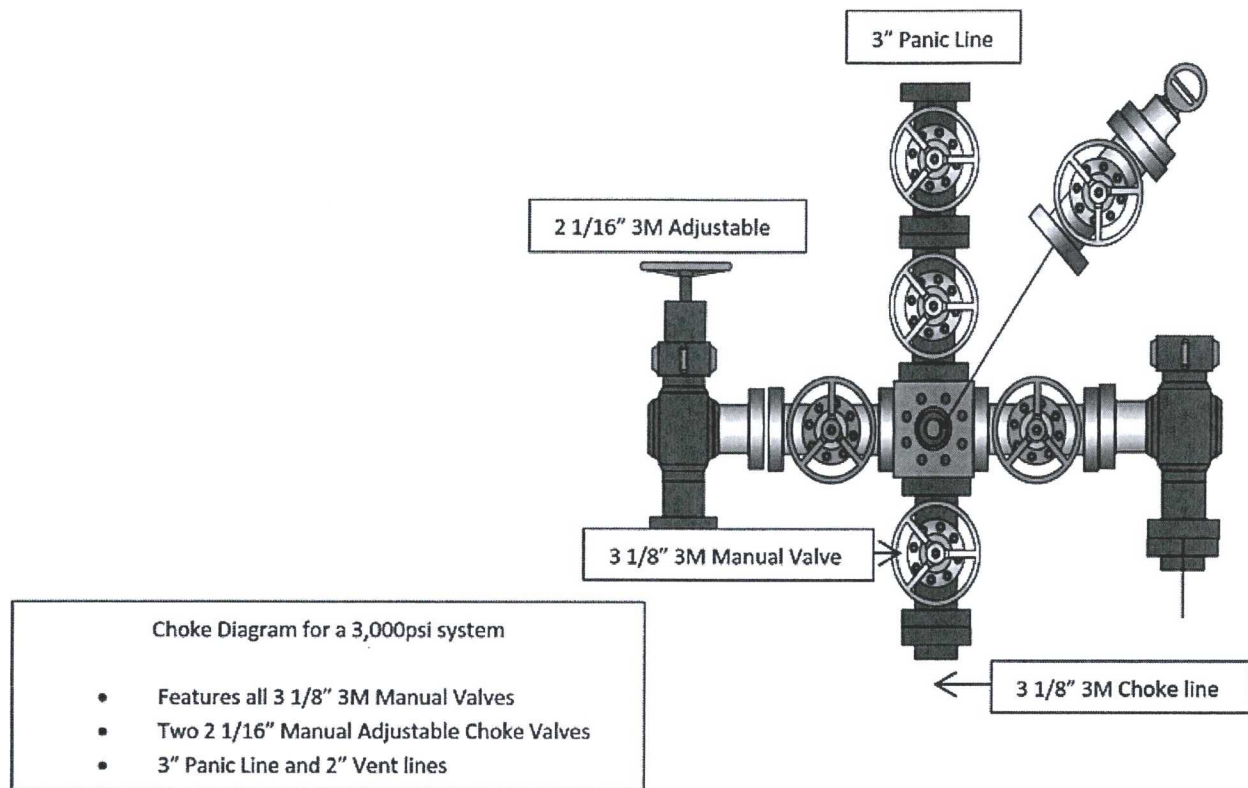
1. Rotating Head
2. Flow line
- 2A. Fill up line and valve
3. Spacer Spools (as needed)
4. 11" 3M Annular Preventer
5. 11" 3M Double Ram Preventer
6. Blind Rams
7. Pipe Rams
8. 3M Gate Valve (2")
- 8a. Check valve
9. 3M Manual Gate Valve (3")
10. 3M Manual Gate Valve (3")
11. Kill Line Connection, 2" 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 211H ST
Choke Manifold Schematic – Aztec 777

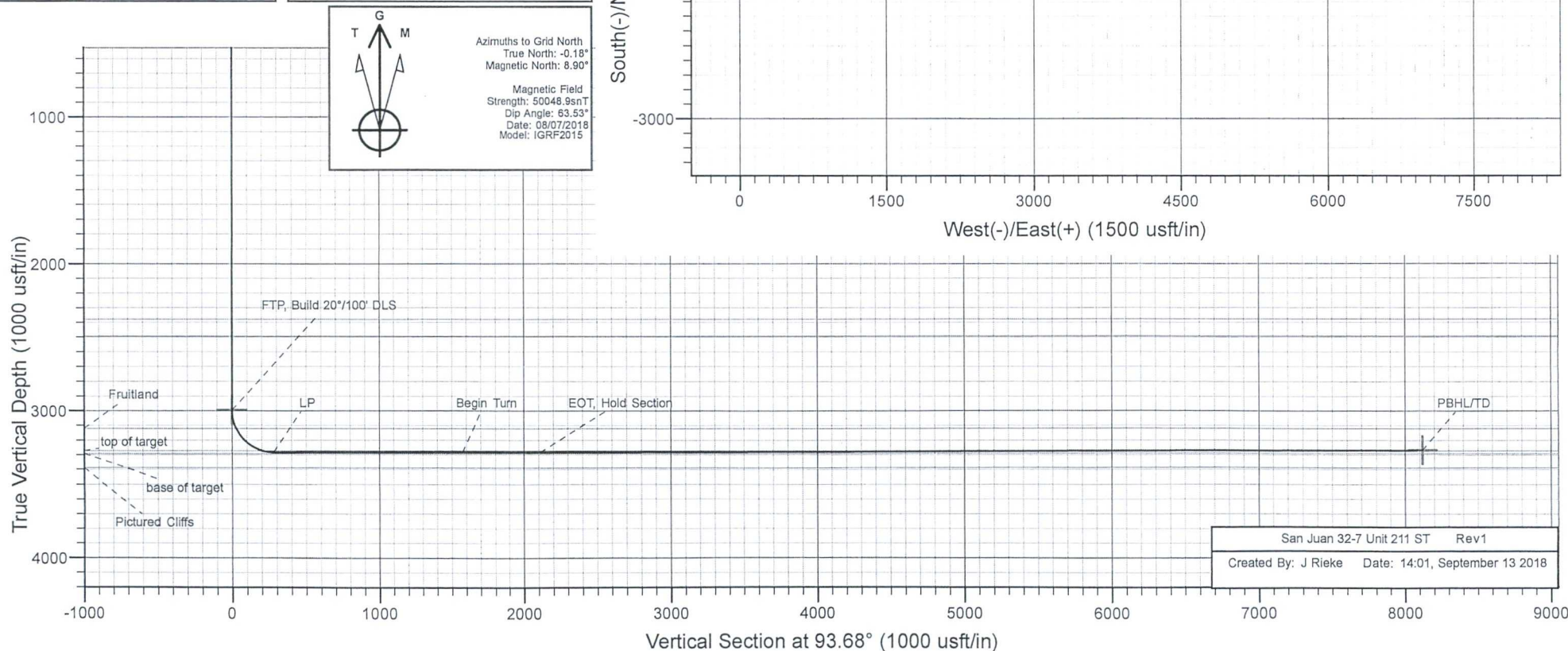
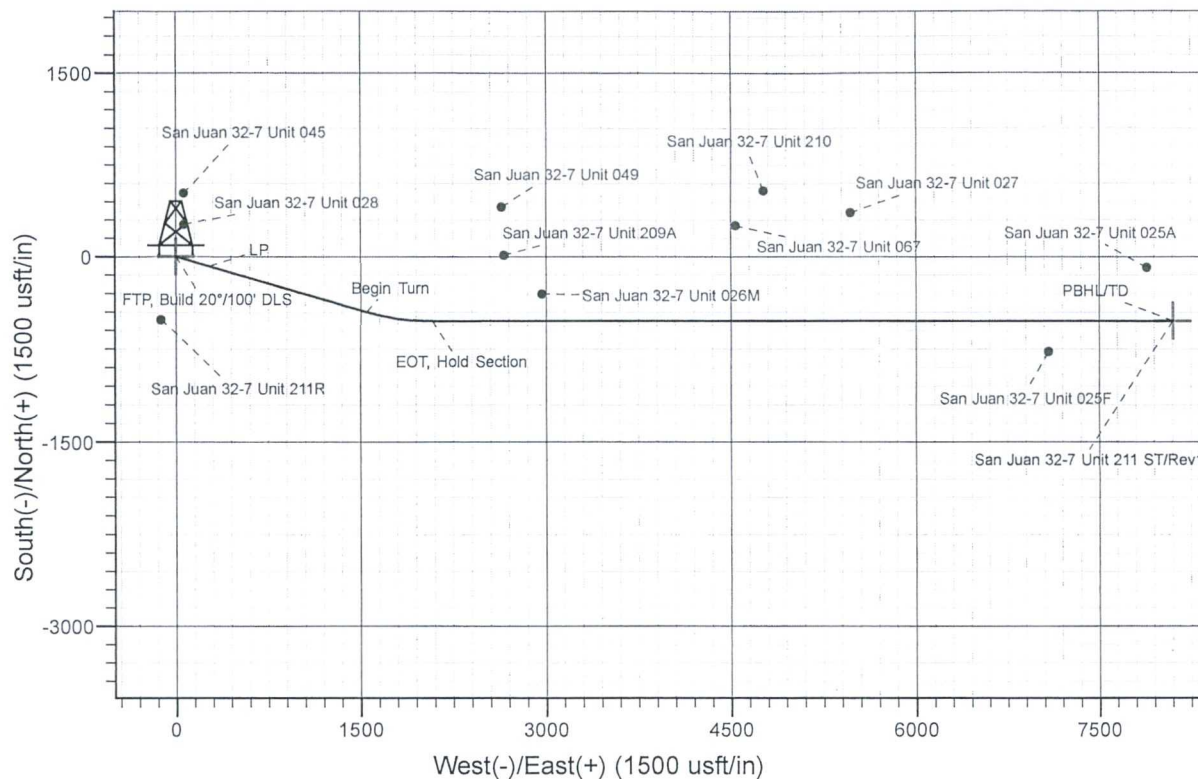




Company: Hilcorp Energy Company
 Field: San Juan Co., NM (NAD27)
 Location: Sec.35-T32N-R07W
 Well: San Juan 32-7 Unit 211 ST
 Borehole: ST
 Plan: Rev1



WELL DETAILS: San Juan 32-7 Unit 211 ST									
+N-S	+E-W	Northing	GL 6543.00	Easting	KB @ 6558.00usft	Latitude	Longitude		
0.00	0.00	2159260.44		585957.28		36.93369°N	107.53923°W		
SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect
1	2996.52	0.00	0.00	2996.52	0.00	0.00	0.00	0.00	0.00
2	3446.52	90.00	106.15	3283.00	-79.68	275.17	20.00	106.15	279.72
3	4772.52	90.00	106.15	3283.00	-448.52	1548.85	0.00	0.00	1574.42
4	5311.84	90.14	89.97	3282.35	-523.89	2081.06	3.00	-89.51	2110.38
5	11335.01	90.14	89.97	3268.00	-520.84	8104.22	0.00	0.00	8120.94
DESIGN TARGET DETAILS									
Name	TVD	+N-S	+E-W	Latitude	Longitude				
SJ 32-7 Unit 211 ST FTP	2996.52	0.00	0.00	36.93369°N	107.53923°W				
SJ 32-7 Unit 211 PBHL/TD	3268.00	-520.84	8104.22	36.93218°N	107.51151°W				
FORMATION TOP DETAILS					ANNOTATIONS				
TVDPath	MDPath	Formation	TVD	MD	Annotation				
2380.00	2380.00	Ojo Alamo	2996.52	2996.52	FTP, Build 20°/100' DLS				
2495.00	2495.00	Kirtland	3283.00	3446.52	LP				
3120.00	3124.18	Fruitland	3283.00	4772.52	Begin Turn				
3272.00	3366.88	top of target	3282.35	5311.84	EOT, Hold Section				
			3268.00	11335.01	PBHL/TD				



San Juan 32-7 Unit 211 ST Rev1
 Created By: J Rieke Date: 14:01, September 13 2018



Hilcorp Energy Company

San Juan Co., NM (NAD27)

Sec.35-T32N-R07W

San Juan 32-7 Unit 211 ST

ST

Plan: Rev1

Standard Planning Report - Geographic

13 September, 2018





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.35-T32N-R07W
Well: San Juan 32-7 Unit 211 ST
Wellbore: ST
Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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.35-T32N-R07W
Site Position: Northing: 2,159,263.84 usft Latitude: 36.93370°N
From: Map Easting: 585,937.24 usft Longitude: 107.53930°W
Position Uncertainty: 0.00 usft Slot Radius: 13.200 in Grid Convergence: 0.18 °

Well: San Juan 32-7 Unit 211 ST
Well Position: +N/-S 0.00 usft Northing: 2,159,260.44 usft Latitude: 36.93369°N
+E/-W 0.00 usft Easting: 585,957.28 usft Longitude: 107.53923°W
Position Uncertainty: 0.00 usft Wellhead Elevation: 0.00 usft Ground Level: 6,543.00 usft

Wellbore: ST

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	08/07/18	9.08	63.53	50,049

Design: Rev1
Audit Notes:
Version: Phase: PROTOTYPE Tie On Depth: 2,996.52
Vertical Section: Depth From (TVD) +N/-S +E/-W Direction
(usft) (usft) (usft) (°)
0.00 0.00 0.00 93.68

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
2,996.52	0.00	0.00	2,996.52	0.00	0.00	0.00	0.00	0.00	0.00	
3,446.52	90.00	106.15	3,283.00	-79.68	275.17	20.00	20.00	0.00	106.15	
4,772.52	90.00	106.15	3,283.00	-448.52	1,548.85	0.00	0.00	0.00	0.00	
5,311.84	90.14	89.97	3,282.35	-523.89	2,081.06	3.00	0.03	-3.00	-89.51	
11,335.01	90.14	89.97	3,268.00	-520.84	8,104.22	0.00	0.00	0.00	0.00	SJ 32-7 Unit 211 PBH



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.35-T32N-R07W
Well: San Juan 32-7 Unit 211 ST
Wellbore: ST
Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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
2,996.52	0.00	0.00	2,996.52	0.00	0.00	2,159,260.44	585,957.28	36.93369°N	107.53923°W
FTP, Build 20°/100' DLS									
3,000.00	0.70	106.15	3,000.00	-0.01	0.02	2,159,260.43	585,957.30	36.93369°N	107.53923°W
3,100.00	20.70	106.15	3,097.76	-5.14	17.76	2,159,255.30	585,975.04	36.93367°N	107.53917°W
3,200.00	40.70	106.15	3,183.32	-19.27	66.54	2,159,241.17	586,023.83	36.93363°N	107.53901°W
3,300.00	60.70	106.15	3,246.34	-40.68	140.49	2,159,219.76	586,097.78	36.93357°N	107.53875°W
3,400.00	80.70	106.15	3,279.23	-66.80	230.69	2,159,193.64	586,187.97	36.93350°N	107.53844°W
3,446.52	90.00	106.15	3,283.00	-79.68	275.17	2,159,180.76	586,232.46	36.93347°N	107.53829°W
LP									
3,500.00	90.00	106.15	3,283.00	-94.56	326.54	2,159,165.88	586,283.83	36.93343°N	107.53812°W
3,600.00	90.00	106.15	3,283.00	-122.38	422.60	2,159,138.06	586,379.88	36.93335°N	107.53779°W
3,700.00	90.00	106.15	3,283.00	-150.19	518.65	2,159,110.25	586,475.94	36.93327°N	107.53746°W
3,800.00	90.00	106.15	3,283.00	-178.01	614.70	2,159,082.43	586,571.99	36.93319°N	107.53713°W
3,900.00	90.00	106.15	3,283.00	-205.82	710.76	2,159,054.62	586,668.04	36.93312°N	107.53680°W
4,000.00	90.00	106.15	3,283.00	-233.64	806.81	2,159,026.80	586,764.10	36.93304°N	107.53647°W
4,100.00	90.00	106.15	3,283.00	-261.45	902.87	2,158,998.99	586,860.15	36.93296°N	107.53615°W
4,200.00	90.00	106.15	3,283.00	-289.27	998.92	2,158,971.17	586,956.20	36.93288°N	107.53582°W
4,300.00	90.00	106.15	3,283.00	-317.08	1,094.97	2,158,943.36	587,052.26	36.93281°N	107.53549°W
4,400.00	90.00	106.15	3,283.00	-344.90	1,191.03	2,158,915.54	587,148.31	36.93273°N	107.53516°W
4,500.00	90.00	106.15	3,283.00	-372.71	1,287.08	2,158,887.73	587,244.36	36.93265°N	107.53483°W
4,600.00	90.00	106.15	3,283.00	-400.53	1,383.13	2,158,859.91	587,340.42	36.93258°N	107.53450°W
4,700.00	90.00	106.15	3,283.00	-428.34	1,479.19	2,158,832.10	587,436.47	36.93250°N	107.53418°W
4,772.52	90.00	106.15	3,283.00	-448.52	1,548.85	2,158,811.92	587,506.13	36.93244°N	107.53394°W
Begin Turn									
4,800.00	90.01	105.33	3,283.00	-455.97	1,575.30	2,158,804.47	587,532.58	36.93242°N	107.53385°W
4,900.00	90.03	102.33	3,282.96	-479.86	1,672.39	2,158,780.58	587,629.67	36.93236°N	107.53352°W
5,000.00	90.06	99.33	3,282.88	-498.64	1,770.60	2,158,761.80	587,727.88	36.93230°N	107.53318°W
5,100.00	90.08	96.33	3,282.76	-512.26	1,869.65	2,158,748.18	587,826.94	36.93226°N	107.53284°W
5,200.00	90.11	93.33	3,282.59	-520.67	1,969.29	2,158,739.77	587,926.57	36.93224°N	107.53250°W
5,300.00	90.13	90.33	3,282.38	-523.86	2,069.22	2,158,736.58	588,026.51	36.93223°N	107.53216°W
5,311.84	90.14	89.97	3,282.35	-523.89	2,081.06	2,158,736.55	588,038.35	36.93223°N	107.53212°W
EOT, Hold Section									
5,400.00	90.14	89.97	3,282.14	-523.84	2,169.22	2,158,736.60	588,126.51	36.93223°N	107.53182°W
5,500.00	90.14	89.97	3,281.90	-523.79	2,269.22	2,158,736.65	588,226.51	36.93223°N	107.53147°W
5,600.00	90.14	89.97	3,281.66	-523.74	2,369.22	2,158,736.70	588,326.51	36.93223°N	107.53113°W
5,700.00	90.14	89.97	3,281.43	-523.69	2,469.22	2,158,736.75	588,426.51	36.93223°N	107.53079°W
5,800.00	90.14	89.97	3,281.19	-523.64	2,569.22	2,158,736.80	588,526.51	36.93223°N	107.53045°W
5,900.00	90.14	89.97	3,280.95	-523.59	2,669.22	2,158,736.85	588,626.51	36.93223°N	107.53011°W
6,000.00	90.14	89.97	3,280.71	-523.54	2,769.22	2,158,736.90	588,726.51	36.93223°N	107.52976°W
6,100.00	90.14	89.97	3,280.47	-523.49	2,869.22	2,158,736.95	588,826.51	36.93223°N	107.52942°W
6,200.00	90.14	89.97	3,280.24	-523.44	2,969.22	2,158,737.00	588,926.51	36.93222°N	107.52908°W
6,300.00	90.14	89.97	3,280.00	-523.39	3,069.22	2,158,737.05	589,026.51	36.93222°N	107.52874°W
6,400.00	90.14	89.97	3,279.76	-523.34	3,169.22	2,158,737.10	589,126.51	36.93222°N	107.52840°W
6,500.00	90.14	89.97	3,279.52	-523.29	3,269.22	2,158,737.15	589,226.51	36.93222°N	107.52805°W
6,600.00	90.14	89.97	3,279.28	-523.24	3,369.22	2,158,737.20	589,326.51	36.93222°N	107.52771°W
6,700.00	90.14	89.97	3,279.04	-523.19	3,469.22	2,158,737.25	589,426.51	36.93222°N	107.52737°W
6,800.00	90.14	89.97	3,278.81	-523.14	3,569.22	2,158,737.31	589,526.50	36.93222°N	107.52703°W
6,900.00	90.14	89.97	3,278.57	-523.08	3,669.22	2,158,737.36	589,626.50	36.93222°N	107.52668°W
7,000.00	90.14	89.97	3,278.33	-523.03	3,769.22	2,158,737.41	589,726.50	36.93222°N	107.52634°W
7,100.00	90.14	89.97	3,278.09	-522.98	3,869.22	2,158,737.46	589,826.50	36.93222°N	107.52600°W
7,200.00	90.14	89.97	3,277.85	-522.93	3,969.22	2,158,737.51	589,926.50	36.93222°N	107.52566°W
7,300.00	90.14	89.97	3,277.61	-522.88	4,069.22	2,158,737.56	590,026.50	36.93222°N	107.52532°W
7,400.00	90.14	89.97	3,277.38	-522.83	4,169.22	2,158,737.61	590,126.50	36.93222°N	107.52497°W
7,500.00	90.14	89.97	3,277.14	-522.78	4,269.22	2,158,737.66	590,226.50	36.93221°N	107.52463°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.35-T32N-R07W
Well: San Juan 32-7 Unit 211 ST
Wellbore: ST
Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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
7,600.00	90.14	89.97	3,276.90	-522.73	4,369.22	2,158,737.71	590,326.50	36.93221°N	107.52429°W
7,700.00	90.14	89.97	3,276.66	-522.68	4,469.22	2,158,737.76	590,426.50	36.93221°N	107.52395°W
7,800.00	90.14	89.97	3,276.42	-522.63	4,569.22	2,158,737.81	590,526.50	36.93221°N	107.52361°W
7,900.00	90.14	89.97	3,276.18	-522.58	4,669.22	2,158,737.86	590,626.50	36.93221°N	107.52326°W
8,000.00	90.14	89.97	3,275.95	-522.53	4,769.22	2,158,737.91	590,726.50	36.93221°N	107.52292°W
8,100.00	90.14	89.97	3,275.71	-522.48	4,869.22	2,158,737.96	590,826.50	36.93221°N	107.52258°W
8,200.00	90.14	89.97	3,275.47	-522.43	4,969.22	2,158,738.01	590,926.50	36.93221°N	107.52224°W
8,300.00	90.14	89.97	3,275.23	-522.38	5,069.22	2,158,738.06	591,026.50	36.93221°N	107.52189°W
8,400.00	90.14	89.97	3,274.99	-522.33	5,169.22	2,158,738.11	591,126.50	36.93221°N	107.52155°W
8,500.00	90.14	89.97	3,274.76	-522.28	5,269.22	2,158,738.16	591,226.50	36.93221°N	107.52121°W
8,600.00	90.14	89.97	3,274.52	-522.23	5,369.21	2,158,738.22	591,326.50	36.93221°N	107.52087°W
8,700.00	90.14	89.97	3,274.28	-522.17	5,469.21	2,158,738.27	591,426.50	36.93221°N	107.52053°W
8,800.00	90.14	89.97	3,274.04	-522.12	5,569.21	2,158,738.32	591,526.50	36.93221°N	107.52018°W
8,900.00	90.14	89.97	3,273.80	-522.07	5,669.21	2,158,738.37	591,626.50	36.93220°N	107.51984°W
9,000.00	90.14	89.97	3,273.56	-522.02	5,769.21	2,158,738.42	591,726.50	36.93220°N	107.51950°W
9,100.00	90.14	89.97	3,273.33	-521.97	5,869.21	2,158,738.47	591,826.50	36.93220°N	107.51916°W
9,200.00	90.14	89.97	3,273.09	-521.92	5,969.21	2,158,738.52	591,926.50	36.93220°N	107.51882°W
9,300.00	90.14	89.97	3,272.85	-521.87	6,069.21	2,158,738.57	592,026.50	36.93220°N	107.51847°W
9,400.00	90.14	89.97	3,272.61	-521.82	6,169.21	2,158,738.62	592,126.50	36.93220°N	107.51813°W
9,500.00	90.14	89.97	3,272.37	-521.77	6,269.21	2,158,738.67	592,226.50	36.93220°N	107.51779°W
9,600.00	90.14	89.97	3,272.13	-521.72	6,369.21	2,158,738.72	592,326.50	36.93220°N	107.51745°W
9,700.00	90.14	89.97	3,271.90	-521.67	6,469.21	2,158,738.77	592,426.50	36.93220°N	107.51710°W
9,800.00	90.14	89.97	3,271.66	-521.62	6,569.21	2,158,738.82	592,526.50	36.93220°N	107.51676°W
9,900.00	90.14	89.97	3,271.42	-521.57	6,669.21	2,158,738.87	592,626.50	36.93220°N	107.51642°W
10,000.00	90.14	89.97	3,271.18	-521.52	6,769.21	2,158,738.92	592,726.50	36.93220°N	107.51608°W
10,100.00	90.14	89.97	3,270.94	-521.47	6,869.21	2,158,738.97	592,826.50	36.93220°N	107.51574°W
10,200.00	90.14	89.97	3,270.70	-521.42	6,969.21	2,158,739.02	592,926.49	36.93219°N	107.51539°W
10,300.00	90.14	89.97	3,270.47	-521.37	7,069.21	2,158,739.07	593,026.49	36.93219°N	107.51505°W
10,400.00	90.14	89.97	3,270.23	-521.31	7,169.21	2,158,739.13	593,126.49	36.93219°N	107.51471°W
10,500.00	90.14	89.97	3,269.99	-521.26	7,269.21	2,158,739.18	593,226.49	36.93219°N	107.51437°W
10,600.00	90.14	89.97	3,269.75	-521.21	7,369.21	2,158,739.23	593,326.49	36.93219°N	107.51403°W
10,700.00	90.14	89.97	3,269.51	-521.16	7,469.21	2,158,739.28	593,426.49	36.93219°N	107.51368°W
10,800.00	90.14	89.97	3,269.27	-521.11	7,569.21	2,158,739.33	593,526.49	36.93219°N	107.51334°W
10,900.00	90.14	89.97	3,269.04	-521.06	7,669.21	2,158,739.38	593,626.49	36.93219°N	107.51300°W
11,000.00	90.14	89.97	3,268.80	-521.01	7,769.21	2,158,739.43	593,726.49	36.93219°N	107.51266°W
11,100.00	90.14	89.97	3,268.56	-520.96	7,869.21	2,158,739.48	593,826.49	36.93219°N	107.51231°W
11,200.00	90.14	89.97	3,268.32	-520.91	7,969.21	2,158,739.53	593,926.49	36.93219°N	107.51197°W
11,300.00	90.14	89.97	3,268.08	-520.86	8,069.21	2,158,739.58	594,026.49	36.93219°N	107.51163°W
11,335.01	90.14	89.97	3,268.00	-520.84	8,104.22	2,158,739.60	594,061.50	36.93219°N	107.51151°W
PBHL/TD									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SJ 32-7 Unit 211 ST FTF - plan hits target center - Point	0.00	0.00	2,996.52	0.00	0.00	2,159,260.44	585,957.28	36.93369°N	107.53923°W
SJ 32-7 Unit 211 PBHL/ - plan hits target center - Point	0.00	0.00	3,268.00	-520.84	8,104.22	2,158,739.60	594,061.50	36.93219°N	107.51151°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.35-T32N-R07W
Well: San Juan 32-7 Unit 211 ST
Wellbore: ST
Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,380.00	2,380.00	Ojo Alamo		0.00		
2,495.00	2,495.00	Kirtland		0.00		
3,124.18	3,120.00	Fruitland		0.00		
3,366.88	3,272.00	top of target		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
2,996.52	2,996.52	0.00	0.00	FTP, Build 20°/100' DLS	
3,446.52	3,283.00	-79.68	275.17	LP	
4,772.52	3,283.00	-448.52	1,548.85	Begin Turn	
5,311.84	3,282.35	-523.89	2,081.06	EOT, Hold Section	
11,335.01	3,268.00	-520.84	8,104.22	PBHL/TD	



Hilcorp Energy Company

San Juan Co., NM (NAD27)

Sec.35-T32N-R07W

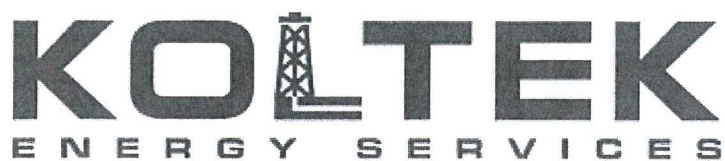
San Juan 32-7 Unit 211 ST

ST

Rev1

Anticollision Report

13 September, 2018





Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 211 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6558.00usft
Reference Site:	Sec.35-T32N-R07W	MD Reference:	KB @ 6558.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 211 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev1	Offset TVD Reference:	Offset Datum

Reference	Rev1		
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	
6.00	2,996.52	Rev0 (Original Hole)	MWD	MWD - Standard	
2,996.52	11,335.01	Rev1 (ST)	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.35-T32N-R07W						
San Juan 32-7 Unit 026M - Original Hole - Original Hole	6,198.43	3,422.87	217.11	-91.63	0.703	Level 1, CC
San Juan 32-7 Unit 026M - Original Hole - Original Hole	6,200.00	3,422.86	217.12	-91.67	0.703	Level 1, ES, SF
San Juan 32-7 Unit 028 - Original Hole - Original Hole	2,939.91	2,931.02	266.91	200.84	4.039	CC
San Juan 32-7 Unit 028 - Original Hole - Original Hole	3,050.00	3,040.05	267.27	199.17	3.925	ES
San Juan 32-7 Unit 028 - Original Hole - Original Hole	3,125.00	3,110.57	269.72	200.45	3.894	SF
San Juan 32-7 Unit 045 - Original Hole - Original Hole	886.51	900.52	518.23	508.79	54.879	CC
San Juan 32-7 Unit 045 - Original Hole - Original Hole	3,025.00	3,040.09	519.35	465.29	9.607	ES
San Juan 32-7 Unit 045 - Original Hole - Original Hole	3,125.00	3,134.80	524.25	468.94	9.479	SF
San Juan 32-7 Unit 049 - Original Hole - Original Hole	5,875.02	3,448.70	929.88	774.06	5.968	CC
San Juan 32-7 Unit 049 - Original Hole - Original Hole	5,900.00	3,448.64	930.22	773.71	5.944	ES
San Juan 32-7 Unit 049 - Original Hole - Original Hole	6,000.00	3,448.39	938.24	778.99	5.891	SF
San Juan 32-7 Unit 209A - Original Hole - Original Hole	5,890.70	3,443.14	533.02	371.40	3.298	CC
San Juan 32-7 Unit 209A - Original Hole - Original Hole	5,900.00	3,443.11	533.10	371.23	3.293	ES, SF
San Juan 32-7 Unit 211R - Original Hole - Original Hole	3,117.50	3,088.06	522.59	440.69	6.381	CC
San Juan 32-7 Unit 211R - Original Hole - Original Hole	3,175.00	3,137.80	523.37	440.13	6.287	ES
San Juan 32-7 Unit 211R - Original Hole - Original Hole	3,250.00	3,192.33	528.65	443.86	6.235	SF
Sec.36-T32N-R07W						
San Juan 32-7 Unit 025A - Original Hole - Original Hole	11,122.68	3,266.78	431.00	130.54	1.434	Level 3, CC, ES, SF
San Juan 32-7 Unit 025F - Original Hole - Original Hole	10,315.32	3,267.60	255.17	-0.57	0.998	Level 1, CC, ES, SF
San Juan 32-7 Unit 027 - Original Hole - Original Hole	8,701.41	3,393.65	878.91	671.43	4.236	CC, ES
San Juan 32-7 Unit 027 - Original Hole - Original Hole	8,800.00	3,393.42	884.42	674.22	4.207	SF
San Juan 32-7 Unit 067 - Original Hole - Original Hole	7,769.35	3,420.64	774.74	574.22	3.864	CC
San Juan 32-7 Unit 067 - Original Hole - Original Hole	7,800.00	3,420.57	775.35	573.98	3.850	ES
San Juan 32-7 Unit 067 - Original Hole - Original Hole	7,900.00	3,420.33	785.68	581.55	3.849	SF
San Juan 32-7 Unit 210 - Original Hole - Original Hole	7,996.54	3,421.03	1,059.34	859.49	5.301	CC
San Juan 32-7 Unit 210 - Original Hole - Original Hole	8,000.00	3,421.03	1,059.34	859.40	5.298	ES
San Juan 32-7 Unit 210 - Original Hole - Original Hole	8,200.00	3,420.55	1,078.70	873.22	5.250	SF

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 211 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6558.00usft
Reference Site:	Sec.35-T32N-R07W	MD Reference:	KB @ 6558.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 211 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev1	Offset TVD Reference:	Offset Datum

Offset Design Sec.35-T32N-R07W - San Juan 32-7 Unit 026M - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 515-INC_ONLY<10													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	141.00	141.00	0.00	0.49	95.89	-306.33	2,967.55	2,983.31					
6.00	6.00	147.00	147.00	0.00	0.51	95.89	-306.33	2,967.55	2,983.31					
106.00	106.00	247.00	247.00	0.10	0.86	95.89	-306.33	2,967.55	2,983.31	2,982.36	0.96	3,115.639		
206.00	206.00	347.00	347.00	0.33	1.20	95.89	-306.33	2,967.55	2,983.31	2,981.79	1.53	1,951.826		
306.00	306.00	447.00	447.00	0.55	1.55	95.89	-306.33	2,967.55	2,983.31	2,981.21	2.10	1,421.020		
406.00	406.00	544.96	544.96	0.78	2.14	95.90	-306.56	2,967.55	2,983.34	2,980.42	2.92	1,023.072		
506.00	506.00	647.12	647.12	1.00	3.35	95.90	-306.88	2,967.55	2,983.37	2,979.01	4.36	684.851		
606.00	606.00	749.26	749.26	1.23	4.57	95.90	-306.48	2,967.55	2,983.33	2,977.53	5.80	514.709		
627.00	627.00	768.00	768.00	1.27	4.79	95.89	-306.33	2,967.55	2,983.31	2,977.25	6.07	491.789		
706.00	706.00	845.86	845.85	1.45	7.63	95.90	-306.82	2,967.55	2,983.36	2,974.28	9.08	328.401		
806.00	806.00	947.83	947.81	1.68	11.35	95.90	-306.88	2,967.55	2,983.37	2,970.34	13.03	228.975		
906.00	906.00	1,047.01	1,047.00	1.90	15.02	95.89	-306.33	2,967.55	2,983.31	2,966.40	16.92	176.362		
1,006.00	1,006.00	1,147.03	1,147.00	2.13	20.10	95.89	-306.33	2,967.55	2,983.31	2,961.09	22.22	134.256		
1,106.00	1,106.00	1,247.06	1,247.00	2.35	25.18	95.89	-306.33	2,967.55	2,983.31	2,955.79	27.53	108.381		
1,206.00	1,206.00	1,344.82	1,344.73	2.57	32.08	95.91	-307.28	2,967.55	2,983.41	2,948.76	34.65	86.092		
1,306.00	1,306.00	1,448.89	1,448.78	2.80	40.02	95.91	-307.38	2,967.55	2,983.42	2,940.60	42.82	69.670		
1,406.00	1,406.00	1,547.12	1,547.00	3.02	47.73	95.89	-306.33	2,967.55	2,983.31	2,932.56	50.75	58.780		
1,506.00	1,506.00	1,647.20	1,647.00	3.25	57.94	95.89	-306.33	2,967.55	2,983.31	2,922.13	61.19	48.759		
1,606.00	1,606.00	1,760.00	1,759.71	3.47	69.44	95.89	-306.33	2,967.55	2,983.34	2,910.43	72.91	40.916		
1,644.19	1,644.19	1,785.50	1,785.19	3.56	72.05	95.89	-306.33	2,967.55	2,983.31	2,907.71	75.61	39.459		
1,706.00	1,706.00	1,847.36	1,847.00	3.70	78.37	95.89	-306.33	2,967.55	2,983.31	2,901.24	82.07	36.351		
1,806.00	1,806.00	1,947.45	1,947.00	3.92	88.60	95.89	-306.33	2,967.55	2,983.31	2,890.79	92.53	32.243		
1,906.00	1,906.00	2,047.53	2,047.00	4.15	98.84	95.89	-306.33	2,967.55	2,983.31	2,880.32	102.99	28.967		
2,006.00	2,006.00	2,147.61	2,147.00	4.37	109.09	95.89	-306.33	2,967.55	2,983.31	2,869.85	113.46	26.294		
2,106.00	2,106.00	2,247.69	2,247.00	4.60	119.33	95.89	-306.33	2,967.55	2,983.31	2,859.39	123.93	24.073		
2,206.00	2,206.00	2,346.89	2,346.11	4.82	129.76	95.90	-306.49	2,967.55	2,983.33	2,848.75	134.58	22.167		
2,306.00	2,306.00	2,447.97	2,447.11	5.05	140.75	95.90	-306.62	2,967.55	2,983.34	2,837.54	145.80	20.462		
2,406.00	2,406.00	2,548.97	2,548.03	5.27	151.74	95.90	-306.43	2,967.55	2,983.32	2,826.32	157.01	19.001		
2,432.04	2,432.04	2,574.00	2,573.04	5.33	154.46	95.89	-306.33	2,967.55	2,983.31	2,823.52	159.79	18.670		
2,506.00	2,506.00	2,647.46	2,646.42	5.50	163.38	95.90	-306.56	2,967.55	2,983.34	2,814.46	168.88	17.665		
2,606.00	2,606.00	2,748.54	2,747.39	5.72	175.66	95.90	-306.60	2,967.55	2,983.34	2,801.96	181.39	16.448		
2,706.00	2,706.00	2,855.51	2,854.26	5.95	188.29	95.89	-306.04	2,967.55	2,983.29	2,789.05	194.24	15.359		
2,806.00	2,806.00	2,949.66	2,948.33	6.17	196.74	95.86	-304.70	2,967.55	2,983.15	2,780.23	202.91	14.702		
2,830.99	2,830.99	2,973.26	2,971.90	6.23	198.86	95.86	-304.64	2,967.55	2,983.14	2,778.05	205.09	14.546		
2,906.00	2,906.00	3,044.20	3,042.75	6.40	205.22	95.87	-305.15	2,967.55	2,983.20	2,771.58	211.62	14.097		
2,996.52	2,996.52	3,139.09	3,137.52	6.60	212.36	95.89	-306.33	2,967.55	2,983.31	2,764.35	218.96	13.625		
3,000.00	3,000.00	3,142.57	3,141.00	6.60	212.54	-10.26	-306.33	2,967.55	2,983.29	2,764.14	219.15	13.613		
3,025.00	3,024.95	3,167.53	3,165.95	6.61	213.83	-10.31	-306.33	2,967.55	2,981.92	2,762.41	219.51	13.584		
3,050.00	3,049.69	3,192.27	3,190.69	6.62	215.11	-10.45	-306.33	2,967.55	2,978.42	2,760.18	218.23	13.648		
3,075.00	3,074.02	3,216.61	3,215.02	6.63	216.36	-10.68	-306.33	2,967.55	2,972.80	2,757.49	215.32	13.807		
3,100.00	3,097.76	3,240.35	3,238.76	6.66	217.59	-11.02	-306.33	2,967.55	2,965.12	2,754.35	210.77	14.068		
3,125.00	3,120.74	3,263.33	3,261.74	6.69	218.77	-11.46	-306.33	2,967.55	2,955.44	2,750.78	204.66	14.441		
3,150.00	3,142.76	3,285.36	3,283.76	6.72	219.91	-12.04	-306.33	2,967.55	2,943.82	2,746.78	197.05	14.940		
3,175.00	3,163.68	3,306.28	3,304.68	6.76	220.99	-12.79	-306.33	2,967.55	2,930.37	2,742.28	188.09	15.580		
3,200.00	3,183.32	3,325.92	3,324.32	6.80	222.00	-13.74	-306.33	2,967.55	2,915.17	2,737.18	177.99	16.379		
3,225.00	3,201.54	3,344.15	3,342.54	6.87	222.94	-14.94	-306.33	2,967.55	2,898.35	2,731.27	167.08	17.347		
3,250.00	3,218.20	3,360.81	3,359.20	7.01	223.80	-16.50	-306.33	2,967.55	2,880.04	2,724.13	155.91	18.473		
3,275.00	3,233.17	3,375.78	3,374.17	7.19	224.57	-18.54	-306.33	2,967.55	2,860.37	2,715.02	145.35	19.679		
3,300.00	3,246.34	3,388.96	3,387.34	7.42	225.25	-21.26	-306.33	2,967.55	2,839.51	2,702.59	136.91	20.739		
3,325.00	3,257.61	3,400.23	3,398.61	7.70	225.84	-25.01	-306.33	2,967.55	2,817.60	2,684.53	133.07	21.174		
3,350.00	3,266.89	3,409.52	3,407.89	8.03	226.31	-30.35	-306.33	2,967.55	2,794.81	2,657.39	137.42	20.337		
3,375.00	3,274.12	3,416.74	3,415.12	8.41	226.69	-38.33	-306.33	2,967.55	2,771.33	2,617.25	154.07	17.987		

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.35-T32N-R07W - San Juan 32-7 Unit 026M - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 515-INC_ONLY<10													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	3,279.23	3,421.86	3,420.23	8.83	226.95	-50.64	-306.33	2,967.55	2,747.32	2,562.40	184.92	14.857		
3,425.00	3,282.19	3,424.82	3,423.19	9.29	227.10	-69.33	-306.33	2,967.55	2,722.98	2,501.22	221.75	12.279		
3,446.52	3,283.00	3,425.63	3,424.00	9.71	227.15	-90.00	-306.33	2,967.55	2,701.89	2,465.04	236.85	11.407		
3,500.00	3,283.00	3,425.63	3,424.00	10.82	227.15	-90.00	-306.33	2,967.55	2,649.48	2,411.52	237.96	11.134		
3,600.00	3,283.00	3,425.63	3,424.00	13.10	227.15	-90.00	-306.33	2,967.55	2,551.59	2,311.35	240.24	10.621		
3,700.00	3,283.00	3,425.63	3,424.00	15.54	227.15	-90.00	-306.33	2,967.55	2,453.87	2,211.18	242.68	10.111		
3,800.00	3,283.00	3,425.63	3,424.00	18.08	227.15	-90.00	-306.33	2,967.55	2,356.34	2,111.11	245.22	9.609		
3,900.00	3,283.00	3,425.63	3,424.00	20.68	227.15	-90.00	-306.33	2,967.55	2,259.02	2,011.20	247.83	9.115		
4,000.00	3,283.00	3,425.63	3,424.00	23.33	227.15	-90.00	-306.33	2,967.55	2,161.96	1,911.48	250.47	8.632		
4,100.00	3,283.00	3,425.63	3,424.00	26.00	227.15	-90.00	-306.33	2,967.55	2,065.17	1,812.02	253.14	8.158		
4,200.00	3,283.00	3,425.63	3,424.00	28.69	227.15	-90.00	-306.33	2,967.55	1,968.70	1,712.86	255.84	7.695		
4,300.00	3,283.00	3,425.63	3,424.00	31.40	227.15	-90.00	-306.33	2,967.55	1,872.60	1,614.06	258.55	7.243		
4,400.00	3,283.00	3,425.63	3,424.00	34.12	227.15	-90.00	-306.33	2,967.55	1,776.94	1,515.67	261.27	6.801		
4,500.00	3,283.00	3,425.63	3,424.00	36.85	227.15	-90.00	-306.33	2,967.55	1,681.78	1,417.78	264.00	6.370		
4,600.00	3,283.00	3,425.63	3,424.00	39.59	227.15	-90.00	-306.33	2,967.55	1,587.21	1,320.47	266.73	5.951		
4,700.00	3,283.00	3,425.63	3,424.00	42.33	227.15	-90.00	-306.33	2,967.55	1,493.35	1,223.87	269.48	5.542		
4,772.52	3,283.00	3,425.63	3,424.00	44.32	227.15	-90.00	-306.33	2,967.55	1,425.81	1,154.34	271.47	5.252		
4,800.00	3,283.00	3,425.62	3,424.00	45.08	227.15	-90.02	-306.33	2,967.55	1,400.27	1,128.05	272.22	5.144		
4,900.00	3,282.96	3,425.59	3,423.96	47.83	227.14	-90.09	-306.33	2,967.55	1,306.73	1,031.85	274.88	4.754		
5,000.00	3,282.88	3,425.51	3,423.88	50.58	227.14	-90.17	-306.33	2,967.55	1,212.30	934.89	277.41	4.370		
5,100.00	3,282.76	3,425.39	3,423.76	53.33	227.13	-90.27	-306.33	2,967.55	1,117.04	837.23	279.81	3.992		
5,200.00	3,282.59	3,425.22	3,423.59	56.05	227.12	-90.39	-306.33	2,967.55	1,021.01	738.95	282.06	3.620		
5,300.00	3,282.38	3,425.01	3,423.38	58.74	227.11	-90.54	-306.33	2,967.55	924.28	640.13	284.15	3.253		
5,311.84	3,282.35	3,424.98	3,423.35	59.06	227.11	-90.56	-306.33	2,967.55	912.79	628.40	284.39	3.210		
5,400.00	3,282.14	3,424.77	3,423.14	61.41	227.10	-90.50	-306.33	2,967.55	827.42	540.62	286.81	2.885		
5,500.00	3,281.90	3,424.53	3,422.90	64.09	227.09	-90.44	-306.33	2,967.55	731.40	441.85	289.55	2.526		
5,600.00	3,281.66	3,424.29	3,422.66	66.78	227.08	-90.38	-306.33	2,967.55	636.60	344.30	292.29	2.178		
5,700.00	3,281.43	3,424.05	3,422.43	69.47	227.06	-90.31	-306.33	2,967.55	543.66	248.62	295.04	1.843		
5,800.00	3,281.19	3,423.81	3,422.19	72.17	227.05	-90.25	-306.33	2,967.55	453.74	155.96	297.79	1.524		
5,900.00	3,280.95	3,423.58	3,421.95	74.88	227.04	-90.19	-306.33	2,967.55	369.05	68.52	300.53	1.228 Level 2		
6,000.00	3,280.71	3,423.34	3,421.71	77.59	227.03	-90.12	-306.33	2,967.55	294.13	-9.15	303.28	0.970 Level 1		
6,100.00	3,280.47	3,423.10	3,421.47	80.30	227.02	-90.06	-306.33	2,967.55	238.38	-67.65	306.03	0.779 Level 1		
6,198.43	3,280.24	3,422.87	3,421.24	82.98	227.00	-90.00	-306.33	2,967.55	217.11	-91.63	308.74	0.703 Level 1, CC		
6,200.00	3,280.24	3,422.86	3,421.24	83.02	227.00	-90.00	-306.33	2,967.55	217.12	-91.67	308.78	0.703 Level 1, ES, SF		
6,300.00	3,280.00	3,422.62	3,421.00	85.75	226.99	-89.94	-306.33	2,967.55	239.69	-71.84	311.53	0.769 Level 1		
6,400.00	3,279.76	3,422.38	3,420.76	88.47	226.98	-89.87	-306.33	2,967.55	296.25	-18.03	314.28	0.943 Level 1		
6,500.00	3,279.52	3,422.15	3,420.52	91.20	226.97	-89.81	-306.33	2,967.55	371.59	54.55	317.04	1.172 Level 2		
6,600.00	3,279.28	3,421.91	3,420.28	93.93	226.95	-89.75	-306.33	2,967.55	456.50	136.71	319.79	1.428 Level 3		
6,700.00	3,279.04	3,421.67	3,420.04	96.67	226.94	-89.68	-306.33	2,967.55	546.54	224.00	322.54	1.694		
6,800.00	3,278.81	3,421.43	3,419.81	99.40	226.93	-89.62	-306.33	2,967.55	639.54	314.25	325.29	1.966		
6,900.00	3,278.57	3,421.19	3,419.57	102.14	226.92	-89.56	-306.33	2,967.55	734.39	406.35	328.04	2.239		
7,000.00	3,278.33	3,420.95	3,419.33	104.88	226.90	-89.50	-306.33	2,967.55	830.45	499.65	330.79	2.510		
7,100.00	3,278.09	3,420.72	3,419.09	107.63	226.89	-89.43	-306.33	2,967.55	927.34	593.79	333.55	2.780		
7,200.00	3,277.85	3,420.48	3,418.85	110.37	226.88	-89.37	-306.33	2,967.55	1,024.83	688.53	336.30	3.047		
7,300.00	3,277.61	3,420.24	3,418.61	113.11	226.87	-89.31	-306.33	2,967.55	1,122.76	783.71	339.05	3.311		
7,400.00	3,277.38	3,420.00	3,418.38	115.86	226.86	-89.24	-306.33	2,967.55	1,221.02	879.22	341.80	3.572		
7,500.00	3,277.14	3,419.76	3,418.14	118.61	226.84	-89.18	-306.33	2,967.55	1,319.55	974.99	344.55	3.830		
7,600.00	3,276.90	3,419.52	3,417.90	121.36	226.83	-89.12	-306.33	2,967.55	1,418.28	1,070.97	347.31	4.084		
7,700.00	3,276.66	3,419.29	3,417.66	124.11	226.82	-89.06	-306.33	2,967.55	1,517.18	1,167.12	350.06	4.334		
7,800.00	3,276.42	3,419.05	3,417.42	126.86	226.81	-88.99	-306.33	2,967.55	1,616.21	1,263.40	352.81	4.581		
7,900.00	3,276.18	3,418.81	3,417.18	129.61	226.79	-88.93	-306.33	2,967.55	1,715.36	1,359.80	355.56	4.824		
8,000.00	3,275.95	3,418.57	3,416.95	132.37	226.78	-88.87	-306.33	2,967.55	1,814.60	1,456.29	358.31	5.064		

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 211 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6558.00usft
Reference Site:	Sec.35-T32N-R07W	MD Reference:	KB @ 6558.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 211 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev1	Offset TVD Reference:	Offset Datum

Offset Design Sec.35-T32N-R07W - San Juan 32-7 Unit 026M - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 515-INC_ONLY<10													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)						
8,100.00	3,275.71	3,418.33	3,416.71	135.12	226.77	-88.80	-306.33	2,967.55	1,913.92	1,552.86	361.06	5.301		
8,200.00	3,275.47	3,418.10	3,416.47	137.88	226.76	-88.74	-306.33	2,967.55	2,013.30	1,649.49	363.81	5.534		
8,300.00	3,275.23	3,417.86	3,416.23	140.63	226.74	-88.68	-306.33	2,967.55	2,112.75	1,746.19	366.56	5.764		
8,400.00	3,274.99	3,417.62	3,415.99	143.39	226.73	-88.62	-306.33	2,967.55	2,212.24	1,842.93	369.31	5.990		
8,500.00	3,274.76	3,417.38	3,415.76	146.15	226.72	-88.55	-306.33	2,967.55	2,311.78	1,939.72	372.06	6.214		
8,600.00	3,274.52	3,417.14	3,415.52	148.91	226.71	-88.49	-306.33	2,967.55	2,411.35	2,036.55	374.80	6.434		
8,700.00	3,274.28	3,416.90	3,415.28	151.67	226.70	-88.43	-306.33	2,967.55	2,510.96	2,133.41	377.55	6.651		
8,800.00	3,274.04	3,416.67	3,415.04	154.43	226.68	-88.36	-306.33	2,967.55	2,610.60	2,230.30	380.30	6.865		
8,900.00	3,273.80	3,416.43	3,414.80	157.19	226.67	-88.30	-306.33	2,967.55	2,710.27	2,327.22	383.05	7.076		
9,000.00	3,273.56	3,416.19	3,414.56	159.95	226.66	-88.24	-306.33	2,967.55	2,809.96	2,424.17	385.79	7.284		
9,100.00	3,273.33	3,415.95	3,414.33	162.71	226.65	-88.18	-306.33	2,967.55	2,909.67	2,521.13	388.54	7.489		
9,200.00	3,273.09	3,415.71	3,414.09	165.47	226.63	-88.11	-306.33	2,967.55	3,009.40	2,618.12	391.28	7.691		
9,300.00	3,272.85	3,415.47	3,413.85	168.23	226.62	-88.05	-306.33	2,967.55	3,109.15	2,715.12	394.03	7.891		
9,400.00	3,272.61	3,415.24	3,413.61	170.99	226.61	-87.99	-306.33	2,967.55	3,208.91	2,812.14	396.77	8.088		
9,500.00	3,272.37	3,415.00	3,413.37	173.76	226.60	-87.92	-306.33	2,967.55	3,308.69	2,909.17	399.52	8.282		
9,600.00	3,272.13	3,414.76	3,413.13	176.52	226.58	-87.86	-306.33	2,967.55	3,408.48	3,006.22	402.26	8.473		
9,700.00	3,271.90	3,414.52	3,412.90	179.28	226.57	-87.80	-306.33	2,967.55	3,508.28	3,103.28	405.00	8.662		
9,800.00	3,271.66	3,414.28	3,412.66	182.05	226.56	-87.74	-306.33	2,967.55	3,608.09	3,200.35	407.74	8.849		
9,900.00	3,271.42	3,414.04	3,412.42	184.81	226.55	-87.67	-306.33	2,967.55	3,707.92	3,297.43	410.49	9.033		
10,000.00	3,271.18	3,413.81	3,412.18	187.58	226.54	-87.61	-306.33	2,967.55	3,807.75	3,394.52	413.23	9.215		
10,100.00	3,270.94	3,413.57	3,411.94	190.34	226.52	-87.55	-306.33	2,967.55	3,907.59	3,491.63	415.97	9.394		
10,200.00	3,270.70	3,413.33	3,411.70	193.11	226.51	-87.49	-306.33	2,967.55	4,007.44	3,588.73	418.71	9.571		
10,300.00	3,270.47	3,413.09	3,411.47	195.87	226.50	-87.42	-306.33	2,967.55	4,107.30	3,685.85	421.45	9.746		
10,400.00	3,270.23	3,412.85	3,411.23	198.64	226.49	-87.36	-306.33	2,967.55	4,207.16	3,782.98	424.18	9.918		
10,500.00	3,269.99	3,412.61	3,410.99	201.40	226.47	-87.30	-306.33	2,967.55	4,307.03	3,880.11	426.92	10.089		
10,600.00	3,269.75	3,412.38	3,410.75	204.17	226.46	-87.23	-306.33	2,967.55	4,406.91	3,977.25	429.66	10.257		
10,700.00	3,269.51	3,412.14	3,410.51	206.94	226.45	-87.17	-306.33	2,967.55	4,506.79	4,074.39	432.39	10.423		
10,800.00	3,269.27	3,411.90	3,410.27	209.70	226.44	-87.11	-306.33	2,967.55	4,606.67	4,171.54	435.13	10.587		
10,900.00	3,269.04	3,411.66	3,410.04	212.47	226.42	-87.05	-306.33	2,967.55	4,706.56	4,268.70	437.86	10.749		
11,000.00	3,268.80	3,411.42	3,409.80	215.24	226.41	-86.98	-306.33	2,967.55	4,806.46	4,365.86	440.60	10.909		
11,100.00	3,268.56	3,411.18	3,409.56	218.01	226.40	-86.92	-306.33	2,967.55	4,906.36	4,463.03	443.33	11.067		
11,200.00	3,268.32	3,410.95	3,409.32	220.77	226.39	-86.86	-306.33	2,967.55	5,006.26	4,560.20	446.06	11.223		
11,300.00	3,268.08	3,410.71	3,409.08	223.54	226.38	-86.80	-306.33	2,967.55	5,106.17	4,657.37	448.80	11.377		
11,335.01	3,268.00	3,410.62	3,409.00	224.51	226.37	-86.77	-306.33	2,967.55	5,141.15	4,691.40	449.75	11.431		



Koltek Energy Services
Anticollision Report



Company:	Hilcorp Energy Company	Local Co-ordinate Reference:	Well San Juan 32-7 Unit 211 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6558.00usft
Reference Site:	Sec.35-T32N-R07W	MD Reference:	KB @ 6558.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 211 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev1	Offset TVD Reference:	Offset Datum

Offset Design Sec.35-T32N-R07W - San Juan 32-7 Unit 028 - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 238-INC_ONLY<10													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)			
0.00	0.00	0.00	0.00	0.00	0.00	14.30	259.42	66.13	267.86					
6.00	6.00	0.00	0.00	0.00	0.00	14.30	259.42	66.13	267.73					
67.02	67.02	58.59	58.59	0.06	0.43	14.31	259.22	66.13	267.53	267.04	0.49	547.360		
106.00	106.00	97.21	97.21	0.10	0.71	14.31	259.16	66.13	267.47	266.66	0.81	330.430		
128.00	128.00	119.00	119.00	0.15	0.87	14.31	259.16	66.13	267.46	266.44	1.02	262.884		
206.00	206.00	196.26	196.26	0.33	1.43	14.31	259.27	66.13	267.57	265.81	1.75	152.492		
306.00	306.00	297.43	297.43	0.55	2.77	14.31	259.30	66.13	267.60	264.28	3.32	80.653		
406.00	406.00	397.20	397.20	0.78	4.50	14.31	259.18	66.13	267.49	262.21	5.28	50.658		
489.00	489.00	480.01	480.00	0.96	5.95	14.32	259.15	66.13	267.46	260.55	6.91	38.712		
506.00	506.00	496.97	496.96	1.00	6.24	14.32	259.15	66.13	267.46	260.21	7.24	36.929		
606.00	606.00	596.73	596.73	1.23	7.98	14.31	259.21	66.13	267.52	258.31	9.20	29.063		
706.00	706.00	696.49	696.48	1.45	9.72	14.30	259.36	66.13	267.66	256.49	11.17	23.969		
806.00	806.00	797.41	797.40	1.68	11.92	14.31	259.28	66.13	267.58	253.98	13.60	19.679		
906.00	906.00	897.19	897.18	1.90	14.25	14.31	259.17	66.13	267.47	251.32	16.15	16.560		
982.98	982.98	974.00	973.98	2.07	16.04	14.32	259.14	66.13	267.45	249.33	18.12	14.761		
1,006.00	1,006.00	996.97	996.95	2.13	16.58	14.32	259.14	66.13	267.45	248.74	18.71	14.297		
1,106.00	1,106.00	1,096.74	1,096.72	2.35	18.91	14.31	259.21	66.13	267.51	246.25	21.26	12.582		
1,206.00	1,206.00	1,196.51	1,196.49	2.57	21.24	14.30	259.35	66.13	267.65	243.84	23.82	11.239		
1,306.00	1,306.00	1,297.02	1,297.00	2.80	23.81	14.30	259.42	66.13	267.71	241.11	26.61	10.062		
1,406.00	1,406.00	1,397.03	1,397.00	3.02	26.45	14.30	259.42	66.13	267.71	238.24	29.47	9.084		
1,506.00	1,506.00	1,497.03	1,497.00	3.25	29.09	14.30	259.42	66.13	267.71	235.37	32.34	8.278		
1,606.00	1,606.00	1,597.04	1,597.00	3.47	31.74	14.30	259.42	66.13	267.71	232.50	35.21	7.603		
1,706.00	1,706.00	1,697.04	1,697.00	3.70	34.39	14.30	259.42	66.13	267.71	229.63	38.08	7.029		
1,806.00	1,806.00	1,797.05	1,797.00	3.92	37.03	14.30	259.42	66.13	267.71	226.76	40.96	6.537		
1,906.00	1,906.00	1,897.05	1,897.00	4.15	39.68	14.30	259.42	66.13	267.71	223.89	43.83	6.108		
2,006.00	2,006.00	1,997.06	1,997.00	4.37	42.32	14.30	259.42	66.13	267.71	221.01	46.70	5.733		
2,106.00	2,106.00	2,097.06	2,097.00	4.60	44.97	14.30	259.42	66.13	267.71	218.14	49.57	5.401		
2,206.00	2,206.00	2,195.85	2,195.78	4.82	46.84	14.28	259.87	66.13	268.16	216.50	51.66	5.191		
2,306.00	2,306.00	2,296.46	2,296.38	5.05	48.59	14.26	260.22	66.13	268.50	214.86	53.63	5.006		
2,406.00	2,406.00	2,397.07	2,396.99	5.27	50.33	14.25	260.34	66.13	268.61	213.00	55.60	4.831		
2,506.00	2,506.00	2,497.69	2,497.61	5.50	52.08	14.26	260.22	66.13	268.49	210.92	57.58	4.663		
2,606.00	2,606.00	2,598.32	2,598.23	5.72	53.82	14.28	259.87	66.13	268.15	208.61	59.55	4.503		
2,706.00	2,706.00	2,698.66	2,698.57	5.95	55.57	14.31	259.29	66.13	267.60	206.08	61.51	4.350		
2,806.00	2,806.00	2,798.00	2,797.91	6.17	57.29	14.33	258.82	66.13	267.14	203.67	63.46	4.209		
2,906.00	2,906.00	2,897.34	2,897.24	6.40	59.02	14.34	258.61	66.13	266.93	201.51	65.41	4.081		
2,939.91	2,939.91	2,931.02	2,930.92	6.47	59.60	14.34	258.59	66.13	266.91	200.84	66.08	4.039 CC		
2,996.52	2,996.52	2,987.24	2,987.15	6.60	60.58	14.34	258.63	66.13	266.95	199.77	67.18	3.974		
3,000.00	3,000.00	2,990.70	2,990.60	6.60	60.64	-91.81	258.64	66.13	266.96	199.71	67.24	3.970		
3,025.00	3,024.95	3,015.48	3,015.38	6.61	61.07	-92.09	258.68	66.13	267.05	199.38	67.67	3.946		
3,050.00	3,049.69	3,040.05	3,039.95	6.62	61.50	-92.80	258.75	66.13	267.27	199.17	68.10	3.925 ES		
3,075.00	3,074.02	3,064.21	3,064.11	6.63	61.92	-93.90	258.82	66.13	267.69	199.17	68.52	3.907		
3,100.00	3,097.76	3,087.77	3,087.68	6.66	62.33	-95.32	258.91	66.13	268.45	199.54	68.91	3.896		
3,125.00	3,120.74	3,110.57	3,110.47	6.69	62.72	-96.97	259.01	66.13	269.72	200.45	69.26	3.894 SF		
3,150.00	3,142.76	3,132.42	3,132.33	6.72	63.10	-98.75	259.12	66.13	271.69	202.13	69.55	3.906		
3,175.00	3,163.68	3,153.16	3,153.07	6.76	63.46	-100.54	259.23	66.13	274.59	204.82	69.77	3.936		
3,200.00	3,183.32	3,172.63	3,172.54	6.80	63.80	-102.21	259.35	66.13	278.62	208.72	69.91	3.986		
3,225.00	3,201.54	3,193.21	3,193.12	6.87	64.28	-104.01	259.39	66.13	283.92	213.84	70.09	4.051		
3,250.00	3,218.20	3,209.82	3,209.72	7.01	64.77	-105.14	259.36	66.13	290.66	220.35	70.31	4.134		
3,275.00	3,233.17	3,224.75	3,224.65	7.19	65.21	-105.80	259.34	66.13	299.02	228.46	70.56	4.238		
3,300.00	3,246.34	3,237.88	3,237.78	7.42	65.60	-105.90	259.32	66.13	309.08	238.16	70.92	4.358		
3,325.00	3,257.61	3,249.11	3,249.01	7.70	65.93	-105.32	259.30	66.13	320.82	249.34	71.48	4.488		
3,350.00	3,266.89	3,258.37	3,258.26	8.03	66.20	-103.98	259.29	66.13	334.19	261.89	72.29	4.623		

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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: 238-INC_ONLY<10												Offset Well Error:	0.00 usft
Reference													
Offset													
Semi Major Axis													
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	3,274.12	3,265.57	3,265.47	8.41	66.42	-101.78	259.28	66.13	349.05	275.69	73.36	4.758	
3,400.00	3,279.23	3,270.67	3,270.57	8.83	66.57	-98.62	259.28	66.13	365.25	290.67	74.58	4.898	
3,425.00	3,282.19	3,273.62	3,273.52	9.29	66.65	-94.46	259.27	66.13	382.58	306.86	75.72	5.053	
3,446.52	3,283.00	3,274.43	3,274.33	9.71	66.68	-90.07	259.27	66.13	398.23	321.85	76.38	5.214	
3,500.00	3,283.00	3,274.45	3,274.34	10.82	66.68	-90.07	259.27	66.13	439.33	361.84	77.49	5.669	
3,600.00	3,283.00	3,274.47	3,274.37	13.10	66.68	-90.08	259.27	66.13	522.23	442.46	79.77	6.546	
3,700.00	3,283.00	3,274.50	3,274.40	15.54	66.68	-90.09	259.27	66.13	610.27	528.06	82.22	7.423	
3,800.00	3,283.00	3,274.53	3,274.42	18.08	66.68	-90.09	259.27	66.13	701.53	616.77	84.76	8.277	
3,900.00	3,283.00	3,274.55	3,274.45	20.68	66.68	-90.10	259.27	66.13	794.89	707.53	87.36	9.099	
4,000.00	3,283.00	3,274.58	3,274.48	23.33	66.68	-90.10	259.27	66.13	889.70	799.69	90.01	9.885	
4,100.00	3,283.00	3,274.61	3,274.50	26.00	66.68	-90.11	259.27	66.13	985.54	892.85	92.68	10.634	
4,200.00	3,283.00	3,274.63	3,274.53	28.69	66.68	-90.11	259.27	66.13	1,082.12	986.75	95.38	11.346	
4,300.00	3,283.00	3,274.66	3,274.56	31.40	66.68	-90.12	259.27	66.13	1,179.28	1,081.20	98.09	12.023	
4,400.00	3,283.00	3,274.69	3,274.58	34.12	66.68	-90.13	259.27	66.13	1,276.88	1,176.07	100.81	12.667	
4,500.00	3,283.00	3,274.71	3,274.61	36.85	66.69	-90.13	259.27	66.13	1,374.82	1,271.28	103.54	13.279	
4,600.00	3,283.00	3,274.74	3,274.64	39.59	66.69	-90.14	259.27	66.13	1,473.04	1,366.76	106.27	13.861	
4,700.00	3,283.00	3,274.77	3,274.66	42.33	66.69	-90.14	259.27	66.13	1,571.48	1,462.46	109.02	14.415	
4,772.52	3,283.00	3,274.78	3,274.68	44.32	66.69	-90.15	259.27	66.13	1,642.99	1,531.98	111.01	14.800	
4,800.00	3,283.00	3,274.79	3,274.69	45.08	66.69	-90.10	259.27	66.13	1,670.08	1,558.31	111.76	14.943	
4,900.00	3,282.96	3,274.78	3,274.68	47.83	66.69	-89.96	259.27	66.13	1,768.16	1,653.74	114.42	15.453	
5,000.00	3,282.88	3,274.72	3,274.62	50.58	66.69	-89.87	259.27	66.13	1,865.38	1,748.42	116.96	15.949	
5,100.00	3,282.76	3,274.61	3,274.51	53.33	66.68	-89.80	259.27	66.13	1,961.62	1,842.26	119.36	16.434	
5,200.00	3,282.59	3,274.45	3,274.35	56.05	66.68	-89.75	259.27	66.13	2,056.77	1,935.15	121.62	16.911	
5,300.00	3,282.38	3,274.24	3,274.14	58.74	66.67	-89.71	259.27	66.13	2,150.74	2,027.02	123.72	17.384	
5,311.84	3,282.35	3,274.22	3,274.11	59.06	66.67	-89.71	259.27	66.13	2,161.78	2,037.82	123.96	17.439	
5,400.00	3,282.14	3,274.01	3,273.91	61.41	66.66	-89.69	259.27	66.13	2,244.17	2,117.79	126.38	17.757	
5,500.00	3,281.90	3,273.77	3,273.67	64.09	66.66	-89.67	259.27	66.13	2,338.12	2,209.00	129.12	18.107	
5,600.00	3,281.66	3,273.54	3,273.43	66.78	66.65	-89.66	259.27	66.13	2,432.56	2,300.69	131.87	18.446	
5,700.00	3,281.43	3,273.30	3,273.20	69.47	66.64	-89.64	259.27	66.13	2,527.43	2,392.81	134.62	18.774	
5,800.00	3,281.19	3,273.06	3,272.96	72.17	66.64	-89.62	259.27	66.13	2,622.68	2,485.31	137.37	19.092	
5,900.00	3,280.95	3,272.83	3,272.73	74.88	66.63	-89.60	259.27	66.13	2,718.27	2,578.14	140.12	19.399	
6,000.00	3,280.71	3,272.59	3,272.49	77.59	66.62	-89.59	259.27	66.13	2,814.16	2,671.29	142.88	19.697	
6,100.00	3,280.47	3,272.36	3,272.26	80.30	66.62	-89.57	259.27	66.13	2,910.33	2,764.70	145.63	19.984	
6,200.00	3,280.24	3,272.12	3,272.02	83.02	66.61	-89.55	259.27	66.13	3,006.76	2,858.37	148.38	20.263	
6,300.00	3,280.00	3,271.88	3,271.78	85.75	66.60	-89.53	259.27	66.13	3,103.41	2,952.26	151.14	20.533	
6,400.00	3,279.76	3,271.65	3,271.55	88.47	66.60	-89.52	259.27	66.13	3,200.26	3,046.36	153.90	20.795	
6,500.00	3,279.52	3,271.41	3,271.31	91.20	66.59	-89.50	259.27	66.13	3,297.30	3,140.65	156.65	21.048	
6,600.00	3,279.28	3,271.18	3,271.08	93.93	66.58	-89.48	259.27	66.13	3,394.52	3,235.10	159.41	21.294	
6,700.00	3,279.04	3,270.94	3,270.84	96.67	66.57	-89.47	259.28	66.13	3,491.89	3,329.72	162.17	21.532	
6,800.00	3,278.81	3,270.71	3,270.60	99.40	66.57	-89.45	259.28	66.13	3,589.40	3,424.47	164.93	21.763	
6,900.00	3,278.57	3,270.47	3,270.37	102.14	66.56	-89.43	259.28	66.13	3,687.05	3,519.36	167.69	21.988	
7,000.00	3,278.33	3,270.23	3,270.13	104.88	66.55	-89.41	259.28	66.13	3,784.82	3,614.38	170.45	22.205	
7,100.00	3,278.09	3,270.00	3,269.90	107.63	66.55	-89.40	259.28	66.13	3,882.71	3,709.50	173.21	22.417	
7,200.00	3,277.85	3,269.76	3,269.66	110.37	66.54	-89.38	259.28	66.13	3,980.70	3,804.73	175.97	22.622	
7,300.00	3,277.61	3,269.53	3,269.42	113.11	66.53	-89.36	259.28	66.13	4,078.79	3,900.06	178.73	22.821	
7,400.00	3,277.38	3,269.29	3,269.19	115.86	66.53	-89.35	259.28	66.13	4,176.96	3,995.47	181.49	23.015	
7,500.00	3,277.14	3,269.05	3,268.95	118.61	66.52	-89.33	259.28	66.13	4,275.23	4,090.98	184.25	23.203	
7,600.00	3,276.90	3,268.82	3,268.72	121.36	66.51	-89.31	259.28	66.13	4,373.57	4,186.56	187.01	23.386	
7,700.00	3,276.66	3,268.58	3,268.48	124.11	66.50	-89.29	259.28	66.13	4,471.98	4,282.21	189.77	23.565	
7,800.00	3,276.42	3,268.35	3,268.25	126.86	66.50	-89.28	259.28	66.13	4,570.47	4,377.93	192.54	23.738	
7,900.00	3,276.18	3,268.11	3,268.01	129.61	66.49	-89.26	259.28	66.13	4,669.02	4,473.72	195.30	23.907	
8,000.00	3,275.95	3,267.87	3,267.77	132.37	66.48	-89.24	259.28	66.13	4,767.63	4,569.56	198.06	24.071	

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.35-T32N-R07W - San Juan 32-7 Unit 028 - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 238-INC_ONLY<10													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	3,275.71	3,267.64	3,267.54	135.12	66.48	-89.22	259.28	66.13	4,866.29	4,665.47	200.82	24.232		
8,200.00	3,275.47	3,267.40	3,267.30	137.88	66.47	-89.21	259.28	66.13	4,965.01	4,761.42	203.59	24.388		
8,300.00	3,275.23	3,267.17	3,267.07	140.63	66.46	-89.19	259.28	66.13	5,063.78	4,857.43	206.35	24.540		
8,400.00	3,274.99	3,266.93	3,266.83	143.39	66.46	-89.17	259.28	66.13	5,162.60	4,953.48	209.11	24.688		
8,500.00	3,274.76	3,266.69	3,266.59	146.15	66.45	-89.16	259.28	66.13	5,261.46	5,049.58	211.88	24.832		
8,600.00	3,274.52	3,266.46	3,266.36	148.91	66.44	-89.14	259.28	66.13	5,360.36	5,145.72	214.64	24.973		
8,700.00	3,274.28	3,266.22	3,266.12	151.67	66.44	-89.12	259.28	66.13	5,459.30	5,241.90	217.41	25.111		
8,800.00	3,274.04	3,265.99	3,265.89	154.43	66.43	-89.10	259.28	66.13	5,558.29	5,338.12	220.17	25.245		
8,900.00	3,273.80	3,265.75	3,265.65	157.19	66.42	-89.09	259.28	66.13	5,657.30	5,434.37	222.93	25.377		
9,000.00	3,273.56	3,265.52	3,265.41	159.95	66.41	-89.07	259.28	66.13	5,756.35	5,530.66	225.70	25.505		
9,100.00	3,273.33	3,265.28	3,265.18	162.71	66.41	-89.05	259.28	66.13	5,855.44	5,626.97	228.46	25.630		
9,200.00	3,273.09	3,265.04	3,264.94	165.47	66.40	-89.03	259.28	66.13	5,954.55	5,723.32	231.23	25.752		
9,300.00	3,272.85	3,264.81	3,264.71	168.23	66.39	-89.02	259.28	66.13	6,053.69	5,819.70	233.99	25.871		
9,400.00	3,272.61	3,264.57	3,264.47	170.99	66.39	-89.00	259.28	66.13	6,152.86	5,916.11	236.76	25.988		
9,500.00	3,272.37	3,264.34	3,264.23	173.76	66.38	-88.98	259.28	66.13	6,252.06	6,012.54	239.52	26.102		
9,600.00	3,272.13	3,264.10	3,264.00	176.52	66.37	-88.97	259.28	66.13	6,351.28	6,109.00	242.28	26.214		
9,700.00	3,271.90	3,263.86	3,263.76	179.28	66.37	-88.95	259.28	66.13	6,450.53	6,205.48	245.05	26.323		
9,800.00	3,271.66	3,263.63	3,263.53	182.05	66.36	-88.93	259.28	66.13	6,549.80	6,301.99	247.81	26.430		
9,900.00	3,271.42	3,263.39	3,263.29	184.81	66.35	-88.91	259.28	66.13	6,649.09	6,398.51	250.58	26.535		
10,000.00	3,271.18	3,263.16	3,263.06	187.58	66.34	-88.90	259.28	66.13	6,748.40	6,495.06	253.34	26.637		
10,100.00	3,270.94	3,262.92	3,262.82	190.34	66.34	-88.88	259.28	66.13	6,847.74	6,591.63	256.11	26.738		
10,200.00	3,270.70	3,262.68	3,262.58	193.11	66.33	-88.86	259.28	66.13	6,947.09	6,688.21	258.87	26.836		
10,300.00	3,270.47	3,262.45	3,262.35	195.87	66.32	-88.85	259.28	66.13	7,046.46	6,784.82	261.64	26.932		
10,400.00	3,270.23	3,262.21	3,262.11	198.64	66.32	-88.83	259.28	66.13	7,145.84	6,881.44	264.40	27.026		
10,500.00	3,269.99	3,261.98	3,261.88	201.40	66.31	-88.81	259.28	66.13	7,245.25	6,978.08	267.17	27.119		
10,600.00	3,269.75	3,261.74	3,261.64	204.17	66.30	-88.79	259.28	66.13	7,344.67	7,074.74	269.93	27.209		
10,700.00	3,269.51	3,261.50	3,261.40	206.94	66.30	-88.78	259.29	66.13	7,444.10	7,171.41	272.70	27.298		
10,800.00	3,269.27	3,261.27	3,261.17	209.70	66.29	-88.76	259.29	66.13	7,543.55	7,268.09	275.46	27.385		
10,900.00	3,269.04	3,261.03	3,260.93	212.47	66.28	-88.74	259.29	66.13	7,643.02	7,364.79	278.23	27.471		
11,000.00	3,268.80	3,260.80	3,260.70	215.24	66.28	-88.72	259.29	66.13	7,742.50	7,461.51	280.99	27.554		
11,100.00	3,268.56	3,260.56	3,260.46	218.01	66.27	-88.71	259.29	66.13	7,841.99	7,558.24	283.75	27.636		
11,200.00	3,268.32	3,260.33	3,260.22	220.77	66.26	-88.69	259.29	66.13	7,941.50	7,654.98	286.52	27.717		
11,300.00	3,268.08	3,260.09	3,259.99	223.54	66.25	-88.67	259.29	66.13	8,041.01	7,751.73	289.28	27.796		
11,335.01	3,268.00	3,260.01	3,259.91	224.51	66.25	-88.67	259.29	66.13	8,075.86	7,785.61	290.25	27.824		

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 211 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6558.00usft
Reference Site:	Sec.35-T32N-R07W	MD Reference:	KB @ 6558.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 211 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev1	Offset TVD Reference:	Offset Datum

Offset Design Sec.35-T32N-R07W - San Juan 32-7 Unit 045 - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 630-INC_ONLY<10												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	15.07	15.07	0.00	0.07	7.23	514.95	65.34	519.08				
6.00	6.00	21.05	21.05	0.00	0.10	7.23	514.94	65.34	519.07				
106.00	106.00	120.69	120.69	0.10	0.57	7.23	514.77	65.34	518.90	518.23	0.67	772.956	
206.00	206.00	220.34	220.34	0.33	1.04	7.24	514.67	65.34	518.80	517.44	1.37	379.871	
301.00	301.00	315.00	315.00	0.54	1.48	7.24	514.64	65.34	518.77	516.75	2.03	256.129	
306.00	306.00	319.98	319.98	0.55	1.51	7.24	514.64	65.34	518.77	516.71	2.06	251.814	
406.00	406.00	419.63	419.63	0.78	1.98	7.24	514.68	65.34	518.81	516.05	2.75	188.346	
506.00	506.00	519.27	519.27	1.00	2.45	7.23	514.78	65.34	518.92	515.47	3.45	150.456	
606.00	606.00	618.91	618.91	1.23	2.92	7.23	514.96	65.34	519.09	514.95	4.14	125.283	
706.00	706.00	722.23	722.23	1.45	4.54	7.24	514.48	65.34	518.62	512.63	5.99	86.516	
806.00	806.00	821.01	821.00	1.68	6.23	7.24	514.18	65.34	518.31	510.41	7.91	65.566	
886.51	886.51	900.52	900.52	1.86	7.59	7.24	514.10	65.34	518.23	508.79	9.44	54.879 CC	
906.00	906.00	919.77	919.77	1.90	7.92	7.24	514.10	65.34	518.24	508.42	9.82	52.798	
1,006.00	1,006.00	1,018.53	1,018.53	2.13	9.60	7.24	514.27	65.34	518.40	506.68	11.73	44.210	
1,106.00	1,106.00	1,117.28	1,117.28	2.35	11.29	7.24	514.67	65.34	518.81	505.17	13.64	38.047	
1,206.00	1,206.00	1,219.11	1,219.10	2.57	13.32	7.23	515.08	65.34	519.21	503.31	15.89	32.670	
1,306.00	1,306.00	1,319.59	1,319.58	2.80	15.65	7.23	515.21	65.34	519.33	500.89	18.45	28.155	
1,406.00	1,406.00	1,420.08	1,420.07	3.02	17.97	7.23	515.24	65.34	519.36	498.37	21.00	24.733	
1,506.00	1,506.00	1,520.58	1,520.56	3.25	20.30	7.23	515.18	65.34	519.30	495.75	23.55	22.049	
1,606.00	1,606.00	1,621.08	1,621.05	3.47	22.63	7.23	515.02	65.34	519.15	493.05	26.11	19.887	
1,624.97	1,624.97	1,640.14	1,640.12	3.52	23.07	7.23	514.98	65.34	519.11	492.52	26.59	19.523	
1,706.00	1,706.00	1,719.21	1,719.18	3.70	24.44	7.23	515.13	65.34	519.26	491.12	28.14	18.451	
1,806.00	1,806.00	1,819.60	1,819.57	3.92	26.19	7.23	515.26	65.34	519.38	489.26	30.12	17.245	
1,906.00	1,906.00	1,919.99	1,919.96	4.15	27.94	7.23	515.30	65.34	519.43	487.33	32.09	16.186	
2,006.00	2,006.00	2,020.39	2,020.35	4.37	29.69	7.23	515.27	65.34	519.40	485.33	34.07	15.247	
2,106.00	2,106.00	2,120.78	2,120.75	4.60	31.44	7.23	515.16	65.34	519.29	483.25	36.04	14.408	
2,205.94	2,205.94	2,221.12	2,221.08	4.82	33.19	7.23	514.98	65.34	519.11	481.10	38.01	13.656	
2,206.00	2,206.00	2,220.00	2,219.96	4.82	33.17	7.23	514.98	65.34	519.11	481.12	37.99	13.663	
2,306.00	2,306.00	2,320.70	2,320.66	5.05	34.93	7.23	514.81	65.34	518.94	478.97	39.97	12.982	
2,406.00	2,406.00	2,420.24	2,420.20	5.27	36.66	7.23	514.73	65.34	518.86	476.92	41.93	12.373	
2,448.46	2,448.46	2,462.51	2,462.46	5.37	37.40	7.23	514.72	65.34	518.85	476.08	42.77	12.132	
2,506.00	2,506.00	2,519.78	2,519.74	5.50	38.40	7.23	514.73	65.34	518.86	474.97	43.89	11.821	
2,606.00	2,606.00	2,619.32	2,619.27	5.72	40.13	7.23	514.83	65.34	518.96	473.11	45.85	11.318	
2,706.00	2,706.00	2,719.02	2,718.97	5.95	41.87	7.23	515.01	65.34	519.14	471.33	47.82	10.857	
2,806.00	2,806.00	2,819.68	2,819.62	6.17	43.62	7.23	515.15	65.34	519.28	469.48	49.79	10.428	
2,906.00	2,906.00	2,920.34	2,920.29	6.40	45.38	7.23	515.16	65.34	519.29	467.51	51.77	10.030	
2,996.52	2,996.52	3,011.47	3,011.41	6.60	46.96	7.23	515.06	65.34	519.18	465.62	53.57	9.693	
2,999.74	2,999.74	3,014.71	3,014.65	6.60	47.02	-98.92	515.05	65.34	519.18	465.56	53.62	9.682	
3,000.00	3,000.00	3,014.97	3,014.91	6.60	47.03	-98.92	515.05	65.34	519.18	465.55	53.63	9.681	
3,025.00	3,024.95	3,040.09	3,040.03	6.61	47.46	-99.04	515.00	65.34	519.35	465.29	54.06	9.607 ES	
3,050.00	3,049.69	3,063.75	3,063.69	6.62	47.83	-99.30	514.98	65.34	519.91	465.50	54.41	9.555	
3,075.00	3,074.02	3,088.08	3,088.02	6.63	48.18	-99.71	514.98	65.34	520.88	466.14	54.73	9.517	
3,100.00	3,097.76	3,111.82	3,111.76	6.66	48.53	-100.23	514.98	65.34	522.30	467.26	55.03	9.490	
3,125.00	3,120.74	3,134.80	3,134.74	6.69	48.86	-100.82	514.98	65.34	524.25	468.94	55.31	9.479 SF	
3,150.00	3,142.76	3,156.82	3,156.76	6.72	49.18	-101.43	514.98	65.34	526.83	471.28	55.55	9.483	
3,175.00	3,163.68	3,177.74	3,177.68	6.76	49.48	-102.01	514.98	65.34	530.13	474.36	55.78	9.505	
3,200.00	3,183.32	3,197.38	3,197.32	6.80	49.77	-102.48	514.98	65.34	534.25	478.27	55.98	9.544	
3,225.00	3,201.54	3,215.60	3,215.54	6.87	50.03	-102.80	514.98	65.34	539.30	483.11	56.19	9.598	
3,250.00	3,218.20	3,232.26	3,232.20	7.01	50.27	-102.90	514.98	65.34	545.35	488.92	56.43	9.665	
3,275.00	3,233.17	3,247.23	3,247.17	7.19	50.49	-102.73	514.98	65.34	552.48	495.75	56.73	9.740	
3,300.00	3,246.34	3,260.40	3,260.34	7.42	50.68	-102.21	514.98	65.34	560.73	503.61	57.11	9.818	
3,325.00	3,257.61	3,271.67	3,271.61	7.70	50.84	-101.30	514.98	65.34	570.11	512.50	57.61	9.896	

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
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.35-T32N-R07W - San Juan 32-7 Unit 045 - Original Hole - Original Hole													Offset Site Error: 0.00 usft
Survey Program: 630-INC_ONLY<10													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
3,350.00	3,266.89	3,280.95	3,280.89	8.03	50.98	-99.95	514.98	65.34	580.62	522.40	58.23	9.972	
3,375.00	3,274.12	3,288.18	3,288.12	8.41	51.08	-98.12	514.98	65.34	592.22	533.28	58.94	10.048	
3,400.00	3,279.23	3,293.29	3,293.23	8.83	51.16	-95.77	514.98	65.34	604.83	545.13	59.70	10.132	
3,425.00	3,282.19	3,296.25	3,296.19	9.29	51.20	-92.89	514.98	65.34	618.34	557.93	60.41	10.235	
3,446.52	3,283.00	3,297.06	3,297.00	9.71	51.21	-90.00	514.98	65.34	630.60	569.68	60.92	10.351	
3,500.00	3,283.00	3,297.06	3,297.00	10.82	51.21	-90.00	514.98	65.34	663.15	601.12	62.03	10.691	
3,600.00	3,283.00	3,297.06	3,297.00	13.10	51.21	-90.00	514.98	65.34	730.66	666.35	64.31	11.362	
3,700.00	3,283.00	3,297.06	3,297.00	15.54	51.21	-90.00	514.98	65.34	804.95	738.20	66.75	12.059	
3,800.00	3,283.00	3,297.06	3,297.00	18.08	51.21	-90.00	514.98	65.34	884.33	815.04	69.29	12.763	
3,900.00	3,283.00	3,297.06	3,297.00	20.68	51.21	-90.00	514.98	65.34	967.54	895.64	71.89	13.458	
4,000.00	3,283.00	3,297.06	3,297.00	23.33	51.21	-90.00	514.98	65.34	1,053.67	979.13	74.54	14.136	
4,100.00	3,283.00	3,297.06	3,297.00	26.00	51.21	-90.00	514.98	65.34	1,142.06	1,064.85	77.21	14.791	
4,200.00	3,283.00	3,297.06	3,297.00	28.69	51.21	-90.00	514.98	65.34	1,232.23	1,152.32	79.90	15.421	
4,300.00	3,283.00	3,297.06	3,297.00	31.40	51.21	-90.00	514.98	65.34	1,323.81	1,241.20	82.61	16.024	
4,400.00	3,283.00	3,297.06	3,297.00	34.12	51.21	-90.00	514.98	65.34	1,416.53	1,331.20	85.33	16.600	
4,500.00	3,283.00	3,297.06	3,297.00	36.85	51.21	-90.00	514.98	65.34	1,510.18	1,422.12	88.06	17.149	
4,600.00	3,283.00	3,297.06	3,297.00	39.59	51.21	-90.00	514.98	65.34	1,604.60	1,513.80	90.80	17.672	
4,700.00	3,283.00	3,297.06	3,297.00	42.33	51.21	-90.00	514.98	65.34	1,699.66	1,606.11	93.54	18.170	
4,772.52	3,283.00	3,297.06	3,297.00	44.32	51.21	-90.00	514.98	65.34	1,768.93	1,673.40	95.54	18.516	
4,800.00	3,283.00	3,297.06	3,297.00	45.08	51.21	-89.98	514.98	65.34	1,795.19	1,698.91	96.29	18.644	
4,900.00	3,282.96	3,297.02	3,296.96	47.83	51.21	-89.91	514.98	65.34	1,890.06	1,791.11	98.95	19.102	
5,000.00	3,282.88	3,296.94	3,296.88	50.58	51.21	-89.85	514.98	65.34	1,983.77	1,882.28	101.48	19.547	
5,100.00	3,282.76	3,296.82	3,296.76	53.33	51.21	-89.81	514.98	65.34	2,076.24	1,972.35	103.89	19.985	
5,200.00	3,282.59	3,296.65	3,296.59	56.05	51.21	-89.77	514.98	65.34	2,167.39	2,061.24	106.15	20.418	
5,300.00	3,282.38	3,296.44	3,296.38	58.74	51.20	-89.74	514.98	65.34	2,257.15	2,148.90	108.25	20.851	
5,311.84	3,282.35	3,296.41	3,296.35	59.06	51.20	-89.74	514.98	65.34	2,267.68	2,159.19	108.49	20.902	
5,400.00	3,282.14	3,296.20	3,296.14	61.41	51.20	-89.72	514.98	65.34	2,346.38	2,235.46	110.92	21.155	
5,500.00	3,281.90	3,295.96	3,295.90	64.09	51.20	-89.71	514.98	65.34	2,436.42	2,322.76	113.66	21.435	
5,600.00	3,281.66	3,295.73	3,295.66	66.78	51.19	-89.70	514.98	65.34	2,527.22	2,410.80	116.41	21.709	
5,700.00	3,281.43	3,295.49	3,295.43	69.47	51.19	-89.68	514.98	65.34	2,618.68	2,499.52	119.17	21.975	
5,800.00	3,281.19	3,295.25	3,295.19	72.17	51.19	-89.67	514.98	65.34	2,710.75	2,588.83	121.92	22.234	
5,900.00	3,280.95	3,295.01	3,294.95	74.88	51.18	-89.66	514.98	65.34	2,803.36	2,678.69	124.68	22.485	
6,000.00	3,280.71	3,294.77	3,294.71	77.59	51.18	-89.65	514.98	65.34	2,896.46	2,769.03	127.43	22.729	
6,100.00	3,280.47	3,294.53	3,294.47	80.30	51.18	-89.63	514.98	65.34	2,990.01	2,859.82	130.19	22.966	
6,200.00	3,280.24	3,294.30	3,294.24	83.02	51.17	-89.62	514.98	65.34	3,083.97	2,951.02	132.95	23.197	
6,300.00	3,280.00	3,294.06	3,294.00	85.75	51.17	-89.61	514.98	65.34	3,178.29	3,042.58	135.71	23.420	
6,400.00	3,279.76	3,293.82	3,293.76	88.47	51.16	-89.59	514.98	65.34	3,272.95	3,134.48	138.47	23.637	
6,500.00	3,279.52	3,293.58	3,293.52	91.20	51.16	-89.58	514.98	65.34	3,367.92	3,226.69	141.23	23.847	
6,600.00	3,279.28	3,293.34	3,293.28	93.93	51.16	-89.57	514.98	65.34	3,463.17	3,319.18	143.99	24.051	
6,700.00	3,279.04	3,293.11	3,293.04	96.67	51.15	-89.55	514.98	65.34	3,558.68	3,411.93	146.75	24.250	
6,800.00	3,278.81	3,292.87	3,292.81	99.40	51.15	-89.54	514.98	65.34	3,654.43	3,504.92	149.51	24.442	
6,900.00	3,278.57	3,292.63	3,292.57	102.14	51.15	-89.53	514.98	65.34	3,750.40	3,598.13	152.28	24.629	
7,000.00	3,278.33	3,292.39	3,292.33	104.88	51.14	-89.51	514.98	65.34	3,846.58	3,691.54	155.04	24.810	
7,100.00	3,278.09	3,292.15	3,292.09	107.63	51.14	-89.50	514.98	65.34	3,942.95	3,785.15	157.81	24.986	
7,200.00	3,277.85	3,291.91	3,291.85	110.37	51.14	-89.49	514.98	65.34	4,039.50	3,878.93	160.57	25.157	
7,300.00	3,277.61	3,291.68	3,291.61	113.11	51.13	-89.47	514.98	65.34	4,136.21	3,972.87	163.33	25.324	
7,400.00	3,277.38	3,291.44	3,291.38	115.86	51.13	-89.46	514.98	65.34	4,233.07	4,066.97	166.10	25.485	
7,500.00	3,277.14	3,291.20	3,291.14	118.61	51.13	-89.45	514.98	65.34	4,330.07	4,161.21	168.86	25.642	
7,600.00	3,276.90	3,290.96	3,290.90	121.36	51.12	-89.44	514.98	65.34	4,427.21	4,255.58	171.63	25.795	
7,700.00	3,276.66	3,290.72	3,290.66	124.11	51.12	-89.42	514.98	65.34	4,524.48	4,350.08	174.40	25.944	
7,800.00	3,276.42	3,290.48	3,290.42	126.86	51.12	-89.41	514.98	65.34	4,621.86	4,444.69	177.16	26.088	
7,900.00	3,276.18	3,290.25	3,290.18	129.61	51.11	-89.40	514.98	65.34	4,719.34	4,539.42	179.93	26.229	

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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
Sec.35-T32N-R07W - San Juan 32-7 Unit 045 - Original Hole - Original Hole													Offset Well Error:	0.00 usft
Survey Program: 630-INC_ONLY<10														
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	3,275.95	3,290.01	3,289.95	132.37	51.11	-89.38	514.98	65.34	4,816.94	4,634.24	182.69	26.366		
8,100.00	3,275.71	3,289.77	3,289.71	135.12	51.11	-89.37	514.98	65.34	4,914.63	4,729.17	185.46	26.500		
8,200.00	3,275.47	3,289.53	3,289.47	137.88	51.10	-89.36	514.98	65.34	5,012.41	4,824.18	188.23	26.630		
8,300.00	3,275.23	3,289.29	3,289.23	140.63	51.10	-89.34	514.98	65.34	5,110.27	4,919.28	190.99	26.756		
8,400.00	3,274.99	3,289.05	3,288.99	143.39	51.10	-89.33	514.98	65.34	5,208.22	5,014.46	193.76	26.879		
8,500.00	3,274.76	3,288.82	3,288.76	146.15	51.09	-89.32	514.98	65.34	5,306.24	5,109.71	196.53	27.000		
8,600.00	3,274.52	3,288.58	3,288.52	148.91	51.09	-89.30	514.98	65.34	5,404.34	5,205.04	199.30	27.117		
8,700.00	3,274.28	3,288.34	3,288.28	151.67	51.09	-89.29	514.98	65.34	5,502.50	5,300.44	202.07	27.231		
8,800.00	3,274.04	3,288.10	3,288.04	154.43	51.08	-89.28	514.98	65.34	5,600.73	5,395.90	204.83	27.343		
8,900.00	3,273.80	3,287.86	3,287.80	157.19	51.08	-89.26	514.98	65.34	5,699.02	5,491.42	207.60	27.452		
9,000.00	3,273.56	3,287.62	3,287.56	159.95	51.07	-89.25	514.98	65.34	5,797.37	5,587.01	210.37	27.558		
9,100.00	3,273.33	3,287.39	3,287.33	162.71	51.07	-89.24	514.98	65.34	5,895.78	5,682.64	213.14	27.662		
9,200.00	3,273.09	3,287.15	3,287.09	165.47	51.07	-89.23	514.98	65.34	5,994.24	5,778.33	215.91	27.763		
9,300.00	3,272.85	3,286.91	3,286.85	168.23	51.06	-89.21	514.98	65.34	6,092.75	5,874.07	218.67	27.862		
9,400.00	3,272.61	3,286.67	3,286.61	170.99	51.06	-89.20	514.98	65.34	6,191.30	5,969.86	221.44	27.959		
9,500.00	3,272.37	3,286.43	3,286.37	173.76	51.06	-89.19	514.98	65.34	6,289.90	6,065.69	224.21	28.054		
9,600.00	3,272.13	3,286.20	3,286.13	176.52	51.05	-89.17	514.98	65.34	6,388.55	6,161.57	226.98	28.146		
9,700.00	3,271.90	3,285.96	3,285.90	179.28	51.05	-89.16	514.98	65.34	6,487.23	6,257.49	229.75	28.236		
9,800.00	3,271.66	3,285.72	3,285.66	182.05	51.05	-89.15	514.98	65.34	6,585.96	6,353.44	232.52	28.325		
9,900.00	3,271.42	3,285.48	3,285.42	184.81	51.04	-89.13	514.98	65.34	6,684.72	6,449.44	235.29	28.411		
10,000.00	3,271.18	3,285.24	3,285.18	187.58	51.04	-89.12	514.98	65.34	6,783.52	6,545.47	238.05	28.496		
10,100.00	3,270.94	3,285.00	3,284.94	190.34	51.04	-89.11	514.98	65.34	6,882.36	6,641.54	240.82	28.579		
10,200.00	3,270.70	3,284.77	3,284.70	193.11	51.03	-89.09	514.98	65.34	6,981.23	6,737.64	243.59	28.660		
10,300.00	3,270.47	3,284.53	3,284.47	195.87	51.03	-89.08	514.98	65.34	7,080.13	6,833.77	246.36	28.739		
10,400.00	3,270.23	3,284.29	3,284.23	198.64	51.03	-89.07	514.98	65.34	7,179.06	6,929.93	249.13	28.817		
10,500.00	3,269.99	3,284.05	3,283.99	201.40	51.02	-89.05	514.98	65.34	7,278.02	7,026.12	251.90	28.893		
10,600.00	3,269.75	3,283.81	3,283.75	204.17	51.02	-89.04	514.98	65.34	7,377.00	7,122.34	254.67	28.967		
10,700.00	3,269.51	3,283.57	3,283.51	206.94	51.02	-89.03	514.98	65.34	7,476.02	7,218.58	257.44	29.040		
10,800.00	3,269.27	3,283.34	3,283.27	209.70	51.01	-89.02	514.98	65.34	7,575.06	7,314.85	260.21	29.112		
10,900.00	3,269.04	3,283.10	3,283.04	212.47	51.01	-89.00	514.98	65.34	7,674.12	7,411.15	262.97	29.182		
11,000.00	3,268.80	3,282.86	3,282.80	215.24	51.01	-88.99	514.98	65.34	7,773.21	7,507.47	265.74	29.251		
11,100.00	3,268.56	3,282.62	3,282.56	218.01	51.00	-88.98	514.98	65.34	7,872.33	7,603.81	268.51	29.318		
11,200.00	3,268.32	3,282.38	3,282.32	220.77	51.00	-88.96	514.98	65.34	7,971.46	7,700.18	271.28	29.384		
11,300.00	3,268.08	3,282.14	3,282.08	223.54	51.00	-88.95	514.98	65.34	8,070.62	7,796.57	274.05	29.449		
11,335.01	3,268.00	3,282.06	3,282.00	224.51	50.99	-88.94	514.98	65.34	8,105.34	7,830.32	275.02	29.472		



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.35-T32N-R07W - San Juan 32-7 Unit 049 - Original Hole - Original Hole												Offset Site Error: 0.00 usft	
Survey Program: 610-INC_ONLY<10												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor
0.00	0.00	167.21	167.21	0.00	1.71	81.28	405.40	2,643.78	2,674.68				
6.00	6.00	173.16	173.16	0.00	1.77	81.28	405.39	2,643.78	2,674.68				
106.00	106.00	272.29	272.29	0.10	2.78	81.29	405.21	2,643.78	2,674.65	2,671.77	2.88	928.705	
139.01	139.01	305.01	305.01	0.18	3.11	81.29	405.20	2,643.78	2,674.65	2,671.36	3.29	813.476	
206.00	206.00	371.43	371.43	0.33	3.79	81.29	405.25	2,643.78	2,674.65	2,670.54	4.12	649.830	
306.00	306.00	470.55	470.55	0.55	4.80	81.28	405.49	2,643.78	2,674.69	2,669.34	5.35	499.772	
406.00	406.00	569.67	569.67	0.78	5.81	81.27	405.95	2,643.78	2,674.76	2,668.17	6.59	406.026	
506.00	506.00	672.67	672.67	1.00	7.69	81.27	406.08	2,643.78	2,674.78	2,666.09	8.69	307.731	
606.00	606.00	772.33	772.32	1.23	10.03	81.27	405.96	2,643.78	2,674.76	2,663.51	11.25	237.730	
696.92	696.92	862.94	862.93	1.43	12.15	81.27	405.92	2,643.78	2,674.76	2,661.18	13.58	196.988	
706.00	706.00	871.98	871.97	1.45	12.36	81.27	405.92	2,643.78	2,674.76	2,660.95	13.81	193.675	
806.00	806.00	971.63	971.62	1.68	14.69	81.27	405.97	2,643.78	2,674.76	2,658.40	16.37	163.398	
906.00	906.00	1,071.27	1,071.26	1.90	17.03	81.27	406.11	2,643.78	2,674.79	2,655.86	18.93	141.308	
1,006.00	1,006.00	1,172.02	1,172.00	2.13	19.56	81.27	406.20	2,643.78	2,674.80	2,653.11	21.68	123.348	
1,106.00	1,106.00	1,272.02	1,272.00	2.35	22.21	81.27	406.20	2,643.78	2,674.80	2,650.24	24.56	108.915	
1,206.00	1,206.00	1,372.03	1,372.00	2.57	24.86	81.27	406.20	2,643.78	2,674.80	2,647.37	27.43	97.506	
1,306.00	1,306.00	1,472.03	1,472.00	2.80	27.51	81.27	406.20	2,643.78	2,674.80	2,644.49	30.31	88.261	
1,406.00	1,406.00	1,572.04	1,572.00	3.02	30.15	81.27	406.20	2,643.78	2,674.80	2,641.62	33.18	80.617	
1,506.00	1,506.00	1,671.36	1,671.31	3.25	32.60	81.26	406.32	2,643.78	2,674.82	2,638.97	35.85	74.611	
1,606.00	1,606.00	1,771.70	1,771.65	3.47	34.95	81.26	406.44	2,643.78	2,674.84	2,636.41	38.43	69.609	
1,706.00	1,706.00	1,872.04	1,871.99	3.70	37.30	81.26	406.49	2,643.78	2,674.84	2,633.84	41.00	65.236	
1,806.00	1,806.00	1,972.39	1,972.33	3.92	39.66	81.26	406.44	2,643.78	2,674.84	2,631.26	43.58	61.379	
1,906.00	1,906.00	2,072.74	2,072.68	4.15	42.01	81.26	406.32	2,643.78	2,674.82	2,628.66	46.16	57.952	
2,006.00	2,006.00	2,172.81	2,172.75	4.37	44.35	81.27	406.13	2,643.78	2,674.79	2,626.06	48.73	54.895	
2,106.00	2,106.00	2,272.44	2,272.37	4.60	46.69	81.27	405.99	2,643.78	2,674.77	2,623.48	51.28	52.155	
2,200.93	2,200.93	2,367.01	2,366.93	4.81	48.90	81.27	405.95	2,643.78	2,674.76	2,621.05	53.71	49.796	
2,206.00	2,206.00	2,372.06	2,371.98	4.82	49.02	81.27	405.95	2,643.78	2,674.76	2,620.92	53.84	49.676	
2,306.00	2,306.00	2,471.67	2,471.60	5.05	51.36	81.27	406.00	2,643.78	2,674.77	2,618.37	56.40	47.422	
2,406.00	2,406.00	2,571.28	2,571.20	5.27	53.69	81.27	406.14	2,643.78	2,674.79	2,615.83	58.96	45.364	
2,506.00	2,506.00	2,673.38	2,673.30	5.50	56.78	81.27	405.92	2,643.78	2,674.76	2,612.48	62.27	42.952	
2,606.00	2,606.00	2,772.76	2,772.67	5.72	60.02	81.28	405.68	2,643.78	2,674.72	2,608.98	65.74	40.685	
2,706.00	2,706.00	2,872.12	2,872.03	5.95	63.26	81.28	405.60	2,643.78	2,674.71	2,605.50	69.21	38.646	
2,707.92	2,707.92	2,874.03	2,873.93	5.95	63.33	81.28	405.60	2,643.78	2,674.71	2,605.43	69.28	38.609	
2,806.00	2,806.00	2,971.48	2,971.37	6.17	66.51	81.28	405.67	2,643.78	2,674.72	2,602.04	72.68	36.803	
2,906.00	2,906.00	3,070.82	3,070.71	6.40	69.75	81.27	405.90	2,643.78	2,674.75	2,598.61	76.14	35.128	
2,996.52	2,996.52	3,161.80	3,161.69	6.60	72.75	81.26	406.22	2,643.78	2,674.80	2,595.45	79.35	33.707	
3,000.00	3,000.00	3,165.30	3,165.19	6.60	72.88	-24.89	406.23	2,643.78	2,674.78	2,595.30	79.49	33.650	
3,025.00	3,024.95	3,190.38	3,190.27	6.61	73.78	-25.01	406.28	2,643.78	2,673.53	2,593.35	80.18	33.345	
3,050.00	3,049.69	3,215.25	3,215.14	6.62	74.67	-25.32	406.31	2,643.78	2,670.30	2,589.94	80.36	33.229	
3,075.00	3,074.02	3,239.71	3,239.59	6.63	75.54	-25.83	406.34	2,643.78	2,665.13	2,585.10	80.04	33.298	
3,100.00	3,097.76	3,263.58	3,263.46	6.66	76.39	-26.55	406.36	2,643.78	2,658.07	2,578.83	79.24	33.546	
3,125.00	3,120.74	3,286.68	3,286.55	6.69	77.22	-27.52	406.38	2,643.78	2,649.15	2,571.15	78.01	33.961	
3,150.00	3,142.76	3,308.82	3,308.70	6.72	78.01	-28.75	406.38	2,643.78	2,638.47	2,562.04	76.43	34.520	
3,175.00	3,163.68	3,329.85	3,329.73	6.76	78.76	-30.30	406.38	2,643.78	2,626.10	2,551.46	74.64	35.181	
3,200.00	3,183.32	3,349.61	3,349.48	6.80	79.47	-32.21	406.38	2,643.78	2,612.15	2,539.31	72.83	35.865	
3,225.00	3,201.54	3,367.93	3,367.80	6.87	80.12	-34.56	406.37	2,643.78	2,596.72	2,525.46	71.26	36.441	
3,250.00	3,218.20	3,384.69	3,384.56	7.01	80.72	-37.44	406.36	2,643.78	2,579.94	2,509.69	70.25	36.726	
3,275.00	3,233.17	3,399.76	3,399.62	7.19	81.26	-40.96	406.34	2,643.78	2,561.95	2,491.76	70.19	36.501	
3,300.00	3,246.34	3,413.01	3,412.88	7.42	81.74	-45.26	406.33	2,643.78	2,542.88	2,471.45	71.43	35.598	
3,325.00	3,257.61	3,424.36	3,424.22	7.70	82.14	-50.48	406.31	2,643.78	2,522.90	2,448.71	74.19	34.006	
3,350.00	3,266.89	3,433.71	3,433.57	8.03	82.48	-56.75	406.30	2,643.78	2,502.15	2,423.81	78.34	31.939	
3,375.00	3,274.12	3,440.99	3,440.85	8.41	82.74	-64.15	406.29	2,643.78	2,480.80	2,397.47	83.33	29.771	

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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: 610-INC_ONLY<10													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			
3,400.00	3,279.23	3,446.15	3,446.00	8.83	82.92	-72.60	406.28	2,643.78	2,459.03	2,370.88	88.15	27.896			
3,425.00	3,282.19	3,449.14	3,449.00	9.29	83.03	-81.84	406.28	2,643.78	2,436.99	2,345.39	91.60	26.606			
3,446.52	3,283.00	3,449.96	3,449.82	9.71	83.06	-90.04	406.28	2,643.78	2,417.94	2,325.18	92.76	26.065			
3,500.00	3,283.00	3,449.98	3,449.84	10.82	83.06	-90.04	406.28	2,643.78	2,370.74	2,276.86	93.88	25.254			
3,600.00	3,283.00	3,450.03	3,449.89	13.10	83.06	-90.05	406.28	2,643.78	2,283.22	2,187.07	96.15	23.745			
3,700.00	3,283.00	3,450.08	3,449.94	15.54	83.06	-90.05	406.28	2,643.78	2,196.77	2,098.17	98.60	22.280			
3,800.00	3,283.00	3,450.13	3,449.98	18.08	83.06	-90.05	406.28	2,643.78	2,111.52	2,010.38	101.14	20.877			
3,900.00	3,283.00	3,450.17	3,450.03	20.68	83.06	-90.05	406.28	2,643.78	2,027.62	1,923.87	103.75	19.544			
4,000.00	3,283.00	3,450.22	3,450.08	23.33	83.07	-90.05	406.28	2,643.78	1,945.23	1,838.84	106.39	18.284			
4,100.00	3,283.00	3,450.27	3,450.12	26.00	83.07	-90.06	406.28	2,643.78	1,864.57	1,755.51	109.07	17.096			
4,200.00	3,283.00	3,450.31	3,450.17	28.69	83.07	-90.06	406.28	2,643.78	1,785.87	1,674.11	111.76	15.979			
4,300.00	3,283.00	3,450.36	3,450.22	31.40	83.07	-90.06	406.28	2,643.78	1,709.40	1,594.92	114.47	14.933			
4,400.00	3,283.00	3,450.41	3,450.27	34.12	83.07	-90.06	406.28	2,643.78	1,635.46	1,518.27	117.20	13.955			
4,500.00	3,283.00	3,450.45	3,450.31	36.85	83.07	-90.07	406.28	2,643.78	1,564.43	1,444.51	119.93	13.045			
4,600.00	3,283.00	3,450.50	3,450.36	39.59	83.08	-90.07	406.28	2,643.78	1,496.71	1,374.05	122.67	12.202			
4,700.00	3,283.00	3,450.55	3,450.41	42.33	83.08	-90.07	406.28	2,643.78	1,432.78	1,307.37	125.41	11.425			
4,772.52	3,283.00	3,450.58	3,450.44	44.32	83.08	-90.07	406.27	2,643.78	1,389.08	1,261.68	127.40	10.903			
4,800.00	3,283.00	3,450.59	3,450.45	45.08	83.08	-90.08	406.27	2,643.78	1,373.00	1,244.84	128.15	10.714			
4,900.00	3,282.96	3,450.60	3,450.46	47.83	83.08	-90.10	406.27	2,643.78	1,314.85	1,184.04	130.81	10.051			
5,000.00	3,282.88	3,450.55	3,450.41	50.58	83.08	-90.12	406.28	2,643.78	1,257.51	1,124.15	133.35	9.430			
5,100.00	3,282.76	3,450.45	3,450.31	53.33	83.07	-90.14	406.28	2,643.78	1,201.24	1,065.48	135.76	8.849			
5,200.00	3,282.59	3,450.29	3,450.15	56.05	83.07	-90.16	406.28	2,643.78	1,146.37	1,008.36	138.01	8.306			
5,300.00	3,282.38	3,450.08	3,449.94	58.74	83.06	-90.18	406.28	2,643.78	1,093.28	953.17	140.11	7.803			
5,311.84	3,282.35	3,450.05	3,449.91	59.06	83.06	-90.18	406.28	2,643.78	1,087.13	946.78	140.35	7.746			
5,400.00	3,282.14	3,449.84	3,449.70	61.41	83.05	-90.17	406.28	2,643.78	1,044.19	901.42	142.77	7.314			
5,500.00	3,281.90	3,449.60	3,449.46	64.09	83.04	-90.15	406.28	2,643.78	1,002.66	857.14	145.51	6.890			
5,600.00	3,281.66	3,449.36	3,449.22	66.78	83.04	-90.14	406.28	2,643.78	969.70	821.44	148.26	6.541			
5,700.00	3,281.43	3,449.12	3,448.98	69.47	83.03	-90.12	406.28	2,643.78	946.21	795.20	151.01	6.266			
5,800.00	3,281.19	3,448.88	3,448.74	72.17	83.02	-90.11	406.28	2,643.78	932.90	779.15	153.76	6.067			
5,875.02	3,281.01	3,448.70	3,448.55	74.20	83.01	-90.10	406.28	2,643.78	929.88	774.06	155.82	5.968 CC			
5,900.00	3,280.95	3,448.64	3,448.49	74.88	83.01	-90.09	406.28	2,643.78	930.22	773.71	156.51	5.944 ES			
6,000.00	3,280.71	3,448.39	3,448.25	77.59	83.00	-90.08	406.28	2,643.78	938.24	778.99	159.26	5.891 SF			
6,100.00	3,280.47	3,448.15	3,448.01	80.30	82.99	-90.06	406.28	2,643.78	956.71	794.70	162.01	5.905			
6,200.00	3,280.24	3,447.91	3,447.77	83.02	82.98	-90.05	406.28	2,643.78	985.03	820.27	164.76	5.978			
6,300.00	3,280.00	3,447.67	3,447.53	85.75	82.98	-90.03	406.28	2,643.78	1,022.39	854.88	167.52	6.103			
6,400.00	3,279.76	3,447.43	3,447.29	88.47	82.97	-90.02	406.28	2,643.78	1,067.84	897.57	170.27	6.271			
6,500.00	3,279.52	3,447.19	3,447.05	91.20	82.96	-90.00	406.28	2,643.78	1,120.39	947.36	173.03	6.475			
6,600.00	3,279.28	3,446.95	3,446.81	93.93	82.95	-89.99	406.28	2,643.78	1,179.10	1,003.31	175.79	6.708			
6,700.00	3,279.04	3,446.71	3,446.56	96.67	82.94	-89.97	406.28	2,643.78	1,243.09	1,064.55	178.54	6.962			
6,800.00	3,278.81	3,446.46	3,446.32	99.40	82.93	-89.96	406.28	2,643.78	1,311.59	1,130.29	181.30	7.234			
6,900.00	3,278.57	3,446.22	3,446.08	102.14	82.92	-89.94	406.28	2,643.78	1,383.93	1,199.87	184.06	7.519			
7,000.00	3,278.33	3,445.98	3,445.84	104.88	82.91	-89.93	406.28	2,643.78	1,459.54	1,272.72	186.82	7.813			
7,100.00	3,278.09	3,445.74	3,445.60	107.63	82.91	-89.91	406.28	2,643.78	1,537.94	1,348.36	189.58	8.113			
7,200.00	3,277.85	3,445.50	3,445.36	110.37	82.90	-89.90	406.28	2,643.78	1,618.72	1,426.38	192.34	8.416			
7,300.00	3,277.61	3,445.26	3,445.12	113.11	82.89	-89.88	406.28	2,643.78	1,701.54	1,506.45	195.09	8.722			
7,400.00	3,277.38	3,445.02	3,444.88	115.86	82.88	-89.87	406.28	2,643.78	1,786.12	1,588.27	197.85	9.027			
7,500.00	3,277.14	3,444.77	3,444.63	118.61	82.87	-89.85	406.28	2,643.78	1,872.23	1,671.61	200.62	9.332			
7,600.00	3,276.90	3,444.53	3,444.39	121.36	82.86	-89.84	406.28	2,643.78	1,959.65	1,756.27	203.38	9.636			
7,700.00	3,276.66	3,444.29	3,444.15	124.11	82.85	-89.82	406.29	2,643.78	2,048.22	1,842.09	206.14	9.936			
7,800.00	3,276.42	3,444.05	3,443.91	126.86	82.85	-89.81	406.29	2,643.78	2,137.80	1,928.91	208.90	10.234			
7,900.00	3,276.18	3,443.81	3,443.67	129.61	82.84	-89.79	406.29	2,643.78	2,228.27	2,016.61	211.66	10.528			
8,000.00	3,275.95	3,443.57	3,443.43	132.37	82.83	-89.78	406.29	2,643.78	2,319.53	2,105.10	214.42	10.818			

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 211 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6558.00usft
Reference Site:	Sec.35-T32N-R07W	MD Reference:	KB @ 6558.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 211 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev1	Offset TVD Reference:	Offset Datum

Offset Design Sec.35-T32N-R07W - San Juan 32-7 Unit 049 - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 610-INC_ONLY<10													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	
8,100.00	3,275.71	3,443.33	3,443.19	135.12	82.82	-89.76	406.29	2,643.78	2,411.47	2,194.29	217.18	11.103		
8,200.00	3,275.47	3,443.09	3,442.95	137.88	82.81	-89.75	406.29	2,643.78	2,504.03	2,284.09	219.94	11.385		
8,300.00	3,275.23	3,442.84	3,442.70	140.63	82.80	-89.73	406.29	2,643.78	2,597.15	2,374.44	222.71	11.662		
8,400.00	3,274.99	3,442.60	3,442.46	143.39	82.79	-89.72	406.29	2,643.78	2,690.76	2,465.29	225.47	11.934		
8,500.00	3,274.76	3,442.36	3,442.22	146.15	82.79	-89.70	406.29	2,643.78	2,784.81	2,556.58	228.23	12.202		
8,600.00	3,274.52	3,442.12	3,441.98	148.91	82.78	-89.69	406.29	2,643.78	2,879.26	2,648.27	230.99	12.465		
8,700.00	3,274.28	3,441.88	3,441.74	151.67	82.77	-89.68	406.29	2,643.78	2,974.08	2,740.32	233.76	12.723		
8,800.00	3,274.04	3,441.64	3,441.50	154.43	82.76	-89.66	406.29	2,643.78	3,069.23	2,832.71	236.52	12.977		
8,900.00	3,273.80	3,441.40	3,441.26	157.19	82.75	-89.65	406.29	2,643.78	3,164.67	2,925.39	239.28	13.226		
9,000.00	3,273.56	3,441.16	3,441.02	159.95	82.74	-89.63	406.29	2,643.78	3,260.39	3,018.34	242.04	13.470		
9,100.00	3,273.33	3,440.91	3,440.77	162.71	82.73	-89.62	406.29	2,643.78	3,356.36	3,111.55	244.81	13.710		
9,200.00	3,273.09	3,440.67	3,440.53	165.47	82.73	-89.60	406.29	2,643.78	3,452.55	3,204.98	247.57	13.946		
9,300.00	3,272.85	3,440.43	3,440.29	168.23	82.72	-89.59	406.29	2,643.78	3,548.96	3,298.62	250.33	14.177		
9,400.00	3,272.61	3,440.19	3,440.05	170.99	82.71	-89.57	406.29	2,643.78	3,645.56	3,392.46	253.10	14.404		
9,500.00	3,272.37	3,439.95	3,439.81	173.76	82.70	-89.56	406.29	2,643.78	3,742.34	3,486.48	255.86	14.626		
9,600.00	3,272.13	3,439.71	3,439.57	176.52	82.69	-89.54	406.29	2,643.78	3,839.28	3,580.66	258.62	14.845		
9,700.00	3,271.90	3,439.47	3,439.33	179.28	82.68	-89.53	406.29	2,643.78	3,936.38	3,674.99	261.39	15.060		
9,800.00	3,271.66	3,439.22	3,439.09	182.05	82.67	-89.51	406.29	2,643.78	4,033.62	3,769.47	264.15	15.270		
9,900.00	3,271.42	3,438.98	3,438.84	184.81	82.66	-89.50	406.29	2,643.78	4,130.99	3,864.07	266.91	15.477		
10,000.00	3,271.18	3,438.74	3,438.60	187.58	82.66	-89.48	406.29	2,643.78	4,228.48	3,958.80	269.68	15.680		
10,100.00	3,270.94	3,438.50	3,438.36	190.34	82.65	-89.47	406.29	2,643.78	4,326.09	4,053.65	272.44	15.879		
10,200.00	3,270.70	3,438.26	3,438.12	193.11	82.64	-89.45	406.29	2,643.78	4,423.80	4,148.60	275.21	16.075		
10,300.00	3,270.47	3,438.02	3,437.88	195.87	82.63	-89.44	406.30	2,643.78	4,521.62	4,243.65	277.97	16.267		
10,400.00	3,270.23	3,437.78	3,437.64	198.64	82.62	-89.42	406.30	2,643.78	4,619.53	4,338.79	280.73	16.455		
10,500.00	3,269.99	3,437.54	3,437.40	201.40	82.61	-89.41	406.30	2,643.78	4,717.52	4,434.02	283.50	16.640		
10,600.00	3,269.75	3,437.29	3,437.16	204.17	82.60	-89.39	406.30	2,643.78	4,815.60	4,529.34	286.26	16.822		
10,700.00	3,269.51	3,437.05	3,436.91	206.94	82.60	-89.38	406.30	2,643.78	4,913.75	4,624.73	289.02	17.001		
10,800.00	3,269.27	3,436.81	3,436.67	209.70	82.59	-89.36	406.30	2,643.78	5,011.98	4,720.19	291.79	17.177		
10,900.00	3,269.04	3,436.57	3,436.43	212.47	82.58	-89.35	406.30	2,643.78	5,110.28	4,815.73	294.55	17.349		
11,000.00	3,268.80	3,436.33	3,436.19	215.24	82.57	-89.33	406.30	2,643.78	5,208.64	4,911.33	297.32	17.519		
11,100.00	3,268.56	3,436.09	3,435.95	218.01	82.56	-89.32	406.30	2,643.78	5,307.07	5,006.99	300.08	17.685		
11,200.00	3,268.32	3,435.85	3,435.71	220.77	82.55	-89.30	406.30	2,643.78	5,405.55	5,102.70	302.84	17.849		
11,300.00	3,268.08	3,435.61	3,435.47	223.54	82.54	-89.29	406.30	2,643.78	5,504.08	5,198.47	305.61	18.010		
11,335.01	3,268.00	3,435.52	3,435.38	224.51	82.54	-89.28	406.30	2,643.78	5,538.59	5,232.02	306.58	18.066		



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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
Sec.35-T32N-R07W - San Juan 32-7 Unit 209A - Original Hole - Original Hole													Offset Well Error:	0.00 usft
Survey Program: 218-INC_ONLY<10														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	161.96	161.96	0.00	2.15	89.80	9.06	2,659.65	2,659.67					
6.00	6.00	167.95	167.95	0.00	2.23	89.80	9.09	2,659.65	2,659.67					
106.00	106.00	268.00	268.00	0.10	4.21	89.80	9.42	2,659.65	2,659.67	2,655.35	4.32	616.091		
206.00	206.00	368.01	368.00	0.33	6.87	89.80	9.42	2,659.65	2,659.67	2,652.48	7.19	369.778		
306.00	306.00	468.01	468.00	0.55	9.52	89.80	9.42	2,659.65	2,659.67	2,649.60	10.07	264.165		
406.00	406.00	568.02	568.00	0.78	12.17	89.80	9.42	2,659.65	2,659.67	2,646.72	12.94	205.478		
506.00	506.00	668.02	668.00	1.00	14.82	89.80	9.42	2,659.65	2,659.67	2,643.85	15.82	168.127		
606.00	606.00	768.03	768.00	1.23	17.47	89.80	9.42	2,659.65	2,659.67	2,640.97	18.69	142.266		
706.00	706.00	868.03	868.00	1.45	20.12	89.80	9.42	2,659.65	2,659.67	2,638.10	21.57	123.301		
806.00	806.00	968.04	968.00	1.68	22.77	89.80	9.42	2,659.65	2,659.67	2,635.22	24.45	108.797		
906.00	906.00	1,068.04	1,068.00	1.90	25.42	89.80	9.42	2,659.65	2,659.67	2,632.35	27.32	97.346		
1,006.00	1,006.00	1,168.05	1,168.00	2.13	28.07	89.80	9.42	2,659.65	2,659.67	2,629.47	30.20	88.076		
1,106.00	1,106.00	1,268.05	1,268.00	2.35	30.72	89.80	9.42	2,659.65	2,659.67	2,626.59	33.07	80.418		
1,206.00	1,206.00	1,368.06	1,368.00	2.57	33.37	89.80	9.42	2,659.65	2,659.67	2,623.72	35.95	73.985		
1,306.00	1,306.00	1,468.06	1,468.00	2.80	36.02	89.80	9.42	2,659.65	2,659.67	2,620.84	38.82	68.506		
1,406.00	1,406.00	1,568.07	1,568.00	3.02	38.68	89.80	9.42	2,659.65	2,659.67	2,617.97	41.70	63.781		
1,506.00	1,506.00	1,668.07	1,668.00	3.25	41.33	89.80	9.42	2,659.65	2,659.67	2,615.09	44.58	59.667		
1,606.00	1,606.00	1,768.08	1,768.00	3.47	43.98	89.80	9.42	2,659.65	2,659.67	2,612.22	47.45	56.051		
1,706.00	1,706.00	1,868.08	1,868.00	3.70	46.63	89.80	9.42	2,659.65	2,659.67	2,609.34	50.33	52.848		
1,806.00	1,806.00	1,968.09	1,968.00	3.92	49.28	89.80	9.42	2,659.65	2,659.67	2,606.47	53.20	49.992		
1,906.00	1,906.00	2,068.09	2,068.00	4.15	51.93	89.80	9.42	2,659.65	2,659.67	2,603.59	56.08	47.428		
2,006.00	2,006.00	2,168.10	2,168.00	4.37	54.58	89.80	9.42	2,659.65	2,659.67	2,600.71	58.95	45.115		
2,106.00	2,106.00	2,268.10	2,268.00	4.60	57.23	89.80	9.42	2,659.65	2,659.67	2,597.84	61.83	43.017		
2,206.00	2,206.00	2,368.11	2,368.00	4.82	59.88	89.80	9.42	2,659.65	2,659.67	2,594.96	64.70	41.105		
2,306.00	2,306.00	2,468.11	2,468.00	5.05	62.53	89.80	9.42	2,659.65	2,659.67	2,592.09	67.58	39.356		
2,406.00	2,406.00	2,568.12	2,568.00	5.27	65.18	89.80	9.42	2,659.65	2,659.67	2,589.21	70.46	37.750		
2,506.00	2,506.00	2,668.12	2,668.00	5.50	67.83	89.80	9.42	2,659.65	2,659.67	2,586.34	73.33	36.269		
2,606.00	2,606.00	2,768.13	2,768.00	5.72	70.49	89.80	9.42	2,659.65	2,659.67	2,583.46	76.21	34.901		
2,706.00	2,706.00	2,868.13	2,868.00	5.95	73.14	89.80	9.42	2,659.65	2,659.67	2,580.59	79.08	33.632		
2,806.00	2,806.00	2,968.14	2,968.00	6.17	75.79	89.80	9.42	2,659.65	2,659.67	2,577.71	81.96	32.452		
2,906.00	2,906.00	3,068.14	3,068.00	6.40	78.44	89.80	9.42	2,659.65	2,659.67	2,574.83	84.83	31.352		
2,996.52	2,996.52	3,158.67	3,158.52	6.60	80.84	89.80	9.42	2,659.65	2,659.67	2,572.23	87.44	30.418		
3,000.00	3,000.00	3,162.15	3,162.00	6.60	80.93	-16.35	9.42	2,659.65	2,659.65	2,572.11	87.54	30.382		
3,025.00	3,024.95	3,187.10	3,186.95	6.61	81.59	-16.44	9.42	2,659.65	2,658.31	2,570.40	87.91	30.237		
3,050.00	3,049.69	3,211.84	3,211.69	6.62	82.25	-16.66	9.42	2,659.65	2,654.89	2,567.22	87.67	30.282		
3,075.00	3,074.02	3,236.18	3,236.02	6.63	82.89	-17.02	9.42	2,659.65	2,649.42	2,562.61	86.81	30.520		
3,100.00	3,097.76	3,259.92	3,259.76	6.66	83.52	-17.53	9.42	2,659.65	2,641.93	2,556.59	85.34	30.957		
3,125.00	3,120.74	3,282.89	3,282.74	6.69	84.13	-18.23	9.42	2,659.65	2,632.50	2,549.19	83.30	31.601		
3,150.00	3,142.76	3,304.92	3,304.76	6.72	84.71	-19.12	9.42	2,659.65	2,621.18	2,540.42	80.76	32.458		
3,175.00	3,163.68	3,325.83	3,325.68	6.76	85.27	-20.26	9.42	2,659.65	2,608.07	2,530.27	77.79	33.526		
3,200.00	3,183.32	3,345.48	3,345.32	6.80	85.79	-21.69	9.42	2,659.65	2,593.27	2,518.71	74.56	34.780		
3,225.00	3,201.54	3,363.70	3,363.54	6.87	86.27	-23.50	9.42	2,659.65	2,576.89	2,505.60	71.29	36.146		
3,250.00	3,218.20	3,380.36	3,380.20	7.01	86.71	-25.79	9.42	2,659.65	2,559.07	2,490.75	68.32	37.456		
3,275.00	3,233.17	3,395.33	3,395.17	7.19	87.11	-28.70	9.42	2,659.65	2,539.95	2,473.80	66.15	38.397		
3,300.00	3,246.34	3,408.50	3,408.34	7.42	87.46	-32.45	9.42	2,659.65	2,519.66	2,454.20	65.45	38.495		
3,325.00	3,257.61	3,419.77	3,419.61	7.70	87.76	-37.36	9.42	2,659.65	2,498.37	2,431.35	67.02	37.279		
3,350.00	3,266.89	3,429.06	3,428.89	8.03	88.00	-43.82	9.42	2,659.65	2,476.24	2,404.75	71.49	34.639		
3,375.00	3,274.12	3,436.28	3,436.12	8.41	88.20	-52.37	9.42	2,659.65	2,453.45	2,374.57	78.88	31.104		
3,400.00	3,279.23	3,441.39	3,441.23	8.83	88.33	-63.48	9.42	2,659.65	2,430.16	2,342.23	87.93	27.639		
3,425.00	3,282.19	3,444.35	3,444.19	9.29	88.41	-77.09	9.42	2,659.65	2,406.56	2,311.00	95.57	25.181		
3,446.52	3,283.00	3,445.16	3,445.00	9.71	88.43	-90.00	9.42	2,659.65	2,386.14	2,288.00	98.14	24.314		
3,500.00	3,283.00	3,445.16	3,445.00	10.82	88.43	-90.00	9.42	2,659.65	2,335.42	2,236.18	99.25	23.531		

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.35-T32N-R07W - San Juan 32-7 Unit 209A - Original Hole - Original Hole												Offset Site Error:	0.00 usft
Survey Program: 218-INC_ONLY<10												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	
3,600.00	3,283.00	3,445.16	3,445.00	13.10	88.43	-90.00	9.42	2,659.65	2,240.93	2,139.41	101.53	22.072	
3,700.00	3,283.00	3,445.16	3,445.00	15.54	88.43	-90.00	9.42	2,659.65	2,146.94	2,042.97	103.97	20.650	
3,800.00	3,283.00	3,445.16	3,445.00	18.08	88.43	-90.00	9.42	2,659.65	2,053.52	1,947.01	106.51	19.280	
3,900.00	3,283.00	3,445.16	3,445.00	20.68	88.43	-90.00	9.42	2,659.65	1,960.74	1,851.63	109.11	17.970	
4,000.00	3,283.00	3,445.16	3,445.00	23.33	88.43	-90.00	9.42	2,659.65	1,868.71	1,756.96	111.76	16.721	
4,100.00	3,283.00	3,445.16	3,445.00	26.00	88.43	-90.00	9.42	2,659.65	1,777.55	1,663.12	114.43	15.534	
4,200.00	3,283.00	3,445.16	3,445.00	28.69	88.43	-90.00	9.42	2,659.65	1,687.38	1,570.25	117.12	14.407	
4,300.00	3,283.00	3,445.16	3,445.00	31.40	88.43	-90.00	9.42	2,659.65	1,598.38	1,478.55	119.83	13.338	
4,400.00	3,283.00	3,445.16	3,445.00	34.12	88.43	-90.00	9.42	2,659.65	1,510.76	1,388.21	122.55	12.327	
4,500.00	3,283.00	3,445.16	3,445.00	36.85	88.43	-90.00	9.42	2,659.65	1,424.77	1,299.49	125.28	11.372	
4,600.00	3,283.00	3,445.16	3,445.00	39.59	88.43	-90.00	9.42	2,659.65	1,340.73	1,212.71	128.02	10.473	
4,700.00	3,283.00	3,445.16	3,445.00	42.33	88.43	-90.00	9.42	2,659.65	1,259.02	1,128.26	130.76	9.628	
4,772.52	3,283.00	3,445.16	3,445.00	44.32	88.43	-90.00	9.42	2,659.65	1,201.50	1,068.74	132.76	9.050	
4,800.00	3,283.00	3,445.16	3,445.00	45.08	88.43	-90.01	9.42	2,659.65	1,180.01	1,046.50	133.51	8.839	
4,900.00	3,282.96	3,445.13	3,444.96	47.83	88.43	-90.04	9.42	2,659.65	1,101.86	965.69	136.17	8.092	
5,000.00	3,282.88	3,445.05	3,444.88	50.58	88.43	-90.07	9.42	2,659.65	1,023.99	885.28	138.70	7.383	
5,100.00	3,282.76	3,444.92	3,444.76	53.33	88.43	-90.10	9.42	2,659.65	946.70	805.60	141.11	6.709	
5,200.00	3,282.59	3,444.75	3,444.59	56.05	88.42	-90.13	9.42	2,659.65	870.40	727.04	143.37	6.071	
5,300.00	3,282.38	3,444.54	3,444.38	58.74	88.42	-90.15	9.42	2,659.65	795.61	650.14	145.47	5.469	
5,311.84	3,282.35	3,444.52	3,444.35	59.06	88.41	-90.15	9.42	2,659.65	786.88	641.18	145.71	5.401	
5,400.00	3,282.14	3,444.31	3,444.14	61.41	88.41	-90.13	9.42	2,659.65	724.49	576.37	148.13	4.891	
5,500.00	3,281.90	3,444.07	3,443.90	64.09	88.40	-90.10	9.42	2,659.65	660.87	510.00	150.87	4.380	
5,600.00	3,281.66	3,443.83	3,443.66	66.78	88.40	-90.07	9.42	2,659.65	607.13	453.52	153.62	3.952	
5,700.00	3,281.43	3,443.59	3,443.43	69.47	88.39	-90.05	9.42	2,659.65	566.10	409.73	156.37	3.620	
5,800.00	3,281.19	3,443.35	3,443.19	72.17	88.38	-90.02	9.42	2,659.65	540.68	381.56	159.12	3.398	
5,890.70	3,280.97	3,443.14	3,442.97	74.63	88.38	-90.00	9.42	2,659.65	533.02	371.40	161.62	3.298 CC	
5,900.00	3,280.95	3,443.11	3,442.95	74.88	88.38	-90.00	9.42	2,659.65	533.10	371.23	161.87	3.293 ES, SF	
6,000.00	3,280.71	3,442.88	3,442.71	77.59	88.37	-89.97	9.42	2,659.65	544.11	379.48	164.63	3.305	
6,100.00	3,280.47	3,442.64	3,442.47	80.30	88.36	-89.95	9.42	2,659.65	572.64	405.26	167.38	3.421	
6,200.00	3,280.24	3,442.40	3,442.24	83.02	88.36	-89.92	9.42	2,659.65	616.26	446.12	170.14	3.622	
6,300.00	3,280.00	3,442.16	3,442.00	85.75	88.35	-89.90	9.42	2,659.65	672.04	499.14	172.89	3.887	
6,400.00	3,279.76	3,441.92	3,441.76	88.47	88.35	-89.87	9.42	2,659.65	737.22	561.57	175.65	4.197	
6,500.00	3,279.52	3,441.68	3,441.52	91.20	88.34	-89.84	9.42	2,659.65	809.54	631.13	178.41	4.538	
6,600.00	3,279.28	3,441.45	3,441.28	93.93	88.33	-89.82	9.42	2,659.65	887.25	706.08	181.17	4.897	
6,700.00	3,279.04	3,441.21	3,441.04	96.67	88.33	-89.79	9.42	2,659.65	969.06	785.13	183.93	5.269	
6,800.00	3,278.81	3,440.97	3,440.81	99.40	88.32	-89.77	9.42	2,659.65	1,054.01	867.32	186.69	5.646	
6,900.00	3,278.57	3,440.73	3,440.57	102.14	88.31	-89.74	9.42	2,659.65	1,141.40	951.95	189.45	6.025	
7,000.00	3,278.33	3,440.49	3,440.33	104.88	88.31	-89.72	9.42	2,659.65	1,230.71	1,038.50	192.21	6.403	
7,100.00	3,278.09	3,440.25	3,440.09	107.63	88.30	-89.69	9.42	2,659.65	1,321.56	1,126.59	194.97	6.778	
7,200.00	3,277.85	3,440.02	3,439.85	110.37	88.30	-89.66	9.42	2,659.65	1,413.64	1,215.91	197.73	7.149	
7,300.00	3,277.61	3,439.78	3,439.61	113.11	88.29	-89.64	9.42	2,659.65	1,506.73	1,306.24	200.49	7.515	
7,400.00	3,277.38	3,439.54	3,439.38	115.86	88.28	-89.61	9.42	2,659.65	1,600.65	1,397.40	203.25	7.875	
7,500.00	3,277.14	3,439.30	3,439.14	118.61	88.28	-89.59	9.42	2,659.65	1,695.27	1,489.26	206.02	8.229	
7,600.00	3,276.90	3,439.06	3,438.90	121.36	88.27	-89.56	9.42	2,659.65	1,790.48	1,581.70	208.78	8.576	
7,700.00	3,276.66	3,438.82	3,438.66	124.11	88.26	-89.54	9.42	2,659.65	1,886.18	1,674.64	211.54	8.916	
7,800.00	3,276.42	3,438.59	3,438.42	126.86	88.26	-89.51	9.42	2,659.65	1,982.30	1,768.00	214.30	9.250	
7,900.00	3,276.18	3,438.35	3,438.18	129.61	88.25	-89.49	9.42	2,659.65	2,078.79	1,861.73	217.07	9.577	
8,000.00	3,275.95	3,438.11	3,437.95	132.37	88.24	-89.46	9.42	2,659.65	2,175.60	1,955.77	219.83	9.897	
8,100.00	3,275.71	3,437.87	3,437.71	135.12	88.24	-89.43	9.42	2,659.65	2,272.68	2,050.09	222.59	10.210	
8,200.00	3,275.47	3,437.63	3,437.47	137.88	88.23	-89.41	9.42	2,659.65	2,370.01	2,144.66	225.36	10.517	
8,300.00	3,275.23	3,437.40	3,437.23	140.63	88.23	-89.38	9.42	2,659.65	2,467.55	2,239.43	228.12	10.817	
8,400.00	3,274.99	3,437.16	3,436.99	143.39	88.22	-89.36	9.42	2,659.65	2,565.28	2,334.40	230.88	11.111	

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.35-T32N-R07W - San Juan 32-7 Unit 209A - Original Hole - Original Hole													Offset Site Error: 0.00 usft
Survey Program: 218-INC_ONLY<10													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
8,500.00	3,274.76	3,436.92	3,436.76	146.15	88.21	-89.33	9.42	2,659.65	2,663.18	2,429.53	233.65	11.398	
8,600.00	3,274.52	3,436.68	3,436.52	148.91	88.21	-89.31	9.42	2,659.65	2,761.23	2,524.82	236.41	11.680	
8,700.00	3,274.28	3,436.44	3,436.28	151.67	88.20	-89.28	9.42	2,659.65	2,859.41	2,620.24	239.17	11.955	
8,800.00	3,274.04	3,436.20	3,436.04	154.43	88.19	-89.25	9.42	2,659.65	2,957.72	2,715.78	241.94	12.225	
8,900.00	3,273.80	3,435.97	3,435.80	157.19	88.19	-89.23	9.42	2,659.65	3,056.13	2,811.43	244.70	12.489	
9,000.00	3,273.56	3,435.73	3,435.56	159.95	88.18	-89.20	9.42	2,659.65	3,154.65	2,907.18	247.47	12.748	
9,100.00	3,273.33	3,435.49	3,435.33	162.71	88.18	-89.18	9.42	2,659.65	3,253.26	3,003.02	250.23	13.001	
9,200.00	3,273.09	3,435.25	3,435.09	165.47	88.17	-89.15	9.42	2,659.65	3,351.94	3,098.95	252.99	13.249	
9,300.00	3,272.85	3,435.01	3,434.85	168.23	88.16	-89.13	9.42	2,659.65	3,450.71	3,194.95	255.76	13.492	
9,400.00	3,272.61	3,434.77	3,434.61	170.99	88.16	-89.10	9.42	2,659.65	3,549.54	3,291.02	258.52	13.730	
9,500.00	3,272.37	3,434.54	3,434.37	173.76	88.15	-89.08	9.42	2,659.65	3,648.44	3,387.15	261.29	13.963	
9,600.00	3,272.13	3,434.30	3,434.13	176.52	88.14	-89.05	9.42	2,659.65	3,747.39	3,483.34	264.05	14.192	
9,700.00	3,271.90	3,434.06	3,433.90	179.28	88.14	-89.02	9.42	2,659.65	3,846.40	3,579.59	266.82	14.416	
9,800.00	3,271.66	3,433.82	3,433.66	182.05	88.13	-89.00	9.42	2,659.65	3,945.46	3,675.88	269.58	14.636	
9,900.00	3,271.42	3,433.58	3,433.42	184.81	88.12	-88.97	9.42	2,659.65	4,044.57	3,772.22	272.34	14.851	
10,000.00	3,271.18	3,433.34	3,433.18	187.58	88.12	-88.95	9.42	2,659.65	4,143.72	3,868.61	275.11	15.062	
10,100.00	3,270.94	3,433.11	3,432.94	190.34	88.11	-88.92	9.42	2,659.65	4,242.90	3,965.03	277.87	15.269	
10,200.00	3,270.70	3,432.87	3,432.70	193.11	88.11	-88.90	9.42	2,659.65	4,342.13	4,061.49	280.64	15.472	
10,300.00	3,270.47	3,432.63	3,432.47	195.87	88.10	-88.87	9.42	2,659.65	4,441.39	4,157.99	283.40	15.672	
10,400.00	3,270.23	3,432.39	3,432.23	198.64	88.09	-88.85	9.42	2,659.65	4,540.68	4,254.51	286.17	15.867	
10,500.00	3,269.99	3,432.15	3,431.99	201.40	88.09	-88.82	9.42	2,659.65	4,640.01	4,351.07	288.93	16.059	
10,600.00	3,269.75	3,431.91	3,431.75	204.17	88.08	-88.79	9.42	2,659.65	4,739.36	4,447.66	291.70	16.247	
10,700.00	3,269.51	3,431.68	3,431.51	206.94	88.07	-88.77	9.42	2,659.65	4,838.74	4,544.27	294.46	16.432	
10,800.00	3,269.27	3,431.44	3,431.27	209.70	88.07	-88.74	9.42	2,659.65	4,938.14	4,640.91	297.23	16.614	
10,900.00	3,269.04	3,431.20	3,431.04	212.47	88.06	-88.72	9.42	2,659.65	5,037.57	4,737.57	299.99	16.792	
11,000.00	3,268.80	3,430.96	3,430.80	215.24	88.06	-88.69	9.42	2,659.65	5,137.02	4,834.26	302.76	16.967	
11,100.00	3,268.56	3,430.72	3,430.56	218.01	88.05	-88.67	9.42	2,659.65	5,236.49	4,930.97	305.52	17.140	
11,200.00	3,268.32	3,430.48	3,430.32	220.77	88.04	-88.64	9.42	2,659.65	5,335.98	5,027.69	308.29	17.309	
11,300.00	3,268.08	3,430.25	3,430.08	223.54	88.04	-88.61	9.42	2,659.65	5,435.48	5,124.44	311.05	17.475	
11,335.01	3,268.00	3,430.16	3,430.00	224.51	88.03	-88.61	9.42	2,659.65	5,470.33	5,158.31	312.02	17.532	



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.35-T32N-R07W - San Juan 32-7 Unit 211R - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 122-INC_ONLY<10													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-166.61	-508.97	-121.19	523.84					
6.00	6.00	0.00	0.00	0.00	0.00	-166.61	-508.97	-121.19	523.58					
38.43	38.43	10.60	10.60	0.03	0.08	-166.61	-509.01	-121.19	523.24	523.13	0.11	4,738.835		
106.00	106.00	80.72	80.72	0.10	0.59	-166.61	-509.09	-121.19	523.31	522.62	0.69	759.021		
139.66	139.66	115.65	115.65	0.18	0.84	-166.61	-508.99	-121.19	523.22	522.21	1.02	513.407		
206.00	206.00	178.15	178.15	0.33	2.03	-166.61	-509.19	-121.19	523.42	521.06	2.36	221.866		
306.00	306.00	278.81	278.80	0.55	4.08	-166.62	-509.49	-121.19	523.71	519.07	4.64	112.963		
406.00	406.00	379.46	379.45	0.78	6.14	-166.62	-509.67	-121.19	523.88	516.97	6.91	75.782		
506.00	506.00	480.11	480.10	1.00	8.19	-166.63	-509.72	-121.19	523.92	514.73	9.19	57.012		
606.00	606.00	580.75	580.74	1.23	10.24	-166.62	-509.63	-121.19	523.84	512.38	11.47	45.686		
706.00	706.00	681.39	681.38	1.45	12.29	-166.62	-509.42	-121.19	523.64	509.90	13.74	38.103		
806.00	806.00	782.02	782.01	1.68	14.34	-166.61	-509.08	-121.19	523.31	507.29	16.02	32.668		
892.39	892.39	866.41	866.39	1.87	16.41	-166.61	-508.97	-121.19	523.20	504.92	18.28	28.628		
906.00	906.00	880.01	880.00	1.90	16.77	-166.61	-508.97	-121.19	523.20	504.53	18.67	28.029		
1,006.00	1,006.00	980.02	980.00	2.13	19.41	-166.61	-508.97	-121.19	523.20	501.66	21.54	24.295		
1,106.00	1,106.00	1,080.02	1,080.00	2.35	22.05	-166.61	-508.97	-121.19	523.20	498.79	24.40	21.438		
1,206.00	1,206.00	1,180.03	1,180.00	2.57	24.70	-166.61	-508.97	-121.19	523.20	495.92	27.27	19.183		
1,306.00	1,306.00	1,280.03	1,280.00	2.80	27.35	-166.61	-508.97	-121.19	523.20	493.05	30.14	17.356		
1,406.00	1,406.00	1,380.04	1,380.00	3.02	29.99	-166.61	-508.97	-121.19	523.20	490.18	33.02	15.846		
1,506.00	1,506.00	1,480.04	1,480.00	3.25	32.64	-166.61	-508.97	-121.19	523.20	487.30	35.89	14.577		
1,606.00	1,606.00	1,580.05	1,580.00	3.47	35.29	-166.61	-508.97	-121.19	523.20	484.43	38.76	13.497		
1,706.00	1,706.00	1,680.05	1,680.00	3.70	37.94	-166.61	-508.97	-121.19	523.20	481.56	41.64	12.565		
1,806.00	1,806.00	1,780.06	1,780.00	3.92	40.59	-166.61	-508.97	-121.19	523.20	478.68	44.51	11.754		
1,906.00	1,906.00	1,880.06	1,880.00	4.15	43.24	-166.61	-508.97	-121.19	523.20	475.81	47.39	11.041		
2,006.00	2,006.00	1,980.07	1,980.00	4.37	45.89	-166.61	-508.97	-121.19	523.20	472.93	50.26	10.409		
2,106.00	2,106.00	2,080.07	2,080.00	4.60	48.54	-166.61	-508.97	-121.19	523.20	470.06	53.14	9.846		
2,206.00	2,206.00	2,180.08	2,180.00	4.82	51.19	-166.61	-508.97	-121.19	523.20	467.18	56.01	9.341		
2,306.00	2,306.00	2,280.08	2,280.00	5.05	53.84	-166.61	-508.97	-121.19	523.20	464.31	58.89	8.885		
2,406.00	2,406.00	2,380.09	2,380.00	5.27	56.49	-166.61	-508.97	-121.19	523.20	461.43	61.76	8.471		
2,506.00	2,506.00	2,480.09	2,480.00	5.50	59.14	-166.61	-508.97	-121.19	523.20	458.56	64.64	8.095		
2,606.00	2,606.00	2,580.10	2,580.00	5.72	61.79	-166.61	-508.97	-121.19	523.20	455.68	67.51	7.750		
2,706.00	2,706.00	2,680.10	2,680.00	5.95	64.44	-166.61	-508.97	-121.19	523.20	452.81	70.39	7.433		
2,806.00	2,806.00	2,780.11	2,780.00	6.17	67.09	-166.61	-508.97	-121.19	523.20	449.93	73.26	7.142		
2,906.00	2,906.00	2,880.11	2,880.00	6.40	69.74	-166.61	-508.97	-121.19	523.20	447.06	76.14	6.872		
2,996.52	2,996.52	2,970.64	2,970.52	6.60	72.14	-166.61	-508.97	-121.19	523.20	444.46	78.74	6.645		
3,000.00	3,000.00	2,974.12	2,974.00	6.60	72.23	87.25	-508.97	-121.19	523.19	444.34	78.86	6.635		
3,025.00	3,024.95	2,999.07	2,998.95	6.61	72.89	87.41	-508.97	-121.19	523.13	443.61	79.52	6.578		
3,050.00	3,049.69	3,023.81	3,023.69	6.62	73.55	87.83	-508.97	-121.19	522.98	442.80	80.18	6.522		
3,075.00	3,074.02	3,048.14	3,048.02	6.63	74.19	88.47	-508.97	-121.19	522.79	441.96	80.83	6.468		
3,100.00	3,097.76	3,071.89	3,071.76	6.66	74.82	89.31	-508.97	-121.19	522.63	441.17	81.46	6.415		
3,117.50	3,113.93	3,088.06	3,087.93	6.68	75.25	90.00	-508.97	-121.19	522.59	440.69	81.90	6.381 CC		
3,125.00	3,120.74	3,094.86	3,094.74	6.69	75.43	90.31	-508.97	-121.19	522.60	440.52	82.08	6.367		
3,150.00	3,142.76	3,116.89	3,116.76	6.72	76.01	91.41	-508.97	-121.19	522.80	440.13	82.67	6.324		
3,175.00	3,163.68	3,137.80	3,137.68	6.76	76.57	92.55	-508.97	-121.19	523.37	440.13	83.25	6.287 ES		
3,200.00	3,183.32	3,157.45	3,157.32	6.80	77.09	93.66	-508.97	-121.19	524.45	440.66	83.79	6.259		
3,225.00	3,201.54	3,175.67	3,175.54	6.87	77.57	94.68	-508.97	-121.19	526.16	441.86	84.30	6.241		
3,250.00	3,218.20	3,192.33	3,192.20	7.01	78.01	95.53	-508.97	-121.19	528.65	443.86	84.79	6.235 SF		
3,275.00	3,233.17	3,207.30	3,207.17	7.19	78.41	96.15	-508.97	-121.19	532.04	446.77	85.27	6.240		
3,300.00	3,246.34	3,220.47	3,220.34	7.42	78.76	96.47	-508.97	-121.19	536.44	450.67	85.77	6.255		
3,325.00	3,257.61	3,231.74	3,231.61	7.70	79.06	96.44	-508.97	-121.19	541.91	455.60	86.31	6.279		
3,350.00	3,266.89	3,241.02	3,240.89	8.03	79.30	96.02	-508.97	-121.19	548.51	461.59	86.91	6.311		
3,375.00	3,274.12	3,248.25	3,248.12	8.41	79.49	95.15	-508.97	-121.19	556.24	468.66	87.58	6.351		

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.35-T32N-R07W - San Juan 32-7 Unit 211R - Original Hole - Original Hole													Offset Site Error: 0.00 usft	
Survey Program: 122-INC_ONLY<10													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 Centras (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
3,400.00	3,279.23	3,253.36	3,253.23	8.83	79.63	93.81	-508.97	-121.19	565.09	476.81	88.28	6.401		
3,425.00	3,282.19	3,256.32	3,256.19	9.29	79.71	91.97	-508.97	-121.19	574.99	486.04	88.95	6.464		
3,446.52	3,283.00	3,257.13	3,257.00	9.71	79.73	90.00	-508.97	-121.19	584.28	494.82	89.46	6.531		
3,500.00	3,283.00	3,257.13	3,257.00	10.82	79.73	90.00	-508.97	-121.19	610.08	519.51	90.57	6.736		
3,600.00	3,283.00	3,257.13	3,257.00	13.10	79.73	90.00	-508.97	-121.19	667.20	574.35	92.85	7.186		
3,700.00	3,283.00	3,257.13	3,257.00	15.54	79.73	90.00	-508.97	-121.19	733.56	638.27	95.29	7.698		
3,800.00	3,283.00	3,257.13	3,257.00	18.08	79.73	90.00	-508.97	-121.19	806.89	709.06	97.83	8.248		
3,900.00	3,283.00	3,257.13	3,257.00	20.68	79.73	90.00	-508.97	-121.19	885.45	785.02	100.44	8.816		
4,000.00	3,283.00	3,257.13	3,257.00	23.33	79.73	90.00	-508.97	-121.19	967.98	864.90	103.08	9.391		
4,100.00	3,283.00	3,257.13	3,257.00	26.00	79.73	90.00	-508.97	-121.19	1,053.54	947.79	105.75	9.962		
4,200.00	3,283.00	3,257.13	3,257.00	28.69	79.73	90.00	-508.97	-121.19	1,141.45	1,033.00	108.45	10.525		
4,300.00	3,283.00	3,257.13	3,257.00	31.40	79.73	90.00	-508.97	-121.19	1,231.20	1,120.05	111.16	11.076		
4,400.00	3,283.00	3,257.13	3,257.00	34.12	79.73	90.00	-508.97	-121.19	1,322.43	1,208.55	113.88	11.613		
4,500.00	3,283.00	3,257.13	3,257.00	36.85	79.73	90.00	-508.97	-121.19	1,414.84	1,298.24	116.61	12.134		
4,600.00	3,283.00	3,257.13	3,257.00	39.59	79.73	90.00	-508.97	-121.19	1,508.22	1,388.88	119.34	12.638		
4,700.00	3,283.00	3,257.13	3,257.00	42.33	79.73	90.00	-508.97	-121.19	1,602.40	1,480.32	122.09	13.125		
4,772.52	3,283.00	3,257.13	3,257.00	44.32	79.73	90.00	-508.97	-121.19	1,671.13	1,547.05	124.08	13.468		
4,800.00	3,283.00	3,257.13	3,257.00	45.08	79.73	89.98	-508.97	-121.19	1,697.31	1,572.48	124.83	13.597		
4,900.00	3,282.96	3,257.09	3,256.96	47.83	79.73	89.86	-508.97	-121.19	1,793.81	1,666.32	127.49	14.070		
5,000.00	3,282.88	3,257.02	3,256.88	50.58	79.73	89.66	-508.97	-121.19	1,891.81	1,761.78	130.03	14.549		
5,100.00	3,282.76	3,256.89	3,256.76	53.33	79.72	89.23	-508.97	-121.19	1,990.84	1,858.40	132.44	15.032		
5,200.00	3,282.59	3,256.72	3,256.59	56.05	79.72	87.93	-508.97	-121.19	2,090.51	1,955.85	134.66	15.525		
5,300.00	3,282.38	3,256.51	3,256.38	58.74	79.71	-25.36	-508.97	-121.19	2,190.46	2,126.80	136.66	16.018		
5,311.84	3,282.35	3,256.48	3,256.35	59.06	79.71	-71.88	-508.97	-121.19	2,202.30	2,071.45	136.66	16.830		
5,400.00	3,282.14	3,256.27	3,256.14	61.41	79.71	-71.20	-508.97	-121.19	2,290.46	2,157.78	132.68	17.263		
5,500.00	3,281.90	3,256.04	3,255.90	64.09	79.70	-70.44	-508.97	-121.19	2,390.46	2,255.75	134.71	17.745		
5,600.00	3,281.66	3,255.80	3,255.66	66.78	79.69	-69.69	-508.97	-121.19	2,490.45	2,353.75	136.71	18.218		
5,700.00	3,281.43	3,255.56	3,255.43	69.47	79.69	-68.95	-508.97	-121.19	2,590.45	2,451.79	138.66	18.682		
5,800.00	3,281.19	3,255.32	3,255.19	72.17	79.68	-68.21	-508.97	-121.19	2,690.45	2,549.87	140.58	19.138		
5,900.00	3,280.95	3,255.08	3,254.95	74.88	79.68	-67.48	-508.97	-121.19	2,790.45	2,647.99	142.46	19.587		
6,000.00	3,280.71	3,254.84	3,254.71	77.59	79.67	-66.76	-508.97	-121.19	2,890.45	2,746.14	144.31	20.030		
6,100.00	3,280.47	3,254.61	3,254.47	80.30	79.66	-66.04	-508.97	-121.19	2,990.44	2,844.33	146.11	20.467		
6,200.00	3,280.24	3,254.37	3,254.24	83.02	79.66	-65.33	-508.97	-121.19	3,090.44	2,942.56	147.88	20.899		
6,300.00	3,280.00	3,254.13	3,254.00	85.75	79.65	-64.64	-508.97	-121.19	3,190.44	3,040.83	149.61	21.325		
6,400.00	3,279.76	3,253.89	3,253.76	88.47	79.64	-63.94	-508.97	-121.19	3,290.44	3,139.14	151.30	21.748		
6,500.00	3,279.52	3,253.65	3,253.52	91.20	79.64	-63.26	-508.97	-121.19	3,390.44	3,237.48	152.96	22.166		
6,600.00	3,279.28	3,253.42	3,253.28	93.93	79.63	-62.59	-508.97	-121.19	3,490.44	3,335.86	154.58	22.581		
6,700.00	3,279.04	3,253.18	3,253.04	96.67	79.63	-61.92	-508.97	-121.19	3,590.44	3,434.28	156.16	22.992		
6,800.00	3,278.81	3,252.94	3,252.81	99.40	79.62	-61.26	-508.97	-121.19	3,690.43	3,532.73	157.71	23.401		
6,900.00	3,278.57	3,252.70	3,252.57	102.14	79.61	-60.61	-508.97	-121.19	3,790.43	3,631.21	159.22	23.806		
7,000.00	3,278.33	3,252.46	3,252.33	104.88	79.61	-59.97	-508.97	-121.19	3,890.43	3,729.74	160.70	24.210		
7,100.00	3,278.09	3,252.22	3,252.09	107.63	79.60	-59.33	-508.97	-121.19	3,990.43	3,828.29	162.14	24.611		
7,200.00	3,277.85	3,251.99	3,251.85	110.37	79.59	-58.71	-508.97	-121.19	4,090.43	3,926.88	163.55	25.010		
7,300.00	3,277.61	3,251.75	3,251.61	113.11	79.59	-58.09	-508.97	-121.19	4,190.43	4,025.50	164.93	25.408		
7,400.00	3,277.38	3,251.51	3,251.38	115.86	79.58	-57.48	-508.97	-121.19	4,290.43	4,124.15	166.27	25.803		
7,500.00	3,277.14	3,251.27	3,251.14	118.61	79.58	-56.88	-508.97	-121.19	4,390.43	4,222.84	167.59	26.198		
7,600.00	3,276.90	3,251.03	3,250.90	121.36	79.57	-56.29	-508.97	-121.19	4,490.43	4,321.56	168.87	26.591		
7,700.00	3,276.66	3,250.79	3,250.66	124.11	79.56	-55.70	-508.97	-121.19	4,590.42	4,420.30	170.12	26.983		
7,800.00	3,276.42	3,250.56	3,250.42	126.86	79.56	-55.12	-508.97	-121.19	4,690.42	4,519.08	171.35	27.374		
7,900.00	3,276.18	3,250.32	3,250.18	129.61	79.55	-54.56	-508.97	-121.19	4,790.42	4,617.88	172.54	27.764		
8,000.00	3,275.95	3,250.08	3,249.95	132.37	79.54	-53.99	-508.97	-121.19	4,890.42	4,716.72	173.71	28.154		
8,100.00	3,275.71	3,249.84	3,249.71	135.12	79.54	-53.44	-508.97	-121.19	4,990.42	4,815.58	174.84	28.542		

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 211 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6558.00usft
Reference Site:	Sec.35-T32N-R07W	MD Reference:	KB @ 6558.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 211 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev1	Offset TVD Reference:	Offset Datum

Offset Design Sec.35-T32N-R07W - San Juan 32-7 Unit 211R - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 122-INC_ONLY<10													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		
8,200.00	3,275.47	3,249.60	3,249.47	137.88	79.53	-52.90	-508.97	-121.19	5,090.42	4,914.47	175.96	28.930		
8,300.00	3,275.23	3,249.36	3,249.23	140.63	79.52	-52.36	-508.97	-121.19	5,190.42	5,013.38	177.04	29.318		
8,400.00	3,274.99	3,249.13	3,248.99	143.39	79.52	-51.83	-508.97	-121.19	5,290.42	5,112.32	178.10	29.705		
8,500.00	3,274.76	3,248.89	3,248.76	146.15	79.51	-51.31	-508.97	-121.19	5,390.42	5,211.28	179.14	30.091		
8,600.00	3,274.52	3,248.65	3,248.52	148.91	79.51	-50.79	-508.97	-121.19	5,490.42	5,310.27	180.15	30.477		
8,700.00	3,274.28	3,248.41	3,248.28	151.67	79.50	-50.28	-508.97	-121.19	5,590.42	5,409.28	181.13	30.863		
8,800.00	3,274.04	3,248.17	3,248.04	154.43	79.49	-49.78	-508.97	-121.19	5,690.42	5,508.32	182.10	31.249		
8,900.00	3,273.80	3,247.93	3,247.80	157.19	79.49	-49.29	-508.97	-121.19	5,790.42	5,607.37	183.04	31.634		
9,000.00	3,273.56	3,247.70	3,247.56	159.95	79.48	-48.80	-508.97	-121.19	5,890.42	5,706.45	183.96	32.019		
9,100.00	3,273.33	3,247.46	3,247.33	162.71	79.47	-48.33	-508.97	-121.19	5,990.41	5,805.55	184.86	32.404		
9,200.00	3,273.09	3,247.22	3,247.09	165.47	79.47	-47.85	-508.97	-121.19	6,090.41	5,904.67	185.74	32.789		
9,300.00	3,272.85	3,246.98	3,246.85	168.23	79.46	-47.39	-508.97	-121.19	6,190.41	6,003.81	186.61	33.174		
9,400.00	3,272.61	3,246.74	3,246.61	170.99	79.46	-46.93	-508.97	-121.19	6,290.41	6,102.96	187.45	33.558		
9,500.00	3,272.37	3,246.50	3,246.37	173.76	79.45	-46.48	-508.97	-121.19	6,390.41	6,202.14	188.27	33.943		
9,600.00	3,272.13	3,246.27	3,246.13	176.52	79.44	-46.04	-508.97	-121.19	6,490.41	6,301.33	189.08	34.327		
9,700.00	3,271.90	3,246.03	3,245.90	179.28	79.44	-45.60	-508.97	-121.19	6,590.41	6,400.55	189.87	34.711		
9,800.00	3,271.66	3,245.79	3,245.66	182.05	79.43	-45.17	-508.97	-121.19	6,690.41	6,499.77	190.64	35.095		
9,900.00	3,271.42	3,245.55	3,245.42	184.81	79.42	-44.74	-508.97	-121.19	6,790.41	6,599.02	191.39	35.479		
10,000.00	3,271.18	3,245.31	3,245.18	187.58	79.42	-44.32	-508.97	-121.19	6,890.41	6,698.28	192.13	35.863		
10,100.00	3,270.94	3,245.08	3,244.94	190.34	79.41	-43.91	-508.97	-121.19	6,990.41	6,797.55	192.86	36.246		
10,200.00	3,270.70	3,244.84	3,244.70	193.11	79.40	-43.50	-508.97	-121.19	7,090.41	6,896.84	193.57	36.630		
10,300.00	3,270.47	3,244.60	3,244.47	195.87	79.40	-43.10	-508.97	-121.19	7,190.41	6,996.14	194.27	37.013		
10,400.00	3,270.23	3,244.36	3,244.23	198.64	79.39	-42.71	-508.97	-121.19	7,290.41	7,095.46	194.95	37.397		
10,500.00	3,269.99	3,244.12	3,243.99	201.40	79.39	-42.32	-508.97	-121.19	7,390.41	7,194.79	195.62	37.780		
10,600.00	3,269.75	3,243.88	3,243.75	204.17	79.38	-41.94	-508.97	-121.19	7,490.41	7,294.13	196.28	38.163		
10,700.00	3,269.51	3,243.65	3,243.51	206.94	79.37	-41.56	-508.97	-121.19	7,590.41	7,393.48	196.92	38.545		
10,800.00	3,269.27	3,243.41	3,243.27	209.70	79.37	-41.19	-508.97	-121.19	7,690.40	7,492.85	197.55	38.928		
10,900.00	3,269.04	3,243.17	3,243.04	212.47	79.36	-40.82	-508.97	-121.19	7,790.40	7,592.23	198.18	39.310		
11,000.00	3,268.80	3,242.93	3,242.80	215.24	79.35	-40.46	-508.97	-121.19	7,890.40	7,691.62	198.79	39.693		
11,100.00	3,268.56	3,242.69	3,242.56	218.01	79.35	-40.10	-508.97	-121.19	7,990.40	7,791.01	199.39	40.075		
11,200.00	3,268.32	3,242.45	3,242.32	220.77	79.34	-39.75	-508.97	-121.19	8,090.40	7,890.42	199.98	40.456		
11,300.00	3,268.08	3,242.22	3,242.08	223.54	79.34	-39.41	-508.97	-121.19	8,190.40	7,989.84	200.56	40.838		
11,335.01	3,268.00	3,242.13	3,242.00	224.51	79.33	-39.29	-508.97	-121.19	8,225.41	8,024.65	200.76	40.971		

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 025A - Original Hole - Original Hole											Offset Site Error: 0.00 usft
Survey Program: 129-INC_ONLY<10											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)			
0.00	0.00	0.00	0.00	0.00	0.00	90.65	-89.95	7,891.67	7,892.19		
6.00	6.00	2.88	2.88	0.00	0.06	90.65	-89.99	7,891.67	7,892.19		
106.00	106.00	104.73	104.73	0.10	2.04	90.65	-90.21	7,891.67	7,892.19	7,890.04	2.14 3,680.191
131.00	131.00	129.00	129.00	0.16	2.52	90.65	-89.95	7,891.67	7,892.19	7,889.51	2.67 2,951.521
206.00	206.00	204.50	204.49	0.33	6.65	90.65	-90.15	7,891.67	7,892.19	7,885.21	6.98 1,130.924
306.00	306.00	304.19	304.16	0.55	12.83	90.65	-89.71	7,891.67	7,892.18	7,878.80	13.38 589.813
366.43	366.43	364.47	364.41	0.69	16.71	90.65	-89.65	7,891.67	7,892.18	7,874.79	17.39 453.757
406.00	406.00	403.96	403.88	0.78	19.24	90.65	-89.68	7,891.67	7,892.18	7,872.16	20.02 394.189
506.00	506.00	504.30	504.19	1.00	25.66	90.65	-89.94	7,891.67	7,892.19	7,865.53	26.66 296.051
593.86	593.86	591.99	591.85	1.20	30.46	90.65	-89.85	7,891.67	7,892.18	7,860.52	31.66 249.273
606.00	606.00	604.11	603.97	1.23	31.13	90.65	-89.85	7,891.67	7,892.18	7,859.83	32.35 243.944
706.00	706.00	704.61	704.44	1.45	36.37	90.65	-89.83	7,891.67	7,892.18	7,854.36	37.82 208.663
770.81	770.81	768.98	768.80	1.60	39.08	90.65	-89.67	7,891.67	7,892.18	7,851.50	40.68 194.009
806.00	806.00	803.95	803.76	1.68	40.56	90.65	-89.72	7,891.67	7,892.18	7,849.95	42.23 186.882
906.00	906.00	904.36	904.16	1.90	44.15	90.65	-89.85	7,891.67	7,892.18	7,846.14	46.05 171.389
1,006.00	1,006.00	1,004.30	1,004.09	2.13	47.09	90.65	-89.70	7,891.67	7,892.18	7,842.96	49.22 160.346
1,106.00	1,106.00	1,104.24	1,104.02	2.35	50.04	90.65	-89.63	7,891.67	7,892.18	7,839.79	52.39 150.639
1,153.27	1,153.27	1,151.48	1,151.26	2.46	51.43	90.65	-89.62	7,891.67	7,892.18	7,838.29	53.89 146.449
1,206.00	1,206.00	1,204.18	1,203.96	2.57	52.99	90.65	-89.63	7,891.67	7,892.18	7,836.62	55.56 142.041
1,306.00	1,306.00	1,304.14	1,303.90	2.80	55.94	90.65	-89.71	7,891.67	7,892.18	7,833.45	58.73 134.370
1,406.00	1,406.00	1,404.09	1,403.85	3.02	58.88	90.65	-89.86	7,891.67	7,892.19	7,830.28	61.91 127.486
1,506.00	1,506.00	1,504.68	1,504.44	3.25	61.15	90.65	-89.63	7,891.67	7,892.18	7,827.78	64.40 122.551
1,606.00	1,606.00	1,604.43	1,604.18	3.47	62.84	90.65	-89.28	7,891.67	7,892.18	7,825.86	66.31 119.011
1,679.73	1,679.73	1,677.98	1,677.73	3.64	64.09	90.65	-89.20	7,891.67	7,892.18	7,824.45	67.73 116.528
1,706.00	1,706.00	1,704.18	1,703.93	3.70	64.53	90.65	-89.21	7,891.67	7,892.18	7,823.95	68.23 115.669
1,806.00	1,806.00	1,803.95	1,803.69	3.92	66.22	90.65	-89.43	7,891.67	7,892.18	7,822.03	70.15 112.510
1,906.00	1,906.00	1,903.72	1,903.45	4.15	67.91	90.65	-89.93	7,891.67	7,892.19	7,820.12	72.06 109.518
2,006.00	2,006.00	2,004.27	2,004.00	4.37	68.72	90.65	-89.95	7,891.67	7,892.19	7,819.09	73.09 107.973
2,106.00	2,106.00	2,104.27	2,104.00	4.60	69.49	90.65	-89.95	7,891.67	7,892.19	7,818.09	74.09 106.520
2,206.00	2,206.00	2,204.27	2,204.00	4.82	70.27	90.65	-89.95	7,891.67	7,892.19	7,817.10	75.09 105.106
2,306.00	2,306.00	2,304.27	2,304.00	5.05	71.04	90.65	-89.95	7,891.67	7,892.19	7,816.10	76.08 103.729
2,406.00	2,406.00	2,404.27	2,404.00	5.27	71.81	90.65	-89.95	7,891.67	7,892.19	7,815.10	77.08 102.387
2,506.00	2,506.00	2,504.27	2,504.00	5.50	72.58	90.65	-89.95	7,891.67	7,892.19	7,814.11	78.08 101.080
2,606.00	2,606.00	2,604.16	2,603.89	5.72	73.53	90.65	-90.04	7,891.67	7,892.19	7,812.94	79.25 99.584
2,706.00	2,706.00	2,704.32	2,704.05	5.95	74.63	90.65	-90.08	7,891.67	7,892.19	7,811.61	80.58 97.945
2,806.00	2,806.00	2,804.27	2,804.00	6.17	75.74	90.65	-89.95	7,891.67	7,892.19	7,810.27	81.91 96.347
2,906.00	2,906.00	2,904.27	2,904.00	6.40	77.16	90.65	-89.95	7,891.67	7,892.19	7,808.63	83.55 94.455
2,996.52	2,996.52	2,994.79	2,994.52	6.60	78.44	90.65	-89.95	7,891.67	7,892.19	7,807.15	85.04 92.806
3,000.00	3,000.00	2,998.27	2,998.00	6.60	78.49	-15.50	-89.95	7,891.67	7,892.17	7,807.06	85.10 92.738
3,025.00	3,024.95	3,023.23	3,022.95	6.61	78.84	-15.57	-89.95	7,891.67	7,890.82	7,805.65	85.18 92.640
3,050.00	3,049.69	3,047.96	3,047.69	6.62	79.19	-15.77	-89.95	7,891.67	7,887.39	7,802.73	84.66 93.169
3,075.00	3,074.02	3,072.30	3,072.02	6.63	79.54	-16.09	-89.95	7,891.67	7,881.89	7,798.35	83.54 94.345
3,100.00	3,097.76	3,096.04	3,095.76	6.66	79.87	-16.55	-89.95	7,891.67	7,874.37	7,792.52	81.86 96.197
3,125.00	3,120.74	3,119.01	3,118.74	6.69	80.20	-17.16	-89.95	7,891.67	7,864.89	7,785.26	79.63 98.766
3,150.00	3,142.76	3,141.04	3,140.76	6.72	80.51	-17.96	-89.95	7,891.67	7,853.51	7,776.59	76.92 102.096
3,175.00	3,163.68	3,161.95	3,161.68	6.76	80.81	-18.98	-89.95	7,891.67	7,840.33	7,766.52	73.82 106.215
3,200.00	3,183.32	3,181.59	3,181.32	6.80	81.09	-20.26	-89.95	7,891.67	7,825.45	7,755.01	70.44 111.097
3,225.00	3,201.54	3,199.81	3,199.54	6.87	81.34	-21.88	-89.95	7,891.67	7,808.98	7,741.99	66.98 116.583
3,250.00	3,218.20	3,216.47	3,216.20	7.01	81.58	-23.93	-89.95	7,891.67	7,791.04	7,727.30	63.74 122.227
3,275.00	3,233.17	3,231.44	3,231.17	7.19	81.79	-26.57	-89.95	7,891.67	7,771.78	7,710.62	61.16 127.077
3,300.00	3,246.34	3,244.62	3,244.34	7.42	81.98	-30.01	-89.95	7,891.67	7,751.34	7,691.48	59.86 129.496
3,325.00	3,257.61	3,255.89	3,255.61	7.70	82.14	-34.56	-89.95	7,891.67	7,729.88	7,669.23	60.65 127.458

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 025A - Original Hole - Original Hole														Offset Site Error:	0.00 usft
Survey Program: 129-INC_ONLY<10														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)							
3,350.00	3,266.89	3,265.17	3,264.89	8.03	82.27	-40.71	-89.95	7,891.67	7,707.55	7,643.22	64.33	119.815			
3,375.00	3,274.12	3,272.39	3,272.12	8.41	82.37	-49.11	-89.95	7,891.67	7,684.54	7,613.27	71.27	107.820			
3,400.00	3,279.23	3,277.51	3,277.23	8.83	82.44	-60.55	-89.95	7,891.67	7,661.02	7,580.41	80.61	95.039			
3,425.00	3,282.19	3,280.47	3,280.19	9.29	82.49	-75.36	-89.95	7,891.67	7,637.17	7,547.97	89.19	85.624			
3,446.52	3,283.00	3,281.28	3,281.00	9.71	82.50	-90.00	-89.95	7,891.67	7,616.51	7,524.30	92.20	82.605			
3,500.00	3,283.00	3,281.28	3,281.00	10.82	82.50	-90.00	-89.95	7,891.67	7,565.13	7,471.82	93.31	81.072			
3,600.00	3,283.00	3,281.28	3,281.00	13.10	82.50	-90.00	-89.95	7,891.67	7,469.15	7,373.56	95.59	78.136			
3,700.00	3,283.00	3,281.28	3,281.00	15.54	82.50	-90.00	-89.95	7,891.67	7,373.27	7,275.23	98.03	75.211			
3,800.00	3,283.00	3,281.28	3,281.00	18.08	82.50	-90.00	-89.95	7,891.67	7,277.50	7,176.93	100.58	72.358			
3,900.00	3,283.00	3,281.28	3,281.00	20.68	82.50	-90.00	-89.95	7,891.67	7,181.85	7,078.67	103.18	69.606			
4,000.00	3,283.00	3,281.28	3,281.00	23.33	82.50	-90.00	-89.95	7,891.67	7,086.32	6,980.50	105.82	66.964			
4,100.00	3,283.00	3,281.28	3,281.00	26.00	82.50	-90.00	-89.95	7,891.67	6,990.91	6,882.42	108.50	64.435			
4,200.00	3,283.00	3,281.28	3,281.00	28.69	82.50	-90.00	-89.95	7,891.67	6,895.64	6,784.45	111.19	62.017			
4,300.00	3,283.00	3,281.28	3,281.00	31.40	82.50	-90.00	-89.95	7,891.67	6,800.49	6,686.60	113.90	59.707			
4,400.00	3,283.00	3,281.28	3,281.00	34.12	82.50	-90.00	-89.95	7,891.67	6,705.50	6,588.88	116.62	57.499			
4,500.00	3,283.00	3,281.28	3,281.00	36.85	82.50	-90.00	-89.95	7,891.67	6,610.64	6,491.30	119.35	55.389			
4,600.00	3,283.00	3,281.28	3,281.00	39.59	82.50	-90.00	-89.95	7,891.67	6,515.95	6,393.86	122.09	53.372			
4,700.00	3,283.00	3,281.28	3,281.00	42.33	82.50	-90.00	-89.95	7,891.67	6,421.41	6,296.58	124.83	51.442			
4,772.52	3,283.00	3,281.28	3,281.00	44.32	82.50	-90.00	-89.95	7,891.67	6,352.95	6,226.13	126.82	50.094			
4,800.00	3,283.00	3,281.27	3,281.00	45.08	82.50	-90.02	-89.95	7,891.67	6,326.97	6,199.40	127.57	49.596			
4,900.00	3,282.96	3,281.24	3,280.96	47.83	82.50	-90.11	-89.95	7,891.67	6,231.50	6,101.27	130.23	47.850			
5,000.00	3,282.88	3,281.16	3,280.88	50.58	82.49	-90.25	-89.95	7,891.67	6,134.71	6,001.94	132.77	46.206			
5,100.00	3,282.76	3,281.04	3,280.76	53.33	82.49	-90.46	-89.95	7,891.67	6,036.81	5,901.64	135.17	44.661			
5,200.00	3,282.59	3,280.87	3,280.59	56.05	82.49	-90.83	-89.95	7,891.67	5,938.03	5,800.61	137.42	43.210			
5,300.00	3,282.38	3,280.66	3,280.38	58.74	82.49	-91.66	-89.95	7,891.67	5,838.59	5,699.11	139.48	41.859			
5,311.84	3,282.35	3,280.63	3,280.35	59.06	82.49	-91.84	-89.95	7,891.67	5,826.79	5,687.08	139.71	41.707			
5,400.00	3,282.14	3,280.42	3,280.14	61.41	82.48	-91.81	-89.95	7,891.67	5,738.88	5,596.74	142.13	40.377			
5,500.00	3,281.90	3,280.18	3,279.90	64.09	82.48	-91.78	-89.95	7,891.67	5,639.16	5,494.28	144.88	38.922			
5,600.00	3,281.66	3,279.94	3,279.66	66.78	82.48	-91.75	-89.95	7,891.67	5,539.46	5,391.83	147.63	37.521			
5,700.00	3,281.43	3,279.70	3,279.43	69.47	82.47	-91.72	-89.95	7,891.67	5,439.77	5,289.38	150.39	36.171			
5,800.00	3,281.19	3,279.47	3,279.19	72.17	82.47	-91.69	-89.95	7,891.67	5,340.09	5,186.95	153.14	34.870			
5,900.00	3,280.95	3,279.23	3,278.95	74.88	82.47	-91.65	-89.95	7,891.67	5,240.42	5,084.52	155.90	33.614			
6,000.00	3,280.71	3,278.99	3,278.71	77.59	82.46	-91.62	-89.95	7,891.67	5,140.77	4,982.11	158.66	32.402			
6,100.00	3,280.47	3,278.75	3,278.47	80.30	82.46	-91.59	-89.95	7,891.67	5,041.13	4,879.71	161.42	31.230			
6,200.00	3,280.24	3,278.51	3,278.24	83.02	82.46	-91.56	-89.95	7,891.67	4,941.50	4,777.32	164.18	30.099			
6,300.00	3,280.00	3,278.27	3,278.00	85.75	82.45	-91.53	-89.95	7,891.67	4,841.89	4,674.95	166.94	29.004			
6,400.00	3,279.76	3,278.04	3,277.76	88.47	82.45	-91.50	-89.95	7,891.67	4,742.30	4,572.60	169.70	27.945			
6,500.00	3,279.52	3,277.80	3,277.52	91.20	82.45	-91.46	-89.95	7,891.67	4,642.72	4,470.26	172.46	26.920			
6,600.00	3,279.28	3,277.56	3,277.28	93.93	82.44	-91.43	-89.95	7,891.67	4,543.16	4,367.94	175.23	25.927			
6,700.00	3,279.04	3,277.32	3,277.04	96.67	82.44	-91.40	-89.95	7,891.67	4,443.62	4,265.63	177.99	24.966			
6,800.00	3,278.81	3,277.08	3,276.81	99.40	82.44	-91.37	-89.95	7,891.67	4,344.11	4,163.35	180.75	24.033			
6,900.00	3,278.57	3,276.84	3,276.57	102.14	82.43	-91.34	-89.95	7,891.67	4,244.61	4,061.09	183.52	23.129			
7,000.00	3,278.33	3,276.61	3,276.33	104.88	82.43	-91.31	-89.95	7,891.67	4,145.14	3,958.86	186.28	22.252			
7,100.00	3,278.09	3,276.37	3,276.09	107.63	82.43	-91.27	-89.95	7,891.67	4,045.70	3,856.65	189.05	21.400			
7,200.00	3,277.85	3,276.13	3,275.85	110.37	82.42	-91.24	-89.95	7,891.67	3,946.28	3,754.46	191.82	20.573			
7,300.00	3,277.61	3,275.89	3,275.61	113.11	82.42	-91.21	-89.95	7,891.67	3,846.89	3,652.31	194.58	19.770			
7,400.00	3,277.38	3,275.65	3,275.38	115.86	82.42	-91.18	-89.95	7,891.67	3,747.54	3,550.19	197.35	18.989			
7,500.00	3,277.14	3,275.41	3,275.14	118.61	82.41	-91.15	-89.95	7,891.67	3,648.22	3,448.11	200.12	18.230			
7,600.00	3,276.90	3,275.18	3,274.90	121.36	82.41	-91.12	-89.95	7,891.67	3,548.94	3,346.06	202.88	17.492			
7,700.00	3,276.66	3,274.94	3,274.66	124.11	82.41	-91.08	-89.95	7,891.67	3,449.70	3,244.05	205.65	16.774			
7,800.00	3,276.42	3,274.70	3,274.42	126.86	82.40	-91.05	-89.95	7,891.67	3,350.51	3,142.09	208.42	16.076			
7,900.00	3,276.18	3,274.46	3,274.18	129.61	82.40	-91.02	-89.95	7,891.67	3,251.37	3,040.18	211.19	15.396			

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 025A - Original Hole - Original Hole												Offset Site Error:		0.00 usft
Survey Program: 129-INC_ONLY<10												Offset Well Error:		0.00 usft
Offset				Semi Major Axis			Distance					Warning		
Reference	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum		Separation	
Depth	Depth	Depth	Depth	Reference	Offset	Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
8,000.00	3,275.95	3,274.22	3,273.95	132.37	82.40	-90.99	-89.95	7,891.67	3,152.28	2,938.32	213.96	14.733		
8,100.00	3,275.71	3,273.98	3,273.71	135.12	82.39	-90.96	-89.95	7,891.67	3,053.25	2,836.52	216.73	14.088		
8,200.00	3,275.47	3,273.75	3,273.47	137.88	82.39	-90.93	-89.95	7,891.67	2,954.28	2,734.79	219.49	13.459		
8,300.00	3,275.23	3,273.51	3,273.23	140.63	82.39	-90.89	-89.95	7,891.67	2,855.39	2,633.13	222.26	12.847		
8,400.00	3,274.99	3,273.27	3,272.99	143.39	82.38	-90.86	-89.95	7,891.67	2,756.58	2,531.55	225.03	12.250		
8,500.00	3,274.76	3,273.03	3,272.76	146.15	82.38	-90.83	-89.95	7,891.67	2,657.86	2,430.05	227.80	11.667		
8,600.00	3,274.52	3,272.79	3,272.52	148.91	82.38	-90.80	-89.95	7,891.67	2,559.23	2,328.66	230.57	11.099		
8,700.00	3,274.28	3,272.56	3,272.28	151.67	82.37	-90.77	-89.95	7,891.67	2,460.72	2,227.38	233.34	10.546		
8,800.00	3,274.04	3,272.32	3,272.04	154.43	82.37	-90.74	-89.95	7,891.67	2,362.33	2,126.22	236.11	10.005		
8,900.00	3,273.80	3,272.08	3,271.80	157.19	82.37	-90.70	-89.95	7,891.67	2,264.08	2,025.20	238.88	9.478		
9,000.00	3,273.56	3,271.84	3,271.56	159.95	82.36	-90.67	-89.95	7,891.67	2,165.99	1,924.34	241.65	8.963		
9,100.00	3,273.33	3,271.60	3,271.33	162.71	82.36	-90.64	-89.95	7,891.67	2,068.09	1,823.67	244.42	8.461		
9,200.00	3,273.09	3,271.36	3,271.09	165.47	82.36	-90.61	-89.95	7,891.67	1,970.39	1,723.20	247.19	7.971		
9,300.00	3,272.85	3,271.13	3,270.85	168.23	82.35	-90.58	-89.95	7,891.67	1,872.94	1,622.98	249.96	7.493		
9,400.00	3,272.61	3,270.89	3,270.61	170.99	82.35	-90.55	-89.95	7,891.67	1,775.78	1,523.05	252.73	7.026		
9,500.00	3,272.37	3,270.65	3,270.37	173.76	82.35	-90.51	-89.95	7,891.67	1,678.94	1,423.44	255.50	6.571		
9,600.00	3,272.13	3,270.41	3,270.13	176.52	82.34	-90.48	-89.95	7,891.67	1,582.50	1,324.23	258.27	6.127		
9,700.00	3,271.90	3,270.17	3,269.90	179.28	82.34	-90.45	-89.95	7,891.67	1,486.53	1,225.49	261.04	5.695		
9,800.00	3,271.66	3,269.93	3,269.66	182.05	82.34	-90.42	-89.95	7,891.67	1,391.13	1,127.32	263.81	5.273		
9,900.00	3,271.42	3,269.70	3,269.42	184.81	82.33	-90.39	-89.95	7,891.67	1,296.42	1,029.84	266.58	4.863		
10,000.00	3,271.18	3,269.46	3,269.18	187.58	82.33	-90.36	-89.95	7,891.67	1,202.57	933.22	269.35	4.465		
10,100.00	3,270.94	3,269.22	3,268.94	190.34	82.33	-90.32	-89.95	7,891.67	1,109.79	837.67	272.12	4.078		
10,200.00	3,270.70	3,268.98	3,268.70	193.11	82.32	-90.29	-89.95	7,891.67	1,018.38	743.49	274.89	3.705		
10,300.00	3,270.47	3,268.74	3,268.47	195.87	82.32	-90.26	-89.95	7,891.67	928.74	651.08	277.66	3.345		
10,400.00	3,270.23	3,268.50	3,268.23	198.64	82.32	-90.23	-89.95	7,891.67	841.45	561.01	280.44	3.000		
10,500.00	3,269.99	3,268.27	3,267.99	201.40	82.31	-90.20	-89.95	7,891.67	757.29	474.09	283.21	2.674		
10,600.00	3,269.75	3,268.03	3,267.75	204.17	82.31	-90.17	-89.95	7,891.67	677.46	391.49	285.98	2.369		
10,700.00	3,269.51	3,267.79	3,267.51	206.94	82.31	-90.13	-89.95	7,891.67	603.67	314.93	288.75	2.091		
10,800.00	3,269.27	3,267.55	3,267.27	209.70	82.30	-90.10	-89.95	7,891.67	538.41	246.89	291.52	1.847		
10,900.00	3,269.04	3,267.31	3,267.04	212.47	82.30	-90.07	-89.95	7,891.67	485.13	190.84	294.29	1.648		
11,000.00	3,268.80	3,267.07	3,266.80	215.24	82.30	-90.04	-89.95	7,891.67	448.12	151.06	297.06	1.509		
11,100.00	3,268.56	3,266.84	3,266.56	218.01	82.29	-90.01	-89.95	7,891.67	431.60	131.77	299.83	1.439 Level 3		
11,122.68	3,268.51	3,266.78	3,266.51	218.63	82.29	-90.00	-89.95	7,891.67	431.00	130.54	300.46	1.434 Level 3, CC, ES, SF		
11,200.00	3,268.32	3,266.60	3,266.32	220.77	82.29	-89.98	-89.95	7,891.67	437.88	135.28	302.60	1.447 Level 3		
11,300.00	3,268.08	3,266.36	3,266.08	223.54	82.29	-89.94	-89.95	7,891.67	466.05	160.68	305.37	1.526		
11,335.01	3,268.00	3,266.28	3,266.00	224.51	82.28	-89.93	-89.95	7,891.67	480.46	174.12	306.34	1.568		

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 025F - Original Hole - Original Hole												Offset Site Error: 0.00 usft	
Survey Program: 244-INC_ONLY<10												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft) +E/-W (usft)		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	96.23	-773.81	7,084.65	7,126.78				
6.00	6.00	2.70	2.70	0.00	0.02	96.23	-773.83	7,084.65	7,126.79				
106.00	106.00	105.55	105.55	0.10	0.77	96.24	-774.08	7,084.65	7,126.81	7,125.94	0.87	8,190.735	
206.00	206.00	208.39	208.39	0.33	1.52	96.23	-773.95	7,084.65	7,126.80	7,124.96	1.84	3,867.274	
242.81	242.81	244.00	244.00	0.41	1.77	96.23	-773.81	7,084.65	7,126.78	7,124.60	2.18	3,262.302	
306.00	306.00	304.22	304.22	0.55	3.00	96.23	-774.02	7,084.65	7,126.81	7,123.25	3.55	2,006.617	
406.00	406.00	406.93	406.92	0.78	5.09	96.24	-774.07	7,084.65	7,126.81	7,120.95	5.87	1,214.969	
506.00	506.00	506.00	506.00	1.00	7.14	96.23	-773.81	7,084.65	7,126.78	7,118.64	8.14	875.225	
606.00	606.00	606.01	606.00	1.23	9.79	96.23	-773.81	7,084.65	7,126.78	7,115.77	11.01	647.194	
706.00	706.00	706.01	706.00	1.45	12.43	96.23	-773.81	7,084.65	7,126.78	7,112.90	13.88	513.426	
806.00	806.00	806.02	806.00	1.68	15.07	96.23	-773.81	7,084.65	7,126.78	7,110.03	16.75	425.484	
906.00	906.00	906.02	906.00	1.90	17.72	96.23	-773.81	7,084.65	7,126.78	7,107.16	19.62	363.262	
1,006.00	1,006.00	1,009.28	1,009.26	2.13	20.39	96.23	-773.77	7,084.65	7,126.78	7,104.26	22.52	316.496	
1,106.00	1,106.00	1,108.01	1,107.98	2.35	22.41	96.23	-773.44	7,084.65	7,126.74	7,101.99	24.76	287.884	
1,206.00	1,206.00	1,206.74	1,206.71	2.57	24.42	96.23	-773.27	7,084.65	7,126.72	7,099.73	26.99	264.016	
1,262.45	1,262.45	1,262.48	1,262.44	2.70	25.56	96.23	-773.24	7,084.65	7,126.72	7,098.46	28.26	252.211	
1,306.00	1,306.00	1,305.48	1,305.44	2.80	26.43	96.23	-773.26	7,084.65	7,126.72	7,097.49	29.23	243.802	
1,406.00	1,406.00	1,404.23	1,404.19	3.02	28.45	96.23	-773.41	7,084.65	7,126.74	7,095.27	31.47	226.462	
1,506.00	1,506.00	1,502.99	1,502.93	3.25	30.46	96.23	-773.72	7,084.65	7,126.77	7,093.07	33.71	211.425	
1,606.00	1,606.00	1,606.06	1,606.00	3.47	32.07	96.23	-773.81	7,084.65	7,126.78	7,091.24	35.55	200.490	
1,706.00	1,706.00	1,706.06	1,706.00	3.70	33.51	96.23	-773.81	7,084.65	7,126.78	7,089.57	37.21	191.534	
1,806.00	1,806.00	1,806.06	1,806.00	3.92	34.95	96.23	-773.81	7,084.65	7,126.78	7,087.91	38.87	183.345	
1,906.00	1,906.00	1,906.06	1,906.00	4.15	36.38	96.23	-773.81	7,084.65	7,126.78	7,086.25	40.53	175.827	
2,006.00	2,006.00	2,006.06	2,006.00	4.37	37.82	96.23	-773.81	7,084.65	7,126.78	7,084.59	42.20	168.901	
2,106.00	2,106.00	2,106.06	2,106.00	4.60	39.26	96.23	-773.81	7,084.65	7,126.78	7,082.93	43.86	162.500	
2,206.00	2,206.00	2,206.06	2,206.00	4.82	40.70	96.23	-773.81	7,084.65	7,126.78	7,081.26	45.52	156.554	
2,306.00	2,306.00	2,306.07	2,306.00	5.05	42.14	96.23	-773.81	7,084.65	7,126.78	7,079.59	47.19	151.021	
2,406.00	2,406.00	2,406.07	2,406.00	5.27	43.59	96.23	-773.81	7,084.65	7,126.78	7,077.92	48.86	145.865	
2,506.00	2,506.00	2,506.07	2,506.00	5.50	45.03	96.23	-773.81	7,084.65	7,126.78	7,076.26	50.53	141.049	
2,606.00	2,606.00	2,606.07	2,606.00	5.72	46.47	96.23	-773.81	7,084.65	7,126.78	7,074.59	52.20	136.541	
2,706.00	2,706.00	2,706.07	2,706.00	5.95	47.92	96.23	-773.81	7,084.65	7,126.78	7,072.92	53.86	132.309	
2,806.00	2,806.00	2,806.07	2,806.00	6.17	49.36	96.23	-773.81	7,084.65	7,126.78	7,071.25	55.54	128.328	
2,906.00	2,906.00	2,906.07	2,906.00	6.40	50.81	96.23	-773.81	7,084.65	7,126.78	7,069.58	57.21	124.580	
2,996.52	2,996.52	2,996.59	2,996.52	6.60	52.12	96.23	-773.81	7,084.65	7,126.78	7,068.06	58.72	121.371	
3,000.00	3,000.00	3,000.07	3,000.00	6.60	52.17	-9.92	-773.81	7,084.65	7,126.76	7,067.98	58.78	121.235	
3,025.00	3,024.95	3,025.03	3,024.95	6.61	52.53	-9.97	-773.81	7,084.65	7,125.39	7,066.41	58.98	120.817	
3,050.00	3,049.69	3,052.00	3,051.93	6.62	52.92	-10.10	-773.81	7,084.65	7,121.88	7,063.11	58.77	121.187	
3,075.00	3,074.02	3,064.07	3,063.99	6.63	53.31	-10.30	-773.97	7,084.65	7,116.28	7,058.16	58.13	122.424	
3,100.00	3,097.76	3,087.94	3,087.86	6.66	54.09	-10.60	-774.28	7,084.65	7,108.63	7,051.20	57.43	123.783	
3,125.00	3,120.74	3,111.05	3,110.97	6.69	54.85	-11.01	-774.58	7,084.65	7,098.97	7,042.70	56.27	126.167	
3,150.00	3,142.76	3,133.22	3,133.13	6.72	55.57	-11.54	-774.86	7,084.65	7,087.37	7,032.71	54.65	129.675	
3,175.00	3,163.68	3,154.28	3,154.19	6.76	56.25	-12.22	-775.13	7,084.65	7,073.92	7,021.30	52.62	134.434	
3,200.00	3,183.32	3,174.06	3,173.97	6.80	56.90	-13.08	-775.37	7,084.65	7,058.72	7,008.51	50.21	140.583	
3,225.00	3,201.54	3,192.42	3,192.32	6.87	57.50	-14.18	-775.60	7,084.65	7,041.90	6,994.39	47.51	148.227	
3,250.00	3,218.20	3,209.22	3,209.12	7.01	58.05	-15.60	-775.81	7,084.65	7,023.58	6,978.93	44.65	157.310	
3,275.00	3,233.17	3,224.32	3,224.22	7.19	58.54	-17.47	-775.99	7,084.65	7,003.90	6,962.03	41.86	167.306	
3,300.00	3,246.34	3,237.62	3,237.52	7.42	58.97	-19.96	-776.15	7,084.65	6,983.00	6,943.45	39.55	176.570	
3,325.00	3,257.61	3,249.01	3,248.91	7.70	59.34	-23.42	-776.29	7,084.65	6,961.06	6,922.68	38.38	181.393	
3,350.00	3,266.89	3,258.42	3,258.31	8.03	59.65	-28.40	-776.41	7,084.65	6,938.23	6,898.83	39.39	176.133	
3,375.00	3,274.12	3,265.75	3,265.64	8.41	59.89	-35.94	-776.49	7,084.65	6,914.69	6,870.76	43.93	157.408	
3,400.00	3,279.23	3,270.97	3,270.86	8.83	60.06	-47.95	-776.56	7,084.65	6,890.62	6,837.65	52.97	130.085	
3,425.00	3,282.19	3,274.02	3,273.91	9.29	60.16	-67.18	-776.59	7,084.65	6,866.20	6,801.49	64.71	106.100	

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 025F - Original Hole - Original Hole													Offset Site Error: 0.00 usft
Survey Program: 244-INC_ONLY<10													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)					
3,446.52	3,283.00	3,274.91	3,274.80	9.71	60.19	-89.62	-776.60	7,084.65	6,845.05	6,775.16	69.89	97.937	
3,500.00	3,283.00	3,275.08	3,274.97	10.82	60.19	-89.62	-776.60	7,084.65	6,792.44	6,721.43	71.01	95.658	
3,600.00	3,283.00	3,275.42	3,275.31	13.10	60.20	-89.64	-776.61	7,084.65	6,694.10	6,620.81	73.30	91.329	
3,700.00	3,283.00	3,275.75	3,275.64	15.54	60.21	-89.66	-776.61	7,084.65	6,595.82	6,520.07	75.75	87.073	
3,800.00	3,283.00	3,276.08	3,275.97	18.08	60.22	-89.67	-776.62	7,084.65	6,497.58	6,419.28	78.30	82.980	
3,900.00	3,283.00	3,276.42	3,276.31	20.68	60.24	-89.69	-776.62	7,084.65	6,399.40	6,318.48	80.92	79.086	
4,000.00	3,283.00	3,276.75	3,276.64	23.33	60.25	-89.70	-776.62	7,084.65	6,301.28	6,217.71	83.57	75.400	
4,100.00	3,283.00	3,277.08	3,276.97	26.00	60.26	-89.72	-776.63	7,084.65	6,203.22	6,116.96	86.26	71.917	
4,200.00	3,283.00	3,277.42	3,277.31	28.69	60.27	-89.73	-776.63	7,084.65	6,105.22	6,016.26	88.96	68.629	
4,300.00	3,283.00	3,277.75	3,277.64	31.40	60.28	-89.75	-776.64	7,084.65	6,007.28	5,915.60	91.68	65.525	
4,400.00	3,283.00	3,278.08	3,277.97	34.12	60.29	-89.76	-776.64	7,084.65	5,909.42	5,815.01	94.41	62.592	
4,500.00	3,283.00	3,278.41	3,278.30	36.85	60.30	-89.78	-776.64	7,084.65	5,811.62	5,714.47	97.15	59.820	
4,600.00	3,283.00	3,278.75	3,278.64	39.59	60.31	-89.80	-776.65	7,084.65	5,713.91	5,614.01	99.90	57.196	
4,700.00	3,283.00	3,279.08	3,278.97	42.33	60.32	-89.81	-776.65	7,084.65	5,616.27	5,513.62	102.65	54.711	
4,772.52	3,283.00	3,279.32	3,279.21	44.32	60.33	-89.82	-776.66	7,084.65	5,545.52	5,440.87	104.65	52.989	
4,800.00	3,283.00	3,279.41	3,279.30	45.08	60.33	-89.85	-776.66	7,084.65	5,518.68	5,413.27	105.41	52.356	
4,900.00	3,282.96	3,279.66	3,279.55	47.83	60.34	-89.98	-776.66	7,084.65	5,420.39	5,312.32	108.08	50.154	
5,000.00	3,282.88	3,279.80	3,279.69	50.58	60.35	-90.21	-776.66	7,084.65	5,321.32	5,210.70	110.62	48.105	
5,100.00	3,282.76	3,279.84	3,279.73	53.33	60.35	-90.84	-776.66	7,084.65	5,221.69	5,108.68	113.02	46.203	
5,200.00	3,282.59	3,279.77	3,279.66	56.05	60.34	-99.36	-776.66	7,084.65	5,121.76	5,007.96	113.81	45.004	
5,300.00	3,282.38	3,279.60	3,279.49	58.74	60.34	92.25	-776.66	7,084.65	5,021.79	4,904.49	117.30	42.810	
5,311.84	3,282.35	3,279.57	3,279.46	59.06	60.34	92.03	-776.66	7,084.65	5,009.97	4,892.41	117.56	42.617	
5,400.00	3,282.14	3,279.36	3,279.25	61.41	60.33	91.98	-776.66	7,084.65	4,921.92	4,801.94	119.98	41.023	
5,500.00	3,281.90	3,279.12	3,279.01	64.09	60.32	91.93	-776.65	7,084.65	4,822.06	4,699.33	122.73	39.291	
5,600.00	3,281.66	3,278.88	3,278.77	66.78	60.32	91.87	-776.65	7,084.65	4,722.20	4,596.73	125.48	37.634	
5,700.00	3,281.43	3,278.64	3,278.53	69.47	60.31	91.82	-776.65	7,084.65	4,622.35	4,494.13	128.23	36.048	
5,800.00	3,281.19	3,278.40	3,278.29	72.17	60.30	91.76	-776.64	7,084.65	4,522.51	4,391.53	130.98	34.529	
5,900.00	3,280.95	3,278.16	3,278.05	74.88	60.29	91.71	-776.64	7,084.65	4,422.67	4,288.94	133.73	33.071	
6,000.00	3,280.71	3,277.92	3,277.81	77.59	60.28	91.66	-776.64	7,084.65	4,322.84	4,186.36	136.49	31.672	
6,100.00	3,280.47	3,277.68	3,277.57	80.30	60.28	91.60	-776.64	7,084.65	4,223.02	4,083.78	139.24	30.328	
6,200.00	3,280.24	3,277.44	3,277.34	83.02	60.27	91.55	-776.63	7,084.65	4,123.21	3,981.21	142.00	29.037	
6,300.00	3,280.00	3,277.21	3,277.10	85.75	60.26	91.50	-776.63	7,084.65	4,023.41	3,878.65	144.76	27.794	
6,400.00	3,279.76	3,276.97	3,276.86	88.47	60.25	91.44	-776.63	7,084.65	3,923.61	3,776.10	147.52	26.598	
6,500.00	3,279.52	3,276.73	3,276.62	91.20	60.25	91.39	-776.62	7,084.65	3,823.83	3,673.55	150.28	25.445	
6,600.00	3,279.28	3,276.49	3,276.38	93.93	60.24	91.34	-776.62	7,084.65	3,724.06	3,571.02	153.04	24.335	
6,700.00	3,279.04	3,276.25	3,276.14	96.67	60.23	91.28	-776.62	7,084.65	3,624.30	3,468.51	155.80	23.263	
6,800.00	3,278.81	3,276.01	3,275.90	99.40	60.22	91.23	-776.62	7,084.65	3,524.56	3,366.00	158.56	22.229	
6,900.00	3,278.57	3,275.77	3,275.66	102.14	60.21	91.17	-776.61	7,084.65	3,424.83	3,263.51	161.32	21.230	
7,000.00	3,278.33	3,275.53	3,275.42	104.88	60.21	91.12	-776.61	7,084.65	3,325.11	3,161.03	164.08	20.265	
7,100.00	3,278.09	3,275.29	3,275.18	107.63	60.20	91.07	-776.61	7,084.65	3,225.42	3,058.58	166.84	19.332	
7,200.00	3,277.85	3,275.05	3,274.94	110.37	60.19	91.01	-776.60	7,084.65	3,125.74	2,956.14	169.60	18.430	
7,300.00	3,277.61	3,274.81	3,274.70	113.11	60.18	90.96	-776.60	7,084.65	3,026.09	2,853.72	172.37	17.556	
7,400.00	3,277.38	3,274.57	3,274.46	115.86	60.18	90.91	-776.60	7,084.65	2,926.46	2,751.32	175.13	16.710	
7,500.00	3,277.14	3,274.33	3,274.23	118.61	60.17	90.85	-776.60	7,084.65	2,826.85	2,648.96	177.89	15.891	
7,600.00	3,276.90	3,274.09	3,273.99	121.36	60.16	90.80	-776.59	7,084.65	2,727.27	2,546.62	180.66	15.096	
7,700.00	3,276.66	3,273.86	3,273.75	124.11	60.15	90.74	-776.59	7,084.65	2,627.73	2,444.31	183.42	14.326	
7,800.00	3,276.42	3,273.62	3,273.51	126.86	60.14	90.69	-776.59	7,084.65	2,528.22	2,342.03	186.19	13.579	
7,900.00	3,276.18	3,273.38	3,273.27	129.61	60.14	90.64	-776.58	7,084.65	2,428.75	2,239.80	188.95	12.854	
8,000.00	3,275.95	3,273.14	3,273.03	132.37	60.13	90.58	-776.58	7,084.65	2,329.33	2,137.61	191.72	12.150	
8,100.00	3,275.71	3,272.90	3,272.79	135.12	60.12	90.53	-776.58	7,084.65	2,229.96	2,035.48	194.48	11.466	
8,200.00	3,275.47	3,272.66	3,272.55	137.88	60.11	90.48	-776.58	7,084.65	2,130.65	1,933.40	197.25	10.802	
8,300.00	3,275.23	3,272.42	3,272.31	140.63	60.11	90.42	-776.57	7,084.65	2,031.40	1,831.39	200.01	10.156	

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
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 025F - Original Hole - Original Hole													Offset Site Error: 0.00 usft
Survey Program: 244-INC_ONLY<10													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)				
8,400.00	3,274.99	3,272.18	3,272.07	143.39	60.10	90.37	-776.57	7,084.65	1,932.24	1,729.46	202.78	9.529	
8,500.00	3,274.76	3,271.94	3,271.83	146.15	60.09	90.31	-776.57	7,084.65	1,833.16	1,627.61	205.55	8.918	
8,600.00	3,274.52	3,271.70	3,271.59	148.91	60.08	90.26	-776.56	7,084.65	1,734.19	1,525.88	208.31	8.325	
8,700.00	3,274.28	3,271.46	3,271.35	151.67	60.07	90.21	-776.56	7,084.65	1,635.34	1,424.27	211.08	7.748	
8,800.00	3,274.04	3,271.22	3,271.11	154.43	60.07	90.15	-776.56	7,084.65	1,536.65	1,322.80	213.84	7.186	
8,900.00	3,273.80	3,270.98	3,270.88	157.19	60.06	90.10	-776.56	7,084.65	1,438.13	1,221.52	216.61	6.639	
9,000.00	3,273.56	3,270.74	3,270.64	159.95	60.05	90.05	-776.55	7,084.65	1,339.84	1,120.46	219.37	6.108	
9,100.00	3,273.33	3,270.51	3,270.40	162.71	60.04	89.99	-776.55	7,084.65	1,241.81	1,019.67	222.14	5.590	
9,200.00	3,273.09	3,270.27	3,270.16	165.47	60.04	89.94	-776.55	7,084.65	1,144.13	919.23	224.91	5.087	
9,300.00	3,272.85	3,270.03	3,269.92	168.23	60.03	89.89	-776.54	7,084.65	1,046.89	819.22	227.67	4.598	
9,400.00	3,272.61	3,269.79	3,269.68	170.99	60.02	89.83	-776.54	7,084.65	950.22	719.78	230.44	4.124	
9,500.00	3,272.37	3,269.55	3,269.44	173.76	60.01	89.78	-776.54	7,084.65	854.31	621.11	233.20	3.663	
9,600.00	3,272.13	3,269.31	3,269.20	176.52	60.00	89.72	-776.54	7,084.65	759.47	523.50	235.97	3.219	
9,700.00	3,271.90	3,269.07	3,268.96	179.28	60.00	89.67	-776.53	7,084.65	666.13	427.40	238.73	2.790	
9,800.00	3,271.66	3,268.83	3,268.72	182.05	59.99	89.62	-776.53	7,084.65	575.03	333.54	241.50	2.381	
9,900.00	3,271.42	3,268.59	3,268.48	184.81	59.98	89.56	-776.53	7,084.65	487.44	243.18	244.26	1.996	
10,000.00	3,271.18	3,268.35	3,268.24	187.58	59.97	89.51	-776.52	7,084.65	405.63	158.61	247.03	1.642	
10,100.00	3,270.94	3,268.11	3,268.00	190.34	59.96	89.46	-776.52	7,084.65	333.88	84.09	249.79	1.337 Level 3	
10,200.00	3,270.70	3,267.87	3,267.76	193.11	59.96	89.40	-776.52	7,084.65	280.02	27.47	252.55	1.109 Level 2	
10,300.00	3,270.47	3,267.63	3,267.53	195.87	59.95	89.35	-776.52	7,084.65	255.63	0.32	255.32	1.001 Level 2	
10,315.32	3,270.43	3,267.60	3,267.49	196.30	59.95	89.34	-776.52	7,084.65	255.17	-0.57	255.74	0.998 Level 1, CC, ES, SF	
10,400.00	3,270.23	3,267.39	3,267.29	198.64	59.94	89.29	-776.51	7,084.65	268.86	10.78	258.08	1.042 Level 2	
10,500.00	3,269.99	3,267.15	3,267.05	201.40	59.93	89.24	-776.51	7,084.65	314.99	54.15	260.84	1.208 Level 2	
10,600.00	3,269.75	3,266.92	3,266.81	204.17	59.93	89.19	-776.51	7,084.65	382.31	118.70	263.61	1.450 Level 3	
10,700.00	3,269.51	3,266.68	3,266.57	206.94	59.92	89.13	-776.50	7,084.65	461.62	195.25	266.37	1.733	
10,800.00	3,269.27	3,266.44	3,266.33	209.70	59.91	89.08	-776.50	7,084.65	547.75	278.62	269.13	2.035	
10,900.00	3,269.04	3,266.20	3,266.09	212.47	59.90	89.03	-776.50	7,084.65	637.94	366.04	271.90	2.346	
11,000.00	3,268.80	3,265.96	3,265.85	215.24	59.89	88.97	-776.50	7,084.65	730.69	456.03	274.66	2.660	
11,100.00	3,268.56	3,265.72	3,265.61	218.01	59.89	88.92	-776.49	7,084.65	825.13	547.71	277.42	2.974	
11,200.00	3,268.32	3,265.48	3,265.37	220.77	59.88	88.86	-776.49	7,084.65	920.75	640.56	280.18	3.286	
11,300.00	3,268.08	3,265.24	3,265.13	223.54	59.87	88.81	-776.49	7,084.65	1,017.21	734.26	282.94	3.595	
11,335.01	3,268.00	3,265.16	3,265.05	224.51	59.87	88.79	-776.49	7,084.65	1,051.14	767.23	283.91	3.702	

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 027 - Original Hole - Original Hole											Offset Site Error:	0.00 usft
Survey Program: 207-INC_ONLY<10											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)				
0.00	0.00	118.77	118.77	0.00	0.86	86.27	356.86	5,470.18	5,481.80			
6.00	6.00	124.68	124.68	0.00	0.91	86.27	356.86	5,470.18	5,481.80			
106.00	106.00	225.00	225.00	0.10	1.77	86.27	357.08	5,470.18	5,481.82	5,479.95	1.87	2,931.749
206.00	206.00	325.00	325.00	0.33	3.22	86.27	357.08	5,470.18	5,481.82	5,478.27	3.55	1,544.463
306.00	306.00	425.00	425.00	0.55	4.68	86.27	357.08	5,470.18	5,481.82	5,476.59	5.23	1,048.377
406.00	406.00	525.00	525.00	0.78	6.13	86.27	357.08	5,470.18	5,481.82	5,474.91	6.91	793.502
506.00	506.00	625.01	625.00	1.00	7.59	86.27	357.08	5,470.18	5,481.82	5,473.23	8.59	638.318
606.00	606.00	725.01	725.00	1.23	9.04	86.27	357.08	5,470.18	5,481.82	5,471.55	10.27	533.904
706.00	706.00	825.64	825.63	1.45	10.65	86.27	356.98	5,470.18	5,481.81	5,469.71	12.10	453.145
806.00	806.00	925.33	925.32	1.68	12.38	86.27	356.85	5,470.18	5,481.80	5,467.75	14.06	390.001
906.00	906.00	1,025.02	1,025.01	1.90	14.11	86.27	356.81	5,470.18	5,481.80	5,465.79	16.01	342.304
907.99	907.99	1,027.01	1,027.00	1.90	14.15	86.27	356.81	5,470.18	5,481.80	5,465.75	16.05	341.472
1,006.00	1,006.00	1,124.71	1,124.70	2.13	15.85	86.27	356.85	5,470.18	5,481.80	5,463.83	17.97	305.004
1,106.00	1,106.00	1,224.39	1,224.38	2.35	17.58	86.27	356.97	5,470.18	5,481.81	5,461.88	19.93	275.035
1,206.00	1,206.00	1,325.62	1,325.61	2.57	19.62	86.27	356.99	5,470.18	5,481.81	5,459.62	22.20	246.976
1,306.00	1,306.00	1,425.26	1,425.24	2.80	21.94	86.27	356.87	5,470.18	5,481.80	5,457.07	24.74	221.601
1,370.03	1,370.03	1,489.05	1,489.03	2.94	23.42	86.27	356.85	5,470.18	5,481.80	5,455.44	26.36	207.924
1,406.00	1,406.00	1,524.89	1,524.87	3.02	24.25	86.27	356.86	5,470.18	5,481.80	5,454.52	27.28	200.956
1,506.00	1,506.00	1,624.52	1,624.49	3.25	26.57	86.27	356.94	5,470.18	5,481.81	5,451.99	29.82	183.831
1,606.00	1,606.00	1,724.32	1,724.30	3.47	28.89	86.26	357.13	5,470.18	5,481.82	5,449.45	32.37	169.361
1,706.00	1,706.00	1,824.64	1,824.61	3.70	31.24	86.26	357.28	5,470.18	5,481.83	5,446.90	34.93	156.915
1,806.00	1,806.00	1,924.97	1,924.93	3.92	33.58	86.26	357.34	5,470.18	5,481.84	5,444.33	37.50	146.173
1,906.00	1,906.00	2,025.30	2,025.26	4.15	35.92	86.26	357.32	5,470.18	5,481.83	5,441.76	40.07	136.807
2,006.00	2,006.00	2,125.64	2,125.59	4.37	38.26	86.26	357.20	5,470.18	5,481.83	5,439.19	42.64	128.569
2,063.01	2,063.01	2,182.84	2,182.79	4.50	39.60	86.27	357.09	5,470.18	5,481.82	5,437.72	44.10	124.301
2,106.00	2,106.00	2,223.76	2,223.70	4.60	40.24	86.26	357.22	5,470.18	5,481.83	5,436.99	44.83	122.267
2,206.00	2,206.00	2,324.50	2,324.45	4.82	41.69	86.26	357.48	5,470.18	5,481.84	5,435.33	46.52	117.850
2,306.00	2,306.00	2,425.26	2,425.20	5.05	43.15	86.26	357.53	5,470.18	5,481.85	5,433.65	48.20	113.740
2,406.00	2,406.00	2,526.01	2,525.96	5.27	44.60	86.26	357.37	5,470.18	5,481.84	5,431.96	49.88	109.907
2,506.00	2,506.00	2,625.79	2,625.73	5.50	45.99	86.27	357.04	5,470.18	5,481.82	5,430.32	51.49	106.460
2,606.00	2,606.00	2,725.49	2,725.43	5.72	47.15	86.27	356.88	5,470.18	5,481.81	5,428.94	52.87	103.690
2,706.00	2,706.00	2,825.19	2,825.12	5.95	48.30	86.27	356.80	5,470.18	5,481.80	5,427.56	54.24	101.061
2,746.44	2,746.44	2,865.51	2,865.44	6.04	48.76	86.27	356.80	5,470.18	5,481.80	5,427.00	54.80	100.035
2,806.00	2,806.00	2,924.89	2,924.82	6.17	49.45	86.27	356.81	5,470.18	5,481.80	5,426.18	55.62	98.562
2,906.00	2,906.00	3,024.58	3,024.52	6.40	50.60	86.27	356.91	5,470.18	5,481.81	5,424.81	56.99	96.183
2,996.52	2,996.52	3,114.82	3,114.76	6.60	51.64	86.27	357.06	5,470.18	5,481.82	5,423.58	58.24	94.127
3,000.00	3,000.00	3,118.29	3,118.23	6.60	51.68	-19.89	357.07	5,470.18	5,481.80	5,423.51	58.29	94.041
3,025.00	3,024.95	3,144.75	3,144.68	6.61	52.11	-19.98	357.03	5,470.18	5,480.48	5,421.91	58.58	93.560
3,050.00	3,049.69	3,169.43	3,169.36	6.62	52.54	-20.23	356.98	5,470.18	5,477.13	5,418.66	58.47	93.669
3,075.00	3,074.02	3,193.70	3,193.64	6.63	52.97	-20.63	356.94	5,470.18	5,471.76	5,413.78	57.98	94.373
3,100.00	3,097.76	3,217.39	3,217.33	6.66	53.38	-21.21	356.90	5,470.18	5,464.43	5,407.31	57.11	95.681
3,125.00	3,120.74	3,240.31	3,240.25	6.69	53.78	-21.98	356.87	5,470.18	5,455.17	5,399.28	55.90	97.596
3,150.00	3,142.76	3,262.29	3,262.22	6.72	54.16	-22.97	356.84	5,470.18	5,444.07	5,389.69	54.38	100.108
3,175.00	3,163.68	3,283.15	3,283.09	6.76	54.52	-24.23	356.82	5,470.18	5,431.22	5,378.57	52.65	103.165
3,200.00	3,183.32	3,302.75	3,302.68	6.80	54.87	-25.80	356.80	5,470.18	5,416.70	5,365.90	50.80	106.625
3,225.00	3,201.54	3,320.93	3,320.86	6.87	55.18	-27.77	356.78	5,470.18	5,400.64	5,351.63	49.01	110.185
3,250.00	3,218.20	3,337.55	3,337.48	7.01	55.47	-30.23	356.77	5,470.18	5,383.16	5,335.64	47.52	113.276
3,275.00	3,233.17	3,352.49	3,352.42	7.19	55.73	-33.33	356.76	5,470.18	5,364.39	5,317.75	46.64	115.007
3,300.00	3,246.34	3,365.62	3,365.56	7.42	55.96	-37.25	356.75	5,470.18	5,344.48	5,297.72	46.77	114.281
3,325.00	3,257.61	3,376.87	3,376.80	7.70	56.16	-42.25	356.74	5,470.18	5,323.58	5,275.31	48.27	110.294
3,350.00	3,266.89	3,386.13	3,386.06	8.03	56.32	-48.65	356.74	5,470.18	5,301.85	5,250.49	51.36	103.229
3,375.00	3,274.12	3,393.33	3,393.27	8.41	56.44	-56.79	356.74	5,470.18	5,279.46	5,223.61	55.85	94.525

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 027 - Original Hole - Original Hole													Offset Site Error: 0.00 usft
Survey Program: 207-INC_ONLY<10													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	3,279.23	3,398.43	3,398.37	8.83	56.53	-66.92	356.74	5,470.18	5,256.58	5,195.69	60.90	86.321	
3,425.00	3,282.19	3,401.39	3,401.32	9.29	56.58	-78.87	356.73	5,470.18	5,233.38	5,168.46	64.93	80.604	
3,446.52	3,283.00	3,402.20	3,402.13	9.71	56.60	-90.00	356.73	5,470.18	5,213.30	5,147.00	66.31	78.625	
3,500.00	3,283.00	3,402.20	3,402.13	10.82	56.60	-90.00	356.73	5,470.18	5,163.39	5,095.98	67.42	76.590	
3,600.00	3,283.00	3,402.21	3,402.14	13.10	56.60	-90.00	356.73	5,470.18	5,070.27	5,000.57	69.69	72.750	
3,700.00	3,283.00	3,402.22	3,402.15	15.54	56.60	-90.00	356.73	5,470.18	4,977.41	4,905.27	72.14	68.999	
3,800.00	3,283.00	3,402.22	3,402.15	18.08	56.60	-90.00	356.73	5,470.18	4,884.83	4,810.15	74.68	65.412	
3,900.00	3,283.00	3,402.23	3,402.16	20.68	56.60	-90.01	356.73	5,470.18	4,792.55	4,715.27	77.28	62.014	
4,000.00	3,283.00	3,402.24	3,402.17	23.33	56.60	-90.01	356.73	5,470.18	4,700.59	4,620.66	79.93	58.812	
4,100.00	3,283.00	3,402.25	3,402.18	26.00	56.60	-90.01	356.73	5,470.18	4,608.96	4,526.36	82.60	55.799	
4,200.00	3,283.00	3,402.26	3,402.19	28.69	56.60	-90.01	356.73	5,470.18	4,517.68	4,432.39	85.29	52.967	
4,300.00	3,283.00	3,402.26	3,402.19	31.40	56.60	-90.01	356.73	5,470.18	4,426.79	4,338.78	88.00	50.303	
4,400.00	3,283.00	3,402.27	3,402.20	34.12	56.60	-90.01	356.73	5,470.18	4,336.29	4,245.57	90.72	47.797	
4,500.00	3,283.00	3,402.28	3,402.21	36.85	56.60	-90.01	356.73	5,470.18	4,246.22	4,152.77	93.45	45.437	
4,600.00	3,283.00	3,402.29	3,402.22	39.59	56.60	-90.01	356.73	5,470.18	4,156.60	4,060.42	96.19	43.213	
4,700.00	3,283.00	3,402.29	3,402.23	42.33	56.60	-90.01	356.73	5,470.18	4,067.47	3,968.54	98.93	41.114	
4,772.52	3,283.00	3,402.30	3,402.23	44.32	56.60	-90.01	356.73	5,470.18	4,003.15	3,902.23	100.92	39.665	
4,800.00	3,283.00	3,402.30	3,402.23	45.08	56.60	-90.02	356.73	5,470.18	3,978.77	3,877.09	101.68	39.132	
4,900.00	3,282.96	3,402.27	3,402.20	47.83	56.60	-90.08	356.73	5,470.18	3,888.84	3,784.51	104.33	37.273	
5,000.00	3,282.88	3,402.20	3,402.13	50.58	56.60	-90.15	356.73	5,470.18	3,797.18	3,690.31	106.87	35.530	
5,100.00	3,282.76	3,402.08	3,402.01	53.33	56.60	-90.24	356.73	5,470.18	3,703.91	3,594.63	109.28	33.894	
5,200.00	3,282.59	3,401.92	3,401.85	56.05	56.59	-90.36	356.73	5,470.18	3,609.16	3,497.63	111.54	32.359	
5,300.00	3,282.38	3,401.71	3,401.64	58.74	56.59	-90.52	356.73	5,470.18	3,513.11	3,399.47	113.64	30.915	
5,311.84	3,282.35	3,401.68	3,401.61	59.06	56.59	-90.54	356.73	5,470.18	3,501.65	3,387.78	113.88	30.750	
5,400.00	3,282.14	3,401.47	3,401.40	61.41	56.59	-90.53	356.73	5,470.18	3,416.39	3,300.09	116.30	29.376	
5,500.00	3,281.90	3,401.23	3,401.16	64.09	56.58	-90.51	356.73	5,470.18	3,319.85	3,200.81	119.05	27.887	
5,600.00	3,281.66	3,401.00	3,400.93	66.78	56.58	-90.50	356.73	5,470.18	3,223.53	3,101.73	121.80	26.466	
5,700.00	3,281.43	3,400.76	3,400.69	69.47	56.57	-90.48	356.74	5,470.18	3,127.44	3,002.89	124.55	25.110	
5,800.00	3,281.19	3,400.52	3,400.45	72.17	56.57	-90.47	356.74	5,470.18	3,031.60	2,904.30	127.30	23.814	
5,900.00	3,280.95	3,400.29	3,400.22	74.88	56.57	-90.45	356.74	5,470.18	2,936.04	2,805.98	130.06	22.575	
6,000.00	3,280.71	3,400.05	3,399.98	77.59	56.56	-90.44	356.74	5,470.18	2,840.78	2,707.97	132.81	21.389	
6,100.00	3,280.47	3,399.81	3,399.74	80.30	56.56	-90.42	356.74	5,470.18	2,745.86	2,610.29	135.57	20.254	
6,200.00	3,280.24	3,399.57	3,399.51	83.02	56.55	-90.41	356.74	5,470.18	2,651.32	2,512.99	138.33	19.167	
6,300.00	3,280.00	3,399.34	3,399.27	85.75	56.55	-90.39	356.74	5,470.18	2,557.19	2,416.10	141.09	18.125	
6,400.00	3,279.76	3,399.10	3,399.03	88.47	56.54	-90.38	356.74	5,470.18	2,463.52	2,319.67	143.85	17.126	
6,500.00	3,279.52	3,398.86	3,398.80	91.20	56.54	-90.36	356.74	5,470.18	2,370.37	2,223.76	146.61	16.168	
6,600.00	3,279.28	3,398.63	3,398.56	93.93	56.54	-90.34	356.74	5,470.18	2,277.80	2,128.43	149.37	15.249	
6,700.00	3,279.04	3,398.39	3,398.32	96.67	56.53	-90.33	356.74	5,470.18	2,185.88	2,033.75	152.13	14.368	
6,800.00	3,278.81	3,398.15	3,398.08	99.40	56.53	-90.31	356.74	5,470.18	2,094.71	1,939.82	154.89	13.524	
6,900.00	3,278.57	3,397.92	3,397.85	102.14	56.52	-90.30	356.74	5,470.18	2,004.38	1,846.72	157.66	12.714	
7,000.00	3,278.33	3,397.68	3,397.61	104.88	56.52	-90.28	356.74	5,470.18	1,915.01	1,754.59	160.42	11.937	
7,100.00	3,278.09	3,397.44	3,397.37	107.63	56.52	-90.27	356.74	5,470.18	1,826.74	1,663.55	163.18	11.194	
7,200.00	3,277.85	3,397.21	3,397.14	110.37	56.51	-90.25	356.74	5,470.18	1,739.74	1,573.79	165.95	10.484	
7,300.00	3,277.61	3,396.97	3,396.90	113.11	56.51	-90.24	356.74	5,470.18	1,654.21	1,485.50	168.71	9.805	
7,400.00	3,277.38	3,396.73	3,396.66	115.86	56.50	-90.22	356.74	5,470.18	1,570.39	1,398.92	171.48	9.158	
7,500.00	3,277.14	3,396.50	3,396.43	118.61	56.50	-90.21	356.74	5,470.18	1,488.57	1,314.33	174.24	8.543	
7,600.00	3,276.90	3,396.26	3,396.19	121.36	56.50	-90.19	356.74	5,470.18	1,409.10	1,232.10	177.01	7.961	
7,700.00	3,276.66	3,396.02	3,395.95	124.11	56.49	-90.17	356.74	5,470.18	1,332.40	1,152.63	179.77	7.412	
7,800.00	3,276.42	3,395.78	3,395.72	126.86	56.49	-90.16	356.74	5,470.18	1,258.97	1,076.43	182.54	6.897	
7,900.00	3,276.18	3,395.55	3,395.48	129.61	56.48	-90.14	356.74	5,470.18	1,189.42	1,004.12	185.30	6.419	
8,000.00	3,275.95	3,395.31	3,395.24	132.37	56.48	-90.13	356.74	5,470.18	1,124.48	936.41	188.07	5.979	
8,100.00	3,275.71	3,395.07	3,395.01	135.12	56.47	-90.11	356.74	5,470.18	1,064.97	874.14	190.84	5.581	

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 027 - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 207-INC_ONLY<10													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)						
8,200.00	3,275.47	3,394.84	3,394.77	137.88	56.47	-90.10	356.74	5,470.18	1,011.87	818.27	193.60	5.227		
8,300.00	3,275.23	3,394.60	3,394.53	140.63	56.47	-90.08	356.74	5,470.18	966.24	769.86	196.37	4.920		
8,400.00	3,274.99	3,394.36	3,394.29	143.39	56.46	-90.07	356.74	5,470.18	929.16	730.02	199.14	4.666		
8,500.00	3,274.76	3,394.13	3,394.06	146.15	56.46	-90.05	356.74	5,470.18	901.69	699.79	201.91	4.466		
8,600.00	3,274.52	3,393.89	3,393.82	148.91	56.45	-90.04	356.74	5,470.18	884.74	680.07	204.67	4.323		
8,700.00	3,274.28	3,393.65	3,393.58	151.67	56.45	-90.02	356.74	5,470.18	878.91	671.47	207.44	4.237		
8,701.41	3,274.28	3,393.65	3,393.58	151.70	56.45	-90.02	356.74	5,470.18	878.91	671.43	207.48	4.236 CC, ES		
8,800.00	3,274.04	3,393.42	3,393.35	154.43	56.45	-90.00	356.74	5,470.18	884.42	674.22	210.21	4.207 SF		
8,900.00	3,273.80	3,393.18	3,393.11	157.19	56.44	-89.99	356.74	5,470.18	901.07	688.09	212.98	4.231		
9,000.00	3,273.56	3,392.94	3,392.87	159.95	56.44	-89.97	356.74	5,470.18	928.25	712.50	215.74	4.303		
9,100.00	3,273.33	3,392.71	3,392.64	162.71	56.43	-89.96	356.74	5,470.18	965.07	746.56	218.51	4.417		
9,200.00	3,273.09	3,392.47	3,392.40	165.47	56.43	-89.94	356.74	5,470.18	1,010.49	789.21	221.28	4.567		
9,300.00	3,272.85	3,392.23	3,392.16	168.23	56.43	-89.93	356.74	5,470.18	1,063.39	839.34	224.05	4.746		
9,400.00	3,272.61	3,391.99	3,391.93	170.99	56.42	-89.91	356.74	5,470.18	1,122.73	895.91	226.82	4.950		
9,500.00	3,272.37	3,391.76	3,391.69	173.76	56.42	-89.90	356.74	5,470.18	1,187.53	957.95	229.58	5.173		
9,600.00	3,272.13	3,391.52	3,391.45	176.52	56.41	-89.88	356.74	5,470.18	1,256.96	1,024.61	232.35	5.410		
9,700.00	3,271.90	3,391.28	3,391.22	179.28	56.41	-89.87	356.74	5,470.18	1,330.29	1,095.17	235.12	5.658		
9,800.00	3,271.66	3,391.05	3,390.98	182.05	56.40	-89.85	356.74	5,470.18	1,406.91	1,169.02	237.89	5.914		
9,900.00	3,271.42	3,390.81	3,390.74	184.81	56.40	-89.83	356.74	5,470.18	1,486.31	1,245.65	240.66	6.176		
10,000.00	3,271.18	3,390.57	3,390.50	187.58	56.40	-89.82	356.74	5,470.18	1,568.06	1,324.64	243.43	6.442		
10,100.00	3,270.94	3,390.34	3,390.27	190.34	56.39	-89.80	356.74	5,470.18	1,651.83	1,405.64	246.19	6.709		
10,200.00	3,270.70	3,390.10	3,390.03	193.11	56.39	-89.79	356.74	5,470.18	1,737.31	1,488.35	248.96	6.978		
10,300.00	3,270.47	3,389.86	3,389.79	195.87	56.38	-89.77	356.74	5,470.18	1,824.27	1,572.54	251.73	7.247		
10,400.00	3,270.23	3,389.63	3,389.56	198.64	56.38	-89.76	356.74	5,470.18	1,912.51	1,658.01	254.50	7.515		
10,500.00	3,269.99	3,389.39	3,389.32	201.40	56.38	-89.74	356.74	5,470.18	2,001.85	1,744.58	257.27	7.781		
10,600.00	3,269.75	3,389.15	3,389.08	204.17	56.37	-89.73	356.74	5,470.18	2,092.16	1,832.12	260.04	8.046		
10,700.00	3,269.51	3,388.92	3,388.85	206.94	56.37	-89.71	356.74	5,470.18	2,183.31	1,920.50	262.81	8.308		
10,800.00	3,269.27	3,388.68	3,388.61	209.70	56.36	-89.70	356.74	5,470.18	2,275.21	2,009.63	265.58	8.567		
10,900.00	3,269.04	3,388.44	3,388.37	212.47	56.36	-89.68	356.74	5,470.18	2,367.76	2,099.41	268.35	8.824		
11,000.00	3,268.80	3,388.20	3,388.14	215.24	56.36	-89.66	356.74	5,470.18	2,460.89	2,189.78	271.11	9.077		
11,100.00	3,268.56	3,387.97	3,387.90	218.01	56.35	-89.65	356.74	5,470.18	2,554.55	2,280.66	273.88	9.327		
11,200.00	3,268.32	3,387.73	3,387.66	220.77	56.35	-89.63	356.74	5,470.18	2,648.67	2,372.01	276.65	9.574		
11,300.00	3,268.08	3,387.49	3,387.43	223.54	56.34	-89.62	356.74	5,470.18	2,743.20	2,463.78	279.42	9.817		
11,335.01	3,268.00	3,387.41	3,387.34	224.51	56.34	-89.61	356.74	5,470.18	2,776.39	2,496.00	280.39	9.902		

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 067 - Original Hole - Original Hole													Offset Site Error: 0.00 usft	
Survey Program: 864-INC_ONLY<10													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	145.10	145.10	0.00	1.48	86.83	251.31	4,538.18	4,545.13					
6.00	6.00	151.08	151.08	0.00	1.54	86.83	251.28	4,538.18	4,545.13					
106.00	106.00	250.70	250.70	0.10	2.56	86.84	250.93	4,538.18	4,545.11	4,542.45	2.66	1,708.831		
206.00	206.00	350.33	350.32	0.33	3.57	86.84	250.74	4,538.18	4,545.10	4,541.20	3.90	1,165.195		
288.01	288.01	432.02	432.02	0.51	4.41	86.84	250.69	4,538.18	4,545.10	4,540.18	4.92	924.105		
306.00	306.00	449.94	449.94	0.55	4.59	86.84	250.69	4,538.18	4,545.10	4,539.95	5.14	883.979		
406.00	406.00	549.56	549.56	0.78	5.61	86.84	250.79	4,538.18	4,545.10	4,538.72	6.38	712.118		
506.00	506.00	649.17	649.17	1.00	6.62	86.83	251.04	4,538.18	4,545.12	4,537.49	7.62	596.210		
606.00	606.00	748.77	748.77	1.23	7.64	86.83	251.45	4,538.18	4,545.14	4,536.27	8.86	512.755		
706.00	706.00	848.38	848.38	1.45	8.65	86.82	252.00	4,538.18	4,545.17	4,535.06	10.10	449.799		
806.00	806.00	949.54	949.54	1.68	10.30	86.82	252.27	4,538.18	4,545.18	4,533.21	11.98	379.438		
906.00	906.00	1,049.64	1,049.64	1.90	12.05	86.82	252.43	4,538.18	4,545.19	4,531.25	13.95	325.893		
1,006.00	1,006.00	1,149.75	1,149.74	2.13	13.79	86.81	252.55	4,538.18	4,545.20	4,529.28	15.92	285.591		
1,106.00	1,106.00	1,249.85	1,249.84	2.35	15.53	86.81	252.63	4,538.18	4,545.20	4,527.32	17.88	254.159		
1,206.00	1,206.00	1,349.96	1,349.95	2.57	17.28	86.81	252.67	4,538.18	4,545.21	4,525.35	19.85	228.960		
1,306.00	1,306.00	1,450.07	1,450.06	2.80	19.02	86.81	252.67	4,538.18	4,545.21	4,523.39	21.82	208.307		
1,406.00	1,406.00	1,550.18	1,550.17	3.02	20.76	86.81	252.62	4,538.18	4,545.20	4,521.42	23.79	191.071		
1,506.00	1,506.00	1,650.30	1,650.28	3.25	22.51	86.81	252.53	4,538.18	4,545.20	4,519.44	25.76	176.469		
1,606.00	1,606.00	1,750.41	1,750.39	3.47	24.25	86.82	252.41	4,538.18	4,545.19	4,517.47	27.72	163.940		
1,706.00	1,706.00	1,850.53	1,850.50	3.70	25.99	86.82	252.24	4,538.18	4,545.18	4,515.49	29.69	153.072		
1,806.00	1,806.00	1,951.89	1,951.86	3.92	28.07	86.82	251.82	4,538.18	4,545.16	4,513.16	32.00	142.056		
1,906.00	1,906.00	2,050.93	2,050.89	4.15	30.68	86.83	251.28	4,538.18	4,545.13	4,510.30	34.83	130.491		
1,994.48	1,994.48	2,138.54	2,138.50	4.35	32.99	86.83	251.13	4,538.18	4,545.12	4,507.78	37.34	121.723		
2,006.00	2,006.00	2,149.94	2,149.90	4.37	33.29	86.83	251.14	4,538.18	4,545.12	4,507.45	37.67	120.668		
2,106.00	2,106.00	2,248.93	2,248.89	4.60	35.90	86.83	251.37	4,538.18	4,545.13	4,504.63	40.50	112.223		
2,206.00	2,206.00	2,347.90	2,347.86	4.82	38.51	86.82	252.00	4,538.18	4,545.17	4,501.83	43.33	104.885		
2,306.00	2,306.00	2,449.64	2,449.60	5.05	42.02	86.82	252.27	4,538.18	4,545.18	4,498.12	47.07	96.567		
2,406.00	2,406.00	2,549.82	2,549.77	5.27	45.58	86.82	252.39	4,538.18	4,545.19	4,494.33	50.86	89.372		
2,506.00	2,506.00	2,650.01	2,649.94	5.50	49.15	86.82	252.44	4,538.18	4,545.19	4,490.55	54.65	83.175		
2,606.00	2,606.00	2,750.20	2,750.12	5.72	52.71	86.82	252.43	4,538.18	4,545.19	4,486.76	58.44	77.782		
2,706.00	2,706.00	2,850.39	2,850.31	5.95	56.28	86.82	252.35	4,538.18	4,545.19	4,482.96	62.22	73.045		
2,806.00	2,806.00	2,950.60	2,950.49	6.17	59.84	86.82	252.19	4,538.18	4,545.18	4,479.16	66.01	68.851		
2,906.00	2,906.00	3,050.11	3,050.00	6.40	63.23	86.82	252.10	4,538.18	4,545.17	4,475.55	69.62	65.282		
2,996.52	2,996.52	3,140.64	3,140.52	6.60	66.18	86.82	252.10	4,538.18	4,545.17	4,472.39	72.78	62.449		
3,000.00	3,000.00	3,144.12	3,144.00	6.60	66.30	-19.33	252.10	4,538.18	4,545.15	4,472.25	72.91	62.341		
3,025.00	3,024.95	3,169.08	3,168.95	6.61	67.11	-19.42	252.10	4,538.18	4,543.84	4,470.33	73.51	61.813		
3,050.00	3,049.69	3,193.81	3,193.69	6.62	67.92	-19.67	252.10	4,538.18	4,540.48	4,466.87	73.61	61.685		
3,075.00	3,074.02	3,218.15	3,218.02	6.63	68.71	-20.07	252.10	4,538.18	4,535.10	4,461.90	73.20	61.958		
3,100.00	3,097.76	3,241.89	3,241.76	6.66	69.49	-20.64	252.10	4,538.18	4,527.73	4,455.45	72.29	62.635		
3,125.00	3,120.74	3,264.87	3,264.74	6.69	70.24	-21.40	252.10	4,538.18	4,518.45	4,447.54	70.91	63.721		
3,150.00	3,142.76	3,286.89	3,286.76	6.72	70.96	-22.38	252.10	4,538.18	4,507.32	4,438.20	69.12	65.210		
3,175.00	3,163.68	3,307.81	3,307.68	6.76	71.64	-23.63	252.10	4,538.18	4,494.42	4,427.41	67.01	67.071		
3,200.00	3,183.32	3,327.45	3,327.32	6.80	72.28	-25.19	252.10	4,538.18	4,479.86	4,415.14	64.72	69.220		
3,225.00	3,201.54	3,345.67	3,345.54	6.87	72.88	-27.14	252.10	4,538.18	4,463.75	4,401.29	62.46	71.465		
3,250.00	3,218.20	3,362.33	3,362.20	7.01	73.42	-29.58	252.10	4,538.18	4,446.22	4,385.68	60.54	73.442		
3,275.00	3,233.17	3,377.31	3,377.17	7.19	73.91	-32.66	252.10	4,538.18	4,427.39	4,368.01	59.38	74.563		
3,300.00	3,246.34	3,390.48	3,390.34	7.42	74.34	-36.57	252.10	4,538.18	4,407.42	4,347.93	59.49	74.084		
3,325.00	3,257.61	3,401.75	3,401.61	7.70	74.71	-41.58	252.10	4,538.18	4,386.46	4,325.05	61.41	71.433		
3,350.00	3,266.89	3,411.03	3,410.89	8.03	75.01	-48.00	252.10	4,538.18	4,364.67	4,299.24	65.43	66.703		
3,375.00	3,274.12	3,418.26	3,418.12	8.41	75.24	-56.22	252.10	4,538.18	4,342.22	4,270.86	71.36	60.853		
3,400.00	3,279.23	3,423.37	3,423.23	8.83	75.41	-66.49	252.10	4,538.18	4,319.28	4,241.22	78.06	55.336		
3,425.00	3,282.19	3,426.33	3,426.19	9.29	75.51	-78.65	252.10	4,538.18	4,296.03	4,212.60	83.43	51.494		

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 067 - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 864-INC_ONLY<10													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		
3,446.52	3,283.00	3,427.14	3,427.00	9.71	75.53	-90.00	252.10	4,538.18	4,275.90	4,190.65	85.24	50.162		
3,500.00	3,283.00	3,427.14	3,427.00	10.82	75.53	-90.00	252.10	4,538.18	4,225.88	4,139.52	86.35	48.938		
3,600.00	3,283.00	3,427.14	3,427.00	13.10	75.53	-90.00	252.10	4,538.18	4,132.58	4,043.95	88.63	46.627		
3,700.00	3,283.00	3,427.14	3,427.00	15.54	75.53	-90.00	252.10	4,538.18	4,039.61	3,948.54	91.07	44.356		
3,800.00	3,283.00	3,427.14	3,427.00	18.08	75.53	-90.00	252.10	4,538.18	3,946.98	3,853.36	93.61	42.162		
3,900.00	3,283.00	3,427.14	3,427.00	20.68	75.53	-90.00	252.10	4,538.18	3,854.72	3,758.50	96.22	40.063		
4,000.00	3,283.00	3,427.14	3,427.00	23.33	75.53	-90.00	252.10	4,538.18	3,762.85	3,663.99	98.86	38.062		
4,100.00	3,283.00	3,427.14	3,427.00	26.00	75.53	-90.00	252.10	4,538.18	3,671.41	3,569.87	101.53	36.159		
4,200.00	3,283.00	3,427.14	3,427.00	28.69	75.53	-90.00	252.10	4,538.18	3,580.42	3,476.20	104.23	34.352		
4,300.00	3,283.00	3,427.14	3,427.00	31.40	75.53	-90.00	252.10	4,538.18	3,489.93	3,383.00	106.94	32.636		
4,400.00	3,283.00	3,427.14	3,427.00	34.12	75.53	-90.00	252.10	4,538.18	3,399.97	3,290.32	109.66	31.006		
4,500.00	3,283.00	3,427.14	3,427.00	36.85	75.53	-90.00	252.10	4,538.18	3,310.59	3,198.21	112.39	29.457		
4,600.00	3,283.00	3,427.14	3,427.00	39.59	75.53	-90.00	252.10	4,538.18	3,221.84	3,106.71	115.12	27.986		
4,700.00	3,283.00	3,427.14	3,427.00	42.33	75.53	-90.00	252.10	4,538.18	3,133.76	3,015.89	117.87	26.587		
4,772.52	3,283.00	3,427.14	3,427.00	44.32	75.53	-90.00	252.10	4,538.18	3,070.34	2,950.48	119.86	25.616		
4,800.00	3,283.00	3,427.14	3,427.00	45.08	75.53	-90.01	252.10	4,538.18	3,046.31	2,925.71	120.61	25.258		
4,900.00	3,282.96	3,427.10	3,426.96	47.83	75.53	-90.07	252.10	4,538.18	2,957.79	2,834.52	123.27	23.995		
5,000.00	3,282.88	3,427.03	3,426.88	50.58	75.53	-90.13	252.10	4,538.18	2,867.60	2,741.79	125.81	22.794		
5,100.00	3,282.76	3,426.90	3,426.76	53.33	75.53	-90.20	252.10	4,538.18	2,775.84	2,647.63	128.21	21.651		
5,200.00	3,282.59	3,426.73	3,426.59	56.05	75.52	-90.30	252.10	4,538.18	2,682.61	2,552.14	130.46	20.562		
5,300.00	3,282.38	3,426.52	3,426.38	58.74	75.51	-90.42	252.10	4,538.18	2,588.02	2,455.45	132.56	19.523		
5,311.84	3,282.35	3,426.49	3,426.35	59.06	75.51	-90.43	252.10	4,538.18	2,576.74	2,443.93	132.80	19.403		
5,400.00	3,282.14	3,426.28	3,426.14	61.41	75.51	-90.42	252.10	4,538.18	2,492.79	2,357.57	135.22	18.435		
5,500.00	3,281.90	3,426.05	3,425.90	64.09	75.50	-90.40	252.10	4,538.18	2,397.95	2,259.98	137.97	17.381		
5,600.00	3,281.66	3,425.81	3,425.66	66.78	75.49	-90.38	252.10	4,538.18	2,303.54	2,162.83	140.71	16.371		
5,700.00	3,281.43	3,425.57	3,425.43	69.47	75.48	-90.36	252.10	4,538.18	2,209.62	2,066.16	143.46	15.402		
5,800.00	3,281.19	3,425.33	3,425.19	72.17	75.48	-90.35	252.10	4,538.18	2,116.26	1,970.05	146.21	14.474		
5,900.00	3,280.95	3,425.09	3,424.95	74.88	75.47	-90.33	252.10	4,538.18	2,023.53	1,874.57	148.96	13.584		
6,000.00	3,280.71	3,424.85	3,424.71	77.59	75.46	-90.31	252.10	4,538.18	1,931.53	1,779.82	151.71	12.731		
6,100.00	3,280.47	3,424.62	3,424.47	80.30	75.45	-90.29	252.10	4,538.18	1,840.37	1,685.90	154.47	11.914		
6,200.00	3,280.24	3,424.38	3,424.24	83.02	75.44	-90.28	252.10	4,538.18	1,750.17	1,592.94	157.22	11.132		
6,300.00	3,280.00	3,424.14	3,424.00	85.75	75.44	-90.26	252.10	4,538.18	1,661.09	1,501.11	159.98	10.383		
6,400.00	3,279.76	3,423.90	3,423.76	88.47	75.43	-90.24	252.10	4,538.18	1,573.32	1,410.59	162.73	9.668		
6,500.00	3,279.52	3,423.66	3,423.52	91.20	75.42	-90.22	252.10	4,538.18	1,487.10	1,321.61	165.49	8.986		
6,600.00	3,279.28	3,423.42	3,423.28	93.93	75.41	-90.21	252.10	4,538.18	1,402.71	1,234.47	168.25	8.337		
6,700.00	3,279.04	3,423.19	3,423.04	96.67	75.41	-90.19	252.10	4,538.18	1,320.51	1,149.50	171.01	7.722		
6,800.00	3,278.81	3,422.95	3,422.81	99.40	75.40	-90.17	252.10	4,538.18	1,240.91	1,067.15	173.76	7.141		
6,900.00	3,278.57	3,422.71	3,422.57	102.14	75.39	-90.15	252.10	4,538.18	1,164.47	987.95	176.52	6.597		
7,000.00	3,278.33	3,422.47	3,422.33	104.88	75.38	-90.14	252.10	4,538.18	1,091.85	912.56	179.28	6.090		
7,100.00	3,278.09	3,422.23	3,422.09	107.63	75.37	-90.12	252.10	4,538.18	1,023.85	841.80	182.04	5.624		
7,200.00	3,277.85	3,421.99	3,421.85	110.37	75.37	-90.10	252.10	4,538.18	961.45	776.65	184.80	5.203		
7,300.00	3,277.61	3,421.76	3,421.61	113.11	75.36	-90.08	252.10	4,538.18	905.83	718.26	187.56	4.829		
7,400.00	3,277.38	3,421.52	3,421.38	115.86	75.35	-90.07	252.10	4,538.18	858.28	667.96	190.33	4.510		
7,500.00	3,277.14	3,421.28	3,421.14	118.61	75.34	-90.05	252.10	4,538.18	820.23	627.14	193.09	4.248		
7,600.00	3,276.90	3,421.04	3,420.90	121.36	75.34	-90.03	252.10	4,538.18	793.04	597.19	195.85	4.049		
7,700.00	3,276.66	3,420.80	3,420.66	124.11	75.33	-90.01	252.10	4,538.18	777.84	579.23	198.61	3.916		
7,769.35	3,276.50	3,420.64	3,420.50	126.02	75.32	-90.00	252.10	4,538.18	774.74	574.22	200.53	3.864 CC		
7,800.00	3,276.42	3,420.57	3,420.42	126.86	75.32	-89.99	252.10	4,538.18	775.35	573.98	201.37	3.850 ES		
7,900.00	3,276.18	3,420.33	3,420.18	129.61	75.31	-89.98	252.10	4,538.18	785.68	581.55	204.13	3.849 SF		
8,000.00	3,275.95	3,420.09	3,419.95	132.37	75.30	-89.96	252.10	4,538.18	808.35	601.45	206.90	3.907		
8,100.00	3,275.71	3,419.85	3,419.71	135.12	75.30	-89.94	252.10	4,538.18	842.35	632.69	209.66	4.018		
8,200.00	3,275.47	3,419.61	3,419.47	137.88	75.29	-89.92	252.10	4,538.18	886.39	673.97	212.42	4.173		

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 211 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6558.00usft
Reference Site:	Sec.35-T32N-R07W	MD Reference:	KB @ 6558.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 211 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev1	Offset TVD Reference:	Offset Datum

Offset Design Sec.36-T32N-R07W - San Juan 32-7 Unit 067 - Original Hole - Original Hole													Offset Site Error:	0.00 usft
Survey Program: 864-INC_ONLY<10													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)						
8,300.00	3,275.23	3,419.37	3,419.23	140.63	75.28	-89.91	252.10	4,538.18	939.05	723.86	215.19	4.364		
8,400.00	3,274.99	3,419.14	3,418.99	143.39	75.27	-89.89	252.10	4,538.18	998.97	781.02	217.95	4.584		
8,500.00	3,274.76	3,418.90	3,418.76	146.15	75.27	-89.87	252.10	4,538.18	1,064.93	844.22	220.71	4.825		
8,600.00	3,274.52	3,418.66	3,418.52	148.91	75.26	-89.85	252.10	4,538.18	1,135.87	912.39	223.48	5.083		
8,700.00	3,274.28	3,418.42	3,418.28	151.67	75.25	-89.84	252.10	4,538.18	1,210.92	984.68	226.24	5.352		
8,800.00	3,274.04	3,418.18	3,418.04	154.43	75.24	-89.82	252.10	4,538.18	1,289.36	1,060.36	229.00	5.630		
8,900.00	3,273.80	3,417.94	3,417.80	157.19	75.23	-89.80	252.10	4,538.18	1,370.62	1,138.85	231.77	5.914		
9,000.00	3,273.56	3,417.71	3,417.56	159.95	75.23	-89.78	252.10	4,538.18	1,454.21	1,219.67	234.53	6.200		
9,100.00	3,273.33	3,417.47	3,417.33	162.71	75.22	-89.77	252.10	4,538.18	1,539.75	1,302.46	237.30	6.489		
9,200.00	3,273.09	3,417.23	3,417.09	165.47	75.21	-89.75	252.10	4,538.18	1,626.95	1,386.89	240.06	6.777		
9,300.00	3,272.85	3,416.99	3,416.85	168.23	75.20	-89.73	252.10	4,538.18	1,715.55	1,472.72	242.82	7.065		
9,400.00	3,272.61	3,416.75	3,416.61	170.99	75.20	-89.71	252.10	4,538.18	1,805.33	1,559.75	245.59	7.351		
9,500.00	3,272.37	3,416.51	3,416.37	173.76	75.19	-89.70	252.10	4,538.18	1,896.14	1,647.79	248.35	7.635		
9,600.00	3,272.13	3,416.28	3,416.13	176.52	75.18	-89.68	252.10	4,538.18	1,987.83	1,736.72	251.12	7.916		
9,700.00	3,271.90	3,416.04	3,415.90	179.28	75.17	-89.66	252.10	4,538.18	2,080.29	1,826.41	253.88	8.194		
9,800.00	3,271.66	3,415.80	3,415.66	182.05	75.16	-89.64	252.10	4,538.18	2,173.42	1,916.77	256.65	8.469		
9,900.00	3,271.42	3,415.56	3,415.42	184.81	75.16	-89.62	252.10	4,538.18	2,267.13	2,007.72	259.41	8.740		
10,000.00	3,271.18	3,415.32	3,415.18	187.58	75.15	-89.61	252.10	4,538.18	2,361.35	2,099.18	262.17	9.007		
10,100.00	3,270.94	3,415.08	3,414.94	190.34	75.14	-89.59	252.10	4,538.18	2,456.04	2,191.10	264.94	9.270		
10,200.00	3,270.70	3,414.85	3,414.70	193.11	75.13	-89.57	252.10	4,538.18	2,551.13	2,283.42	267.70	9.530		
10,300.00	3,270.47	3,414.61	3,414.47	195.87	75.13	-89.55	252.10	4,538.18	2,646.58	2,376.11	270.47	9.785		
10,400.00	3,270.23	3,414.37	3,414.23	198.64	75.12	-89.54	252.10	4,538.18	2,742.35	2,469.12	273.23	10.037		
10,500.00	3,269.99	3,414.13	3,413.99	201.40	75.11	-89.52	252.10	4,538.18	2,838.42	2,562.42	276.00	10.284		
10,600.00	3,269.75	3,413.89	3,413.75	204.17	75.10	-89.50	252.10	4,538.18	2,934.75	2,655.99	278.76	10.528		
10,700.00	3,269.51	3,413.65	3,413.51	206.94	75.09	-89.48	252.10	4,538.18	3,031.32	2,749.79	281.53	10.767		
10,800.00	3,269.27	3,413.42	3,413.27	209.70	75.09	-89.47	252.10	4,538.18	3,128.10	2,843.81	284.29	11.003		
10,900.00	3,269.04	3,413.18	3,413.04	212.47	75.08	-89.45	252.10	4,538.18	3,225.08	2,938.02	287.06	11.235		
11,000.00	3,268.80	3,412.94	3,412.80	215.24	75.07	-89.43	252.10	4,538.18	3,322.24	3,032.41	289.82	11.463		
11,100.00	3,268.56	3,412.70	3,412.56	218.01	75.06	-89.41	252.10	4,538.18	3,419.56	3,126.97	292.59	11.687		
11,200.00	3,268.32	3,412.46	3,412.32	220.77	75.06	-89.40	252.10	4,538.18	3,517.03	3,221.68	295.35	11.908		
11,300.00	3,268.08	3,412.22	3,412.08	223.54	75.05	-89.38	252.10	4,538.18	3,614.64	3,316.52	298.12	12.125		
11,335.01	3,268.00	3,412.14	3,412.00	224.51	75.05	-89.37	252.10	4,538.18	3,648.85	3,349.76	299.09	12.200		



Koltek Energy Services
Anticollision Report



Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 210 - Original Hole - Original Hole													Offset Site Error: 0.00 usft
Survey Program: 256-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	
0.00	0.00	144.85	144.85	0.00	2.17	83.57	536.67	4,765.22	4,795.35				
6.00	6.00	150.79	150.79	0.00	2.26	83.57	536.67	4,765.22	4,795.35				
106.00	106.00	249.88	249.88	0.10	3.74	83.57	536.79	4,765.22	4,795.36	4,791.87	3.49	1,372.660	
206.00	206.00	351.73	351.73	0.33	6.86	83.57	536.64	4,765.22	4,795.34	4,789.11	6.24	768.884	
306.00	306.00	451.28	451.27	0.55	10.01	83.58	536.54	4,765.22	4,795.33	4,786.34	9.00	533.084	
365.50	365.50	510.51	510.50	0.69	11.88	83.58	536.53	4,765.22	4,795.33	4,784.69	10.64	450.808	
406.00	406.00	550.82	550.82	0.78	13.16	83.58	536.54	4,765.22	4,795.33	4,783.58	11.75	407.952	
506.00	506.00	650.36	650.35	1.00	16.31	83.57	536.61	4,765.22	4,795.34	4,780.83	14.51	330.394	
606.00	606.00	749.89	749.89	1.23	19.46	83.57	536.77	4,765.22	4,795.36	4,778.08	17.27	277.613	
706.00	706.00	851.00	851.00	1.45	22.84	83.57	536.81	4,765.22	4,795.36	4,775.49	19.87	241.366	
806.00	806.00	951.00	951.00	1.68	26.22	83.57	536.81	4,765.22	4,795.36	4,772.96	22.40	214.055	
906.00	906.00	1,051.01	1,051.00	1.90	29.60	83.57	536.81	4,765.22	4,795.36	4,770.42	24.94	192.281	
1,006.00	1,006.00	1,151.01	1,151.00	2.13	32.98	83.57	536.81	4,765.22	4,795.36	4,767.88	27.48	174.518	
1,106.00	1,106.00	1,251.01	1,251.00	2.35	36.36	83.57	536.81	4,765.22	4,795.36	4,765.34	30.02	159.755	
1,206.00	1,206.00	1,351.18	1,351.17	2.57	40.04	83.57	536.71	4,765.22	4,795.35	4,762.85	32.50	147.563	
1,218.99	1,218.99	1,364.00	1,363.99	2.60	40.53	83.57	536.71	4,765.22	4,795.35	4,762.54	32.81	146.145	
1,306.00	1,306.00	1,449.86	1,449.85	2.80	43.77	83.57	536.80	4,765.22	4,795.36	4,760.44	34.93	137.300	
1,406.00	1,406.00	1,551.36	1,551.35	3.02	48.75	83.57	536.67	4,765.22	4,795.35	4,757.63	37.72	127.130	
1,447.49	1,447.49	1,592.51	1,592.49	3.12	50.78	83.57	536.65	4,765.22	4,795.34	4,756.48	38.86	123.398	
1,506.00	1,506.00	1,650.53	1,650.52	3.25	53.64	83.57	536.68	4,765.22	4,795.35	4,754.88	40.47	118.484	
1,606.00	1,606.00	1,749.92	1,749.90	3.47	58.56	83.57	536.84	4,765.22	4,795.37	4,752.13	43.23	110.918	
1,706.00	1,706.00	1,850.37	1,850.35	3.70	63.60	83.57	537.00	4,765.22	4,795.38	4,749.39	46.00	104.256	
1,806.00	1,806.00	1,950.82	1,950.79	3.92	68.64	83.57	537.08	4,765.22	4,795.39	4,746.63	48.77	98.333	
1,906.00	1,906.00	2,051.28	2,051.24	4.15	73.67	83.57	537.08	4,765.22	4,795.39	4,743.85	51.54	93.036	
2,006.00	2,006.00	2,151.74	2,151.70	4.37	78.71	83.57	536.99	4,765.22	4,795.38	4,741.06	54.33	88.271	
2,106.00	2,106.00	2,252.20	2,252.16	4.60	83.75	83.57	536.82	4,765.22	4,795.36	4,738.25	57.11	83.965	
2,145.09	2,145.09	2,290.14	2,290.09	4.69	85.49	83.57	536.81	4,765.22	4,795.36	4,737.22	58.14	82.478	
2,206.00	2,206.00	2,351.05	2,351.00	4.82	88.24	83.57	536.81	4,765.22	4,795.36	4,735.58	59.78	80.216	
2,306.00	2,306.00	2,451.05	2,451.00	5.05	92.75	83.57	536.81	4,765.22	4,795.36	4,732.89	62.47	76.757	
2,406.00	2,406.00	2,551.05	2,551.00	5.27	97.26	83.57	536.81	4,765.22	4,795.36	4,730.19	65.17	73.583	
2,506.00	2,506.00	2,651.06	2,651.00	5.50	101.77	83.57	536.81	4,765.22	4,795.36	4,727.50	67.86	70.660	
2,606.00	2,606.00	2,751.06	2,751.00	5.72	106.35	83.57	536.81	4,765.22	4,795.36	4,724.70	70.66	67.867	
2,706.00	2,706.00	2,851.06	2,851.00	5.95	110.94	83.57	536.81	4,765.22	4,795.36	4,721.88	73.48	65.261	
2,806.00	2,806.00	2,951.06	2,951.00	6.17	115.54	83.57	536.81	4,765.22	4,795.36	4,719.06	76.30	62.847	
2,906.00	2,906.00	3,051.07	3,051.00	6.40	120.13	83.57	536.81	4,765.22	4,795.36	4,716.24	79.12	60.606	
2,996.52	2,996.52	3,141.59	3,141.52	6.60	124.29	83.57	536.81	4,765.22	4,795.36	4,713.68	81.68	58.710	
3,000.00	3,000.00	3,145.07	3,145.00	6.60	124.45	-22.58	536.81	4,765.22	4,795.34	4,664.88	130.46	36.757	
3,025.00	3,024.95	3,170.02	3,169.95	6.61	125.60	-22.68	536.81	4,765.22	4,794.06	4,663.03	131.02	36.589	
3,050.00	3,049.69	3,195.68	3,195.61	6.62	126.89	-22.96	536.77	4,765.22	4,790.76	4,659.95	130.81	36.623	
3,075.00	3,074.02	3,219.72	3,219.65	6.63	128.13	-23.41	536.73	4,765.22	4,785.49	4,655.87	129.62	36.918	
3,100.00	3,097.76	3,243.17	3,243.10	6.66	129.33	-24.05	536.71	4,765.22	4,778.29	4,650.79	127.50	37.478	
3,125.00	3,120.74	3,265.86	3,265.79	6.69	130.50	-24.91	536.70	4,765.22	4,769.20	4,644.75	124.45	38.321	
3,150.00	3,142.76	3,287.62	3,287.54	6.72	131.62	-26.01	536.71	4,765.22	4,758.31	4,637.77	120.54	39.473	
3,175.00	3,163.68	3,308.27	3,308.19	6.76	132.69	-27.39	536.72	4,765.22	4,745.70	4,629.85	115.85	40.963	
3,200.00	3,183.32	3,327.65	3,327.58	6.80	133.68	-29.12	536.74	4,765.22	4,731.46	4,620.96	110.50	42.818	
3,225.00	3,201.54	3,345.63	3,345.56	6.87	134.61	-31.26	536.77	4,765.22	4,715.71	4,611.03	104.68	45.049	
3,250.00	3,218.20	3,362.07	3,361.99	7.01	135.46	-33.91	536.80	4,765.22	4,698.57	4,599.92	98.65	47.631	
3,275.00	3,233.17	3,378.25	3,378.17	7.19	136.37	-37.21	536.81	4,765.22	4,680.17	4,587.30	92.86	50.398	
3,300.00	3,246.34	3,391.42	3,391.34	7.42	137.13	-41.30	536.81	4,765.22	4,660.65	4,572.96	87.68	53.154	
3,325.00	3,257.61	3,402.69	3,402.61	7.70	137.77	-46.40	536.81	4,765.22	4,640.16	4,556.43	83.74	55.414	
3,350.00	3,266.89	3,411.97	3,411.89	8.03	138.31	-52.74	536.81	4,765.22	4,618.87	4,537.27	81.60	56.601	
3,375.00	3,274.12	3,419.20	3,419.12	8.41	138.72	-60.52	536.81	4,765.22	4,596.94	4,515.39	81.54	56.373	

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.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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.36-T32N-R07W - San Juan 32-7 Unit 210 - Original Hole - Original Hole													Offset Site Error: 0.00 usft
Survey Program: 256-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)					
3,400.00	3,279.23	3,424.31	3,424.23	8.83	139.02	-69.81	536.81	4,765.22	4,574.53	4,491.42	83.11	55.041	
3,425.00	3,282.19	3,427.27	3,427.19	9.29	139.19	-80.37	536.81	4,765.22	4,551.83	4,466.74	85.08	53.499	
3,446.52	3,283.00	3,428.08	3,428.00	9.71	139.23	-90.00	536.81	4,765.22	4,532.17	4,446.12	86.05	52.669	
3,500.00	3,283.00	3,428.08	3,428.00	10.82	139.23	-90.00	536.81	4,765.22	4,483.36	4,396.20	87.16	51.439	
3,600.00	3,283.00	3,428.08	3,428.00	13.10	139.23	-90.00	536.81	4,765.22	4,392.37	4,302.93	89.44	49.111	
3,700.00	3,283.00	3,428.08	3,428.00	15.54	139.23	-90.00	536.81	4,765.22	4,301.78	4,209.90	91.88	46.819	
3,800.00	3,283.00	3,428.08	3,428.00	18.08	139.23	-90.00	536.81	4,765.22	4,211.62	4,117.20	94.42	44.605	
3,900.00	3,283.00	3,428.08	3,428.00	20.68	139.23	-90.00	536.81	4,765.22	4,121.91	4,024.89	97.02	42.483	
4,000.00	3,283.00	3,428.08	3,428.00	23.33	139.23	-90.00	536.81	4,765.22	4,032.69	3,933.02	99.67	40.461	
4,100.00	3,283.00	3,428.08	3,428.00	26.00	139.23	-90.00	536.81	4,765.22	3,943.98	3,841.64	102.34	38.538	
4,200.00	3,283.00	3,428.08	3,428.00	28.69	139.23	-90.00	536.81	4,765.22	3,855.83	3,750.80	105.03	36.710	
4,300.00	3,283.00	3,428.08	3,428.00	31.40	139.23	-90.00	536.81	4,765.22	3,768.27	3,660.53	107.74	34.974	
4,400.00	3,283.00	3,428.08	3,428.00	34.12	139.23	-90.00	536.81	4,765.22	3,681.34	3,570.88	110.46	33.326	
4,500.00	3,283.00	3,428.08	3,428.00	36.85	139.23	-90.00	536.81	4,765.22	3,595.09	3,481.90	113.19	31.760	
4,600.00	3,283.00	3,428.08	3,428.00	39.59	139.23	-90.00	536.81	4,765.22	3,509.57	3,393.64	115.93	30.273	
4,700.00	3,283.00	3,428.08	3,428.00	42.33	139.23	-90.00	536.81	4,765.22	3,424.84	3,306.17	118.67	28.859	
4,772.52	3,283.00	3,428.08	3,428.00	44.32	139.23	-90.00	536.81	4,765.22	3,363.91	3,243.25	120.67	27.878	
4,800.00	3,283.00	3,428.08	3,428.00	45.08	139.23	-90.01	536.81	4,765.22	3,340.84	3,220.15	120.69	27.681	
4,900.00	3,282.96	3,428.04	3,427.96	47.83	139.23	-90.06	536.81	4,765.22	3,255.65	3,134.70	120.95	26.917	
5,000.00	3,282.88	3,427.96	3,427.88	50.58	139.23	-90.11	536.81	4,765.22	3,168.59	3,047.06	121.53	26.073	
5,100.00	3,282.76	3,427.84	3,427.76	53.33	139.22	-90.17	536.81	4,765.22	3,079.75	2,957.29	122.46	25.149	
5,200.00	3,282.59	3,427.67	3,427.59	56.05	139.21	-90.24	536.81	4,765.22	2,989.23	2,865.44	123.79	24.148	
5,300.00	3,282.38	3,427.46	3,427.38	58.74	139.20	-90.33	536.81	4,765.22	2,897.14	2,771.60	125.53	23.078	
5,311.84	3,282.35	3,427.43	3,427.35	59.06	139.19	-90.35	536.81	4,765.22	2,886.14	2,760.37	125.77	22.948	
5,400.00	3,282.14	3,427.22	3,427.14	61.41	139.18	-90.33	536.81	4,765.22	2,804.31	2,676.12	128.19	21.876	
5,500.00	3,281.90	3,426.98	3,426.90	64.09	139.17	-90.32	536.81	4,765.22	2,711.99	2,581.05	130.94	20.712	
5,600.00	3,281.66	3,426.74	3,426.66	66.78	139.16	-90.31	536.81	4,765.22	2,620.22	2,486.53	133.69	19.600	
5,700.00	3,281.43	3,426.51	3,426.43	69.47	139.14	-90.30	536.81	4,765.22	2,529.08	2,392.64	136.44	18.536	
5,800.00	3,281.19	3,426.27	3,426.19	72.17	139.13	-90.28	536.81	4,765.22	2,438.64	2,299.45	139.19	17.520	
5,900.00	3,280.95	3,426.03	3,425.95	74.88	139.11	-90.27	536.81	4,765.22	2,348.97	2,207.02	141.95	16.548	
6,000.00	3,280.71	3,425.79	3,425.71	77.59	139.10	-90.26	536.81	4,765.22	2,260.16	2,115.46	144.70	15.619	
6,100.00	3,280.47	3,425.55	3,425.47	80.30	139.09	-90.24	536.81	4,765.22	2,172.33	2,024.88	147.46	14.732	
6,200.00	3,280.24	3,425.32	3,425.24	83.02	139.07	-90.23	536.81	4,765.22	2,085.60	1,935.38	150.22	13.884	
6,300.00	3,280.00	3,425.08	3,425.00	85.75	139.06	-90.22	536.81	4,765.22	2,000.11	1,847.13	152.97	13.075	
6,400.00	3,279.76	3,424.84	3,424.76	88.47	139.05	-90.21	536.81	4,765.22	1,916.02	1,760.28	155.73	12.303	
6,500.00	3,279.52	3,424.60	3,424.52	91.20	139.03	-90.19	536.81	4,765.22	1,833.52	1,675.03	158.49	11.568	
6,600.00	3,279.28	3,424.36	3,424.28	93.93	139.02	-90.18	536.81	4,765.22	1,752.86	1,591.60	161.25	10.870	
6,700.00	3,279.04	3,424.12	3,424.04	96.67	139.00	-90.17	536.81	4,765.22	1,674.28	1,510.26	164.02	10.208	
6,800.00	3,278.81	3,423.89	3,423.81	99.40	138.99	-90.15	536.81	4,765.22	1,598.09	1,431.31	166.78	9.582	
6,900.00	3,278.57	3,423.65	3,423.57	102.14	138.98	-90.14	536.81	4,765.22	1,524.66	1,355.12	169.54	8.993	
7,000.00	3,278.33	3,423.41	3,423.33	104.88	138.96	-90.13	536.81	4,765.22	1,454.40	1,282.10	172.30	8.441	
7,100.00	3,278.09	3,423.17	3,423.09	107.63	138.95	-90.12	536.81	4,765.22	1,387.79	1,212.73	175.06	7.927	
7,200.00	3,277.85	3,422.93	3,422.85	110.37	138.94	-90.10	536.81	4,765.22	1,325.39	1,147.56	177.83	7.453	
7,300.00	3,277.61	3,422.69	3,422.61	113.11	138.92	-90.09	536.81	4,765.22	1,267.82	1,087.22	180.59	7.020	
7,400.00	3,277.38	3,422.46	3,422.38	115.86	138.91	-90.08	536.81	4,765.22	1,215.75	1,032.40	183.36	6.631	
7,500.00	3,277.14	3,422.22	3,422.14	118.61	138.90	-90.06	536.81	4,765.22	1,169.93	983.81	186.12	6.286	
7,600.00	3,276.90	3,421.98	3,421.90	121.36	138.88	-90.05	536.81	4,765.22	1,131.12	942.24	188.88	5.988	
7,700.00	3,276.66	3,421.74	3,421.66	124.11	138.87	-90.04	536.81	4,765.22	1,100.06	908.41	191.65	5.740	
7,800.00	3,276.42	3,421.50	3,421.42	126.86	138.85	-90.03	536.81	4,765.22	1,077.41	883.00	194.42	5.542	
7,900.00	3,276.18	3,421.26	3,421.18	129.61	138.84	-90.01	536.81	4,765.22	1,063.73	866.55	197.18	5.395	
7,996.54	3,275.95	3,421.03	3,420.95	132.27	138.83	-90.00	536.81	4,765.22	1,059.34	859.49	199.85	5.301 CC	
8,000.00	3,275.95	3,421.03	3,420.95	132.37	138.83	-90.00	536.81	4,765.22	1,059.34	859.40	199.95	5.298 ES	

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 211 ST
Project:	San Juan Co., NM (NAD27)	TVD Reference:	KB @ 6558.00usft
Reference Site:	Sec.35-T32N-R07W	MD Reference:	KB @ 6558.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	San Juan 32-7 Unit 211 ST	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST	Database:	EDM 5000.1 Single User Db
Reference Design:	Rev1	Offset TVD Reference:	Offset Datum

Offset Design Sec.36-T32N-R07W - San Juan 32-7 Unit 210 - Original Hole - Original Hole														Offset Site Error:	0.00 usft
Survey Program: 256-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)							
8,100.00	3,275.71	3,420.79	3,420.71	135.12	138.81	-89.99	536.81	4,765.22	1,064.38	861.66	202.71	5.251			
8,200.00	3,275.47	3,420.55	3,420.47	137.88	138.80	-89.97	536.81	4,765.22	1,078.70	873.22	205.48	5.250 SF			
8,300.00	3,275.23	3,420.31	3,420.23	140.63	138.79	-89.96	536.81	4,765.22	1,101.94	893.70	208.24	5.292			
8,400.00	3,274.99	3,420.07	3,419.99	143.39	138.77	-89.95	536.81	4,765.22	1,133.57	922.56	211.01	5.372			
8,500.00	3,274.76	3,419.83	3,419.76	146.15	138.76	-89.94	536.81	4,765.22	1,172.89	959.11	213.78	5.486			
8,600.00	3,274.52	3,419.60	3,419.52	148.91	138.74	-89.92	536.81	4,765.22	1,219.16	1,002.62	216.54	5.630			
8,700.00	3,274.28	3,419.36	3,419.28	151.67	138.73	-89.91	536.81	4,765.22	1,271.63	1,052.32	219.31	5.798			
8,800.00	3,274.04	3,419.12	3,419.04	154.43	138.72	-89.90	536.81	4,765.22	1,329.56	1,107.49	222.08	5.987			
8,900.00	3,273.80	3,418.88	3,418.80	157.19	138.70	-89.88	536.81	4,765.22	1,392.27	1,167.43	224.84	6.192			
9,000.00	3,273.56	3,418.64	3,418.56	159.95	138.69	-89.87	536.81	4,765.22	1,459.15	1,231.54	227.61	6.411			
9,100.00	3,273.33	3,418.40	3,418.33	162.71	138.68	-89.86	536.81	4,765.22	1,529.64	1,299.26	230.38	6.640			
9,200.00	3,273.09	3,418.17	3,418.09	165.47	138.66	-89.84	536.81	4,765.22	1,603.28	1,370.13	233.15	6.877			
9,300.00	3,272.85	3,417.93	3,417.85	168.23	138.65	-89.83	536.81	4,765.22	1,679.64	1,443.73	235.91	7.120			
9,400.00	3,272.61	3,417.69	3,417.61	170.99	138.63	-89.82	536.81	4,765.22	1,758.37	1,519.69	238.68	7.367			
9,500.00	3,272.37	3,417.45	3,417.37	173.76	138.62	-89.81	536.81	4,765.22	1,839.18	1,597.73	241.45	7.617			
9,600.00	3,272.13	3,417.21	3,417.13	176.52	138.61	-89.79	536.81	4,765.22	1,921.79	1,677.57	244.22	7.869			
9,700.00	3,271.90	3,416.98	3,416.90	179.28	138.59	-89.78	536.81	4,765.22	2,005.98	1,758.99	246.98	8.122			
9,800.00	3,271.66	3,416.74	3,416.66	182.05	138.58	-89.77	536.81	4,765.22	2,091.56	1,841.81	249.75	8.375			
9,900.00	3,271.42	3,416.50	3,416.42	184.81	138.57	-89.75	536.81	4,765.22	2,178.38	1,925.86	252.52	8.627			
10,000.00	3,271.18	3,416.26	3,416.18	187.58	138.55	-89.74	536.81	4,765.22	2,266.28	2,010.99	255.29	8.877			
10,100.00	3,270.94	3,416.02	3,415.94	190.34	138.54	-89.73	536.81	4,765.22	2,355.15	2,097.09	258.06	9.126			
10,200.00	3,270.70	3,415.78	3,415.70	193.11	138.53	-89.72	536.81	4,765.22	2,444.87	2,184.05	260.82	9.374			
10,300.00	3,270.47	3,415.55	3,415.47	195.87	138.51	-89.70	536.81	4,765.22	2,535.37	2,271.78	263.59	9.619			
10,400.00	3,270.23	3,415.31	3,415.23	198.64	138.50	-89.69	536.81	4,765.22	2,626.55	2,360.19	266.36	9.861			
10,500.00	3,269.99	3,415.07	3,414.99	201.40	138.48	-89.68	536.81	4,765.22	2,718.36	2,449.23	269.13	10.101			
10,600.00	3,269.75	3,414.83	3,414.75	204.17	138.47	-89.66	536.81	4,765.22	2,810.72	2,538.82	271.90	10.337			
10,700.00	3,269.51	3,414.59	3,414.51	206.94	138.46	-89.65	536.81	4,765.22	2,903.59	2,628.93	274.67	10.571			
10,800.00	3,269.27	3,414.35	3,414.27	209.70	138.44	-89.64	536.81	4,765.22	2,996.92	2,719.49	277.43	10.802			
10,900.00	3,269.04	3,414.12	3,414.04	212.47	138.43	-89.63	536.81	4,765.22	3,090.67	2,810.47	280.20	11.030			
11,000.00	3,268.80	3,413.88	3,413.80	215.24	138.42	-89.61	536.81	4,765.22	3,184.79	2,901.82	282.97	11.255			
11,100.00	3,268.56	3,413.64	3,413.56	218.01	138.40	-89.60	536.81	4,765.22	3,279.27	2,993.53	285.74	11.476			
11,200.00	3,268.32	3,413.40	3,413.32	220.77	138.39	-89.59	536.81	4,765.22	3,374.06	3,085.55	288.51	11.695			
11,300.00	3,268.08	3,413.16	3,413.08	223.54	138.37	-89.57	536.81	4,765.22	3,469.15	3,177.87	291.28	11.910			
11,335.01	3,268.00	3,413.08	3,413.00	224.51	138.37	-89.57	536.81	4,765.22	3,502.50	3,210.26	292.24	11.985			

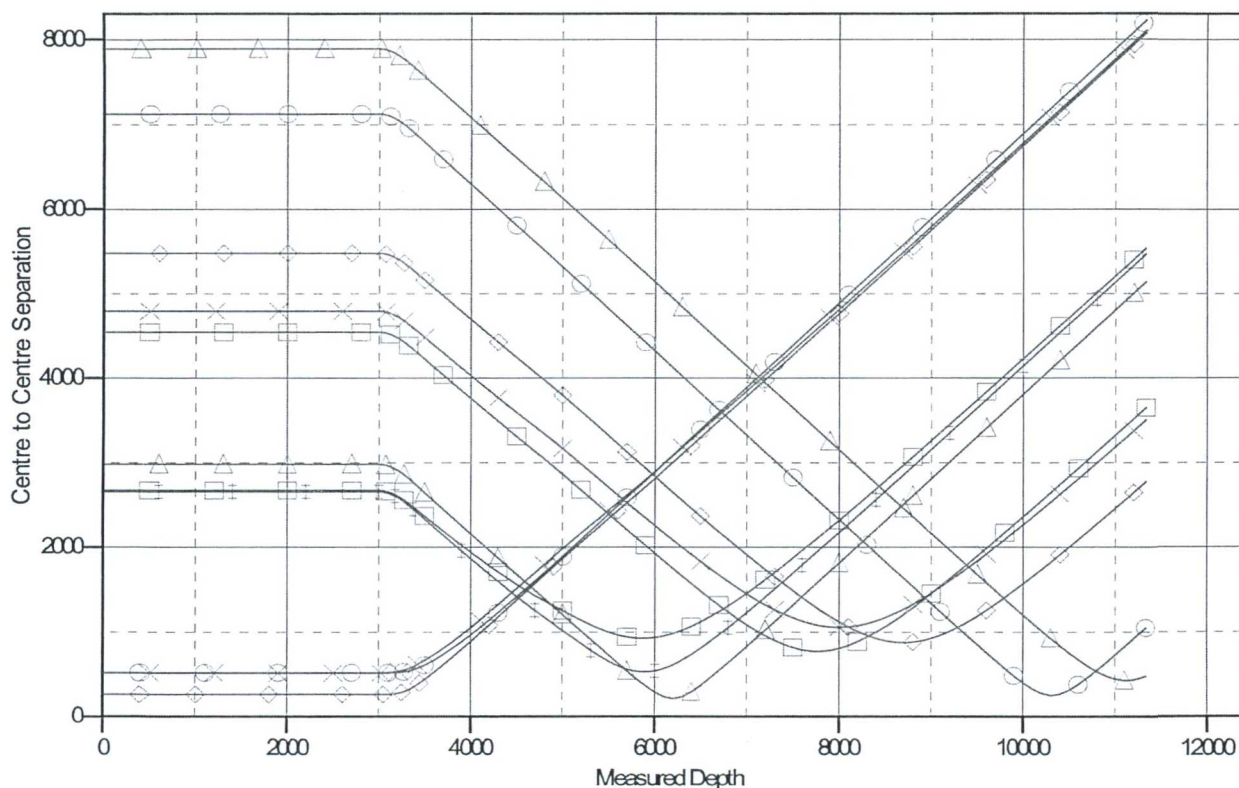
Company: Hilcorp Energy Company
Project: San Juan Co., NM (NAD27)
Reference Site: Sec.35-T32N-R07W
Site Error: 0.00 usft
Reference Well: San Juan 32-7 Unit 211 ST
Well Error: 0.00 usft
Reference Wellbore: ST
Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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 @ 6558.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 107.83334°W

Coordinates are relative to: San Juan 32-7 Unit 211 ST
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: 0.18°

Ladder Plot



LEGEND

San Juan 32-7 Unit026M, Original Hole, Original Hole V0	San Juan 32-7 Unit209A, Original Hole, Original Hole V0	San Juan 32-7 Unit027, Original Hole, Original Hole V0
San Juan 32-7 Unit028, Original Hole, Original Hole V0	San Juan 32-7 Unit211R, Original Hole, Original Hole V0	San Juan 32-7 Unit067, Original Hole, Original Hole V0
San Juan 32-7 Unit045, Original Hole, Original Hole V0	San Juan 32-7 Unit025A, Original Hole, Original Hole V0	San Juan 32-7 Unit210, Original Hole, Original Hole V0
San Juan 32-7 Unit049, Original Hole, Original Hole V0	San Juan 32-7 Unit025F, Original Hole, Original Hole V0	



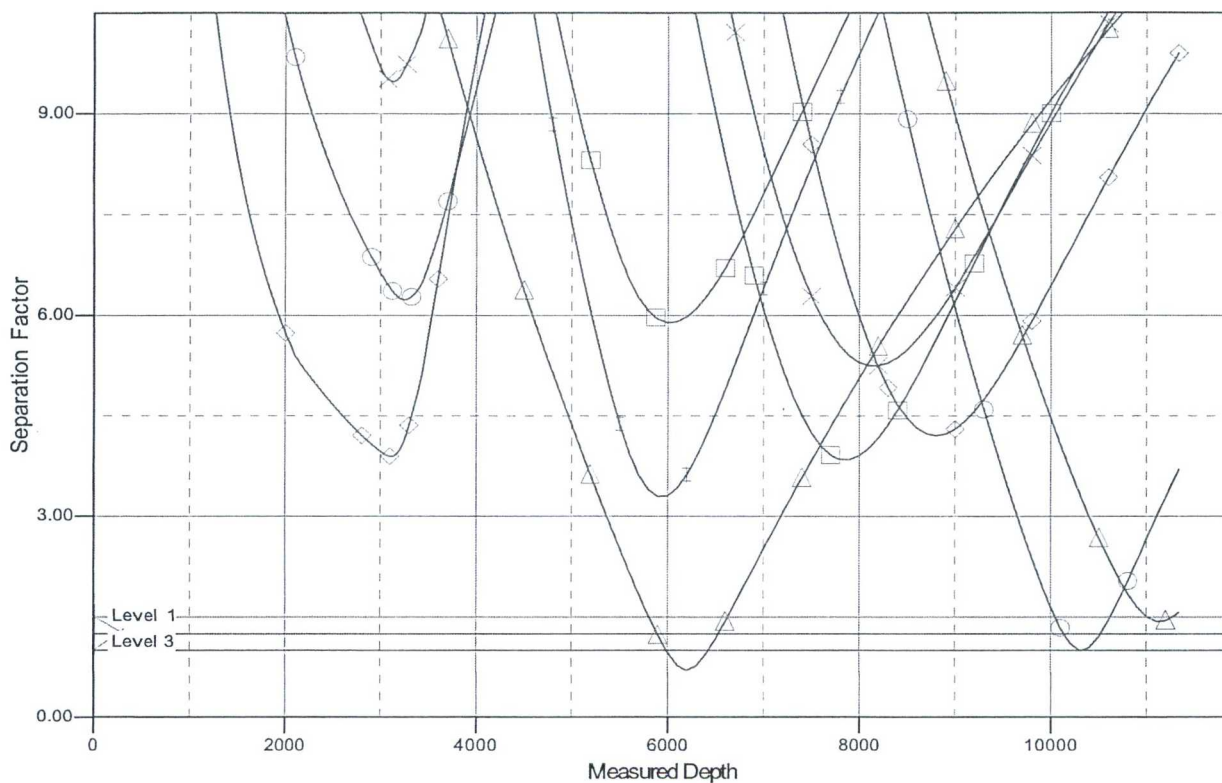
Company: Hilcorp Energy Company
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Reference Site: Sec.35-T32N-R07W
Site Error: 0.00 usft
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Well Error: 0.00 usft
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Reference Design: Rev1

Local Co-ordinate Reference: Well San Juan 32-7 Unit 211 ST
TVD Reference: KB @ 6558.00usft
MD Reference: KB @ 6558.00usft
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 @ 6558.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 107.83334°W

Coordinates are relative to: San Juan 32-7 Unit 211 ST
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: 0.18°

Separation Factor Plot



LEGEND

San Juan 32-7 Unit026M, Original Hole, Original Hole V0	San Juan 32-7 Unit209A, Original Hole, Original Hole V0	San Juan 32-7 Unit027, Original Hole, Original Hole V0
San Juan 32-7 Unit028, Original Hole, Original Hole V0	San Juan 32-7 Unit211R, Original Hole, Original Hole V0	San Juan 32-7 Unit067, Original Hole, Original Hole V0
San Juan 32-7 Unit045, Original Hole, Original Hole V0	San Juan 32-7 Unit025A, Original Hole, Original Hole V0	San Juan 32-7 Unit210, Original Hole, Original Hole V0
San Juan 32-7 Unit049, Original Hole, Original Hole V0	San Juan 32-7 Unit025F, Original Hole, Original Hole V0	