

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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.

5. Lease Serial No.
NMSF078138A

6. If Indian, Allottee or Tribe Name

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

SUBMIT IN TRIPLICATE - Other instructions on page 2

8. Well Name and No.
STOREY B LS 6 1H

9. API Well No.
30-045-35712-00-X1

10. Field and Pool or Exploratory Area
Basin Fruitland Coal

11. County or Parish, State
SAN JUAN COUNTY, NM

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator **BP AMERICA PRODUCTION COMPANY** Contact: **TOYA COLVIN**
Email: **Toya.Colvin@bp.com**

3a. Address **501 WESTLAKE PARK BLVD. THREE ELDRIDGE PLACE**
HOUSTON, TX 77079 3b. Phone No. (include area code)
Ph: 281-892-5369

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

Sec 11 T30N R11W SWNE 1719FNL 1981FEL
36.828879 N Lat, 107.958212 W Lon

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	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

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

BP respectfully requests to add and drill a pilot hole in the subject well before drilling our previously approved lateral. The pilot hole drilled will not be produced and will be plugged back according to the attached plan.

OIL CONS. DIV DIST. 3

DEC 15 2016

In addition we have made changes to the cemented liner and proposed completions of the subject well.

Please see the attached updated drill plan, directional plans, and C-102 plat.

ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

CONDITIONS OF APPROVAL
Adhere to previously issued stipulations

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #357975 verified by the BLM Well Information System
For BP AMERICA PRODUCTION COMPANY, sent to the Farmington
Committed to AFMSS for processing by ABDELGADIR ELMADANI on 12/13/2016 (17AE0099SE)

Name (Printed/Typed) **TOYA COLVIN**

Title **REGULATORY ANALYST**

Signature (Electronic Submission)

Date **11/15/2016**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By **ABDELGADIR ELMADANI**

Title **PETROLEUM ENGINEER**

Date **12/13/2016**

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 **Farmington**

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.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

NMOCD

**Application for Permit to Drill
Drilling Plan
REVISED 11/10/2016**

BP AMERICA PRODUCTION COMPANY

STOREY B LS 6 #1H

Surface Location: 1939' FNL & 2078' FEL
Section 11, T30N, R11W
Proposed GL Elev = 5938.60'
Lat. = 36.82827510° N
Long. = 107.95854884° W
NAD 83
San Juan County, New Mexico

Pilot Hole Bottom Hole Location: 1589' FNL – 1981' FEL
Core Ignacio Coal, Fruitland Sand Channel, Cottonwood Coal, Cahn Coal and Picture Cliffs Sandstone
Plug back and drill horizontal in Cahn Coal
Proposed Entry Point of Production Location: 1941' FNL – 1801' FEL
Proposed Bottom Hole Location: 710' FSL – 911' FEL
Section 11, T30N, R11W
San Juan County, Colorado

Drilling program written in compliance with onshore Oil and Gas Order No. 1
(III.D.3, effective May 2007) and Onshore Order No. 2 Dated November 18, 1988

A. Names and estimated tops of all geologic groups, formations, members or zones.

Depths referenced to GL of 5,938.60' & RKB 11' @ 5,949.60'			
Marker	Sub Sea	TVD	MD
Nacimiento	5,937	11	11
Ojo Alamo	4,935	1,013	1,061
Kirtland Sh	4,816	1,132	1,191
Farmington Ss	4,309	1,639	1,736
Lwr. Kirtland Sh	4,108	1,840	1,939
Fruitland Coal	3,868	2,080	2,185
Fruitland Ss	3,707	2,241	2,381
Fruitland Ss Base	3,683	2,265	2,417
Cottonwood Seam	3,666	2,282	2,443
Cahn Seam	3,540	2,408	2,727
Picture Cliffs SS	3,513	2,435	2,478
Pilot Hole Total Depth:	3,400	2,548	2,591
TOTAL DEPTH:	3,554	2,422 – 2,395	5,244

- B. Estimated depth and thickness of formations, members or zones potentially containing useable water, oil, gas or prospectively valuable deposits of other minerals that the operator expects to encounter, and the operator's plans for protecting such resources.**

Depths referenced to GL of 5,938.60' & RKB 11' @ 5,949.60'					
Marker	Sub Sea	TVD	Thickness	MD	
Nacimiento	5,937	11	1002	11	Usable Water
Ojo Alamo	4,935	1,013	119	1,061	Water
Kirtland Sh	4,816	1,132	507	1,191	Water
Farmington Ss	4,309	1,639	201	1,736	Gas & Water
Lwr. Kirtland Sh	4,108	1,840	240	1,939	Gas & Water
Fruitland Coal	3,868	2,080	161	2,185	Gas, Water
Fruitland Ss	3,707	2,241	24	2,381	Gas
Fruitland Ss Base	3,683	2,265	17	2,417	Gas
Cottonwood Coal	3,666	2,282	126	2,443	Gas
Cahn Coal	3,540	2,408	18	2,727	Gas
Picture Cliffs SS	3,513	2,435	2,478		
TOTAL DEPTH:	3,554	2,422 – 2,395		5,244	

Conductor: No conductor casing is necessary

Surface Casing: Protection shall be accomplished by setting surface casing 50' below known fresh water sources and cemented to surface with 9 5/8" surface casing.

Possible Aquifers: Nacimiento, 250'

Oil Shale: None Expected.

Oil & Gas: Primary objective is gas in the Cahn Coal 2408' TVD.

Protection of oil, gas, water, or other mineral bearing formations: Protection shall be accomplished by setting surface casing below base of possible aquifer and cementing surface casing to surface.

Intermediate casing will be set at 3130'MD/2422'TVD and cemented to surface.

C. The operator's minimum specifications for blowout prevention equipment and diverter systems to be used, including size, pressure rating, configuration and the testing procedure and frequency. Blowout prevention equipment must meet the minimum standards outlined in Order 2.

BOP equipment and accessories will meet or exceed BLM requirements outlined in 43 CFR Part 3160.

The working pressure of all BOPE shall exceed the anticipated surface pressure to which it may be subjected, assuming a partially evacuated hole with a pressure gradient of 0.22 psi/ft.

Expected Maximum Bottom Hole pressure = 1066 psi, which is less than 2,000 psi working pressure. Therefore, a 2000 psi BOPE system is required that consists of the following:

- Annular preventer, or double ram, or two rams with one being blind and one being a pipe ram.
- Kill line (2" minimum)
- 1 Kill line valve (2" minimum)
- 1 choke line valve
- 2 chokes (refer to diagram in Attachment 1)
- Upper Kelly cock valve with handle available
- Safety valve and subs to fit all drill strings in use
- Pressure gauge on choke manifold
- 2" minimum choke manifold
- Fill-up line above the uppermost preventer

See attached diagram for the proposed BOP system. The wellhead BOP equipment will be nipped-up on the 9-5/8" x 11" 2,000 psi flanged casing head. The BOP will be hydraulically operated.

All ram preventers and related equipment will be tested to 2,000 psi for 10 minutes. Annular preventers will be tested to 50% of rated working pressure for 10 minutes. Surface casing will be tested to 1500 psi. All preventers and surface casing will be tested before drilling out of surface casing. BOP equipment will be tested when initially installed, whenever any seal subject to test pressure is broken, following related repairs and at least once every 30 days. Annular preventers will be functionally operated at least once per week. Rams preventers will be activated each trip, not to exceed once per day.

D. The operator's proposed casing program, including size, grade, weight, type of thread and coupling, the setting depth of each string, and it's condition. The operator must include the minimum design criteria, including casing loading assumptions and corresponding safety factors for burst, collapse, and tensions (body yield and joint strength). The operator must also include the lengths and setting depth of each casing when a tapered casing string is proposed. The hole size for each wellbore section of hole drilled must be included. Special casing designs such as the use of coil tubing or expandable casing may necessitate additional information.

Casing & Hole Size	Grade	Weight	Coupling	Setting Depth (MD)	Condition
9-5/8" (12-1/4")	J-55	36 ppf	LT&C	0' - 300'	New casing.
7" (8-3/4")	J-55	23 ppf	LT&C	0' - 3130'	New casing.
4-1/2" (6-1/4")	N-80	11.6 ppf	BT&C	3030' - 5244'	New casing.
4-1/2" (6-1/4") Production Alternative	J-55	11.6 ppf	LT&C	3030' - 5244'	Used casing, perforated liner.

Casing strings below the conductor casing will be tested to .22 psi per foot of the casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield.

Minimum casing design factors used: Collapse - 1.0

Burst - 1.1
Tension - 1.4

Surface casing shall have a minimum of 1 centralizer per joint on the bottom three (3) joints, starting with the shoe joint.

The intermediate casing will be centralized using 1 centralizer the first 6 jts and spaced appropriately through the curve section of the well-bore and then spaced +/- 1 centralizer / 4 jts through the remainder of the cement column, using approximately 30 centralizers.

Surface casing maybe preset with a preset rig.

The production casing will be a liner set a minimum of 100' above the 7" casing shoe and is cemented to top of liner.

Surface Casing Design - Evacuation/Casing Test (collapse & burst), 100k overpull (tension)

					Collapse	Burst	Tension		
Min Safety Factors					1.000	1.100	1.400		
	Size	Weight	Grade	Conn	Collapse	Burst	Tension (Pipe Body)	Tension (Connection)	Notes
Surface	9.625	36	J55	STC	2,020	3,520	564,000	394,000	0' - 300'
					80% of Burst =		2,816		
36 ppf J55 STC									
	Casing TVD	MW in	MW out	Pres in	Pres out	SF			
Collapse	300	0	15.80	0	246	8.20	Full evacuation with 15.8ppg cement in the annulus		
Burst	300	9.0	0	1500	0	2.35	1500psi casing test		
		Mud Wt	Air Wt	Bouy Wt	BW +100k				
Tension (Pipe Body)	300	9.0	10,800	9,316	109,316	5.16	100k over pull		
Tension (Connection)	300	9.0	10,800	9,316	109,316	3.60			
BF= 1- (MW)/65.5 = 0.8626									

Intermediate Casing Design - Evacuation/Casing Test (collapse & burst), 100k overpull (tension)

					Collapse	Burst	Tension		
Min Safety Factors					1.125	1.000	1.400		
	Size	Weight	Grade	Conn	Collapse	Burst	Tension (Pipe Body)	Tension (Connection)	Notes
Intermediate	7	23	J55	LTC	3,270	4,350	366,000	313,000	0' - 2422'
					80% of Burst =		3,480		
23 ppf J55 LTC									
	Casing Depth	MW in	MW out	Pres in	Pres out	SF			
Collapse	2422	0	13.20	0	1662	1.97	Full evacuation with 13.2 ppg cement in the annulus		
Burst	2422	9.0	0	1500	0	2.90	1500 psi casing test		
		Mud Wt	Air Wt	Bouy Wt	BW +100k				
Tension (Pipe Body)	2422	9.0	55,706	48,052	148,052	2.47	100k over pull		
Tension (Connection)	2422	9.0	55,706	48,052	148,052	2.11			
BF= 1- (MW)/65.5 = 0.8626									

Production Casing Design - Evacuation/Casing Test (collapse & burst), 100k overpull (tension)

	Collapse	Burst	Tension
Min Safety Factors	1.000	1.100	1.400

	Size	Weight	Grade	Conn	Collapse	Burst	Tension (Pipe Body)	Tension (Connection)	Notes
Production	4.5	11.6	N80	BTC	6,360	7,780	267,000	304,000	0' - 2422'
					80% of Burst =		6,224		

11.6 ppg N80 BTC

	Casing Depth	MW in	MW out	Pres in	Pres out	SF	
Collapse	2422	0	13.20	0	1662	3.83	Full evacuation with 13.2ppg cement in the annulus
Burst	2422	9.0	0	3800	0	2.05	Evacuated annulus with Frac pressure
		Mud Wt	Air Wt	Bouy Wt	BW +100k		
Tension (Pipe Body)	2422	9.0	28,095	24,235	124,235	2.15	100k over pull
Tension (Connection)	2422	9.0	28,095	24,235	124,235	2.45	
BF= 1- (MW)/65.5 = 0.8626							

- E. The estimated amount and type(s) of cement expected to be used in the setting of each casing string. If stage cementing will be used, provide the setting depth of the stage tool(s) and the amount and type of cement including additives, to be used for each stage. Provide the yield of each cement slurry and the expected top of cement, with excess, for each cemented string or stage.**

The proposed cementing program has been designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. All indications of useable water shall be reported.

The surface casing shall be cemented back to surface. In the event cement does not circulate to surface, remedial cementing shall be done to cement the casing back to surface. If returns are lost and/or cement is not brought to surface, a cement bond log (CBL) will be required to determine the quality of the job prior to drilling ahead (see OO2).

Top plugs shall be used to reduce contamination of cement by displacement fluid. A fluid spacer will be pumped to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

Intermediate casing will be cemented to surface. Tail cement for the intermediate cement job is designed to cover from the casing shoe to the curve KOP, lead cement is designed to circulate to surface. Planned excess is 50% in the open hole.

Surface Casing Single Stage Job – (0-300' MD):

Excess – 100% over gauge hole – 12-1/4" hole and 9-5/8" casing (0.3132ft3/ft)

Top of Lead Cement - Surface

Lead Slurry - (0' – 168'): 43 sx – 12.3 ppg, conventional cement containing:

HALCEM™ SYSTEM – Cement – 94 lbs/sx

Yield – 2.45 ft3/sx

Water requirement – 13.77 gal/sx.

Top of Tail Cement - 168'

Tail Slurry - (168' – 300' MD): 45 sx - 13.5 ppg, conventional cement containing:

HALCEM™ CEMENT – Cement – 94 lbs/sx

Yield – 1.842 ft3/sx

Water requirement – 9.31 gal/sx.

Total sacks of cement pumped on surface job = 88 sx

Pilot Hole Isolation Plug – Kick Off Plug (500' above KOP - Pilot Hole TD) – (1090' – 2591'MD):
Excess – 50% over gauge hole – 8-3/4" hole (0.4176 ft³/ft), 1501' – approximately 3 – 500' plugs.

Top of Tail Cement – KOP 1590'MD – Top of plug – 500' above at approximately 1090'MD.
Tail Slurry - (1090' – 5244'): 510 sx - 13.5 ppg, conventional cement containing:
VARICEM™ CEMENT – Cement – 94 lbs/sx
Yield – 1.849 ft³/sx
Water requirement – 9.33 gal/sx.

Total sacks of cement pumped on Pilot Hole Isolation Plug = 510 sx

Intermediate Casing Single Stage Job – (0-3130'MD/ 2422'TVD):
Excess – 50% over gauge hole – 8-3/4" hole and 7" casing (0.1503 ft³/ft)
Excess - 0% inside surface casing – 8.921" surf csg ID and 7" casing (0.1668 ft³/ft)
Top of Lead Cement - Surface
Lead Slurry - (0' – 1590' MD): 150 sx - 12.3 ppg, conventional cement containing:
VARICEM™ CEMENT – Cement – 94 lbs/sx
Yield – 2.454 ft³/sx
Water requirement – 13.78 gal/sx.

Top of Tail Cement - 1590' MD
Tail Slurry - (1590' – 3130'): 188 sx - 13.5 ppg, conventional cement containing:
VARICEM™ CEMENT – Cement – 94 lbs/sx
Yield – 1.849 ft³/sx
Water requirement – 9.33 gal/sx.

Total sacks of cement pumped on intermediate job = 338 sx

Production Casing Single Stage Job – (0- 3030'MD/ 2422'TVD – 5244'MD/2395' TVD):
Excess – 50% over gauge hole – 6-1/4" hole and 4-1/2" casing (0.1026 ft³/ft)

Top of Tail Cement - 3030' MD – Top of cement and liner 100' into 7" intermediate.
Tail Slurry - (3030'- 5244'): 185 sx - 13.5 ppg, conventional cement containing:
VARICEM™ CEMENT – Cement – 94 lbs/sx
Yield – 1.849 ft³/sx
Water requirement – 9.33 gal/sx.

Total sacks of cement pumped on intermediate job = 185 sx

Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on selected slurries.

All waiting on cement times shall be a minimum of 8 hours or adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

- F. Type and characteristics of the proposed circulating medium or mediums proposed for the drilling of each well bore section, the quantities and types of mud and weighting material to be maintained, and the monitoring equipment to be used on the circulating system. The operator must submit the detailed information when air or gas drill is proposed.**

Interval (MD)	Hole Section	Hole Size	Type	MW (ppg)	VIS (s/qt)	FL (mL/30 min)	PV (cP)	YP (lbs/100ft ²)	Max Salinity (mg/L)	pH
0'-300'	Surface	12-1/4"	FW/Gel	8.4-8.8	~100	NC	16-22	18-24	2500	8-8.5
300'-3130'	Intermed.	8-3/4"	LSND	8.8-9.5	35-44	<6	8-15	6-12	5000	8-8.5
3030'-5244'	Production	6-1/4"	Brine	8.4-8.8	35-45	<10	6-15	4-12	50000	8-8.5
3030'-5244'	Production Alternative	6-1/4"	Aerated FW mud 400 – 700 SCFM AIR	7.0 – 8.4	28-30	<10	6-15	4-12	2500	8-8.5

Aerated fluid may be used if losses are encountered in production hole.

Sufficient weighting material will be on hand to weight mud up 1 PPG, if required.

The formula for weight up with barite is listed below:

Sacks of Barite per 100 bbl of mud = $1470 \times (W2 - W1) \div (35 - W2)$

Where; W1 = current mud weight, W2 = new mud weight

Sacks = $1470 \times (10.5 - 9.5) \div (35 - 10.5) = 60 \text{ sx} \times 5 \text{ (500bbls minimum)} = 300\text{sx}$

Mud Product	Estimated Quantity on Location
Baroid 41	300 sx
Aquagel Gold Seal	250 sx
Lime	4 sx
Caustic Soda	8 sx
EZ-Mud	20 buckets
Barazan D Plus	20 sx
Pac R	20 sx
Filter-Chek	30 sx
LCM	120 sx

Pit Volume Totalizer (PVT) equipment (or equivalent) will be on each pit to monitor pit levels. A trip tank equipped with a PVT sensor will be used to monitor trip volumes. Possible lost circulation in the Fruitland Coal and Pictured Cliffs Sand. Lost circulation has been successfully mitigated with lost circulation materials.

There will not be a reserve pit for this well. A closed-loop system will be used to recover drilling fluid and dry cuttings in both phases of the well and on all hole intervals. Above-ground tanks will be utilized to hold cuttings and fluids for rig operations. A frac tank will be on location to store fresh water.

G. The testing, logging, and coring procedures proposed, including drill stem testing procedures, equipment, and safety measures.

Testing: None planned

Open Hole Logging:

At Total Depth of Pilot Hole (2591'MD):

Triple Combo

Image & Dipole Sonic

Formation pressure testing (6 zones)

Mud Logging: Surface casing point to Total Depth of Pilot Hole

Coring:

Core #1 – 120' - Ignacio Coal, Fruitland Sand and Cottonwood Coal

Core #2 – 60' – Cahn Coal and Picture Cliff Sandstone

Cased Hole Logging: If cement is not brought to surface on the surface casing string, then a cement bond log (CBL) will be run to determine the quality of the job prior to drilling ahead. A Cement Bond Log (CBL) will be run after the drilling of the well has been completed and as the start of the completion process. The CBL will confirm the quality of the cement bond and the actual TOC. Gamma ray and density logs will be obtained with the CBL to describe the stratigraphy of the wellbore.

H. The expected bottom-hole pressure and any anticipated abnormal pressures, temperatures, or potential hazards that the operator expects to encounter, such as lost circulation and hydrogen sulfide. A description of the operator's plans for mitigating such hazards must be included.

Normal to subnormal pressure gradient to TD.

Maximum expected BHP @ Cahn Coal target at 2422' TVD (0.44 psi/ft): 1066 psi

Maximum expected BHP @ TD at 5244'MD/2395'TVD: 1053 psi

Maximum expected BHT @ 2422' TVD: ~100° F

The maximum anticipated bottom hole pressure will be controlled with mud weight and BOP equipment.

No hydrogen sulfide gas is anticipated, however, if H₂S is encountered, the guidelines in Onshore Order No. 6 will be followed.

I. Any other facets of the proposed operation that the operator would like the BLM to considered in reviewing the application. Examples include, but are not limited to: For directional wells, proposed directional designs, plan view, and vertical section in true vertical and measured depths: Horizontal drilling; and Coil tubing Operations.

Timing:

The operation is expected to start November 2016. Drilling operations will last approximately 15 days. It is anticipated that completion operations will begin within 30 days after the well has been drilled depending on fracture treatment schedules with various pumping service companies and the completion rig will be on location approximately two to three weeks.

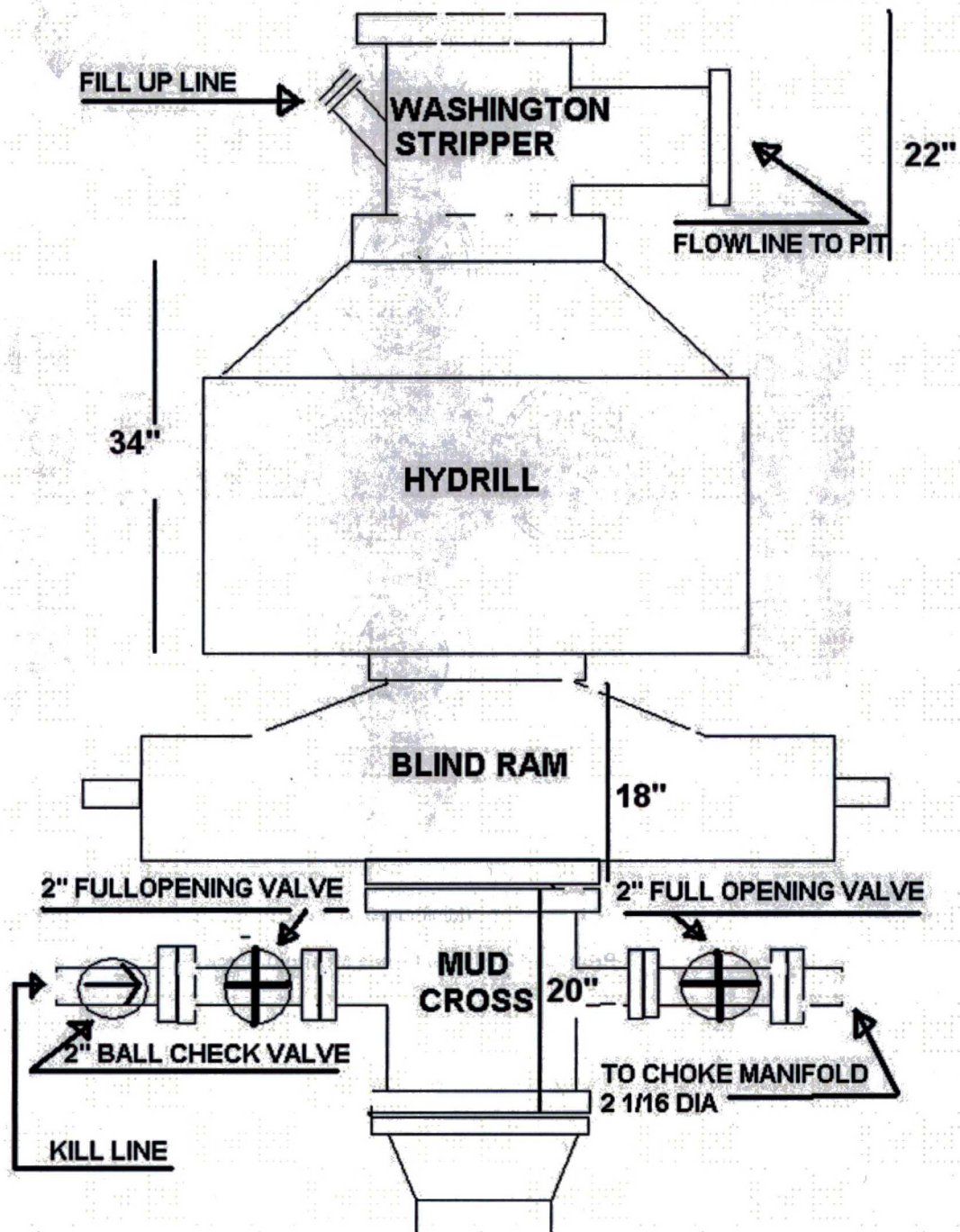
Directional Plans:

Horizontal directional well, directional plans attached.

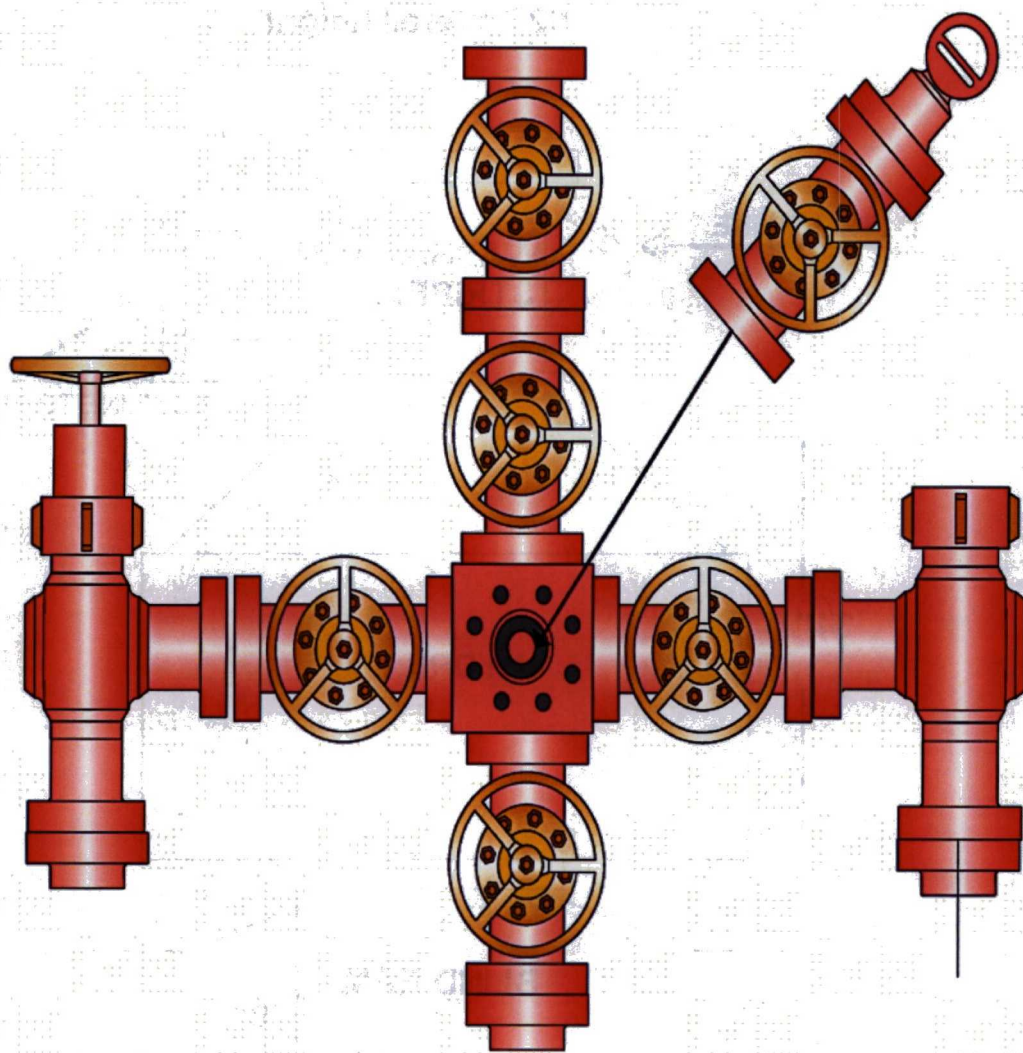
Completion:

BP plans to leave the production hole section uncased to see if well is productive. If well proves to be productive a perforated liner will be ran and dropped off to overlap intermediate casing to assist in dewatering and prevent wellbore collapse. If well proves to be unproductive, a liner will be set overlapping intermediate casing and cemented then the well will be completed in the Cahn coal seam. BP plans on completing the well utilizing hydraulic fracturing for approximately 9 stages. Adjustments maybe made to the number of stages and stage size based on the petrophysical properties of the target zone.

92" overall height



Proposed 2,000 psi BOP Stack



(Minimum 2")

Proposed 2,000 psi Choke Manifold Stack

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., 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 Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35712	² Pool Code 71629	³ Pool Name Basin Fruitland Coal
⁴ Property Code 001136	⁵ Property Name Storey B LS 6	⁶ Well Number 1H
⁷ OGRID No. 000778	⁸ Operator Name BP America Production Company	⁹ Elevation 5939

¹⁰ Surface Location

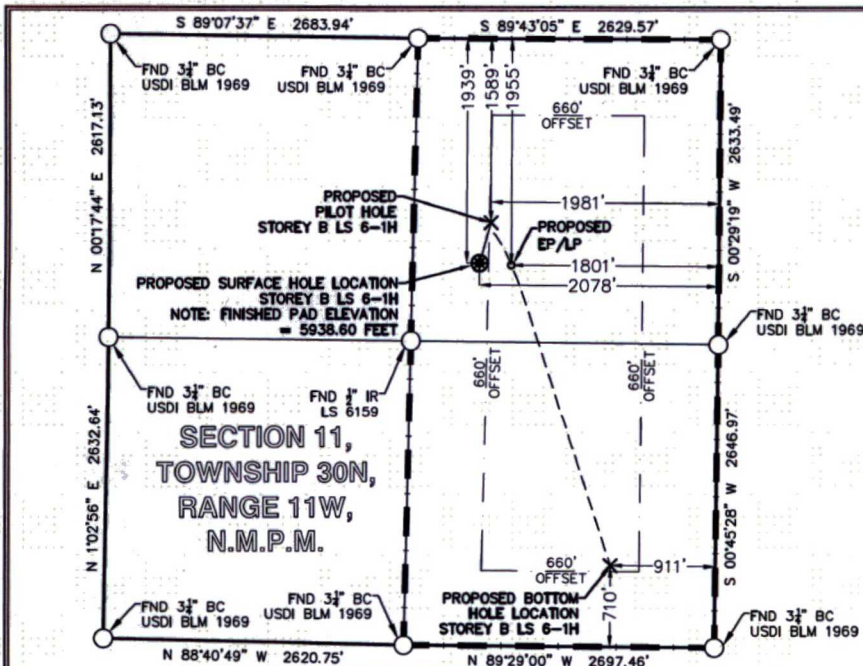
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	11	30N	11W		1939	North	2078	East	San Juan

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	11	30N	11W		710	South	911	East	San Juan

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



LEGEND
FOUND MONUMENT O
PROPOSED SURFACE HOLE LOCATION ●
PROPOSED BOTTOM HOLE LOCATION X

STOREY B LS 6-1H	NWZ NAD'83	NAD'83	TIES
PROPOSED SURFACE HOLE LOCATION (SHL)	N (Y) = 2,120,838.10' E (X) = 2,686,445.65'	LAT. = 36.82827510°N LON. = 107.95854884°W	FNL = 1939' FEL = 2078'
PROPOSED PILOT HOLE	N (Y) = 2,121,188.10' E (X) = 2,686,545.65'	LAT. = 36.82923684°N LON. = 107.95820872°W	FNL = 1589' FEL = 1981'
PROPOSED ENTRY POINT (EP)/ LANDING POINT (LP)	N (Y) = 2,120,820.76' E (X) = 2,686,722.64'	LAT. = 36.82822846°N LON. = 107.95780232°W	FNL = 1955' FEL = 1801'
PROPOSED BOTTOM HOLE LOCATION (BHL)	N (Y) = 2,118,204.87' E (X) = 2,687,581.47'	LAT. = 36.82104614°N LON. = 107.95465646°W	FSL = 710' FEL = 911'

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: Toya Colvin Date: 11/08/2016

Printed Name

E-mail Address: toya.colvin@bp.com

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey: 12-16-15
Signature and Seal of Professional Surveyor: Marshall W. Linden

Certificate Number: 17078
Professional Surveyor: Marshall W. Linden
Date: 11-7-16

0 500 1000 2000

GRAPHIC SCALE IN FEET

S 89°07'37" E 2683.94'

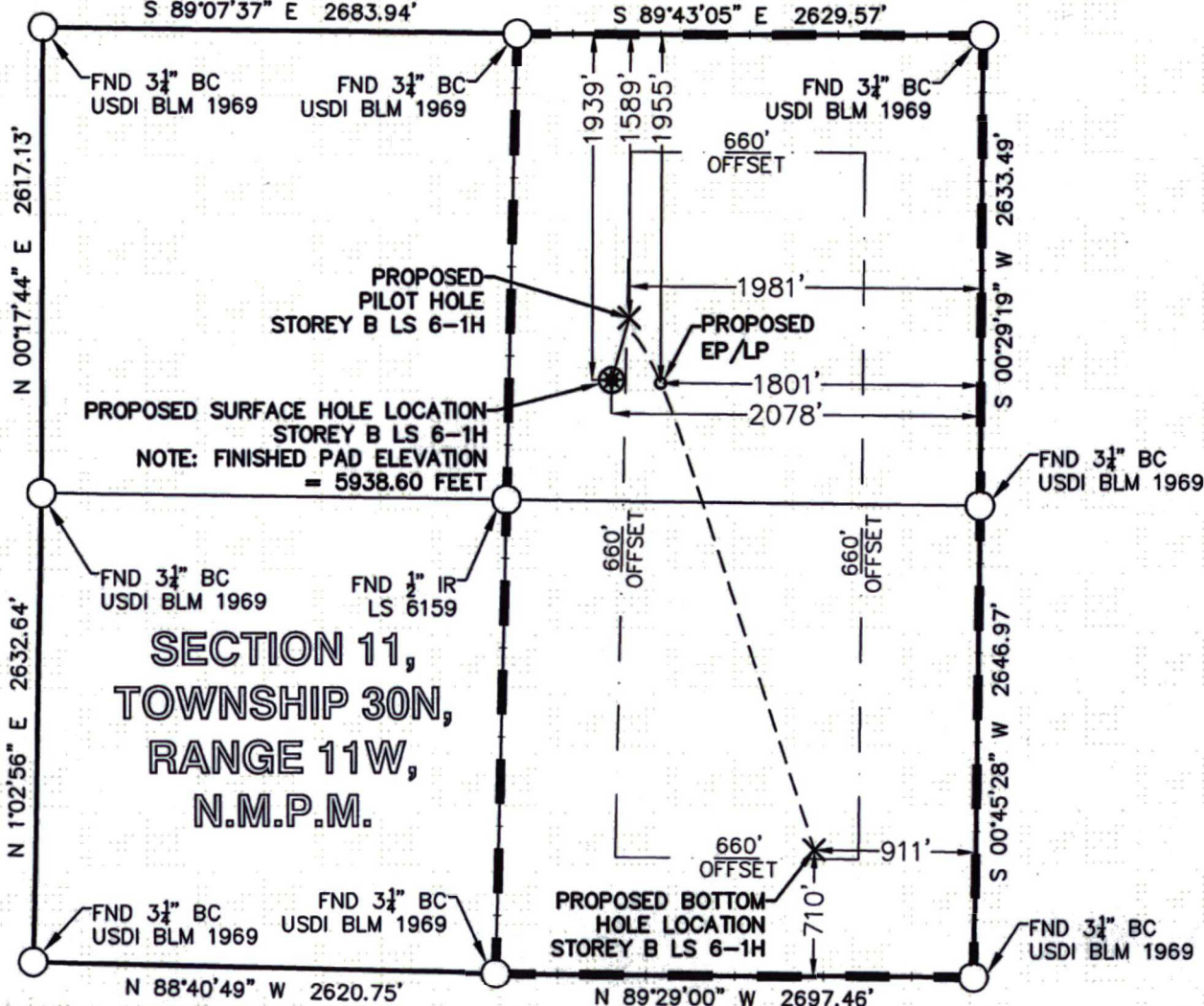
S 89°43'05" E 2629.57'

LEGEND

FOUND MONUMENT O

PROPOSED SURFACE HOLE LOCATION *

PROPOSED BOTTOM HOLE LOCATION X

**STOREY B LS 6-1H WELLBORE DISTANCES**

SHL TO PILOT	364'
SHL TO EPLP	645'
EPLP TO BHL	2,754'
SHL TO BHL	3,399'

STOREY B LS 6-1H	NMWS NAD'83	NAD'83	TIES
PROPOSED SURFACE HOLE LOCATION (SHL)	N (Y) = 2,120,838.10' E (X) = 2,686,445.65'	LAT. = 36.82827510°N LON. = 107.95854884°W	FNL = 1939' FEL = 2078'
PROPOSED PILOT HOLE	N (Y) = 2,121,188.10' E (X) = 2,686,545.65'	LAT. = 36.82923684°N LON. = 107.95820872°W	FNL = 1589' FEL = 1981'
PROPOSED ENTRY POINT (EP/LP)	N (Y) = 2,120,820.76' E (X) = 2,686,722.64'	LAT. = 36.82822846°N LON. = 107.95760232°W	FNL = 1955' FEL = 1801'
PROPOSED BOTTOM HOLE LOCATION (BHL)	N (Y) = 2,118,204.87' E (X) = 2,687,581.47'	LAT. = 36.82104614°N LON. = 107.95465646°W	FSL = 710' FEL = 911'

SURVEY NOTES

1. BEARING BASIS FOR THIS SURVEY IS BASED ON THE NORTH AMERICAN DATUM OF 1983, NEW MEXICO STATE PLANE COORDINATE SYSTEM, NEW MEXICO WEST, ZONE 3003.
2. ELEVATION BASIS FOR THIS SURVEY IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (GEOID12A).
3. SURVEYED IN THE FIELD ON 12/16/2015.
4. BEARINGS AND DISTANCE SHOWN ARE MEASURED IN THE FIELD UNLESS OTHERWISE NOTED.
5. ALL MEASURED DISTANCES SHOWN ARE GRID USING A COMBINED SCALE FACTOR 0.99963788.

SURVEYOR'S CERTIFICATE

I, MARSHALL LINDEEN, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF NEW MEXICO, DO 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.



BP AMERICA
PRODUCTION COMPANY
US LOWER 48 ONSHORE

WELL LOCATION PLAT**STOREY B LS 6-1H**

PART OF
SECTION 11, TOWNSHIP 30N, RANGE 11W,
N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO

DRAWN BY CFW/RLM	CHECKED BY MWL	SCALE 1"=1000'	DATE 11/07/2016	SHEET 1 OF 1	REVISION
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B.P.

San Juan County, NM NAD83

Storey Pad

Storey B LS 6-1H

Pilot

Plan #3

Anticollision Report

03 November, 2016



Scientific Drilling

www.scientificdrilling.com





Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Pilot	Database:	Grand Junction District
Reference Design:	Plan #3	Offset TVD Reference:	Reference Datum

Reference	Plan #3		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 30,000.00 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	11/3/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	2,590.56	Plan #3 (Pilot)	SDI MWD	SDI MWD - Standard ver 1.0.1	

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						
Storey Pad						
Current #2 - OH - OH	1,928.63	1,868.41	559.69	524.02	15.691	CC
Current #2 - OH - OH	2,590.56	2,528.93	560.28	513.46	11.967	ES, SF
Storey B 1M - OH - OH	300.00	211.56	2,633.33	2,626.32	375.549	CC
Storey B 1M - OH - OH	400.00	311.55	2,633.94	2,622.70	234.422	ES
Storey B 1M - OH - OH	2,590.56	2,459.56	2,971.77	2,869.12	28.949	SF
Storey B LS 1A - OH - OH	300.00	230.71	1,583.40	1,579.26	382.516	CC
Storey B LS 1A - OH - OH	400.00	330.70	1,584.00	1,576.59	213.968	ES
Storey B LS 1A - OH - OH	2,590.56	2,478.71	1,922.58	1,844.49	24.618	SF
Storey B LS 6-1H - Lateral 1 - Plan #10	1,590.32	1,590.32	0.00	0.00	0.000	Stop Drilling, CC, SF
Storey B LS 6-1H - Lateral 1 - Plan #10	1,600.00	1,600.00	0.07	-0.21	0.234	Stop Drilling, ES
Storey B1 E - OH - OH	300.00	241.24	2,038.16	2,029.96	248.582	CC
Storey B1 E - OH - OH	500.00	441.09	2,041.61	2,024.98	122.735	ES
Storey B1 E - OH - OH	2,590.56	2,489.24	2,270.70	2,165.77	21.641	SF
Storey B1 LS - OH - OH	2,263.03	2,194.89	1,140.97	1,047.41	12.195	CC
Storey B1 LS - OH - OH	2,500.00	2,414.00	1,141.21	1,038.57	11.119	ES, SF
Storey BE LS - OH - OH	300.00	210.63	2,559.30	2,552.32	366.938	CC
Storey BE LS - OH - OH	400.00	310.62	2,559.91	2,548.71	228.590	ES
Storey BE LS - OH - OH	2,590.56	2,434.00	2,900.36	2,798.76	28.548	SF
Storey LS B6 - OH - OH	2,263.01	2,230.69	290.12	242.14	6.047	CC
Storey LS B6 - OH - OH	2,590.56	2,558.28	290.33	231.95	4.973	ES, SF

Offset Design		Storey Pad - Current #2 - OH - OH										Offset Site Error:		0.00 usft
Survey Program:		2620-INCLINOMETER										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	19.07	0.00	0.00	74.80	171.49	631.08	654.24					
100.00	100.00	80.93	100.00	0.10	1.23	74.80	171.49	631.08	653.97	652.64	1.33	492.052		
200.00	200.00	180.93	200.00	0.32	2.75	74.80	171.49	631.08	653.97	650.89	3.07	212.862		
300.00	300.00	280.93	300.00	0.55	4.27	74.80	171.49	631.08	653.97	649.15	4.82	135.806		
400.00	399.99	380.92	399.99	0.77	5.78	58.91	171.49	631.08	653.63	647.07	6.56	99.663		
500.00	499.85	480.77	499.85	1.00	7.30	59.37	171.49	631.08	650.94	642.64	8.30	78.430		
600.00	599.29	580.21	599.29	1.25	8.81	60.31	171.49	631.08	645.67	635.62	10.05	64.274		
700.00	698.04	678.97	698.04	1.54	10.31	61.72	171.49	631.08	638.01	626.20	11.81	54.021		

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Pilot	Database:	Grand Junction District
Reference Design:	Plan #3	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Current #2 - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 2620-INCLINOMETER													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 (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
800.00	795.85	776.78	795.85	1.90	11.79	63.62	171.49	631.08	628.30	614.68	13.61	46.152		
900.00	892.56	873.49	892.56	2.33	13.26	65.84	171.49	631.08	617.17	601.69	15.48	39.861		
1,000.00	989.07	970.00	989.07	2.80	14.73	68.04	171.49	631.08	606.59	589.18	17.41	34.846		
1,100.00	1,085.58	1,066.50	1,085.58	3.29	16.19	70.30	171.49	631.08	596.98	577.62	19.36	30.833		
1,200.00	1,182.08	1,163.01	1,182.08	3.79	17.66	72.62	171.49	631.08	588.38	567.04	21.34	27.577		
1,300.00	1,278.59	1,259.52	1,278.59	4.29	19.13	75.01	171.49	631.08	580.83	557.50	23.33	24.902		
1,400.00	1,375.09	1,356.02	1,375.09	4.80	20.59	77.45	171.49	631.08	574.38	549.05	25.32	22.681		
1,500.00	1,471.60	1,452.53	1,471.60	5.31	22.06	79.94	171.49	631.08	569.06	541.73	27.33	20.821		
1,600.00	1,568.11	1,549.04	1,568.11	5.82	23.52	82.47	171.49	631.08	564.91	535.58	29.34	19.255		
1,700.00	1,664.61	1,645.54	1,664.61	6.33	24.99	85.03	171.49	631.08	561.96	530.61	31.35	17.928		
1,800.00	1,761.39	1,742.31	1,761.39	6.81	26.46	87.48	171.49	631.08	560.26	526.95	33.31	16.821		
1,900.00	1,859.27	1,840.20	1,859.27	7.16	27.94	89.51	171.49	631.08	559.71	524.55	35.15	15.922		
1,928.63	1,887.48	1,868.41	1,887.48	7.24	28.37	90.00	171.49	631.08	559.69	524.02	35.67	15.691 CC		
2,000.00	1,958.09	1,939.02	1,958.09	7.45	29.44	91.05	171.49	631.08	559.78	522.83	36.95	15.149		
2,100.00	2,057.57	2,038.50	2,057.57	7.69	30.95	92.06	171.49	631.08	560.06	521.37	38.69	14.474		
2,200.00	2,157.44	2,138.37	2,157.44	7.86	32.47	92.58	171.49	631.08	560.26	519.88	40.38	13.875		
2,300.00	2,257.44	2,238.36	2,257.44	7.98	33.99	108.58	171.49	631.08	560.28	518.26	42.02	13.333		
2,400.00	2,357.44	2,338.36	2,357.44	8.11	35.51	108.58	171.49	631.08	560.28	516.61	43.67	12.830		
2,500.00	2,457.44	2,438.36	2,457.44	8.24	37.03	108.58	171.49	631.08	560.28	514.96	45.32	12.363		
2,590.56	2,548.00	2,528.93	2,548.00	8.37	38.40	108.58	171.49	631.08	560.28	513.46	46.82	11.967 ES, SF		

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Pilot	Database:	Grand Junction District
Reference Design:	Plan #3	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B 1M - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	88.44	0.00	0.00	172.93	-2,613.31	324.12	2,634.82					
100.00	100.00	11.56	100.00	0.10	0.23	172.93	-2,613.31	324.12	2,633.33	2,633.00	0.33	7,946.137		
200.00	200.00	111.56	200.00	0.32	2.46	172.93	-2,613.31	324.12	2,633.33	2,630.55	2.79	944.799		
300.00	300.00	211.56	300.00	0.55	6.46	172.93	-2,613.31	324.12	2,633.33	2,626.32	7.01	375.549 CC		
327.78	327.78	239.34	327.78	0.61	7.57	156.98	-2,613.31	324.12	2,633.43	2,625.24	8.19	321.708		
400.00	399.99	311.55	399.99	0.77	10.46	156.98	-2,613.31	324.12	2,633.94	2,622.70	11.24	234.422 ES		
500.00	499.85	411.41	499.85	1.00	14.46	156.97	-2,613.31	324.12	2,638.75	2,623.32	15.44	170.956		
600.00	599.29	510.85	599.29	1.25	18.43	156.95	-2,613.31	324.12	2,648.38	2,628.81	19.57	135.342		
700.00	698.04	609.60	698.04	1.54	22.38	156.91	-2,613.31	324.12	2,662.80	2,639.20	23.60	112.837		
800.00	795.85	707.41	795.85	1.90	26.30	156.85	-2,613.31	324.12	2,681.98	2,654.49	27.50	97.541		
900.00	892.56	804.12	892.56	2.33	30.16	156.91	-2,613.31	324.12	2,705.45	2,674.07	31.38	86.216		
1,000.00	989.07	900.63	989.07	2.80	34.03	157.12	-2,613.31	324.12	2,729.70	2,694.28	35.42	77.074		
1,100.00	1,085.58	997.14	1,085.58	3.29	37.89	157.33	-2,613.31	324.12	2,753.99	2,714.52	39.46	69.789		
1,200.00	1,182.08	1,093.64	1,182.08	3.79	41.75	157.54	-2,613.31	324.12	2,778.30	2,734.79	43.51	63.851		
1,300.00	1,278.59	1,190.15	1,278.59	4.29	45.61	157.74	-2,613.31	324.12	2,802.66	2,755.09	47.57	58.920		
1,400.00	1,375.09	1,286.65	1,375.09	4.80	49.47	157.94	-2,613.31	324.12	2,827.04	2,775.42	51.62	54.763		
1,500.00	1,471.60	1,383.16	1,471.60	5.31	53.33	158.14	-2,613.31	324.12	2,851.46	2,795.78	55.68	51.211		
1,600.00	1,568.11	1,479.67	1,568.11	5.82	57.19	158.33	-2,613.31	324.12	2,875.91	2,816.18	59.74	48.142		
1,700.00	1,664.61	1,576.17	1,664.61	6.33	61.05	158.52	-2,613.31	324.12	2,900.39	2,836.60	63.80	45.463		
1,800.00	1,761.39	1,672.95	1,761.39	6.81	64.92	158.87	-2,613.31	324.12	2,923.94	2,855.65	68.29	42.816		
1,900.00	1,859.27	1,770.83	1,859.27	7.16	68.83	159.22	-2,613.31	324.12	2,943.05	2,870.08	72.97	40.332		
2,000.00	1,958.09	1,869.65	1,958.09	7.45	72.79	159.47	-2,613.31	324.12	2,957.35	2,879.78	77.57	38.127		
2,100.00	2,057.57	1,969.13	2,057.57	7.69	76.77	159.64	-2,613.31	324.12	2,966.78	2,884.75	82.04	36.164		
2,200.00	2,157.44	2,069.00	2,157.44	7.86	80.76	159.72	-2,613.31	324.12	2,971.33	2,884.99	86.34	34.416		
2,300.00	2,257.44	2,169.00	2,257.44	7.98	84.76	175.67	-2,613.31	324.12	2,971.77	2,881.28	90.50	32.838		
2,400.00	2,357.44	2,269.00	2,357.44	8.11	88.76	175.67	-2,613.31	324.12	2,971.77	2,877.09	94.68	31.388		
2,500.00	2,457.44	2,369.00	2,457.44	8.24	92.76	175.67	-2,613.31	324.12	2,971.77	2,872.91	98.86	30.060		
2,590.56	2,548.00	2,459.56	2,548.00	8.37	96.38	175.67	-2,613.31	324.12	2,971.77	2,869.12	102.65	28.949 SF		



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Pilot	Database:	Grand Junction District
Reference Design:	Plan #3	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B LS 1A - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 225-INCLINOMETER													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	69.29	0.00	0.00	172.39	-1,569.45	209.69	1,584.91					
100.00	100.00	30.71	100.00	0.10	0.47	172.39	-1,569.45	209.69	1,583.40	1,582.83	0.57	2,795.137		
200.00	200.00	130.71	200.00	0.32	1.98	172.39	-1,569.45	209.69	1,583.40	1,581.09	2.31	685.569		
300.00	300.00	230.71	300.00	0.55	3.59	172.39	-1,569.45	209.69	1,583.40	1,579.26	4.14	382.516 CC		
327.78	327.78	258.49	327.78	0.61	4.43	156.45	-1,569.45	209.69	1,583.49	1,578.44	5.05	313.821		
400.00	399.99	330.70	399.99	0.77	6.63	156.45	-1,569.45	209.69	1,584.00	1,576.59	7.40	213.968 ES		
500.00	499.85	430.55	499.85	1.00	9.66	156.46	-1,569.45	209.69	1,588.79	1,578.13	10.66	149.025		
600.00	599.29	529.99	599.29	1.25	12.68	156.50	-1,569.45	209.69	1,598.39	1,584.51	13.88	115.176		
700.00	698.04	628.75	698.04	1.54	15.68	156.55	-1,569.45	209.69	1,612.76	1,595.74	17.02	94.735		
800.00	795.85	726.56	795.85	1.90	18.65	156.61	-1,569.45	209.69	1,631.90	1,611.83	20.08	81.287		
900.00	892.56	823.27	892.56	2.33	21.59	156.80	-1,569.45	209.69	1,655.35	1,632.24	23.11	71.641		
1,000.00	989.07	919.78	989.07	2.80	24.52	157.15	-1,569.45	209.69	1,679.59	1,653.36	26.23	64.028		
1,100.00	1,085.58	1,016.29	1,085.58	3.29	27.45	157.49	-1,569.45	209.69	1,703.89	1,674.52	29.37	58.019		
1,200.00	1,182.08	1,112.79	1,182.08	3.79	30.38	157.82	-1,569.45	209.69	1,728.24	1,695.73	32.51	53.162		
1,300.00	1,278.59	1,209.30	1,278.59	4.29	33.31	158.14	-1,569.45	209.69	1,752.65	1,717.00	35.65	49.157		
1,400.00	1,375.09	1,305.81	1,375.09	4.80	36.24	158.45	-1,569.45	209.69	1,777.11	1,738.31	38.80	45.801		
1,500.00	1,471.60	1,402.31	1,471.60	5.31	39.17	158.76	-1,569.45	209.69	1,801.62	1,759.67	41.95	42.948		
1,600.00	1,568.11	1,498.82	1,568.11	5.82	42.10	159.05	-1,569.45	209.69	1,826.18	1,781.08	45.10	40.495		
1,700.00	1,664.61	1,595.32	1,664.61	6.33	45.03	159.34	-1,569.45	209.69	1,850.78	1,802.53	48.24	38.362		
1,800.00	1,761.39	1,692.10	1,761.39	6.81	47.97	159.77	-1,569.45	209.69	1,874.45	1,822.75	51.71	36.251		
1,900.00	1,859.27	1,789.98	1,859.27	7.16	50.94	160.19	-1,569.45	209.69	1,893.68	1,838.38	55.30	34.246		
2,000.00	1,958.09	1,888.80	1,958.09	7.45	53.94	160.49	-1,569.45	209.69	1,908.06	1,849.24	58.82	32.439		
2,100.00	2,057.57	1,988.28	2,057.57	7.69	56.97	160.68	-1,569.45	209.69	1,917.56	1,855.31	62.25	30.806		
2,200.00	2,157.44	2,088.15	2,157.44	7.86	60.00	160.77	-1,569.45	209.69	1,922.13	1,856.59	65.54	29.327		
2,300.00	2,257.44	2,188.15	2,257.44	7.98	63.03	176.73	-1,569.45	209.69	1,922.58	1,853.85	68.74	27.971		
2,400.00	2,357.44	2,294.00	2,357.44	8.11	66.25	176.73	-1,569.45	209.69	1,922.59	1,850.46	72.13	26.654		
2,435.40	2,392.84	2,323.55	2,392.84	8.16	67.15	176.73	-1,569.45	209.69	1,922.58	1,849.49	73.09	26.303		
2,500.00	2,457.44	2,388.15	2,457.44	8.24	69.11	176.73	-1,569.45	209.69	1,922.58	1,847.41	75.18	25.574		
2,590.56	2,548.00	2,478.71	2,548.00	8.37	71.86	176.73	-1,569.45	209.69	1,922.58	1,844.49	78.10	24.618 SF		

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Pilot	Database:	Grand Junction District
Reference Design:	Plan #3	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B LS 6-1H - Lateral 1 - Plan #10													Offset Site Error:	0.00 usft
Survey Program: 0-SDI MWD, 1590-SDI MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,590.32	1,558.77	1,590.32	1,558.77	0.00	0.00	0.00	249.08	71.17	0.00	0.00	0.00	0.000	Stop Drilling, CC, SF	
1,600.00	1,568.11	1,600.00	1,568.12	0.05	0.10	145.19	251.46	71.88	0.07	-0.21	0.28	0.234	Stop Drilling, ES	
1,700.00	1,664.61	1,699.15	1,665.17	0.57	0.25	145.19	268.81	81.70	8.35	7.85	0.50	16.648		
1,800.00	1,761.39	1,794.52	1,759.40	1.04	0.43	144.26	273.27	95.24	29.23	28.13	1.10	26.653		
1,900.00	1,859.27	1,884.56	1,847.62	1.39	0.59	142.14	266.39	111.49	58.86	57.27	1.59	37.066		
2,000.00	1,958.09	1,968.35	1,927.85	1.68	0.72	140.66	250.41	129.41	96.11	94.09	2.01	47.753		
2,100.00	2,057.57	2,045.57	1,999.21	1.92	0.85	139.79	227.70	148.10	139.99	137.61	2.38	58.914		
2,200.00	2,157.44	2,116.32	2,061.69	2.09	0.99	139.37	200.38	166.86	189.49	186.80	2.68	70.635		
2,300.00	2,257.44	2,180.75	2,115.64	2.21	1.20	154.64	170.34	185.15	244.20	241.23	2.97	82.128		
2,400.00	2,357.44	2,238.17	2,161.00	2.34	1.44	154.07	139.60	202.30	305.49	302.18	3.31	92.343		
2,500.00	2,457.44	2,288.95	2,198.71	2.48	1.68	153.86	109.48	218.03	372.45	368.80	3.65	101.920		
2,590.56	2,548.00	2,329.76	2,227.26	2.60	1.94	153.83	83.38	231.01	437.18	433.39	3.79	115.412		

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Pilot	Database:	Grand Junction District
Reference Design:	Plan #3	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B1 E - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	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)					
0.00	0.00	0.00	58.76	0.00	0.00	141.82	-1,602.09	1,259.92	2,039.01						
100.00	100.00	41.24	100.00	0.10	0.82	141.82	-1,602.09	1,259.92	2,038.16	2,037.23	0.92	2,203.561			
200.00	200.00	141.24	200.00	0.32	3.65	141.82	-1,602.09	1,259.92	2,038.16	2,034.18	3.97	512.823			
300.00	300.00	241.24	300.00	0.55	7.65	141.82	-1,602.09	1,259.92	2,038.16	2,029.96	8.20	248.582 CC			
327.79	327.79	269.03	327.79	0.61	8.76	125.87	-1,602.09	1,259.92	2,038.22	2,028.84	9.37	217.454			
400.00	399.99	341.23	399.99	0.77	11.65	125.88	-1,602.09	1,259.92	2,038.54	2,026.12	12.42	164.094			
500.00	499.85	441.09	499.85	1.00	15.64	125.92	-1,602.09	1,259.92	2,041.61	2,024.98	16.63	122.735 ES			
600.00	599.29	540.53	599.29	1.25	19.62	126.01	-1,602.09	1,259.92	2,047.78	2,026.95	20.82	98.351			
700.00	698.04	639.28	698.04	1.54	23.57	126.13	-1,602.09	1,259.92	2,057.06	2,032.09	24.98	82.363			
800.00	795.85	737.09	795.85	1.90	27.48	126.29	-1,602.09	1,259.92	2,069.52	2,040.43	29.09	71.142			
900.00	892.56	833.80	892.56	2.33	31.35	126.63	-1,602.09	1,259.92	2,084.93	2,051.71	33.22	62.769			
1,000.00	989.07	930.31	989.07	2.80	35.21	127.19	-1,602.09	1,259.92	2,101.02	2,063.60	37.42	56.151			
1,100.00	1,085.58	1,026.82	1,085.58	3.29	39.07	127.75	-1,602.09	1,259.92	2,117.32	2,075.69	41.63	50.864			
1,200.00	1,182.08	1,123.32	1,182.08	3.79	42.93	128.29	-1,602.09	1,259.92	2,133.81	2,087.97	45.84	46.548			
1,300.00	1,278.59	1,219.83	1,278.59	4.29	46.79	128.83	-1,602.09	1,259.92	2,150.50	2,100.44	50.06	42.963			
1,400.00	1,375.09	1,316.33	1,375.09	4.80	50.65	129.36	-1,602.09	1,259.92	2,167.37	2,113.10	54.27	39.938			
1,500.00	1,471.60	1,412.84	1,471.60	5.31	54.51	129.88	-1,602.09	1,259.92	2,184.43	2,125.95	58.48	37.355			
1,600.00	1,568.11	1,509.35	1,568.11	5.82	58.37	130.39	-1,602.09	1,259.92	2,201.67	2,138.98	62.68	35.123			
1,700.00	1,664.61	1,605.85	1,664.61	6.33	62.23	130.89	-1,602.09	1,259.92	2,219.08	2,152.20	66.89	33.176			
1,800.00	1,761.39	1,702.63	1,761.39	6.81	66.11	131.61	-1,602.09	1,259.92	2,235.97	2,164.70	71.28	31.370			
1,900.00	1,859.27	1,800.51	1,859.27	7.16	70.02	132.31	-1,602.09	1,259.92	2,249.78	2,174.05	75.73	29.708			
2,000.00	1,958.09	1,899.33	1,958.09	7.45	73.97	132.82	-1,602.09	1,259.92	2,260.17	2,180.03	80.14	28.202			
2,100.00	2,057.57	1,998.81	2,057.57	7.69	77.95	133.16	-1,602.09	1,259.92	2,267.05	2,182.57	84.48	26.834			
2,200.00	2,157.44	2,098.68	2,157.44	7.86	81.95	133.32	-1,602.09	1,259.92	2,270.37	2,181.66	88.72	25.591			
2,300.00	2,257.44	2,198.68	2,257.44	7.98	85.95	149.28	-1,602.09	1,259.92	2,270.70	2,177.84	92.86	24.454			
2,400.00	2,357.44	2,298.68	2,357.44	8.11	89.95	149.28	-1,602.09	1,259.92	2,270.70	2,173.69	97.01	23.408			
2,500.00	2,457.44	2,398.68	2,457.44	8.24	93.95	149.28	-1,602.09	1,259.92	2,270.70	2,169.54	101.16	22.446			
2,590.56	2,548.00	2,489.24	2,548.00	8.37	97.57	149.28	-1,602.09	1,259.92	2,270.70	2,165.77	104.93	21.641 SF			

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Pilot	Database:	Grand Junction District
Reference Design:	Plan #3	Offset TVD Reference:	Reference Datum

Offet Design Storey Pad - Storey B1 LS - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
0.00	0.00	0.00	25.58	0.00	0.00	77.88	265.95	1,237.97	1,266.47						
100.00	100.00	74.42	100.00	0.10	1.39	77.88	265.95	1,237.97	1,266.21	1,264.72	1.49	849.634			
200.00	200.00	174.42	200.00	0.32	4.84	77.88	265.95	1,237.97	1,266.21	1,261.04	5.17	244.929			
300.00	300.00	274.42	300.00	0.55	8.84	77.88	265.95	1,237.97	1,266.21	1,256.82	9.39	134.783			
400.00	399.99	374.41	399.99	0.77	12.84	61.96	265.95	1,237.97	1,265.90	1,252.29	13.62	92.957			
500.00	499.85	474.26	499.85	1.00	16.84	62.24	265.95	1,237.97	1,263.45	1,245.62	17.83	70.854			
600.00	599.29	573.70	599.29	1.25	20.82	62.79	265.95	1,237.97	1,258.61	1,236.57	22.03	57.126			
700.00	698.04	672.46	698.04	1.54	24.77	63.61	265.95	1,237.97	1,251.48	1,225.26	26.22	47.722			
800.00	795.85	770.27	795.85	1.90	28.68	64.70	265.95	1,237.97	1,242.25	1,211.84	30.42	40.838			
900.00	892.56	866.98	892.56	2.33	32.55	65.91	265.95	1,237.97	1,231.36	1,196.71	34.66	35.531			
1,000.00	989.07	963.49	989.07	2.80	36.41	67.00	265.95	1,237.97	1,220.58	1,181.62	38.96	31.330			
1,100.00	1,085.58	1,059.99	1,085.58	3.29	40.27	68.11	265.95	1,237.97	1,210.27	1,166.98	43.29	27.959			
1,200.00	1,182.08	1,156.50	1,182.08	3.79	44.13	69.23	265.95	1,237.97	1,200.44	1,152.80	47.63	25.201			
1,300.00	1,278.59	1,253.01	1,278.59	4.29	47.99	70.37	265.95	1,237.97	1,191.11	1,139.11	52.00	22.908			
1,400.00	1,375.09	1,349.51	1,375.09	4.80	51.85	71.53	265.95	1,237.97	1,182.28	1,125.91	56.37	20.974			
1,500.00	1,471.60	1,446.02	1,471.60	5.31	55.71	72.71	265.95	1,237.97	1,173.97	1,113.22	60.75	19.324			
1,600.00	1,568.11	1,542.53	1,568.11	5.82	59.57	73.90	265.95	1,237.97	1,166.19	1,101.05	65.14	17.902			
1,700.00	1,664.61	1,639.03	1,664.61	6.33	63.43	75.10	265.95	1,237.97	1,158.96	1,089.41	69.54	16.665			
1,800.00	1,761.39	1,735.81	1,761.39	6.81	67.30	76.16	265.95	1,237.97	1,152.52	1,078.58	73.94	15.587			
1,900.00	1,859.27	1,833.69	1,859.27	7.16	71.22	76.99	265.95	1,237.97	1,147.68	1,069.42	78.26	14.665			
2,000.00	1,958.09	1,932.51	1,958.09	7.45	75.17	77.62	265.95	1,237.97	1,144.29	1,061.74	82.55	13.862			
2,100.00	2,057.57	2,031.99	2,057.57	7.69	79.15	78.05	265.95	1,237.97	1,142.16	1,055.38	86.78	13.161			
2,200.00	2,157.44	2,131.86	2,157.44	7.86	83.14	78.26	265.95	1,237.97	1,141.16	1,050.20	90.96	12.546			
2,263.03	2,220.47	2,194.89	2,220.47	7.94	85.66	78.30	265.95	1,237.97	1,140.97	1,047.41	93.56	12.195 CC			
2,300.00	2,257.44	2,231.85	2,257.44	7.98	87.14	94.22	265.95	1,237.97	1,141.07	1,045.98	95.08	12.001			
2,400.00	2,357.44	2,331.85	2,357.44	8.11	91.14	94.22	265.95	1,237.97	1,141.07	1,041.85	99.21	11.501			
2,459.42	2,416.86	2,391.28	2,416.86	8.19	93.52	94.22	265.95	1,237.97	1,141.07	1,039.40	101.67	11.223			
2,500.00	2,457.44	2,414.00	2,439.58	8.24	94.43	94.22	265.95	1,237.97	1,141.21	1,038.57	102.63	11.119 ES, SF			
2,590.56	2,548.00	2,414.00	2,439.58	8.37	94.43	94.22	265.95	1,237.97	1,146.21	1,043.45	102.76	11.154			



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Pilot	Database:	Grand Junction District
Reference Design:	Plan #3	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey BE LS - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	89.37	0.00	0.00	174.06	-2,545.58	264.64	2,560.86					
100.00	100.00	10.63	100.00	0.10	0.21	174.06	-2,545.58	264.64	2,559.30	2,558.99	0.31	8,181.909		
200.00	200.00	110.63	200.00	0.32	2.43	174.06	-2,545.58	264.64	2,559.30	2,556.55	2.75	930.659		
300.00	300.00	210.63	300.00	0.55	6.43	174.06	-2,545.58	264.64	2,559.30	2,552.32	6.97	366.938 CC		
327.78	327.78	238.41	327.78	0.61	7.54	158.12	-2,545.58	264.64	2,559.39	2,551.24	8.15	314.091		
400.00	399.99	310.62	399.99	0.77	10.42	158.12	-2,545.58	264.64	2,559.91	2,548.71	11.20	228.590 ES		
500.00	499.85	410.48	499.85	1.00	14.42	158.11	-2,545.58	264.64	2,564.76	2,549.37	15.40	166.567		
600.00	599.29	509.92	599.29	1.25	18.40	158.09	-2,545.58	264.64	2,574.47	2,554.94	19.53	131.827		
700.00	698.04	608.67	698.04	1.54	22.35	158.05	-2,545.58	264.64	2,589.00	2,565.45	23.56	109.907		
800.00	795.85	706.48	795.85	1.90	26.26	158.00	-2,545.58	264.64	2,608.34	2,580.89	27.45	95.031		
900.00	892.56	803.19	892.56	2.33	30.13	158.06	-2,545.58	264.64	2,632.00	2,600.67	31.32	84.024		
1,000.00	989.07	899.70	989.07	2.80	33.99	158.27	-2,545.58	264.64	2,656.44	2,621.08	35.36	75.135		
1,100.00	1,085.58	996.21	1,085.58	3.29	37.85	158.47	-2,545.58	264.64	2,680.91	2,641.51	39.40	68.051		
1,200.00	1,182.08	1,092.71	1,182.08	3.79	41.71	158.68	-2,545.58	264.64	2,705.41	2,661.97	43.44	62.278		
1,300.00	1,278.59	1,189.22	1,278.59	4.29	45.57	158.87	-2,545.58	264.64	2,729.95	2,682.46	47.49	57.485		
1,400.00	1,375.09	1,285.72	1,375.09	4.80	49.43	159.07	-2,545.58	264.64	2,754.51	2,702.97	51.54	53.443		
1,500.00	1,471.60	1,382.23	1,471.60	5.31	53.29	159.26	-2,545.58	264.64	2,779.11	2,723.52	55.59	49.990		
1,600.00	1,568.11	1,478.74	1,568.11	5.82	57.15	159.45	-2,545.58	264.64	2,803.73	2,744.09	59.65	47.006		
1,700.00	1,664.61	1,575.24	1,664.61	6.33	61.01	159.64	-2,545.58	264.64	2,828.39	2,764.69	63.70	44.402		
1,800.00	1,761.39	1,672.02	1,761.39	6.81	64.88	159.97	-2,545.58	264.64	2,852.10	2,783.90	68.20	41.821		
1,900.00	1,859.27	1,769.90	1,859.27	7.16	68.80	160.31	-2,545.58	264.64	2,871.34	2,798.46	72.88	39.397		
2,000.00	1,958.09	1,868.72	1,958.09	7.45	72.75	160.55	-2,545.58	264.64	2,885.73	2,808.25	77.48	37.243		
2,100.00	2,057.57	1,968.20	2,057.57	7.69	76.73	160.72	-2,545.58	264.64	2,895.23	2,813.28	81.96	35.326		
2,200.00	2,157.44	2,068.07	2,157.44	7.86	80.72	160.79	-2,545.58	264.64	2,899.81	2,813.55	86.26	33.617		
2,300.00	2,257.44	2,168.07	2,257.44	7.98	84.72	176.75	-2,545.58	264.64	2,900.26	2,809.83	90.42	32.074		
2,400.00	2,357.44	2,268.07	2,357.44	8.11	88.72	176.75	-2,545.58	264.64	2,900.26	2,805.65	94.60	30.657		
2,500.00	2,457.44	2,368.07	2,457.44	8.24	92.72	176.75	-2,545.58	264.64	2,900.26	2,801.47	98.79	29.358		
2,549.10	2,506.54	2,417.17	2,506.54	8.31	94.69	176.75	-2,545.58	264.64	2,900.26	2,799.41	100.85	28.759		
2,590.56	2,548.00	2,434.00	2,523.37	8.37	95.36	176.75	-2,545.58	264.64	2,900.36	2,798.76	101.60	28.548 SF		



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Pilot	Database:	Grand Junction District
Reference Design:	Plan #3	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey LS B6 - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 1800-INCLINOMETER													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	10.25	0.00	0.00	0.16	44.22	397.17	386.47	554.17					
100.00	100.00	110.25	100.00	0.10	1.67	44.22	397.17	386.47	554.17	552.39	1.77	312.338		
200.00	200.00	210.25	200.00	0.32	3.19	44.22	397.17	386.47	554.17	550.65	3.52	157.548		
300.00	300.00	310.25	300.00	0.55	4.71	44.22	397.17	386.47	554.17	548.91	5.26	105.342		
400.00	399.99	410.24	399.99	0.77	6.23	28.31	397.17	386.47	553.59	546.59	7.00	79.037		
500.00	499.85	510.09	499.85	1.00	7.75	28.64	397.17	386.47	548.99	540.25	8.74	62.797		
600.00	599.29	609.53	599.29	1.25	9.26	29.30	397.17	386.47	539.83	529.37	10.46	51.603		
700.00	698.04	708.29	698.04	1.54	10.76	30.34	397.17	386.47	526.22	514.07	12.16	43.291		
800.00	795.85	806.10	795.85	1.90	12.24	31.81	397.17	386.47	508.31	494.48	13.83	36.762		
900.00	892.56	902.81	892.56	2.33	13.71	33.57	397.17	386.47	486.74	471.20	15.53	31.336		
1,000.00	989.07	999.32	989.07	2.80	15.17	35.33	397.17	386.47	464.89	447.56	17.32	26.837		
1,100.00	1,085.58	1,095.82	1,085.58	3.29	16.64	37.27	397.17	386.47	443.51	424.36	19.15	23.164		
1,200.00	1,182.08	1,192.33	1,182.08	3.79	18.10	39.39	397.17	386.47	422.67	401.67	21.00	20.124		
1,300.00	1,278.59	1,288.84	1,278.59	4.29	19.57	41.72	397.17	386.47	402.46	379.57	22.90	17.578		
1,400.00	1,375.09	1,385.34	1,375.09	4.80	21.04	44.28	397.17	386.47	382.98	358.16	24.82	15.428		
1,500.00	1,471.60	1,481.85	1,471.60	5.31	22.50	47.11	397.17	386.47	364.34	337.55	26.79	13.600		
1,600.00	1,568.11	1,578.36	1,568.11	5.82	23.97	50.22	397.17	386.47	346.69	317.89	28.80	12.039		
1,700.00	1,664.61	1,674.86	1,664.61	6.33	25.43	53.63	397.17	386.47	330.17	299.32	30.85	10.704		
1,800.00	1,761.39	1,771.63	1,761.39	6.81	26.90	57.01	397.17	386.47	315.53	282.59	32.94	9.579		
1,900.00	1,859.27	1,869.52	1,859.27	7.16	29.44	59.89	397.17	386.47	304.68	268.69	35.99	8.465		
2,000.00	1,958.09	1,968.34	1,958.09	7.45	32.44	62.21	397.17	386.47	297.23	257.82	39.41	7.542		
2,100.00	2,057.57	2,067.82	2,057.57	7.69	35.47	63.83	397.17	386.47	292.64	249.90	42.74	6.847		
2,200.00	2,157.44	2,167.69	2,157.44	7.86	38.50	64.63	397.17	386.47	290.53	244.55	45.98	6.318		
2,263.01	2,220.44	2,230.69	2,220.44	7.94	40.41	64.79	397.17	386.47	290.12	242.14	47.98	6.047 CC		
2,300.00	2,257.44	2,267.68	2,257.44	7.98	41.53	80.65	397.17	386.47	290.33	241.18	49.15	5.907		
2,400.00	2,357.44	2,367.68	2,357.44	8.11	44.57	80.65	397.17	386.47	290.33	238.01	52.32	5.549		
2,500.00	2,457.44	2,467.68	2,457.44	8.24	47.61	80.65	397.17	386.47	290.33	234.83	55.50	5.231		
2,590.56	2,548.00	2,558.28	2,548.00	8.37	50.36	80.65	397.17	386.47	290.33	231.95	58.38	4.973 ES, SF		



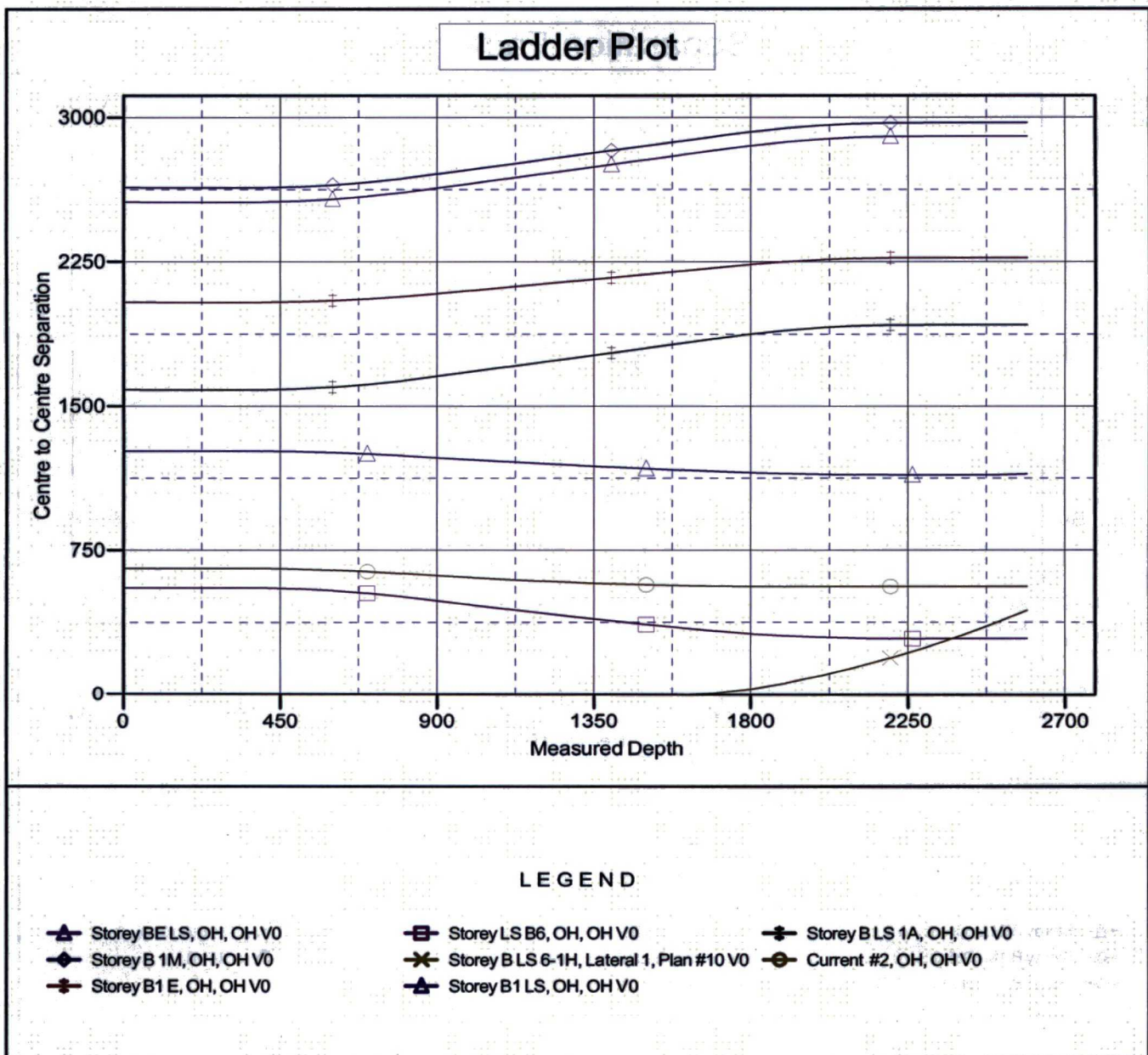
Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Pilot	Database:	Grand Junction District
Reference Design:	Plan #3	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GL 5936.57' & RKB 11' @ 5947.57usft
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: Storey B LS 6-1H
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: -0.08°





Anticollision Report

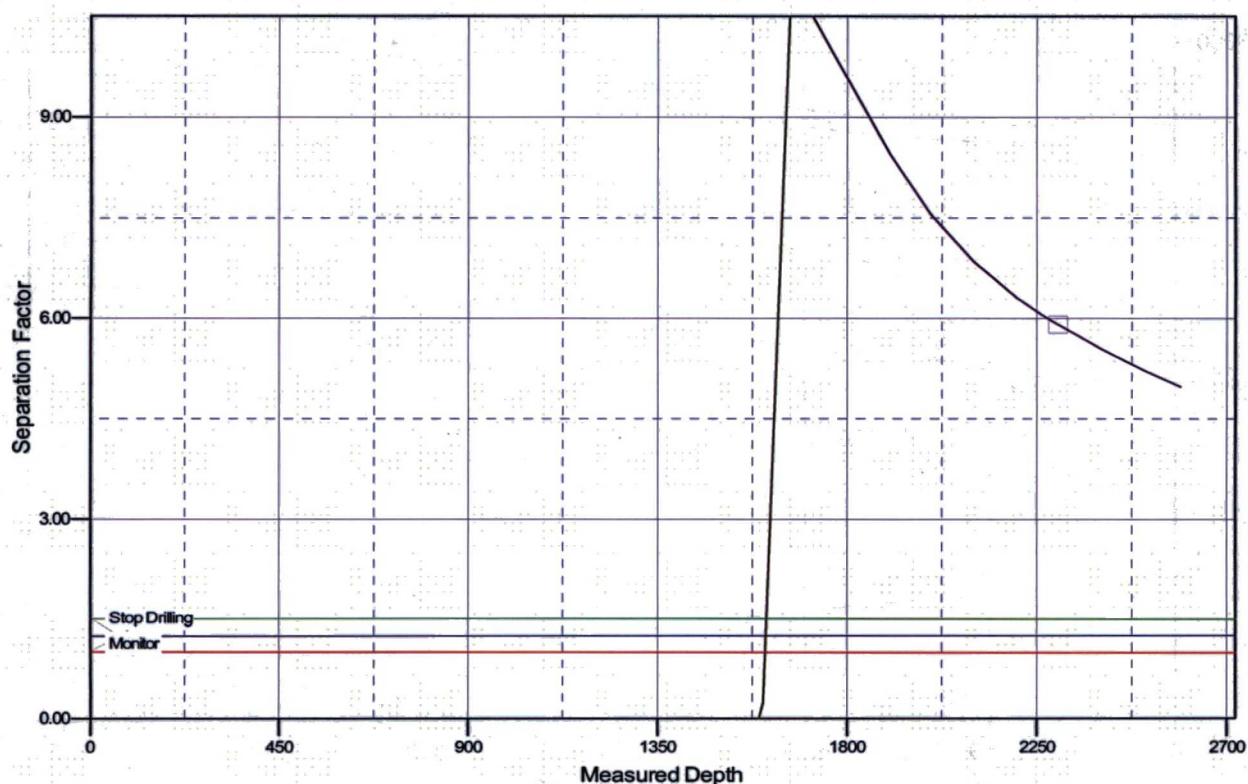


Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Pilot	Database:	Grand Junction District
Reference Design:	Plan #3	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GL 5936.57' & RKB 11' @ 5947.57usft
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Central Meridian is -107.8333334

Coordinates are relative to: Storey B LS 6-1H
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: -0.08°

Separation Factor Plot



LEGEND

- | | | |
|-------------------------|--|---------------------------|
| Storey BE LS, OH, OH V0 | Storey LS B6, OH, OH V0 | Storey B LS 1A, OH, OH V0 |
| Storey B 1M, OH, OH V0 | Storey B LS 6-1H, Lateral 1, Plan #10 V0 | Current #2, OH, OH V0 |
| Storey B1 E, OH, OH V0 | Storey B1 LS, OH, OH V0 | |

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



B.P.

San Juan County, NM NAD83

Storey Pad

Storey B LS 6-1H

Pilot

Plan: Plan #3

Standard Planning Report

03 November, 2016



Scientific Drilling

www.scientificdrilling.com





Company: B.P.
Project: San Juan County, NM NAD83
Site: Storey Pad
Well: Storey B LS 6-1H



Well Details: Storey B LS 6-1H

+N/-S
0.00

+E/-W
0.00

Northing
2120838.10

GL 5936.57' & RKB 11' @ 5947.57usft
Easting
2686445.65

Latitude
36.8282751

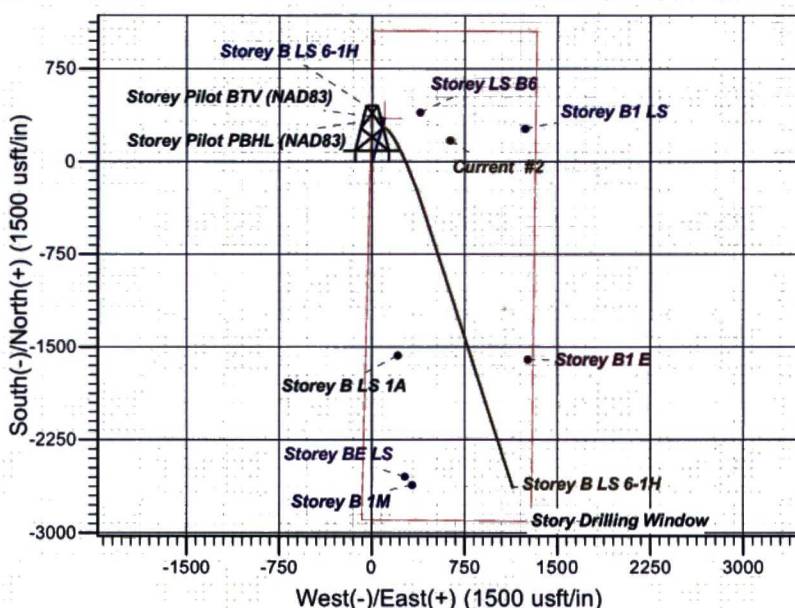
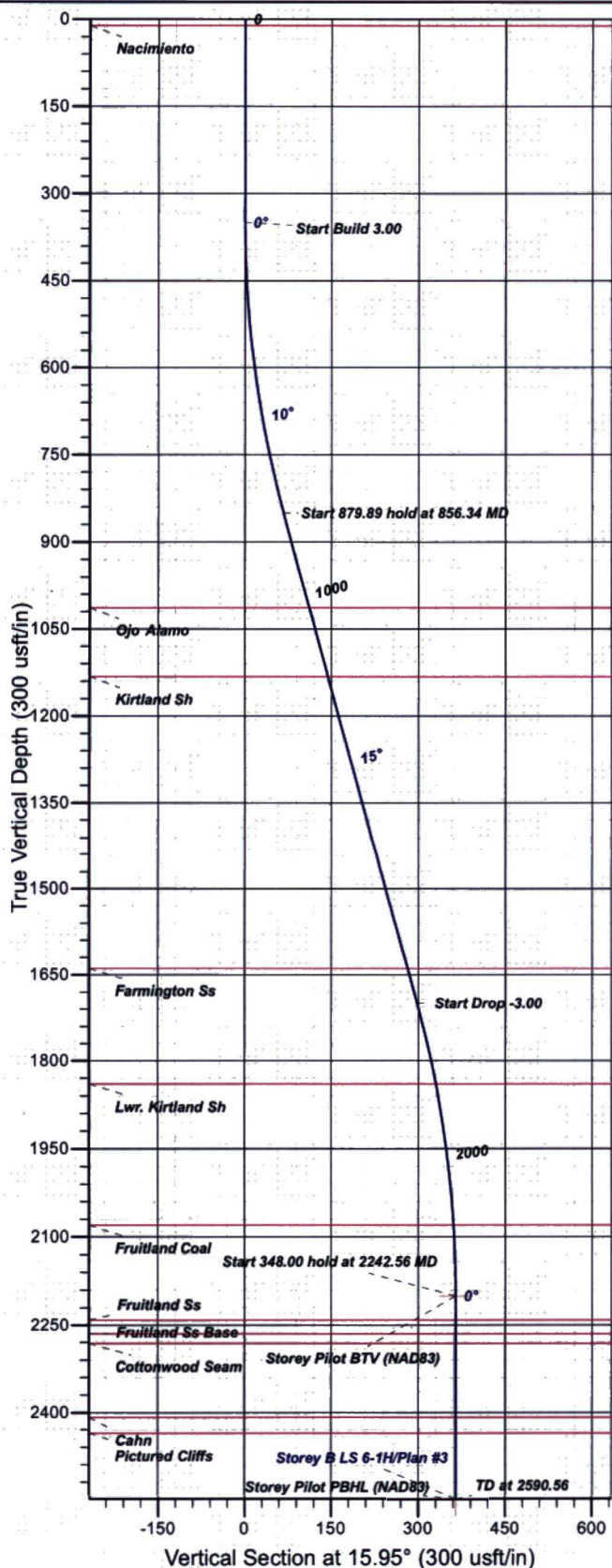
Longitude
-107.9585488

Slot



Azimuths to Grid North
True North: 0.07°
Magnetic North: 9.29°

Magnetic Field
Strength: 50046.1nT
Dip Angle: 63.42°
Date: 10/19/2016
Model: HDGM



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
11.00	11.00	Nacimiento
1013.00	1024.80	Ojo Alamo
1132.00	1148.10	Kirtland Sh
1639.00	1673.46	Farmington Ss
1840.00	1880.40	Lwr. Kirtland Sh
2080.00	2122.48	Fruitland Coal
2241.00	2283.56	Fruitland Ss
2265.00	2307.56	Fruitland Ss Base
2282.00	2324.56	Cottonwood Seam
2408.00	2450.56	Cahn
2435.00	2477.56	Pictured Cliffs

Plan: Plan #3

10:28, November 03 2016
Created By: Janie Collins

PROJECT DETAILS: San Juan County, NM NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone

System Datum: Mean Sea Level

CASING DETAILS

No casing data is available

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	
3	856.34	15.19	15.95	850.43	64.16	18.33	3.00	15.95	66.73	
4	1736.23	15.19	15.95	1699.57	285.84	81.67	0.00	0.00	297.28	
5	2242.56	0.00	0.00	2200.00	350.00	100.00	3.00	180.00	364.01	Storey Pilot BTV (NAD83)
6	2590.56	0.00	0.00	2548.00	350.00	100.00	0.00	0.00	364.01	Storey Pilot PBHL (NAD83)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Storey Pilot BTV (NAD83)	2200.00	350.00	100.00	2121188.10	2686545.65	36.8292368	-107.9582087	Point
- plan hits target center								
Storey Pilot PBHL (NAD83)	2548.00	350.00	100.00	2121188.10	2686545.65	36.8292368	-107.9582087	Point
- plan hits target center								



Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Company:	B.P.	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Project:	San Juan County, NM NAD83	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site:	Storey Pad	North Reference:	Grid
Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
Design:	Plan #3		

Project	San Juan County, NM NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Storey Pad		
Site Position:		Northing:	2,120,838.10 usft
From:	Map	Easting:	2,686,445.65 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	36.8282751
		Longitude:	-107.9585489
		Grid Convergence:	-0.08 °

Well	Storey B LS 6-1H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	36.8282751
		Longitude:	-107.9585489
		Ground Level:	5,936.57 usft

Wellbore	Pilot		
Magnetics	Model Name	Sample Date	Declination
			(°)
	HDGM	10/19/2016	9.22
			Dip Angle
			(°)
			63.42
			Field Strength
			(nT)
			50,046

Design	Plan #3		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			15.95

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00	
856.34	15.19	15.95	850.43	64.16	18.33	3.00	3.00	0.00	15.95	
1,736.23	15.19	15.95	1,699.57	285.84	81.67	0.00	0.00	0.00	0.00	
2,242.56	0.00	0.00	2,200.00	350.00	100.00	3.00	-3.00	0.00	180.00	Storey Pilot BTV (NAI)
2,590.56	0.00	0.00	2,548.00	350.00	100.00	0.00	0.00	0.00	0.00	Storey Pilot PBHL (NAI)



Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Company:	B.P.	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Project:	San Juan County, NM NAD83	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site:	Storey Pad	North Reference:	Grid
Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
Design:	Plan #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11.00	0.00	0.00	11.00	0.00	0.00	0.00	0.00	0.00	0.00
Nacimiento									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	1.50	15.95	399.99	0.63	0.18	0.65	3.00	3.00	0.00
500.00	4.50	15.95	499.85	5.66	1.62	5.89	3.00	3.00	0.00
600.00	7.50	15.95	599.29	15.71	4.49	16.34	3.00	3.00	0.00
700.00	10.50	15.95	698.04	30.75	8.79	31.98	3.00	3.00	0.00
800.00	13.50	15.95	795.85	50.74	14.50	52.77	3.00	3.00	0.00
856.34	15.19	15.95	850.43	64.16	18.33	66.73	3.00	3.00	0.00
900.00	15.19	15.95	892.56	75.16	21.47	78.17	0.00	0.00	0.00
1,000.00	15.19	15.95	989.07	100.35	28.67	104.37	0.00	0.00	0.00
1,024.80	15.19	15.95	1,013.00	106.60	30.46	110.87	0.00	0.00	0.00
Ojo Alamo									
1,100.00	15.19	15.95	1,085.58	125.55	35.87	130.57	0.00	0.00	0.00
1,148.10	15.19	15.95	1,132.00	137.67	39.33	143.18	0.00	0.00	0.00
Kirtland Sh									
1,200.00	15.19	15.95	1,182.08	150.74	43.07	156.77	0.00	0.00	0.00
1,300.00	15.19	15.95	1,278.59	175.94	50.27	182.98	0.00	0.00	0.00
1,400.00	15.19	15.95	1,375.09	201.13	57.47	209.18	0.00	0.00	0.00
1,500.00	15.19	15.95	1,471.60	226.33	64.66	235.38	0.00	0.00	0.00
1,600.00	15.19	15.95	1,568.11	251.52	71.86	261.58	0.00	0.00	0.00
1,673.46	15.19	15.95	1,639.00	270.03	77.15	280.83	0.00	0.00	0.00
Farmington Ss									
1,700.00	15.19	15.95	1,664.61	276.71	79.06	287.79	0.00	0.00	0.00
1,736.23	15.19	15.95	1,699.57	285.84	81.67	297.28	0.00	0.00	0.00
1,800.00	13.28	15.95	1,761.39	300.92	85.98	312.96	3.00	-3.00	0.00
1,880.40	10.87	15.95	1,840.00	317.08	90.59	329.77	3.00	-3.00	0.00
Lwr. Kirtland Sh									
1,900.00	10.28	15.95	1,859.27	320.54	91.58	333.37	3.00	-3.00	0.00
2,000.00	7.28	15.95	1,958.09	335.21	95.77	348.62	3.00	-3.00	0.00
2,100.00	4.28	15.95	2,057.57	344.89	98.54	358.69	3.00	-3.00	0.00
2,122.48	3.60	15.95	2,080.00	346.37	98.96	360.23	3.00	-3.00	0.00
Fruitland Coal									
2,200.00	1.28	15.95	2,157.44	349.54	99.87	363.53	3.00	-3.00	0.00
2,242.56	0.00	0.00	2,200.00	350.00	100.00	364.01	3.00	-3.00	-37.46
Storey Pilot BTV (NAD83)									
2,283.56	0.00	0.00	2,241.00	350.00	100.00	364.01	0.00	0.00	0.00
Fruitland Ss									
2,300.00	0.00	0.00	2,257.44	350.00	100.00	364.01	0.00	0.00	0.00
2,307.56	0.00	0.00	2,265.00	350.00	100.00	364.01	0.00	0.00	0.00
Fruitland Ss Base									
2,324.56	0.00	0.00	2,282.00	350.00	100.00	364.01	0.00	0.00	0.00
Cottonwood Seam									
2,400.00	0.00	0.00	2,357.44	350.00	100.00	364.01	0.00	0.00	0.00
2,450.56	0.00	0.00	2,408.00	350.00	100.00	364.01	0.00	0.00	0.00
Cahn									
2,477.56	0.00	0.00	2,435.00	350.00	100.00	364.01	0.00	0.00	0.00
Pictured Cliffs									



Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Company:	B.P.	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Project:	San Juan County, NM NAD83	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site:	Storey Pad	North Reference:	Grid
Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
Design:	Plan #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,500.00	0.00	0.00	2,457.44	350.00	100.00	364.01	0.00	0.00	0.00
2,590.56	0.00	0.00	2,548.00	350.00	100.00	364.01	0.00	0.00	0.00
Storey Pilot PBHL (NAD83)									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Storey Pilot BTV (NAD83: - plan hits target center - Point	0.00	4.53	2,200.00	350.00	100.00	2,121,188.10	2,686,545.65	36.8292368	-107.9582088
Storey Pilot PBHL (NAD83: - plan hits target center - Point	0.00	4.53	2,548.00	350.00	100.00	2,121,188.10	2,686,545.65	36.8292368	-107.9582088

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
11.00	11.00	Nacimiento		0.00	0.00
1,024.80	1,013.00	Ojo Alamo		0.00	0.00
1,148.10	1,132.00	Kirtland Sh		0.00	0.00
1,673.46	1,639.00	Farmington Ss		0.00	0.00
1,880.40	1,840.00	Lwr. Kirtland Sh		0.00	0.00
2,122.48	2,080.00	Fruitland Coal		0.00	0.00
2,283.56	2,241.00	Fruitland Ss		0.00	0.00
2,307.56	2,265.00	Fruitland Ss Base		0.00	0.00
2,324.56	2,282.00	Cottonwood Seam		0.00	0.00
2,450.56	2,408.00	Cahn		0.00	0.00
2,477.56	2,435.00	Pictured Cliffs		0.00	0.00



B.P.

San Juan County, NM NAD83

Storey Pad

Storey B LS 6-1H

Lateral 1

Plan #10

Anticollision Report

03 November, 2016



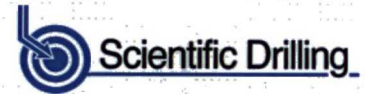
Scientific Drilling

www.scientificdrilling.com





Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Reference	Plan #10		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 30,000.00 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	11/3/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	1,590.32	Plan #3 (Pilot)	SDI MWD	SDI MWD - Standard ver 1.0.1	
1,590.32	5,243.13	Plan #10 (Lateral 1)	SDI MWD	SDI MWD - Standard ver 1.0.1	

Summary						
Site Name	Reference	Offset	Distance		Separation	Warning
	Measured	Measured	Between	Between		
Offset Well - Wellbore - Design	Depth	Depth	Centres	Ellipses	Factor	
	(usft)	(usft)	(usft)	(usft)		
Storey Pad						
Current #2 - OH - OH	2,434.36	2,273.53	400.08	359.37	9.828	CC, ES
Current #2 - OH - OH	2,500.00	2,308.32	404.47	362.58	9.655	SF
Storey B 1M - OH - OH	4,976.21	2,309.50	766.67	614.67	5.044	CC
Storey B 1M - OH - OH	5,000.00	2,309.23	767.04	614.58	5.031	ES
Storey B 1M - OH - OH	5,100.00	2,308.14	776.60	621.91	5.020	SF
Storey B LS 1A - OH - OH	3,947.34	2,339.95	556.19	450.16	5.246	CC, ES
Storey B LS 1A - OH - OH	4,000.00	2,339.37	558.67	451.62	5.219	SF
Storey B LS 6-1H - Pilot - Plan #3	1,600.00	1,600.00	0.07	-0.01	0.915	Stop Drilling, CC, ES, SF
Storey B1 E - OH - OH	4,299.81	2,346.60	433.68	301.06	3.270	CC
Storey B1 E - OH - OH	4,300.00	2,346.60	433.68	301.06	3.270	ES, SF
Storey B1 LS - OH - OH	2,573.53	2,334.63	996.37	897.23	10.050	CC
Storey B1 LS - OH - OH	2,600.00	2,344.80	996.75	896.85	9.977	ES
Storey B1 LS - OH - OH	2,800.00	2,391.79	1,025.63	920.64	9.770	SF
Storey BE LS - OH - OH	4,893.52	2,309.47	802.57	652.50	5.348	CC
Storey BE LS - OH - OH	4,900.00	2,309.40	802.60	652.40	5.344	ES
Storey BE LS - OH - OH	5,000.00	2,308.30	809.60	657.18	5.312	SF
Storey LS B6 - OH - OH	2,053.58	2,016.68	292.44	254.01	7.610	CC, ES
Storey LS B6 - OH - OH	2,200.00	2,141.40	307.12	265.50	7.378	SF

Offset Design		Storey Pad - Current #2 - OH - OH										Offset Site Error:		0.00 usft	
Survey Program:		2620-INCLINOMETER										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	19.07	0.00	0.00	74.80	171.49	631.08	654.24						
100.00	100.00	80.93	100.00	0.10	1.23	74.80	171.49	631.08	653.97	652.64	1.33	492.052			
200.00	200.00	180.93	200.00	0.32	2.75	74.80	171.49	631.08	653.97	650.89	3.07	212.862			
300.00	300.00	280.93	300.00	0.55	4.27	74.80	171.49	631.08	653.97	649.15	4.82	135.806			
400.00	399.99	380.92	399.99	0.77	5.78	58.91	171.49	631.08	653.63	647.07	6.56	99.663			
500.00	499.85	480.77	499.85	1.00	7.30	59.37	171.49	631.08	650.94	642.64	8.30	78.430			
600.00	599.29	580.21	599.29	1.25	8.81	60.31	171.49	631.08	645.67	635.62	10.05	64.274			
700.00	698.04	678.97	698.04	1.54	10.31	61.72	171.49	631.08	638.01	626.20	11.81	54.021			
800.00	795.85	776.78	795.85	1.90	11.79	63.62	171.49	631.08	628.30	614.68	13.61	46.152			

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Current #2 - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 2620-INCLINOMETER													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	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)				
900.00	892.56	873.49	892.56	2.33	13.26	65.84	171.49	631.08	617.17	601.89	15.48	39.861		
1,000.00	989.07	970.00	989.07	2.80	14.73	68.04	171.49	631.08	606.59	589.18	17.41	34.846		
1,100.00	1,085.58	1,066.50	1,085.58	3.29	16.19	70.30	171.49	631.08	596.98	577.62	19.36	30.833		
1,200.00	1,182.08	1,163.01	1,182.08	3.79	17.66	72.62	171.49	631.08	588.38	567.04	21.34	27.577		
1,300.00	1,278.59	1,259.52	1,278.59	4.29	19.13	75.01	171.49	631.08	580.83	557.50	23.33	24.902		
1,400.00	1,375.09	1,356.02	1,375.09	4.80	20.59	77.45	171.49	631.08	574.38	549.05	25.32	22.681		
1,500.00	1,471.60	1,452.53	1,471.60	5.31	22.06	79.94	171.49	631.08	569.06	541.73	27.33	20.821		
1,600.00	1,568.12	1,549.05	1,568.12	5.81	23.52	80.74	171.49	631.08	564.88	535.56	29.32	19.266		
1,700.00	1,664.60	1,646.93	1,664.60	6.01	25.01	82.25	171.49	631.08	557.85	526.95	30.90	18.053		
1,800.00	1,764.80	1,745.73	1,764.80	6.12	26.51	2.52	171.49	631.08	544.52	512.31	32.21	16.907		
1,900.00	1,862.58	1,843.51	1,862.58	6.12	27.99	-28.06	171.49	631.08	524.72	491.52	33.21	15.802		
2,000.00	1,957.45	1,938.38	1,957.45	6.05	29.43	-43.99	171.49	631.08	499.25	465.26	34.00	14.685		
2,100.00	2,047.56	2,028.48	2,047.56	5.95	30.80	-55.89	171.49	631.08	470.04	435.15	34.89	13.473		
2,200.00	2,131.15	2,112.08	2,131.15	5.86	32.07	-66.99	171.49	631.08	440.40	404.22	36.18	12.171		
2,300.00	2,206.60	2,187.53	2,206.60	5.87	33.22	-77.70	171.49	631.08	415.32	377.33	37.99	10.932		
2,400.00	2,272.44	2,253.37	2,272.44	6.30	34.22	-87.21	171.49	631.08	401.19	361.17	40.03	10.024		
2,434.36	2,292.61	2,273.53	2,292.61	6.60	34.52	-90.00	171.49	631.08	400.08	359.37	40.71	9.828 CC, ES		
2,500.00	2,327.39	2,308.32	2,327.39	7.34	35.05	-94.45	171.49	631.08	404.47	362.58	41.89	9.655 SF		
2,600.00	2,370.38	2,351.31	2,370.38	8.69	35.70	-98.62	171.49	631.08	429.07	385.48	43.59	9.843		
2,700.00	2,400.57	2,381.50	2,400.57	10.25	36.16	-99.16	171.49	631.08	474.61	429.15	45.46	10.440		
2,800.00	2,417.37	2,398.30	2,417.37	11.95	36.42	-95.55	171.49	631.08	537.21	489.53	47.68	11.268		
2,900.00	2,420.73	2,401.66	2,420.73	13.72	36.47	-89.20	171.49	631.08	611.74	562.02	49.72	12.304		
3,000.00	2,419.63	2,400.56	2,419.63	15.55	36.45	-89.03	171.49	631.08	693.15	641.58	51.57	13.440		
3,100.00	2,418.53	2,399.46	2,418.53	17.41	36.43	-88.87	171.49	631.08	778.91	725.45	53.46	14.570		
3,200.00	2,417.44	2,398.36	2,417.44	19.31	36.42	-88.70	171.49	631.08	867.71	812.34	55.37	15.671		
3,300.00	2,416.34	2,397.27	2,416.34	21.23	36.40	-88.53	171.49	631.08	958.72	901.43	57.30	16.733		
3,400.00	2,415.24	2,396.17	2,415.24	23.16	36.38	-88.37	171.49	631.08	1,051.37	992.13	59.23	17.749		
3,500.00	2,414.14	2,395.07	2,414.14	25.11	36.37	-88.20	171.49	631.08	1,145.25	1,084.07	61.18	18.719		
3,600.00	2,413.04	2,393.97	2,413.04	27.07	36.35	-88.03	171.49	631.08	1,240.09	1,176.95	63.13	19.642		
3,700.00	2,411.95	2,392.87	2,411.95	29.04	36.33	-87.87	171.49	631.08	1,335.68	1,270.58	65.09	20.519		
3,800.00	2,410.85	2,391.78	2,410.85	31.01	36.32	-87.70	171.49	631.08	1,431.87	1,364.81	67.06	21.353		
3,900.00	2,409.75	2,390.68	2,409.75	32.99	36.30	-87.53	171.49	631.08	1,528.55	1,459.53	69.02	22.146		
4,000.00	2,408.65	2,389.58	2,408.65	34.97	36.28	-87.37	171.49	631.08	1,625.63	1,554.64	70.99	22.899		
4,100.00	2,407.55	2,388.48	2,407.55	36.95	36.27	-87.20	171.49	631.08	1,723.04	1,650.08	72.96	23.616		
4,200.00	2,406.46	2,387.39	2,406.46	38.94	36.25	-87.04	171.49	631.08	1,820.74	1,745.80	74.93	24.298		
4,300.00	2,405.36	2,386.29	2,405.36	40.93	36.23	-86.87	171.49	631.08	1,918.67	1,841.76	76.90	24.949		
4,400.00	2,404.26	2,385.19	2,404.26	42.93	36.22	-86.70	171.49	631.08	2,016.80	1,937.92	78.88	25.569		
4,500.00	2,403.16	2,384.09	2,403.16	44.93	36.20	-86.54	171.49	631.08	2,115.11	2,034.26	80.85	26.161		
4,600.00	2,402.07	2,382.99	2,402.07	46.92	36.18	-86.37	171.49	631.08	2,213.57	2,130.74	82.82	26.726		
4,700.00	2,400.97	2,381.90	2,400.97	48.92	36.17	-86.21	171.49	631.08	2,312.16	2,227.36	84.80	27.267		
4,800.00	2,399.87	2,380.80	2,399.87	50.93	36.15	-86.04	171.49	631.08	2,410.86	2,324.09	86.77	27.785		
4,900.00	2,398.77	2,379.70	2,398.77	52.93	36.13	-85.88	171.49	631.08	2,509.67	2,420.93	88.74	28.281		
5,000.00	2,397.67	2,378.60	2,397.67	54.93	36.12	-85.71	171.49	631.08	2,608.57	2,517.86	90.71	28.756		
5,100.00	2,396.58	2,377.50	2,396.58	56.94	36.10	-85.54	171.49	631.08	2,707.55	2,614.87	92.68	29.213		
5,200.00	2,395.48	2,376.41	2,395.48	58.94	36.08	-85.38	171.49	631.08	2,806.60	2,711.95	94.65	29.651		
5,243.57	2,395.00	2,375.93	2,395.00	58.94	36.08	-85.31	171.49	631.08	2,849.77	2,755.14	94.64	30.112		

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B 1M - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset		+N/-S (usft)	+E/-W (usft)						
0.00	0.00	0.00	88.44	0.00	0.00	172.93	-2,613.31	324.12	2,634.82					
100.00	100.00	11.56	100.00	0.10	0.23	172.93	-2,613.31	324.12	2,633.33	2,633.00	0.33	7,946.137		
200.00	200.00	111.56	200.00	0.32	2.46	172.93	-2,613.31	324.12	2,633.33	2,630.55	2.79	944.799		
300.00	300.00	211.56	300.00	0.55	6.46	172.93	-2,613.31	324.12	2,633.33	2,626.32	7.01	375.549		
327.78	327.78	239.34	327.78	0.61	7.57	156.98	-2,613.31	324.12	2,633.43	2,625.24	8.19	321.708		
400.00	399.99	311.55	399.99	0.77	10.46	156.98	-2,613.31	324.12	2,633.94	2,622.70	11.24	234.422		
500.00	499.85	411.41	499.85	1.00	14.46	156.97	-2,613.31	324.12	2,638.75	2,623.32	15.44	170.956		
600.00	599.29	510.85	599.29	1.25	18.43	156.95	-2,613.31	324.12	2,648.38	2,628.81	19.57	135.342		
700.00	698.04	609.60	698.04	1.54	22.38	156.91	-2,613.31	324.12	2,662.80	2,639.20	23.60	112.837		
800.00	795.85	707.41	795.85	1.90	26.30	156.85	-2,613.31	324.12	2,681.98	2,654.49	27.50	97.541		
900.00	892.56	804.12	892.56	2.33	30.16	156.91	-2,613.31	324.12	2,705.45	2,674.07	31.38	86.216		
1,000.00	989.07	900.63	989.07	2.80	34.03	157.12	-2,613.31	324.12	2,729.70	2,694.28	35.42	77.074		
1,100.00	1,085.58	997.14	1,085.58	3.29	37.89	157.33	-2,613.31	324.12	2,753.99	2,714.52	39.46	69.789		
1,200.00	1,182.08	1,093.64	1,182.08	3.79	41.75	157.54	-2,613.31	324.12	2,778.30	2,734.79	43.51	63.851		
1,300.00	1,278.59	1,190.15	1,278.59	4.29	45.61	157.74	-2,613.31	324.12	2,802.66	2,755.09	47.57	58.920		
1,400.00	1,375.09	1,286.65	1,375.09	4.80	49.47	157.94	-2,613.31	324.12	2,827.04	2,775.42	51.62	54.763		
1,500.00	1,471.60	1,383.16	1,471.60	5.31	53.33	158.14	-2,613.31	324.12	2,851.46	2,795.78	55.68	51.211		
1,600.00	1,568.12	1,479.68	1,568.12	5.81	57.19	158.59	-2,613.31	324.12	2,875.85	2,815.95	59.91	48.006		
1,700.00	1,666.00	1,577.56	1,666.00	6.01	61.10	126.64	-2,613.31	324.12	2,892.38	2,827.24	65.15	44.399		
1,800.00	1,764.80	1,676.36	1,764.80	6.12	65.05	77.38	-2,613.31	324.12	2,895.46	2,826.07	69.39	41.729		
1,900.00	1,862.58	1,774.14	1,862.58	6.12	68.97	49.38	-2,613.31	324.12	2,885.06	2,812.68	72.38	39.858		
2,000.00	1,957.45	1,869.01	1,957.45	6.05	72.76	38.34	-2,613.31	324.12	2,861.46	2,787.48	73.98	38.679		
2,100.00	2,047.56	1,959.12	2,047.56	5.95	76.36	33.76	-2,613.31	324.12	2,825.16	2,751.01	74.16	38.098		
2,200.00	2,131.15	2,042.71	2,131.15	5.86	79.71	32.24	-2,613.31	324.12	2,776.95	2,703.84	73.11	37.981		
2,300.00	2,206.60	2,118.16	2,206.60	5.87	82.73	32.73	-2,613.31	324.12	2,717.82	2,646.42	71.40	38.065		
2,400.00	2,272.44	2,184.00	2,272.44	6.30	85.36	35.03	-2,613.31	324.12	2,648.99	2,578.90	70.09	37.793		
2,500.00	2,327.39	2,238.95	2,327.39	7.34	87.56	39.42	-2,613.31	324.12	2,571.87	2,500.88	70.99	36.229		
2,600.00	2,370.38	2,281.94	2,370.38	8.69	89.28	46.68	-2,613.31	324.12	2,488.01	2,411.62	76.39	32.570		
2,700.00	2,400.57	2,312.13	2,400.57	10.25	90.49	58.11	-2,613.31	324.12	2,399.08	2,311.61	87.47	27.427		
2,800.00	2,417.37	2,328.93	2,417.37	11.95	91.16	74.95	-2,613.31	324.12	2,306.85	2,206.18	100.66	22.917		
2,900.00	2,420.73	2,332.29	2,420.73	13.72	91.29	91.70	-2,613.31	324.12	2,213.12	2,106.82	106.30	20.821		
3,000.00	2,419.63	2,331.19	2,419.63	15.55	91.25	91.62	-2,613.31	324.12	2,119.60	2,011.21	108.39	19.556		
3,100.00	2,418.53	2,330.09	2,418.53	17.41	91.20	91.54	-2,613.31	324.12	2,026.70	1,916.18	110.51	18.339		
3,200.00	2,417.44	2,329.00	2,417.44	19.31	91.16	91.46	-2,613.31	324.12	1,934.51	1,821.84	112.67	17.170		
3,300.00	2,416.34	2,327.90	2,416.34	21.23	91.12	91.37	-2,613.31	324.12	1,843.13	1,728.29	114.83	16.051		
3,400.00	2,415.24	2,326.80	2,415.24	23.16	91.07	91.29	-2,613.31	324.12	1,752.69	1,635.68	117.01	14.979		
3,500.00	2,414.14	2,325.70	2,414.14	25.11	91.03	91.21	-2,613.31	324.12	1,663.34	1,544.14	119.20	13.954		
3,600.00	2,413.04	2,324.60	2,413.04	27.07	90.98	91.13	-2,613.31	324.12	1,575.28	1,453.88	121.40	12.976		
3,700.00	2,411.95	2,323.51	2,411.95	29.04	90.94	91.05	-2,613.31	324.12	1,488.72	1,365.12	123.60	12.045		
3,800.00	2,410.85	2,322.41	2,410.85	31.01	90.90	90.96	-2,613.31	324.12	1,403.95	1,278.14	125.81	11.160		
3,900.00	2,409.75	2,321.31	2,409.75	32.99	90.85	90.88	-2,613.31	324.12	1,321.31	1,193.29	128.02	10.321		
4,000.00	2,408.65	2,320.21	2,408.65	34.97	90.81	90.80	-2,613.31	324.12	1,241.23	1,111.00	130.23	9.531		
4,100.00	2,407.55	2,319.11	2,407.55	36.95	90.76	90.72	-2,613.31	324.12	1,164.23	1,031.78	132.45	8.790		
4,200.00	2,406.46	2,318.02	2,406.46	38.94	90.72	90.64	-2,613.31	324.12	1,090.97	956.30	134.67	8.101		
4,300.00	2,405.36	2,316.92	2,405.36	40.93	90.68	90.55	-2,613.31	324.12	1,022.24	885.36	136.89	7.468		
4,400.00	2,404.26	2,315.82	2,404.26	42.93	90.63	90.47	-2,613.31	324.12	959.04	819.93	139.11	6.894		
4,500.00	2,403.16	2,314.72	2,403.16	44.93	90.59	90.39	-2,613.31	324.12	902.51	761.18	141.33	6.386		
4,600.00	2,402.07	2,313.63	2,402.07	46.92	90.55	90.31	-2,613.31	324.12	853.99	710.43	143.56	5.949		
4,700.00	2,400.97	2,312.53	2,400.97	48.92	90.50	90.23	-2,613.31	324.12	814.90	669.12	145.78	5.590		
4,800.00	2,399.87	2,311.43	2,399.87	50.93	90.46	90.14	-2,613.31	324.12	786.65	638.65	148.01	5.315		
4,900.00	2,398.77	2,310.33	2,398.77	52.93	90.41	90.06	-2,613.31	324.12	770.45	620.21	150.23	5.128		
4,976.21	2,397.94	2,309.50	2,397.94	54.46	90.38	90.00	-2,613.31	324.12	766.67	614.67	151.99	5.044 CC		

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B 1M - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	2,397.67	2,309.23	2,397.67	54.93	90.37	89.98	-2,613.31	324.12	767.04	614.58	152.46	5.031 ES		
5,100.00	2,396.58	2,308.14	2,396.58	56.94	90.33	89.90	-2,613.31	324.12	776.60	621.91	154.69	5.020 SF		
5,200.00	2,395.48	2,307.04	2,395.48	58.94	90.28	89.82	-2,613.31	324.12	798.66	641.74	156.92	5.090		
5,243.57	2,395.00	2,306.56	2,395.00	58.94	90.26	89.78	-2,613.31	324.12	811.94	655.05	156.90	5.175		



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B LS 1A - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 225-INCLINOMETER													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	69.29	0.00	0.00	172.39	-1,569.45	209.69	1,584.91					
100.00	100.00	30.71	100.00	0.10	0.47	172.39	-1,569.45	209.69	1,583.40	1,582.83	0.57	2,795.137		
200.00	200.00	130.71	200.00	0.32	1.98	172.39	-1,569.45	209.69	1,583.40	1,581.09	2.31	685.569		
300.00	300.00	230.71	300.00	0.55	3.59	172.39	-1,569.45	209.69	1,583.40	1,579.26	4.14	382.516		
327.78	327.78	258.49	327.78	0.61	4.43	156.45	-1,569.45	209.69	1,583.49	1,578.44	5.05	313.821		
400.00	399.99	330.70	399.99	0.77	6.63	156.45	-1,569.45	209.69	1,584.00	1,576.59	7.40	213.968		
500.00	499.85	430.55	499.85	1.00	9.66	156.46	-1,569.45	209.69	1,588.79	1,578.13	10.66	149.025		
600.00	599.29	529.99	599.29	1.25	12.68	156.50	-1,569.45	209.69	1,598.39	1,584.51	13.88	115.176		
700.00	698.04	628.75	698.04	1.54	15.68	156.55	-1,569.45	209.69	1,612.76	1,595.74	17.02	94.735		
800.00	795.85	726.56	795.85	1.90	18.65	156.61	-1,569.45	209.69	1,631.90	1,611.83	20.08	81.287		
900.00	892.56	823.27	892.56	2.33	21.59	156.80	-1,569.45	209.69	1,655.35	1,632.24	23.11	71.641		
1,000.00	989.07	919.78	989.07	2.80	24.52	157.15	-1,569.45	209.69	1,679.59	1,653.36	26.23	64.028		
1,100.00	1,085.58	1,016.29	1,085.58	3.29	27.45	157.49	-1,569.45	209.69	1,703.89	1,674.52	29.37	58.019		
1,200.00	1,182.08	1,112.79	1,182.08	3.79	30.38	157.82	-1,569.45	209.69	1,728.24	1,695.73	32.51	53.162		
1,300.00	1,278.59	1,209.30	1,278.59	4.29	33.31	158.14	-1,569.45	209.69	1,752.65	1,717.00	35.65	49.157		
1,400.00	1,375.09	1,305.81	1,375.09	4.80	36.24	158.45	-1,569.45	209.69	1,777.11	1,738.31	38.80	45.801		
1,500.00	1,471.60	1,402.31	1,471.60	5.31	39.17	158.76	-1,569.45	209.69	1,801.62	1,759.67	41.95	42.948		
1,600.00	1,568.12	1,498.83	1,568.12	5.81	42.10	157.31	-1,569.45	209.69	1,826.12	1,780.90	45.22	40.387		
1,700.00	1,666.00	1,596.71	1,666.00	6.01	45.07	127.47	-1,569.45	209.69	1,842.80	1,793.63	49.16	37.483		
1,800.00	1,764.80	1,695.51	1,764.80	6.12	48.07	78.36	-1,569.45	209.69	1,846.10	1,793.71	52.39	35.236		
1,900.00	1,862.58	1,793.29	1,862.58	6.12	51.04	50.57	-1,569.45	209.69	1,836.05	1,781.33	54.72	33.552		
2,000.00	1,957.45	1,888.16	1,957.45	6.05	53.92	39.82	-1,569.45	209.69	1,812.93	1,756.88	56.05	32.345		
2,100.00	2,047.56	1,978.27	2,047.56	5.95	56.66	35.62	-1,569.45	209.69	1,777.30	1,720.90	56.40	31.512		
2,200.00	2,131.15	2,061.86	2,131.15	5.86	59.20	34.61	-1,569.45	209.69	1,729.99	1,673.99	56.00	30.894		
2,300.00	2,206.60	2,137.31	2,206.60	5.87	61.49	35.78	-1,569.45	209.69	1,672.06	1,616.70	55.36	30.202		
2,400.00	2,272.44	2,203.16	2,272.44	6.30	63.49	38.97	-1,569.45	209.69	1,604.81	1,549.37	55.44	28.945		
2,500.00	2,327.39	2,258.10	2,327.39	7.34	65.16	44.43	-1,569.45	209.69	1,529.72	1,472.11	57.61	26.555		
2,600.00	2,370.38	2,301.09	2,370.38	8.69	66.46	52.73	-1,569.45	209.69	1,448.44	1,385.38	63.06	22.968		
2,700.00	2,400.57	2,331.28	2,400.57	10.25	67.38	64.33	-1,569.45	209.69	1,362.77	1,291.35	71.42	19.081		
2,800.00	2,417.37	2,348.09	2,417.37	11.95	67.89	78.83	-1,569.45	209.69	1,274.58	1,195.18	79.40	16.052		
2,900.00	2,420.73	2,351.44	2,420.73	13.72	67.99	91.18	-1,569.45	209.69	1,185.81	1,102.79	83.02	14.283		
3,000.00	2,419.63	2,350.35	2,419.63	15.55	67.96	91.07	-1,569.45	209.69	1,098.50	1,013.37	85.12	12.905		
3,100.00	2,418.53	2,349.25	2,418.53	17.41	67.93	90.96	-1,569.45	209.69	1,013.53	926.27	87.26	11.615		
3,200.00	2,417.44	2,348.15	2,417.44	19.31	67.89	90.85	-1,569.45	209.69	931.56	842.14	89.42	10.418		
3,300.00	2,416.34	2,347.05	2,416.34	21.23	67.86	90.73	-1,569.45	209.69	853.43	761.84	91.60	9.317		
3,400.00	2,415.24	2,345.95	2,415.24	23.16	67.83	90.62	-1,569.45	209.69	780.32	686.53	93.79	8.320		
3,500.00	2,414.14	2,344.86	2,414.14	25.11	67.79	90.51	-1,569.45	209.69	713.75	617.76	95.98	7.436		
3,600.00	2,413.04	2,343.76	2,413.04	27.07	67.76	90.39	-1,569.45	209.69	655.73	557.54	98.19	6.678		
3,700.00	2,411.95	2,342.66	2,411.95	29.04	67.73	90.28	-1,569.45	209.69	608.70	508.30	100.40	6.063		
3,800.00	2,410.85	2,341.56	2,410.85	31.01	67.69	90.17	-1,569.45	209.69	575.37	472.76	102.62	5.607		
3,900.00	2,409.75	2,340.47	2,409.75	32.99	67.66	90.05	-1,569.45	209.69	558.20	453.36	104.83	5.325		
3,947.34	2,409.23	2,339.95	2,409.23	33.92	67.64	90.00	-1,569.45	209.69	556.19	450.16	106.02	5.246 CC, ES		
4,000.00	2,408.65	2,339.37	2,408.65	34.97	67.63	89.94	-1,569.45	209.69	558.67	451.62	107.06	5.219 SF		
4,100.00	2,407.55	2,338.27	2,407.55	36.95	67.59	89.83	-1,569.45	209.69	576.76	467.47	109.28	5.278		
4,200.00	2,406.46	2,337.17	2,406.46	38.94	67.56	89.71	-1,569.45	209.69	610.88	499.37	111.51	5.478		
4,300.00	2,405.36	2,336.07	2,405.36	40.93	67.53	89.60	-1,569.45	209.69	658.56	544.82	113.73	5.790		
4,400.00	2,404.26	2,334.98	2,404.26	42.93	67.49	89.49	-1,569.45	209.69	717.09	601.13	115.96	6.184		
4,500.00	2,403.16	2,333.88	2,403.16	44.93	67.46	89.38	-1,569.45	209.69	784.05	665.86	118.19	6.634		
4,600.00	2,402.07	2,332.78	2,402.07	46.92	67.43	89.26	-1,569.45	209.69	857.47	737.05	120.42	7.120		
4,700.00	2,400.97	2,331.68	2,400.97	48.92	67.39	89.15	-1,569.45	209.69	935.83	813.17	122.65	7.630		
4,800.00	2,399.87	2,330.58	2,399.87	50.93	67.36	89.04	-1,569.45	209.69	1,017.98	893.09	124.89	8.151		
4,900.00	2,398.77	2,329.49	2,398.77	52.93	67.33	88.92	-1,569.45	209.69	1,103.08	975.96	127.12	8.678		

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B LS 1A - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 225-INCLINOMETER												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.00	2,397.67	2,328.39	2,397.67	54.93	67.29	88.81	-1,569.45	209.69	1,190.50	1,061.15	129.35	9.204	
5,100.00	2,396.58	2,327.29	2,396.58	56.94	67.26	88.70	-1,569.45	209.69	1,279.77	1,148.19	131.58	9.726	
5,200.00	2,395.48	2,326.19	2,395.48	58.94	67.23	88.58	-1,569.45	209.69	1,370.51	1,236.70	133.81	10.242	
5,243.57	2,395.00	2,325.71	2,395.00	58.94	67.21	88.53	-1,569.45	209.69	1,410.44	1,276.64	133.80	10.542	



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B LS 6-1H - Pilot - Plan #3													Offset Site Error:	0.00 usft
Survey Program: 0-SDI MWD													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		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		
1,590.32	1,558.88	1,590.32	1,558.76	0.00	0.00	-36.34	249.08	71.17	0.55					
1,600.00	1,588.12	1,600.00	1,568.11	0.05	0.05	-36.51	251.52	71.86	0.07	-0.01	0.07	0.915	Stop Drilling, CC, ES, SF	
1,700.00	1,666.00	1,699.57	1,664.20	0.28	0.56	-66.38	276.61	79.03	8.38	7.78	0.60	13.974		
1,800.00	1,764.80	1,797.80	1,759.25	0.47	1.03	-117.01	300.43	85.84	29.68	28.59	1.09	27.234		
1,900.00	1,862.58	1,894.57	1,853.93	0.63	1.37	-148.20	319.60	91.31	60.77	59.29	1.49	40.898		
2,000.00	1,957.45	1,989.00	1,947.18	0.78	1.65	-162.41	333.84	95.38	101.27	99.48	1.79	56.635		
2,100.00	2,047.56	2,080.28	2,037.91	0.93	1.87	-170.24	343.37	98.11	150.88	148.88	2.00	75.597		
2,200.00	2,131.15	2,167.57	2,125.03	1.21	2.03	-175.40	348.58	99.60	209.18	207.05	2.14	97.882		
2,300.00	2,206.60	2,249.16	2,206.60	1.67	2.15	-179.30	350.00	100.00	275.66	273.39	2.26	121.754		
2,400.00	2,272.44	2,315.01	2,272.44	4.02	2.23	177.54	350.00	100.00	350.81	348.78	2.03	172.618		
2,500.00	2,327.39	2,369.95	2,327.39	5.79	2.30	174.41	350.00	100.00	434.20	432.55	1.66	261.904		
2,600.00	2,370.38	2,412.94	2,370.38	7.34	2.36	170.22	350.00	100.00	524.26	522.93	1.33	394.327		
2,700.00	2,400.57	2,443.13	2,400.57	8.89	2.40	162.38	350.00	100.00	619.29	616.55	2.74	226.161		
2,800.00	2,417.37	2,459.94	2,417.37	10.48	2.42	139.67	350.00	100.00	717.47	709.66	7.81	91.850		
2,900.00	2,420.73	2,463.29	2,420.73	12.09	2.43	83.05	350.00	100.00	816.95	802.83	14.13	57.824		
3,000.00	2,419.63	2,462.19	2,419.63	13.75	2.42	82.20	350.00	100.00	916.59	900.51	16.07	57.022		
3,100.00	2,418.53	2,461.10	2,418.53	15.45	2.42	81.36	350.00	100.00	1,016.29	998.23	18.07	56.252		
3,200.00	2,417.44	2,460.00	2,417.44	17.18	2.42	80.53	350.00	100.00	1,116.05	1,095.96	20.09	55.551		
3,300.00	2,416.34	2,458.90	2,416.34	18.95	2.42	79.69	350.00	100.00	1,215.85	1,193.71	22.13	54.932		
3,400.00	2,415.24	2,457.80	2,415.24	20.75	2.42	78.86	350.00	100.00	1,315.67	1,291.49	24.19	54.394		
3,500.00	2,414.14	2,456.71	2,414.14	22.58	2.42	78.04	350.00	100.00	1,415.52	1,389.28	26.25	53.933		
3,600.00	2,413.04	2,455.61	2,413.04	24.42	2.42	77.22	350.00	100.00	1,515.39	1,487.09	28.30	53.541		
3,700.00	2,411.95	2,454.51	2,411.95	26.29	2.41	76.41	350.00	100.00	1,615.28	1,584.92	30.36	53.210		
3,800.00	2,410.85	2,453.41	2,410.85	28.17	2.41	75.60	350.00	100.00	1,715.17	1,682.77	32.40	52.935		
3,900.00	2,409.75	2,452.31	2,409.75	30.07	2.41	74.80	350.00	100.00	1,815.08	1,780.65	34.44	52.710		
4,000.00	2,408.65	2,451.22	2,408.65	31.98	2.41	74.00	350.00	100.00	1,915.00	1,878.54	36.46	52.528		
4,100.00	2,407.55	2,450.12	2,407.55	33.89	2.41	73.21	350.00	100.00	2,014.92	1,976.46	38.46	52.385		
4,200.00	2,406.46	2,449.02	2,406.46	35.82	2.41	72.43	350.00	100.00	2,114.85	2,074.40	40.45	52.278		
4,300.00	2,405.36	2,447.92	2,405.36	37.76	2.41	71.65	350.00	100.00	2,214.79	2,172.36	42.43	52.202		
4,400.00	2,404.26	2,446.82	2,404.26	39.70	2.40	70.88	350.00	100.00	2,314.73	2,270.35	44.38	52.155		
4,500.00	2,403.16	2,445.73	2,403.16	41.65	2.40	70.12	350.00	100.00	2,414.68	2,368.36	46.32	52.134		
4,600.00	2,402.07	2,444.63	2,402.07	43.61	2.40	69.36	350.00	100.00	2,514.63	2,466.40	48.23	52.137		
4,700.00	2,400.97	2,443.53	2,400.97	45.57	2.40	68.61	350.00	100.00	2,614.58	2,564.46	50.12	52.161		
4,800.00	2,399.87	2,442.43	2,399.87	47.53	2.40	67.87	350.00	100.00	2,714.54	2,662.54	52.00	52.206		
4,900.00	2,398.77	2,441.34	2,398.77	49.50	2.40	67.14	350.00	100.00	2,814.50	2,760.65	53.85	52.270		
5,000.00	2,397.67	2,440.24	2,397.67	51.47	2.39	66.41	350.00	100.00	2,914.46	2,858.78	55.67	52.350		
5,100.00	2,396.58	2,439.14	2,396.58	53.45	2.39	65.70	350.00	100.00	3,014.42	2,956.94	57.48	52.447		
5,200.00	2,395.48	2,438.04	2,395.48	55.43	2.39	64.99	350.00	100.00	3,114.39	3,055.13	59.26	52.559		
5,243.57	2,395.00	2,437.56	2,395.00	55.43	2.39	64.68	350.00	100.00	3,157.94	3,098.82	59.12	53.414		

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B1 E - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	58.76	0.00	0.00	141.82	-1,602.09	1,259.92	2,039.01					
100.00	100.00	41.24	100.00	0.10	0.82	141.82	-1,602.09	1,259.92	2,038.16	2,037.23	0.92	2,203.561		
200.00	200.00	141.24	200.00	0.32	3.65	141.82	-1,602.09	1,259.92	2,038.16	2,034.18	3.97	512.823		
300.00	300.00	241.24	300.00	0.55	7.65	141.82	-1,602.09	1,259.92	2,038.16	2,029.96	8.20	248.582		
327.79	327.79	269.03	327.79	0.61	8.76	125.87	-1,602.09	1,259.92	2,038.22	2,028.84	9.37	217.454		
400.00	399.99	341.23	399.99	0.77	11.65	125.88	-1,602.09	1,259.92	2,038.54	2,026.12	12.42	164.094		
500.00	499.85	441.09	499.85	1.00	15.64	125.92	-1,602.09	1,259.92	2,041.61	2,024.98	16.63	122.735		
600.00	599.29	540.53	599.29	1.25	19.62	126.01	-1,602.09	1,259.92	2,047.78	2,026.95	20.82	98.351		
700.00	698.04	639.28	698.04	1.54	23.57	126.13	-1,602.09	1,259.92	2,057.06	2,032.09	24.98	82.363		
800.00	795.85	737.09	795.85	1.90	27.48	126.29	-1,602.09	1,259.92	2,069.52	2,040.43	29.09	71.142		
900.00	892.56	833.80	892.56	2.33	31.35	126.63	-1,602.09	1,259.92	2,084.93	2,051.71	33.22	62.769		
1,000.00	989.07	930.31	989.07	2.80	35.21	127.19	-1,602.09	1,259.92	2,101.02	2,063.60	37.42	56.152		
1,100.00	1,085.58	1,026.82	1,085.58	3.29	39.07	127.75	-1,602.09	1,259.92	2,117.32	2,075.69	41.63	50.864		
1,200.00	1,182.08	1,123.32	1,182.08	3.79	42.93	128.29	-1,602.09	1,259.92	2,133.81	2,087.97	45.84	46.548		
1,300.00	1,278.59	1,219.83	1,278.59	4.29	46.79	128.83	-1,602.09	1,259.92	2,150.50	2,100.44	50.06	42.963		
1,400.00	1,375.09	1,316.33	1,375.09	4.80	50.65	129.36	-1,602.09	1,259.92	2,167.37	2,113.10	54.27	39.938		
1,500.00	1,471.60	1,412.84	1,471.60	5.31	54.51	129.88	-1,602.09	1,259.92	2,184.43	2,125.95	58.48	37.355		
1,600.00	1,568.12	1,509.36	1,568.12	5.81	58.37	128.72	-1,602.09	1,259.92	2,201.61	2,138.81	62.79	35.061		
1,700.00	1,666.00	1,607.24	1,666.00	6.01	62.29	99.49	-1,602.09	1,259.92	2,211.01	2,143.47	67.54	32.736		
1,800.00	1,764.80	1,706.04	1,764.80	6.12	66.24	50.30	-1,602.09	1,259.92	2,207.02	2,135.82	71.20	30.996		
1,900.00	1,862.58	1,803.82	1,862.58	6.12	70.15	21.70	-1,602.09	1,259.92	2,189.65	2,116.20	73.44	29.814		
2,000.00	1,957.45	1,898.69	1,957.45	6.05	73.95	9.35	-1,602.09	1,259.92	2,159.18	2,085.18	73.99	29.181		
2,100.00	2,047.56	1,988.80	2,047.56	5.95	77.55	2.59	-1,602.09	1,259.92	2,116.16	2,043.50	72.66	29.124		
2,200.00	2,131.15	2,072.39	2,131.15	5.86	80.90	-2.23	-1,602.09	1,259.92	2,061.43	1,992.03	69.40	29.702		
2,300.00	2,206.60	2,147.84	2,206.60	5.87	83.91	-6.61	-1,602.09	1,259.92	1,996.04	1,931.61	64.42	30.984		
2,400.00	2,272.44	2,213.68	2,272.44	6.30	86.55	-11.53	-1,602.09	1,259.92	1,921.28	1,862.74	58.54	32.818		
2,500.00	2,327.39	2,268.63	2,327.39	7.34	88.75	-18.11	-1,602.09	1,259.92	1,838.66	1,784.52	54.14	33.960		
2,600.00	2,370.38	2,311.62	2,370.38	8.69	90.46	-28.14	-1,602.09	1,259.92	1,749.87	1,692.99	56.88	30.763		
2,700.00	2,400.57	2,341.81	2,400.57	10.25	91.67	-44.63	-1,602.09	1,259.92	1,656.75	1,583.12	73.63	22.502		
2,800.00	2,417.37	2,358.61	2,417.37	11.95	92.34	-69.82	-1,602.09	1,259.92	1,561.24	1,463.57	97.67	15.986		
2,900.00	2,420.73	2,361.97	2,420.73	13.72	92.48	-92.03	-1,602.09	1,259.92	1,465.37	1,359.72	105.65	13.870		
3,000.00	2,419.63	2,360.87	2,419.63	15.55	92.43	-91.88	-1,602.09	1,259.92	1,370.17	1,262.69	107.48	12.748		
3,100.00	2,418.53	2,359.77	2,418.53	17.41	92.39	-91.74	-1,602.09	1,259.92	1,275.71	1,166.36	109.36	11.666		
3,200.00	2,417.44	2,358.68	2,417.44	19.31	92.35	-91.59	-1,602.09	1,259.92	1,182.16	1,070.91	111.25	10.626		
3,300.00	2,416.34	2,357.58	2,416.34	21.23	92.30	-91.45	-1,602.09	1,259.92	1,089.76	976.60	113.16	9.630		
3,400.00	2,415.24	2,356.48	2,415.24	23.16	92.26	-91.30	-1,602.09	1,259.92	998.82	883.74	115.08	8.679		
3,500.00	2,414.14	2,355.38	2,414.14	25.11	92.22	-91.16	-1,602.09	1,259.92	909.78	792.76	117.01	7.775		
3,600.00	2,413.04	2,354.28	2,413.04	27.07	92.17	-91.01	-1,602.09	1,259.92	823.25	704.30	118.95	6.921		
3,700.00	2,411.95	2,353.19	2,411.95	29.04	92.13	-90.87	-1,602.09	1,259.92	740.14	619.24	120.89	6.122		
3,800.00	2,410.85	2,352.09	2,410.85	31.01	92.08	-90.72	-1,602.09	1,259.92	661.71	538.86	122.84	5.387		
3,900.00	2,409.75	2,350.99	2,409.75	32.99	92.04	-90.58	-1,602.09	1,259.92	589.83	465.04	124.79	4.727		
4,000.00	2,408.65	2,349.89	2,408.65	34.97	92.00	-90.43	-1,602.09	1,259.92	527.21	400.46	126.75	4.160		
4,100.00	2,407.55	2,348.79	2,407.55	36.95	91.95	-90.29	-1,602.09	1,259.92	477.49	348.79	128.70	3.710		
4,200.00	2,406.46	2,347.70	2,406.46	38.94	91.91	-90.14	-1,602.09	1,259.92	445.01	314.35	130.66	3.406		
4,299.81	2,405.36	2,346.60	2,405.36	40.93	91.86	-90.00	-1,602.09	1,259.92	433.68	301.06	132.61	3.270 CC		
4,300.00	2,405.36	2,346.60	2,405.36	40.93	91.86	-90.00	-1,602.09	1,259.92	433.68	301.06	132.62	3.270 ES, SF		
4,400.00	2,404.26	2,345.50	2,404.26	42.93	91.82	-89.85	-1,602.09	1,259.92	445.10	310.52	134.58	3.307		
4,500.00	2,403.16	2,344.40	2,403.16	44.93	91.78	-89.71	-1,602.09	1,259.92	477.65	341.11	136.54	3.498		
4,600.00	2,402.07	2,343.31	2,402.07	46.92	91.73	-89.56	-1,602.09	1,259.92	527.43	388.93	138.50	3.808		
4,700.00	2,400.97	2,342.21	2,400.97	48.92	91.69	-89.42	-1,602.09	1,259.92	590.09	449.84	140.46	4.201		
4,800.00	2,399.87	2,341.11	2,399.87	50.93	91.64	-89.27	-1,602.09	1,259.92	661.99	519.58	142.42	4.648		
4,900.00	2,398.77	2,340.01	2,398.77	52.93	91.60	-89.13	-1,602.09	1,259.92	740.45	596.07	144.38	5.129		

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B1 E - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	2,397.67	2,338.91	2,397.67	54.93	91.56	-88.98	-1,602.09	1,259.92	823.58	677.24	146.34	5.628		
5,100.00	2,396.58	2,337.82	2,396.58	56.94	91.51	-88.84	-1,602.09	1,259.92	910.11	761.81	148.30	6.137		
5,200.00	2,395.48	2,336.72	2,395.48	58.94	91.47	-88.69	-1,602.09	1,259.92	999.16	848.90	150.26	6.650		
5,243.57	2,395.00	2,336.24	2,395.00	58.94	91.45	-88.63	-1,602.09	1,259.92	1,038.58	888.35	150.23	6.913		



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey B1 LS - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	25.58	0.00	0.00	77.88	265.95	1,237.97	1,266.47					
100.00	100.00	74.42	100.00	0.10	1.39	77.88	265.95	1,237.97	1,266.21	1,264.72	1.49	849.634		
200.00	200.00	174.42	200.00	0.32	4.84	77.88	265.95	1,237.97	1,266.21	1,261.04	5.17	244.929		
300.00	300.00	274.42	300.00	0.55	8.84	77.88	265.95	1,237.97	1,266.21	1,256.82	9.39	134.783		
400.00	399.99	374.41	399.99	0.77	12.84	61.96	265.95	1,237.97	1,265.90	1,252.29	13.62	92.957		
500.00	499.85	474.26	499.85	1.00	16.84	62.24	265.95	1,237.97	1,263.45	1,245.62	17.83	70.854		
600.00	599.29	573.70	599.29	1.25	20.82	62.79	265.95	1,237.97	1,258.61	1,236.57	22.03	57.126		
700.00	698.04	672.46	698.04	1.54	24.77	63.61	265.95	1,237.97	1,251.48	1,225.26	26.22	47.722		
800.00	795.85	770.27	795.85	1.90	28.68	64.70	265.95	1,237.97	1,242.25	1,211.84	30.42	40.838		
900.00	892.56	866.98	892.56	2.33	32.55	65.91	265.95	1,237.97	1,231.36	1,196.71	34.66	35.531		
1,000.00	989.07	963.49	989.07	2.80	36.41	67.00	265.95	1,237.97	1,220.58	1,181.62	38.96	31.330		
1,100.00	1,085.58	1,059.99	1,085.58	3.29	40.27	68.11	265.95	1,237.97	1,210.27	1,166.98	43.29	27.959		
1,200.00	1,182.08	1,156.50	1,182.08	3.79	44.13	69.23	265.95	1,237.97	1,200.44	1,152.80	47.63	25.201		
1,300.00	1,278.59	1,253.01	1,278.59	4.29	47.99	70.37	265.95	1,237.97	1,191.11	1,139.11	52.00	22.908		
1,400.00	1,375.09	1,349.51	1,375.09	4.80	51.85	71.53	265.95	1,237.97	1,182.28	1,125.91	56.37	20.974		
1,500.00	1,471.60	1,446.02	1,471.60	5.31	55.71	72.71	265.95	1,237.97	1,173.97	1,113.22	60.75	19.324		
1,600.00	1,568.12	1,542.54	1,568.12	5.81	59.57	72.14	265.95	1,237.97	1,166.17	1,101.06	65.11	17.911		
1,700.00	1,666.00	1,640.42	1,666.00	6.01	63.49	42.35	265.95	1,237.97	1,156.17	1,087.25	68.92	16.776		
1,800.00	1,764.80	1,739.22	1,764.80	6.12	67.44	-8.02	265.95	1,237.97	1,141.85	1,069.42	72.43	15.764		
1,900.00	1,862.58	1,837.00	1,862.58	6.12	71.35	-38.47	265.95	1,237.97	1,123.37	1,047.72	75.65	14.850		
2,000.00	1,957.45	1,931.87	1,957.45	6.05	75.14	-53.29	265.95	1,237.97	1,101.40	1,022.69	78.71	13.994		
2,100.00	2,047.56	2,021.97	2,047.56	5.95	78.75	-62.95	265.95	1,237.97	1,077.17	995.26	81.90	13.151		
2,200.00	2,131.15	2,105.57	2,131.15	5.86	82.09	-70.69	265.95	1,237.97	1,052.45	967.04	85.41	12.322		
2,300.00	2,206.60	2,181.02	2,206.60	5.87	85.11	-77.39	265.95	1,237.97	1,029.50	940.26	89.24	11.536		
2,400.00	2,272.44	2,246.86	2,272.44	6.30	87.74	-83.09	265.95	1,237.97	1,010.86	917.71	93.15	10.852		
2,500.00	2,327.39	2,301.81	2,327.39	7.34	89.94	-87.60	265.95	1,237.97	999.16	902.39	96.77	10.325		
2,573.53	2,360.22	2,334.63	2,360.22	8.32	91.25	-90.00	265.95	1,237.97	996.37	897.23	99.14	10.050 CC		
2,600.00	2,370.38	2,344.80	2,370.38	8.69	91.66	-90.65	265.95	1,237.97	996.75	896.85	99.91	9.977 ES		
2,700.00	2,400.57	2,374.99	2,400.57	10.25	92.87	-92.02	265.95	1,237.97	1,005.34	902.73	102.61	9.797		
2,800.00	2,417.37	2,391.79	2,417.37	11.95	93.54	-91.55	265.95	1,237.97	1,025.63	920.64	104.98	9.770 SF		
2,900.00	2,420.73	2,395.15	2,420.73	13.72	93.67	-89.75	265.95	1,237.97	1,057.16	950.24	106.92	9.887		
3,000.00	2,419.63	2,394.05	2,419.63	15.55	93.63	-89.69	265.95	1,237.97	1,097.58	988.82	108.75	10.092		
3,100.00	2,418.53	2,392.95	2,418.53	17.41	93.59	-89.63	265.95	1,237.97	1,145.32	1,034.70	110.61	10.354		
3,200.00	2,417.44	2,391.85	2,417.44	19.31	93.54	-89.56	265.95	1,237.97	1,199.51	1,087.01	112.50	10.662		
3,300.00	2,416.34	2,390.76	2,416.34	21.23	93.50	-89.50	265.95	1,237.97	1,259.33	1,144.93	114.40	11.008		
3,400.00	2,415.24	2,389.66	2,415.24	23.16	93.45	-89.43	265.95	1,237.97	1,324.00	1,207.66	116.31	11.383		
3,500.00	2,414.14	2,388.56	2,414.14	25.11	93.41	-89.37	265.95	1,237.97	1,392.85	1,274.62	118.24	11.780		
3,600.00	2,413.04	2,387.46	2,413.04	27.07	93.37	-89.31	265.95	1,237.97	1,465.30	1,345.13	120.17	12.194		
3,700.00	2,411.95	2,386.36	2,411.95	29.04	93.32	-89.24	265.95	1,237.97	1,540.83	1,418.73	122.10	12.619		
3,800.00	2,410.85	2,385.27	2,410.85	31.01	93.28	-89.18	265.95	1,237.97	1,619.02	1,494.98	124.04	13.052		
3,900.00	2,409.75	2,384.17	2,409.75	32.99	93.23	-89.11	265.95	1,237.97	1,699.50	1,573.51	125.99	13.489		
4,000.00	2,408.65	2,383.07	2,408.65	34.97	93.19	-89.05	265.95	1,237.97	1,781.95	1,654.01	127.94	13.928		
4,100.00	2,407.55	2,381.97	2,407.55	36.95	93.15	-88.99	265.95	1,237.97	1,866.12	1,736.23	129.89	14.367		
4,200.00	2,406.46	2,380.88	2,406.46	38.94	93.10	-88.92	265.95	1,237.97	1,951.78	1,819.94	131.84	14.804		
4,300.00	2,405.36	2,379.78	2,405.36	40.93	93.06	-88.86	265.95	1,237.97	2,038.75	1,904.95	133.79	15.238		
4,400.00	2,404.26	2,378.68	2,404.26	42.93	93.02	-88.80	265.95	1,237.97	2,126.86	1,991.11	135.75	15.667		
4,500.00	2,403.16	2,377.58	2,403.16	44.93	92.97	-88.73	265.95	1,237.97	2,215.98	2,078.28	137.71	16.092		
4,600.00	2,402.07	2,376.48	2,402.07	46.92	92.93	-88.67	265.95	1,237.97	2,306.00	2,166.33	139.67	16.511		
4,700.00	2,400.97	2,375.39	2,400.97	48.92	92.88	-88.60	265.95	1,237.97	2,396.80	2,255.18	141.62	16.924		
4,800.00	2,399.87	2,374.29	2,399.87	50.93	92.84	-88.54	265.95	1,237.97	2,488.31	2,344.73	143.58	17.330		
4,900.00	2,398.77	2,373.19	2,398.77	52.93	92.80	-88.48	265.95	1,237.97	2,580.45	2,434.91	145.54	17.730		
5,000.00	2,397.67	2,372.09	2,397.67	54.93	92.75	-88.41	265.95	1,237.97	2,673.16	2,525.65	147.50	18.122		

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Storey Pad - Storey B1 LS - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	2,396.58	2,370.99	2,396.58	58.94	92.71	-88.35	265.95	1,237.97	2,766.37	2,616.90	149.47	18.508		
5,200.00	2,395.48	2,369.90	2,395.48	58.94	92.66	-88.28	265.95	1,237.97	2,860.04	2,708.61	151.43	18.887		
5,243.57	2,395.00	2,369.42	2,395.00	58.94	92.64	-88.26	265.95	1,237.97	2,900.98	2,749.58	151.41	19.160		



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey BE LS - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
0.00	0.00	0.00	89.37	0.00	0.00	174.06	-2,545.58	264.64	2,560.86						
100.00	100.00	10.63	100.00	0.10	0.21	174.06	-2,545.58	264.64	2,559.30	2,558.99	0.31	8,181.909			
200.00	200.00	110.63	200.00	0.32	2.43	174.06	-2,545.58	264.64	2,559.30	2,556.55	2.75	930.659			
300.00	300.00	210.63	300.00	0.55	6.43	174.06	-2,545.58	264.64	2,559.30	2,552.32	6.97	366.938			
327.78	327.78	238.41	327.78	0.61	7.54	158.12	-2,545.58	264.64	2,559.39	2,551.24	8.15	314.091			
400.00	399.99	310.62	399.99	0.77	10.42	158.12	-2,545.58	264.64	2,559.91	2,548.71	11.20	228.590			
500.00	499.85	410.48	499.85	1.00	14.42	158.11	-2,545.58	264.64	2,564.76	2,549.37	15.40	166.567			
600.00	599.29	509.92	599.29	1.25	18.40	158.09	-2,545.58	264.64	2,574.47	2,554.94	19.53	131.827			
700.00	698.04	608.67	698.04	1.54	22.35	158.05	-2,545.58	264.64	2,589.00	2,565.45	23.56	109.907			
800.00	795.85	706.48	795.85	1.90	26.26	158.00	-2,545.58	264.64	2,608.34	2,580.89	27.45	95.031			
900.00	892.56	803.19	892.56	2.33	30.13	158.06	-2,545.58	264.64	2,632.00	2,600.67	31.32	84.024			
1,000.00	989.07	899.70	989.07	2.80	33.99	158.27	-2,545.58	264.64	2,656.44	2,621.08	35.36	75.135			
1,100.00	1,085.58	996.21	1,085.58	3.29	37.85	158.47	-2,545.58	264.64	2,680.91	2,641.51	39.40	68.051			
1,200.00	1,182.08	1,092.71	1,182.08	3.79	41.71	158.68	-2,545.58	264.64	2,705.41	2,661.97	43.44	62.278			
1,300.00	1,278.59	1,189.22	1,278.59	4.29	45.57	158.87	-2,545.58	264.64	2,729.95	2,682.46	47.49	57.485			
1,400.00	1,375.09	1,285.72	1,375.09	4.80	49.43	159.07	-2,545.58	264.64	2,754.51	2,702.97	51.54	53.443			
1,500.00	1,471.60	1,382.23	1,471.60	5.31	53.29	159.26	-2,545.58	264.64	2,779.11	2,723.52	55.59	49.990			
1,600.00	1,568.12	1,478.75	1,568.12	5.81	57.15	157.70	-2,545.58	264.64	2,803.67	2,743.86	59.81	46.872			
1,700.00	1,666.00	1,576.63	1,666.00	6.01	61.07	127.73	-2,545.58	264.64	2,820.42	2,755.36	65.06	43.350			
1,800.00	1,764.80	1,675.43	1,764.80	6.12	65.02	78.46	-2,545.58	264.64	2,823.77	2,754.45	69.32	40.733			
1,900.00	1,862.58	1,773.21	1,862.58	6.12	68.93	50.48	-2,545.58	264.64	2,813.72	2,741.36	72.36	38.886			
2,000.00	1,957.45	1,868.08	1,957.45	6.05	72.72	39.49	-2,545.58	264.64	2,790.52	2,716.50	74.02	37.701			
2,100.00	2,047.56	1,958.19	2,047.56	5.95	76.33	34.98	-2,545.58	264.64	2,754.70	2,680.40	74.30	37.075			
2,200.00	2,131.15	2,041.78	2,131.15	5.86	79.67	33.57	-2,545.58	264.64	2,707.03	2,633.59	73.43	36.864			
2,300.00	2,206.60	2,117.23	2,206.60	5.87	82.69	34.20	-2,545.58	264.64	2,648.50	2,576.51	71.99	36.789			
2,400.00	2,272.44	2,183.07	2,272.44	6.30	85.32	36.68	-2,545.58	264.64	2,580.36	2,509.27	71.09	36.298			
2,500.00	2,327.39	2,238.02	2,327.39	7.34	87.52	41.28	-2,545.58	264.64	2,503.98	2,431.49	72.49	34.544			
2,600.00	2,370.38	2,281.01	2,370.38	8.69	89.24	48.70	-2,545.58	264.64	2,420.94	2,342.69	78.24	30.941			
2,700.00	2,400.57	2,311.20	2,400.57	10.25	90.45	60.03	-2,545.58	264.64	2,332.90	2,243.86	89.04	26.200			
2,800.00	2,417.37	2,328.00	2,417.37	11.95	91.12	76.07	-2,545.58	264.64	2,241.62	2,140.49	101.13	22.166			
2,900.00	2,420.73	2,331.36	2,420.73	13.72	91.25	91.56	-2,545.58	264.64	2,148.90	2,042.63	106.26	20.222			
3,000.00	2,419.83	2,330.28	2,419.83	15.55	91.21	91.48	-2,545.58	264.64	2,056.48	1,948.12	108.38	18.979			
3,100.00	2,418.53	2,329.16	2,418.53	17.41	91.17	91.41	-2,545.58	264.64	1,964.80	1,854.32	110.48	17.784			
3,200.00	2,417.44	2,328.07	2,417.44	19.31	91.12	91.33	-2,545.58	264.64	1,873.98	1,761.34	112.63	16.638			
3,300.00	2,416.34	2,326.97	2,416.34	21.23	91.08	91.25	-2,545.58	264.64	1,784.13	1,669.33	114.80	15.541			
3,400.00	2,415.24	2,325.87	2,415.24	23.16	91.03	91.17	-2,545.58	264.64	1,695.42	1,578.44	116.98	14.493			
3,500.00	2,414.14	2,324.77	2,414.14	25.11	90.99	91.09	-2,545.58	264.64	1,606.04	1,488.87	119.17	13.494			
3,600.00	2,413.04	2,323.67	2,413.04	27.07	90.95	91.01	-2,545.58	264.64	1,522.21	1,400.84	121.36	12.543			
3,700.00	2,411.95	2,322.58	2,411.95	29.04	90.90	90.94	-2,545.58	264.64	1,438.21	1,314.64	123.57	11.639			
3,800.00	2,410.85	2,321.48	2,410.85	31.01	90.86	90.86	-2,545.58	264.64	1,356.38	1,230.61	125.77	10.784			
3,900.00	2,409.75	2,320.38	2,409.75	32.99	90.82	90.78	-2,545.58	264.64	1,277.14	1,149.16	127.98	9.979			
4,000.00	2,408.65	2,319.28	2,408.65	34.97	90.77	90.70	-2,545.58	264.64	1,201.00	1,070.80	130.20	9.224			
4,100.00	2,407.55	2,318.18	2,407.55	36.95	90.73	90.62	-2,545.58	264.64	1,128.59	996.18	132.41	8.523			
4,200.00	2,406.46	2,317.09	2,406.46	38.94	90.68	90.54	-2,545.58	264.64	1,060.68	926.04	134.63	7.878			
4,300.00	2,405.36	2,315.99	2,405.36	40.93	90.64	90.47	-2,545.58	264.64	998.17	861.32	136.85	7.294			
4,400.00	2,404.26	2,314.89	2,404.26	42.93	90.60	90.39	-2,545.58	264.64	942.15	803.08	139.07	6.774			
4,500.00	2,403.16	2,313.79	2,403.16	44.93	90.55	90.31	-2,545.58	264.64	893.84	752.55	141.30	6.326			
4,600.00	2,402.07	2,312.70	2,402.07	46.92	90.51	90.23	-2,545.58	264.64	854.55	711.03	143.52	5.954			
4,700.00	2,400.97	2,311.60	2,400.97	48.92	90.46	90.15	-2,545.58	264.64	825.57	679.82	145.75	5.664			
4,800.00	2,399.87	2,310.50	2,399.87	50.93	90.42	90.07	-2,545.58	264.64	808.00	660.03	147.97	5.461			
4,893.52	2,398.84	2,309.47	2,398.84	52.80	90.38	90.00	-2,545.58	264.64	802.57	652.50	150.07	5.348 CC			
4,900.00	2,398.77	2,309.40	2,398.77	52.93	90.38	89.99	-2,545.58	264.64	802.60	652.40	150.20	5.344 ES			

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey BE LS - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.00	2,397.67	2,308.30	2,397.67	54.93	90.33	89.92	-2,545.58	264.64	809.60	657.18	152.42	5.312 SF	
5,100.00	2,396.58	2,307.21	2,396.58	56.94	90.29	89.84	-2,545.58	264.64	828.70	674.05	154.65	5.359	
5,200.00	2,395.48	2,306.11	2,395.48	58.94	90.24	89.76	-2,545.58	264.64	859.09	702.21	156.88	5.476	
5,243.57	2,395.00	2,305.63	2,395.00	58.94	90.23	89.73	-2,545.58	264.64	875.58	718.72	156.86	5.582	



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey LS B6 - OH - OH											Offset Site Error: 0.00 usft		
Survey Program: 1800-INCLINOMETER											Offset Well Error: 0.00 usft		
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	10.25	0.00	0.00	0.16	44.22	397.17	386.47	554.17				
100.00	100.00	110.25	100.00	0.10	1.67	44.22	397.17	386.47	554.17	552.39	1.77	312.338	
200.00	200.00	210.25	200.00	0.32	3.19	44.22	397.17	386.47	554.17	550.65	3.52	157.548	
300.00	300.00	310.25	300.00	0.55	4.71	44.22	397.17	386.47	554.17	548.91	5.26	105.342	
400.00	399.99	410.24	399.99	0.77	6.23	28.31	397.17	386.47	553.59	546.59	7.00	79.037	
500.00	499.85	510.09	499.85	1.00	7.75	28.64	397.17	386.47	548.99	540.25	8.74	62.797	
600.00	599.29	609.53	599.29	1.25	9.26	29.30	397.17	386.47	539.83	529.37	10.46	51.603	
700.00	698.04	708.29	698.04	1.54	10.76	30.34	397.17	386.47	526.22	514.07	12.16	43.291	
800.00	795.85	806.10	795.85	1.90	12.24	31.81	397.17	386.47	508.31	494.48	13.83	36.762	
900.00	892.56	902.81	892.56	2.33	13.71	33.57	397.17	386.47	486.74	471.20	15.53	31.336	
1,000.00	989.07	999.32	989.07	2.80	15.17	35.33	397.17	386.47	464.89	447.56	17.32	26.837	
1,100.00	1,085.58	1,095.82	1,085.58	3.29	16.64	37.27	397.17	386.47	443.51	424.36	19.15	23.164	
1,200.00	1,182.08	1,192.33	1,182.08	3.79	18.10	39.39	397.17	386.47	422.67	401.67	21.00	20.124	
1,300.00	1,278.59	1,288.84	1,278.59	4.29	19.57	41.72	397.17	386.47	402.46	379.57	22.90	17.578	
1,400.00	1,375.09	1,385.34	1,375.09	4.80	21.04	44.28	397.17	386.47	382.98	358.16	24.82	15.428	
1,500.00	1,471.60	1,481.85	1,471.60	5.31	22.50	47.11	397.17	386.47	364.34	337.55	26.79	13.600	
1,600.00	1,568.12	1,578.37	1,568.12	5.81	23.97	48.37	397.17	386.47	346.69	317.91	28.78	12.045	
1,700.00	1,666.00	1,676.25	1,666.00	6.01	25.45	49.23	397.17	386.47	330.56	300.12	30.45	10.857	
1,800.00	1,764.80	1,775.05	1,764.80	6.12	26.95	-31.76	397.17	386.47	315.71	283.78	31.93	9.887	
1,900.00	1,862.58	1,872.83	1,862.58	6.12	29.54	-64.28	397.17	386.47	302.67	268.32	34.35	8.810	
2,000.00	1,957.45	1,967.70	1,957.45	6.05	32.42	-82.42	397.17	386.47	293.93	256.89	37.04	7.936	
2,053.58	2,006.43	2,016.68	2,006.43	5.99	33.91	-90.00	397.17	386.47	292.44	254.01	38.43	7.610 CC, ES	
2,100.00	2,047.56	2,057.80	2,047.56	5.95	35.16	-95.93	397.17	386.47	293.74	254.20	39.54	7.429	
2,200.00	2,131.15	2,141.40	2,131.15	5.86	37.70	-107.00	397.17	386.47	307.12	265.50	41.62	7.378 SF	
2,300.00	2,206.60	2,216.85	2,206.60	5.87	39.99	-115.63	397.17	386.47	337.63	294.61	43.02	7.848	
2,400.00	2,272.44	2,282.69	2,272.44	6.30	41.99	-121.55	397.17	386.47	385.90	342.12	43.78	8.815	
2,500.00	2,327.39	2,337.64	2,327.39	7.34	43.66	-124.52	397.17	386.47	449.93	405.52	44.40	10.133	
2,600.00	2,370.38	2,380.63	2,370.38	8.69	44.96	-124.11	397.17	386.47	526.53	480.67	45.86	11.481	
2,700.00	2,400.57	2,410.82	2,400.57	10.25	45.88	-119.07	397.17	386.47	612.42	563.00	49.42	12.392	
2,800.00	2,417.37	2,427.62	2,417.37	11.95	46.39	-106.43	397.17	386.47	704.51	648.91	55.59	12.672	
2,900.00	2,420.73	2,430.98	2,420.73	13.72	46.49	-87.73	397.17	386.47	800.03	740.32	59.72	13.397	
3,000.00	2,419.63	2,429.88	2,419.63	15.55	46.46	-87.44	397.17	386.47	896.79	835.24	61.54	14.572	
3,100.00	2,418.53	2,428.78	2,418.53	17.41	46.43	-87.15	397.17	386.47	994.18	930.78	63.40	15.681	
3,200.00	2,417.44	2,427.68	2,417.44	19.31	46.39	-86.85	397.17	386.47	1,092.04	1,026.77	65.28	16.729	
3,300.00	2,416.34	2,426.59	2,416.34	21.23	46.36	-86.56	397.17	386.47	1,190.26	1,123.09	67.17	17.719	
3,400.00	2,415.24	2,425.49	2,415.24	23.16	46.33	-86.27	397.17	386.47	1,288.75	1,219.68	69.08	18.657	
3,500.00	2,414.14	2,424.39	2,414.14	25.11	46.29	-85.98	397.17	386.47	1,387.46	1,316.47	70.99	19.545	
3,600.00	2,413.04	2,423.29	2,413.04	27.07	46.26	-85.68	397.17	386.47	1,486.34	1,413.44	72.90	20.388	
3,700.00	2,411.95	2,422.19	2,411.95	29.04	46.23	-85.39	397.17	386.47	1,585.36	1,510.54	74.82	21.189	
3,800.00	2,410.85	2,421.10	2,410.85	31.01	46.19	-85.10	397.17	386.47	1,684.49	1,607.75	76.74	21.951	
3,900.00	2,409.75	2,420.00	2,409.75	32.99	46.16	-84.81	397.17	386.47	1,783.72	1,705.06	78.66	22.677	
4,000.00	2,408.65	2,418.90	2,408.65	34.97	46.13	-84.52	397.17	386.47	1,883.03	1,802.45	80.58	23.369	
4,100.00	2,407.55	2,417.80	2,407.55	36.95	46.09	-84.22	397.17	386.47	1,982.41	1,899.91	82.50	24.030	
4,200.00	2,406.46	2,416.71	2,406.46	38.94	46.06	-83.93	397.17	386.47	2,081.85	1,997.43	84.41	24.662	
4,300.00	2,405.36	2,415.61	2,405.36	40.93	46.03	-83.64	397.17	386.47	2,181.34	2,095.01	86.33	25.267	
4,400.00	2,404.26	2,414.51	2,404.26	42.93	45.99	-83.35	397.17	386.47	2,280.87	2,192.63	88.24	25.847	
4,500.00	2,403.16	2,413.41	2,403.16	44.93	45.96	-83.06	397.17	386.47	2,380.44	2,290.29	90.15	26.404	
4,600.00	2,402.07	2,412.31	2,402.07	46.92	45.93	-82.77	397.17	386.47	2,480.05	2,387.99	92.06	26.939	
4,700.00	2,400.97	2,411.22	2,400.97	48.92	45.89	-82.48	397.17	386.47	2,579.68	2,485.72	93.97	27.453	
4,800.00	2,399.87	2,410.12	2,399.87	50.93	45.86	-82.19	397.17	386.47	2,679.35	2,583.48	95.87	27.948	
4,900.00	2,398.77	2,409.02	2,398.77	52.93	45.83	-81.91	397.17	386.47	2,779.03	2,681.27	97.77	28.425	
5,000.00	2,397.67	2,407.92	2,397.67	54.93	45.79	-81.62	397.17	386.47	2,878.74	2,779.08	99.66	28.885	

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



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Offset Design Storey Pad - Storey LS B6 - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 1800-INCLINOMETER												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance								Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.00	2,396.58	2,406.82	2,396.58	56.94	45.76	-81.33	397.17	386.47	2,978.47	2,876.92	101.55	29.329	
5,200.00	2,395.48	2,405.73	2,395.48	58.94	45.73	-81.04	397.17	386.47	3,078.21	2,974.77	103.44	29.759	
5,243.57	2,395.00	2,405.25	2,395.00	58.94	45.71	-80.92	397.17	386.47	3,121.67	3,018.28	103.39	30.193	



Anticollision Report



Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GL 5936.57' & RKB 11' @ 5947.57usft

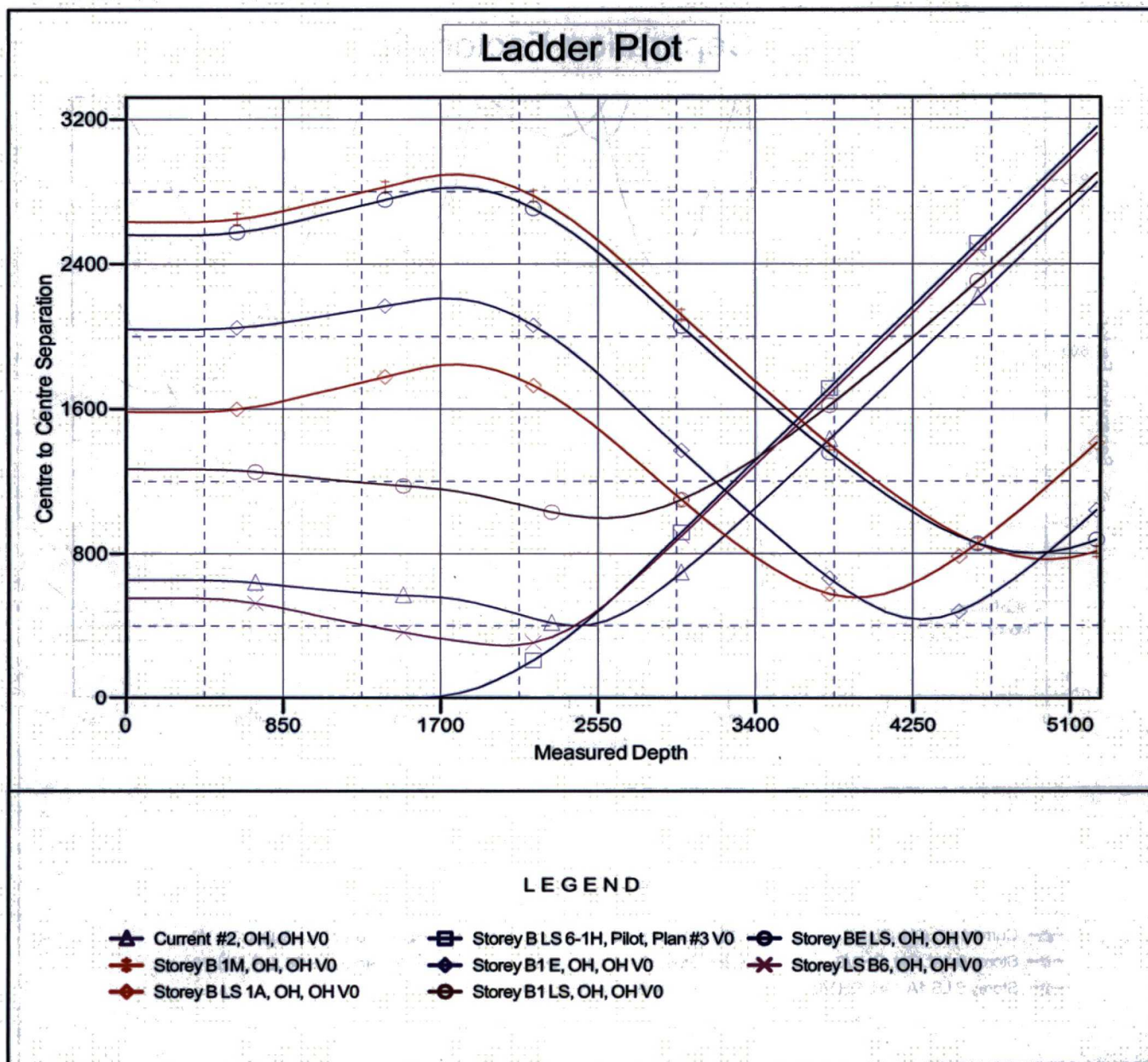
Coordinates are relative to: Storey B LS 6-1H

Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, New Mexico Western Zone

Central Meridian is -107.8333334

Grid Convergence at Surface is: -0.08°





Anticollision Report

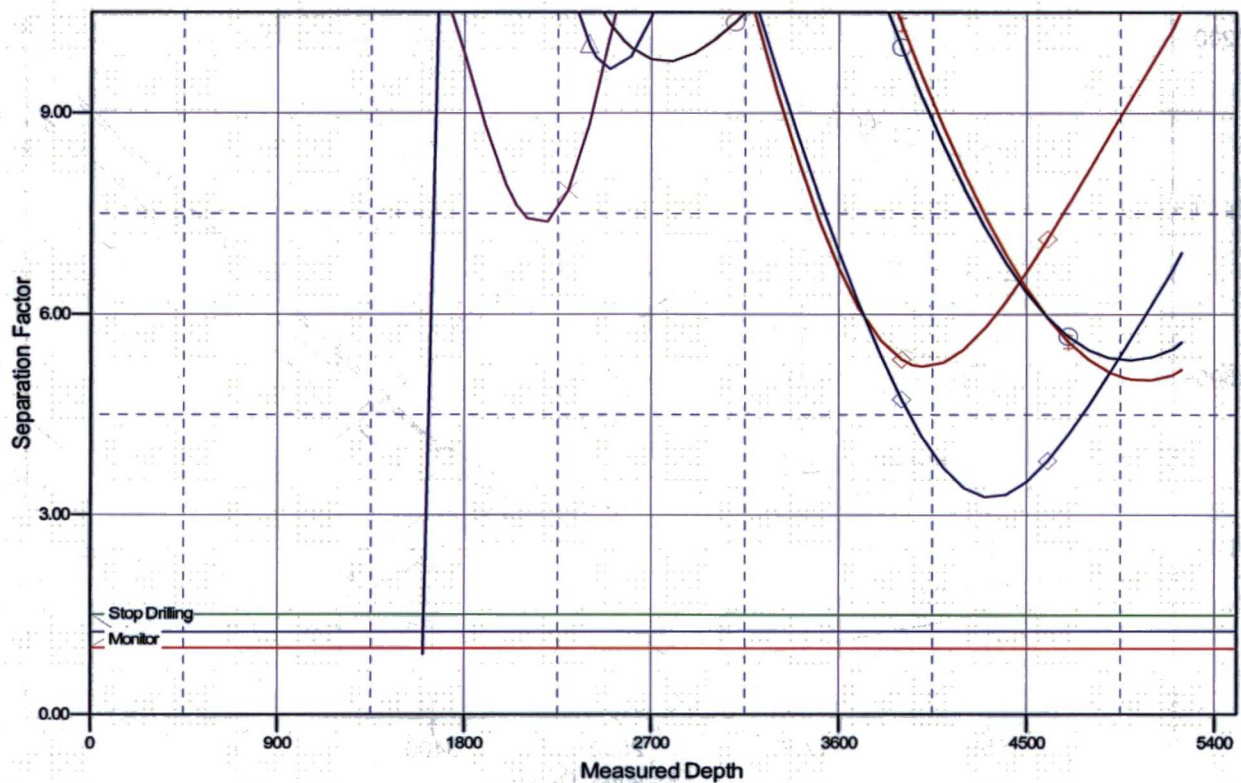


Company:	B.P.	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Project:	San Juan County, NM NAD83	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Reference Site:	Storey Pad	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral 1	Database:	Grand Junction District
Reference Design:	Plan #10	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GL 5936.57' & RKB 11' @ 5947.57usft
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: Storey B LS 6-1H
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: -0.08°

Separation Factor Plot



LEGEND

- Current #2, OH, OH V0
- Storey B LS 6-1H, Pilot, Plan #3 V0
- Storey BE LS, OH, OH V0
- Storey B 1M, OH, OH V0
- Storey B1 E, OH, OH V0
- Storey LS B6, OH, OH V0
- Storey B LS 1A, OH, OH V0
- Storey B1 LS, OH, OH V0



Company: B.P.
Project: San Juan County, NM NAD83
Site: Storey Pad
Well: Storey B LS 6-1H
Wellbore: Lateral 1
Design: Plan #10

PROJECT DETAILS: San Juan County, NM NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level
Local North: Grid



Azimuths to Grid North
True North: 0.07°
Magnetic North: 9.29°

Magnetic Field
Strength: 50048.8nT
Dip Angle: 63.42°
Date: 10/10/2016
Model: HDGM

WELL DETAILS: Storey B LS 6-1H

GL 5936.57' & RKB 11' @ 5947.57usft
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 2120838.10 2686445.65 36.8282751 -107.9585488

Plan: Plan #10 (Storey B LS 6-1H/Lateral 1)

Created By: Janie Collins Date: 10:39, November 03 2016

DESIGN TARGET DETAILS

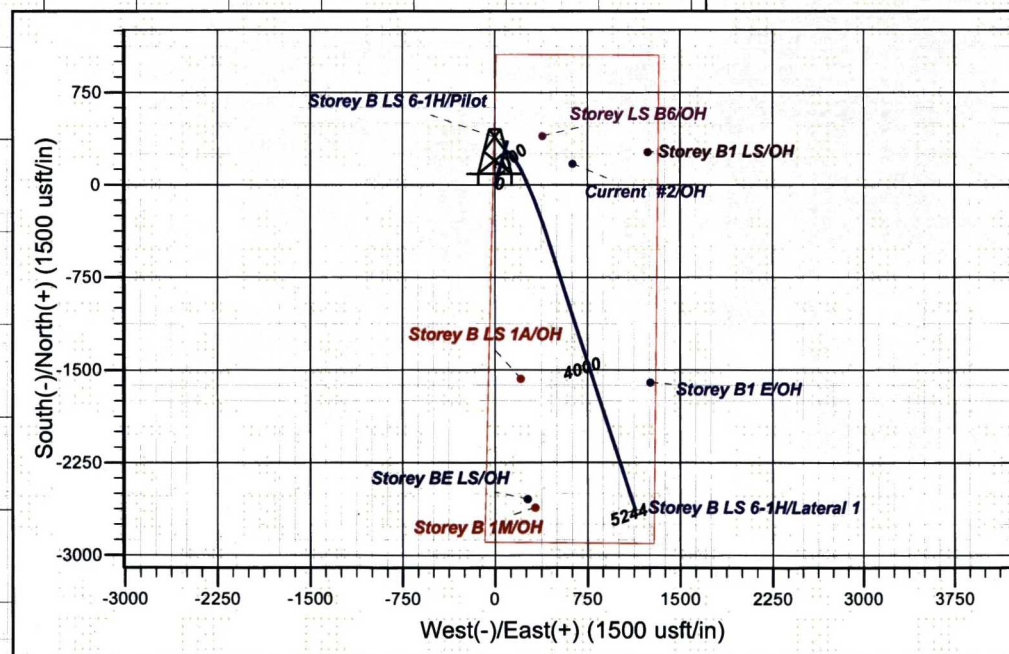
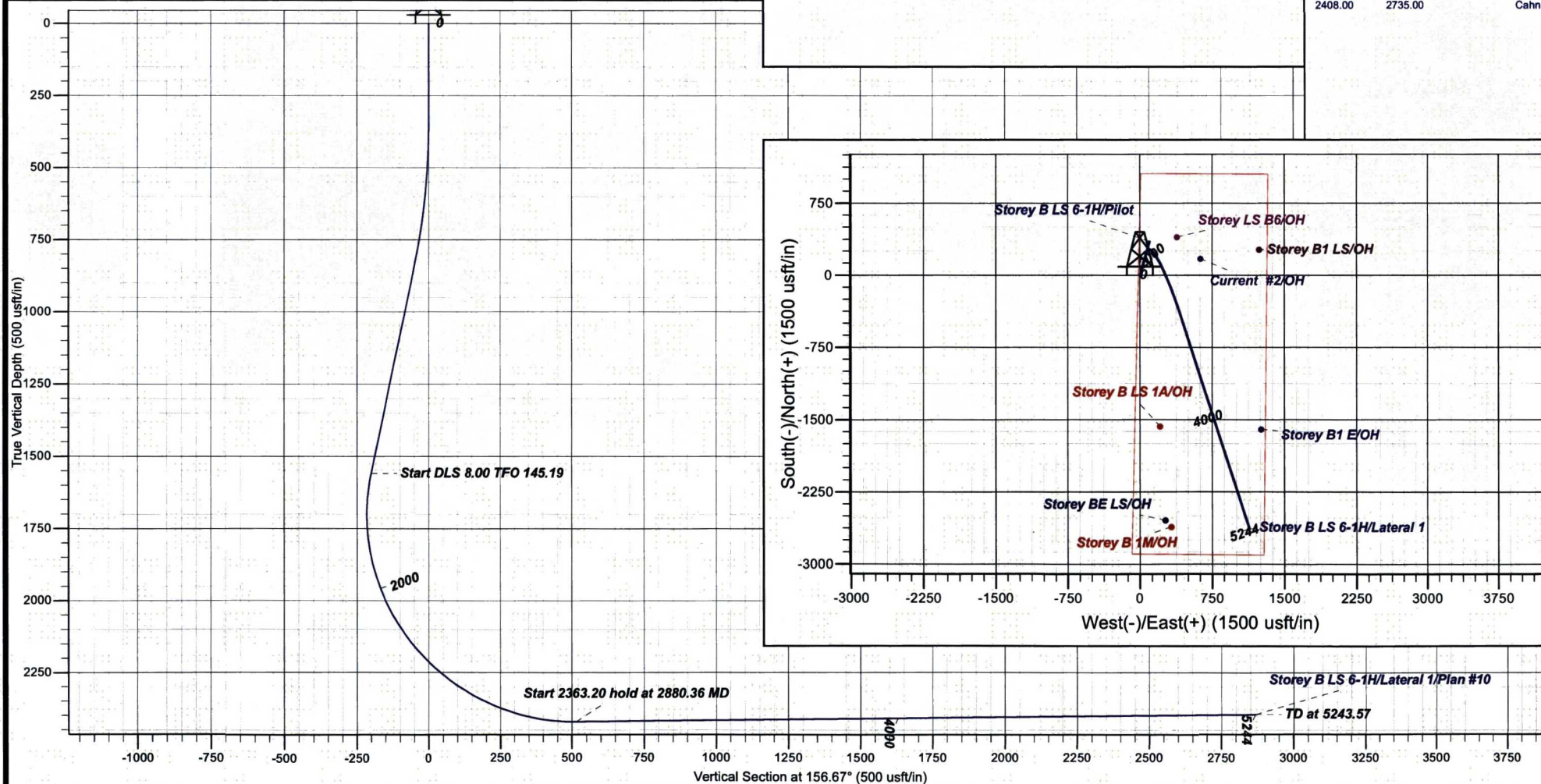
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Storey BHL (NAD83)	2395.00	-2633.23	1135.82	2118204.87	2687581.47	36.8210461	-107.9546565
Storey LP (NAD83)	2423.94	-3.06	128.87	2120835.04	2686574.52	36.8282672	-107.9581085

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1590.32	15.19	15.95	1558.77	249.08	71.17	0.00	0.00	-200.52	
2880.36	90.63	162.18	2420.94	-383.52	412.72	8.00	145.19	515.62	
5243.57	90.63	162.18	2395.00	-2633.23	1135.82	0.00	0.00	2867.75	Storey BHL (NAD83)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1639.00	1672.58	Farmington Sh
1840.00	1876.71	Lwr. Kirtland Sh
2080.00	2137.78	Fruitland Coal
2241.00	2350.29	Fruitland Ss
2265.00	2387.84	Fruitland Ss Base
2282.00	2416.00	Cottonwood Seam
2408.00	2735.00	Cahn





B.P.

San Juan County, NM NAD83

Storey Pad

Storey B LS 6-1H

Lateral 1

Plan: Plan #10

Standard Planning Report

03 November, 2016



www.scientificdrilling.com





Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Company:	B.P.	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Project:	San Juan County, NM NAD83	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site:	Storey Pad	North Reference:	Grid
Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #10		

Project	San Juan County, NM NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Storey Pad		
Site Position:		Northing:	2,120,838.10 usft
From:	Map	Easting:	2,686,445.65 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	36.8282751
		Longitude:	-107.9585489
		Grid Convergence:	-0.08 °

Well	Storey B LS 6-1H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	36.8282751
		Longitude:	-107.9585489
		Ground Level:	5,936.57 usft

Wellbore	Lateral 1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	HDGM	10/10/2016	9.22
			Dip Angle
			(°)
			63.42
			Field Strength
			(nT)
			50,049

Design	Plan #10		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			1,590.32
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			156.67

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
1,590.32	15.19	15.95	1,558.77	249.08	71.17	0.00	0.00	0.00	0.00	
2,880.36	90.63	162.18	2,420.94	-383.52	412.72	8.00	5.85	11.34	145.19	
5,243.57	90.63	162.18	2,395.00	-2,633.23	1,135.82	0.00	0.00	0.00	0.00	Storey BHL (NAD83)



Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Company:	B.P.	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Project:	San Juan County, NM NAD83	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site:	Storey Pad	North Reference:	Grid
Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #10		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,590.32	15.19	15.95	1,558.77	249.08	71.17	-200.52	0.00	0.00	0.00
1,600.00	14.56	17.70	1,568.12	251.46	71.88	-202.42	8.00	-6.50	18.17
1,672.58	10.47	37.05	1,639.00	265.42	78.64	-212.57	8.00	-5.64	26.66
Farmington Ss									
1,700.00	9.40	48.18	1,666.00	268.90	81.81	-214.51	8.00	-3.91	40.59
1,800.00	9.57	98.27	1,764.80	273.16	96.14	-212.74	8.00	0.17	50.09
1,876.71	13.42	122.75	1,840.00	267.42	109.95	-202.00	8.00	5.02	31.91
Lwr. Kirtland Sh									
1,900.00	14.90	127.43	1,862.58	264.14	114.60	-197.15	8.00	6.32	20.07
2,000.00	21.89	139.97	1,957.45	242.01	136.83	-168.03	8.00	7.00	12.54
2,100.00	29.39	146.50	2,047.56	207.22	162.40	-125.95	8.00	7.50	6.53
2,137.78	32.28	148.23	2,080.00	190.91	172.83	-106.85	8.00	7.65	4.56
Fruitland Coal									
2,200.00	37.08	150.54	2,131.15	160.44	190.82	-71.74	8.00	7.72	3.71
2,300.00	44.87	153.34	2,206.60	102.57	221.52	-6.45	8.00	7.79	2.81
2,350.29	48.80	154.48	2,241.00	69.64	237.63	30.18	8.00	7.83	2.25
Fruitland Ss									
2,387.84	51.75	155.24	2,265.00	43.49	249.90	59.05	8.00	7.85	2.02
Fruitland Ss Base									
2,400.00	52.71	155.47	2,272.44	34.75	253.91	68.65	8.00	7.86	1.92
2,416.00	53.96	155.77	2,282.00	23.06	259.20	81.48	8.00	7.86	1.86
Cottonwood Seam									
2,469.23	58.15	156.69	2,311.71	-17.34	276.99	125.63	8.00	7.87	1.74
Storey LP (NAD83) - Storey LP - Storey LP (75' inside hardline)									
2,500.00	60.58	157.19	2,327.39	-41.70	287.36	152.10	8.00	7.88	1.62
2,600.00	68.46	158.66	2,370.38	-125.31	321.22	242.28	8.00	7.89	1.47
2,700.00	76.37	159.98	2,400.57	-214.43	354.82	337.43	8.00	7.90	1.32
2,735.00	79.13	160.42	2,408.00	-246.61	366.41	371.56	8.00	7.91	1.25
Cahn									
2,800.00	84.27	161.22	2,417.37	-307.34	387.53	435.69	8.00	7.91	1.22
2,880.36	90.63	162.18	2,420.94	-383.52	412.72	515.62	8.00	7.91	1.20
2,900.00	90.63	162.18	2,420.73	-402.21	418.73	535.17	0.00	0.00	0.00
3,000.00	90.63	162.18	2,419.63	-497.41	449.33	634.70	0.00	0.00	0.00
3,100.00	90.63	162.18	2,418.53	-592.61	479.93	734.23	0.00	0.00	0.00
3,200.00	90.63	162.18	2,417.44	-687.81	510.53	833.76	0.00	0.00	0.00
3,300.00	90.63	162.18	2,416.34	-783.00	541.12	933.29	0.00	0.00	0.00
3,400.00	90.63	162.18	2,415.24	-878.20	571.72	1,032.82	0.00	0.00	0.00
3,500.00	90.63	162.18	2,414.14	-973.40	602.32	1,132.35	0.00	0.00	0.00
3,600.00	90.63	162.18	2,413.04	-1,068.60	632.92	1,231.89	0.00	0.00	0.00
3,700.00	90.63	162.18	2,411.95	-1,163.79	663.52	1,331.42	0.00	0.00	0.00
3,800.00	90.63	162.18	2,410.85	-1,258.99	694.11	1,430.95	0.00	0.00	0.00
3,900.00	90.63	162.18	2,409.75	-1,354.19	724.71	1,530.48	0.00	0.00	0.00
4,000.00	90.63	162.18	2,408.65	-1,449.38	755.31	1,630.01	0.00	0.00	0.00
4,100.00	90.63	162.18	2,407.55	-1,544.58	785.91	1,729.54	0.00	0.00	0.00
4,200.00	90.63	162.18	2,406.46	-1,639.78	816.51	1,829.07	0.00	0.00	0.00
4,300.00	90.63	162.18	2,405.36	-1,734.98	847.11	1,928.60	0.00	0.00	0.00
4,400.00	90.63	162.18	2,404.26	-1,830.17	877.70	2,028.14	0.00	0.00	0.00
4,500.00	90.63	162.18	2,403.16	-1,925.37	908.30	2,127.67	0.00	0.00	0.00
4,600.00	90.63	162.18	2,402.07	-2,020.57	938.90	2,227.20	0.00	0.00	0.00
4,700.00	90.63	162.18	2,400.97	-2,115.77	969.50	2,326.73	0.00	0.00	0.00
4,800.00	90.63	162.18	2,399.87	-2,210.96	1,000.10	2,426.26	0.00	0.00	0.00
4,900.00	90.63	162.18	2,398.77	-2,306.16	1,030.69	2,525.79	0.00	0.00	0.00
5,000.00	90.63	162.18	2,397.67	-2,401.36	1,061.29	2,625.32	0.00	0.00	0.00



Planning Report



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Storey B LS 6-1H
Company:	B.P.	TVD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Project:	San Juan County, NM NAD83	MD Reference:	GL 5936.57' & RKB 11' @ 5947.57usft
Site:	Storey Pad	North Reference:	Grid
Well:	Storey B LS 6-1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #10		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100.00	90.63	162.18	2,396.58	-2,496.56	1,091.89	2,724.85	0.00	0.00	0.00
5,200.00	90.63	162.18	2,395.48	-2,591.75	1,122.49	2,824.39	0.00	0.00	0.00
5,243.57	90.63	162.18	2,395.00	-2,633.23	1,135.82	2,867.75	0.00	0.00	0.00
Storey BHL (NAD83) - Storey BHL									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Storey BHL (NAD83)	0.00	359.39	2,395.00	-2,633.23	1,135.82	2,118,204.87	2,687,581.47	36.8210461	-107.9546565
- plan hits target center									
- Point									
Storey LP (NAD83)	0.00	359.39	2,423.94	-3.06	128.87	2,120,835.04	2,686,574.52	36.8282671	-107.9581085
- plan misses target center by 186.38usft at 2469.23usft MD (2311.71 TVD, -17.34 N, 276.99 E)									
- Point									

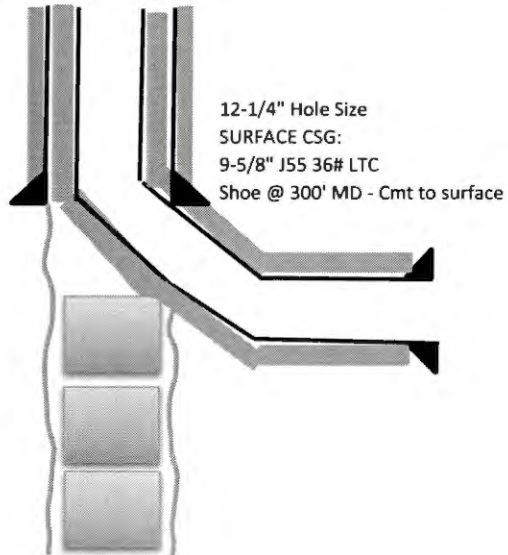
Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
11.00	11.00	Nacimiento		0.00	360.00
1,024.79	1,013.00	Ojo Alamo		0.00	360.00
1,148.10	1,132.00	Kirtland Sh		0.00	360.00
1,672.58	1,639.00	Farmington Ss		0.00	360.00
1,876.71	1,840.00	Lwr. Kirtland Sh		0.00	360.00
2,137.78	2,080.00	Fruitland Coal		0.00	360.00
2,350.29	2,241.00	Fruitland Ss		0.00	360.00
2,387.84	2,265.00	Fruitland Ss Base		0.00	360.00
2,416.00	2,282.00	Cottonwood Seam		0.00	360.00
2,735.00	2,408.00	Cahn		0.00	360.00

30.045-35712
STOREY B LS 6-1H PILOT HOLE WBD

Depths referenced to GL of 5938' & RKB 11' @ 5949'

Marker	TVD	MD
Animas	11	11
Lwr. Animas	1013	1024
Kirtland Sh	1132	1148
Farmington Ss	1639	1673
Lwr. Kirtland Sh	1840	1880
Fruitland Coal	2080	2122
Pictured Cliffs SS	2241	2477
TOTAL DEPTH:	2265	2509
Core 1	2210' - 2330'	
Core 2	2410' - 2470'	



OIL CONS. DIV DIST. 3
DEC 19 2016

Pilot Coring: After coring operations and open hole logging have been completed three 500' cement plugs will be pumped and the top of cement will be 1,090', approximately 500' above planned KOP(1,590' MD) for the lateral. Will utilize cement plugs to kick off from and drill the intermediate interval landing 7", J55, 23#, LTC casing string at 90 degrees and cemented to surface.