

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

5. Lease Serial No.
NMLC0063798

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No. (322239)
CHARLES LING FED COM 214H

9. API Well No.

10. Field and Pool, or Exploratory
WILDCAT / UPPER WOLFCAMP (48135)

11. Sec., T. R. M. or Blk. and Survey or Area

SEC 11 / T24S / R33E / NMP

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator
MATADOR PRODUCTION COMPANY (228937)

3a. Address
5400 LBJ Freeway, Suite 1500 Dallas TX 75242

3b. Phone No. (include area code)
(972)371-5200

4. Location of Well (Report location clearly and in accordance with any State requirements.)*

At surface NENE / 330 FNL / 791 FEL / LAT 32.2384826 / LONG -103.5371878

At proposed prod. zone SESE / 240 FSL / 330 FEL / LAT 32.2255153 / LONG -103.5378001

14. Distance in miles and direction from nearest town or post office*
23 miles

12. County or Parish
LEA

13. State
NM

15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)
596 feet

16. No. of acres in lease
2480

17. Spacing Unit dedicated to this well
320

18. Distance from proposed location*
to nearest well, drilling, completed, 30 feet
applied for, on this lease, ft.

19. Proposed Depth
12437 feet / 17194 feet

20. BLM/BIA Bond No. on file
FED: NMB001079

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3626 feet

22. Approximate date work will start*
07/01/2018

23. Estimated duration
90 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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

25. Signature
(Electronic Submission)

Name (Printed/Typed)
Brian Wood / Ph: (505)466-8120

Date
05/18/2018

Title
President

Approved by (Signature)
(Electronic Submission)

Name (Printed/Typed)
Cody Layton / Ph: (575)234-5959

Date
07/18/2018

Title
Assistant Field Manager Lands & Minerals

Office
CARLSBAD

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS
Approval Date: 07/18/2018

Kz
08/13/18

Don't
forget

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

1. SHL: NENE / 330 FNL / 791 FEL / TWSP: 24S / RANGE: 33E / SECTION: 11 / LAT: 32.2384826 / LONG: -103.5371878 (TVD: 0 feet, MD: 0 feet)
PPP: NESE / 5280 FSL / 985 FEL / TWSP: 24S / RANGE: 33E / SECTION: 11 / LAT: 32.232132 / LONG: -103.537801 (TVD: 12437 feet, MD: 14787 feet)
PPP: NENE / 330 FNL / 791 FEL / TWSP: 24S / RANGE: 33E / SECTION: 11 / LAT: 32.2384826 / LONG: -103.5371878 (TVD: 0 feet, MD: 0 feet)
BHL: SESE / 240 FSL / 330 FEL / TWSP: 24S / RANGE: 33E / SECTION: 11 / LAT: 32.2255153 / LONG: -103.5378001 (TVD: 12437 feet, MD: 17194 feet)

BLM Point of Contact

Name: Sipra Dahal

Title: Legal Instruments Examiner

Phone: 5752345983

Email: sdahal@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data Report

07/18/2018

APD ID: 10400030394

Submission Date: 05/18/2018

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHARLES LING FED COM

Well Number: 214H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data
clear the report
recent changes

[Show Final Text](#)

Section 1 - General

APD ID: 10400030394

Tie to previous NOS?

Submission Date: 05/18/2018

BLM Office: CARLSBAD

User: Brian Wood

Title: President

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMLC0063798

Lease Acres: 2480

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? YES

APD Operator: MATADOR PRODUCTION COMPANY

Operator letter of designation:

Operator Info

Operator Organization Name: MATADOR PRODUCTION COMPANY

Operator Address: 5400 LBJ Freeway, Suite 1500

Zip: 75240

Operator PO Box:

Operator City: Dallas

State: TX

Operator Phone: (972)371-5200

Operator Internet Address: amonroe@matadorresources.com

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: CHARLES LING FED COM

Well Number: 214H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WILDCAT

Pool Name: UPPER
WOLFCAMP

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,CO2,OIL

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHARLES LING FED COM

Well Number: 214H

Describe other minerals:

Is the proposed well in a Helium production area? N

Use Existing Well Pad? NO

New surface disturbance?

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:
CHARLES LING FED COM

Number: SLOT 4

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 23 Miles

Distance to nearest well: 30 FT

Distance to lease line: 596 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: CL_214H_C102_et al_20180518151928.pdf

Well work start Date: 07/01/2018

Duration: 90 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: 18329

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	330	FNL	791	FEL	24S	33E	11	Aliquot NENE	32.23848 26	- 103.5371 878	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC0 063798	362 6	0	0
KOP Leg #1	330	FSL	982	FEL	24S	33E	11	Aliquot NENE	32.23848 1	- 103.5378 04	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC0 063798	- 823 2	118 70	118 58
PPP Leg #1	330	FNL	791	FEL	24S	33E	11	Aliquot NENE	32.23848 26	- 103.5371 878	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC0 063798	362 6	0	0



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report

07/18/2018

APD ID: 10400030394

Submission Date: 05/18/2018

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHARLES LING FED COM

Well Number: 214H

Well Type: OIL WELL

Well Work Type: Drill

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reflects the most
recent changes

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Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	---	3626	0	0	OTHER : Quaternary	USEABLE WATER	No
2	RUSTLER ANHYDRITE	2288	1338	1338		NONE	No
3	SALADO	1761	1865	1865	SALT	NONE	No
4	CASTILE	-114	3740	3740		NONE	No
5	BASE OF SALT	-1593	5219	5229		NONE	No
6	BELL CANYON	-1644	5270	5281		NATURAL GAS,CO2,OIL	No
7	CHERRY CANYON	-2721	6347	6358		NATURAL GAS,CO2,OIL	No
8	BRUSHY CANYON	-3862	7488	7500		NATURAL GAS,CO2,OIL	No
9	BONE SPRING	-5399	9025	9037	LIMESTONE	NATURAL GAS,CO2,OIL	No
10	BONE SPRING 1ST	-6199	9825	9836	OTHER : Carbonate	NATURAL GAS,CO2,OIL	No
11	BONE SPRING 1ST	-6406	10032	10044	SANDSTONE	NATURAL GAS,CO2,OIL	No
12	BONE SPRING 2ND	-6826	10452	10464	OTHER : Carbonate	NATURAL GAS,CO2,OIL	No
13	BONE SPRING 2ND	-7118	10744	10755	SANDSTONE	NATURAL GAS,CO2,OIL	No
14	BONE SPRING 3RD	-7643	11269	11280	OTHER : Carbonate	NATURAL GAS,CO2,OIL	No
15	BONE SPRING 3RD	-8220	11846	11857	SANDSTONE	NATURAL GAS,CO2,OIL	No
16	WOLFCAMP	-8459	12085	12103	OTHER : A Carbonate	NATURAL GAS,CO2,OIL	Yes

Section 2 - Blowout Prevention

SCALE: 1" = 300'

0' 150' 300'

SECTION 11, TOWNSHIP 24-S, RANGE 33-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

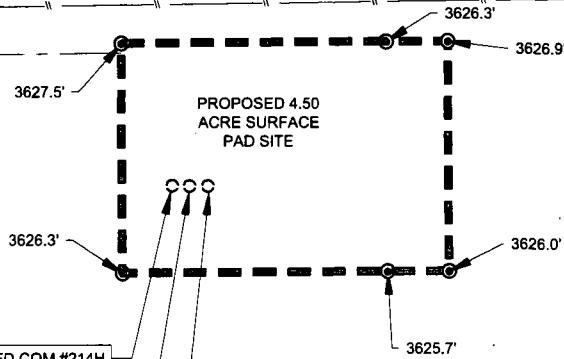


500' PROXIMITY

FND. BRASS CAP,
U.S. G.L.O. SUR.
1913



PROPOSED
ROAD EASEMENT



CHARLES LING FED COM #214H

CHARLES LING FED COM #204H

CHARLES LING FED COM #134H

MARK MCCLOY AND ANNETTE MCCLOY
(JOINT TENANTS) TO MARK AND ANNETTE
MCCLOY REVOCABLE LIVING TRUST
BOOK 1949, PAGE 561
RECORDED IN EXHIBIT A
D.R.L.C.N.M.

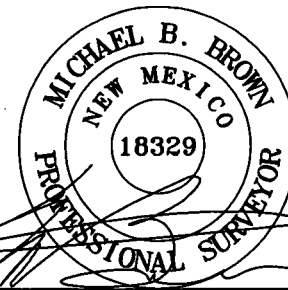
LEGEND

- PROPOSED SITE
- 500' PROXIMITY
- R --- TRACT BORDER
- PROPOSED ROAD
- EXISTING PIPELINE
- SECTION LINE
- IRON ROD SET
- MONUMENT



TOPOGRAPHIC
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Michael Blake Brown, P.S. No. 18329
APRIL 24, 2018

CHARLES LING FED COM
#214H
PROXIMITY MAP

REVISION:

AMD 04/24/2018

DATE: 02/26/18

FILE: LO_CHARLES_LING_FED_COM_214H_REV4

DRAWN BY: GJU

SHEET: 7 OF 7

NOTES:

1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY MATADOR PRODUCTION COMPANY. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. ADJOINER INFORMATION SHOWN FOR INFORMATIONAL PURPOSES ONLY.

Operator Name: MATADOR P. ACTION COMPANY

Well Name: CHARLES LING FED COM

Well Number: 214H

Pressure Rating (P-RD): 1000

Rating Depth: 12000

Equipment: A 12,000' 5000-psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. See attached BOP, choke manifold, co-flex hose, and speed head diagrams. An accumulator complying with Onshore Order 2 requirements for the BOP stack pressure rating will be present. Rotating head will be installed as needed.

Requesting Variance? YES

Variance request: Matador requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. Manufacturer does not require the hose to be anchored. If the specific hose is not available, then one of equal or higher rating will be used. Matador is requesting a variance to use a speed head for setting the intermediate (9-5/8") casing. In the case of running a speed head with landing mandrel for 9-5/8" casing, BOP test pressures after setting surface casing will be 250 psi low and 5000 psi high. Annular will be tested to 250 psi low and 2500 psi high before drilling below the surface shoe. The BOPs will not be tested again until after setting 7-5/8" x 7" casing unless any flanges are separated. A diagram of the speed head is attached and does not require the hose to be anchored. If the specific hose is not available, then one of equal or higher rating will be used.

Testing Procedure: Pressure tests will be conducted before drilling out from under all casing strings. BOP will be inspected and operated as required in Onshore Order 2. Kelly cock and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position. A third party company will test the BOPs. After setting surface casing, a minimum 5M BOPE system will be installed. Test pressures will be 250 psi low and 5000 psi high with the annular being tested to 250 psi low and 2500 psi high before drilling below surface shoe. In the event that the rig drills multiple wells on the pad and the BOPs are removed after setting Intermediate 2 casing, a full BOP test will be performed when the rig returns and the 5M BOPE system is re-installed. After setting 7-5/8" x 7" Casing, pressure tests will be made to 250 psi low and 10,000 psi high. Annular will tested to 250 psi low and 5000 psi high.

Choke Diagram Attachment:

CL_214H_Choke_20180622101853.pdf

BOP Diagram Attachment:

CL_214H_BOP_297_20180518151807.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1340	0	1340	3626		1340	J-55	54.5	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
2	INTERMEDIATE	8.75	7.625	NEW	API	Y	0	4920	0	4889	3626		4920	P-110	29.7	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5220	0	5214	3626		5220	J-55	40	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
4	PRODUCTION	6.125	5.5	NEW	API	Y	0	11701	0	11688	3626		11701	P-110	20	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHARLES LING FED COM

Well Number: 214H

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
5	INTERMEDIATE	8.75	7.625	NEW	API	Y	4921	11800	4890	11788			6879	P-110	29.7	OTHER - VAM HTF-NR	1.125	1.125	DRY	1.8	DRY	1.8
6	INTERMEDIATE	8.75	7.0	NEW	API	Y	11801	12669	11789	12422			868	P-110	29	OTHER - VAM HTF-NR	1.125	1.125	DRY	1.8	DRY	1.8
7	PRODUCTION	6.125	4.5	NEW	API	Y	11701	17193	11689	12437			5492	P-110	13.5	OTHER - VAM DWC/C-ISMS	1.125	1.125	DRY	1.8	DRY	1.8

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

CL_214H_Casing_Design_Assumptions_20180518151857.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

CL_214H_Casing_Design_Assumptions_20180518152546.pdf

Casing Design Assumptions and Worksheet(s):

CL_214H_Casing_Design_Assumptions_20180518152530.pdf

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHARLES LING FED COM

Well Number: 214H

Casing Attachments

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

CL_214H_Casing_Design_Assumptions_20180518151957.pdf

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

5.500in_Casing_Spec_20180518152402.PDF

Casing Design Assumptions and Worksheet(s):

CL_214H_Casing_Design_Assumptions_20180518152520.pdf

Casing ID: 5 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

7.625in_VAM_Casing_Spec_20180518152308.pdf

Casing Design Assumptions and Worksheet(s):

CL_214H_Casing_Design_Assumptions_20180518152149.pdf

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHARLES LING FED COM

Well Number: 214H

Casing Attachments

Casing ID: 6 String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

CL_214H_Casing_Design_Assumptions_20180518152232.pdf

Casing Design Assumptions and Worksheet(s):

CL_214H_Casing_Design_Assumptions_20180518152248.pdf

Casing ID: 7 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

4.500in_Casing_Spec_20180518152445.PDF

Casing Design Assumptions and Worksheet(s):

CL_214H_Casing_Design_Assumptions_20180518152509.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1340	800	1.82	13.5	1456	100	Class C	Bentonite + 2% CaCl ₂ + 3% NaCl + LCM
SURFACE	Tail		0	1340	340	1.38	14.8	469	100	Class C	5% NaCl + LCM
INTERMEDIATE	Lead		0	4920	520	2.36	11.5	1227	75	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		0	4920	320	1.38	14.8	442	75	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		0	5220	1290	1.82	12.8	2348	100	Class C	Bentonite + 2% CaCl ₂ + 3% NaCl + LCM

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHARLES LING FED COM

Well Number: 214H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Tail		0	5220	500	1.38	14.8	690	100	Class C	5% NaCl + LC
PRODUCTION	Lead		0	1170 0	0	0	0	0	0	None	None
PRODUCTION	Tail		0	1170 0	500	1.17	15.8	585	10	Class H	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		4921	1180 0	520	2.36	11.5	1227	75	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		4921	1180 0	320	1.38	14.8	442	75	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		1180 1	1266 9	520	2.36	11.5	1227	75	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		1180 1	1266 9	320	1.38	14.8	442	75	TXI	Fluid Loss + Dispersant + Retarder + LCM
PRODUCTION	Lead		1170 1	1719 3	0	0	0	0	0	None	None
PRODUCTION	Tail		1170 1	1719 3	500	1.17	15.8	585	10	Class H	Fluid Loss + Dispersant + Retarder + LCM

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: All necessary mud products (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions. A closed loop system will be used.

Describe the mud monitoring system utilized: An electronic Pason mud monitoring system complying with Onshore Order 1 will be used.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
-----------	--------------	----------	----------------------	----------------------	---------------------	-----------------------------	----	----------------	----------------	-----------------	----------------------------

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHARLES LING FED COM

Well Number: 214H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1340	OTHER : Fresh water spud	8.3	8.3							
5220	1274 4	OTHER : Fresh water & cut brine	9	9							
1340	5220	OTHER : Brine water	10	10							
1274 4	1719 3	OIL-BASED MUD	12.5	12.5							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

A 2-person mud logging program will be used from 5,220' to TD. No electric logs are planned at this time. GR will be collected through the MWD tools from intermediate casing to TD. CBL with CCL will be run as far as gravity will let it fall to TOC.

List of open and cased hole logs run in the well:

CBL

Coring operation description for the well:

No core or drill stem test is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 8700

Anticipated Surface Pressure: 5963.86

Anticipated Bottom Hole Temperature(F): 178

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Operator Name: MATADOR P, CTION COMPANY

Well Name: CHARLES LING FED COM

Well Number: 214H

CL_214H_H2S_Plan_Slot4_20180518153058.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

CL_214H_Horizontal_Drill_Plan_20180518153110.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

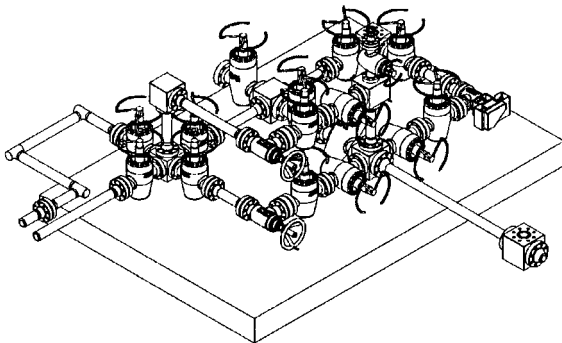
CL_214H_Speedhead_Specs_20180518153140.pdf

CL_214H_Drill_Plan_Revised_20180622101924.pdf

10M_Well_Control_Plan_20180622101930.pdf

Other Variance attachment:

CL_214H_Casing_Variance_20180518153126.pdf



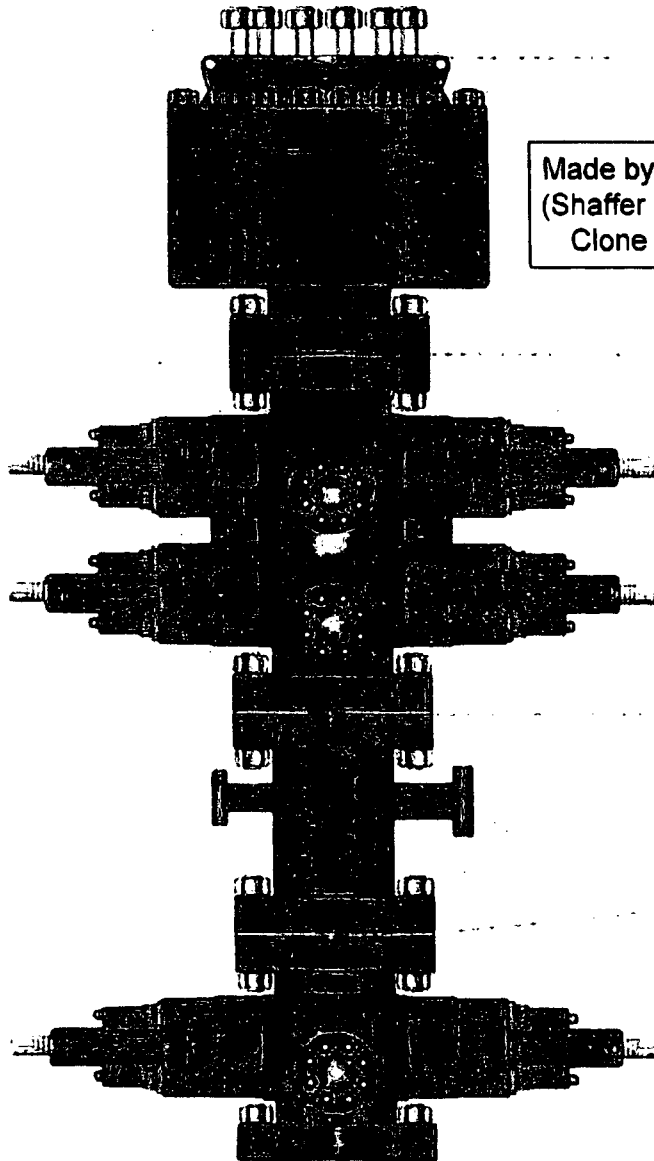


PATTERSON-UTI

Well Control

RIG:

297



Made by Cameron
(Shaffer Spherical)
Clone Annular

PATTERSON-UTI # PS2-628

STYLE: New Shaffer Spherical

BORE 13 5/8" PRESSURE 5,000

HEIGHT: 48 1/2" WEIGHT: 13,800 lbs

PATTERSON-UTI # PC2-128

STYLE: New Cameron Type U

BORE 13 5/8" PRESSURE 10,000

RAMS: TOP 5" Pipe BTM Blinds

HEIGHT: 66 5/8" WEIGHT: 24,000 lbs

Length 40" Outlets 4" 10M

DSA 4" 10M x 2" 10M

PATTERSON-UTI # PC2-228

STYLE: New Cameron Type U

BORE 13 5/8" PRESSURE 10,000

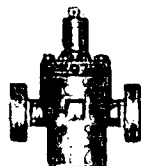
RAMS: 5" Pipe

HEIGHT: 41 5/8" WEIGHT: 13,000 lbs

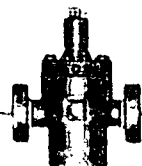
WING VALVES



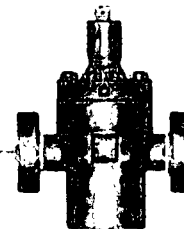
2" Check Valve



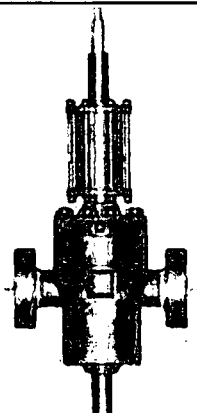
2" Manual Valve



2" Manual Valve



4" Manual Valve



4" Hydraulic Valve



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

December 8, 2014

Customer: Patterson

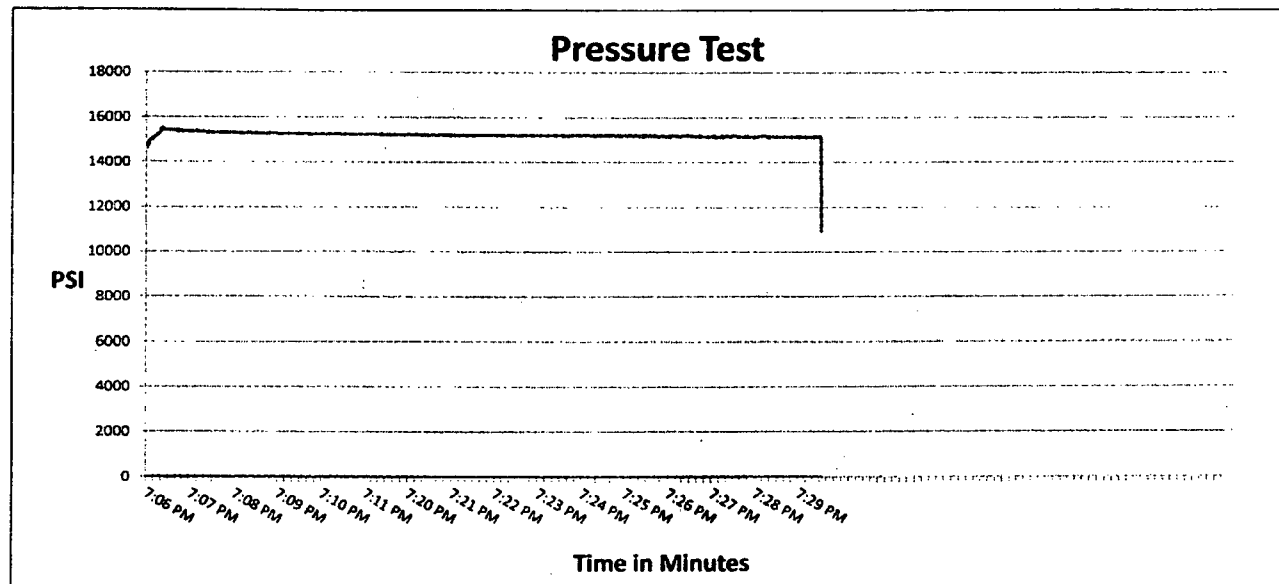
Pick Ticket #: 284918

Hose Specifications

Hose Type	Length
Ck	10'
I.D.	O.D.
3"	4.79"
Working Pressure	Burst Pressure
10000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
4-1/16 10K	Swage
Die Size	Final O.D.
5.37"	5.37"
Hose Serial #	Hose Assembly Serial #
10490	284918-2



Test Pressure
15000 PSI

Time Held at Test Pressure
15 2/4 Minutes

Actual Burst Pressure

Peak Pressure
15732 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Tyler Hill

Approved By: Ryan Adams

[Signature of Tyler Hill]

[Signature of Ryan Adams]



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K
Date Assembled	12/8/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	236404	Hose Lot # and Date Code	10490-01/13
Customer Purchase Order #	260471	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	287918-2	Hose O.D. (Inches)	5.30"
Hose Assembly Length	10'	Armor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	91996	Stem (Heat #)	91996
Ferrule (Part and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	37DA5631	Ferrule (Heat #)	37DA5631
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)		Connection (Heat #)	
Dies Used	5.37	Dies Used	5.37
Hydrostatic Test Requirements			
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.	
Test Pressure Hold Time (minutes)	15 1/2		
Date Tested	Tested By		Approved By
12/8/2014			



Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: PATTERSON B&E	Customer P.O.# 260471
Sales Order # 236404	Date Assembled: 12/8/2014

Specifications

Hose Assembly Type:	Choke & Kill		
Assembly Serial #	287918-2	Hose Lot # and Date Code	10490-01/13
Hose Working Pressure (psi)	10000	Test Pressure (psi)	15000

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

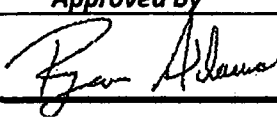
Supplier:

Midwest Hose & Specialty, Inc.

3312 S I-35 Service Rd

Oklahoma City, OK 73129

Comments:

Approved By	Date
	12/9/2014



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

December 9, 2014

Customer: Patterson

Pick Ticket #: 284918

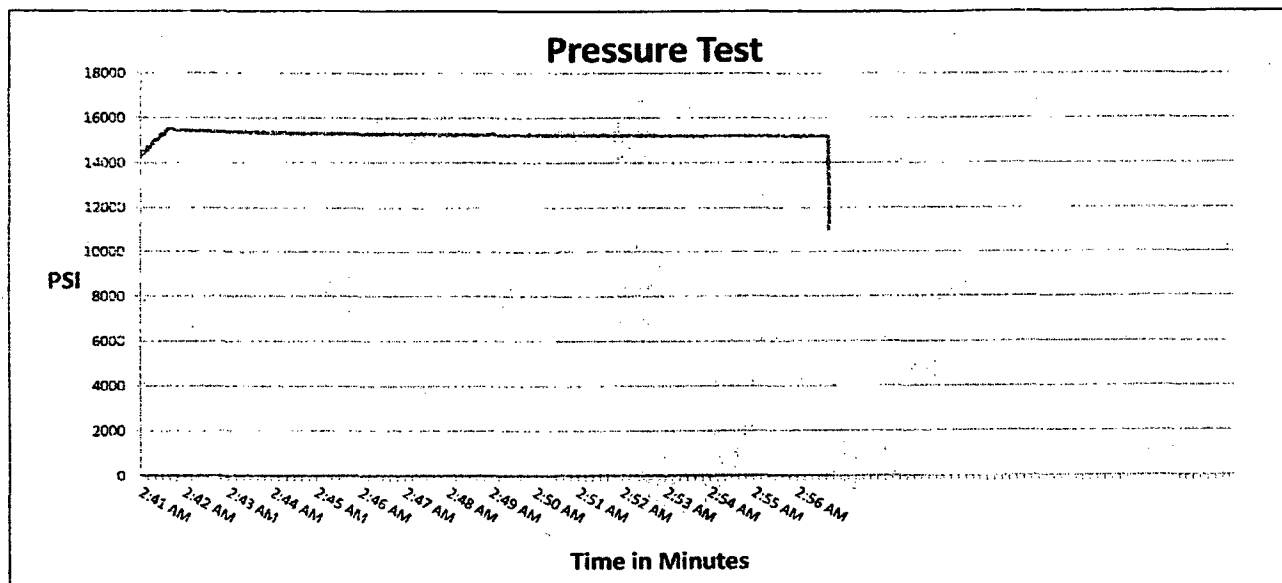
Hose Specifications

<u>Hose Type</u>	<u>Length</u>
Ck	20'
<u>I.D.</u>	<u>O.D.</u>
3"	4.77"
<u>Working Pressure</u>	<u>Burst Pressure</u>
10000 PSI	Standard Safety Multiplier Applies

Verification

<u>Type of Fitting</u>	<u>Coupling Method</u>
4-1/16 10K	Swage
<u>Die Size</u>	<u>Final O.D.</u>
5.37"	5.40"
<u>Hose Serial #</u>	<u>Hose Assembly Serial #</u>
10490	284918-1

2297



Test Pressure
15000 PSI

Time Held at Test Pressure
15 2/4 Minutes

Actual Burst Pressure

Peak Pressure
15893 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Tyler Hill

Approved By: Ryan Adams

[Signature]

[Signature]



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K
Date Assembled	12/8/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	236404	Hose Lot # and Date Code	10490-01/13
Customer Purchase Order #	260471	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	287918-1	Hose O.D. (Inches)	5.30"
Hose Assembly Length	20'	Aarmor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	A141420	Stem (Heat #)	A141420
Ferrule (Part and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	37DA5631	Ferrule (Heat #)	37DA5631
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)	V3579	Connection (Heat #)	V3579
Dies Used	5.37	Dies Used	5.37
Hydrostatic Test Requirements			
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.	
Test Pressure Hold Time (minutes)	15 1/2		
Date Tested	Tested By		Approved By
12/9/2014			



Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: PATTERSON B&E	Customer P.O.# 260471
Sales Order # 236404	Date Assembled: 12/8/2014

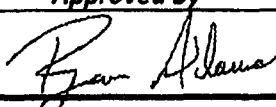
Specifications

Hose Assembly Type:	Choke & Kill		
Assembly Serial #	287918-1	Hose Lot # and Date Code	10490-01/13
Hose Working Pressure (psi)	10000	Test Pressure (psi)	15000

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	Date
	12/9/2014



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

December 9, 2014

Customer: Patterson

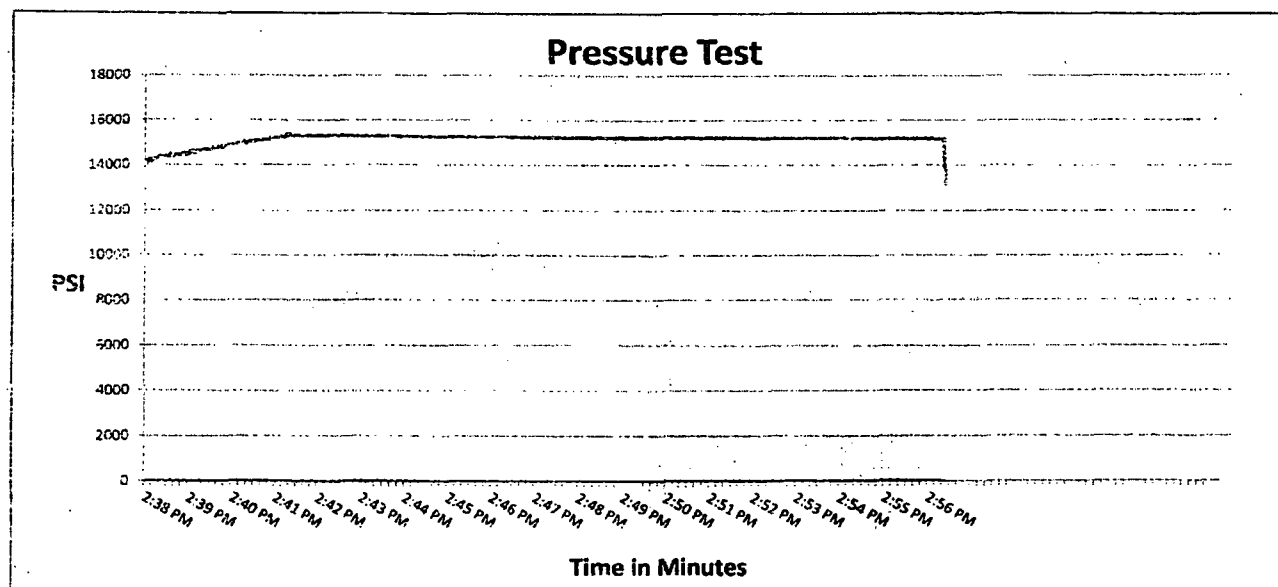
Pick Ticket #: 284918

Hose Specifications

Hose Type	Length
Mud	70'
I.D.	O.D.
3"	4.79"
Working Pressure	Burst Pressure
10000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
4 1/16 10K	Swage
Die Size	Final O.D.
5.37"	5.37"
Hose Serial #	Hose Assembly Serial #
10490	284918-3



Test Pressure
15000 PSI

Time Held at Test Pressure
16 3/4 Minutes

Actual Burst Pressure

Peak Pressure
15410 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Tyler Hill

Approved By: Ryan Adams



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K
Date Assembled	12/8/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	236404	Hose Lot # and Date Code	10490-01/13
Customer Purchase Order #	260471	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	287918-3	Hose O.D. (Inches)	5.23"
Hose Assembly Length	70'	Armor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	A141420	Stem (Heat #)	A141420
Ferrule (Part and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	37DA5631	Ferrule (Heat #)	37DA5631
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)		Connection (Heat #)	
Dies Used	5.37	Dies Used	5.37
Hydrostatic Test Requirements			
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.	
Test Pressure Hold Time (minutes)	16 3/4		
Date Tested	Tested By		Approved By
12/9/2014			



Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **PATTERSON B&E**

Customer P.O.# **260471**

Sales Order # **236404**

Date Assembled: **12/8/2014**

Specifications

Hose Assembly Type: **Choke & Kill**

Assembly Serial # **287918-3**

Hose Lot # and Date Code **10490-01/13**

Hose Working Pressure (psi) **10000**

Test Pressure (psi) **15000**

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:

Midwest Hose & Specialty, Inc.

3312 S I-35 Service Rd

Oklahoma City, OK 73129

Comments:

Approved By

Date

12/9/2014

Technical Specifications

Connection Type:	Size(O.D.):	Weight (Wall):	Grade:
DWC/C-IS MS Casing standard	5-1/2 in	20.00 lb/ft (0.361 in)	VST P110 EC

VST P110 EC	Material
125,000	Grade
135,000	Minimum Yield Strength (psi)
	Minimum Ultimate Strength (psi)

	Pipe Dimensions
5.500	Nominal Pipe Body O.D. (in)
4.778	Nominal Pipe Body I.D.(in)
0.361	Nominal Wall Thickness (in)
20.00	Nominal Weight (lbs/ft)
19.83	Plain End Weight (lbs/ft)
5.828	Nominal Pipe Body Area (sq in)

	Pipe Body Performance Properties
729,000	Minimum Pipe Body Yield Strength (lbs)
12,090	Minimum Collapse Pressure (psi)
14,360	Minimum Internal Yield Pressure (psi)
13,100	Hydrostatic Test Pressure (psi)

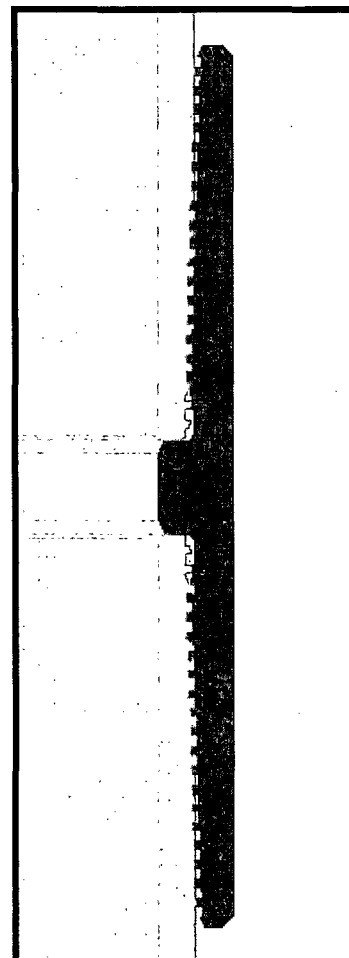
	Connection Dimensions
6.115	Connection O.D. (in)
4.778	Connection I.D. (in)
4.653	Connection Drift Diameter (in)
4.13	Make-up Loss (in)
5.828	Critical Area (sq in)
100.0	Joint Efficiency (%)

	Connection Performance Properties
729,000	Joint Strength (lbs)
26,040	Reference String Length (ft) 1.4 Design Factor
728,000	API Joint Strength (lbs)
729,000	Compression Rating (lbs)
12,090	API Collapse Pressure Rating (psi)
14,360	API Internal Pressure Resistance (psi)
104.2	Maximum Uniaxial Bend Rating [degrees/100 ft]

	Appoximated Field End Torque Values
16,100	Minimum Final Torque (ft-lbs)
18,600	Maximum Final Torque (ft-lbs)
21,100	Connection Yield Torque (ft-lbs)



VAM USA
4424 W. Sam Houston Pkwy. Suite 150
Houston, TX 77041
Phone: 713-479-3200
Fax: 713-479-3234
E-mail: VAMUSAsales@vam-usa.com



For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).

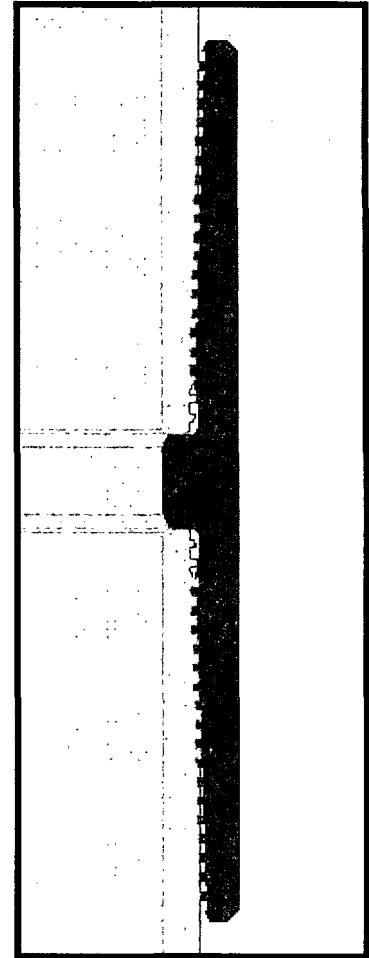
Connection specifications within the control of VAM USA were correct as of the date printed. Specifications are subject to change without notice. Certain connection specifications are dependent on the mechanical properties of the pipe. Mechanical properties of mill proprietary pipe grades were obtained from mill publications and are subject to change. Properties of mill proprietary grades should be confirmed with the mill. Users are advised to obtain current connection specifications and verify pipe mechanical properties for each application.

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DWC Connection Data Notes:

1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a give pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.



Connection specifications within the control of VAM USA were correct as of the date printed. Specifications are subject to change without notice. Certain connection specifications are dependent on the mechanical properties of the pipe. Mechanical properties of mill proprietary pipe grades were obtained from mill publications and are subject to change. Properties of mill proprietary grades should be confirmed with the mill. Users are advised to obtain current connection specifications and verify pipe mechanical properties for each application.

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1/11/2017 8:38:10 AM

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: $DF_c=1.125$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

**DATA ARE INFORMATIVE ONLY.
BASED ON SI_PD-101836 P&B**

VAM® HTF-NR™
Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift	Connection
7 5/8 in.	29.70 lb/ft	0.375 in.	P110 EC	6.750 in.	VAM® HTF NR

PIPE PROPERTIES	
Nominal OD	7.625 in.
Nominal ID	6.875 in.
Nominal Cross Section Area	8.541 sqin.
Grade Type	Enhanced API
Min. Yield Strength	125 ksi
Max. Yield Strength	140 ksi
Min. Ultimate Tensile Strength	135 ksi
Tensile Yield Strength	1 068 klb
Internal Yield Pressure	10 760 psi
Collapse pressure	7 360 psi

CONNECTION PROPERTIES	
Connection Type	Premium Integral Flush
Connection OD (nom)	7.701 in.
Connection ID (nom)	6.782 in.
Make-Up Loss	4.657 in.
Critical Cross Section	4.971 sqin.
Tension Efficiency	58 % of pipe
Compression Efficiency	72.7 % of pipe
Compression Efficiency with Sealability	34.8 % of pipe
Internal Pressure Efficiency	100 % of pipe
External Pressure Efficiency	100 % of pipe

CONNECTION PERFORMANCES	
Tensile Yield Strength	619 klb.
Compression Resistance	778 klb
Compression with Sealability	372 klb
Internal Yield Pressure	10 760 psi
External Pressure Resistance	7 360 psi
Max. Bending	44 °/100ft
Max. Bending with Sealability	17 °/100ft

TORQUE VALUES	
Min. Make-up torque	9 600 ft.lb
Optl. Make-up torque	11 300 ft.lb
Max. Make-up torque	13 000 ft.lb
Max. Torque with Sealability	58 500 ft.lb
Max. Torsional Value	73 000 ft.lb

VAM® HTF™ (High Torque Flush) is a flush OD integral connection providing maximum clearance along with torque strength for challenging applications such as extended reach and slim hole wells, drilling liner / casing, liner rotation to achieve better cementation in highly deviated and critical High Pressure / High Temperature wells.

Looking ahead on the upcoming testing industry standards, VAM® decided to create an upgraded design and launch on the market the VAM® HTF-NR as the new standard version of VAM® extreme high torque flush connection. The VAM® HTF-NR has extensive tests as per API RP 5C5:2015 CAL II which include the gas sealability having load points with bending, internal pressure and high temperature at 135°C.

Do you need help on this product? - Remember no one knows VAM® like VAM®

canada@vamfieldservice.com
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china@vamfieldservice.com
baku@vamfieldservice.com
singapore@vamfieldservice.com
australia@vamfieldservice.com

Over 180 VAM® Specialists available worldwide 24/7 for Rig Site Assistance

Other Connection Data Sheets are available at www.vamservices.com

Vallourec Group



Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: $DF_c=1.125$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: $DF_c=1.125$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: $DF_c=1.125$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: $DF_c=1.125$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: $DF_c=1.125$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: $DF_c=1.125$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
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Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

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- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: $DF_c=1.125$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
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Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

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Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

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Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: $DF_c=1.125$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

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Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: $DF_c=1.125$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b=1.125$

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
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Tensile: $DF_t=1.8$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).



Hydrogen Sulfide Drilling

Operations Plan

Matador Resources

1 H2S safety instructions to the following:

- Characteristics of H2S
- Physical effects and hazards
- Principal and operation of H2S detectors, warning system and briefing areas
- Evacuation procedures, routes and first aid
- Proper use of safety equipment & life support systems
- Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30min pressure demand air packs

2 H2S Detection and Alarm Systems:

- H2S sensor/detectors to be located on the drilling rig floor, in the base of the sub structure / cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary
- An audio alarm system will be installed on the derrick floor and in the doghouse

3 Windsocks and / Wind Streamers:

- Windsocks at mud pit area should be high enough to be visible
- Windsock on the rig floor and / top of doghouse should be high enough to be visible

4 Condition Flags and Signs:

- Warning sign on access road to location
- Flags to be displayed on sign at entrance to location
 - Green Flag – Normal Safe Operation Condition
 - Yellow Flag – Potential Pressure and Danger
 - Red Flag – Danger (H2S present in dangerous concentrations) Only H2S trained personnel admitted on location

5 Well Control Equipment:

- See Exhibit E-1

6 Communication:

- While working under masks chalkboards will be used for communications
- Hand signals will be used where chalk board is inappropriate
- Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.



7 Drilling Stem Testing:

- No DST cores are planned at this time

8 Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubulars good and other mechanical equipment

9 If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavengers if necessary

11 Emergency Contacts

- See exhibit E-6

Exhibit 6: H2S Contingency Plan Emergency Contacts
Charles Ling Fed Com Slot 4
Wells 134H, 204H, & 214H
Matador Resources Company
Sec. 11, 24S, 33E
Lea County, NM

<u>Company Office</u>			
Matador Resources Company		(972)-371-5200	
<u>Key Personnel</u>			
Name	Title	Office	Mobile
Billy Goodwin	Vice President Drilling	972-371-5210	817-522-2928
Dee Smith	Drilling Superintendent	972-371-5447	972-822-1010
Blake Hermes	Drilling Engineer	972-371-5485	713-876-8558
	Construction Superintendent		
	Construction Superintendent		
<u>Artesia</u>			
Ambulance		911	
State Police		575-746-2703	
City Police		575-746-2703	
Sheriff's Office		575-746-9888	
Fire Department		575-746-2701	
Local Emergency Planning Committee		575-746-2122	
New Mexico Oil Conservation Division		575-748-1283	
<u>Carlsbad</u>			
Ambulance		911	
State Police		575-885-3137	
City Police		575-885-2111	
Sheriff's Office		575-887-7551	
Fire Department		575-887-3798	
Local Emergency Planning Committee		575-887-6544	
New Mexico Oil Conservation Division		575-887-6544	
<u>Santa Fe</u>			
New Mexico Emergency Response Comission (Santa Fe)		505-476-9600	
New Mexico Emergency Response Comission (Santa Fe) 24 hrs		505-827-9126	
New Mexico State Emergency Operations Center		505-476-9635	
<u>National</u>			
National Emegency Response Center (Washington, D.C.)		800-424-8802	
<u>Medical</u>			
Flight for Life- 4000 24th St.; Lubbock, TX		806-743-9911	
Aerocare- R3, Box 49F; Lubbock, TX		806-747-8923	
Med Flight Air Amb- 2301 Yale Blvd S.E., D3; Albuquerque, NM		505-842-4433	
SB Air Med Service- 2505 Clark Carr Loop S.E.; Albuquerque, NM		505-842-4949	
<u>Other</u>			
Boots & Coots IWC		800-256-9688	or 281-931-8884
Cudd Pressure Control		432-699-0139	or 432-563-3356
Haliburton		575-746-2757	
B.J. Services		575-746-3569	

HYDROGEN SULFIDE CONTINGENCY PLAN Drilling, Testing, & Completion

MRC ENERGY CO.

Charles Ling Fed Com Slot 4 Wells

Reviewers

----- Operations Manager
----- Operations Supt.
----- Staff RES
----- Field Supv.
Blake Hermes---Engineering

**Latitude: 32.2384" N
Longitude: 103.5367" W**

**Charles Ling Fed Com #134
SHL 330' FNL & 731' FEL, Sec. 11
BHL 240' FSL & 988' FEL, Sec. 11**

**Charles Ling Fed Com #204
SHL 330' FNL & 761' FEL, Sec. 11
BHL 240' FSL & 330' FEL, Sec. 11**

**Charles Ling Fed Com #214
SHL 330' FNL & 791' FEL, Sec. 11
BHL 240' FSL & 988' FEL, Sec. 11**

H2S Contingency Plan # 0165 Revision# 0

This H2S Contingency Plan is subject to updating

Effective date: July 8, 2015

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INTRODUCTION

The H₂S equipment will be rigged up 2 days prior to reaching a potential H₂S containing zone. Drilling into any potential H₂S zone shall not commence until the on-site MRC Drilling Supervisor has confirmed this plan in place.

The onsite Drilling Foreman will give Total Safety one week (7 days) notice to prepare for rig up of H₂S equipment)

To be effective, the plan requires the cooperation and effort of each person participating in the drilling of an H₂S well. Each person must know his/her responsibilities and all emergency and safety procedures. He/she should thoroughly understand and be able to use with accuracy, all safety equipment while performing his/her normal duties, if the circumstance should arise. He/she should therefore familiarize himself/herself with the location of all safety equipment and check to see that it is properly stored, easily accessible at all times, and routinely maintained.

It is the intention of MRC ENERGY CO. and the Drilling Contractor to make every effort to provide adequate safeguards against harm to persons on the rig and in the immediate vicinity from the effects of hydrogen sulfide, which may be released into the atmosphere under emergency conditions. However, the initiative rests with the individual in utilizing the safeguards provided. The ideas and suggestions of the individuals involved in the drilling of this well are highly welcomed and act as a fundamental tool for providing the safest working conditions possible.

The drilling representative is required to enforce these procedures. They are set up for your safety and the safety of all others.

II. PURPOSE

It is MRC Energy Co.'s intent to provide a safe working place, not only for its employees, but also for other contractors who are aiding in the drilling of this well. The safety of the general public is of utmost concern. All precautions will be taken to keep a safe working environment and protect the public.

There is a possibility of encountering toxic hydrogen sulfide gas. Safety procedures must be adhered to in order to protect all personnel connected with the operations as well as people living within the area.

The MRC Energy Co. representative will enforce all aspects of the H2S Contingency Plan. This job will become easier by a careful study of the following pages and training and informing all personnel that will be working on the well, their duties and responsibilities.

A. OPERATING PROCEDURES

DEFINITIONS:

For purpose of this plan, on-site personnel shall be referred to as “In Scope Personnel” or “Out of Scope Personnel”, per the following definitions:

In Scope Personnel – Personnel who will be working or otherwise present in potential H₂S release areas, including the rig floor, cellar, pits, and shaker areas.

Out of Scope Personnel – Personnel who will not be working or Otherwise present in potential H₂S areas. Such personnel include rig Site visitor, delivery and camp services personnel.

GENERAL:

Before this H₂S contingency plan becomes operational, all regularly assigned In Scope Personnel (primarily the MRC, drilling contractor, and certain service personnel,) shall be thoroughly trained in the use of breathing equipment, emergency procedures, and responsibilities. Total Safety Technician or a designee assigned by the MRC Drilling Foreman shall keep a list of all personnel who have been through the on-site H₂S training program at the drill site.

All In Scope Personnel shall be given H₂S training and the steps to be taken during H₂S conditions under which the well may be drilled. General information will be explained about toxic gases, as well as the physiological effects of H₂S and the various classified operating conditions. In addition, the reader will be informed his/her general responsibility concerning safety equipment and emergency procedures.

The Total Safety H₂S Safety Technician or MRC on-site RSE Technician shall make available the H₂S Contingency Plan for all personnel to review.

Without exception, all personnel that arrive on location must proceed directly to and sign-in with the on-site MRC RSE Technician. In Scope Personnel will be required to complete an on-site H₂S training and respirator fit testing before starting work, or produce evidence that they have received equivalent training. Out of Scope Personnel will be required to complete a site H₂S awareness and general safety briefing. This briefing will consist of a H₂S hazard overview, alarm review and required response to alarms.

**B. PROCEDURES TO BE INITIATED PRIOR TO H₂S
CONTINGENCY PLAN COMPLIANCE:**

A list of emergency phone numbers and contacts will be on location and posted at the following locations:

1. MRC ENERGY CO.'S Representative's Office
2. Drilling Contractor's, Toolpusher Office
3. Living Quarters Area

All safety equipment and H₂S related hardware must be set up as required by MRC Energy Co. with regard to location of briefing areas, breathing equipment, etc. All safety equipment must be inspected periodically (at least weekly) with particular attention to resuscitators and breathing equipment.

In Scope Personnel working in the well site area will be assigned breathing apparatus. Operator and drilling contractor personnel required to work in the following areas will be provided with Self Contained Breathing Apparatus:

1. Rig Floor
2. Mud Pits
3. Derrick
4. Shale Shaker
5. Cellar

The Total Safety H₂S Safety Technician will be responsible for rigging up all H₂S continuous monitoring-type detectors. The Total Safety Technician will monitor and bump test the detector units periodically (at least at least once a week to test alarm function during drilling conditions. In the event H₂S is detected, or when drilling in a zone confirmed to contain H₂S, the units shall be bump tested at least once every 24 hours. A bump test/calibration log will be kept on location. All results will be reported to the MRC on-site Drilling Foreman.

All Total Safety H₂S equipment will be maintained and inspected by a Total Safety Technician on at least a Weekly basis.

C. DRILLING BELOW CONTINGENCY PLAN DEPTH

H₂S response drills will be held at least once per week if possible or as often as necessary to acquaint the crews and service company personnel of their responsibilities and the proper procedures to shut-in a well. Initial drills will be performed until crews demonstrate competency donning and working under mask. After the MRC Energy Co.'s representative is satisfied with initial blowout drill procedures, a drill will be conducted weekly with each crew, as necessary. The H₂S Safety Technician or designee will conduct safety talks and maintain the safety equipment, consult and carry out the instructions of the drilling supervisor. All personnel allowed in the well work area during drilling or testing operations will be instructed in the use of breathing equipment until supervisory personnel are satisfied that they are capable of using it.

After familiarization, each person must perform a drill with breathing equipment. The drill should include getting the breathing equipment, donning the breathing apparatus, and performing expected duties for a short period. A record shall be kept of all personnel drilled and the date of the drill. H₂S training records will be kept on location for all personnel.

Rig crews and service company personnel shall be made aware of the location of spare air bottles, resuscitation equipment, portable fire extinguishers, H₂S monitors and detectors. Knowledge of the location of the H₂S monitors and detectors are vital in determining as our gas location and the severity of the emergency conditions.

After any device has initially detected H₂S, all areas of poor ventilation shall be inspected periodically by means of a portable H₂S detector instrument. The buddy system will be utilized. (When an alarm sounds, personnel will don an SCBA, shut the well in, and proceed to SBA for roll call. The H₂S Technician or designee will mask up, with a buddy and will verify source of H₂S and report back to the on-site MRC Foreman.)

D. PROCEDURES PROGRAM

1. Drill Site

- a. The drilling rig will be located to allow prevailing winds to blow across the reserve pit.
- b. A Safe Briefing Area will be provided with a breathing air cascade trailer and or 30-minute SCBA's at the Primary Area. Personnel will assemble at the most up-wind station under alarm conditions, or when so ordered by the MRC Energy Co. representative, the Contractor representative, or

the Total Safety H₂S Safety Technician. Windssocks or streamers will be anchored to various strategic places on a pole about 10 feet high, so it is in easy view from the rig floor at all times.

- c. Warning signs will be posted on the perimeters. "No Smoking" signs will be posted by MRC Energy Co. as well.
- d. One multi-channel automatic H₂S monitor will be provided by Total Safety and the detector heads will be at the shale shaker, bell nipple, mud pits, rig floor, and quarter's area. The monitor will be located inside HSE or Company man trailer. Should the alarm be shut off to silence the sirens, the blinker light must continue to warn of H₂S presence. The Total Safety H₂S Safety Technician or designee will continuously monitor the detectors and will reactivate the alarm if H₂S concentrations increase to a dangerous level.
- e. A method of escape will be open at all times.
- f. If available, land line telephone service will be provided or cell phones provided. (Primary communications provided)
- g. A rig communication system will be provided, as needed.
- h. A gas trap, choke manifold, and degasser will be installed.
- i. A kill line, securely anchored and of ample strength, will be laid to the well-head from a safe location. This line is to be used only in an emergency.

General

- a. The MRC Energy Co. representative and/or the Contractor's Toolpusher will be available at all times. The drilling supervisor, while on duty, will have complete charge of the rig and location operations and will take whatever action is deemed necessary to insure personnel safety, to protect the well, and to prevent damage.
- b. A Mud Engineer will be on location at all times when drilling takes place at the depth H₂S may be expected. The mud engineer will be able to verify the presence or absence of H₂S.

III. CONDITIONS AND EMERGENCY PROCEDURES

A. DEFINITION OF OPERATIONAL "CONDITIONS"

CONDITION I	"POSSIBLE DANGER"
Warning Flags	Green
Alarms	No Alarm. Less than 10 ppm
Characterized By:	Drilling operations in zones that may contain hydrogen sulfide. This condition remains in effect unless H ₂ S is detected and it becomes necessary to go to Condition II.
General Action:	- Be alert for a condition change - Check all safety equipment for availability and proper functioning. - Perform all drills for familiarization and proficiency.
CONDITION II	"MODERATE DANGER"
Warning Flags	Yellow
Alarms:	Actuates at 10 ppm. Continuous flashing light.
Characterized By:	Drilling operations in zones containing hydrogen sulfide. This condition will remain in effect until adding chemicals to the mud system neutralizes the hydrogen sulfide or it becomes necessary to go to Condition III.
General Action:	- Be alert for a condition change WHEN DRILLING AHEAD - Driller and designated crewmember will don 30 min SCBA, shut-in the well and immediately proceed to the Safe Briefing Area. WHEN TRIPPING – Driller and two designated crewmembers will don 30 min SCBA, shut in the well and immediately proceed to the Safe Briefing Area. The Derrickman will

don a 5-minute escape pack, descend to the rig floor, don a 30-min SCBA (if necessary) and immediately proceed to the Safe Briefing Area.

- c. All In Scope Personnel will proceed directly to the appropriate Safe Briefing Area.
- d. Remain in safe briefing area, take roll call and wait for instructions
- e. Contact the Total H2S Technician if not on location.
- f. Personnel shall ensure that their breathing apparatus is properly fitted and operational before entering an H₂S contaminated area to provide assistance to anyone who may be injured or overcome by toxic gases.
- g. All Out of Scope Personnel will report to the appropriate Safe Briefing Area.

CONDITION III "EXTREME DANGER"

Warning Flags

Red

Alarms

Actuate at 15 ppm. Continuous Sirens and Flashing Lights

Characterized by:

Critical well operations which pose an immediate threat of H₂S exposure to on-site personnel and a potential threat to the public.

General Action:

- a. **WHEN DRILLING AHEAD -**
Driller and designated crewmember will don 30 min SCBA, shut-in the well and immediately proceed to the Safe Briefing Area.
- WHEN TRIPPING –** Driller and two designated crewmembers will don 30

min SCBA, shut in the well and immediately proceed to the Safe Briefing Area. The Derrickman will don a 5-minute escape pack, descend to the rig floor, don a 30-min SCBA (if necessary) and immediately proceed to the Safe Briefing Area.

- b. All In Scope Personnel should don SCBA if nearby and immediately proceed to Safe Briefing Area. If SCBA is not nearby at time of alarm, **DO NOT GO TOWARDS RIG AREA**, but proceed directly to the Safe Briefing Area
- c. All out of Scope Personnel shall evacuate the location.
- d. Remain in the Safe Briefing Area, take roll call and wait for instructions.
- e. Contact the Total H2S Technician if not on location.
- f. Personnel shall ensure that their breathing apparatus is properly fitted and operational before entering an H₂S contaminated area to provide assistance to anyone who may be injured or overcome by toxic gases. Use the buddy system.
- g. Remain in safe briefing area, take roll call and wait for instructions.
- h. A cascade breathing air systems shall be mobilized and utilized to conduct any additional on rig work required to correct the H2S release condition.
- i. If well is ignited do not assume area is safe. SO₂ is hazardous and not all H₂S will burn.

H₂S EMERGENCY PROCEDURES; IN SCOPE PERSONNEL

A. Day To Day Drilling Operations

1. Upon discovering a release of H₂S gas in the ambient air by warning alarms or in any other way **Do Not Panic**.
2. Hold your breath donning the nearest Self Contained Breathing Apparatus and rapidly move up or across-wind away from the areas where H₂S sensing devices are in place, to the closest available safe briefing area. Continue to use breathing apparatus until it has been determined that the exposure of H₂S gas in the ambient air no longer exists. **Do Not Panic!**
3. Utilize the "Buddy System", i.e.; select and pair up each person participating in the drilling of an H₂S well prior to an emergency situation.
4. Help anyone who is overcome or affected by the H₂S gas by taking him/her up-wind out of the contaminated area. (This should be done utilizing an SCBA and with a buddy.)
5. Take necessary steps to confirm the release of the H₂S gas into the ambient air.
 - When an H₂S alarm activates, two designated personnel using the buddy system, while wearing their self contained breathing apparatus, will determine by the read-out on the fixed monitor which sensing device has detected the release of the H₂S gas.
 - They will utilize the hand-held sniffer type device at the particular sensing point disclosed on the fixed monitor to corroborate the fact that H₂S gas has actually been released. This will rule out the possibility of a false alarm. This will be done with a buddy and under mask after reporting to the Safe Briefing Area for roll call and instructions by on-site MRC Foreman.
6. Refer to the Emergency Phone Numbers and call emergency personnel.
7. Take the necessary steps to suppress the release of H₂S gas into the ambient air. Comply with the MRC Energy Co. Representative to physically suppress the release of H₂S gas at the actual release point.

8. Check all of MRC Energy Co.'s monitoring devices and increase gas-monitoring activities with the portable hand-operated H₂S and gas detector units.

Do Not Panic!

The MRC Energy Co. representative will assess the situation and with assistance of the Contractor's Representative and Total Safety's H₂S Safety Technician or on site designee, will assign duties to each person to bring the situation under control.

B. RESPONSIBILITIES OF WELL-SITE PERSONNEL

In the event of a release of potentially hazardous amounts of H₂S, all personnel will immediately don their protective breathing apparatus, the well will be shut in and personnel will proceed upwind to the nearest designated safe briefing area for roll call and instructions by MRC Foreman. Consideration will be given to evacuating Out of Scope Personnel, as situation warrants.

1. MRC ENERGY CO.'S Well-site Representatives

- a. If MRC Energy Co.'s well-site representative is incapacitated or not on location, this responsibility will fall to the Toolpusher/Driller.
- b. Immediately upon assessing the situation, set this plan into Action by initiating the proper procedures to contain the gas and notify the appropriate people and agencies.
- c. Ensure that the alarm area indicated by the fixed H₂S Monitor is checked and verified with a portable H₂S detector. (Safety Technician if on location or MRC assigned designee with a buddy utilizing SCBA's)
- d. Consult Pusher/driller of remedial actions as needed.
- e. Ensure that non-essential personnel proceed to the safe briefing area.
- f. Ensure location entrance barricades are positioned. Keep the number of persons on location to a minimum during hazardous operations.

- g. Consult each contractor, Service Company and all others allowed to enter the site, that H₂S gas may be encountered and the potential hazards that may exist.
- h. Authorize the evacuation of local residents if H₂S threatens Their safety.
- i. Non essential personnel should be evacuated from location if Situation warrants.

2. Toolpusher

- a. Toolpusher/Driller will assume responsibilities of MRC Energy Co.'s well-site representative if that person is incapacitated or not on location.
- b. Ensure that the alarm area indicated by the fixed H₂S monitor is checked and verified with a portable H₂S gas detector. (Alarm area indicated by the monitor will be Checked by the H₂S Technician and a buddy, under mask.) This will be done after checking in and roll call at the Upwind Safe Briefing Area.
- c. Confer with MRC Energy Co.'s well-site representative or superintendent and direct remedial action to suppress the H₂S and control the well.
- d. Ensure that personnel at the safe briefing area are instructed on emergency actions required.
- e. Ensure that personnel at the drill floor area are instructed on emergency actions required.
- f. Ensure that all personnel observe the appropriate safety and emergency procedures.
- g. Ensure that all persons are accounted for and provided emergency assistance as necessary.

3. Mud Engineer

- a. Run a sulfide check on the flowline mud.
- b. Take steps to determine the source of the H₂S and suppress it. Lime and H₂S scavenger shall be added to the mud as necessary.

4. Total H₂S Safety Technician, if on location, or MRC Designee

- a. H₂S Safety Technician or designee don nearest SCBA and report to Safe Briefing Area for roll call, take a buddy masked up and check monitor and verify with a portable H₂S detector the alarm area indicated by the fixed H₂S monitor. Advise the Toolpusher/Driller and MRC Energy Co.'s well-site representative of findings. Record all findings.
- b. If H₂S is flared, check for sulfur dioxide (SO₂) near the flare as necessary. Take hourly readings at different perimeters, log readings and record on location.
- c. Ensure that personnel at the safe briefing area are instructed on emergency actions required.
- d. Ensure that the appropriate warning flags are displayed.
- e. Ensure that all personnel are in S.C.B.A. as necessary.
- f. Ensure that all persons are accounted for and provide emergency assistance as necessary.
- g. Be prepared to evacuate rig if order is issued.

5. General Personnel & Visitors

- a. All In Scope Personnel, if not specifically designated to shut the well in or control the well, shall proceed to the (upwind) safe briefing area. All Out of Scope Personnel shall immediately proceed to the appropriate (upwind) safe briefing area or evacuate the site as conditions warrant.

- b. During any emergency, use the "buddy" system to prevent anyone from entering or being left in a gas area alone, even wearing breathing apparatus.
- c. Provide assistance to anyone who may be injured or overcome by toxic gases. Personnel shall ensure that their breathing apparatus is properly fitted and operational before entering a potentially H₂S contaminated area.
- d. Remain in safe briefing area and wait for instructions.

C. INSTRUCTIONS FOR IGNITING THE WELL

1. The Toolpusher/Driller will confer with MRC Energy Co.'s well-site representative who will secure the approval of the "Texas Wells Delivery Manager, prior to igniting the well, if at all possible.

The Toolpusher/Driller will be responsible for igniting the well in the event of severe well control problems. This decision should be made only as a last resort in situations where it is clear that:

- a. Human life and property are endangered, or
- b. There is no hope of controlling the well under current conditions.

2. Once the decision has been made, the following procedures should be followed:
 - a. Two people wearing self-contained breathing apparatus will be needed for the actual lighting of the well. They must first establish the flammable perimeter by using an explosimeter. This should be established at 30% to 40% of the lower flammable limits.
 - b. After the flammable perimeter has been established and everyone removed from the area, the ignition team should select a site upwind of the well from which to ignite the well. This site should offer the maximum protection and have a clear path for retreat from the area.

- c. The ignition team should have safety belts and lifeline attached and manned before attempting ignition. If the leak is not ignited on the first attempt, move in 20 to 30 feet and fire again. Continue to monitor with the explosimeter and NEVER fire from an area with over 75% of the Lower Explosive Limit (LEL). If having trouble igniting the well, try firing 40 degrees to 90 degrees on either side of the well.
- d. If ignition is not possible due to the makeup of the gas, the toxic perimeter must be established and evacuation continued until the well is contained.
- e. All personnel must act only as directed by the person in charge of the operations.

NOTE: After the well is ignited, burning hydrogen sulfide (H_2S) will convert to sulfur dioxide (SO_2), which is also a highly toxic gas.

DO NOT ASSUME THE AREA IS SAFE AFTER THE WELL IS IGNITED

D. CORING PROCEDURES

Only essential personnel shall be on the rig floor. Ten (10) stands prior to retrieving core barrel; all personnel on drill floor and in derrick shall confirm self-Contained breathing apparatus available and ready for use.

A Total H₂S Technician will don a SCBA with a buddy assigned from the rig crew, and continuously monitor for H₂S at each connection. Any levels detected will require operations to be shut down and all involved personnel to don SCBAs. Precautions will remain in place until barrel is laid down.

All involved personnel will don SCBAs when removing the inner barrel from the outer barrel. SCBAs can be removed once the absence of H₂S is confirmed by the Total H₂S Technician.

Cores will be appropriately marked and sealed for transportation.

Normal Operations

1. Responsibilities of well-site personnel

a. Well-site Representative

1. Notify H₂S Technician of expected date to reach Contingency Plan implementation depth (Two (2) days prior to reaching suspected H₂S bearing zone) or prior to starting well work.
2. Ensure H₂S Safety Technician completes rig-up procedures prior to reaching Contingency Plan effective depth.
3. Restrict the number of personnel at the drilling rig or well site to a minimum while drilling, starting well work, testing or coring.
4. Ensure weekly H₂S drills/training are performed, if possible.

B. Toolpusher

1. Ensure that necessary H₂S safety equipment is provided on the rig, and that it is properly inspected and maintained.
2. Ensure that all personnel that work in the well area, are thoroughly trained in the use of H₂S safety equipment and periodic drills are held to maintain an adequate level of proficiency.

C. In Scope Personnel

1. Remain clean-shaven. Beards and long sideburns do not allow a proper facepiece seal.
2. Receive H₂S safety training on location, or confirm prior training by certification that is one year within date.
3. Familiarize yourself with the rig's Contingency Plan.
4. Inspect and practice putting on your breathing apparatus.

5. Know the location of the "safe briefing areas".
6. Keep yourself "wind conscious". Be prepared to quickly move upwind and away in the event of any emergency involving release of H₂S.

D. Total Safety H₂S Safety Technician or MRC Designee

1. Conduct training as necessary to ensure all personnel working in well area are familiar with the contingency procedures and the operation of emergency equipment.
2. Check all H₂S safety equipment to ensure that it is ready for emergency use:
 - Check pressure weekly for each shift on breathing apparatus (both 30-minute and hip-packs) to make sure they are charged to full volume.
 - Check pressure on cascade air bottles, if on location, to see that they are capable of recharging breathing apparatus.
 - Check oxygen resuscitator, if on location, to ensure that it is charged to full volume.
 - Check H₂S detectors weekly for each shift (fixed and portable), and explosimeter, to ensure they are working properly.
3. Provide a weekly report to MRC Energy Co.'s well-site representative documenting:
 - Calibrations performed on H₂S detectors.
 - Proper location and working order of H₂S safety equipment.
 - Attendance of all personnel, trained or retrained, and their company.
 - Weekly drills, if held and a list of personnel participating and summary of actions.

OUT OF SCOPE PERSONNEL

MRC Energy Co. policy will not require Out of Scope Personnel to be clean shaven, have processed medical questionnaires, fit testing, or have certified H2S Training.

SAFETY EQUIPMENT

All respirators will be designed, selected, used and maintained in conformance with ANSI Z88.2, American National Standard for respiratory protection.

Personal protective equipment must be provided and used. Those who are expected to use respiratory equipment in case of an emergency will be carefully instructed in the proper use and told why the equipment is being used. Careful attention will be given to the minute details in order to avoid possible misuse of the equipment during periods of extreme stress.

Self-contained breathing apparatus provides complete respiratory and eye protection in any concentration of toxic gases and under any condition of oxygen deficiency. The wearer is independent of the surrounding atmosphere because he/she is breathing with a system admitting no outside air. It consists of a full face mask, breathing tube, pressure demand regulator, air supply cylinder, and harness. Pure breathing air from the supply cylinder flows to the mask automatically through the pressure demand regulator which reduces the pressure to a breathing level. Upon inhalation, air flows into the mask at a rate precisely regulated to the user's demand. Upon exhalation, the flow to the mask stops and the exhaled breath passes through a valve in the face piece to the surrounding atmosphere. The apparatus includes an alarm & gauge which warns the wearer to leave the contaminated area for a new cylinder of air or cylinder refill.

The derrickman is provided with a full face piece unit attached to a 5-minute escape cylinder. He will also have his own self-contained 30-minute unit breathing apparatus located on the drilling floor. He will use the 5-minute unit to exit the derrick to the floor, donning the 30-minute unit located on the floor, if needed.

All respiratory protective equipment, when not in use, should be stored in a clean, cool, dry place, and out of direct sunlight to retard the deterioration of rubber parts. After each use, the mask assembly will be scrubbed with soap and water, rinsed thoroughly, and dried. Air cylinders can be recharged to a full condition from a cascade system.

Personnel in each crew will be trained in the proper techniques of bottle filling.

The primary piece of equipment to be utilized, should anyone be overcome by hydrogen sulfide, is the oxygen resuscitator, if on location.

When asphyxiation occurs, the victim must be moved to fresh air and immediately given artificial respiration. In order to assure readiness, the bottles of oxygen will be checked at regular intervals and an extra tank kept on hand.

Hand-operated pump-type detectors incorporating detector tubes will give more accurate readings of hydrogen sulfide. The pump-type draws air to be tested through the detector tube containing lead acetate-silica gel granules. Presence of hydrogen sulfide in the air sample is shown by the development of a dark brown stain on the granules, which is the

scale reading of the concentration of hydrogen sulfide. By changing the type of detector tube used, this detector may also be used for sulfur dioxide (SO₂) detection when hydrogen sulfide (H₂S) is being burned in the flare area.

Provisions must be made for the storage of all safety equipment as is evident from the foregoing discussion. All equipment must be stored in an available location so that anyone engaged in normal work situations is no more than "one breath away" from a mask.

V – TOXICITY OF VARIOUS GASES

Lethal Common Name ppm⁴	Chemical Formula	Specific Gravity¹	PEL (OSHA)²	STEL³
Hydrogen Cyanide 300	HCN	0.94	10	150
Hydrogen Sulfide 600	H ₂ S	1.18	20	Peak- 50ppm
Note: The ACGIH(7) recommends a TWA(6) value of 10ppm as the TLV(5) for H ₂ S and an STEL of 15ppm.				
Sulfur Dioxide 1000	SO ₂	2.21	2	5 ppm
Chlorine	CL ₂	2.45	1	
Carbon Monoxide 1000	CO	0.97	35	200/1 Hour
Carbon Dioxide 10%	CO ₂	1.52	5000	5%
Methane	CH ₄	0.55	90000	

¹ Air = 1.0

² **Permissible** - Concentration at which is believed that all workers may repeatedly be exposed, day after day, without adverse effect.

³ **STEL** - Short Term Exposure Limit. A 15-minute time weighted average.

⁴ **Lethal** - Concentration that will cause death with short-term exposure.

TLV – Threshold Limit Value; a concentration recommended by the American Conference of Governmental Industrial Hygienists (ACGIH)

TWA – Time Weighted Average; the average concentration of contaminant one can be exposed to over a given eight-hour period.

ACGIH – (American Conference of Governmental Industrial Hygienists) is an organization comprised of Occupational Health Professionals believed by many to be the top experts in the field of Industrial Hygiene. They are recognized as an expert resource by OSHA. The ACGIH releases a bi-annual publication "Threshold Limit Values and Biological Indices" that many safety professionals consider to be the authoritative document on airborne contaminants.

Reference: API RP-49, September 1974 - Reissued August 1978

VI. PROPERTIES OF GASES

A. CARBON DIOXIDE

1. Carbon Dioxide (CO₂) is usually considered inert and is commonly used to extinguish fires. It is 1.52 times heavier than air and will concentrate in low areas of still air. Humans cannot breathe air containing more than 10% CO₂ without losing conscience or becoming disorientation in a few minutes. Continued exposure to CO₂ after being affected will cause convulsions, coma, and respiratory failure.
2. The threshold limit of CO₂ is 5000 ppm. Short-term exposure to 50,000 ppm (5%) is reasonable. This gas is colorless, odorless, and can be tolerated in relatively high concentrations.

B. HYDROGEN SULFIDE

1. Hydrogen Sulfide (H₂S) is a colorless, transparent, flammable gas. It is heavier than air and, hence, may accumulate in low places.
2. Although the slightest presence of H₂S in the air is normally detectable by its characteristic "rotten egg" odor, it is dangerous to rely on the odor as a means of detecting excessive concentrations because the sense of smell is rapidly lost, allowing lethal concentrations to be accumulated without warning. The following table indicates the poisonous nature of H₂S.

CONCENTRATION			EFFECTS
% H ₂ S	PPM	GR/100 SCF ¹	
0.001	10	.65	Safe for 8 hours without respirator. Obvious and unpleasant odor.
0.0015	15	0.975	Safe for 15 minutes of exposure without respirator.
0.01	100	6.48	Kills smell in 3-15 minutes; may sting eyes and throat.
0.02	200	12.96	Kills smell quickly; stings eyes and throat.
0.05	500	32.96	Dizziness; breathing ceases in a few minutes; need prompt artificial respiration.
0.07	700	45.92	Rapid Unconsciousness; death will result if not rescued promptly.
0.1	1000	64.80	Instant unconsciousness, followed by death within minutes.

¹ Grains per 100 Cubic Feet**VII. Treatment Procedures for Hydrogen Sulfide Poisoning**

- A. Remove the victim to fresh air.
- B. If breathing has ceased or is labored, begin resuscitation immediately.
Note: This is the quickest and preferred method of clearing victim's lungs of contaminated air; however, under disaster conditions, it may not be practical to move the victim to fresh air. In such instances, where those rendering first aid must continue to wear masks, a resuscitator should be used.
- C. Apply resuscitator to help purge H₂S from the blood stream.
- D. Keep the victim at rest and prevent chilling.
- E. Get victim under physician's care as soon as possible.

C. SULPHUR DIOXIDE

- 1. Sulfur Dioxide (SO₂) is a colorless, non-flammable, transparent gas.
- 2. SO₂ is produced during the burning of H₂S. Although SO₂ is heavier than air, it can be picked up by a breeze and carried downwind at elevated temperatures. Since SO₂ is extremely irritating to the eyes and mucous membranes of the upper respiratory tract, it has exceptionally good warning powers in this respect. The following table indicates the toxic nature of SO₂:

CONCENTRATION		EFFECTS
% SO ₂	PPM	
0.0005	3 to 5	Pungent odor, normally a person can detect SO ₂ in this range.
0.0012	12	Throat irritation, coughing, constriction of the chest, tearing and smarting of eyes.
0.015	150	So irritating that it can only be endured for a few minutes.
.05	500	Causes a sense of suffocation, event with the

		first breath.
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VIII. BREATHING AIR EQUIPMENT DRILLS FOR ON & OFF DUTY PERSONNEL

An H₂S Drill and Training Session must be given once a week to ALL on-duty personnel with off duty personnel. On-duty and Off-duty personnel will reverse roles on alternate drills.

An H₂S drill and training session must be given once a week to all off-duty personnel in coincidence with on-duty personnel reversing roles on alternate drills.

The purpose of this drill is to instruct the crews in the operation and use of breathing air and H₂S related emergency equipment and to allow the personnel to become acquainted with using the equipment under working conditions. The crews should be trained to put on the breathing air equipment within one minute when required or requested to do so.

The following procedure should be used for weekly drills. The MRC supervisor must be satisfied that the crews are proficient with the equipment.

1. All personnel should be informed that a drill will be held.
2. The Total H₂S Safety Technician or a designee assigned by the MRC Drilling Foreman should initiate the drill by signaling as he/she would if H₂S was detected.
3. Personnel should don their breathing apparatus.
4. Once the breathing air equipment is on, the H₂S Technician should check all personnel to insure proper operation.

A training and information session will be conducted after each drill to answer any H₂S related questions and to cover any gaps identified from one of the following topics:

- Condition II, and III alerts and steps to be taken by all personnel.
- The importance of wind direction when dealing with H₂S.
- Proper use and storage of all types of breathing equipment.
- Proper use and storage of oxygen resuscitators.
- Proper use and storage of H₂S detectors (Mini Checks or equivalent).
- The "buddy system" and the procedure for rescuing a person overcome by H₂S.
- Responsibilities and duties.
- Location of H₂S safety equipment.
- Other parts of the "H₂S Contingency Plan" that should be reviewed.

NOTE: A record of attendance must be kept for weekly drills and training sessions.

IX. HYDROGEN SULFIDE TRAINING CURRICULUM

(FOR EMPLOYERS, VISITORS, AND CONTRACTORS)

EACH PERSON WILL BE INFORMED ON THE RESTRICTIONS OF HAVING BEARDS AND CONTACT LENS. THEY WILL ALSO BE INFORMED OF THE AVAILABILITY OF SPECTACLE KITS.

AFTER THE H2S EQUIPMENT IS RIGGED UP, ALL IN SCOPE PERSONNEL WILL BE H2S TRAINED AND PUT THROUGH A DRILL. ANY DEFICIENCIES WILL BE CORRECTED.

Training Completion cards are good for one year and will indicate date of completion or expiration. Personnel previously trained on another facility and visiting, must attend a "supplemental briefing" on H2S equipment and procedures before beginning duty. Visitors who remain on the location more than 24 hours must receive full H2S training given all crew members. A "supplemental briefing" will include but not be limited to: Location of respirators, familiarization with safe briefing areas, alarms with instruction on responsibilities in the event of a release and hazards of H2S and (SO2, if applicable). A training and drill log will be kept.

Topics for full H2S training shall include the following equipment if on location, but not be limited to the following:

1. **Brief Introduction on H2S**
 - A. Slide or Computer presentation (If Available)
 - B. H2S material will be distributed
 - C. Re-emphasize the properties, toxicity, and hazards of H2S
 - D. Source of SO2 (if applicable)
2. **H2S Detection**
 - A. Description of H2S sensors
 - B. Description of warning system (how it works & it's location)
 - C. Actual location of H2S sensors
 - D. Instruction on use of pump type detector (Gastec)
 - E. Use of card detectors, ampoules, or dosimeters
 - F. Use of combustible gas detector
 - G. Other personnel detectors used
 - H. Alarm conditions I & II,
 - I. SO2 alarms (if applicable)

3. **H2S Protection**

- A. Types of breathing apparatus provided (30-minute SCBA & 5-minute SCBA (with voice diaphragms for communication if supplied)
- B. Principle of how breathing apparatus works
- C. Demonstration on how to use breathing apparatus
- D. Location of breathing apparatus

4. **Cascade System**

- A. Description of cascade system
- B. How system works
- C. Cascade location of rig with reference to briefing areas
- D. How to use cascade system (with 5-minute hose work line units & refill, if supplied)
- E. Importance of wind direction and actual location of Windssocks
- F. Purpose of compressor/function (if one is on site)

5. **H2S Rescue and First Aid**

- A. Importance of wind direction
- B. Safe briefing area
- C. Buddy system
- D. H2S symptoms
- E. Methods of rescue

6. **Hands on Training**

- A. Donning/familiarization of SCBA 30-minute unit
- B. Donning/familiarization of SKADA 5-MIN. Packs
- C. Familiarization of cascades
- D. Use of O2 resuscitator
- E. Alarm conditions - upwind briefing areas, etc...
- F. Duties and responsibilities of all personnel
- G. Procedures for evacuation
- H. Search and Rescue teams

7. **Certification**

- A. Testing on material covered

TOTAL SAFETY US INC., FIT TEST

X. EMPLOYEE INFORMATION

Employee Name: _____ Date: _____

Date of Employee Medical Evaluation: _____

Medical Status (circle): Unrestricted Limitations on Use Use Not
Authorized

RESPIRATOR INFORMATION

Respirator Type (Dustmask, SCBA, etc): _____

Brand: _____

Size: (circle): XS S M L XL

FIT TEST INFORMATION

Type of Fit Test Performed:

Quantitative

Porta Count
Fittester 3000

Fit Factor: _____

Fit Factor: _____

Qualitative

Irritant Smoke
Isoamyl Acetate (Banana Oil)
Saccharin
Bitrex

Passed / Failed
Passed / Failed
Passed / Failed
Passed / Failed

I hereby certify that this fittest was conducted in accordance with the OSHA Fit Testing Protocols found in Appendix A of 1910.134.

Fit Tester Name (Print): _____

Signature: _____ Date: _____

XI. H₂S SAFETY SERVICES

HYDROGEN SULFIDE SAFETY PACKAGE – Contained on location in Total Safety H₂S Equipment Trailer, unless otherwise noted:

RESPIRATORY SAFETY SYSTEMS

QTY DESCRIPTION

- 12 30-Minute Pressure Demand SCBA
(4-Primary Safe Briefing Area, 4-Secondary Safe Briefing Area, 4-floor with one of these for derrick man)
- 9 Hose Line 5-minute Work Unit w/Escaped Cylinder (1 in derrick, 6 on drill floor, 1 in mud pit wt area, 1 in shaker area)

The following shall be part of the package if requested by the MRC Foremen (at least one trailer with cascade system is required to be located in the MRC Magnolia asset for use as needed)

- 1 Breathing air cascade of 10 bottles w/regulator
- 2 Refill lines to refill 30-minute units on location
- 1 6-Man manifold that can be rigged up to work area on floor, if needed
- 6 25 foot hose lines
- 2 50 foot hose lines
- 100 Feet of hose line to rig cascade up to 12 man manifold on floor
- 12 30-minute Self Contained Breathing apparatus

DETECTION AND ALARM SAFETY SYSTEM

- 1 H₂S Fixed Monitor w/8Channels (Loc determined at rig up) suggested.
(Mud pit area, shaker area, bell nipple area, floor/driller area, & outside quarters)
- 5 H₂S Sensors
- 3 Explosion Proof Alarms (Light and Siren)
(1 on floor, 1 in work area, 1 in trailer area where quarters are located)
- 2 Personal H₂S monitors
- 1 Portable Tri-Gas Hand Held Meter (O₂, LEL, H₂S)
- 1 Sensidyne/Gastech Manual Pump Type Detector
- 8 Boxes H₂S Tubes Various Ranges
- 2 Boxes SO₂ Tubes Various Ranges
- 1 Calibration Gas
- 1 Set Paper Work for Records: Training, Cal, Inspection, other

ADDITIONAL SAFETY RELATED EQUIPMENT

QTY DESCRIPTION

- 2 Windsocks with Pole and Bracket
- 1 Set Well Condition Sign w/Green, Yellow, Red Flags
- 1 Primary Safe Briefing Area Sign
- 1 Secondary Safe Briefing Area Sign
- 6 Operating Condition Signs for Work Areas & Living Quarters

**TRAILER WITH BREATHING AIR CASCADE WILL
ALSO INCLUDE THE FOLLOWING:**

This equipment will be part of the H2S equipment stored in the trailer, when on location

- 1 First aid kit
- 1 Fire Blanket
- 1 Eye wash station
- 2 Safety Harness w/150' safety line

XII. EMERGENCY PHONE NUMBERS (Updated March 18, 2009)**EMERGENCY PHONE NUMBERS**

MRC Energy Co. Emergency Phone #

MRC Energy Co. Permian Operations Phone-----

MRC Energy Co. Production

113 Daw Rd

Mansfield LA 71052

Title	Names	Phone	Cell
Operations Manager			
Operation Supt.			
Operations Supervisor			
Operations Supervisor			
Office Supervisor			
HSE			
Scheduler Planner			

Hydrogen Sulfide Safety Consultants

Total Safety W. Bender Blvd. Hobbs, NM	575-392-2973	After Hours 24 Hour Call Center Through Office Number
Tommy Throckmorton Operations Manager	575-392-2973	940-268-9614
Rodney Jourdan Sales Contact	575-392-2973	432-349-3928

**MRC Energy Co. MEDICAL RESPONSE PLAN AND IT'S MEDICAL
PROTOCOLS WILL BE FOLLOWED**

MEDICAL COORDINATOR # -----

Emergency Numbers & Directions

Hospitals (911)

Artesia General Hospital 702 N. 13th St. Artesia, NM 88210	Main Phone Number	575-748-3333
Nor-Lea General Hospital 1600 N. Main Ave. Lovington, NM 88260	Main Phone Number	575-396-6611
Lea Regional Medical Center 5419 N. Lovington Hwy Hobbs, NM 88240	Main Phone Number	575-492-5260
Carlsbad General Hospital 2430 W. Pierce St. Carlsbad, NM	Main Phone Number	575-887-4100
Lovelace Regional Hospital 117 E. 19th St Roswell, NM 88201	Main Phone Number	575-627-7000
Winkler Co. Memorial Hospital 821 Jeffee Dr. Kermit, Texas 79745	Main Phone Number	432-586-8299
Reeves County Hospital 2323 Texas St. Pecos, Texas 79772	Main Phone Number	432-447-3551

State Police (911)

Texas DPS Loving co. 225 N.Pecos Mentone, Texas 79754	Office Number	432-377-2411
Texas DPS Winkler Co. 100 E Winkler Kermit, Texas 79745	Office Number	432-586-3465
Texas DPS Pecos Co. 148 N I-20 Frontage RD Pecos, Texas 79772	Office Number	432-447-3532
New Mexico State Police 3300 W. Main St Artesia, NM	Office Number	575-748-9718
New Mexico State Police 304 N. Canyon St Carlsbad, NM 88220	Office Number	575-885-3137
New Mexico State Police 5100 Jack Gomez Blvd. Hobbs, NM 88240	Office Number	575-392-5588

Local Law Enforcement (911) (Sheriff)

Reeves Co. Sheriff 500 N. Oak ST Pecos, Texas 79722	Office Number	432-445-4901
Winkler Co. Sheriff 1300 Bellaire St. Kermit, Texas 79745	Office Number	432-586-3461
Loving Co. Sheriff Courthouse Mentone, Texas	Office Number	432-377-2411
Lea Co. Sheriff 1417 S. Commercial St. Lovington, NM 88260	Office Number	
Eddy Co. Sheriff 305 N 7th St. Artesia, NM 88210	Office Number	575-766-9888
Eddy Co. Sheriff 305 N 7th St. Carlsbad, NM 88220	Office Number	575-746-9888

Federal & State Agencies

OSHA Lubbock Area Office 1205 Texas Av. Room 806 Lubbock, Texas 79401	Main Number	806-472-7681 EXT 7685
New Mexico Environment Department 400 N Pennsylvania Roswell, NM 88201	Joe Fresquez	575-623-3935
Texas Railroad Commission Midland, Texas	Main Number	844-773-0305
BLM Carlsbad, NM Field Office 620 E. Green ST Carlsbad, NM 88220	Main Number	575-234-5972
BLM Hobbs Field Station 414 W. Taylor Rd. Hobbs, NM 88240	Main Number	575-393-3612
BLM Roswell District Office 2909 W. Second St. Roswell, NM 88201	Main Number	575-627-0272
TECQ Texas Commission on Environmental Quality	Main Number	800-832-8224
New Mexico OCD		
U.S. Environmental Protection Agency Region 6 Texas/New Mexico	Main Number	214-655-2222
National Response Center Toxic Chemicals & Oil Spills	Main Number	800-424-8802

Rig Company

XIII. EVACUATION OF THE GENERAL PUBLIC

The procedure to be used in alerting nearby persons in the event of any occurrence that could pose a threat to life or property will be arranged and completed with public officials in detail, prior to drilling into the hydrogen sulfide formations.

In the event of an actual emergency, the following steps will be immediately taken:

1. The MRC Energy Co.'s representative will dispatch sufficient personnel to immediately warn each resident and transients down-wind within radius of exposure from the well site. Then warn all residence in the radius of exposure. Additional evacuation zones may be necessary as the situation warrants.
2. The MRC Energy Co.'s representative will immediately notify proper authorities, including the Sheriff's Office, Highway Patrol, and any other public officials as described above and will enlist their assistance in warning residents and transients in the calculated radius of exposure.
3. The MRC Energy Co.'s representative will dispatch sufficient personnel to divert traffic in the vicinity away from the potentially dangerous area. A guard to the entrance of the well site will be posted to monitor essential and non essential traffic.
4. General:
 - A. The area included within the radius of exposure is considered to be the zone of maximum potential hazard from a hydrogen sulfide gas escape. Immediate evacuation of public areas, in accordance with the provisions of this contingency plan, is imperative. When it is determined that conditions exist which create an additional area (beyond the initial zone of maximum potential hazard) vulnerable to possible hazard, public areas in the additional hazardous area will be evacuated in accordance with the contingency plan.
 - B. In the event of a disaster, after the public areas have been evacuated and traffic stopped, it is expected that local civil authorities will have arrived and within a few hours will have assumed direction of and control of the public, including all public areas. MRC Energy Co. will cooperate with these authorities to the fullest extent and will exert every effort by careful advice to such authorities to prevent panic or rumors.
 - C. MRC Energy Co. will dispatch appropriate management personnel at the disaster site as soon as possible. The company's personnel

will cooperate with and provide such information to civil authorities as they might require.

- D. One of the products of the combustion of hydrogen sulfide is sulfur dioxide (SO_2). Under certain conditions this gas may be equally as dangerous as H_2S . A pump type detector device, which determines the percent of SO_2 in air through concentrations in ppm, will be available. Although normal air movement is sufficient to dissipate this material to safe levels, the SO_2 detector should be utilized to check concentrations in the proximity of the well once every hour, or as necessary and the situation warrants. Also, if any low areas are suspected of having high concentrations, personnel should be made aware of these areas, and steps should be taken to determine whether or not these low areas are hazardous.



Matador Resources

Lea County, New Mexico (NAD 27)

Charles Ling Fed Com

Charles Ling Fed Com #214H

Wellbore #1

Plan: Design #1

Standard Planning Report

07 May, 2018





MS Directional Planning Report



Database:	EDM 5000.14 Conroe DB	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Company:	Matador Resources	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Project:	Lea County, New Mexico (NAD 27)	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site:	Charles Ling Fed Com	North Reference:	Grid
Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Lea County, New Mexico (NAD 27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Well	Charles Ling Fed Com #214H			
Well Position	+N/-S	64.70 usft	Northing:	451,346.96 usft
	+E/-W	3,886.55 usft	Easting:	746,311.61 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	
			Ground Level:	3,626.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2018	5/7/2018	6.91	60.04	47,899

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	181.88

Plan Survey Tool Program	Date	5/7/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,193.67	Design #1 (Wellbore #1)	MWD
				OWSG MWD - Standard

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
999.59	4.00	325.24	999.27	11.44	-7.94	1.00	1.00	0.00	325.24	
5,520.13	4.00	325.24	5,508.82	270.24	-187.55	0.00	0.00	0.00	0.00	
5,786.53	0.00	0.00	5,775.00	277.87	-192.84	1.50	-1.50	0.00	180.00	VP - Charles Ling F
11,869.77	0.00	0.00	11,858.24	277.87	-192.84	0.00	0.00	0.00	0.00	
12,669.77	80.00	179.56	12,422.49	-195.58	-189.22	10.00	10.00	0.00	179.56	PBHL - Charles Lin
12,836.44	90.00	179.56	12,437.00	-361.40	-187.95	6.00	6.00	0.00	0.00	
17,193.91	90.00	179.56	12,437.00	-4,718.75	-154.63	0.00	0.00	0.00	0.00	PBHL - Charles Lin



MS Directional
Planning Report



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Company:	Matador Resources	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Project:	Lea County, New Mexico (NAD 27)	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site:	Charles Ling Fed Com	North Reference:	Grid
Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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
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
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 1.00°/100' Build									
700.00	1.00	325.24	699.99	0.72	-0.50	-0.70	1.00	1.00	0.00
800.00	2.00	325.24	799.96	2.87	-1.99	-2.80	1.00	1.00	0.00
900.00	3.00	325.24	899.86	6.45	-4.48	-6.30	1.00	1.00	0.00
999.59	4.00	325.24	999.27	11.44	-7.94	-11.18	1.00	1.00	0.00
Begin 4.00° Tangent									
1,100.00	4.00	325.24	1,099.43	17.19	-11.93	-16.79	0.00	0.00	0.00
1,200.00	4.00	325.24	1,199.19	22.92	-15.90	-22.38	0.00	0.00	0.00
1,300.00	4.00	325.24	1,298.95	28.64	-19.88	-27.97	0.00	0.00	0.00
1,339.08	4.00	325.24	1,337.93	30.88	-21.43	-30.16	0.00	0.00	0.00
Z (Rustler)									
1,350.00	4.00	325.24	1,348.82	31.50	-21.86	-30.77	0.00	0.00	0.00
13 3/8"									
1,400.00	4.00	325.24	1,398.70	34.37	-23.85	-33.57	0.00	0.00	0.00
1,500.00	4.00	325.24	1,498.46	40.09	-27.82	-39.16	0.00	0.00	0.00
1,600.00	4.00	325.24	1,598.22	45.82	-31.80	-44.75	0.00	0.00	0.00
1,700.00	4.00	325.24	1,697.97	51.54	-35.77	-50.34	0.00	0.00	0.00
1,800.00	4.00	325.24	1,797.73	57.27	-39.74	-55.93	0.00	0.00	0.00
1,867.05	4.00	325.24	1,864.62	61.10	-42.41	-59.68	0.00	0.00	0.00
Z (Salado) (Top Salt)									
1,900.00	4.00	325.24	1,897.49	62.99	-43.72	-61.53	0.00	0.00	0.00
2,000.00	4.00	325.24	1,997.24	68.72	-47.69	-67.12	0.00	0.00	0.00
2,100.00	4.00	325.24	2,097.00	74.44	-51.66	-72.71	0.00	0.00	0.00
2,200.00	4.00	325.24	2,196.76	80.17	-55.64	-78.30	0.00	0.00	0.00
2,300.00	4.00	325.24	2,296.51	85.89	-59.61	-83.89	0.00	0.00	0.00
2,400.00	4.00	325.24	2,396.27	91.62	-63.58	-89.48	0.00	0.00	0.00
2,500.00	4.00	325.24	2,496.03	97.34	-67.55	-95.08	0.00	0.00	0.00
2,600.00	4.00	325.24	2,595.79	103.07	-71.53	-100.67	0.00	0.00	0.00
2,700.00	4.00	325.24	2,695.54	108.79	-75.50	-106.26	0.00	0.00	0.00
2,800.00	4.00	325.24	2,795.30	114.52	-79.47	-111.85	0.00	0.00	0.00
2,900.00	4.00	325.24	2,895.06	120.24	-83.45	-117.44	0.00	0.00	0.00
3,000.00	4.00	325.24	2,994.81	125.97	-87.42	-123.03	0.00	0.00	0.00
3,100.00	4.00	325.24	3,094.57	131.69	-91.39	-128.63	0.00	0.00	0.00
3,200.00	4.00	325.24	3,194.33	137.42	-95.37	-134.22	0.00	0.00	0.00
3,300.00	4.00	325.24	3,294.08	143.14	-99.34	-139.81	0.00	0.00	0.00
3,400.00	4.00	325.24	3,393.84	148.87	-103.31	-145.40	0.00	0.00	0.00
3,500.00	4.00	325.24	3,493.60	154.59	-107.29	-150.99	0.00	0.00	0.00
3,600.00	4.00	325.24	3,593.35	160.32	-111.26	-156.59	0.00	0.00	0.00
3,700.00	4.00	325.24	3,693.11	166.04	-115.23	-162.18	0.00	0.00	0.00
3,747.50	4.00	325.24	3,740.50	168.76	-117.12	-164.83	0.00	0.00	0.00
Z (Castile (Ti))									
3,800.00	4.00	325.24	3,792.87	171.77	-119.21	-167.77	0.00	0.00	0.00
3,900.00	4.00	325.24	3,892.63	177.49	-123.18	-173.36	0.00	0.00	0.00
4,000.00	4.00	325.24	3,992.38	183.22	-127.15	-178.95	0.00	0.00	0.00
4,100.00	4.00	325.24	4,092.14	188.94	-131.13	-184.54	0.00	0.00	0.00
4,200.00	4.00	325.24	4,191.90	194.67	-135.10	-190.14	0.00	0.00	0.00



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Site:	Charles Ling Fed Com	North Reference:	Grid
Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
4,300.00	4.00	325.24	4,291.65	200.39	-139.07	-195.73	0.00	0.00	0.00
4,400.00	4.00	325.24	4,391.41	206.12	-143.04	-201.32	0.00	0.00	0.00
4,500.00	4.00	325.24	4,491.17	211.84	-147.02	-206.91	0.00	0.00	0.00
4,600.00	4.00	325.24	4,590.92	217.56	-150.99	-212.50	0.00	0.00	0.00
4,700.00	4.00	325.24	4,690.68	223.29	-154.96	-218.09	0.00	0.00	0.00
4,800.00	4.00	325.24	4,790.44	229.01	-158.94	-223.69	0.00	0.00	0.00
4,900.00	4.00	325.24	4,890.19	234.74	-162.91	-229.28	0.00	0.00	0.00
5,000.00	4.00	325.24	4,989.95	240.46	-166.88	-234.87	0.00	0.00	0.00
5,100.00	4.00	325.24	5,089.71	246.19	-170.86	-240.46	0.00	0.00	0.00
5,200.00	4.00	325.24	5,189.47	251.91	-174.83	-246.05	0.00	0.00	0.00
5,229.11	4.00	325.24	5,218.50	253.58	-175.99	-247.68	0.00	0.00	0.00
Z (G30:CS14-CSB) (Base Salt)									
5,281.23	4.00	325.24	5,270.50	256.57	-178.06	-250.60	0.00	0.00	0.00
Z (G26: Bell Cyn.)									
5,300.00	4.00	325.24	5,289.22	257.64	-178.80	-251.65	0.00	0.00	0.00
9 5/8"									
5,400.00	4.00	325.24	5,388.98	263.36	-182.78	-257.24	0.00	0.00	0.00
5,500.00	4.00	325.24	5,488.74	269.09	-186.75	-262.83	0.00	0.00	0.00
5,520.13	4.00	325.24	5,508.82	270.24	-187.55	-263.95	0.00	0.00	0.00
Begin 1.50°/100' Drop									
5,600.00	2.80	325.24	5,588.54	274.13	-190.25	-267.75	1.50	-1.50	0.00
5,700.00	1.30	325.24	5,688.48	277.07	-192.29	-270.62	1.50	-1.50	0.00
5,786.53	0.00	0.00	5,775.00	277.87	-192.84	-271.41	1.50	-1.50	40.17
Begin Vertical Hold - VP - Charles Ling Fed Com #214H									
5,800.00	0.00	0.00	5,788.47	277.87	-192.84	-271.41	0.00	0.00	0.00
5,900.00	0.00	0.00	5,888.47	277.87	-192.84	-271.41	0.00	0.00	0.00
6,000.00	0.00	0.00	5,988.47	277.87	-192.84	-271.41	0.00	0.00	0.00
6,100.00	0.00	0.00	6,088.47	277.87	-192.84	-271.41	0.00	0.00	0.00
6,200.00	0.00	0.00	6,188.47	277.87	-192.84	-271.41	0.00	0.00	0.00
6,300.00	0.00	0.00	6,288.47	277.87	-192.84	-271.41	0.00	0.00	0.00
6,358.03	0.00	0.00	6,346.50	277.87	-192.84	-271.41	0.00	0.00	0.00
Z (G13: Cherry Cyn.)									
6,400.00	0.00	0.00	6,388.47	277.87	-192.84	-271.41	0.00	0.00	0.00
6,500.00	0.00	0.00	6,488.47	277.87	-192.84	-271.41	0.00	0.00	0.00
6,600.00	0.00	0.00	6,588.47	277.87	-192.84	-271.41	0.00	0.00	0.00
6,700.00	0.00	0.00	6,688.47	277.87	-192.84	-271.41	0.00	0.00	0.00
6,800.00	0.00	0.00	6,788.47	277.87	-192.84	-271.41	0.00	0.00	0.00
6,900.00	0.00	0.00	6,888.47	277.87	-192.84	-271.41	0.00	0.00	0.00
7,000.00	0.00	0.00	6,988.47	277.87	-192.84	-271.41	0.00	0.00	0.00
7,100.00	0.00	0.00	7,088.47	277.87	-192.84	-271.41	0.00	0.00	0.00
7,200.00	0.00	0.00	7,188.47	277.87	-192.84	-271.41	0.00	0.00	0.00
7,300.00	0.00	0.00	7,288.47	277.87	-192.84	-271.41	0.00	0.00	0.00
7,400.00	0.00	0.00	7,388.47	277.87	-192.84	-271.41	0.00	0.00	0.00
7,500.00	0.00	0.00	7,488.47	277.87	-192.84	-271.41	0.00	0.00	0.00
7,500.03	0.00	0.00	7,488.50	277.87	-192.84	-271.41	0.00	0.00	0.00
Z (G7: Brushy Cyn.) Antelope Ridge									
7,600.00	0.00	0.00	7,588.47	277.87	-192.84	-271.41	0.00	0.00	0.00
7,700.00	0.00	0.00	7,688.47	277.87	-192.84	-271.41	0.00	0.00	0.00
7,800.00	0.00	0.00	7,788.47	277.87	-192.84	-271.41	0.00	0.00	0.00
7,900.00	0.00	0.00	7,888.47	277.87	-192.84	-271.41	0.00	0.00	0.00
8,000.00	0.00	0.00	7,988.47	277.87	-192.84	-271.41	0.00	0.00	0.00
8,100.00	0.00	0.00	8,088.47	277.87	-192.84	-271.41	0.00	0.00	0.00
8,200.00	0.00	0.00	8,188.47	277.87	-192.84	-271.41	0.00	0.00	0.00



MS Directional
Planning Report



Database:	EDM 5000.14 Conroe DB	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Company:	Matador Resources	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Project:	Lea County, New Mexico (NAD 27)	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site:	Charles Ling Fed Com	North Reference:	Grid
Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
8,300.00	0.00	0.00	8,288.47	277.87	-192.84	-271.41	0.00	0.00	0.00
8,400.00	0.00	0.00	8,388.47	277.87	-192.84	-271.41	0.00	0.00	0.00
8,500.00	0.00	0.00	8,488.47	277.87	-192.84	-271.41	0.00	0.00	0.00
8,600.00	0.00	0.00	8,588.47	277.87	-192.84	-271.41	0.00	0.00	0.00
8,700.00	0.00	0.00	8,688.47	277.87	-192.84	-271.41	0.00	0.00	0.00
8,800.00	0.00	0.00	8,788.47	277.87	-192.84	-271.41	0.00	0.00	0.00
8,900.00	0.00	0.00	8,888.47	277.87	-192.84	-271.41	0.00	0.00	0.00
9,000.00	0.00	0.00	8,988.47	277.87	-192.84	-271.41	0.00	0.00	0.00
9,037.03	0.00	0.00	9,025.50	277.87	-192.84	-271.41	0.00	0.00	0.00
Z (G4: BSGI (CS9))									
9,100.00	0.00	0.00	9,088.47	277.87	-192.84	-271.41	0.00	0.00	0.00
9,200.00	0.00	0.00	9,188.47	277.87	-192.84	-271.41	0.00	0.00	0.00
9,300.00	0.00	0.00	9,288.47	277.87	-192.84	-271.41	0.00	0.00	0.00
9,400.00	0.00	0.00	9,388.47	277.87	-192.84	-271.41	0.00	0.00	0.00
9,500.00	0.00	0.00	9,488.47	277.87	-192.84	-271.41	0.00	0.00	0.00
9,600.00	0.00	0.00	9,588.47	277.87	-192.84	-271.41	0.00	0.00	0.00
9,700.00	0.00	0.00	9,688.47	277.87	-192.84	-271.41	0.00	0.00	0.00
9,800.00	0.00	0.00	9,788.47	277.87	-192.84	-271.41	0.00	0.00	0.00
9,836.03	0.00	0.00	9,824.50	277.87	-192.84	-271.41	0.00	0.00	0.00
Z (L5.3: FBSC)									
9,900.00	0.00	0.00	9,888.47	277.87	-192.84	-271.41	0.00	0.00	0.00
10,000.00	0.00	0.00	9,988.47	277.87	-192.84	-271.41	0.00	0.00	0.00
10,044.03	0.00	0.00	10,032.50	277.87	-192.84	-271.41	0.00	0.00	0.00
Z (L5.1: FBSC)									
10,100.00	0.00	0.00	10,088.47	277.87	-192.84	-271.41	0.00	0.00	0.00
10,200.00	0.00	0.00	10,188.47	277.87	-192.84	-271.41	0.00	0.00	0.00
10,300.00	0.00	0.00	10,288.47	277.87	-192.84	-271.41	0.00	0.00	0.00
10,400.00	0.00	0.00	10,388.47	277.87	-192.84	-271.41	0.00	0.00	0.00
10,464.03	0.00	0.00	10,452.50	277.87	-192.84	-271.41	0.00	0.00	0.00
Z (L4.3: SBSC)									
10,500.00	0.00	0.00	10,488.47	277.87	-192.84	-271.41	0.00	0.00	0.00
10,600.00	0.00	0.00	10,588.47	277.87	-192.84	-271.41	0.00	0.00	0.00
10,700.00	0.00	0.00	10,688.47	277.87	-192.84	-271.41	0.00	0.00	0.00
10,755.03	0.00	0.00	10,743.50	277.87	-192.84	-271.41	0.00	0.00	0.00
Z (L4.1: SBSG)									
10,800.00	0.00	0.00	10,788.47	277.87	-192.84	-271.41	0.00	0.00	0.00
10,900.00	0.00	0.00	10,888.47	277.87	-192.84	-271.41	0.00	0.00	0.00
11,000.00	0.00	0.00	10,988.47	277.87	-192.84	-271.41	0.00	0.00	0.00
11,100.00	0.00	0.00	11,088.47	277.87	-192.84	-271.41	0.00	0.00	0.00
11,200.00	0.00	0.00	11,188.47	277.87	-192.84	-271.41	0.00	0.00	0.00
11,280.03	0.00	0.00	11,268.50	277.87	-192.84	-271.41	0.00	0.00	0.00
Z (L3.3: TBSC)									
11,300.00	0.00	0.00	11,288.47	277.87	-192.84	-271.41	0.00	0.00	0.00
11,400.00	0.00	0.00	11,388.47	277.87	-192.84	-271.41	0.00	0.00	0.00
11,500.00	0.00	0.00	11,488.47	277.87	-192.84	-271.41	0.00	0.00	0.00
11,600.00	0.00	0.00	11,588.47	277.87	-192.84	-271.41	0.00	0.00	0.00
11,700.00	0.00	0.00	11,688.47	277.87	-192.84	-271.41	0.00	0.00	0.00
11,800.00	0.00	0.00	11,788.47	277.87	-192.84	-271.41	0.00	0.00	0.00
11,857.03	0.00	0.00	11,845.50	277.87	-192.84	-271.41	0.00	0.00	0.00
Z (L3.1: TBSC)									
11,869.77	0.00	0.00	11,858.24	277.87	-192.84	-271.41	0.00	0.00	0.00
Begin 10.00°/100' Build									
11,900.00	3.02	179.56	11,888.46	277.07	-192.84	-270.61	10.00	10.00	0.00



MS Directional Planning Report



Database:	EDM 5000.14 Conroe DB	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Company:	Matador Resources	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Project:	Lea County, New Mexico (NAD 27)	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site:	Charles Ling Fed Com	North Reference:	Grid
Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
11,950.00	8.02	179.56	11,938.21	272.26	-192.80	-265.80	10.00	10.00	0.00
12,000.00	13.02	179.56	11,987.35	263.13	-192.73	-256.68	10.00	10.00	0.00
12,050.00	18.02	179.56	12,035.51	249.76	-192.63	-243.31	10.00	10.00	0.00
12,055.25	18.55	179.56	12,040.50	248.11	-192.62	-241.67	10.00	10.00	0.00
Z (L. TBSG)									
12,100.00	23.02	179.56	12,082.33	232.23	-192.49	-225.81	10.00	10.00	0.00
12,103.45	23.37	179.56	12,085.50	230.87	-192.48	-224.45	10.00	10.00	0.00
Z (L2: WFMP A)									
12,150.00	28.02	179.56	12,127.43	210.70	-192.33	-204.29	10.00	10.00	0.00
12,150.08	28.02	179.56	12,127.50	210.66	-192.33	-204.25	0.00	0.00	0.00
Z (X Sand (T))									
12,185.81	31.60	179.56	12,158.50	192.90	-192.19	-186.50	10.02	10.02	0.00
Z (X Sand (B))									
12,200.00	33.02	179.56	12,170.49	185.31	-192.14	-178.92	10.00	10.00	0.00
12,250.00	38.02	179.56	12,211.17	156.27	-191.91	-149.90	10.00	10.00	0.00
12,250.42	38.06	179.56	12,211.50	156.01	-191.91	-149.64	10.00	10.00	0.00
Z (Y Sand (T))									
12,296.37	42.66	179.56	12,246.50	126.27	-191.68	-119.92	10.00	10.00	0.00
Z (Y Sand (B))									
12,300.00	43.02	179.56	12,249.17	123.80	-191.67	-117.45	10.00	10.00	0.00
12,350.00	48.02	179.56	12,284.19	88.13	-191.39	-81.81	10.00	10.00	0.00
12,397.57	52.78	179.56	12,314.50	51.48	-191.11	-45.20	10.00	10.00	0.00
Z (WFMP A Fat)									
12,400.00	53.02	179.56	12,315.96	49.55	-191.10	-43.26	10.00	10.00	0.00
12,450.00	58.02	179.56	12,344.26	8.35	-190.78	-2.09	10.00	10.00	0.00
12,500.00	63.02	179.56	12,368.85	-35.17	-190.45	41.38	10.00	10.00	0.00
12,550.00	68.02	179.56	12,389.56	-80.66	-190.10	86.84	10.00	10.00	0.00
12,600.00	73.02	179.56	12,406.23	-127.78	-189.74	133.92	10.00	10.00	0.00
12,650.00	78.02	179.56	12,418.73	-176.17	-189.37	182.28	10.00	10.00	0.00
12,669.77	80.00	179.56	12,422.49	-195.58	-189.22	201.67	10.00	10.00	0.00
Begin 6.00°/100° Build - 7"									
12,700.00	81.81	179.56	12,427.27	-225.43	-188.99	231.50	6.00	6.00	0.00
12,750.00	84.81	179.56	12,433.09	-275.08	-188.62	281.11	6.00	6.00	0.00
12,800.00	87.81	179.56	12,436.31	-324.97	-188.23	330.96	6.00	6.00	0.00
12,836.44	90.00	179.56	12,437.00	-361.40	-187.95	367.36	6.00	6.00	0.00
Begin 90.00° Lateral									
12,900.00	90.00	179.56	12,437.00	-424.96	-187.47	430.87	0.00	0.00	0.00
13,000.00	90.00	179.56	12,437.00	-524.96	-186.70	530.79	0.00	0.00	0.00
13,100.00	90.00	179.56	12,437.00	-624.95	-185.94	630.71	0.00	0.00	0.00
13,200.00	90.00	179.56	12,437.00	-724.95	-185.17	730.63	0.00	0.00	0.00
13,300.00	90.00	179.56	12,437.00	-824.95	-184.41	830.54	0.00	0.00	0.00
13,400.00	90.00	179.56	12,437.00	-924.94	-183.65	930.46	0.00	0.00	0.00
13,500.00	90.00	179.56	12,437.00	-1,024.94	-182.88	1,030.38	0.00	0.00	0.00
13,600.00	90.00	179.56	12,437.00	-1,124.94	-182.12	1,130.30	0.00	0.00	0.00
13,700.00	90.00	179.56	12,437.00	-1,224.94	-181.35	1,230.22	0.00	0.00	0.00
13,800.00	90.00	179.56	12,437.00	-1,324.93	-180.59	1,330.14	0.00	0.00	0.00
13,900.00	90.00	179.56	12,437.00	-1,424.93	-179.82	1,430.05	0.00	0.00	0.00
14,000.00	90.00	179.56	12,437.00	-1,524.93	-179.06	1,529.97	0.00	0.00	0.00
14,100.00	90.00	179.56	12,437.00	-1,624.92	-178.29	1,629.89	0.00	0.00	0.00
14,200.00	90.00	179.56	12,437.00	-1,724.92	-177.53	1,729.81	0.00	0.00	0.00
14,300.00	90.00	179.56	12,437.00	-1,824.92	-176.76	1,829.73	0.00	0.00	0.00
14,400.00	90.00	179.56	12,437.00	-1,924.92	-176.00	1,929.65	0.00	0.00	0.00
14,500.00	90.00	179.56	12,437.00	-2,024.91	-175.23	2,029.57	0.00	0.00	0.00



MS Directional Planning Report



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Company:	Matador Resources	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Project:	Lea County, New Mexico (NAD 27)	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site:	Charles Ling Fed Com	North Reference:	Grid
Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
14,600.00	90.00	179.56	12,437.00	-2,124.91	-174.47	2,129.48	0.00	0.00	0.00
14,700.00	90.00	179.56	12,437.00	-2,224.91	-173.70	2,229.40	0.00	0.00	0.00
14,800.00	90.00	179.56	12,437.00	-2,324.90	-172.94	2,329.32	0.00	0.00	0.00
14,900.00	90.00	179.56	12,437.00	-2,424.90	-172.17	2,429.24	0.00	0.00	0.00
15,000.00	90.00	179.56	12,437.00	-2,524.90	-171.41	2,529.16	0.00	0.00	0.00
15,100.00	90.00	179.56	12,437.00	-2,624.89	-170.64	2,629.08	0.00	0.00	0.00
15,200.00	90.00	179.56	12,437.00	-2,724.89	-169.88	2,728.99	0.00	0.00	0.00
15,300.00	90.00	179.56	12,437.00	-2,824.89	-169.12	2,828.91	0.00	0.00	0.00
15,400.00	90.00	179.56	12,437.00	-2,924.89	-168.35	2,928.83	0.00	0.00	0.00
15,500.00	90.00	179.56	12,437.00	-3,024.88	-167.59	3,028.75	0.00	0.00	0.00
15,600.00	90.00	179.56	12,437.00	-3,124.88	-166.82	3,128.67	0.00	0.00	0.00
15,700.00	90.00	179.56	12,437.00	-3,224.88	-166.06	3,228.59	0.00	0.00	0.00
15,800.00	90.00	179.56	12,437.00	-3,324.87	-165.29	3,328.50	0.00	0.00	0.00
15,900.00	90.00	179.56	12,437.00	-3,424.87	-164.53	3,428.42	0.00	0.00	0.00
16,000.00	90.00	179.56	12,437.00	-3,524.87	-163.76	3,528.34	0.00	0.00	0.00
16,100.00	90.00	179.56	12,437.00	-3,624.87	-163.00	3,628.26	0.00	0.00	0.00
16,200.00	90.00	179.56	12,437.00	-3,724.86	-162.23	3,728.18	0.00	0.00	0.00
16,300.00	90.00	179.56	12,437.00	-3,824.86	-161.47	3,828.10	0.00	0.00	0.00
16,400.00	90.00	179.56	12,437.00	-3,924.86	-160.70	3,928.01	0.00	0.00	0.00
16,500.00	90.00	179.56	12,437.00	-4,024.85	-159.94	4,027.93	0.00	0.00	0.00
16,600.00	90.00	179.56	12,437.00	-4,124.85	-159.17	4,127.85	0.00	0.00	0.00
16,700.00	90.00	179.56	12,437.00	-4,224.85	-158.41	4,227.77	0.00	0.00	0.00
16,800.00	90.00	179.56	12,437.00	-4,324.85	-157.64	4,327.69	0.00	0.00	0.00
16,900.00	90.00	179.56	12,437.00	-4,424.84	-156.88	4,427.61	0.00	0.00	0.00
17,000.00	90.00	179.56	12,437.00	-4,524.84	-156.11	4,527.52	0.00	0.00	0.00
17,100.00	90.00	179.56	12,437.00	-4,624.84	-155.35	4,627.44	0.00	0.00	0.00
17,193.91	90.00	179.56	12,437.00	-4,718.74	-154.63	4,721.28	0.00	0.00	0.00

PBHL - 5 1/2" - PBHL - Charles Ling Fed Com #214H

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
VP - Charles Ling Fed - hit/miss target - Shape - Point	0.00	0.01	5,775.00	277.87	-192.84	451,624.83	746,118.76	32° 14' 20.855 N	103° 32' 14.376 W
PBHL - Charles Ling F - plan hits target center - Point	0.00	0.00	12,437.00	-4,718.75	-154.63	446,628.21	746,156.98	32° 13' 31.409 N	103° 32' 14.362 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,350.00	1,348.82	13 3/8"	13-3/8	17-1/2
5,300.00	5,289.22	9 5/8"	9-5/8	12-1/4
12,669.77	12,422.49	7"	7	7-1/2
17,193.91	12,437.00	5 1/2"	5-1/2	6



MS Directional Planning Report



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Project:	Lea County, New Mexico (NAD 27)	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site:	Charles Ling Fed Com	North Reference:	Grid
Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,339.08	1,337.93	Z (Rustler)		0.00	179.56	
1,867.05	1,864.62	Z (Salado) (Top Salt)		0.00	179.56	
3,747.50	3,740.50	Z (Castile (T))		0.00	179.56	
5,229.11	5,218.50	Z (G30:CS14-CSB) (Base Salt)		0.00	179.56	
5,281.23	5,270.50	Z (G26: Bell Cyn.)		0.00	179.56	
6,358.03	6,346.50	Z (G13: Cherry Cyn.)		0.00	179.56	
7,500.03	7,488.50	Z (G7: Brushy Cyn.) Antelope Ridge		0.00	179.56	
9,037.03	9,025.50	Z (G4: BSG (CS9))		0.00	179.56	
9,836.03	9,824.50	Z (L5.3: FBSC)		0.00	179.56	
10,044.03	10,032.50	Z (L5.1: FBSC)		0.00	179.56	
10,464.03	10,452.50	Z (L4.3: SBSC)		0.00	179.56	
10,755.03	10,743.50	Z (L4.1: SBSC)		0.00	179.56	
11,280.03	11,268.50	Z (L3.3: TBSC)		0.00	179.56	
11,857.03	11,845.50	Z (L3.1: TBSC)		0.00	179.56	
12,055.25	12,040.50	Z (L. TBSC)		0.00	179.56	
12,103.45	12,085.50	Z (L2: WFMP A)		0.00	179.56	
12,150.08	12,127.50	Z (X Sand (T))		0.00	179.56	
12,185.81	12,158.50	Z (X Sand (B))		0.00	179.56	
12,250.42	12,211.50	Z (Y Sand (T))		0.00	179.56	
12,296.37	12,246.50	Z (Y Sand (B))		0.00	179.56	
12,397.57	12,314.50	Z (WFMP A Fat)		0.00	179.56	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
600.00	600.00	0.00	0.00	KOP, 1.00°/100' Build	
999.59	999.27	11.44	-7.94	Begin 4.00° Tangent	
5,520.13	5,508.82	270.24	-187.55	Begin 1.50°/100' Drop	
5,786.53	5,775.00	277.87	-192.84	Begin Vertical Hold	
11,869.77	11,858.24	277.87	-192.84	Begin 10.00°/100' Build	
12,669.77	12,422.49	-195.58	-189.22	Begin 6.00°/100' Build	
12,836.44	12,437.00	-361.40	-187.95	Begin 90.00° Lateral	
17,193.91	12,437.00	-4,718.75	-154.63	PBHL	



Matador Resources

Lea County, New Mexico (NAD 27)

Charles Ling Fed Com

Charles Ling Fed Com #214H

Wellbore #1

Design #1

Anticollision Report

07 May, 2018





MS Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference	Design #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD + Stations Interval 100.00usft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 10,000.00 u
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program		Date	5/7/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,193.67	Design #1 (Wellbore #1)	MWD	OWSG MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Charles Ling Fed Com						
Charles Ling Fed Com #133H - Wellbore #1 - Design #1	5,645.97	5,623.48	1,057.55	1,016.48	25.749	CC
Charles Ling Fed Com #133H - Wellbore #1 - Design #1	5,700.00	5,677.45	1,057.70	1,016.23	25.508	ES
Charles Ling Fed Com #133H - Wellbore #1 - Design #1	17,193.91	16,760.91	1,394.21	1,223.91	8.187	SF
Charles Ling Fed Com #134H - Wellbore #1 - Design #1	600.00	599.00	60.10	56.26	15.661	CC
Charles Ling Fed Com #134H - Wellbore #1 - Design #1	700.00	699.27	60.36	55.81	13.258	ES
Charles Ling Fed Com #134H - Wellbore #1 - Design #1	11,602.30	11,603.83	171.35	88.67	2.072	SF
Charles Ling Fed Com #203H - Wellbore #1 - Design #1	11,600.00	11,603.83	660.00	576.55	7.909	CC
Charles Ling Fed Com #203H - Wellbore #1 - Design #1	17,193.91	16,929.44	711.96	544.15	4.243	ES, SF
Charles Ling Fed Com #204H - Wellbore #1 - Design #1	600.00	599.00	29.99	26.15	7.814	CC
Charles Ling Fed Com #204H - Wellbore #1 - Design #1	700.00	698.99	30.49	25.93	6.697	ES
Charles Ling Fed Com #204H - Wellbore #1 - Design #1	17,193.91	16,904.00	721.30	552.35	4.269	SF
Charles Ling Fed Com #213H - Wellbore #1 - Design #1	1,060.48	1,021.92	1,175.73	1,168.73	168.015	CC
Charles Ling Fed Com #213H - Wellbore #1 - Design #1	17,193.91	17,205.09	1,318.25	1,140.64	7.422	ES, SF
Leo Thorsness 13-24S-33E AR						
#211H - Wellbore #1 - Surveys	17,193.91	12,000.00	1,510.06	1,383.38	11.920	CC, ES, SF
Roy Batty Federal COM						
Roy Batty Federal COM #3H - Wellbore #1 - Surveys	11,166.54	15,392.00	1,054.23	939.28	9.172	CC, ES
Roy Batty Federal COM #3H - Wellbore #1 - Surveys	11,200.00	15,392.00	1,054.76	939.71	9.168	SF
Roy Batty Federal COM #4H - Wellbore #1 - Surveys	10,942.04	15,556.00	678.89	560.69	5.743	CC, ES, SF
Tyrell Fee						
001H - Wellbore #1 - Surveys	17,193.91	10,968.94	1,731.29	1,658.38	23.746	CC, ES, SF

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #133H - Wellbore #1 - Design #1											
Survey Program: 0-MWD											
Reference											
Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)
0.00	0.00	0.00	0.00	0.00	0.00	-104.32	-276.60	-1,083.53	1,118.31		
100.00	100.00	91.00	91.00	0.13	0.12	-104.32	-276.60	-1,083.53	1,118.28	1,118.03	0.24
200.00	200.00	191.00	191.00	0.49	0.45	-104.32	-276.60	-1,083.53	1,118.28	1,117.34	0.94
300.00	300.00	291.00	291.00	0.85	0.81	-104.32	-276.60	-1,083.53	1,118.28	1,116.62	1.66
400.00	400.00	391.00	391.00	1.20	1.17	-104.32	-276.60	-1,083.53	1,118.28	1,115.90	2.37

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #133H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N-S (usft)	+E/-W (usft)				Between Centres (usft)	Between Ellipses (usft)	
500.00	500.00	491.00	491.00	1.56	1.53	-104.32	-276.60	-1,083.53	1,118.28	1,115.19	3.09	361.690		
600.00	600.00	591.00	591.00	1.92	1.89	-104.32	-276.60	-1,083.53	1,118.28	1,114.47	3.81	293.607		
700.00	699.99	688.27	688.27	2.28	2.24	-104.33	-275.97	-1,083.80	1,118.08	1,113.57	4.51	247.721		
800.00	799.96	785.28	785.25	2.63	2.58	-104.34	-273.85	-1,084.72	1,117.55	1,112.33	5.22	214.256		
900.00	899.86	882.29	882.17	2.99	2.93	-104.35	-270.22	-1,086.30	1,116.67	1,110.75	5.92	188.606		
999.59	999.27	978.90	978.63	3.35	3.28	-104.36	-265.11	-1,088.51	1,115.46	1,108.83	6.63	168.330		
1,000.00	999.68	979.30	979.02	3.35	3.28	-104.36	-265.08	-1,088.52	1,115.45	1,108.82	6.63	168.256		
1,100.00	1,099.43	1,078.02	1,077.49	3.72	3.64	-104.33	-258.58	-1,091.34	1,114.15	1,106.80	7.35	151.594		
1,200.00	1,199.19	1,178.01	1,177.21	4.08	4.00	-104.29	-251.85	-1,094.25	1,112.88	1,104.80	8.08	137.762		
1,300.00	1,298.95	1,278.00	1,276.93	4.45	4.37	-104.26	-245.12	-1,097.17	1,111.61	1,102.80	8.81	126.179		
1,400.00	1,398.70	1,377.99	1,376.65	4.82	4.74	-104.22	-238.39	-1,100.08	1,110.34	1,100.79	9.54	116.345		
1,500.00	1,498.46	1,477.98	1,476.37	5.18	5.11	-104.18	-231.67	-1,103.00	1,109.06	1,098.79	10.28	107.897		
1,600.00	1,598.22	1,577.97	1,576.09	5.55	5.48	-104.15	-224.94	-1,105.91	1,107.79	1,096.78	11.02	100.565		
1,700.00	1,697.97	1,677.96	1,675.81	5.92	5.85	-104.11	-218.21	-1,108.83	1,106.52	1,094.77	11.75	94.143		
1,800.00	1,797.73	1,777.95	1,775.53	6.29	6.22	-104.07	-211.48	-1,111.74	1,105.25	1,092.76	12.49	88.474		
1,900.00	1,897.49	1,877.93	1,875.25	6.66	6.59	-104.04	-204.76	-1,114.66	1,103.98	1,090.75	13.23	83.433		
2,000.00	1,997.24	1,977.92	1,974.97	7.03	6.96	-104.00	-198.03	-1,117.57	1,102.71	1,088.74	13.97	78.922		
2,100.00	2,097.00	2,077.91	2,074.69	7.40	7.34	-103.96	-191.30	-1,120.48	1,101.44	1,086.73	14.71	74.862		
2,200.00	2,196.76	2,177.90	2,174.41	7.78	7.71	-103.93	-184.58	-1,123.40	1,100.18	1,084.72	15.45	71.190		
2,300.00	2,296.51	2,277.89	2,274.13	8.15	8.08	-103.89	-177.85	-1,126.31	1,098.91	1,082.71	16.20	67.852		
2,400.00	2,396.27	2,377.88	2,373.85	8.52	8.45	-103.85	-171.12	-1,129.23	1,097.64	1,080.70	16.94	64.805		
2,500.00	2,496.03	2,477.87	2,473.57	8.89	8.83	-103.81	-164.39	-1,132.14	1,096.37	1,078.69	17.68	62.013		
2,600.00	2,595.79	2,577.86	2,573.29	9.26	9.20	-103.77	-157.67	-1,135.06	1,095.11	1,076.68	18.42	59.445		
2,700.00	2,695.54	2,677.85	2,673.01	9.63	9.57	-103.74	-150.94	-1,137.97	1,093.84	1,074.68	19.16	57.075		
2,800.00	2,795.30	2,777.84	2,772.73	10.01	9.95	-103.70	-144.21	-1,140.89	1,092.57	1,072.67	19.91	54.882		
2,900.00	2,895.06	2,877.83	2,872.45	10.38	10.32	-103.66	-137.49	-1,143.80	1,091.31	1,070.66	20.65	52.846		
3,000.00	2,994.81	2,977.82	2,972.17	10.75	10.69	-103.62	-130.76	-1,146.72	1,090.05	1,068.65	21.39	50.951		
3,100.00	3,094.57	3,077.81	3,071.89	11.12	11.07	-103.59	-124.03	-1,149.63	1,088.78	1,066.64	22.14	49.183		
3,200.00	3,194.33	3,177.80	3,171.61	11.50	11.44	-103.55	-117.30	-1,152.54	1,087.52	1,064.64	22.88	47.530		
3,300.00	3,294.08	3,277.79	3,271.33	11.87	11.81	-103.51	-110.58	-1,155.46	1,086.25	1,062.63	23.62	45.981		
3,400.00	3,393.84	3,377.78	3,371.05	12.24	12.19	-103.47	-103.85	-1,158.37	1,084.99	1,060.62	24.37	44.526		
3,500.00	3,493.60	3,477.76	3,470.77	12.61	12.56	-103.43	-97.12	-1,161.29	1,083.73	1,058.62	25.11	43.157		
3,600.00	3,593.35	3,577.75	3,570.49	12.99	12.93	-103.39	-90.39	-1,164.20	1,082.47	1,056.61	25.86	41.866		
3,700.00	3,693.11	3,677.74	3,670.21	13.36	13.31	-103.35	-83.67	-1,167.12	1,081.21	1,054.61	26.60	40.648		
3,800.00	3,792.87	3,777.73	3,769.93	13.73	13.68	-103.32	-76.94	-1,170.03	1,079.95	1,052.60	27.34	39.496		
3,900.00	3,892.63	3,877.72	3,869.65	14.11	14.06	-103.28	-70.21	-1,172.95	1,078.69	1,050.60	28.09	38.405		
4,000.00	3,992.38	3,977.71	3,969.37	14.48	14.43	-103.24	-63.49	-1,175.86	1,077.43	1,048.59	28.83	37.370		
4,100.00	4,092.14	4,077.70	4,069.09	14.85	14.81	-103.20	-56.76	-1,178.78	1,076.17	1,046.59	29.58	36.388		
4,200.00	4,191.90	4,177.69	4,168.81	15.22	15.18	-103.16	-50.03	-1,181.69	1,074.91	1,044.59	30.32	35.453		
4,300.00	4,291.65	4,277.68	4,268.53	15.60	15.55	-103.12	-43.30	-1,184.60	1,073.65	1,042.59	31.06	34.563		
4,400.00	4,391.41	4,377.67	4,368.26	15.97	15.93	-103.08	-36.58	-1,187.52	1,072.39	1,040.58	31.81	33.715		
4,500.00	4,491.17	4,477.66	4,467.98	16.34	16.30	-103.04	-29.85	-1,190.43	1,071.14	1,038.58	32.55	32.906		
4,600.00	4,590.92	4,577.65	4,567.70	16.72	16.68	-103.00	-23.12	-1,193.35	1,069.88	1,036.58	33.30	32.132		
4,700.00	4,690.68	4,677.64	4,667.42	17.09	17.05	-102.96	-16.40	-1,196.26	1,068.62	1,034.58	34.04	31.393		
4,800.00	4,790.44	4,777.63	4,767.14	17.46	17.42	-102.92	-9.67	-1,199.18	1,067.37	1,032.58	34.78	30.685		
4,900.00	4,890.19	4,877.62	4,866.86	17.83	17.80	-102.88	-2.94	-1,202.09	1,066.11	1,030.58	35.53	30.007		
5,000.00	4,989.95	4,977.61	4,966.58	18.21	18.17	-102.84	3.79	-1,205.01	1,064.86	1,028.58	36.27	29.357		
5,100.00	5,089.71	5,077.59	5,066.30	18.58	18.55	-102.80	10.51	-1,207.92	1,063.60	1,026.59	37.02	28.733		
5,200.00	5,189.47	5,177.58	5,166.02	18.95	18.92	-102.76	17.24	-1,210.83	1,062.35	1,024.59	37.76	28.133		
5,300.00	5,289.22	5,277.57	5,265.74	19.33	19.30	-102.72	23.97	-1,213.75	1,061.10	1,022.59	38.51	27.557		
5,400.00	5,388.98	5,377.56	5,365.46	19.70	19.67	-102.68	30.70	-1,216.66	1,059.84	1,020.59	39.25	27.002		
5,500.00	5,488.74	5,477.55	5,465.18	20.07	20.05	-102.64	37.42	-1,219.58	1,058.59	1,018.60	39.99	26.469		

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



MS Directional Anticollision Report



Company: Matador Resources
Project: Lea County, New Mexico (NAD 27)
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #214H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #133H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,520.13	5,508.82	5,497.68	5,485.25	20.15	20.12	-102.63	38.78	-1,220.17	1,058.34	1,018.20	40.14	26.364		
5,600.00	5,588.54	5,577.53	5,564.89	20.44	20.42	-102.56	44.15	-1,222.49	1,057.66	1,016.92	40.74	25.964		
5,645.97	5,634.47	5,623.48	5,610.71	20.61	20.59	-102.48	47.24	-1,223.83	1,057.55	1,016.48	41.07	25.749 CC		
5,700.00	5,688.48	5,677.45	5,664.54	20.80	20.79	-102.35	50.87	-1,225.41	1,057.70	1,016.23	41.47	25.508 ES		
5,786.53	5,775.00	5,763.81	5,750.67	21.11	21.12	-102.06	56.68	-1,227.92	1,058.56	1,016.47	42.09	25.151		
5,800.00	5,788.47	5,777.25	5,764.07	21.15	21.17	-102.01	57.59	-1,228.31	1,058.75	1,016.57	42.18	25.098		
5,900.00	5,888.47	5,876.98	5,863.53	21.50	21.54	-101.62	64.30	-1,231.22	1,060.23	1,017.34	42.90	24.715		
6,000.00	5,988.47	5,976.71	5,962.99	21.84	21.91	-101.24	71.01	-1,234.13	1,061.76	1,018.15	43.61	24.345		
6,100.00	6,088.47	6,076.44	6,062.45	22.19	22.29	-100.85	77.72	-1,237.04	1,063.34	1,019.01	44.33	23.988		
6,200.00	6,188.47	6,176.17	6,161.92	22.53	22.66	-100.47	84.43	-1,239.94	1,064.96	1,019.92	45.04	23.644		
6,300.00	6,288.47	6,275.90	6,261.38	22.88	23.04	-100.08	91.14	-1,242.85	1,066.63	1,020.88	45.76	23.311		
6,400.00	6,388.47	6,375.63	6,360.84	23.23	23.41	-99.70	97.84	-1,245.76	1,068.35	1,021.88	46.47	22.989		
6,500.00	6,488.47	6,475.36	6,460.30	23.57	23.78	-99.32	104.55	-1,248.66	1,070.12	1,022.93	47.19	22.677		
6,600.00	6,588.47	6,575.10	6,559.77	23.92	24.16	-98.94	111.26	-1,251.57	1,071.94	1,024.03	47.90	22.376		
6,700.00	6,688.47	6,674.83	6,659.23	24.27	24.53	-98.57	117.97	-1,254.48	1,073.80	1,025.18	48.62	22.085		
6,800.00	6,788.47	6,774.56	6,758.69	24.62	24.90	-98.19	124.68	-1,257.38	1,075.71	1,026.37	49.34	21.803		
6,900.00	6,888.47	6,874.29	6,858.15	24.97	25.28	-97.81	131.39	-1,260.29	1,077.66	1,027.61	50.05	21.530		
7,000.00	6,988.47	6,974.02	6,957.62	25.32	25.65	-97.44	138.10	-1,263.20	1,079.66	1,028.89	50.77	21.265		
7,100.00	7,088.47	7,073.75	7,057.08	25.66	26.02	-97.07	144.81	-1,266.10	1,081.71	1,030.22	51.49	21.009		
7,200.00	7,188.47	7,173.48	7,156.54	26.01	26.40	-96.70	151.52	-1,269.01	1,083.80	1,031.60	52.20	20.761		
7,300.00	7,288.47	7,273.21	7,256.00	26.36	26.77	-96.33	158.23	-1,271.92	1,085.94	1,033.02	52.92	20.520		
7,400.00	7,388.47	7,372.94	7,355.47	26.71	27.14	-95.96	164.94	-1,274.83	1,088.12	1,034.48	53.64	20.286		
7,500.00	7,488.47	7,472.67	7,454.93	27.06	27.52	-95.59	171.65	-1,277.73	1,090.35	1,036.00	54.36	20.059		
7,600.00	7,588.47	7,572.40	7,554.39	27.41	27.89	-95.23	178.36	-1,280.64	1,092.63	1,037.55	55.07	19.839		
7,700.00	7,688.47	7,672.13	7,653.85	27.76	28.27	-94.86	185.07	-1,283.55	1,094.94	1,039.15	55.79	19.625		
7,800.00	7,788.47	7,771.87	7,753.32	28.11	28.64	-94.50	191.78	-1,286.45	1,097.31	1,040.79	56.51	19.418		
7,900.00	7,888.47	7,871.60	7,852.78	28.46	29.01	-94.14	198.49	-1,289.36	1,099.71	1,042.48	57.23	19.216		
8,000.00	7,988.47	7,971.33	7,952.24	28.82	29.39	-93.78	205.20	-1,292.27	1,102.16	1,044.21	57.95	19.021		
8,100.00	8,088.47	8,071.06	8,051.70	29.17	29.76	-93.42	211.91	-1,295.17	1,104.65	1,045.99	58.66	18.830		
8,200.00	8,188.47	8,170.79	8,151.17	29.52	30.13	-93.07	218.62	-1,298.08	1,107.19	1,047.80	59.38	18.645		
8,300.00	8,288.47	8,270.52	8,250.63	29.87	30.51	-92.71	225.33	-1,300.99	1,109.76	1,049.66	60.10	18.465		
8,400.00	8,388.47	8,370.25	8,350.09	30.22	30.88	-92.36	232.04	-1,303.90	1,112.38	1,051.57	60.82	18.290		
8,500.00	8,488.47	8,469.98	8,449.55	30.57	31.25	-92.01	238.75	-1,306.80	1,115.05	1,053.51	61.54	18.120		
8,600.00	8,588.47	8,569.71	8,549.01	30.93	31.63	-91.66	245.46	-1,309.71	1,117.75	1,055.50	62.25	17.954		
8,700.00	8,688.47	8,669.44	8,648.48	31.28	32.00	-91.31	252.17	-1,312.62	1,120.50	1,057.52	62.97	17.793		
8,800.00	8,788.47	8,769.94	8,748.70	31.63	32.38	-90.97	258.88	-1,315.54	1,123.28	1,059.59	63.69	17.636		
8,900.00	8,888.47	8,869.54	8,848.12	31.98	32.79	-90.67	264.80	-1,318.09	1,125.47	1,061.02	64.45	17.462		
9,000.00	8,988.47	8,969.42	8,947.96	32.33	33.19	-90.52	267.63	-1,319.32	1,126.53	1,061.33	65.20	17.278		
9,100.00	9,088.47	9,100.94	9,079.47	32.69	33.56	-90.51	267.91	-1,319.44	1,126.64	1,060.72	65.91	17.093		
9,200.00	9,188.47	9,200.94	9,179.47	33.04	33.90	-90.51	267.91	-1,319.44	1,126.64	1,060.03	66.61	16.914		
9,300.00	9,288.47	9,300.94	9,279.47	33.39	34.24	-90.51	267.91	-1,319.44	1,126.64	1,059.33	67.31	16.739		
9,400.00	9,388.47	9,400.94	9,379.47	33.75	34.59	-90.51	267.91	-1,319.44	1,126.64	1,058.63	68.01	16.567		
9,500.00	9,488.47	9,500.94	9,479.47	34.10	34.93	-90.51	267.91	-1,319.44	1,126.64	1,057.93	68.71	16.398		
9,600.00	9,588.47	9,600.94	9,579.47	34.45	35.27	-90.51	267.91	-1,319.44	1,126.64	1,057.23	69.40	16.233		
9,700.00	9,688.47	9,700.94	9,679.47	34.81	35.62	-90.51	267.91	-1,319.44	1,126.64	1,056.53	70.10	16.071		
9,800.00	9,788.47	9,800.94	9,779.47	35.16	35.96	-90.51	267.91	-1,319.44	1,126.64	1,055.83	70.80	15.912		
9,900.00	9,888.47	9,900.94	9,879.47	35.51	36.31	-90.51	267.91	-1,319.44	1,126.64	1,055.13	71.50	15.756		
10,000.00	9,988.47	10,000.94	9,979.47	35.87	36.65	-90.51	267.91	-1,319.44	1,126.64	1,054.43	72.21	15.603		
10,100.00	10,088.47	10,100.94	10,079.47	36.22	37.00	-90.51	267.91	-1,319.44	1,126.64	1,053.73	72.91	15.453		
10,200.00	10,188.47	10,200.94	10,179.47	36.57	37.34	-90.51	267.91	-1,319.44	1,126.64	1,053.03	73.61	15.306		
10,300.00	10,288.47	10,300.94	10,279.47	36.93	37.69	-90.51	267.91	-1,319.44	1,126.64	1,052.33	74.31	15.161		
10,400.00	10,388.47	10,400.94	10,379.47	37.28	38.04	-90.51	267.91	-1,319.44	1,126.64	1,051.62	75.01	15.019		

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



MS Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #133H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)				Between Centres (usft)	Between Ellipses (usft)	Separation Factor
10,500.00	10,488.47	10,500.94	10,479.47	37.64	38.38	-90.51	267.91	-1,319.44	1,126.64	1,050.92	75.71	14.880		
10,600.00	10,588.47	10,600.94	10,579.47	37.99	38.73	-90.51	267.91	-1,319.44	1,126.64	1,050.22	76.42	14.743		
10,700.00	10,688.47	10,700.94	10,679.47	38.35	39.08	-90.51	267.91	-1,319.44	1,126.64	1,049.52	77.12	14.609		
10,800.00	10,788.47	10,800.94	10,779.47	38.70	39.42	-90.51	267.91	-1,319.44	1,126.64	1,048.81	77.82	14.477		
10,900.00	10,888.47	10,900.94	10,879.47	39.05	39.77	-90.51	267.91	-1,319.44	1,126.64	1,048.11	78.53	14.347		
11,000.00	10,988.47	11,000.94	10,979.47	39.41	40.12	-90.51	267.91	-1,319.44	1,126.64	1,047.41	79.23	14.220		
11,100.00	11,088.47	11,100.94	11,079.47	39.76	40.47	-90.51	267.91	-1,319.44	1,126.64	1,046.70	79.93	14.095		
11,200.00	11,188.47	11,200.94	11,179.47	40.12	40.81	-90.51	267.91	-1,319.44	1,126.64	1,046.00	80.64	13.972		
11,300.00	11,288.47	11,300.94	11,279.47	40.47	41.16	-90.51	267.91	-1,319.44	1,126.64	1,045.30	81.34	13.851		
11,400.00	11,388.47	11,400.94	11,379.47	40.83	41.51	-90.51	267.91	-1,319.44	1,126.64	1,044.59	82.05	13.732		
11,500.00	11,488.47	11,477.61	11,456.05	41.18	41.76	-90.64	265.32	-1,319.98	1,127.45	1,044.79	82.66	13.640		
11,600.00	11,588.47	11,550.00	11,527.48	41.54	41.96	-91.21	254.08	-1,322.32	1,130.93	1,047.72	83.20	13.593		
11,700.00	11,688.47	11,611.54	11,586.66	41.89	42.10	-92.03	237.66	-1,325.75	1,137.42	1,053.79	83.63	13.601		
11,800.00	11,788.47	11,672.09	11,642.80	42.25	42.23	-93.14	215.53	-1,330.38	1,147.41	1,063.46	83.95	13.668		
11,869.77	11,858.24	11,711.16	11,677.63	42.50	42.30	-93.99	198.23	-1,333.99	1,156.72	1,072.64	84.09	13.756		
11,900.00	11,888.46	11,727.47	11,691.81	42.60	42.33	-94.34	190.32	-1,335.64	1,161.35	1,077.24	84.12	13.806		
11,950.00	11,938.21	11,750.00	11,710.99	42.75	42.36	-94.67	178.76	-1,338.06	1,169.61	1,085.52	84.09	13.909		
12,000.00	11,987.35	11,781.11	11,736.69	42.90	42.41	-95.05	161.60	-1,341.64	1,178.44	1,094.34	84.10	14.012		
12,050.00	12,035.51	11,800.00	11,751.81	43.03	42.43	-94.93	150.52	-1,343.96	1,187.80	1,103.83	83.97	14.145		
12,100.00	12,082.33	11,834.31	11,778.29	43.16	42.47	-95.09	129.18	-1,348.42	1,197.42	1,113.47	83.96	14.262		
12,150.00	12,127.43	11,850.00	11,789.96	43.28	42.49	-94.53	118.91	-1,350.56	1,207.40	1,123.65	83.75	14.417		
12,200.00	12,170.49	11,887.12	11,816.38	43.39	42.52	-94.52	93.40	-1,355.89	1,217.32	1,133.58	83.74	14.537		
12,250.00	12,211.17	11,913.39	11,834.03	43.48	42.54	-94.01	74.36	-1,359.87	1,227.34	1,143.71	83.63	14.677		
12,300.00	12,249.17	11,950.00	11,857.11	43.57	42.57	-93.76	46.55	-1,365.68	1,237.34	1,153.73	83.61	14.798		
12,350.00	12,284.19	11,965.72	11,866.45	43.65	42.57	-92.63	34.17	-1,368.27	1,247.00	1,163.57	83.42	14.948		
12,400.00	12,315.96	12,000.00	11,885.60	43.71	42.59	-92.09	6.35	-1,374.08	1,256.53	1,173.10	83.42	15.062		
12,450.00	12,344.26	12,017.79	11,894.86	43.78	42.59	-90.81	-8.52	-1,377.19	1,265.62	1,182.30	83.31	15.191		
12,500.00	12,368.85	12,050.00	11,910.41	43.86	42.60	-90.05	-36.13	-1,382.95	1,274.39	1,191.03	83.36	15.288		
12,550.00	12,389.56	12,069.66	11,919.11	43.95	42.61	-88.69	-53.39	-1,386.56	1,282.65	1,199.30	83.35	15.389		
12,600.00	12,406.23	12,100.00	11,931.33	44.04	42.61	-87.75	-80.57	-1,392.24	1,290.46	1,207.00	83.46	15.461		
12,650.00	12,418.73	12,121.40	11,939.06	44.14	42.61	-86.39	-100.09	-1,396.32	1,297.70	1,214.13	83.57	15.529		
12,669.77	12,422.49	12,131.61	11,942.49	44.18	42.62	-85.93	-109.52	-1,398.28	1,300.41	1,216.78	83.63	15.549		
12,700.00	12,427.27	12,150.00	11,948.22	44.25	42.62	-85.34	-126.62	-1,401.86	1,304.51	1,220.75	83.76	15.575		
12,750.00	12,433.09	12,173.26	11,954.67	44.36	42.62	-84.07	-148.49	-1,406.43	1,311.28	1,227.33	83.95	15.620		
12,800.00	12,436.31	12,200.00	11,960.95	44.48	42.64	-82.96	-173.93	-1,411.74	1,318.06	1,233.87	84.19	15.656		
12,836.44	12,437.00	12,218.59	11,964.60	44.57	42.65	-82.13	-191.77	-1,415.47	1,322.99	1,238.61	84.38	15.680		
12,900.00	12,437.00	12,250.00	11,969.42	44.74	42.68	-80.67	-222.15	-1,421.81	1,332.31	1,247.59	84.71	15.727		
13,000.00	12,437.00	12,306.62	11,973.78	45.06	42.75	-78.77	-277.39	-1,433.35	1,349.72	1,264.46	85.26	15.830		
13,100.00	12,437.00	12,448.56	11,974.00	45.43	43.01	-80.72	-416.85	-1,459.66	1,368.13	1,282.21	85.92	15.924		
13,200.00	12,437.00	12,629.64	11,974.00	45.86	43.50	-84.34	-596.36	-1,483.19	1,381.12	1,294.38	86.74	15.922		
13,300.00	12,437.00	12,813.19	11,974.00	46.35	44.15	-88.01	-779.48	-1,495.42	1,388.14	1,300.44	87.70	15.828		
13,400.00	12,437.00	12,967.00	11,974.00	46.88	44.82	-90.36	-933.26	-1,496.86	1,389.50	1,300.75	88.75	15.657		
13,500.00	12,437.00	13,067.00	11,974.00	47.47	45.31	-90.36	-1,033.26	-1,496.22	1,389.62	1,299.83	89.79	15.476		
13,600.00	12,437.00	13,167.00	11,974.00	48.11	45.86	-90.36	-1,133.26	-1,495.59	1,389.75	1,298.81	90.93	15.283		
13,700.00	12,437.00	13,267.00	11,974.00	48.80	46.46	-90.36	-1,233.26	-1,494.96	1,389.87	1,297.70	92.17	15.079		
13,800.00	12,437.00	13,367.00	11,974.00	49.53	47.10	-90.36	-1,333.26	-1,494.32	1,390.00	1,296.50	93.50	14.867		
13,900.00	12,437.00	13,467.00	11,974.00	50.30	47.80	-90.36	-1,433.25	-1,493.69	1,390.12	1,295.21	94.91	14.646		
14,000.00	12,437.00	13,567.00	11,974.00	51.12	48.54	-90.36	-1,533.25	-1,493.06	1,390.24	1,293.83	96.41	14.420		
14,100.00	12,437.00	13,667.00	11,974.00	51.97	49.32	-90.36	-1,633.25	-1,492.42	1,390.37	1,292.38	97.99	14.189		
14,200.00	12,437.00	13,767.00	11,974.00	52.87	50.14	-90.36	-1,733.25	-1,491.79	1,390.49	1,290.85	99.64	13.955		
14,300.00	12,437.00	13,867.00	11,974.00	53.80	51.01	-90.36	-1,833.24	-1,491.15	1,390.62	1,289.25	101.36	13.719		
14,400.00	12,437.00	13,967.00	11,974.00	54.76	51.91	-90.36	-1,933.24	-1,490.52	1,390.74	1,287.58	103.16	13.482		

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



MS Directional
Anticollision Report



Company: Matador Resources
Project: Lea County, New Mexico (NAD 27)
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #214H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #133H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,500.00	12,437.00	14,067.00	11,974.00	55.75	52.85	-90.36	-2,033.24	-1,489.89	1,390.86	1,285.85	105.02	13.244		
14,600.00	12,437.00	14,167.00	11,974.00	56.78	53.82	-90.36	-2,133.24	-1,489.25	1,390.99	1,284.05	106.94	13.008		
14,700.00	12,437.00	14,267.00	11,974.00	57.84	54.83	-90.36	-2,233.24	-1,488.62	1,391.11	1,282.20	108.91	12.773		
14,800.00	12,437.00	14,367.00	11,974.00	58.92	55.87	-90.36	-2,333.23	-1,487.99	1,391.24	1,280.29	110.95	12.540		
14,900.00	12,437.00	14,467.00	11,974.00	60.03	56.93	-90.36	-2,433.23	-1,487.35	1,391.36	1,278.33	113.03	12.309		
15,000.00	12,437.00	14,567.00	11,974.00	61.16	58.02	-90.36	-2,533.23	-1,486.72	1,391.48	1,276.32	115.17	12.082		
15,100.00	12,437.00	14,667.00	11,974.00	62.32	59.14	-90.36	-2,633.23	-1,486.09	1,391.61	1,274.26	117.35	11.859		
15,200.00	12,437.00	14,766.99	11,974.00	63.49	60.28	-90.36	-2,733.23	-1,485.45	1,391.73	1,272.16	119.58	11.639		
15,300.00	12,437.00	14,866.99	11,974.00	64.69	61.45	-90.36	-2,833.22	-1,484.82	1,391.86	1,270.01	121.84	11.423		
15,400.00	12,437.00	14,966.99	11,974.00	65.91	62.64	-90.36	-2,933.22	-1,484.19	1,391.98	1,267.83	124.15	11.212		
15,500.00	12,437.00	15,066.99	11,974.00	67.15	63.85	-90.36	-3,033.22	-1,483.55	1,392.10	1,265.61	126.49	11.005		
15,600.00	12,437.00	15,166.99	11,974.00	68.40	65.07	-90.36	-3,133.22	-1,482.92	1,392.23	1,263.36	128.87	10.803		
15,700.00	12,437.00	15,266.99	11,974.00	69.67	66.32	-90.36	-3,233.22	-1,482.29	1,392.35	1,261.07	131.28	10.606		
15,800.00	12,437.00	15,366.99	11,974.00	70.96	67.58	-90.36	-3,333.21	-1,481.65	1,392.48	1,258.75	133.73	10.413		
15,900.00	12,437.00	15,466.99	11,974.00	72.26	68.86	-90.36	-3,433.21	-1,481.02	1,392.60	1,256.40	136.20	10.225		
16,000.00	12,437.00	15,566.99	11,974.00	73.58	70.16	-90.36	-3,533.21	-1,480.39	1,392.73	1,254.02	138.70	10.041		
16,100.00	12,437.00	15,666.99	11,974.00	74.91	71.47	-90.36	-3,633.21	-1,479.75	1,392.85	1,251.62	141.23	9.862		
16,200.00	12,437.00	15,766.99	11,974.00	76.25	72.79	-90.36	-3,733.21	-1,479.12	1,392.97	1,249.19	143.79	9.688		
16,300.00	12,437.00	15,866.99	11,974.00	77.60	74.13	-90.36	-3,833.20	-1,478.49	1,393.10	1,246.73	146.36	9.518		
16,400.00	12,437.00	15,966.99	11,974.00	78.97	75.48	-90.36	-3,933.20	-1,477.85	1,393.22	1,244.26	148.97	9.353		
16,500.00	12,437.00	16,066.99	11,974.00	80.35	76.84	-90.36	-4,033.20	-1,477.22	1,393.35	1,241.76	151.59	9.192		
16,600.00	12,437.00	16,166.99	11,974.00	81.73	78.22	-90.36	-4,133.20	-1,476.58	1,393.47	1,239.24	154.23	9.035		
16,700.00	12,437.00	16,266.99	11,974.00	83.13	79.60	-90.36	-4,233.19	-1,475.95	1,393.59	1,236.70	156.89	8.882		
16,800.00	12,437.00	16,366.99	11,974.00	84.53	80.99	-90.36	-4,333.19	-1,475.32	1,393.72	1,234.14	159.57	8.734		
16,900.00	12,437.00	16,466.99	11,974.00	85.95	82.40	-90.36	-4,433.19	-1,474.68	1,393.84	1,231.57	162.27	8.590		
17,000.00	12,437.00	16,566.99	11,974.00	87.37	83.81	-90.36	-4,533.19	-1,474.05	1,393.97	1,228.98	164.99	8.449		
17,100.00	12,437.00	16,666.99	11,974.00	88.80	85.23	-90.36	-4,633.19	-1,473.42	1,394.09	1,226.37	167.72	8.312		
17,193.91	12,437.00	16,760.91	11,974.00	90.15	86.57	-90.36	-4,727.10	-1,472.82	1,394.21	1,223.91	170.29	8.187 SF		



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #134H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference														
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre	Distance		Minimum Separation (usft)	Separation Factor	Warning		
				Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	89.62	0.39	60.10	60.11					
100.00	100.00	99.00	99.00	0.13	0.13	89.62	0.39	60.10	60.10	59.84	0.26	235.650		
200.00	200.00	199.00	199.00	0.49	0.48	89.62	0.39	60.10	60.10	59.13	0.97	61.977		
300.00	300.00	299.00	299.00	0.85	0.84	89.62	0.39	60.10	60.10	58.41	1.69	35.632		
400.00	400.00	399.00	399.00	1.20	1.20	89.62	0.39	60.10	60.10	57.69	2.40	25.003		
500.00	500.00	499.00	499.00	1.56	1.56	89.62	0.39	60.10	60.10	56.98	3.12	19.259		
600.00	600.00	599.00	599.00	1.92	1.92	89.62	0.39	60.10	60.10	56.26	3.84	15.661 CC		
700.00	699.99	699.27	699.27	2.28	2.28	89.52	1.22	59.86	60.36	55.81	4.55	13.258 ES		
800.00	799.96	799.54	799.50	2.63	2.64	89.18	3.74	59.16	61.16	55.89	5.27	11.611		
900.00	899.86	899.80	899.67	2.99	3.00	88.63	7.95	57.99	62.49	56.50	5.98	10.442		
999.59	999.27	999.64	999.32	3.35	3.36	87.89	13.81	56.35	64.34	57.64	6.70	9.601		
1,000.00	999.68	1,000.05	999.73	3.35	3.36	87.89	13.84	56.34	64.35	57.65	6.70	9.598		
1,100.00	1,099.43	1,100.02	1,099.45	3.72	3.72	87.10	20.56	54.46	66.49	59.06	7.43	8.950		
1,200.00	1,199.19	1,200.00	1,199.18	4.08	4.08	86.36	27.28	52.59	68.64	60.48	8.16	8.416		
1,300.00	1,298.95	1,299.97	1,298.91	4.45	4.45	85.66	34.00	50.71	70.80	61.91	8.89	7.967		
1,400.00	1,398.70	1,399.94	1,398.64	4.82	4.82	85.01	40.72	48.83	72.96	63.35	9.62	7.586		
1,500.00	1,498.46	1,499.92	1,498.37	5.18	5.19	84.39	47.44	46.95	75.14	64.79	10.35	7.259		
1,600.00	1,598.22	1,599.89	1,598.10	5.55	5.56	83.81	54.16	45.08	77.33	66.24	11.09	6.975		
1,700.00	1,697.97	1,699.86	1,697.83	5.92	5.92	83.26	60.87	43.20	79.52	67.70	11.82	6.726		
1,800.00	1,797.73	1,799.84	1,797.56	6.29	6.29	82.74	67.59	41.32	81.73	69.16	12.56	6.506		
1,900.00	1,897.49	1,899.81	1,897.29	6.66	6.66	82.25	74.31	39.45	83.93	70.63	13.30	6.311		
2,000.00	1,997.24	1,999.78	1,997.02	7.03	7.04	81.78	81.03	37.57	86.15	72.11	14.04	6.136		
2,100.00	2,097.00	2,099.75	2,096.75	7.40	7.41	81.34	87.75	35.69	88.37	73.59	14.78	5.979		
2,200.00	2,196.76	2,199.73	2,196.48	7.78	7.78	80.91	94.47	33.82	90.59	75.07	15.52	5.837		
2,300.00	2,296.51	2,299.70	2,296.21	8.15	8.15	80.51	101.19	31.94	92.82	76.56	16.26	5.709		
2,400.00	2,396.27	2,399.67	2,395.94	8.52	8.52	80.13	107.91	30.06	95.05	78.05	17.00	5.591		
2,500.00	2,496.03	2,499.65	2,495.67	8.89	8.89	79.76	114.63	28.18	97.29	79.55	17.74	5.484		
2,600.00	2,595.79	2,599.62	2,595.40	9.26	9.26	79.42	121.35	26.31	99.53	81.05	18.48	5.385		
2,700.00	2,695.54	2,699.59	2,695.12	9.63	9.63	79.08	128.07	24.43	101.78	82.55	19.23	5.294		
2,800.00	2,795.30	2,799.57	2,794.85	10.01	10.01	78.76	134.79	22.55	104.02	84.05	19.97	5.209		
2,900.00	2,895.06	2,899.54	2,894.58	10.38	10.38	78.46	141.50	20.68	106.27	85.56	20.71	5.131		
3,000.00	2,994.81	2,999.51	2,994.31	10.75	10.75	78.16	148.22	18.80	108.53	87.07	21.45	5.059		
3,100.00	3,094.57	3,099.49	3,094.04	11.12	11.12	77.88	154.94	16.92	110.78	88.59	22.20	4.991		
3,200.00	3,194.33	3,199.46	3,193.77	11.50	11.49	77.61	161.66	15.04	113.04	90.10	22.94	4.928		
3,300.00	3,294.08	3,299.43	3,293.50	11.87	11.86	77.36	168.38	13.17	115.31	91.62	23.68	4.869		
3,400.00	3,393.84	3,399.40	3,393.23	12.24	12.24	77.11	175.10	11.29	117.57	93.14	24.43	4.813		
3,500.00	3,493.60	3,499.38	3,492.96	12.61	12.61	76.87	181.82	9.41	119.84	94.67	25.17	4.761		
3,600.00	3,593.35	3,599.35	3,592.69	12.99	12.98	76.64	188.54	7.54	122.10	96.19	25.91	4.712		
3,700.00	3,693.11	3,699.32	3,692.42	13.36	13.35	76.41	195.26	5.66	124.37	97.72	26.66	4.666		
3,800.00	3,792.87	3,799.30	3,792.15	13.73	13.73	76.20	201.98	3.78	126.65	99.24	27.40	4.622		
3,900.00	3,892.63	3,899.27	3,891.88	14.11	14.10	75.99	208.70	1.91	128.92	100.77	28.15	4.580		
4,000.00	3,992.38	3,999.24	3,991.61	14.48	14.47	75.79	215.42	0.03	131.19	102.30	28.89	4.541		
4,100.00	4,092.14	4,099.22	4,091.34	14.85	14.84	75.60	222.13	-1.85	133.47	103.84	29.63	4.504		
4,200.00	4,191.90	4,199.19	4,191.07	15.22	15.22	75.41	228.85	-3.73	135.75	105.37	30.38	4.469		
4,300.00	4,291.65	4,299.16	4,290.79	15.60	15.59	75.23	235.57	-5.60	138.03	106.91	31.12	4.435		
4,400.00	4,391.41	4,399.14	4,390.52	15.97	15.96	75.06	242.29	-7.48	140.31	108.44	31.87	4.403		
4,500.00	4,491.17	4,499.11	4,490.25	16.34	16.33	74.89	249.01	-9.36	142.59	109.98	32.61	4.372		
4,600.00	4,590.92	4,599.08	4,589.98	16.72	16.71	74.73	255.73	-11.23	144.88	111.52	33.36	4.343		
4,700.00	4,690.68	4,699.05	4,689.71	17.09	17.08	74.57	262.45	-13.11	147.16	113.06	34.10	4.315		
4,800.00	4,790.44	4,799.03	4,789.44	17.46	17.45	74.41	269.17	-14.99	149.45	114.60	34.85	4.289		
4,900.00	4,890.19	4,899.00	4,889.22	17.83	17.82	74.59	275.06	-16.63	151.73	116.15	35.58	4.264		
5,000.00	4,989.95	4,998.87	4,989.03	18.21	18.18	75.71	278.49	-17.59	154.06	117.75	36.31	4.243		

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



MS Directional Anticollision Report



Company: Matador Resources
Project: Lea County, New Mexico (NAD 27)
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #214H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #134H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,100.00	5,089.71	5,098.56	5,088.71	18.58	18.53	77.75	279.42	-17.85	156.57	119.56	37.01	4.230		
5,200.00	5,189.47	5,198.31	5,188.47	18.95	18.87	80.06	279.42	-17.85	159.37	121.66	37.71	4.226		
5,300.00	5,289.22	5,298.07	5,288.22	19.33	19.22	82.29	279.42	-17.85	162.42	124.01	38.41	4.229		
5,400.00	5,388.98	5,397.83	5,387.98	19.70	19.57	84.44	279.42	-17.85	165.71	126.60	39.10	4.238		
5,500.00	5,488.74	5,497.59	5,487.74	20.07	19.91	86.50	279.42	-17.85	169.21	129.42	39.79	4.252		
5,520.13	5,508.82	5,517.67	5,507.82	20.15	19.98	86.90	279.42	-17.85	169.95	130.01	39.93	4.256		
5,600.00	5,588.54	5,597.39	5,587.54	20.44	20.26	88.24	279.42	-17.85	172.48	131.99	40.49	4.260		
5,700.00	5,688.48	5,697.33	5,687.48	20.80	20.61	89.23	279.42	-17.85	174.45	133.27	41.18	4.236		
5,786.53	5,775.00	5,783.85	5,774.00	21.11	20.91	89.49	279.42	-17.85	175.00	133.21	41.79	4.188		
5,800.00	5,788.47	5,797.32	5,787.47	21.15	20.96	89.49	279.42	-17.85	175.00	133.12	41.88	4.179		
5,900.00	5,888.47	5,897.32	5,887.47	21.50	21.31	89.49	279.42	-17.85	175.00	132.42	42.58	4.110		
6,000.00	5,988.47	5,997.32	5,987.47	21.84	21.66	89.49	279.42	-17.85	175.00	131.73	43.27	4.044		
6,100.00	6,088.47	6,097.32	6,087.47	22.19	22.01	89.49	279.42	-17.85	175.00	131.03	43.97	3.980		
6,200.00	6,188.47	6,197.32	6,187.47	22.53	22.36	89.49	279.42	-17.85	175.00	130.33	44.67	3.918		
6,300.00	6,288.47	6,297.32	6,287.47	22.88	22.71	89.49	279.42	-17.85	175.00	129.63	45.37	3.857		
6,400.00	6,388.47	6,397.32	6,387.47	23.23	23.06	89.49	279.42	-17.85	175.00	128.93	46.07	3.799		
6,500.00	6,488.47	6,497.32	6,487.47	23.57	23.41	89.49	279.42	-17.85	175.00	128.23	46.77	3.742		
6,600.00	6,588.47	6,597.32	6,587.47	23.92	23.76	89.49	279.42	-17.85	175.00	127.53	47.47	3.687		
6,700.00	6,688.47	6,697.32	6,687.47	24.27	24.11	89.49	279.42	-17.85	175.00	126.83	48.17	3.633		
6,800.00	6,788.47	6,797.32	6,787.47	24.62	24.46	89.49	279.42	-17.85	175.00	126.13	48.87	3.581		
6,900.00	6,888.47	6,897.32	6,887.47	24.97	24.82	89.49	279.42	-17.85	175.00	125.43	49.57	3.530		
7,000.00	6,988.47	6,997.32	6,987.47	25.32	25.17	89.49	279.42	-17.85	175.00	124.72	50.28	3.481		
7,100.00	7,088.47	7,097.32	7,087.47	25.66	25.52	89.49	279.42	-17.85	175.00	124.02	50.98	3.433		
7,200.00	7,188.47	7,197.32	7,187.47	26.01	25.87	89.49	279.42	-17.85	175.00	123.32	51.68	3.386		
7,300.00	7,288.47	7,297.32	7,287.47	26.36	26.23	89.49	279.42	-17.85	175.00	122.61	52.39	3.341		
7,400.00	7,388.47	7,397.32	7,387.47	26.71	26.58	89.49	279.42	-17.85	175.00	121.91	53.09	3.296		
7,500.00	7,488.47	7,497.32	7,487.47	27.06	26.93	89.49	279.42	-17.85	175.00	121.21	53.79	3.253		
7,600.00	7,588.47	7,597.32	7,587.47	27.41	27.28	89.49	279.42	-17.85	175.00	120.50	54.50	3.211		
7,700.00	7,688.47	7,697.32	7,687.47	27.76	27.64	89.49	279.42	-17.85	175.00	119.80	55.20	3.170		
7,800.00	7,788.47	7,797.32	7,787.47	28.11	27.99	89.49	279.42	-17.85	175.00	119.09	55.91	3.130		
7,900.00	7,888.47	7,897.32	7,887.47	28.46	28.34	89.49	279.42	-17.85	175.00	118.38	56.62	3.091		
8,000.00	7,988.47	7,997.32	7,987.47	28.82	28.70	89.49	279.42	-17.85	175.00	117.68	57.32	3.053		
8,100.00	8,088.47	8,097.32	8,087.47	29.17	29.05	89.49	279.42	-17.85	175.00	116.97	58.03	3.016		
8,200.00	8,188.47	8,197.32	8,187.47	29.52	29.40	89.49	279.42	-17.85	175.00	116.27	58.73	2.980		
8,300.00	8,288.47	8,297.32	8,287.47	29.87	29.76	89.49	279.42	-17.85	175.00	115.56	59.44	2.944		
8,400.00	8,388.47	8,397.32	8,387.47	30.22	30.11	89.49	279.42	-17.85	175.00	114.85	60.15	2.910		
8,500.00	8,488.47	8,497.32	8,487.47	30.57	30.47	89.49	279.42	-17.85	175.00	114.15	60.85	2.876		
8,600.00	8,588.47	8,597.32	8,587.47	30.93	30.82	89.49	279.42	-17.85	175.00	113.44	61.56	2.843		
8,700.00	8,688.47	8,697.32	8,687.47	31.28	31.17	89.49	279.42	-17.85	175.00	112.73	62.27	2.810		
8,800.00	8,788.47	8,797.32	8,787.47	31.63	31.53	89.49	279.42	-17.85	175.00	112.02	62.98	2.779		
8,900.00	8,888.47	8,897.32	8,887.47	31.98	31.88	89.49	279.42	-17.85	175.00	111.31	63.68	2.748		
9,000.00	8,988.47	8,997.32	8,987.47	32.33	32.24	89.49	279.42	-17.85	175.00	110.61	64.39	2.718		
9,100.00	9,088.47	9,097.32	9,087.47	32.69	32.59	89.49	279.42	-17.85	175.00	109.90	65.10	2.688		
9,200.00	9,188.47	9,197.32	9,187.47	33.04	32.95	89.49	279.42	-17.85	175.00	109.19	65.81	2.659		
9,300.00	9,288.47	9,297.32	9,287.47	33.39	33.30	89.49	279.42	-17.85	175.00	108.48	66.52	2.631		
9,400.00	9,388.47	9,397.32	9,387.47	33.75	33.66	89.49	279.42	-17.85	175.00	107.77	67.23	2.603		
9,500.00	9,488.47	9,497.32	9,487.47	34.10	34.01	89.49	279.42	-17.85	175.00	107.06	67.94	2.576		
9,600.00	9,588.47	9,597.32	9,587.47	34.45	34.37	89.49	279.42	-17.85	175.00	106.35	68.65	2.549		
9,700.00	9,688.47	9,697.32	9,687.47	34.81	34.72	89.49	279.42	-17.85	175.00	105.64	69.36	2.523		
9,800.00	9,788.47	9,797.32	9,787.47	35.16	35.08	89.49	279.42	-17.85	175.00	104.93	70.07	2.498		
9,900.00	9,888.47	9,897.32	9,887.47	35.51	35.43	89.49	279.42	-17.85	175.00	104.23	70.77	2.473		
10,000.00	9,988.47	9,997.32	9,987.47	35.87	35.79	89.49	279.42	-17.85	175.00	103.52	71.48	2.448		

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



MS Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #134H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,100.00	10,088.47	10,097.32	10,087.47	36.22	36.14	89.49	279.42	-17.85	175.00	102.81	72.19	2.424		
10,200.00	10,188.47	10,197.32	10,187.47	36.57	36.50	89.49	279.42	-17.85	175.00	102.10	72.90	2.400		
10,300.00	10,288.47	10,297.32	10,287.47	36.93	36.85	89.49	279.42	-17.85	175.00	101.39	73.61	2.377		
10,400.00	10,388.47	10,397.32	10,387.47	37.28	37.21	89.49	279.42	-17.85	175.00	100.67	74.33	2.355		
10,500.00	10,488.47	10,497.32	10,487.47	37.64	37.57	89.49	279.42	-17.85	175.00	99.96	75.04	2.332		
10,600.00	10,588.47	10,597.32	10,587.47	37.99	37.92	89.49	279.42	-17.85	175.00	99.25	75.75	2.310		
10,700.00	10,688.47	10,697.32	10,687.47	38.35	38.28	89.49	279.42	-17.85	175.00	98.54	76.46	2.289		
10,800.00	10,788.47	10,797.32	10,787.47	38.70	38.63	89.49	279.42	-17.85	175.00	97.83	77.17	2.268		
10,900.00	10,888.47	10,897.32	10,887.47	39.05	38.99	89.49	279.42	-17.85	175.00	97.12	77.88	2.247		
11,000.00	10,988.47	10,997.32	10,987.47	39.41	39.34	89.49	279.42	-17.85	175.00	96.41	78.59	2.227		
11,100.00	11,088.47	11,097.32	11,087.47	39.76	39.70	89.49	279.42	-17.85	175.00	95.70	79.30	2.207		
11,200.00	11,188.47	11,197.32	11,187.47	40.12	40.06	89.49	279.42	-17.85	175.00	94.99	80.01	2.187		
11,300.00	11,288.47	11,297.32	11,287.47	40.47	40.41	89.49	279.42	-17.85	175.00	94.28	80.72	2.168		
11,400.00	11,388.47	11,397.32	11,387.47	40.83	40.77	89.49	279.42	-17.85	175.00	93.56	81.44	2.149		
11,500.00	11,488.47	11,502.62	11,492.24	41.18	41.10	92.41	270.58	-19.60	173.46	91.35	82.10	2.113		
11,600.00	11,588.47	11,601.68	11,587.74	41.54	41.38	100.97	245.26	-24.63	171.35	88.68	82.67	2.073		
11,602.30	11,590.77	11,603.83	11,589.77	41.55	41.38	101.22	244.53	-24.77	171.35	88.67	82.68	2.072 SF		
11,700.00	11,688.47	11,689.71	11,667.78	41.89	41.59	112.99	209.52	-31.72	176.13	93.44	82.69	2.130		
11,800.00	11,788.47	11,765.05	11,731.17	42.25	41.75	125.23	169.67	-39.62	195.84	114.87	80.97	2.419		
11,869.77	11,858.24	11,810.31	11,766.50	42.50	41.83	132.62	141.93	-45.12	220.30	141.65	78.65	2.801		
11,900.00	11,888.46	11,828.61	11,780.13	42.60	41.87	135.35	129.96	-47.50	232.99	155.51	77.49	3.007		
11,950.00	11,938.21	11,858.47	11,801.51	42.75	41.92	139.05	109.52	-51.55	254.66	179.17	75.49	3.374		
12,000.00	11,987.35	11,887.91	11,821.50	42.90	41.97	141.92	88.32	-55.76	276.58	203.12	73.46	3.765		
12,050.00	12,035.51	11,916.97	11,840.12	43.03	42.02	144.14	66.44	-60.10	298.26	226.82	71.44	4.175		
12,100.00	12,082.33	11,950.00	11,859.87	43.16	42.08	146.43	40.48	-65.25	319.38	249.56	69.82	4.574		
12,150.00	12,127.43	11,974.17	11,873.34	43.28	42.13	147.03	20.80	-69.15	339.54	272.03	67.51	5.030		
12,200.00	12,170.49	12,000.00	11,886.79	43.39	42.18	147.48	-0.83	-73.44	358.69	293.24	65.44	5.481		
12,250.00	12,211.17	12,030.37	11,901.32	43.48	42.24	148.28	-26.99	-78.63	376.58	312.76	63.81	5.901		
12,300.00	12,249.17	12,050.00	11,909.94	43.57	42.28	148.89	-44.28	-82.06	393.27	331.70	61.57	6.388		
12,350.00	12,284.19	12,085.82	11,924.10	43.65	42.36	147.99	-76.54	-88.46	408.23	347.75	60.48	6.750		
12,400.00	12,315.96	12,113.31	11,933.57	43.71	42.41	147.19	-101.86	-93.48	421.80	362.82	58.99	7.151		
12,450.00	12,344.26	12,150.00	11,944.24	43.78	42.49	147.97	-136.29	-100.31	433.95	375.88	58.07	7.473		
12,500.00	12,368.85	12,167.95	11,948.64	43.86	42.53	143.72	-153.36	-103.70	444.11	387.65	56.45	7.867		
12,550.00	12,389.56	12,200.00	11,955.14	43.95	42.60	142.19	-184.14	-109.81	452.78	397.18	55.60	8.143		
12,600.00	12,406.23	12,222.24	11,958.61	44.04	42.65	135.84	-205.69	-114.08	459.64	404.98	54.65	8.410		
12,650.00	12,418.73	12,250.00	11,961.74	44.14	42.71	128.97	-232.74	-119.45	464.77	410.69	54.08	8.594		
12,669.77	12,422.49	12,250.00	11,961.74	44.18	42.71	118.04	-232.74	-119.45	466.50	412.67	53.83	8.667		
12,700.00	12,427.27	12,276.30	11,963.47	44.25	42.76	117.15	-258.47	-124.55	468.43	414.72	53.72	8.720		
12,750.00	12,433.09	12,304.98	11,964.00	44.36	42.83	101.14	-286.60	-130.13	471.87	418.28	53.60	8.804		
12,800.00	12,436.31	12,353.02	11,964.00	44.48	42.95	100.18	-333.81	-139.01	473.95	420.41	53.54	8.852		
12,836.44	12,437.00	12,388.28	11,964.00	44.57	43.04	99.47	-368.56	-145.03	474.00	420.47	53.54	8.854		
12,900.00	12,437.00	12,450.19	11,964.00	44.74	43.23	98.23	-429.72	-154.56	473.17	419.58	53.59	8.829		
13,000.00	12,437.00	12,548.38	11,964.00	45.06	43.56	96.27	-527.13	-166.95	472.42	418.61	53.81	8.780		
13,100.00	12,437.00	12,647.37	11,964.00	45.43	43.95	94.29	-625.69	-176.06	472.11	417.97	54.14	8.721		
13,200.00	12,437.00	12,746.94	11,964.00	45.86	44.39	92.30	-725.09	-181.78	472.02	417.48	54.53	8.655		
13,300.00	12,437.00	12,846.83	11,964.00	46.35	44.88	90.34	-824.95	-184.05	472.00	417.03	54.98	8.586		
13,400.00	12,437.00	12,946.83	11,964.00	46.88	45.42	89.68	-924.94	-183.53	472.00	416.55	55.45	8.512		
13,401.40	12,437.00	12,948.23	11,964.00	46.89	45.43	89.68	-926.34	-183.51	472.00	416.55	55.46	8.511		
13,500.00	12,437.00	13,046.83	11,964.00	47.47	46.01	89.69	-1,024.94	-182.76	472.00	416.04	55.96	8.434		
13,600.00	12,437.00	13,146.83	11,964.00	48.11	46.65	89.69	-1,124.94	-182.00	472.00	415.49	56.52	8.352		
13,700.00	12,437.00	13,246.83	11,964.00	48.80	47.34	89.69	-1,224.94	-181.24	472.00	414.90	57.11	8.265		
13,800.00	12,437.00	13,346.83	11,964.00	49.53	48.08	89.70	-1,324.93	-180.48	472.00	414.27	57.73	8.176		

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



MS Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #134H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
13,900.00	12,437.00	13,446.83	11,964.00	50.30	48.87	89.70	-1,424.93	-179.72	472.00	413.61	58.39	8.083		
14,000.00	12,437.00	13,546.83	11,964.00	51.12	49.69	89.71	-1,524.93	-178.96	472.00	412.91	59.09	7.988		
14,100.00	12,437.00	13,646.83	11,964.00	51.97	50.56	89.71	-1,624.92	-178.19	472.00	412.18	59.82	7.890		
14,200.00	12,437.00	13,746.83	11,964.00	52.87	51.46	89.72	-1,724.92	-177.43	472.00	411.42	60.58	7.791		
14,300.00	12,437.00	13,846.83	11,964.00	53.80	52.40	89.72	-1,824.92	-176.67	472.00	410.63	61.37	7.691		
14,400.00	12,437.00	13,946.83	11,964.00	54.76	53.38	89.73	-1,924.91	-175.91	472.00	409.81	62.19	7.589		
14,500.00	12,437.00	14,046.83	11,964.00	55.75	54.39	89.73	-2,024.91	-175.15	472.00	408.96	63.04	7.487		
14,600.00	12,437.00	14,146.83	11,964.00	56.78	55.43	89.74	-2,124.91	-174.39	472.00	408.08	63.92	7.384		
14,700.00	12,437.00	14,246.83	11,964.00	57.84	56.50	89.75	-2,224.91	-173.62	472.00	407.18	64.82	7.281		
14,800.00	12,437.00	14,346.83	11,964.00	58.92	57.59	89.75	-2,324.90	-172.86	472.00	406.25	65.75	7.178		
14,900.00	12,437.00	14,446.83	11,964.00	60.03	58.72	89.76	-2,424.90	-172.10	472.00	405.30	66.71	7.076		
15,000.00	12,437.00	14,546.83	11,964.00	61.16	59.86	89.77	-2,524.90	-171.34	472.00	404.32	67.68	6.974		
15,100.00	12,437.00	14,646.83	11,964.00	62.32	61.03	89.78	-2,624.89	-170.58	472.00	403.32	68.68	6.873		
15,200.00	12,437.00	14,746.83	11,964.00	63.49	62.22	89.79	-2,724.89	-169.82	472.00	402.30	69.70	6.772		
15,300.00	12,437.00	14,846.83	11,964.00	64.69	63.44	89.80	-2,824.89	-169.06	472.00	401.27	70.74	6.673		
15,400.00	12,437.00	14,946.83	11,964.00	65.91	64.67	89.82	-2,924.89	-168.29	472.00	400.21	71.79	6.574		
15,500.00	12,437.00	15,046.83	11,964.00	67.15	65.92	89.83	-3,024.88	-167.53	472.00	399.13	72.87	6.477		
15,600.00	12,437.00	15,146.83	11,964.00	68.40	67.19	89.85	-3,124.88	-166.77	472.00	398.04	73.96	6.382		
15,700.00	12,437.00	15,246.83	11,964.00	69.67	68.47	89.87	-3,224.88	-166.01	472.00	396.93	75.07	6.287		
15,800.00	12,437.00	15,346.83	11,964.00	70.96	69.77	89.89	-3,324.87	-165.25	472.00	395.80	76.20	6.194		
15,900.00	12,437.00	15,446.83	11,964.00	72.26	71.09	89.91	-3,424.87	-164.49	472.00	394.66	77.34	6.103		
16,000.00	12,437.00	15,546.83	11,964.00	73.58	72.42	89.94	-3,524.87	-163.72	472.00	393.50	78.50	6.013		
16,100.00	12,437.00	15,646.83	11,964.00	74.91	73.76	89.98	-3,624.87	-162.96	472.00	392.33	79.67	5.924		
16,200.00	12,437.00	15,746.83	11,964.00	76.25	75.11	90.02	-3,724.86	-162.20	472.00	391.14	80.86	5.838		
16,300.00	12,437.00	15,846.83	11,964.00	77.60	76.48	90.07	-3,824.86	-161.44	472.00	389.95	82.05	5.752		
16,400.00	12,437.00	15,946.83	11,964.00	78.97	77.85	90.14	-3,924.86	-160.68	472.00	388.74	83.26	5.669		
16,500.00	12,437.00	16,046.83	11,964.00	80.35	79.24	90.22	-4,024.85	-159.92	472.00	387.51	84.49	5.587		
16,600.00	12,437.00	16,146.83	11,964.00	81.73	80.64	90.33	-4,124.85	-159.15	472.00	386.28	85.72	5.506		
16,700.00	12,437.00	16,246.83	11,964.00	83.13	82.05	90.48	-4,224.85	-158.39	472.00	385.04	86.96	5.428		
16,800.00	12,437.00	16,346.83	11,964.00	84.53	83.46	90.72	-4,324.85	-157.63	472.00	383.78	88.22	5.350		
16,900.00	12,437.00	16,446.83	11,964.00	85.95	84.89	91.11	-4,424.84	-156.87	472.00	382.52	89.48	5.275		
17,000.00	12,437.00	16,546.83	11,964.00	87.37	86.32	91.90	-4,524.84	-156.11	472.00	381.24	90.76	5.201		
17,100.00	12,437.00	16,646.83	11,964.00	88.80	87.76	94.38	-4,624.84	-155.35	472.00	379.96	92.04	5.128		
17,193.91	12,437.00	16,740.74	11,964.00	90.15	89.12	0.00	-4,718.75	-154.63	472.00	378.75	93.25	5.062		

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



MS Directional Anticollision Report



Company: Matador Resources
Project: Lea County, New Mexico (NAD 27)
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #214H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #203H - Wellbore #1 - Design #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-103.96	-276.80	-1,113.53	1,147.45				
100.00	100.00	91.00	91.00	0.13	0.12	-103.96	-276.80	-1,113.53	1,147.42	1,147.17	0.24	4,687.673	
200.00	200.00	191.00	191.00	0.49	0.45	-103.96	-276.80	-1,113.53	1,147.42	1,146.48	0.94	1,219.377	
300.00	300.00	291.00	291.00	0.85	0.81	-103.96	-276.80	-1,113.53	1,147.42	1,145.76	1.66	692.079	
400.00	400.00	391.00	391.00	1.20	1.17	-103.96	-276.80	-1,113.53	1,147.42	1,145.04	2.37	483.149	
500.00	500.00	491.00	491.00	1.56	1.53	-103.96	-276.80	-1,113.53	1,147.42	1,144.33	3.09	371.115	
600.00	600.00	591.00	591.00	1.92	1.89	-103.96	-276.80	-1,113.53	1,147.42	1,143.61	3.81	301.258	
700.00	699.99	690.99	690.99	2.28	2.25	-104.00	-276.80	-1,113.53	1,147.11	1,142.59	4.52	253.559	
800.00	799.96	790.96	790.96	2.63	2.61	-104.12	-276.80	-1,113.53	1,146.18	1,140.95	5.24	218.804	
900.00	899.86	890.86	890.86	2.99	2.96	-104.33	-276.80	-1,113.53	1,144.65	1,138.70	5.95	192.251	
999.59	999.27	990.27	990.27	3.35	3.32	-104.61	-276.80	-1,113.53	1,142.55	1,135.88	6.67	171.334	
1,000.00	999.68	990.68	990.68	3.35	3.32	-104.61	-276.80	-1,113.53	1,142.54	1,135.87	6.67	171.257	
1,100.00	1,099.43	1,090.43	1,090.43	3.72	3.68	-104.94	-276.80	-1,113.53	1,140.16	1,132.76	7.39	154.258	
1,200.00	1,199.19	1,190.19	1,190.19	4.08	4.04	-105.27	-276.80	-1,113.53	1,137.81	1,129.70	8.11	140.252	
1,300.00	1,298.95	1,303.38	1,303.38	4.45	4.44	-105.57	-275.96	-1,113.13	1,134.97	1,126.09	8.88	127.785	
1,400.00	1,398.70	1,418.11	1,418.06	4.82	4.85	-105.78	-273.05	-1,111.75	1,130.86	1,121.20	9.65	117.127	
1,500.00	1,498.46	1,532.82	1,532.63	5.18	5.26	-105.90	-268.07	-1,109.38	1,125.43	1,115.01	10.43	107.929	
1,600.00	1,598.22	1,647.43	1,646.97	5.55	5.67	-105.94	-261.03	-1,106.04	1,118.70	1,107.50	11.20	99.892	
1,700.00	1,697.97	1,749.71	1,748.92	5.92	6.04	-105.96	-253.53	-1,102.48	1,111.09	1,099.16	11.93	93.116	
1,800.00	1,797.73	1,849.42	1,848.30	6.29	6.40	-105.99	-246.20	-1,098.99	1,103.47	1,090.81	12.66	87.164	
1,900.00	1,897.49	1,949.13	1,947.67	6.66	6.77	-106.01	-238.86	-1,095.51	1,095.84	1,082.46	13.39	81.850	
2,000.00	1,997.24	2,048.83	2,047.05	7.03	7.13	-106.04	-231.52	-1,092.02	1,088.22	1,074.10	14.12	77.078	
2,100.00	2,097.00	2,148.54	2,146.42	7.40	7.50	-106.07	-224.18	-1,088.53	1,080.60	1,065.75	14.85	72.770	
2,200.00	2,196.76	2,248.25	2,245.80	7.78	7.87	-106.09	-216.84	-1,085.05	1,072.97	1,057.39	15.58	68.862	
2,300.00	2,296.51	2,347.96	2,345.18	8.15	8.24	-106.12	-209.50	-1,081.56	1,065.35	1,049.04	16.31	65.301	
2,400.00	2,396.27	2,447.67	2,444.55	8.52	8.61	-106.15	-202.17	-1,078.08	1,057.73	1,040.68	17.05	62.044	
2,500.00	2,496.03	2,547.37	2,543.93	8.89	8.98	-106.18	-194.83	-1,074.59	1,050.10	1,032.32	17.78	59.054	
2,600.00	2,595.79	2,647.08	2,643.31	9.26	9.35	-106.21	-187.49	-1,071.10	1,042.48	1,023.96	18.52	56.299	
2,700.00	2,695.54	2,746.79	2,742.68	9.63	9.72	-106.24	-180.15	-1,067.62	1,034.86	1,015.61	19.25	53.753	
2,800.00	2,795.30	2,846.50	2,842.06	10.01	10.09	-106.27	-172.81	-1,064.13	1,027.24	1,007.25	19.99	51.393	
2,900.00	2,895.06	2,946.20	2,941.43	10.38	10.46	-106.30	-165.47	-1,060.65	1,019.62	998.89	20.72	49.200	
3,000.00	2,994.81	3,045.91	3,040.81	10.75	10.83	-106.33	-158.13	-1,057.16	1,011.99	990.53	21.46	47.157	
3,100.00	3,094.57	3,145.62	3,140.19	11.12	11.21	-106.36	-150.80	-1,053.67	1,004.37	982.18	22.20	45.248	
3,200.00	3,194.33	3,245.33	3,239.56	11.50	11.58	-106.39	-143.46	-1,050.19	996.75	973.82	22.93	43.462	
3,300.00	3,294.08	3,345.03	3,338.94	11.87	11.95	-106.42	-136.12	-1,046.70	989.13	965.46	23.67	41.786	
3,400.00	3,393.84	3,444.74	3,438.31	12.24	12.33	-106.46	-128.78	-1,043.22	981.51	957.10	24.41	40.211	
3,500.00	3,493.60	3,544.45	3,537.69	12.61	12.70	-106.49	-121.44	-1,039.73	973.89	948.74	25.15	38.729	
3,600.00	3,593.35	3,644.16	3,637.07	12.99	13.07	-106.52	-114.10	-1,036.24	966.27	940.39	25.88	37.330	
3,700.00	3,693.11	3,743.86	3,736.44	13.36	13.45	-106.56	-106.77	-1,032.76	958.65	932.03	26.62	36.009	
3,800.00	3,792.87	3,843.57	3,835.82	13.73	13.82	-106.59	-99.43	-1,029.27	951.03	923.67	27.36	34.759	
3,900.00	3,892.63	3,943.28	3,935.19	14.11	14.20	-106.63	-92.09	-1,025.79	943.42	915.32	28.10	33.574	
4,000.00	3,992.38	4,042.99	4,034.57	14.48	14.57	-106.67	-84.75	-1,022.30	935.80	906.96	28.84	32.450	
4,100.00	4,092.14	4,142.70	4,133.95	14.85	14.95	-106.70	-77.41	-1,018.81	928.18	898.60	29.58	31.382	
4,200.00	4,191.90	4,242.40	4,233.32	15.22	15.32	-106.74	-70.07	-1,015.33	920.56	890.25	30.32	30.366	
4,300.00	4,291.65	4,342.11	4,332.70	15.60	15.70	-106.78	-62.74	-1,011.84	912.94	881.89	31.05	29.399	
4,400.00	4,391.41	4,441.82	4,432.07	15.97	16.07	-106.82	-55.40	-1,008.36	905.33	873.54	31.79	28.476	
4,500.00	4,491.17	4,541.53	4,531.45	16.34	16.45	-106.85	-48.06	-1,004.87	897.71	865.18	32.53	27.595	
4,600.00	4,590.92	4,641.23	4,630.83	16.72	16.82	-106.89	-40.72	-1,001.38	890.10	856.83	33.27	26.753	
4,700.00	4,690.68	4,740.94	4,730.20	17.09	17.20	-106.94	-33.38	-997.90	882.48	848.47	34.01	25.947	
4,800.00	4,790.44	4,840.65	4,829.58	17.46	17.57	-106.98	-26.04	-994.41	874.87	840.12	34.75	25.176	
4,900.00	4,890.19	4,940.36	4,928.96	17.83	17.95	-107.02	-18.70	-990.93	867.25	831.76	35.49	24.437	
5,000.00	4,989.95	5,040.06	5,028.33	18.21	18.32	-107.06	-11.37	-987.44	859.64	823.41	36.23	23.728	

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #203H - Wellbore #1 - Design #1													Offset Site Error: 0.00 usft	
Survey Program: 0-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,089.71	5,139.77	5,127.71	18.58	18.70	-107.10	-4.03	-983.95	852.02	815.06	36.97	23.047		
5,200.00	5,189.47	5,239.48	5,227.08	18.95	19.08	-107.15	3.31	-980.47	844.41	806.70	37.71	22.394		
5,300.00	5,289.22	5,339.19	5,326.46	19.33	19.45	-107.19	10.65	-976.98	836.80	798.35	38.45	21.765		
5,400.00	5,388.98	5,438.89	5,425.84	19.70	19.83	-107.24	17.99	-973.50	829.19	790.00	39.19	21.160		
5,500.00	5,488.74	5,538.60	5,525.21	20.07	20.20	-107.29	25.33	-970.01	821.58	781.65	39.93	20.577		
5,520.13	5,508.82	5,558.68	5,545.22	20.15	20.28	-107.30	26.80	-969.31	820.04	779.97	40.08	20.462		
5,600.00	5,588.54	5,638.33	5,624.61	20.44	20.58	-107.28	32.67	-966.52	814.21	773.55	40.66	20.023		
5,700.00	5,688.48	5,738.07	5,724.02	20.80	20.96	-107.10	40.01	-963.04	807.61	766.22	41.39	19.511		
5,786.53	5,775.00	5,824.35	5,810.01	21.11	21.28	-106.79	46.36	-960.02	802.56	760.54	42.02	19.102		
5,800.00	5,788.47	5,837.77	5,823.39	21.15	21.33	-106.73	47.34	-959.55	801.82	759.71	42.11	19.040		
5,900.00	5,888.47	5,937.44	5,922.72	21.50	21.71	-106.30	54.68	-956.07	796.36	753.54	42.83	18.595		
6,000.00	5,988.47	6,037.11	6,022.06	21.84	22.08	-105.86	62.02	-952.58	790.96	747.41	43.54	18.165		
6,100.00	6,088.47	6,136.78	6,121.40	22.19	22.46	-105.41	69.35	-949.10	785.59	741.33	44.26	17.749		
6,200.00	6,188.47	6,236.44	6,220.73	22.53	22.84	-104.96	76.69	-945.61	780.28	735.30	44.98	17.348		
6,300.00	6,288.47	6,336.11	6,320.07	22.88	23.21	-104.51	84.02	-942.13	775.02	729.32	45.70	16.960		
6,400.00	6,388.47	6,435.78	6,419.41	23.23	23.59	-104.04	91.36	-938.64	769.81	723.39	46.42	16.585		
6,500.00	6,488.47	6,535.45	6,518.74	23.57	23.97	-103.57	98.69	-935.16	764.64	717.51	47.14	16.222		
6,600.00	6,588.47	6,635.11	6,618.08	23.92	24.34	-103.09	106.03	-931.68	759.53	711.68	47.86	15.871		
6,700.00	6,688.47	6,734.78	6,717.41	24.27	24.72	-102.61	113.36	-928.19	754.48	705.90	48.58	15.531		
6,800.00	6,788.47	6,834.45	6,816.75	24.62	25.09	-102.12	120.70	-924.71	749.48	700.18	49.30	15.203		
6,900.00	6,888.47	6,934.12	6,916.09	24.97	25.47	-101.62	128.04	-921.22	744.53	694.51	50.02	14.884		
7,000.00	6,988.47	7,033.78	7,015.42	25.32	25.85	-101.12	135.37	-917.74	739.64	688.90	50.74	14.576		
7,100.00	7,088.47	7,133.45	7,114.76	25.66	26.22	-100.61	142.71	-914.25	734.81	683.34	51.47	14.277		
7,200.00	7,188.47	7,233.12	7,214.09	26.01	26.60	-100.10	150.04	-910.77	730.04	677.84	52.19	13.987		
7,300.00	7,288.47	7,332.79	7,313.43	26.36	26.98	-99.57	157.38	-907.28	725.32	672.41	52.92	13.707		
7,400.00	7,388.47	7,432.45	7,412.77	26.71	27.35	-99.04	164.71	-903.80	720.67	667.03	53.64	13.435		
7,500.00	7,488.47	7,532.12	7,512.10	27.06	27.73	-98.51	172.05	-900.31	716.08	661.72	54.37	13.171		
7,600.00	7,588.47	7,631.79	7,611.44	27.41	28.11	-97.96	179.38	-896.83	711.56	656.46	55.10	12.915		
7,700.00	7,688.47	7,731.46	7,710.77	27.76	28.48	-97.41	186.72	-893.35	707.10	651.28	55.82	12.667		
7,800.00	7,788.47	7,831.12	7,810.11	28.11	28.86	-96.86	194.05	-889.86	702.71	646.16	56.55	12.426		
7,900.00	7,888.47	7,930.79	7,909.45	28.46	29.24	-96.29	201.39	-886.38	698.38	641.10	57.28	12.193		
8,000.00	7,988.47	8,030.46	8,008.78	28.82	29.61	-95.72	208.73	-882.89	694.12	636.12	58.01	11.966		
8,100.00	8,088.47	8,130.13	8,108.12	29.17	29.99	-95.14	216.06	-879.41	689.93	631.20	58.74	11.746		
8,200.00	8,188.47	8,229.79	8,207.45	29.52	30.37	-94.56	223.40	-875.92	685.82	626.35	59.47	11.533		
8,300.00	8,288.47	8,329.46	8,306.79	29.87	30.74	-93.97	230.73	-872.44	681.77	621.58	60.20	11.326		
8,400.00	8,388.47	8,429.13	8,406.13	30.22	31.12	-93.37	238.07	-868.95	677.80	616.88	60.93	11.125		
8,500.00	8,488.47	8,528.80	8,505.46	30.57	31.50	-92.76	245.40	-865.47	673.91	612.25	61.66	10.930		
8,600.00	8,588.47	8,628.46	8,604.80	30.93	31.87	-92.15	252.74	-861.98	670.09	607.70	62.39	10.741		
8,700.00	8,688.47	8,728.13	8,704.14	31.28	32.25	-91.53	260.07	-858.50	666.35	603.23	63.12	10.557		
8,800.00	8,788.47	8,821.12	8,796.89	31.63	32.60	-91.02	266.04	-855.67	663.16	599.32	63.84	10.388		
8,900.00	8,888.47	8,913.90	8,889.56	31.98	32.93	-90.69	269.96	-853.80	661.08	596.55	64.54	10.243		
9,000.00	8,988.47	9,006.82	8,982.46	32.33	33.26	-90.52	271.85	-852.91	660.10	594.87	65.22	10.120		
9,057.99	9,046.46	9,061.82	9,037.46	32.54	33.45	-90.51	272.04	-852.82	660.00	594.38	65.62	10.058		
9,100.00	9,088.47	9,103.83	9,079.47	32.69	33.59	-90.51	272.04	-852.82	660.00	594.09	65.91	10.013		
9,200.00	9,188.47	9,203.83	9,179.47	33.04	33.94	-90.51	272.04	-852.82	660.00	593.39	66.61	9.908		
9,300.00	9,288.47	9,303.83	9,279.47	33.39	34.28	-90.51	272.04	-852.82	660.00	592.69	67.31	9.806		
9,400.00	9,388.47	9,403.83	9,379.47	33.75	34.62	-90.51	272.04	-852.82	660.00	591.99	68.01	9.705		
9,500.00	9,488.47	9,503.83	9,479.47	34.10	34.96	-90.51	272.04	-852.82	660.00	591.30	68.70	9.606		
9,600.00	9,588.47	9,603.83	9,579.47	34.45	35.31	-90.51	272.04	-852.82	660.00	590.60	69.40	9.510		
9,700.00	9,688.47	9,703.83	9,679.47	34.81	35.65	-90.51	272.04	-852.82	660.00	589.90	70.10	9.415		
9,800.00	9,788.47	9,803.83	9,779.47	35.16	35.99	-90.51	272.04	-852.82	660.00	589.20	70.80	9.322		
9,900.00	9,888.47	9,903.83	9,879.47	35.51	36.34	-90.51	272.04	-852.82	660.00	588.50	71.50	9.230		

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



MS Directional Anticollision Report



Company: Matador Resources
Project: Lea County, New Mexico (NAD 27)
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #214H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #203H - Wellbore #1 - Design #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,000.00	9,988.47	10,003.83	9,979.47	35.87	36.68	-90.51	272.04	-852.82	660.00	587.80	72.20	9.141	
10,100.00	10,088.47	10,103.83	10,079.47	36.22	37.03	-90.51	272.04	-852.82	660.00	587.10	72.90	9.053	
10,200.00	10,188.47	10,203.83	10,179.47	36.57	37.37	-90.51	272.04	-852.82	660.00	586.39	73.61	8.967	
10,300.00	10,288.47	10,303.83	10,279.47	36.93	37.72	-90.51	272.04	-852.82	660.00	585.69	74.31	8.882	
10,400.00	10,388.47	10,403.83	10,379.47	37.28	38.06	-90.51	272.04	-852.82	660.00	584.99	75.01	8.799	
10,500.00	10,488.47	10,503.83	10,479.47	37.64	38.41	-90.51	272.04	-852.82	660.00	584.29	75.71	8.717	
10,600.00	10,588.47	10,603.83	10,579.47	37.99	38.76	-90.51	272.04	-852.82	660.00	583.59	76.41	8.637	
10,700.00	10,688.47	10,703.83	10,679.47	38.35	39.10	-90.51	272.04	-852.82	660.00	582.88	77.11	8.559	
10,800.00	10,788.47	10,803.83	10,779.47	38.70	39.45	-90.51	272.04	-852.82	660.00	582.18	77.82	8.481	
10,900.00	10,888.47	10,903.83	10,879.47	39.05	39.80	-90.51	272.04	-852.82	660.00	581.48	78.52	8.405	
11,000.00	10,988.47	11,003.83	10,979.47	39.41	40.14	-90.51	272.04	-852.82	660.00	580.78	79.22	8.331	
11,100.00	11,088.47	11,103.83	11,079.47	39.76	40.49	-90.51	272.04	-852.82	660.00	580.07	79.93	8.257	
11,200.00	11,188.47	11,203.83	11,179.47	40.12	40.84	-90.51	272.04	-852.82	660.00	579.37	80.63	8.185	
11,300.00	11,288.47	11,303.83	11,279.47	40.47	41.18	-90.51	272.04	-852.82	660.00	578.66	81.33	8.115	
11,400.00	11,388.47	11,403.83	11,379.47	40.83	41.53	-90.51	272.04	-852.82	660.00	577.96	82.04	8.045	
11,500.00	11,488.47	11,503.83	11,479.47	41.18	41.88	-90.51	272.04	-852.82	660.00	577.26	82.74	7.976	
11,600.00	11,588.47	11,603.83	11,579.47	41.54	42.23	-90.51	272.04	-852.82	660.00	576.55	83.45	7.909 CC	
11,603.12	11,591.59	11,606.96	11,582.59	41.55	42.24	-90.51	272.04	-852.82	660.00	576.53	83.47	7.907	
11,700.00	11,688.47	11,702.79	11,677.97	41.89	42.53	-91.21	263.98	-852.76	660.06	575.96	84.10	7.849	
11,800.00	11,788.47	11,796.31	11,768.50	42.25	42.75	-93.21	240.92	-852.58	660.86	576.20	84.66	7.806	
11,869.77	11,858.24	11,856.16	11,823.98	42.50	42.87	-95.14	218.54	-852.41	662.71	577.73	84.97	7.799	
11,900.00	11,888.46	11,880.78	11,846.08	42.60	42.91	-96.01	207.68	-852.33	663.97	578.89	85.08	7.804	
11,950.00	11,938.21	11,920.73	11,880.87	42.75	42.98	-97.28	188.06	-852.18	666.48	581.28	85.21	7.822	
12,000.00	11,987.35	11,959.82	11,913.50	42.90	43.03	-98.33	166.57	-852.01	669.46	584.18	85.28	7.850	
12,050.00	12,035.51	12,000.00	11,945.45	43.03	43.08	-99.27	142.21	-851.82	672.81	587.50	85.31	7.886	
12,100.00	12,082.33	12,035.80	11,972.41	43.16	43.12	-99.78	118.67	-851.64	676.43	591.18	85.26	7.934	
12,150.00	12,127.43	12,072.87	11,998.72	43.28	43.15	-100.16	92.56	-851.44	680.23	595.07	85.16	7.987	
12,200.00	12,170.49	12,109.44	12,022.97	43.39	43.18	-100.33	65.20	-851.24	684.13	599.10	85.02	8.046	
12,250.00	12,211.17	12,150.00	12,047.76	43.48	43.20	-100.58	33.11	-850.99	688.04	603.14	84.90	8.104	
12,300.00	12,249.17	12,181.28	12,065.29	43.57	43.22	-100.03	7.21	-850.79	691.82	607.18	84.65	8.173	
12,350.00	12,284.19	12,216.67	12,083.39	43.65	43.23	-99.59	-23.20	-850.56	695.47	611.04	84.43	8.237	
12,400.00	12,315.96	12,250.00	12,098.69	43.71	43.25	-98.83	-52.80	-850.33	698.89	614.69	84.20	8.300	
12,450.00	12,344.26	12,286.62	12,113.48	43.78	43.26	-98.17	-86.29	-850.08	702.00	617.99	84.02	8.355	
12,500.00	12,368.85	12,321.26	12,125.48	43.86	43.27	-97.23	-118.79	-849.83	704.77	620.93	83.84	8.406	
12,550.00	12,389.56	12,350.00	12,133.93	43.95	43.28	-95.68	-146.25	-849.62	707.17	623.51	83.66	8.452	
12,600.00	12,406.23	12,390.07	12,143.39	44.04	43.30	-94.97	-185.18	-849.32	709.07	625.45	83.61	8.480	
12,650.00	12,418.73	12,426.85	12,149.80	44.14	43.32	-93.92	-221.39	-849.04	710.47	626.88	83.59	8.499	
12,669.77	12,422.49	12,442.33	12,152.04	44.18	43.33	-93.57	-236.70	-848.93	710.82	627.21	83.61	8.502	
12,700.00	12,427.27	12,465.99	12,154.98	44.25	43.35	-93.02	-260.18	-848.75	711.20	627.55	83.65	8.502	
12,750.00	12,433.09	12,500.00	12,158.19	44.36	43.38	-91.65	-294.04	-848.49	711.68	627.95	83.74	8.499	
12,800.00	12,436.31	12,544.18	12,160.56	44.48	43.44	-91.14	-338.15	-848.15	711.91	628.03	83.88	8.487	
12,836.44	12,437.00	12,573.27	12,161.00	44.57	43.47	-90.51	-367.23	-847.93	711.96	627.96	84.00	8.475	
12,857.90	12,437.00	12,593.94	12,161.00	44.62	43.50	-90.44	-387.90	-847.77	711.96	627.88	84.09	8.467	
12,900.00	12,437.00	12,636.05	12,161.00	44.74	43.58	-90.44	-430.01	-847.45	711.96	627.70	84.26	8.450	
13,000.00	12,437.00	12,736.05	12,161.00	45.06	43.80	-90.44	-530.00	-846.68	711.96	627.21	84.75	8.401	
13,100.00	12,437.00	12,836.05	12,161.00	45.43	44.08	-90.44	-630.00	-845.92	711.96	626.62	85.34	8.342	
13,200.00	12,437.00	12,936.05	12,161.00	45.86	44.41	-90.44	-730.00	-845.15	711.96	625.91	86.05	8.274	
13,300.00	12,437.00	13,036.05	12,161.00	46.35	44.80	-90.44	-829.99	-844.39	711.96	625.09	86.87	8.196	
13,400.00	12,437.00	13,136.05	12,161.00	46.88	45.25	-90.44	-929.99	-843.62	711.96	624.18	87.78	8.111	
13,500.00	12,437.00	13,236.05	12,161.00	47.47	45.75	-90.44	-1,029.99	-842.86	711.96	623.16	88.80	8.018	
13,600.00	12,437.00	13,336.05	12,161.00	48.11	46.31	-90.44	-1,129.99	-842.10	711.96	622.05	89.91	7.918	
13,700.00	12,437.00	13,436.05	12,161.00	48.80	46.91	-90.44	-1,229.98	-841.33	711.96	620.84	91.12	7.813	

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #203H - Wellbore #1 - Design #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	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)			
13,800.00	12,437.00	13,536.05	12,161.00	49.53	47.57	-90.44	-1,329.98	-840.57	711.96	619.54	92.42	7.704	
13,900.00	12,437.00	13,636.05	12,161.00	50.30	48.27	-90.44	-1,429.98	-839.80	711.96	618.16	93.80	7.590	
14,000.00	12,437.00	13,736.05	12,161.00	51.12	49.02	-90.44	-1,529.97	-839.04	711.96	616.70	95.26	7.474	
14,100.00	12,437.00	13,836.05	12,161.00	51.97	49.81	-90.44	-1,629.97	-838.27	711.96	615.15	96.81	7.355	
14,200.00	12,437.00	13,936.05	12,161.00	52.87	50.64	-90.44	-1,729.97	-837.51	711.96	613.54	98.42	7.234	
14,300.00	12,437.00	14,036.05	12,161.00	53.80	51.51	-90.44	-1,829.97	-836.74	711.96	611.85	100.11	7.112	
14,400.00	12,437.00	14,136.05	12,161.00	54.76	52.42	-90.44	-1,929.96	-835.98	711.96	610.09	101.87	6.989	
14,500.00	12,437.00	14,236.05	12,161.00	55.75	53.36	-90.44	-2,029.96	-835.21	711.96	608.27	103.69	6.866	
14,600.00	12,437.00	14,336.05	12,161.00	56.78	54.34	-90.44	-2,129.96	-834.45	711.96	606.39	105.57	6.744	
14,700.00	12,437.00	14,436.05	12,161.00	57.84	55.35	-90.44	-2,229.95	-833.68	711.96	604.45	107.51	6.622	
14,800.00	12,437.00	14,536.05	12,161.00	58.92	56.39	-90.44	-2,329.95	-832.92	711.96	602.46	109.50	6.502	
14,900.00	12,437.00	14,636.05	12,161.00	60.03	57.46	-90.44	-2,429.95	-832.15	711.96	600.41	111.55	6.382	
15,000.00	12,437.00	14,736.05	12,161.00	61.16	58.55	-90.44	-2,529.95	-831.39	711.96	598.32	113.64	6.265	
15,100.00	12,437.00	14,836.05	12,161.00	62.32	59.67	-90.44	-2,629.94	-830.62	711.96	596.17	115.79	6.149	
15,200.00	12,437.00	14,936.05	12,161.00	63.49	60.82	-90.44	-2,729.94	-829.86	711.96	593.99	117.97	6.035	
15,300.00	12,437.00	15,036.05	12,161.00	64.69	61.99	-90.44	-2,829.94	-829.09	711.96	591.76	120.20	5.923	
15,400.00	12,437.00	15,136.05	12,161.00	65.91	63.18	-90.44	-2,929.93	-828.33	711.96	589.50	122.46	5.814	
15,500.00	12,437.00	15,236.05	12,161.00	67.15	64.39	-90.44	-3,029.93	-827.56	711.96	587.20	124.76	5.707	
15,600.00	12,437.00	15,336.05	12,161.00	68.40	65.62	-90.44	-3,129.93	-826.80	711.96	584.86	127.10	5.602	
15,700.00	12,437.00	15,436.05	12,161.00	69.67	66.86	-90.44	-3,229.92	-826.04	711.96	582.49	129.47	5.499	
15,800.00	12,437.00	15,536.05	12,161.00	70.96	68.13	-90.44	-3,329.92	-825.27	711.96	580.09	131.87	5.399	
15,900.00	12,437.00	15,636.05	12,161.00	72.26	69.41	-90.44	-3,429.92	-824.51	711.96	577.66	134.30	5.301	
16,000.00	12,437.00	15,736.05	12,161.00	73.58	70.71	-90.44	-3,529.92	-823.74	711.96	575.20	136.76	5.206	
16,100.00	12,437.00	15,836.05	12,161.00	74.91	72.02	-90.44	-3,629.91	-822.98	711.96	572.72	139.24	5.113	
16,200.00	12,437.00	15,936.05	12,161.00	76.25	73.34	-90.44	-3,729.91	-822.21	711.96	570.21	141.75	5.023	
16,300.00	12,437.00	16,036.05	12,161.00	77.60	74.68	-90.44	-3,829.91	-821.45	711.96	567.67	144.29	4.934	
16,400.00	12,437.00	16,136.05	12,161.00	78.97	76.03	-90.44	-3,929.90	-820.68	711.96	565.12	146.84	4.848	
16,500.00	12,437.00	16,236.05	12,161.00	80.35	77.39	-90.44	-4,029.90	-819.92	711.96	562.54	149.42	4.765	
16,600.00	12,437.00	16,336.05	12,161.00	81.73	78.77	-90.44	-4,129.90	-819.15	711.96	559.94	152.02	4.683	
16,700.00	12,437.00	16,436.05	12,161.00	83.13	80.15	-90.44	-4,229.90	-818.39	711.96	557.32	154.64	4.604	
16,800.00	12,437.00	16,536.05	12,161.00	84.53	81.54	-90.44	-4,329.89	-817.62	711.96	554.69	157.27	4.527	
16,900.00	12,437.00	16,636.05	12,161.00	85.95	82.95	-90.44	-4,429.89	-816.86	711.96	552.03	159.92	4.452	
17,000.00	12,437.00	16,736.05	12,161.00	87.37	84.36	-90.44	-4,529.89	-816.09	711.96	549.36	162.59	4.379	
17,100.00	12,437.00	16,836.05	12,161.00	88.80	85.78	-90.44	-4,629.88	-815.33	711.96	546.68	165.28	4.308	
17,191.09	12,437.00	16,927.14	12,161.00	90.11	87.08	-90.44	-4,720.97	-814.63	711.96	544.22	167.74	4.244	
17,193.91	12,437.00	16,929.44	12,161.00	90.15	87.11	-90.39	-4,723.27	-814.61	711.96	544.15	167.81	4.243 ES, SF	

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #204H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	89.57	0.23	29.99	30.00					
100.00	100.00	99.00	99.00	0.13	0.13	89.57	0.23	29.99	29.99	29.73	0.26	117.583		
200.00	200.00	199.00	199.00	0.49	0.48	89.57	0.23	29.99	29.99	29.02	0.97	30.925		
300.00	300.00	299.00	299.00	0.85	0.84	89.57	0.23	29.99	29.99	28.30	1.69	17.779		
400.00	400.00	399.00	399.00	1.20	1.20	89.57	0.23	29.99	29.99	27.58	2.40	12.476		
500.00	500.00	499.00	499.00	1.56	1.56	89.57	0.23	29.99	29.99	26.87	3.12	9.610		
600.00	600.00	599.00	599.00	1.92	1.92	89.57	0.23	29.99	29.99	26.15	3.84	7.814 CC		
700.00	699.99	698.99	698.99	2.28	2.28	90.92	0.23	29.99	30.49	25.93	4.55	6.697 ES		
800.00	799.96	798.96	798.96	2.63	2.63	94.72	0.23	29.99	32.08	26.82	5.27	6.091		
900.00	899.86	898.86	898.86	2.99	2.99	100.24	0.23	29.99	35.02	29.04	5.98	5.854		
999.59	999.27	998.27	998.27	3.35	3.35	106.47	0.23	29.99	39.55	32.86	6.70	5.907		
1,000.00	999.68	998.68	998.68	3.35	3.35	106.50	0.23	29.99	39.57	32.87	6.70	5.908		
1,100.00	1,099.43	1,098.43	1,098.43	3.72	3.71	112.03	0.23	29.99	45.22	37.80	7.42	6.098		
1,200.00	1,199.19	1,198.19	1,198.19	4.08	4.06	116.31	0.23	29.99	51.19	43.06	8.13	6.296		
1,300.00	1,298.95	1,297.50	1,297.49	4.45	4.42	118.94	0.68	30.68	57.77	48.93	8.84	6.534		
1,400.00	1,398.70	1,396.73	1,396.69	4.82	4.77	119.67	2.09	32.80	65.21	55.66	9.55	6.829		
1,500.00	1,498.46	1,495.84	1,495.71	5.18	5.12	119.05	4.44	36.36	73.44	63.18	10.26	7.160		
1,600.00	1,598.22	1,594.77	1,594.46	5.55	5.47	117.52	7.72	41.33	82.50	71.53	10.96	7.524		
1,700.00	1,697.97	1,694.23	1,693.68	5.92	5.83	115.75	11.55	47.12	92.09	80.41	11.68	7.885		
1,800.00	1,797.73	1,793.73	1,792.94	6.29	6.18	114.32	15.38	52.92	101.76	89.36	12.40	8.209		
1,900.00	1,897.49	1,893.24	1,892.19	6.66	6.54	113.14	19.22	58.71	111.48	98.36	13.11	8.500		
2,000.00	1,997.24	1,992.74	1,991.45	7.03	6.90	112.15	23.05	64.51	121.23	107.40	13.83	8.764		
2,100.00	2,097.00	2,092.24	2,090.71	7.40	7.27	111.30	26.88	70.31	131.02	116.47	14.55	9.002		
2,200.00	2,196.76	2,191.74	2,189.97	7.78	7.63	110.58	30.71	76.11	140.84	125.56	15.28	9.219		
2,300.00	2,296.51	2,291.24	2,289.23	8.15	7.99	109.94	34.54	81.91	150.67	134.67	16.00	9.418		
2,400.00	2,396.27	2,390.75	2,388.49	8.52	8.36	109.39	38.37	87.70	160.52	143.80	16.72	9.599		
2,500.00	2,496.03	2,490.25	2,487.75	8.89	8.72	108.90	42.21	93.50	170.39	152.94	17.45	9.766		
2,600.00	2,595.79	2,589.75	2,587.01	9.26	9.09	108.46	46.04	99.30	180.26	162.09	18.17	9.920		
2,700.00	2,695.54	2,689.25	2,686.27	9.63	9.45	108.07	49.87	105.10	190.15	171.25	18.90	10.063		
2,800.00	2,795.30	2,788.76	2,785.53	10.01	9.82	107.72	53.70	110.89	200.04	180.42	19.62	10.195		
2,900.00	2,895.06	2,888.26	2,884.79	10.38	10.19	107.40	57.53	116.69	209.94	189.59	20.35	10.318		
3,000.00	2,994.81	2,987.76	2,984.05	10.75	10.56	107.11	61.37	122.49	219.84	198.77	21.07	10.432		
3,100.00	3,094.57	3,087.26	3,083.31	11.12	10.92	106.84	65.20	128.29	229.75	207.95	21.80	10.539		
3,200.00	3,194.33	3,186.76	3,182.57	11.50	11.29	106.60	69.03	134.08	239.67	217.14	22.53	10.640		
3,300.00	3,294.08	3,286.27	3,281.82	11.87	11.66	106.37	72.86	139.88	249.58	226.33	23.25	10.734		
3,400.00	3,393.84	3,385.77	3,381.08	12.24	12.03	106.16	76.69	145.68	259.51	235.53	23.98	10.822		
3,500.00	3,493.60	3,485.27	3,480.34	12.61	12.40	105.97	80.53	151.48	269.43	244.73	24.71	10.905		
3,600.00	3,593.35	3,584.77	3,579.60	12.99	12.77	105.79	84.36	157.27	279.36	253.93	25.43	10.983		
3,700.00	3,693.11	3,684.28	3,678.86	13.36	13.13	105.63	88.19	163.07	289.29	263.13	26.16	11.058		
3,800.00	3,792.87	3,783.78	3,778.12	13.73	13.50	105.47	92.02	168.87	299.22	272.33	26.89	11.128		
3,900.00	3,892.63	3,883.28	3,877.38	14.11	13.87	105.33	95.85	174.67	309.16	281.54	27.62	11.194		
4,000.00	3,992.38	3,982.78	3,976.64	14.48	14.24	105.19	99.69	180.46	319.10	290.75	28.35	11.257		
4,100.00	4,092.14	4,082.29	4,075.90	14.85	14.61	105.06	103.52	186.26	329.03	299.96	29.07	11.317		
4,200.00	4,191.90	4,181.79	4,175.16	15.22	14.98	104.94	107.35	192.06	338.97	309.17	29.80	11.374		
4,300.00	4,291.65	4,281.29	4,274.42	15.60	15.35	104.83	111.18	197.86	348.92	318.38	30.53	11.428		
4,400.00	4,391.41	4,380.79	4,373.68	15.97	15.72	104.72	115.01	203.65	358.86	327.60	31.26	11.480		
4,500.00	4,491.17	4,480.29	4,472.94	16.34	16.09	104.62	118.85	209.45	368.80	336.81	31.99	11.529		
4,600.00	4,590.92	4,579.80	4,572.20	16.72	16.46	104.53	122.68	215.25	378.75	346.03	32.72	11.576		
4,700.00	4,690.68	4,679.30	4,671.45	17.09	16.83	104.43	126.51	221.05	388.69	355.25	33.45	11.622		
4,800.00	4,790.44	4,778.80	4,770.71	17.46	17.20	104.35	130.34	226.84	398.64	364.47	34.17	11.665		
4,900.00	4,890.19	4,878.30	4,869.97	17.83	17.57	104.26	134.17	232.64	408.59	373.69	34.90	11.706		
5,000.00	4,989.95	4,977.81	4,969.23	18.21	17.94	104.19	138.01	238.44	418.54	382.91	35.63	11.746		

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #204H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,089.71	5,077.31	5,068.49	18.58	18.31	104.11	141.84	244.24	428.49	392.13	36.36	11.784		
5,200.00	5,189.47	5,176.81	5,167.75	18.95	18.68	104.04	145.67	250.03	438.44	401.35	37.09	11.821		
5,300.00	5,289.22	5,276.31	5,267.01	19.33	19.05	103.97	149.50	255.83	448.39	410.57	37.82	11.856		
5,400.00	5,388.98	5,375.81	5,366.27	19.70	19.42	103.91	153.33	261.63	458.34	419.79	38.55	11.890		
5,500.00	5,488.74	5,475.32	5,465.53	20.07	19.80	103.84	157.16	267.43	468.29	429.01	39.28	11.922		
5,520.13	5,508.82	5,495.35	5,485.51	20.15	19.87	103.83	157.94	268.59	470.30	430.87	39.43	11.929		
5,600.00	5,588.54	5,574.87	5,564.84	20.44	20.17	103.72	161.00	273.23	477.62	437.62	40.01	11.939		
5,700.00	5,688.48	5,674.56	5,664.28	20.80	20.54	103.39	164.84	279.04	485.05	444.32	40.73	11.909		
5,786.53	5,775.00	5,760.87	5,750.38	21.11	20.86	102.96	168.16	284.07	489.94	448.58	41.35	11.848		
5,800.00	5,788.47	5,774.30	5,763.79	21.15	20.91	102.88	168.68	284.85	490.58	449.14	41.45	11.836		
5,900.00	5,888.47	5,874.06	5,863.30	21.50	21.28	102.29	172.52	290.66	495.44	453.28	42.16	11.751		
6,000.00	5,988.47	5,973.82	5,962.81	21.84	21.65	101.72	176.36	296.47	500.34	457.47	42.88	11.670		
6,100.00	6,088.47	6,073.57	6,062.32	22.19	22.02	101.16	180.20	302.29	505.30	461.71	43.59	11.592		
6,200.00	6,188.47	6,173.33	6,161.83	22.53	22.40	100.61	184.05	308.10	510.30	465.99	44.30	11.518		
6,300.00	6,288.47	6,273.08	6,261.35	22.88	22.77	100.07	187.89	313.91	515.34	470.33	45.02	11.447		
6,400.00	6,388.47	6,372.84	6,360.86	23.23	23.14	99.54	191.73	319.72	520.44	474.70	45.73	11.380		
6,500.00	6,488.47	6,472.59	6,460.37	23.57	23.51	99.02	195.57	325.53	525.57	479.12	46.45	11.316		
6,600.00	6,588.47	6,572.35	6,559.88	23.92	23.88	98.51	199.41	331.35	530.75	483.59	47.16	11.254		
6,700.00	6,688.47	6,672.11	6,659.39	24.27	24.26	98.01	203.25	337.16	535.97	488.09	47.88	11.195		
6,800.00	6,788.47	6,771.86	6,758.91	24.62	24.63	97.52	207.10	342.97	541.22	492.63	48.59	11.139		
6,900.00	6,888.47	6,871.62	6,858.42	24.97	25.00	97.04	210.94	348.78	546.52	497.22	49.30	11.085		
7,000.00	6,988.47	6,971.37	6,957.93	25.32	25.37	96.57	214.78	354.60	551.86	501.84	50.02	11.033		
7,100.00	7,088.47	7,071.13	7,057.44	25.66	25.74	96.11	218.62	360.41	557.23	506.49	50.73	10.984		
7,200.00	7,188.47	7,170.88	7,156.96	26.01	26.12	95.66	222.46	366.22	562.63	511.19	51.45	10.936		
7,300.00	7,288.47	7,270.64	7,256.47	26.36	26.49	95.22	226.30	372.03	568.07	515.91	52.16	10.891		
7,400.00	7,388.47	7,370.40	7,355.98	26.71	26.86	94.78	230.15	377.85	573.55	520.67	52.87	10.847		
7,500.00	7,488.47	7,470.15	7,455.49	27.06	27.23	94.35	233.99	383.66	579.05	525.46	53.59	10.805		
7,600.00	7,588.47	7,569.91	7,555.00	27.41	27.61	93.93	237.83	389.47	584.59	530.29	54.30	10.765		
7,700.00	7,688.47	7,669.66	7,654.52	27.76	27.98	93.52	241.67	395.28	590.16	535.14	55.02	10.727		
7,800.00	7,788.47	7,769.42	7,754.03	28.11	28.35	93.12	245.51	401.10	595.76	540.03	55.73	10.690		
7,900.00	7,888.47	7,869.18	7,853.54	28.46	28.72	92.72	249.36	406.91	601.39	544.94	56.45	10.654		
8,000.00	7,988.47	7,968.93	7,953.05	28.82	29.09	92.33	253.20	412.72	607.04	549.88	57.16	10.620		
8,100.00	8,088.47	8,068.69	8,052.57	29.17	29.47	91.95	257.04	418.53	612.73	554.85	57.88	10.587		
8,200.00	8,188.47	8,168.44	8,152.08	29.52	29.84	91.58	260.88	424.34	618.44	559.85	58.59	10.555		
8,300.00	8,288.47	8,268.20	8,251.59	29.87	30.21	91.21	264.72	430.16	624.17	564.87	59.30	10.525		
8,400.00	8,388.47	8,367.95	8,351.10	30.22	30.58	90.85	268.56	435.97	629.93	569.91	60.02	10.496		
8,500.00	8,488.47	8,467.71	8,450.61	30.57	30.96	90.49	272.41	441.78	635.72	574.99	60.73	10.467		
8,600.00	8,588.47	8,567.47	8,550.13	30.93	31.33	90.15	276.25	447.59	641.53	580.08	61.45	10.440		
8,700.00	8,688.47	8,674.08	8,656.50	31.28	31.72	89.79	280.18	453.55	647.14	584.93	62.21	10.403		
8,800.00	8,788.47	8,790.57	8,772.88	31.63	32.15	89.56	282.88	457.63	650.66	587.65	63.01	10.327		
8,900.00	8,888.47	8,905.17	8,887.47	31.98	32.55	89.49	283.63	458.77	651.64	587.88	63.76	10.220		
9,000.00	8,988.47	9,005.17	8,987.47	32.33	32.89	89.49	283.63	458.77	651.64	587.18	64.46	10.109		
9,100.00	9,088.47	9,105.17	9,087.47	32.69	33.23	89.49	283.63	458.77	651.64	586.48	65.16	10.000		
9,200.00	9,188.47	9,205.17	9,187.47	33.04	33.58	89.49	283.63	458.77	651.64	585.78	65.86	9.894		
9,300.00	9,288.47	9,305.17	9,287.47	33.39	33.92	89.49	283.63	458.77	651.64	585.07	66.56	9.790		
9,400.00	9,388.47	9,405.17	9,387.47	33.75	34.26	89.49	283.63	458.77	651.64	584.37	67.27	9.687		
9,500.00	9,488.47	9,505.17	9,487.47	34.10	34.61	89.49	283.63	458.77	651.64	583.67	67.97	9.587		
9,600.00	9,588.47	9,605.17	9,587.47	34.45	34.95	89.49	283.63	458.77	651.64	582.97	68.67	9.489		
9,700.00	9,688.47	9,705.17	9,687.47	34.81	35.29	89.49	283.63	458.77	651.64	582.26	69.37	9.393		
9,800.00	9,788.47	9,805.17	9,787.47	35.16	35.64	89.49	283.63	458.77	651.64	581.56	70.08	9.299		
9,900.00	9,888.47	9,905.17	9,887.47	35.51	35.98	89.49	283.63	458.77	651.64	580.86	70.78	9.207		
10,000.00	9,988.47	10,005.17	9,987.47	35.87	36.33	89.49	283.63	458.77	651.64	580.15	71.48	9.116		

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #204H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N-S (usft)	+E-W (usft)						
10,100.00	10,088.47	10,105.17	10,087.47	36.22	36.67	89.49	283.63	458.77	651.64	579.45	72.19	9.027		
10,200.00	10,188.47	10,205.17	10,187.47	36.57	37.02	89.49	283.63	458.77	651.64	578.75	72.89	8.940		
10,300.00	10,288.47	10,305.17	10,287.47	36.93	37.37	89.49	283.63	458.77	651.64	578.04	73.60	8.854		
10,400.00	10,388.47	10,405.17	10,387.47	37.28	37.71	89.49	283.63	458.77	651.64	577.34	74.30	8.770		
10,500.00	10,488.47	10,505.17	10,487.47	37.64	38.06	89.49	283.63	458.77	651.64	576.63	75.01	8.688		
10,600.00	10,588.47	10,605.17	10,587.47	37.99	38.41	89.49	283.63	458.77	651.64	575.93	75.71	8.607		
10,700.00	10,688.47	10,705.17	10,687.47	38.35	38.75	89.49	283.63	458.77	651.64	575.22	76.42	8.528		
10,800.00	10,788.47	10,805.17	10,787.47	38.70	39.10	89.49	283.63	458.77	651.64	574.52	77.12	8.450		
10,900.00	10,888.47	10,905.17	10,887.47	39.05	39.45	89.49	283.63	458.77	651.64	573.81	77.83	8.373		
11,000.00	10,988.47	11,005.17	10,987.47	39.41	39.79	89.49	283.63	458.77	651.64	573.11	78.53	8.298		
11,100.00	11,088.47	11,105.17	11,087.47	39.76	40.14	89.49	283.63	458.77	651.64	572.40	79.24	8.224		
11,200.00	11,188.47	11,205.17	11,187.47	40.12	40.49	89.49	283.63	458.77	651.64	571.69	79.95	8.151		
11,300.00	11,288.47	11,305.17	11,287.47	40.47	40.84	89.49	283.63	458.77	651.64	570.99	80.65	8.080		
11,400.00	11,388.47	11,405.17	11,387.47	40.83	41.19	89.49	283.63	458.77	651.64	570.28	81.36	8.009		
11,500.00	11,488.47	11,505.17	11,487.47	41.18	41.53	89.49	283.63	458.77	651.64	569.57	82.07	7.940		
11,511.15	11,499.62	11,516.32	11,498.62	41.22	41.57	89.49	283.63	458.77	651.64	569.49	82.14	7.933		
11,600.00	11,588.47	11,605.15	11,587.44	41.54	41.88	89.54	283.08	458.77	651.64	568.87	82.77	7.873		
11,700.00	11,688.47	11,703.21	11,684.57	41.89	42.17	90.65	270.42	458.89	651.78	568.35	83.43	7.813		
11,800.00	11,788.47	11,794.51	11,771.83	42.25	42.42	92.98	243.92	459.12	653.04	569.01	84.03	7.771		
11,869.77	11,858.24	11,850.00	11,822.41	42.50	42.55	94.97	221.16	459.33	655.56	571.18	84.38	7.770		
11,900.00	11,888.46	11,876.04	11,845.34	42.60	42.60	95.97	208.81	459.44	657.19	572.68	84.51	7.777		
11,950.00	11,938.21	11,914.51	11,878.12	42.75	42.68	97.30	188.69	459.62	660.40	575.75	84.65	7.801		
12,000.00	11,987.35	11,950.00	11,907.10	42.90	42.75	98.28	168.23	459.80	664.15	579.43	84.71	7.840		
12,050.00	12,035.51	11,989.09	11,937.49	43.03	42.81	99.23	143.66	460.02	668.30	583.55	84.75	7.885		
12,100.00	12,082.33	12,025.39	11,964.15	43.16	42.86	99.84	119.03	460.24	672.77	588.06	84.71	7.942		
12,150.00	12,127.43	12,061.14	11,988.83	43.28	42.91	100.21	93.17	460.48	677.42	592.81	84.61	8.007		
12,200.00	12,170.49	12,100.00	12,013.77	43.39	42.96	100.58	63.38	460.74	682.18	597.67	84.50	8.073		
12,250.00	12,211.17	12,131.28	12,032.35	43.48	42.98	100.25	38.22	460.97	686.89	602.62	84.27	8.151		
12,300.00	12,249.17	12,165.78	12,051.20	43.57	43.01	99.94	9.34	461.23	691.49	607.44	84.05	8.227		
12,350.00	12,284.19	12,200.00	12,068.16	43.65	43.05	99.44	-20.38	461.49	695.90	612.06	83.83	8.301		
12,400.00	12,315.96	12,233.89	12,083.17	43.71	43.07	98.73	-50.75	461.77	700.01	616.41	83.61	8.373		
12,450.00	12,344.26	12,267.58	12,096.29	43.78	43.11	97.86	-81.78	462.04	703.77	620.37	83.40	8.438		
12,500.00	12,368.85	12,300.00	12,107.17	43.86	43.16	96.74	-112.31	462.32	707.12	623.90	83.21	8.498		
12,550.00	12,389.56	12,334.42	12,116.82	43.95	43.21	95.66	-145.35	462.61	709.98	626.89	83.09	8.545		
12,600.00	12,406.23	12,367.64	12,124.23	44.04	43.28	94.38	-177.72	462.90	712.32	629.31	83.01	8.581		
12,650.00	12,418.73	12,400.00	12,129.77	44.14	43.35	92.93	-209.60	463.19	714.05	631.06	82.99	8.604		
12,669.77	12,422.49	12,419.13	12,132.51	44.18	43.39	92.89	-228.54	463.36	714.47	631.43	83.04	8.604		
12,700.00	12,427.27	12,442.27	12,135.31	44.25	43.45	92.29	-251.50	463.57	714.97	631.87	83.10	8.604		
12,750.00	12,433.09	12,480.50	12,138.71	44.36	43.55	91.27	-289.58	463.91	715.59	632.36	83.23	8.598		
12,800.00	12,436.31	12,518.71	12,140.59	44.48	43.65	90.24	-327.73	464.25	715.96	632.55	83.41	8.584		
12,836.44	12,437.00	12,546.61	12,141.00	44.57	43.72	89.49	-355.63	464.50	716.07	632.51	83.56	8.570		
12,900.00	12,437.00	12,610.09	12,141.00	44.74	43.92	89.49	-419.11	465.07	716.15	632.26	83.89	8.537		
13,000.00	12,437.00	12,710.09	12,141.00	45.06	44.26	89.49	-519.11	465.96	716.27	631.77	84.49	8.477		
13,100.00	12,437.00	12,810.09	12,141.00	45.43	44.65	89.49	-619.10	466.86	716.39	631.18	85.20	8.408		
13,200.00	12,437.00	12,910.09	12,141.00	45.86	45.10	89.49	-719.10	467.76	716.51	630.49	86.02	8.330		
13,300.00	12,437.00	13,010.09	12,141.00	46.35	45.61	89.49	-819.09	468.65	716.63	629.69	86.94	8.243		
13,400.00	12,437.00	13,110.09	12,141.00	46.88	46.16	89.49	-919.09	469.55	716.75	628.79	87.95	8.149		
13,500.00	12,437.00	13,210.09	12,141.00	47.47	46.77	89.49	-1,019.08	470.45	716.87	627.80	89.07	8.049		
13,600.00	12,437.00	13,310.09	12,141.00	48.11	47.42	89.49	-1,119.08	471.34	716.99	626.72	90.27	7.943		
13,700.00	12,437.00	13,410.09	12,141.00	48.80	48.13	89.49	-1,219.08	472.24	717.11	625.55	91.56	7.832		
13,800.00	12,437.00	13,510.09	12,141.00	49.53	48.87	89.49	-1,319.07	473.14	717.23	624.29	92.94	7.717		
13,900.00	12,437.00	13,610.09	12,141.00	50.30	49.66	89.49	-1,419.07	474.03	717.35	622.95	94.39	7.600		

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #204H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
14,000.00	12,437.00	13,710.09	12,141.00	51.12	50.49	89.49	-1,519.06	474.93	717.47	621.54	95.92	7.479		
14,100.00	12,437.00	13,810.09	12,141.00	51.97	51.37	89.49	-1,619.06	475.83	717.59	620.05	97.53	7.357		
14,200.00	12,437.00	13,910.09	12,141.00	52.87	52.27	89.49	-1,719.06	476.72	717.71	618.50	99.21	7.234		
14,300.00	12,437.00	14,010.09	12,141.00	53.80	53.22	89.49	-1,819.05	477.62	717.83	616.87	100.95	7.111		
14,400.00	12,437.00	14,110.09	12,141.00	54.76	54.20	89.49	-1,919.05	478.51	717.95	615.19	102.76	6.987		
14,500.00	12,437.00	14,210.09	12,141.00	55.75	55.21	89.49	-2,019.04	479.41	718.07	613.44	104.62	6.863		
14,600.00	12,437.00	14,310.09	12,141.00	56.78	56.25	89.49	-2,119.04	480.31	718.19	611.64	106.55	6.741		
14,700.00	12,437.00	14,410.09	12,141.00	57.84	57.31	89.49	-2,219.04	481.20	718.31	609.78	108.52	6.619		
14,800.00	12,437.00	14,510.09	12,141.00	58.92	58.41	89.49	-2,319.03	482.10	718.43	607.88	110.55	6.499		
14,900.00	12,437.00	14,610.09	12,141.00	60.03	59.53	89.49	-2,419.03	483.00	718.55	605.92	112.63	6.380		
15,000.00	12,437.00	14,710.09	12,141.00	61.16	60.68	89.49	-2,519.02	483.89	718.67	603.92	114.75	6.263		
15,100.00	12,437.00	14,810.09	12,141.00	62.32	61.85	89.49	-2,619.02	484.79	718.79	601.88	116.91	6.148		
15,200.00	12,437.00	14,910.09	12,141.00	63.49	63.04	89.49	-2,719.02	485.69	718.91	599.79	119.11	6.035		
15,300.00	12,437.00	15,010.09	12,141.00	64.69	64.25	89.49	-2,819.01	486.58	719.03	597.67	121.36	5.925		
15,400.00	12,437.00	15,110.09	12,141.00	65.91	65.48	89.49	-2,919.01	487.48	719.15	595.51	123.64	5.817		
15,500.00	12,437.00	15,210.09	12,141.00	67.15	66.73	89.49	-3,019.00	488.37	719.27	593.31	125.95	5.711		
15,600.00	12,437.00	15,310.09	12,141.00	68.40	67.99	89.49	-3,119.00	489.27	719.39	591.09	128.30	5.607		
15,700.00	12,437.00	15,410.09	12,141.00	69.67	69.27	89.49	-3,218.99	490.17	719.51	588.83	130.68	5.506		
15,800.00	12,437.00	15,510.09	12,141.00	70.96	70.57	89.49	-3,318.99	491.06	719.63	586.54	133.08	5.407		
15,900.00	12,437.00	15,610.09	12,141.00	72.26	71.88	89.49	-3,418.99	491.96	719.75	584.23	135.52	5.311		
16,000.00	12,437.00	15,710.09	12,141.00	73.58	73.21	89.49	-3,518.98	492.86	719.87	581.89	137.98	5.217		
16,100.00	12,437.00	15,810.09	12,141.00	74.91	74.55	89.49	-3,618.98	493.75	719.99	579.53	140.46	5.126		
16,200.00	12,437.00	15,910.09	12,141.00	76.25	75.90	89.49	-3,718.97	494.65	720.11	577.14	142.97	5.037		
16,300.00	12,437.00	16,010.09	12,141.00	77.60	77.26	89.49	-3,818.97	495.55	720.23	574.73	145.50	4.950		
16,400.00	12,437.00	16,110.09	12,141.00	78.97	78.63	89.49	-3,918.97	496.44	720.35	572.29	148.05	4.865		
16,500.00	12,437.00	16,210.09	12,141.00	80.35	80.02	89.49	-4,018.96	497.34	720.47	569.84	150.63	4.783		
16,600.00	12,437.00	16,310.09	12,141.00	81.73	81.41	89.49	-4,118.96	498.23	720.59	567.37	153.22	4.703		
16,700.00	12,437.00	16,410.09	12,141.00	83.13	82.82	89.49	-4,218.95	499.13	720.71	564.88	155.83	4.625		
16,800.00	12,437.00	16,510.09	12,141.00	84.53	84.23	89.49	-4,318.95	500.03	720.83	562.37	158.45	4.549		
16,900.00	12,437.00	16,610.09	12,141.00	85.95	85.65	89.49	-4,418.95	500.92	720.95	559.85	161.10	4.475		
17,000.00	12,437.00	16,710.09	12,141.00	87.37	87.08	89.49	-4,518.94	501.82	721.07	557.31	163.76	4.403		
17,100.00	12,437.00	16,810.09	12,141.00	88.80	88.52	89.49	-4,618.94	502.72	721.19	554.76	166.43	4.333		
17,193.91	12,437.00	16,904.00	12,141.00	90.15	89.88	89.49	-4,712.85	503.56	721.30	552.35	168.96	4.269 SF		

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



MS Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #213H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: O-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-103.62	-277.01	-1,143.53	1,176.64					
100.00	100.00	91.00	91.00	0.13	0.12	-103.62	-277.01	-1,143.53	1,176.60	1,176.36	0.24	4,806.904		
200.00	200.00	191.00	191.00	0.49	0.45	-103.62	-277.01	-1,143.53	1,176.60	1,175.66	0.94	1,250.392		
300.00	300.00	291.00	291.00	0.85	0.81	-103.62	-277.01	-1,143.53	1,176.60	1,174.95	1.66	709.682		
400.00	400.00	391.00	391.00	1.20	1.17	-103.62	-277.01	-1,143.53	1,176.60	1,174.23	2.37	495.438		
500.00	500.00	491.00	491.00	1.56	1.53	-103.62	-277.01	-1,143.53	1,176.60	1,173.51	3.09	380.554		
600.00	600.00	591.00	591.00	1.92	1.89	-103.62	-277.01	-1,143.53	1,176.60	1,172.79	3.81	308.920		
700.00	699.99	685.03	685.03	2.28	2.22	-103.63	-276.48	-1,143.88	1,176.52	1,172.02	4.50	261.373		
800.00	799.96	778.48	778.45	2.63	2.56	-103.65	-274.69	-1,145.07	1,176.36	1,171.17	5.19	226.660		
900.00	899.86	871.94	871.83	2.99	2.89	-103.68	-271.64	-1,147.10	1,176.13	1,170.25	5.88	199.997		
999.59	999.27	965.02	964.77	3.35	3.23	-103.72	-267.33	-1,149.96	1,175.83	1,169.26	6.57	178.901		
1,000.00	999.68	965.40	965.15	3.35	3.23	-103.72	-267.31	-1,149.98	1,175.83	1,169.25	6.58	178.824		
1,060.48	1,060.00	1,021.92	1,021.54	3.57	3.43	-103.73	-264.08	-1,152.12	1,175.73	1,168.73	7.00	168.015 CC		
1,100.00	1,099.43	1,058.86	1,058.37	3.72	3.57	-103.73	-261.71	-1,153.69	1,175.77	1,168.50	7.27	161.630		
1,200.00	1,199.19	1,158.49	1,157.68	4.08	3.93	-103.67	-255.00	-1,158.15	1,176.02	1,168.02	8.00	146.977		
1,300.00	1,298.95	1,258.49	1,257.34	4.45	4.30	-103.62	-248.26	-1,162.63	1,176.27	1,167.54	8.73	134.695		
1,400.00	1,398.70	1,358.48	1,357.01	4.82	4.67	-103.57	-241.52	-1,167.10	1,176.53	1,167.06	9.47	124.278		
1,500.00	1,498.46	1,458.47	1,456.67	5.18	5.04	-103.51	-234.78	-1,171.58	1,176.78	1,166.58	10.20	115.337		
1,600.00	1,598.22	1,558.47	1,556.34	5.55	5.41	-103.46	-228.04	-1,176.06	1,177.04	1,166.10	10.94	107.585		
1,700.00	1,697.97	1,658.46	1,656.00	5.92	5.79	-103.41	-221.31	-1,180.53	1,177.29	1,165.61	11.68	100.801		
1,800.00	1,797.73	1,758.45	1,755.67	6.29	6.16	-103.35	-214.57	-1,185.01	1,177.55	1,165.13	12.42	94.817		
1,900.00	1,897.49	1,858.45	1,855.34	6.66	6.53	-103.30	-207.83	-1,189.49	1,177.81	1,164.65	13.16	89.500		
2,000.00	1,997.24	1,958.44	1,955.00	7.03	6.91	-103.24	-201.09	-1,193.96	1,178.07	1,164.17	13.90	84.745		
2,100.00	2,097.00	2,058.43	2,054.67	7.40	7.28	-103.19	-194.35	-1,198.44	1,178.33	1,163.69	14.64	80.468		
2,200.00	2,196.76	2,158.43	2,154.33	7.78	7.66	-103.14	-187.61	-1,202.92	1,178.59	1,163.20	15.39	76.602		
2,300.00	2,296.51	2,258.42	2,254.00	8.15	8.04	-103.08	-180.87	-1,207.39	1,178.85	1,162.72	16.13	73.090		
2,400.00	2,396.27	2,358.41	2,353.66	8.52	8.41	-103.03	-174.13	-1,211.87	1,179.12	1,162.24	16.87	69.886		
2,500.00	2,496.03	2,458.41	2,453.33	8.89	8.79	-102.98	-167.40	-1,216.35	1,179.38	1,161.77	17.62	66.951		
2,600.00	2,595.79	2,558.40	2,553.00	9.26	9.17	-102.92	-160.66	-1,220.82	1,179.65	1,161.29	18.36	64.252		
2,700.00	2,695.54	2,658.40	2,652.66	9.63	9.54	-102.87	-153.92	-1,225.30	1,179.91	1,160.81	19.10	61.764		
2,800.00	2,795.30	2,758.39	2,752.33	10.01	9.92	-102.82	-147.18	-1,229.78	1,180.18	1,160.33	19.85	59.461		
2,900.00	2,895.06	2,858.38	2,851.99	10.38	10.30	-102.76	-140.44	-1,234.25	1,180.45	1,159.86	20.59	57.324		
3,000.00	2,994.81	2,958.38	2,951.66	10.75	10.67	-102.71	-133.70	-1,238.73	1,180.72	1,159.38	21.34	55.336		
3,100.00	3,094.57	3,058.37	3,051.32	11.12	11.05	-102.66	-126.96	-1,243.20	1,180.99	1,158.91	22.08	53.482		
3,200.00	3,194.33	3,158.36	3,150.99	11.50	11.43	-102.60	-120.22	-1,247.68	1,181.26	1,158.44	22.83	51.749		
3,300.00	3,294.08	3,258.36	3,250.66	11.87	11.81	-102.55	-113.49	-1,252.16	1,181.54	1,157.97	23.57	50.125		
3,400.00	3,393.84	3,358.35	3,350.32	12.24	12.18	-102.50	-106.75	-1,256.63	1,181.81	1,157.49	24.32	48.600		
3,500.00	3,493.60	3,458.34	3,449.99	12.61	12.56	-102.44	-100.01	-1,261.11	1,182.09	1,157.02	25.06	47.166		
3,600.00	3,593.35	3,558.34	3,549.65	12.99	12.94	-102.39	-93.27	-1,265.59	1,182.36	1,156.56	25.81	45.815		
3,700.00	3,693.11	3,658.33	3,649.32	13.36	13.32	-102.34	-86.53	-1,270.06	1,182.64	1,156.09	26.55	44.539		
3,800.00	3,792.87	3,758.32	3,748.98	13.73	13.69	-102.28	-79.79	-1,274.54	1,182.92	1,155.62	27.30	43.333		
3,900.00	3,892.63	3,858.32	3,848.65	14.11	14.07	-102.23	-73.05	-1,279.02	1,183.20	1,155.15	28.04	42.192		
4,000.00	3,992.38	3,958.31	3,948.32	14.48	14.45	-102.18	-66.31	-1,283.49	1,183.48	1,154.69	28.79	41.109		
4,100.00	4,092.14	4,058.31	4,047.98	14.85	14.83	-102.12	-59.57	-1,287.97	1,183.76	1,154.22	29.53	40.081		
4,200.00	4,191.90	4,158.30	4,147.65	15.22	15.21	-102.07	-52.84	-1,292.45	1,184.04	1,153.76	30.28	39.103		
4,300.00	4,291.65	4,258.29	4,247.31	15.60	15.58	-102.02	-46.10	-1,296.92	1,184.32	1,153.30	31.03	38.173		
4,400.00	4,391.41	4,358.29	4,346.98	15.97	15.96	-101.96	-39.36	-1,301.40	1,184.61	1,152.84	31.77	37.286		
4,500.00	4,491.17	4,458.28	4,446.65	16.34	16.34	-101.91	-32.62	-1,305.88	1,184.89	1,152.38	32.52	36.440		
4,600.00	4,590.92	4,558.27	4,546.31	16.72	16.72	-101.86	-25.88	-1,310.35	1,185.18	1,151.92	33.26	35.632		
4,700.00	4,690.68	4,658.27	4,645.98	17.09	17.10	-101.81	-19.14	-1,314.83	1,185.47	1,151.46	34.01	34.859		
4,800.00	4,790.44	4,758.26	4,745.64	17.46	17.47	-101.75	-12.40	-1,319.31	1,185.76	1,151.00	34.75	34.120		
4,900.00	4,890.19	4,858.25	4,845.31	17.83	17.85	-101.70	-5.66	-1,323.78	1,186.05	1,150.55	35.50	33.411		

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #213H - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,000.00	4,989.95	4,958.25	4,944.97	18.21	18.23	-101.65	1.07	-1,328.26	1,186.34	1,150.09	36.24	32.732		
5,100.00	5,089.71	5,058.24	5,044.64	18.58	18.61	-101.59	7.81	-1,332.74	1,186.63	1,149.64	36.99	32.080		
5,200.00	5,189.47	5,158.23	5,144.31	18.95	18.99	-101.54	14.55	-1,337.21	1,186.92	1,149.19	37.74	31.454		
5,300.00	5,289.22	5,258.23	5,243.97	19.33	19.37	-101.49	21.29	-1,341.69	1,187.21	1,148.73	38.48	30.852		
5,400.00	5,388.98	5,358.22	5,343.64	19.70	19.74	-101.44	28.03	-1,346.17	1,187.51	1,148.28	39.23	30.273		
5,500.00	5,488.74	5,458.22	5,443.30	20.07	20.12	-101.38	34.77	-1,350.64	1,187.80	1,147.83	39.97	29.716		
5,520.13	5,508.82	5,478.35	5,463.37	20.15	20.20	-101.37	36.13	-1,351.54	1,187.86	1,147.74	40.12	29.606		
5,600.00	5,588.54	5,558.19	5,542.95	20.44	20.50	-101.29	41.51	-1,355.12	1,188.43	1,147.72	40.71	29.190		
5,700.00	5,688.48	5,658.09	5,642.52	20.80	20.88	-101.09	48.24	-1,359.59	1,190.10	1,148.65	41.45	28.715		
5,786.53	5,775.00	5,744.41	5,728.55	21.11	21.20	-100.82	54.06	-1,363.45	1,192.40	1,150.33	42.07	28.345		
5,800.00	5,788.47	5,757.83	5,741.94	21.15	21.26	-100.78	54.96	-1,364.05	1,192.83	1,150.66	42.16	28.290		
5,900.00	5,888.47	5,857.50	5,841.28	21.50	21.63	-100.42	61.68	-1,368.52	1,196.00	1,153.12	42.88	27.893		
6,000.00	5,988.47	5,957.18	5,940.63	21.84	22.01	-100.07	68.39	-1,372.98	1,199.21	1,155.62	43.59	27.510		
6,100.00	6,088.47	6,056.85	6,039.97	22.19	22.39	-99.71	75.11	-1,377.44	1,202.47	1,158.17	44.31	27.140		
6,200.00	6,188.47	6,156.52	6,139.32	22.53	22.76	-99.36	81.83	-1,381.90	1,205.78	1,160.76	45.02	26.782		
6,300.00	6,288.47	6,256.19	6,238.66	22.88	23.14	-99.01	88.55	-1,386.37	1,209.13	1,163.40	45.74	26.437		
6,400.00	6,388.47	6,355.87	6,338.01	23.23	23.52	-98.67	95.26	-1,390.83	1,212.53	1,166.08	46.45	26.103		
6,500.00	6,488.47	6,455.54	6,437.36	23.57	23.90	-98.32	101.98	-1,395.29	1,215.97	1,168.80	47.17	25.780		
6,600.00	6,588.47	6,555.21	6,536.70	23.92	24.27	-97.98	108.70	-1,399.75	1,219.46	1,171.57	47.88	25.467		
6,700.00	6,688.47	6,654.88	6,636.05	24.27	24.65	-97.64	115.41	-1,404.21	1,222.99	1,174.39	48.60	25.165		
6,800.00	6,788.47	6,754.55	6,735.39	24.62	25.03	-97.30	122.13	-1,408.68	1,226.56	1,177.24	49.32	24.872		
6,900.00	6,888.47	6,854.23	6,834.74	24.97	25.40	-96.96	128.85	-1,413.14	1,230.17	1,180.14	50.03	24.588		
7,000.00	6,988.47	6,953.90	6,934.08	25.32	25.78	-96.63	135.57	-1,417.60	1,233.83	1,183.08	50.75	24.313		
7,100.00	7,088.47	7,053.57	7,033.43	25.66	26.16	-96.29	142.28	-1,422.06	1,237.53	1,186.07	51.46	24.046		
7,200.00	7,188.47	7,153.24	7,132.77	26.01	26.54	-95.96	149.00	-1,426.52	1,241.27	1,189.09	52.18	23.788		
7,300.00	7,288.47	7,252.91	7,232.12	26.36	26.91	-95.63	155.72	-1,430.99	1,245.06	1,192.16	52.90	23.537		
7,400.00	7,388.47	7,352.59	7,331.46	26.71	27.29	-95.31	162.43	-1,435.45	1,248.88	1,195.26	53.61	23.294		
7,500.00	7,488.47	7,452.26	7,430.81	27.06	27.67	-94.98	169.15	-1,439.91	1,252.74	1,198.41	54.33	23.057		
7,600.00	7,588.47	7,551.93	7,530.15	27.41	28.05	-94.66	175.87	-1,444.37	1,256.65	1,201.60	55.05	22.828		
7,700.00	7,688.47	7,651.60	7,629.50	27.76	28.42	-94.34	182.59	-1,448.84	1,260.59	1,204.83	55.77	22.605		
7,800.00	7,788.47	7,751.28	7,728.85	28.11	28.80	-94.02	189.30	-1,453.30	1,264.58	1,208.09	56.48	22.389		
7,900.00	7,888.47	7,850.95	7,828.19	28.46	29.18	-93.70	196.02	-1,457.76	1,268.60	1,211.40	57.20	22.178		
8,000.00	7,988.47	7,950.62	7,927.54	28.82	29.56	-93.39	202.74	-1,462.22	1,272.66	1,214.74	57.92	21.974		
8,100.00	8,088.47	8,050.29	8,026.88	29.17	29.93	-93.07	209.45	-1,466.68	1,276.76	1,218.12	58.64	21.775		
8,200.00	8,188.47	8,149.96	8,126.23	29.52	30.31	-92.76	216.17	-1,471.15	1,280.90	1,221.54	59.35	21.581		
8,300.00	8,288.47	8,249.64	8,225.57	29.87	30.69	-92.45	222.89	-1,475.61	1,285.07	1,225.00	60.07	21.393		
8,400.00	8,388.47	8,349.31	8,324.92	30.22	31.06	-92.15	229.61	-1,480.07	1,289.29	1,228.50	60.79	21.210		
8,500.00	8,488.47	8,448.98	8,424.26	30.57	31.44	-91.84	236.32	-1,484.53	1,293.54	1,232.03	61.51	21.031		
8,600.00	8,588.47	8,548.65	8,523.61	30.93	31.82	-91.54	243.04	-1,488.99	1,297.82	1,235.60	62.22	20.858		
8,700.00	8,688.47	8,648.33	8,622.95	31.28	32.20	-91.24	249.76	-1,493.46	1,302.14	1,239.20	62.94	20.688		
8,800.00	8,788.47	8,750.12	8,724.42	31.63	32.58	-90.93	256.60	-1,498.00	1,306.49	1,242.83	63.67	20.521		
8,900.00	8,888.47	8,872.71	8,846.77	31.98	33.03	-90.65	262.92	-1,502.20	1,309.85	1,245.39	64.47	20.319		
9,000.00	8,988.47	8,995.67	8,969.66	32.33	33.47	-90.52	265.97	-1,504.23	1,311.48	1,246.24	65.24	20.102		
9,100.00	9,088.47	9,105.48	9,079.47	32.69	33.85	-90.51	266.27	-1,504.43	1,311.64	1,245.67	65.96	19.885		
9,200.00	9,188.47	9,205.48	9,179.47	33.04	34.18	-90.51	266.27	-1,504.43	1,311.64	1,244.98	66.66	19.677		
9,300.00	9,288.47	9,305.48	9,279.47	33.39	34.52	-90.51	266.27	-1,504.43	1,311.64	1,244.28	67.35	19.474		
9,400.00	9,388.47	9,405.48	9,379.47	33.75	34.86	-90.51	266.27	-1,504.43	1,311.64	1,243.58	68.05	19.274		
9,500.00	9,488.47	9,505.48	9,479.47	34.10	35.20	-90.51	266.27	-1,504.43	1,311.64	1,242.89	68.75	19.079		
9,600.00	9,588.47	9,605.48	9,579.47	34.45	35.55	-90.51	266.27	-1,504.43	1,311.64	1,242.19	69.45	18.887		
9,700.00	9,688.47	9,705.48	9,679.47	34.81	35.89	-90.51	266.27	-1,504.43	1,311.64	1,241.49	70.14	18.699		
9,800.00	9,788.47	9,805.48	9,779.47	35.16	36.23	-90.51	266.27	-1,504.43	1,311.64	1,240.79	70.84	18.515		
9,900.00	9,888.47	9,905.48	9,879.47	35.51	36.57	-90.51	266.27	-1,504.43	1,311.64	1,240.09	71.54	18.334		

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #213H - Wellbore #1 - Design #1												Offset Site Error:	0.00 usft
Survey Program: 0-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,000.00	9,988.47	10,005.48	9,979.47	35.87	36.91	-90.51	266.27	-1,504.43	1,311.64	1,239.40	72.24	18.156	
10,100.00	10,088.47	10,105.48	10,079.47	36.22	37.25	-90.51	266.27	-1,504.43	1,311.64	1,238.70	72.94	17.982	
10,200.00	10,188.47	10,205.48	10,179.47	36.57	37.60	-90.51	266.27	-1,504.43	1,311.64	1,238.00	73.64	17.811	
10,300.00	10,288.47	10,305.48	10,279.47	36.93	37.94	-90.51	266.27	-1,504.43	1,311.64	1,237.30	74.34	17.644	
10,400.00	10,388.47	10,405.48	10,379.47	37.28	38.28	-90.51	266.27	-1,504.43	1,311.64	1,236.60	75.04	17.479	
10,500.00	10,488.47	10,505.48	10,479.47	37.64	38.63	-90.51	266.27	-1,504.43	1,311.64	1,235.89	75.74	17.317	
10,600.00	10,588.47	10,605.48	10,579.47	37.99	38.97	-90.51	266.27	-1,504.43	1,311.64	1,235.19	76.44	17.158	
10,700.00	10,688.47	10,705.48	10,679.47	38.35	39.31	-90.51	266.27	-1,504.43	1,311.64	1,234.49	77.14	17.003	
10,800.00	10,788.47	10,805.48	10,779.47	38.70	39.66	-90.51	266.27	-1,504.43	1,311.64	1,233.79	77.85	16.849	
10,900.00	10,888.47	10,905.48	10,879.47	39.05	40.00	-90.51	266.27	-1,504.43	1,311.64	1,233.09	78.55	16.699	
11,000.00	10,988.47	11,005.48	10,979.47	39.41	40.35	-90.51	266.27	-1,504.43	1,311.64	1,232.39	79.25	16.551	
11,100.00	11,088.47	11,105.48	11,079.47	39.76	40.69	-90.51	266.27	-1,504.43	1,311.64	1,231.68	79.95	16.405	
11,200.00	11,188.47	11,205.48	11,179.47	40.12	41.04	-90.51	266.27	-1,504.43	1,311.64	1,230.98	80.65	16.262	
11,300.00	11,288.47	11,305.48	11,279.47	40.47	41.38	-90.51	266.27	-1,504.43	1,311.64	1,230.28	81.36	16.122	
11,400.00	11,388.47	11,405.48	11,379.47	40.83	41.73	-90.51	266.27	-1,504.43	1,311.64	1,229.58	82.06	15.984	
11,500.00	11,488.47	11,505.48	11,479.47	41.18	42.08	-90.51	266.27	-1,504.43	1,311.64	1,228.87	82.76	15.848	
11,600.00	11,588.47	11,605.48	11,579.47	41.54	42.42	-90.51	266.27	-1,504.43	1,311.64	1,228.17	83.47	15.714	
11,700.00	11,688.47	11,705.48	11,679.47	41.89	42.77	-90.51	266.27	-1,504.43	1,311.64	1,227.46	84.17	15.583	
11,800.00	11,788.47	11,805.48	11,779.47	42.25	43.11	-90.51	266.27	-1,504.43	1,311.64	1,226.76	84.88	15.454	
11,869.77	11,858.24	11,875.25	11,849.24	42.50	43.36	-90.51	266.27	-1,504.43	1,311.64	1,226.27	85.37	15.365	
11,886.03	11,874.50	11,891.47	11,865.46	42.55	43.41	-90.50	266.23	-1,504.43	1,311.64	1,226.16	85.48	15.345	
11,900.00	11,888.46	11,905.36	11,879.35	42.60	43.45	-90.49	265.88	-1,504.43	1,311.64	1,226.07	85.57	15.329	
11,950.00	11,938.21	11,955.14	11,928.95	42.75	43.60	-90.45	261.89	-1,504.40	1,311.64	1,225.77	85.87	15.275	
12,000.00	11,987.35	12,004.99	11,978.09	42.90	43.74	-90.42	253.60	-1,504.35	1,311.65	1,225.51	86.15	15.226	
12,050.00	12,035.51	12,054.90	12,026.39	43.03	43.86	-90.38	241.04	-1,504.27	1,311.67	1,225.27	86.40	15.181	
12,100.00	12,082.33	12,104.90	12,073.48	43.16	43.96	-90.35	224.31	-1,504.16	1,311.69	1,225.05	86.64	15.140	
12,150.00	12,127.43	12,154.96	12,118.99	43.28	44.06	-90.31	203.50	-1,504.03	1,311.72	1,224.86	86.86	15.102	
12,200.00	12,170.49	12,205.10	12,162.58	43.39	44.14	-90.29	178.76	-1,503.87	1,311.76	1,224.70	87.05	15.068	
12,250.00	12,211.17	12,255.31	12,203.90	43.48	44.21	-90.26	150.26	-1,503.69	1,311.80	1,224.56	87.24	15.037	
12,300.00	12,249.17	12,305.59	12,242.62	43.57	44.26	-90.24	118.21	-1,503.49	1,311.84	1,224.44	87.40	15.009	
12,350.00	12,284.19	12,355.94	12,278.43	43.65	44.30	-90.23	82.83	-1,503.27	1,311.89	1,224.33	87.56	14.983	
12,400.00	12,315.96	12,406.35	12,311.03	43.71	44.33	-90.22	44.40	-1,503.02	1,311.94	1,224.24	87.70	14.959	
12,450.00	12,344.26	12,456.83	12,340.17	43.78	44.35	-90.22	3.20	-1,502.76	1,312.00	1,224.16	87.84	14.936	
12,500.00	12,368.85	12,507.37	12,365.59	43.86	44.36	-90.23	-40.46	-1,502.49	1,312.06	1,224.08	87.98	14.913	
12,550.00	12,389.56	12,557.97	12,387.09	43.95	44.36	-90.24	-86.24	-1,502.20	1,312.12	1,224.01	88.12	14.891	
12,600.00	12,406.23	12,608.61	12,404.49	44.04	44.36	-90.26	-133.79	-1,501.90	1,312.19	1,223.94	88.25	14.868	
12,650.00	12,418.73	12,659.31	12,417.63	44.14	44.36	-90.29	-182.73	-1,501.59	1,312.26	1,223.86	88.39	14.846	
12,669.77	12,422.49	12,679.36	12,421.62	44.18	44.36	-90.30	-202.38	-1,501.46	1,312.28	1,223.83	88.45	14.837	
12,700.00	12,427.27	12,709.89	12,426.60	44.25	44.36	-90.31	-232.50	-1,501.27	1,312.32	1,223.79	88.53	14.823	
12,750.00	12,433.09	12,760.34	12,432.70	44.36	44.38	-90.33	-282.57	-1,500.95	1,312.39	1,223.70	88.69	14.797	
12,800.00	12,436.31	12,810.80	12,436.15	44.48	44.41	-90.35	-332.91	-1,500.64	1,312.46	1,223.60	88.86	14.770	
12,836.44	12,437.00	12,847.58	12,436.99	44.57	44.46	-90.36	-369.67	-1,500.40	1,312.51	1,223.51	88.99	14.749	
12,900.00	12,437.00	12,911.17	12,437.00	44.74	44.56	-90.36	-433.27	-1,500.00	1,312.59	1,223.34	89.25	14.706	
13,000.00	12,437.00	13,011.17	12,437.00	45.06	44.78	-90.36	-533.26	-1,499.37	1,312.72	1,222.96	89.76	14.624	
13,100.00	12,437.00	13,111.17	12,437.00	45.43	45.06	-90.36	-633.26	-1,498.73	1,312.85	1,222.46	90.39	14.524	
13,200.00	12,437.00	13,211.17	12,437.00	45.86	45.39	-90.36	-733.26	-1,498.10	1,312.98	1,221.85	91.13	14.407	
13,300.00	12,437.00	13,311.17	12,437.00	46.35	45.78	-90.36	-833.26	-1,497.47	1,313.12	1,221.13	91.99	14.275	
13,400.00	12,437.00	13,411.17	12,437.00	46.88	46.23	-90.36	-933.26	-1,496.84	1,313.25	1,220.29	92.95	14.128	
13,500.00	12,437.00	13,511.17	12,437.00	47.47	46.72	-90.36	-1,033.25	-1,496.20	1,313.38	1,219.35	94.03	13.968	
13,600.00	12,437.00	13,611.17	12,437.00	48.11	47.27	-90.36	-1,133.25	-1,495.57	1,313.51	1,218.31	95.20	13.797	
13,700.00	12,437.00	13,711.17	12,437.00	48.80	47.86	-90.36	-1,233.25	-1,494.94	1,313.64	1,217.17	96.47	13.617	
13,800.00	12,437.00	13,811.17	12,437.00	49.53	48.50	-90.36	-1,333.25	-1,494.30	1,313.78	1,215.93	97.84	13.428	

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Charles Ling Fed Com - Charles Ling Fed Com #213H - Wellbore #1 - Design #1													Offset Site Error: 0.00 usft	
Survey Program: 0-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
13,900.00	12,437.00	13,911.17	12,437.00	50.30	49.19	-90.36	-1,433.25	-1,493.67	1,313.91	1,214.61	99.30	13.232		
14,000.00	12,437.00	14,011.17	12,437.00	51.12	49.93	-90.36	-1,533.24	-1,493.04	1,314.04	1,213.19	100.85	13.030		
14,100.00	12,437.00	14,111.17	12,437.00	51.97	50.70	-90.36	-1,633.24	-1,492.41	1,314.17	1,211.70	102.48	12.824		
14,200.00	12,437.00	14,211.17	12,437.00	52.87	51.52	-90.36	-1,733.24	-1,491.77	1,314.30	1,210.12	104.18	12.615		
14,300.00	12,437.00	14,311.17	12,437.00	53.80	52.38	-90.36	-1,833.24	-1,491.14	1,314.43	1,208.47	105.97	12.404		
14,400.00	12,437.00	14,411.17	12,437.00	54.76	53.27	-90.36	-1,933.24	-1,490.51	1,314.57	1,206.74	107.82	12.192		
14,500.00	12,437.00	14,511.17	12,437.00	55.75	54.20	-90.36	-2,033.23	-1,489.87	1,314.70	1,204.95	109.75	11.979		
14,600.00	12,437.00	14,611.17	12,437.00	56.78	55.16	-90.36	-2,133.23	-1,489.24	1,314.83	1,203.09	111.74	11.767		
14,700.00	12,437.00	14,711.17	12,437.00	57.84	56.15	-90.36	-2,233.23	-1,488.61	1,314.96	1,201.17	113.79	11.556		
14,800.00	12,437.00	14,811.17	12,437.00	58.92	57.18	-90.36	-2,333.23	-1,487.97	1,315.09	1,199.20	115.90	11.347		
14,900.00	12,437.00	14,911.17	12,437.00	60.03	58.23	-90.36	-2,433.23	-1,487.34	1,315.22	1,197.17	118.06	11.140		
15,000.00	12,437.00	15,011.17	12,437.00	61.16	59.31	-90.36	-2,533.22	-1,486.71	1,315.36	1,195.08	120.27	10.936		
15,100.00	12,437.00	15,111.17	12,437.00	62.32	60.42	-90.36	-2,633.22	-1,486.08	1,315.49	1,192.95	122.54	10.735		
15,200.00	12,437.00	15,211.17	12,437.00	63.49	61.55	-90.36	-2,733.22	-1,485.44	1,315.62	1,190.77	124.85	10.538		
15,300.00	12,437.00	15,311.17	12,437.00	64.69	62.70	-90.36	-2,833.22	-1,484.81	1,315.75	1,188.55	127.20	10.344		
15,400.00	12,437.00	15,411.17	12,437.00	65.91	63.88	-90.36	-2,933.21	-1,484.18	1,315.88	1,186.28	129.60	10.153		
15,500.00	12,437.00	15,511.17	12,437.00	67.15	65.07	-90.36	-3,033.21	-1,483.54	1,316.02	1,183.98	132.03	9.967		
15,600.00	12,437.00	15,611.17	12,437.00	68.40	66.29	-90.36	-3,133.21	-1,482.91	1,316.15	1,181.64	134.51	9.785		
15,700.00	12,437.00	15,711.17	12,437.00	69.67	67.52	-90.36	-3,233.21	-1,482.28	1,316.28	1,179.26	137.01	9.607		
15,800.00	12,437.00	15,811.17	12,437.00	70.96	68.77	-90.36	-3,333.21	-1,481.65	1,316.41	1,176.86	139.56	9.433		
15,900.00	12,437.00	15,911.17	12,437.00	72.26	70.04	-90.36	-3,433.20	-1,481.01	1,316.54	1,174.42	142.13	9.263		
16,000.00	12,437.00	16,011.17	12,437.00	73.58	71.33	-90.36	-3,533.20	-1,480.38	1,316.67	1,171.95	144.73	9.098		
16,100.00	12,437.00	16,111.17	12,437.00	74.91	72.63	-90.36	-3,633.20	-1,479.75	1,316.81	1,169.45	147.36	8.936		
16,200.00	12,437.00	16,211.17	12,437.00	76.25	73.94	-90.36	-3,733.20	-1,479.11	1,316.94	1,166.92	150.02	8.779		
16,300.00	12,437.00	16,311.17	12,437.00	77.60	75.26	-90.36	-3,833.20	-1,478.48	1,317.07	1,164.37	152.70	8.625		
16,400.00	12,437.00	16,411.17	12,437.00	78.97	76.60	-90.36	-3,933.19	-1,477.85	1,317.20	1,161.80	155.40	8.476		
16,500.00	12,437.00	16,511.17	12,437.00	80.35	77.95	-90.36	-4,033.19	-1,477.21	1,317.33	1,159.20	158.13	8.331		
16,600.00	12,437.00	16,611.17	12,437.00	81.73	79.32	-90.36	-4,133.19	-1,476.58	1,317.47	1,156.58	160.88	8.189		
16,700.00	12,437.00	16,711.17	12,437.00	83.13	80.69	-90.36	-4,233.19	-1,475.95	1,317.60	1,153.94	163.65	8.051		
16,800.00	12,437.00	16,811.17	12,437.00	84.53	82.07	-90.36	-4,333.19	-1,475.32	1,317.73	1,151.28	166.45	7.917		
16,900.00	12,437.00	16,911.17	12,437.00	85.95	83.47	-90.36	-4,433.18	-1,474.68	1,317.86	1,148.61	169.25	7.786		
17,000.00	12,437.00	17,011.17	12,437.00	87.37	84.87	-90.36	-4,533.18	-1,474.05	1,317.99	1,145.91	172.08	7.659		
17,100.00	12,437.00	17,111.17	12,437.00	88.80	86.28	-90.36	-4,633.18	-1,473.42	1,318.12	1,143.20	174.92	7.535		
17,193.91	12,437.00	17,205.09	12,437.00	90.15	87.61	-90.36	-4,727.09	-1,472.82	1,318.25	1,140.64	177.61	7.422 ES, SF		

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Leo Thorsness 13-24S-33E AR - #211H - Wellbore #1 - Surveys												Offset Site Error:	0.00 usft
Survey Program: 195-MWD												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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	171.05	-5,490.64	865.13	5,558.42				
100.00	100.00	89.80	89.80	0.13	0.14	171.05	-5,490.53	865.10	5,558.28	5,558.02	0.27	N/A	
200.00	200.00	207.18	207.18	0.49	0.32	171.05	-5,490.08	864.97	5,557.89	5,557.08	0.80	6,922.060	
299.54	299.54	276.04	276.04	0.84	0.58	171.05	-5,489.94	864.91	5,557.66	5,556.24	1.42	3,910.331	
300.00	300.00	276.38	276.38	0.85	0.58	171.05	-5,489.94	864.91	5,557.66	5,556.23	1.42	3,902.517	
400.00	400.00	360.88	360.88	1.20	0.87	171.05	-5,490.13	864.92	5,557.87	5,555.79	2.07	2,678.833	
500.00	500.00	853.76	853.21	1.56	2.63	170.95	-5,472.70	871.92	5,554.51	5,550.33	4.18	1,328.273	
600.00	600.00	949.58	948.76	1.92	2.98	170.92	-5,465.81	873.89	5,547.73	5,542.85	4.88	1,136.054	
700.00	699.99	1,145.02	1,143.32	2.28	3.71	170.81	-5,449.02	881.27	5,540.32	5,534.37	5.95	931.438	
800.00	799.96	1,239.42	1,237.21	2.63	4.07	170.74	-5,440.35	885.84	5,534.36	5,527.71	6.65	832.366	
900.00	899.86	1,363.50	1,360.56	2.99	4.54	170.63	-5,428.50	892.09	5,529.64	5,522.18	7.46	740.938	
999.59	999.27	1,456.00	1,452.51	3.35	4.90	170.54	-5,419.65	896.85	5,526.55	5,518.38	8.16	676.993	
1,000.00	999.68	1,456.00	1,452.51	3.35	4.90	170.54	-5,419.65	896.85	5,526.54	5,518.37	8.16	676.869	
1,100.00	1,099.43	1,551.00	1,546.94	3.72	5.27	170.44	-5,410.55	901.93	5,524.25	5,515.37	8.88	622.158	
1,200.00	1,199.19	1,646.00	1,641.38	4.08	5.64	170.35	-5,401.55	906.86	5,522.06	5,512.47	9.59	575.517	
1,300.00	1,298.95	1,690.71	1,685.87	4.45	5.81	170.29	-5,397.63	908.98	5,520.48	5,510.35	10.13	545.210	
1,400.00	1,398.70	1,742.00	1,736.96	4.82	6.00	170.23	-5,393.63	911.21	5,519.82	5,509.14	10.68	516.840	
1,500.00	1,498.46	1,871.88	1,866.29	5.18	6.50	170.12	-5,383.30	917.18	5,519.00	5,507.47	11.52	478.955	
1,600.00	1,598.22	1,932.00	1,926.17	5.55	6.73	170.05	-5,378.71	919.96	5,518.59	5,506.48	12.11	455.679	
1,602.23	1,600.44	1,932.00	1,926.17	5.56	6.73	170.05	-5,378.71	919.96	5,518.59	5,506.47	12.12	455.372	
1,700.00	1,697.97	1,978.04	1,972.06	5.92	6.90	169.99	-5,375.63	921.83	5,519.03	5,506.39	12.64	436.497	
1,800.00	1,797.73	2,027.00	2,020.93	6.29	7.08	169.94	-5,372.94	923.38	5,520.47	5,507.28	13.19	418.630	
1,900.00	1,897.49	2,107.19	2,101.00	6.66	7.38	169.88	-5,369.11	925.58	5,522.57	5,508.73	13.84	398.995	
2,000.00	1,997.24	2,215.18	2,208.83	7.03	7.77	169.81	-5,364.04	928.48	5,524.76	5,510.16	14.60	378.500	
2,100.00	2,097.00	2,312.51	2,306.02	7.40	8.13	169.75	-5,359.43	930.84	5,526.87	5,511.56	15.31	360.938	
2,200.00	2,196.76	2,429.36	2,422.70	7.78	8.55	169.68	-5,353.78	933.51	5,528.87	5,512.77	16.10	343.422	
2,300.00	2,296.51	2,539.88	2,533.05	8.15	8.96	169.62	-5,348.12	935.80	5,530.55	5,513.68	16.86	327.967	
2,400.00	2,396.27	2,621.32	2,614.38	8.52	9.26	169.57	-5,344.01	937.42	5,532.31	5,514.78	17.52	315.744	
2,500.00	2,496.03	2,691.00	2,683.96	8.89	9.51	169.51	-5,340.83	939.24	5,534.62	5,516.48	18.14	305.153	
2,600.00	2,595.79	2,771.75	2,764.59	9.26	9.81	169.45	-5,337.39	941.98	5,537.40	5,518.60	18.79	294.631	
2,700.00	2,695.54	2,865.15	2,857.83	9.63	10.15	169.37	-5,333.49	945.58	5,540.35	5,520.85	19.50	284.143	
2,800.00	2,795.30	2,958.82	2,951.36	10.01	10.49	169.30	-5,329.67	949.16	5,543.42	5,523.22	20.20	274.378	
2,900.00	2,895.06	3,061.81	3,054.18	10.38	10.87	169.22	-5,325.50	953.22	5,546.54	5,525.60	20.94	264.835	
3,000.00	2,994.81	3,148.65	3,140.89	10.75	11.19	169.15	-5,322.01	956.72	5,549.73	5,528.10	21.62	256.652	
3,100.00	3,094.57	3,262.36	3,254.41	11.12	11.60	169.07	-5,317.50	961.31	5,552.97	5,530.57	22.40	247.863	
3,200.00	3,194.33	3,355.00	3,346.90	11.50	11.94	168.99	-5,313.68	965.03	5,556.06	5,532.96	23.11	240.466	
3,300.00	3,294.08	3,439.73	3,431.50	11.87	12.25	168.92	-5,310.35	968.41	5,559.36	5,535.58	23.78	233.806	
3,400.00	3,393.84	3,520.78	3,512.43	12.24	12.55	168.85	-5,307.47	971.65	5,563.03	5,538.59	24.44	227.662	
3,500.00	3,493.60	3,611.20	3,602.72	12.61	12.88	168.78	-5,304.49	975.33	5,566.97	5,541.85	25.13	221.546	
3,600.00	3,593.35	3,701.19	3,692.59	12.99	13.20	168.71	-5,301.63	979.07	5,571.06	5,545.25	25.82	215.779	
3,700.00	3,693.11	3,787.34	3,778.62	13.36	13.52	168.64	-5,299.08	982.69	5,575.38	5,548.88	26.49	210.439	
3,800.00	3,792.87	3,958.39	3,949.41	13.73	14.14	168.53	-5,292.64	989.59	5,578.67	5,551.18	27.49	202.945	
3,900.00	3,892.63	4,130.40	4,121.05	14.11	14.78	168.41	-5,284.01	996.62	5,580.81	5,552.32	28.49	195.911	
4,000.00	3,992.38	4,224.50	4,214.94	14.48	15.13	168.34	-5,278.96	1,000.38	5,582.76	5,553.56	29.20	191.213	
4,100.00	4,092.14	4,317.93	4,308.17	14.85	15.47	168.26	-5,274.04	1,004.13	5,584.83	5,554.92	29.90	186.759	
4,200.00	4,191.90	4,400.00	4,390.06	15.22	15.78	168.19	-5,269.78	1,007.52	5,587.03	5,556.46	30.57	182.767	
4,300.00	4,291.65	4,472.69	4,462.58	15.60	16.05	168.12	-5,266.25	1,010.80	5,589.65	5,558.45	31.20	179.157	
4,400.00	4,391.41	4,537.41	4,527.16	15.97	16.29	168.05	-5,263.46	1,014.14	5,592.92	5,561.12	31.80	175.880	
4,500.00	4,491.17	4,590.00	4,579.62	16.34	16.48	167.99	-5,261.44	1,017.14	5,596.83	5,564.48	32.35	172.999	
4,600.00	4,590.92	4,682.17	4,671.57	16.72	16.82	167.90	-5,258.26	1,022.76	5,601.18	5,568.13	33.06	169.450	
4,700.00	4,690.68	4,780.00	4,769.15	17.09	17.18	167.81	-5,255.31	1,029.04	5,606.01	5,572.23	33.78	165.956	
4,800.00	4,790.44	4,834.06	4,823.07	17.46	17.38	167.74	-5,253.87	1,032.66	5,611.16	5,576.83	34.34	163.421	

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



MS Directional
Anticollision Report



Company: Matador Resources
Project: Lea County, New Mexico (NAD 27)
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #214H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

Offset Design Leo Thorsness 13-24S-33E AR - #211H - Wellbore #1 - Surveys													Offset Site Error: 0.00 usft
Survey Program: 195-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		
4,900.00	4,890.19	4,907.09	4,895.90	17.83	17.65	167.66	-5,252.19	1,037.78	5,616.84	5,581.88	34.96	160.649	
5,000.00	4,989.95	5,062.43	5,050.79	18.21	18.22	167.51	-5,248.76	1,049.02	5,622.91	5,586.99	35.91	156.569	
5,100.00	5,089.71	5,241.11	5,228.96	18.58	18.88	167.35	-5,241.53	1,060.45	5,626.51	5,589.56	36.95	152.268	
5,200.00	5,189.47	5,329.66	5,317.29	18.95	19.21	167.27	-5,237.87	1,065.46	5,630.19	5,592.54	37.64	149.569	
5,300.00	5,289.22	5,443.52	5,430.90	19.33	19.63	167.17	-5,233.31	1,071.39	5,633.90	5,595.47	38.43	146.604	
5,400.00	5,388.98	5,588.73	5,575.76	19.70	20.17	167.06	-5,226.76	1,079.11	5,637.20	5,597.86	39.34	143.310	
5,500.00	5,488.74	5,771.14	5,757.49	20.07	20.86	166.89	-5,215.56	1,090.21	5,638.92	5,598.53	40.38	139.636	
5,520.13	5,508.82	5,790.42	5,776.68	20.15	20.94	166.87	-5,214.26	1,091.39	5,639.18	5,598.65	40.53	139.140	
5,600.00	5,588.54	5,866.96	5,852.93	20.44	21.23	166.80	-5,209.20	1,095.82	5,639.48	5,598.37	41.11	137.195	
5,700.00	5,688.48	5,962.61	5,948.25	20.80	21.59	166.72	-5,203.05	1,100.84	5,637.74	5,595.91	41.82	134.800	
5,786.53	5,775.00	6,044.98	6,030.34	21.11	21.90	166.66	-5,197.83	1,105.11	5,634.33	5,591.89	42.44	132.769	
5,800.00	5,788.47	6,057.80	6,043.12	21.15	21.95	166.66	-5,197.02	1,105.78	5,633.67	5,591.13	42.53	132.456	
5,900.00	5,888.47	6,154.95	6,139.95	21.50	22.32	166.59	-5,190.92	1,110.89	5,628.76	5,585.52	43.25	130.155	
6,000.00	5,988.47	6,254.85	6,239.52	21.84	22.70	166.53	-5,184.68	1,116.05	5,623.88	5,579.91	43.97	127.900	
6,100.00	6,088.47	6,352.84	6,337.19	22.19	23.07	166.46	-5,178.58	1,121.03	5,619.01	5,574.32	44.69	125.737	
6,200.00	6,188.47	6,449.03	6,433.07	22.53	23.43	166.40	-5,172.65	1,125.95	5,614.20	5,568.80	45.40	123.662	
6,300.00	6,288.47	6,552.05	6,535.75	22.88	23.82	166.33	-5,166.30	1,131.29	5,609.43	5,563.29	46.14	121.583	
6,400.00	6,388.47	6,661.03	6,644.36	23.23	24.23	166.26	-5,159.41	1,137.03	5,604.52	5,557.62	46.90	119.509	
6,500.00	6,488.47	6,760.11	6,743.10	23.57	24.60	166.19	-5,153.06	1,142.22	5,599.53	5,551.91	47.62	117.591	
6,600.00	6,588.47	6,856.73	6,839.41	23.92	24.97	166.13	-5,146.97	1,147.02	5,594.59	5,546.26	48.33	115.753	
6,700.00	6,688.47	7,055.18	7,037.19	24.27	25.72	166.01	-5,133.19	1,155.62	5,588.96	5,539.55	49.41	113.109	
6,800.00	6,788.47	7,153.57	7,135.22	24.62	26.09	165.95	-5,125.51	1,159.26	5,582.28	5,532.15	50.13	111.357	
6,900.00	6,888.47	7,252.00	7,233.29	24.97	26.46	165.90	-5,117.97	1,162.78	5,575.70	5,524.85	50.85	109.656	
7,000.00	6,988.47	7,360.09	7,341.00	25.32	26.87	165.84	-5,109.65	1,166.46	5,569.07	5,517.47	51.60	107.933	
7,100.00	7,088.47	7,467.30	7,447.82	25.66	27.27	165.78	-5,101.21	1,169.90	5,562.21	5,509.86	52.34	106.261	
7,200.00	7,188.47	7,558.28	7,538.48	26.01	27.61	165.74	-5,094.13	1,172.66	5,555.40	5,502.37	53.03	104.751	
7,300.00	7,288.47	7,633.00	7,612.96	26.36	27.89	165.70	-5,088.46	1,174.81	5,548.79	5,495.12	53.67	103.393	
7,400.00	7,388.47	7,731.20	7,710.86	26.71	28.26	165.66	-5,081.28	1,177.47	5,542.37	5,487.99	54.38	101.919	
7,500.00	7,488.47	7,823.00	7,802.41	27.06	28.60	165.62	-5,074.93	1,179.79	5,536.29	5,481.22	55.07	100.529	
7,600.00	7,588.47	7,889.77	7,869.01	27.41	28.85	165.59	-5,070.58	1,181.46	5,530.55	5,474.88	55.67	99.340	
7,700.00	7,688.47	7,964.10	7,943.18	27.76	29.13	165.56	-5,066.03	1,183.43	5,525.29	5,468.99	56.30	98.139	
7,800.00	7,788.47	8,040.46	8,019.39	28.11	29.41	165.53	-5,061.70	1,185.55	5,520.48	5,463.54	56.93	96.961	
7,900.00	7,888.47	8,120.66	8,099.44	28.46	29.70	165.49	-5,057.46	1,187.77	5,516.05	5,458.47	57.58	95.795	
8,000.00	7,988.47	8,203.00	8,181.66	28.82	30.00	165.46	-5,053.42	1,190.00	5,511.98	5,453.74	58.24	94.648	
8,100.00	8,088.47	8,345.50	8,323.95	29.17	30.52	165.41	-5,046.32	1,193.02	5,507.69	5,448.59	59.10	93.185	
8,200.00	8,188.47	8,473.44	8,451.68	29.52	30.99	165.37	-5,039.25	1,194.80	5,502.68	5,442.76	59.92	91.835	
8,300.00	8,288.47	8,592.46	8,570.46	29.87	31.43	165.33	-5,032.04	1,197.04	5,497.30	5,436.60	60.70	90.562	
8,400.00	8,388.47	8,678.45	8,656.26	30.22	31.75	165.30	-5,026.73	1,198.98	5,491.89	5,430.52	61.37	89.486	
8,500.00	8,488.47	8,774.00	8,751.61	30.57	32.10	165.26	-5,020.99	1,201.33	5,486.70	5,424.62	62.08	88.388	
8,600.00	8,588.47	8,837.26	8,814.75	30.93	32.33	165.23	-5,017.41	1,202.99	5,481.86	5,419.19	62.66	87.481	
8,700.00	8,688.47	8,906.32	8,883.69	31.28	32.58	165.20	-5,013.87	1,204.86	5,477.58	5,414.31	63.27	86.573	
8,800.00	8,788.47	8,963.00	8,940.29	31.63	32.79	165.18	-5,011.24	1,206.44	5,473.89	5,410.06	63.83	85.756	
8,900.00	8,888.47	9,046.00	9,023.20	31.98	33.09	165.15	-5,008.01	1,208.25	5,470.71	5,406.23	64.48	84.843	
9,000.00	8,988.47	9,116.43	9,093.60	32.33	33.34	165.14	-5,005.92	1,208.93	5,468.09	5,403.00	65.08	84.017	
9,100.00	9,088.47	9,223.11	9,200.25	32.69	33.71	165.14	-5,003.51	1,208.65	5,465.85	5,400.04	65.81	83.054	
9,200.00	9,188.47	9,371.11	9,348.18	33.04	34.22	165.15	-4,999.57	1,206.71	5,462.93	5,396.26	66.68	81.929	
9,300.00	9,288.47	9,439.62	9,416.66	33.39	34.45	165.15	-4,997.80	1,205.70	5,460.00	5,392.74	67.26	81.172	
9,400.00	9,388.47	9,534.00	9,511.01	33.75	34.77	165.16	-4,995.61	1,204.47	5,457.42	5,389.48	67.94	80.326	
9,500.00	9,488.47	9,634.97	9,611.94	34.10	35.11	165.17	-4,993.40	1,202.83	5,454.89	5,386.25	68.64	79.474	
9,600.00	9,588.47	9,724.00	9,700.92	34.45	35.41	165.19	-4,991.36	1,200.66	5,452.08	5,382.79	69.29	78.683	
9,700.00	9,688.47	9,817.84	9,794.71	34.81	35.73	165.21	-4,989.42	1,198.18	5,449.41	5,379.45	69.96	77.895	
9,800.00	9,788.47	9,915.00	9,891.83	35.16	36.05	165.23	-4,987.92	1,195.97	5,447.33	5,376.70	70.64	77.117	

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



MS Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Leo Thorsness 13-24S-33E AR - #211H - Wellbore #1 - Surveys													Offset Site Error:	0.00 usft
Survey Program: 195-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)				Between Centres (usft)	Between Ellipses (usft)	
9,900.00	9,888.47	9,957.07	9,933.89	35.51	36.19	165.23	-4,987.43	1,195.33	5,445.66	5,374.53	71.13	76.564		
10,000.00	9,988.47	10,018.05	9,994.87	35.87	36.40	165.23	-4,986.88	1,195.23	5,444.75	5,373.07	71.68	75.959		
10,100.00	10,088.47	10,105.00	10,081.80	36.22	36.69	165.21	-4,986.44	1,196.79	5,444.66	5,372.33	72.33	75.276		
10,116.83	10,105.30	10,105.00	10,081.80	36.28	36.69	165.21	-4,986.44	1,196.79	5,444.63	5,372.25	72.38	75.220		
10,200.00	10,188.47	10,160.79	10,137.57	36.57	36.88	165.20	-4,986.32	1,198.29	5,444.98	5,372.11	72.86	74.730		
10,300.00	10,288.47	10,258.07	10,234.84	36.93	37.21	165.18	-4,986.34	1,200.22	5,445.50	5,371.95	73.55	74.034		
10,400.00	10,388.47	10,366.75	10,343.50	37.28	37.58	165.17	-4,986.59	1,201.47	5,446.02	5,371.73	74.29	73.310		
10,500.00	10,488.47	10,482.39	10,459.14	37.64	37.97	165.16	-4,986.70	1,202.18	5,446.27	5,371.22	75.04	72.574		
10,600.00	10,588.47	10,601.18	10,577.94	37.99	38.38	165.15	-4,986.40	1,203.01	5,446.20	5,370.38	75.82	71.830		
10,700.00	10,688.47	10,675.00	10,651.74	38.35	38.64	165.14	-4,985.88	1,203.96	5,445.95	5,369.52	76.43	71.258		
10,730.67	10,719.14	10,719.20	10,695.94	38.45	38.79	165.13	-4,985.61	1,204.62	5,445.83	5,369.14	76.69	71.010		
10,731.50	10,719.97	10,719.73	10,696.47	38.46	38.79	165.13	-4,985.60	1,204.62	5,445.83	5,369.13	76.70	71.005		
10,800.00	10,788.47	10,763.89	10,740.63	38.70	38.94	165.12	-4,985.54	1,205.26	5,445.98	5,368.90	77.08	70.651		
10,900.00	10,888.47	10,828.36	10,805.09	39.05	39.16	165.12	-4,985.82	1,206.14	5,446.76	5,369.11	77.65	70.149		
11,000.00	10,988.47	10,904.91	10,881.63	39.41	39.42	165.11	-4,986.64	1,207.20	5,448.14	5,369.88	78.25	69.622		
11,100.00	11,088.47	10,997.37	10,974.05	39.76	39.73	165.09	-4,987.67	1,209.10	5,449.73	5,370.81	78.92	69.054		
11,200.00	11,188.47	11,084.88	11,061.53	40.12	40.02	165.07	-4,988.61	1,211.52	5,451.49	5,371.92	79.57	68.515		
11,300.00	11,288.47	11,164.62	11,141.24	40.47	40.28	165.05	-4,989.81	1,213.47	5,453.57	5,373.39	80.18	68.015		
11,400.00	11,388.47	11,245.76	11,222.34	40.83	40.55	165.04	-4,991.47	1,214.98	5,456.03	5,375.23	80.80	67.524		
11,500.00	11,488.47	11,488.08	11,464.84	41.18	41.34	165.03	-4,993.75	1,216.31	5,456.71	5,374.69	82.02	66.527		
11,600.00	11,588.47	11,594.85	11,571.41	41.54	41.70	165.03	-4,993.57	1,216.74	5,456.65	5,373.91	82.74	65.948		
11,700.00	11,688.47	11,711.04	11,687.60	41.89	42.10	165.02	-4,993.03	1,217.65	5,456.41	5,372.90	83.51	65.339		
11,726.58	11,715.05	11,715.00	11,691.55	41.99	42.12	165.02	-4,993.00	1,217.68	5,456.34	5,372.73	83.61	65.259		
11,800.00	11,788.47	11,715.00	11,691.55	42.25	42.12	165.02	-4,993.00	1,217.68	5,456.84	5,372.99	83.84	65.084		
11,869.77	11,858.24	11,715.00	11,691.55	42.50	42.12	165.02	-4,993.00	1,217.68	5,458.22	5,374.17	84.05	64.937		
11,900.00	11,888.46	11,738.41	11,714.96	42.60	42.19	165.02	-4,993.25	1,217.80	5,457.90	5,373.67	84.23	64.797		
11,950.00	11,938.21	11,763.00	11,739.52	42.75	42.28	165.01	-4,994.39	1,217.76	5,455.08	5,370.63	84.46	64.591		
12,000.00	11,987.35	11,763.00	11,739.52	42.90	42.28	164.98	-4,994.39	1,217.76	5,448.06	5,363.48	84.58	64.417		
12,050.00	12,035.51	11,763.00	11,739.52	43.03	42.28	164.95	-4,994.39	1,217.76	5,437.32	5,352.64	84.69	64.206		
12,100.00	12,082.33	11,763.00	11,739.52	43.16	42.28	164.90	-4,994.39	1,217.76	5,422.94	5,338.16	84.79	63.961		
12,150.00	12,127.43	11,763.00	11,739.52	43.28	42.28	164.84	-4,994.39	1,217.76	5,405.00	5,320.13	84.87	63.683		
12,200.00	12,170.49	11,763.00	11,739.52	43.39	42.28	164.77	-4,994.39	1,217.76	5,383.60	5,298.65	84.95	63.375		
12,250.00	12,211.17	11,763.00	11,739.52	43.48	42.28	164.69	-4,994.39	1,217.76	5,358.85	5,273.84	85.01	63.036		
12,300.00	12,249.17	11,763.00	11,739.52	43.57	42.28	164.60	-4,994.39	1,217.76	5,330.91	5,245.84	85.06	62.669		
12,350.00	12,284.19	11,763.00	11,739.52	43.65	42.28	164.50	-4,994.39	1,217.76	5,299.93	5,214.83	85.10	62.276		
12,400.00	12,315.96	11,763.00	11,739.52	43.71	42.28	164.39	-4,994.39	1,217.76	5,266.11	5,180.97	85.13	61.857		
12,450.00	12,344.26	11,763.00	11,739.52	43.78	42.28	164.28	-4,994.39	1,217.76	5,229.64	5,144.49	85.15	61.413		
12,500.00	12,368.85	11,763.00	11,739.52	43.86	42.28	164.15	-4,994.39	1,217.76	5,190.75	5,105.59	85.17	60.947		
12,550.00	12,389.56	11,763.00	11,739.52	43.95	42.28	164.01	-4,994.39	1,217.76	5,149.69	5,064.52	85.17	60.460		
12,600.00	12,406.23	11,763.00	11,739.52	44.04	42.28	163.87	-4,994.39	1,217.76	5,106.72	5,021.55	85.18	59.954		
12,650.00	12,418.73	11,763.00	11,739.52	44.14	42.28	163.72	-4,994.39	1,217.76	5,062.12	4,976.95	85.18	59.430		
12,669.77	12,422.49	11,763.00	11,739.52	44.18	42.28	163.66	-4,994.39	1,217.76	5,044.11	4,958.93	85.18	59.218		
12,700.00	12,427.27	11,763.00	11,739.52	44.25	42.28	163.56	-4,994.39	1,217.76	5,016.29	4,931.11	85.18	58.891		
12,750.00	12,433.09	11,763.00	11,739.52	44.36	42.28	163.41	-4,994.39	1,217.76	4,969.78	4,884.60	85.18	58.345		
12,800.00	12,436.31	11,763.00	11,739.52	44.48	42.28	163.24	-4,994.39	1,217.76	4,922.76	4,837.57	85.18	57.790		
12,836.44	12,437.00	11,763.00	11,739.52	44.57	42.28	163.12	-4,994.39	1,217.76	4,888.24	4,803.05	85.19	57.381		
12,900.00	12,437.00	11,763.00	11,739.52	44.74	42.28	162.91	-4,994.39	1,217.76	4,827.89	4,742.69	85.20	56.665		
13,000.00	12,437.00	11,763.00	11,739.52	45.06	42.28	162.56	-4,994.39	1,217.76	4,733.13	4,647.91	85.23	55.536		
13,100.00	12,437.00	11,763.00	11,739.52	45.43	42.28	162.19	-4,994.39	1,217.76	4,638.59	4,553.33	85.26	54.406		
13,200.00	12,437.00	11,763.00	11,739.52	45.86	42.28	161.81	-4,994.39	1,217.76	4,544.29	4,458.99	85.30	53.274		
13,300.00	12,437.00	11,763.00	11,739.52	46.35	42.28	161.41	-4,994.39	1,217.76	4,450.23	4,364.88	85.35	52.140		
13,400.00	12,437.00	11,785.73	11,762.12	46.88	42.34	161.01	-4,996.81	1,218.01	4,355.34	4,269.80	85.54	50.916		

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



MS Directional Anticollision Report



Company: Matador Resources
Project: Lea County, New Mexico
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #2
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

Offset Design Leo Thorsness 13-24S-33B					211H - Wellbore #1 - Surveys							Offset Site Error:	0.00 usft
Survey Program: 195-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Reference (usft)	Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)			+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
13,500.00	12,437.00	11,786.56	11,762.93	47.47	150.57	-4,996.93	1,218.03	4,261.75	4,176.13	85.62	49.775		
13,600.00	12,437.00	11,787.42	11,763.78	48.11	150.12	-4,997.06	1,218.06	4,168.45	4,082.73	85.72	48.631		
13,700.00	12,437.00	11,810.00	11,785.89	48.80	159.65	-5,001.49	1,219.10	4,076.46	3,990.51	85.95	47.428		
13,800.00	12,437.00	11,810.00	11,785.89	49.53	159.16	-5,001.49	1,219.10	3,983.73	3,897.66	86.08	46.282		
13,900.00	12,437.00	11,810.00	11,785.89	50.30	158.64	-5,001.49	1,219.10	3,891.36	3,805.14	86.22	45.134		
14,000.00	12,437.00	11,810.00	11,785.89	51.12	158.09	-5,001.49	1,219.10	3,799.38	3,713.00	86.38	43.984		
14,100.00	12,437.00	11,810.00	11,785.89	51.97	157.52	-5,001.49	1,219.10	3,707.81	3,621.24	86.57	42.833		
14,200.00	12,437.00	11,810.00	11,785.89	52.87	156.91	-5,001.49	1,219.10	3,616.68	3,529.91	86.77	41.679		
14,300.00	12,437.00	11,810.00	11,785.89	53.80	156.28	-5,001.49	1,219.10	3,526.04	3,439.03	87.01	40.524		
14,400.00	12,437.00	11,810.00	11,785.89	54.76	155.61	-5,001.49	1,219.10	3,435.92	3,348.64	87.28	39.368		
14,500.00	12,437.00	11,810.00	11,785.89	55.75	154.90	-5,001.49	1,219.10	3,346.36	3,258.78	87.58	38.211		
14,600.00	12,437.00	11,810.00	11,785.89	56.78	154.15	-5,001.49	1,219.10	3,257.40	3,169.49	87.91	37.053		
14,700.00	12,437.00	11,810.00	11,785.89	57.84	153.36	-5,001.49	1,219.10	3,169.11	3,080.82	88.29	35.894		
14,800.00	12,437.00	11,810.00	11,785.89	58.92	152.52	-5,001.49	1,219.10	3,081.53	2,992.81	88.71	34.736		
14,900.00	12,437.00	11,810.00	11,785.89	60.03	151.63	-5,001.49	1,219.10	2,994.72	2,905.54	89.18	33.579		
15,000.00	12,437.00	11,810.00	11,785.89	61.16	150.69	-5,001.49	1,219.10	2,908.77	2,819.06	89.71	32.424		
15,100.00	12,437.00	11,810.00	11,785.89	62.32	149.68	-5,001.49	1,219.10	2,823.74	2,733.44	90.30	31.272		
15,200.00	12,437.00	11,810.00	11,785.89	63.49	148.61	-5,001.49	1,219.10	2,739.72	2,648.77	90.95	30.124		
15,300.00	12,437.00	11,810.00	11,785.89	64.69	147.47	-5,001.49	1,219.10	2,656.81	2,565.14	91.67	28.981		
15,400.00	12,437.00	11,810.00	11,785.89	65.91	146.25	-5,001.49	1,219.10	2,575.11	2,482.64	92.48	27.846		
15,500.00	12,437.00	11,810.00	11,785.89	67.15	144.95	-5,001.49	1,219.10	2,494.75	2,401.39	93.36	26.720		
15,600.00	12,437.00	11,828.49	11,803.76	68.40	143.59	-5,006.06	1,220.38	2,415.56	2,321.04	94.52	25.556		
15,700.00	12,437.00	11,834.82	11,809.86	69.67	142.12	-5,007.70	1,220.88	2,338.04	2,242.37	95.67	24.440		
15,800.00	12,437.00	11,858.00	11,832.05	70.96	140.58	-5,014.05	1,222.96	2,262.44	2,165.35	97.09	23.303		
15,900.00	12,437.00	11,858.00	11,832.05	72.26	138.88	-5,014.05	1,222.96	2,188.31	2,089.90	98.41	22.237		
16,000.00	12,437.00	11,858.00	11,832.05	73.58	137.04	-5,014.05	1,222.96	2,116.31	2,016.46	99.85	21.196		
16,100.00	12,437.00	11,858.00	11,832.05	74.91	135.07	-5,014.05	1,222.96	2,046.66	1,945.25	101.41	20.183		
16,200.00	12,437.00	11,858.00	11,832.05	76.25	132.94	-5,014.05	1,222.96	1,979.61	1,876.52	103.09	19.202		
16,300.00	12,437.00	11,876.94	11,850.00	77.60	130.76	-5,019.77	1,224.93	1,915.05	1,809.93	105.13	18.217		
16,400.00	12,437.00	11,885.00	11,857.57	78.97	128.36	-5,022.38	1,225.83	1,853.67	1,746.50	107.17	17.297		
16,500.00	12,437.00	11,905.00	11,876.18	80.35	125.89	-5,029.32	1,228.22	1,795.73	1,686.26	109.47	16.403		
16,600.00	12,437.00	11,905.00	11,876.18	81.73	123.10	-5,029.32	1,228.22	1,741.16	1,629.51	111.65	15.595		
16,700.00	12,437.00	11,905.00	11,876.18	83.13	120.12	-5,029.32	1,228.22	1,690.75	1,576.84	113.91	14.843		
16,800.00	12,437.00	11,924.49	11,894.02	84.53	117.15	-5,036.74	1,230.76	1,644.48	1,527.99	116.49	14.117		
16,900.00	12,437.00	11,953.00	11,919.54	85.95	114.15	-5,048.76	1,234.85	1,603.18	1,483.95	119.23	13.446		
17,000.00	12,437.00	11,953.00	11,919.54	87.37	110.64	-5,048.76	1,234.85	1,566.29	1,444.69	121.60	12.881		
17,100.00	12,437.00	11,971.38	11,935.63	88.80	107.24	-5,057.20	1,237.63	1,534.83	1,410.65	124.18	12.360		
17,193.91	12,437.00	12,000.00	11,960.17	90.15	104.17	-5,071.26	1,241.98	1,510.06	1,383.38	126.68	11.920 CC, ES, SF		

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Roy Batty Federal COM - Roy Batty Federal COM #3H - Wellbore #1 - Surveys													Offset Site Error: 0.00 usft	
Survey Program: 100-GYRO-NS, 10518-MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Azimuth from North (°)	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	0.00	0.00	0.00	-167.46	-4,770.94	-1,061.03	4,887.58					
100.00	100.00	154.10	154.08	0.13	0.35	-167.48	-4,769.49	-1,058.95	4,886.34	4,885.86	0.48	N/A		
200.00	200.00	247.39	247.34	0.49	0.69	-167.50	-4,768.33	-1,057.24	4,884.73	4,883.57	1.16	4,206.792		
300.00	300.00	335.60	335.53	0.85	0.99	-167.52	-4,767.36	-1,055.55	4,883.24	4,881.41	1.83	2,671.361		
400.00	400.00	419.83	419.74	1.20	1.29	-167.53	-4,766.70	-1,054.25	4,882.13	4,879.65	2.48	1,968.315		
500.00	500.00	527.95	527.86	1.56	1.66	-167.54	-4,765.80	-1,052.80	4,881.03	4,877.81	3.22	1,517.776		
600.00	600.00	622.61	622.49	1.92	1.99	-167.56	-4,765.01	-1,051.34	4,879.89	4,875.98	3.90	1,249.666		
669.48	669.48	680.91	680.79	2.17	2.19	-167.57	-4,764.62	-1,050.57	4,879.52	4,875.17	4.36	1,120.046		
700.00	699.99	706.99	706.87	2.28	2.28	-167.58	-4,764.48	-1,050.30	4,879.59	4,875.04	4.56	1,070.914		
800.00	799.96	800.00	799.88	2.63	2.61	-167.61	-4,764.04	-1,049.55	4,880.74	4,875.51	5.24	931.891		
900.00	899.86	910.23	910.10	2.99	2.99	-167.65	-4,763.44	-1,048.76	4,883.02	4,877.04	5.98	816.503		
999.59	999.27	1,000.00	999.87	3.35	3.30	-167.71	-4,762.96	-1,048.07	4,886.48	4,879.83	6.65	734.512		
1,000.00	999.68	1,000.00	999.87	3.35	3.30	-167.71	-4,762.96	-1,048.07	4,886.50	4,879.84	6.65	734.353		
1,100.00	1,099.43	1,078.86	1,078.72	3.72	3.58	-167.77	-4,762.75	-1,047.70	4,890.88	4,883.59	7.29	670.792		
1,200.00	1,199.19	1,195.24	1,195.10	4.08	3.98	-167.83	-4,762.48	-1,047.52	4,895.40	4,887.34	8.06	607.322		
1,300.00	1,298.95	1,279.98	1,279.85	4.45	4.28	-167.89	-4,762.19	-1,047.40	4,899.79	4,891.07	8.72	561.885		
1,400.00	1,398.70	1,391.92	1,391.78	4.82	4.67	-167.95	-4,761.80	-1,047.81	4,904.30	4,894.83	9.48	517.577		
1,500.00	1,498.46	1,505.09	1,504.95	5.18	5.07	-168.00	-4,760.94	-1,048.66	4,908.49	4,898.25	10.24	479.536		
1,600.00	1,598.22	1,595.62	1,595.47	5.55	5.38	-168.05	-4,760.25	-1,049.23	4,912.65	4,901.73	10.92	449.977		
1,700.00	1,697.97	1,733.13	1,732.97	5.92	5.86	-168.09	-4,758.64	-1,050.24	4,916.41	4,904.64	11.76	417.893		
1,800.00	1,797.73	1,825.21	1,825.04	6.29	6.19	-168.14	-4,757.34	-1,050.69	4,919.92	4,907.47	12.45	395.073		
1,900.00	1,897.49	1,902.10	1,901.93	6.66	6.45	-168.20	-4,756.57	-1,050.98	4,923.81	4,910.72	13.09	376.201		
2,000.00	1,997.24	2,025.64	2,025.46	7.03	6.89	-168.24	-4,755.24	-1,051.69	4,927.66	4,913.77	13.89	354.827		
2,100.00	2,097.00	2,128.66	2,128.46	7.40	7.25	-168.29	-4,753.74	-1,052.57	4,931.21	4,916.59	14.61	337.409		
2,200.00	2,196.76	2,220.20	2,219.99	7.78	7.57	-168.33	-4,752.54	-1,053.45	4,934.91	4,919.61	15.30	322.500		
2,300.00	2,296.51	2,328.48	2,328.25	8.15	7.95	-168.38	-4,751.00	-1,054.55	4,938.53	4,922.48	16.05	307.731		
2,400.00	2,396.27	2,422.70	2,422.46	8.52	8.28	-168.42	-4,749.65	-1,055.71	4,942.18	4,925.44	16.75	295.143		
2,500.00	2,496.03	2,522.79	2,522.53	8.89	8.63	-168.46	-4,748.28	-1,056.84	4,945.89	4,928.43	17.46	283.229		
2,600.00	2,595.79	2,627.43	2,627.15	9.26	8.99	-168.50	-4,746.79	-1,058.10	4,949.55	4,931.35	18.20	272.011		
2,700.00	2,695.54	2,731.33	2,731.03	9.63	9.36	-168.54	-4,745.20	-1,059.16	4,953.08	4,934.15	18.93	261.689		
2,800.00	2,795.30	2,826.64	2,826.33	10.01	9.69	-168.59	-4,743.79	-1,060.16	4,956.66	4,937.03	19.63	252.527		
2,900.00	2,895.06	2,920.84	2,920.51	10.38	10.02	-168.63	-4,742.39	-1,061.41	4,960.30	4,939.97	20.33	244.048		
3,000.00	2,994.81	3,000.00	2,999.66	10.75	10.30	-168.67	-4,741.47	-1,062.43	4,964.25	4,943.28	20.97	236.749		
3,100.00	3,094.57	3,101.33	3,100.97	11.12	10.65	-168.72	-4,740.53	-1,063.59	4,968.39	4,946.70	21.69	229.063		
3,200.00	3,194.33	3,198.81	3,198.45	11.50	10.99	-168.76	-4,739.65	-1,064.56	4,972.54	4,950.14	22.40	222.007		
3,300.00	3,294.08	3,298.93	3,298.56	11.87	11.34	-168.81	-4,738.85	-1,065.16	4,976.72	4,953.60	23.12	215.295		
3,400.00	3,393.84	3,389.07	3,388.70	12.24	11.66	-168.86	-4,738.25	-1,065.51	4,980.99	4,957.20	23.80	209.305		
3,500.00	3,493.60	3,473.17	3,472.80	12.61	11.95	-168.91	-4,737.88	-1,065.95	4,985.52	4,961.06	24.46	203.844		
3,600.00	3,593.35	3,565.96	3,565.59	12.99	12.28	-168.97	-4,737.76	-1,066.31	4,990.31	4,965.17	25.15	198.441		
3,700.00	3,693.11	3,667.74	3,667.36	13.36	12.63	-169.02	-4,737.68	-1,066.54	4,995.15	4,969.28	25.87	193.087		
3,800.00	3,792.87	3,761.69	3,761.32	13.73	12.96	-169.07	-4,737.57	-1,066.91	4,999.98	4,973.41	26.56	188.224		
3,900.00	3,892.63	3,846.25	3,845.87	14.11	13.25	-169.13	-4,737.64	-1,067.40	5,005.03	4,977.81	27.22	183.849		
4,000.00	3,992.38	3,935.39	3,935.01	14.48	13.56	-169.18	-4,738.02	-1,067.90	5,010.42	4,982.52	27.90	179.591		
4,100.00	4,092.14	4,025.56	4,025.18	14.85	13.88	-169.23	-4,738.46	-1,068.29	5,015.87	4,987.29	28.58	175.517		
4,200.00	4,191.90	4,100.00	4,099.61	15.22	14.13	-169.28	-4,739.24	-1,068.72	5,021.86	4,992.66	29.20	171.988		
4,300.00	4,291.65	4,200.00	4,199.61	15.60	14.48	-169.34	-4,740.40	-1,069.27	5,027.99	4,998.08	29.91	168.088		
4,400.00	4,391.41	4,283.14	4,282.74	15.97	14.77	-169.39	-4,741.43	-1,069.62	5,034.19	5,003.62	30.57	164.703		
4,500.00	4,491.17	4,394.11	4,393.69	16.34	15.16	-169.45	-4,743.13	-1,069.87	5,040.64	5,009.32	31.32	160.941		
4,600.00	4,590.92	4,487.55	4,487.12	16.72	15.48	-169.51	-4,744.49	-1,069.76	5,046.95	5,014.94	32.01	157.667		
4,700.00	4,690.68	4,614.57	4,614.12	17.09	15.92	-169.58	-4,746.33	-1,068.52	5,053.12	5,020.29	32.82	153.944		
4,800.00	4,790.44	4,703.61	4,703.13	17.46	16.23	-169.66	-4,747.65	-1,066.75	5,059.12	5,025.62	33.50	151.018		
4,900.00	4,890.19	4,800.00	4,799.47	17.83	16.56	-169.75	-4,749.35	-1,063.99	5,065.26	5,031.06	34.20	148.094		

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



MS Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Roy Batty Federal COM - Roy Batty Federal COM #3H - Wellbore #1 - Surveys													Offset Site Error:	0.00 usft
Survey Program: 100-GYRO-NS, 10518-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,989.95	4,889.30	4,888.70	18.21	16.88	-169.85	-4,751.14	-1,060.84	5,071.54	5,036.66	34.88	145.399		
5,100.00	5,089.71	4,977.95	4,977.27	18.58	17.19	-169.94	-4,753.05	-1,057.84	5,078.01	5,042.45	35.55	142.824		
5,200.00	5,189.47	5,139.28	5,138.53	18.95	17.75	-170.05	-4,755.48	-1,053.60	5,083.97	5,047.47	36.50	139.298		
5,300.00	5,289.22	5,238.56	5,237.79	19.33	18.10	-170.12	-4,756.19	-1,051.75	5,089.31	5,052.10	37.21	136.771		
5,400.00	5,388.98	5,339.04	5,338.25	19.70	18.45	-170.20	-4,757.04	-1,049.98	5,094.80	5,056.87	37.93	134.328		
5,500.00	5,488.74	5,455.81	5,455.00	20.07	18.85	-170.28	-4,757.62	-1,047.96	5,099.95	5,061.25	38.71	131.764		
5,520.13	5,508.82	5,476.53	5,475.71	20.15	18.93	-170.29	-4,757.70	-1,047.59	5,100.97	5,062.12	38.85	131.294		
5,600.00	5,588.54	5,548.63	5,547.81	20.44	19.18	-170.35	-4,758.01	-1,046.30	5,104.45	5,065.06	39.39	129.577		
5,700.00	5,688.48	5,636.19	5,635.35	20.80	19.48	-170.39	-4,758.58	-1,044.90	5,107.37	5,067.32	40.06	127.507		
5,786.53	5,775.00	5,717.45	5,716.60	21.11	19.77	-170.41	-4,759.27	-1,043.50	5,108.54	5,067.90	40.64	125.694		
5,800.00	5,788.47	5,731.78	5,730.93	21.15	19.82	-170.42	-4,759.39	-1,043.25	5,108.62	5,067.88	40.74	125.396		
5,900.00	5,888.47	5,837.74	5,836.86	21.50	20.19	-170.44	-4,760.22	-1,041.51	5,109.12	5,067.66	41.46	123.232		
6,000.00	5,988.47	5,939.46	5,938.57	21.84	20.54	-170.45	-4,760.85	-1,040.26	5,109.53	5,067.36	42.16	121.183		
6,100.00	6,088.47	6,049.27	6,048.38	22.19	20.93	-170.47	-4,761.52	-1,038.85	5,109.92	5,067.03	42.90	119.118		
6,200.00	6,188.47	15,392.00	11,126.11	22.53	82.92	-120.66	-259.75	-1,099.68	5,077.19	5,024.17	53.02	95.764		
6,300.00	6,288.47	15,392.00	11,126.11	22.88	82.92	-120.66	-259.75	-1,099.68	4,979.41	4,926.08	53.33	93.363		
6,400.00	6,388.47	15,392.00	11,126.11	23.23	82.92	-120.66	-259.75	-1,099.68	4,881.73	4,828.07	53.66	90.977		
6,500.00	6,488.47	15,392.00	11,126.11	23.57	82.92	-120.66	-259.75	-1,099.68	4,784.14	4,730.14	53.99	88.604		
6,600.00	6,588.47	15,392.00	11,126.11	23.92	82.92	-120.66	-259.75	-1,099.68	4,686.65	4,632.30	54.34	86.246		
6,700.00	6,688.47	15,392.00	11,126.11	24.27	82.92	-120.66	-259.75	-1,099.68	4,589.26	4,534.57	54.70	83.902		
6,800.00	6,788.47	15,392.00	11,126.11	24.62	82.92	-120.66	-259.75	-1,099.68	4,492.00	4,436.93	55.07	81.574		
6,900.00	6,888.47	15,392.00	11,126.11	24.97	82.92	-120.66	-259.75	-1,099.68	4,394.85	4,339.40	55.45	79.261		
7,000.00	6,988.47	15,392.00	11,126.11	25.32	82.92	-120.66	-259.75	-1,099.68	4,297.84	4,242.00	55.84	76.963		
7,100.00	7,088.47	15,392.00	11,126.11	25.66	82.92	-120.66	-259.75	-1,099.68	4,200.97	4,144.71	56.25	74.681		
7,200.00	7,188.47	15,392.00	11,126.11	26.01	82.92	-120.66	-259.75	-1,099.68	4,104.24	4,047.57	56.68	72.415		
7,300.00	7,288.47	15,392.00	11,126.11	26.36	82.92	-120.66	-259.75	-1,099.68	4,007.68	3,950.56	57.12	70.166		
7,400.00	7,388.47	15,392.00	11,126.11	26.71	82.92	-120.66	-259.75	-1,099.68	3,911.29	3,853.71	57.58	67.933		
7,500.00	7,488.47	15,392.00	11,126.11	27.06	82.92	-120.66	-259.75	-1,099.68	3,815.09	3,757.03	58.05	65.717		
7,600.00	7,588.47	15,392.00	11,126.11	27.41	82.92	-120.66	-259.75	-1,099.68	3,719.08	3,660.53	58.55	63.519		
7,700.00	7,688.47	15,392.00	11,126.11	27.76	82.92	-120.66	-259.75	-1,099.68	3,623.29	3,564.22	59.07	61.339		
7,800.00	7,788.47	15,392.00	11,126.11	28.11	82.92	-120.66	-259.75	-1,099.68	3,527.74	3,468.13	59.61	59.176		
7,900.00	7,888.47	15,392.00	11,126.11	28.46	82.92	-120.66	-259.75	-1,099.68	3,432.44	3,372.26	60.18	57.033		
8,000.00	7,988.47	15,392.00	11,126.11	28.82	82.92	-120.66	-259.75	-1,099.68	3,337.42	3,276.63	60.78	54.908		
8,100.00	8,088.47	15,392.00	11,126.11	29.17	82.92	-120.66	-259.75	-1,099.68	3,242.69	3,181.28	61.41	52.803		
8,200.00	8,188.47	15,392.00	11,126.11	29.52	82.92	-120.66	-259.75	-1,099.68	3,148.29	3,086.22	62.07	50.719		
8,300.00	8,288.47	15,392.00	11,126.11	29.87	82.92	-120.66	-259.75	-1,099.68	3,054.25	2,991.47	62.77	48.655		
8,400.00	8,388.47	15,392.00	11,126.11	30.22	82.92	-120.66	-259.75	-1,099.68	2,960.59	2,897.08	63.51	46.613		
8,500.00	8,488.47	15,392.00	11,126.11	30.57	82.92	-120.66	-259.75	-1,099.68	2,867.37	2,803.07	64.30	44.595		
8,600.00	8,588.47	15,392.00	11,126.11	30.93	82.92	-120.66	-259.75	-1,099.68	2,774.62	2,709.48	65.13	42.599		
8,700.00	8,688.47	15,392.00	11,126.11	31.28	82.92	-120.66	-259.75	-1,099.68	2,682.39	2,616.36	66.02	40.629		
8,800.00	8,788.47	15,392.00	11,126.11	31.63	82.92	-120.66	-259.75	-1,099.68	2,590.73	2,523.76	66.97	38.685		
8,900.00	8,888.47	15,392.00	11,126.11	31.98	82.92	-120.66	-259.75	-1,099.68	2,499.72	2,431.73	67.98	36.769		
9,000.00	8,988.47	15,392.00	11,126.11	32.33	82.92	-120.66	-259.75	-1,099.68	2,409.41	2,340.34	69.07	34.882		
9,100.00	9,088.47	15,392.00	11,126.11	32.69	82.92	-120.66	-259.75	-1,099.68	2,319.91	2,249.66	70.24	33.027		
9,200.00	9,188.47	15,392.00	11,126.11	33.04	82.92	-120.66	-259.75	-1,099.68	2,231.29	2,159.79	71.50	31.206		
9,300.00	9,288.47	15,392.00	11,126.11	33.39	82.92	-120.66	-259.75	-1,099.68	2,143.68	2,070.81	72.86	29.421		
9,400.00	9,388.47	15,392.00	11,126.11	33.75	82.92	-120.66	-259.75	-1,099.68	2,057.19	1,982.86	74.33	27.675		
9,500.00	9,488.47	15,392.00	11,126.11	34.10	82.92	-120.66	-259.75	-1,099.68	1,971.99	1,896.06	75.92	25.973		
9,600.00	9,588.47	15,392.00	11,126.11	34.45	82.92	-120.66	-259.75	-1,099.68	1,888.23	1,810.59	77.65	24.318		
9,700.00	9,688.47	15,392.00	11,126.11	34.81	82.92	-120.66	-259.75	-1,099.68	1,806.13	1,726.62	79.52	22.713		
9,800.00	9,788.47	15,392.00	11,126.11	35.16	82.92	-120.66	-259.75	-1,099.68	1,725.92	1,644.38	81.54	21.165		
9,900.00	9,888.47	15,392.00	11,126.11	35.51	82.92	-120.66	-259.75	-1,099.68	1,647.88	1,564.14	83.74	19.679		

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



MS Directional
Anticollision Report



Company: Matador Resources
Project: Lea County, New Mexico (NAD 27)
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #214H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

Offset Design Roy Batty Federal COM - Roy Batty Federal COM #3H - Wellbore #1 - Surveys													Offset Site Error: 0.00 usft
Survey Program: 100-GYRO-NS, 10518-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		
10,000.00	9,988.47	15,392.00	11,126.11	35.87	82.92	-120.66	-259.75	-1,099.68	1,572.32	1,486.22	86.10	18.261	
10,100.00	10,088.47	15,392.00	11,126.11	36.22	82.92	-120.66	-259.75	-1,099.68	1,499.63	1,410.99	88.65	16.917	
10,200.00	10,188.47	15,392.00	11,126.11	36.57	82.92	-120.66	-259.75	-1,099.68	1,430.24	1,338.88	91.36	15.655	
10,300.00	10,288.47	15,392.00	11,126.11	36.93	82.92	-120.66	-259.75	-1,099.68	1,364.65	1,270.43	94.23	14.483	
10,400.00	10,388.47	15,392.00	11,126.11	37.28	82.92	-120.66	-259.75	-1,099.68	1,303.45	1,206.23	97.22	13.408	
10,500.00	10,488.47	15,392.00	11,126.11	37.64	82.92	-120.66	-259.75	-1,099.68	1,247.26	1,146.98	100.28	12.438	
10,600.00	10,588.47	15,392.00	11,126.11	37.99	82.92	-120.66	-259.75	-1,099.68	1,196.81	1,093.47	103.34	11.581	
10,700.00	10,688.47	15,392.00	11,126.11	38.35	82.92	-120.66	-259.75	-1,099.68	1,152.84	1,046.54	106.30	10.845	
10,800.00	10,788.47	15,392.00	11,126.11	38.70	82.92	-120.66	-259.75	-1,099.68	1,116.13	1,007.10	109.03	10.237	
10,900.00	10,888.47	15,392.00	11,126.11	39.05	82.92	-120.66	-259.75	-1,099.68	1,087.40	976.00	111.40	9.762	
11,000.00	10,988.47	15,392.00	11,126.11	39.41	82.92	-120.66	-259.75	-1,099.68	1,067.30	954.04	113.26	9.424	
11,100.00	11,088.47	15,392.00	11,126.11	39.76	82.92	-120.66	-259.75	-1,099.68	1,056.32	941.83	114.50	9.226	
11,166.54	11,155.01	15,392.00	11,126.11	40.00	82.92	-120.66	-259.75	-1,099.68	1,054.23	939.28	114.94	9.172 CC, ES	
11,200.00	11,188.47	15,392.00	11,126.11	40.12	82.92	-120.66	-259.75	-1,099.68	1,054.76	939.71	115.05	9.168 SF	
11,300.00	11,288.47	15,392.00	11,126.11	40.47	82.92	-120.66	-259.75	-1,099.68	1,062.64	947.75	114.89	9.249	
11,400.00	11,388.47	15,392.00	11,126.11	40.83	82.92	-120.66	-259.75	-1,099.68	1,079.77	965.70	114.07	9.466	
11,500.00	11,488.47	15,392.00	11,126.11	41.18	82.92	-120.66	-259.75	-1,099.68	1,105.71	993.03	112.68	9.813	
11,600.00	11,588.47	15,392.00	11,126.11	41.54	82.92	-120.66	-259.75	-1,099.68	1,139.86	1,029.00	110.86	10.282	
11,700.00	11,688.47	15,392.00	11,126.11	41.89	82.92	-120.66	-259.75	-1,099.68	1,181.51	1,072.77	108.74	10.866	
11,800.00	11,788.47	15,392.00	11,126.11	42.25	82.92	-120.66	-259.75	-1,099.68	1,229.91	1,123.45	106.46	11.553	
11,869.77	11,858.24	15,392.00	11,126.11	42.50	82.92	-120.66	-259.75	-1,099.68	1,267.25	1,162.43	104.82	12.089	
11,900.00	11,888.46	15,392.00	11,126.11	42.60	82.92	-120.62	-259.75	-1,099.68	1,283.94	1,179.82	104.12	12.332	
11,950.00	11,938.21	15,392.00	11,126.11	42.75	82.92	-120.40	-259.75	-1,099.68	1,311.06	1,208.08	102.98	12.731	
12,000.00	11,987.35	15,392.00	11,126.11	42.90	82.92	-119.96	-259.75	-1,099.68	1,337.45	1,235.56	101.89	13.126	
12,050.00	12,035.51	15,392.00	11,126.11	43.03	82.92	-119.32	-259.75	-1,099.68	1,362.95	1,262.10	100.85	13.514	
12,100.00	12,082.33	15,392.00	11,126.11	43.16	82.92	-118.47	-259.75	-1,099.68	1,387.43	1,287.56	99.86	13.893	
12,150.00	12,127.43	15,392.00	11,126.11	43.28	82.92	-117.41	-259.75	-1,099.68	1,410.75	1,311.82	98.93	14.260	
12,200.00	12,170.49	15,392.00	11,126.11	43.39	82.92	-116.12	-259.75	-1,099.68	1,432.80	1,334.75	98.05	14.613	
12,250.00	12,211.17	15,392.00	11,126.11	43.48	82.92	-114.62	-259.75	-1,099.68	1,453.48	1,356.24	97.23	14.948	
12,300.00	12,249.17	15,392.00	11,126.11	43.57	82.92	-112.90	-259.75	-1,099.68	1,472.68	1,376.20	96.48	15.265	
12,350.00	12,284.19	15,392.00	11,126.11	43.65	82.92	-110.96	-259.75	-1,099.68	1,490.32	1,394.54	95.78	15.559	
12,400.00	12,315.96	15,392.00	11,126.11	43.71	82.92	-108.80	-259.75	-1,099.68	1,506.32	1,411.17	95.16	15.830	
12,450.00	12,344.26	15,392.00	11,126.11	43.78	82.92	-106.43	-259.75	-1,099.68	1,520.62	1,426.02	94.60	16.074	
12,500.00	12,368.85	15,392.00	11,126.11	43.86	82.92	-103.87	-259.75	-1,099.68	1,533.16	1,439.04	94.12	16.290	
12,550.00	12,389.56	15,392.00	11,126.11	43.95	82.92	-101.14	-259.75	-1,099.68	1,543.87	1,450.17	93.71	16.476	
12,600.00	12,406.23	15,392.00	11,126.11	44.04	82.92	-98.25	-259.75	-1,099.68	1,552.73	1,459.35	93.38	16.629	
12,650.00	12,418.73	15,392.00	11,126.11	44.14	82.92	-95.25	-259.75	-1,099.68	1,559.69	1,466.56	93.13	16.748	
12,669.77	12,422.49	15,376.38	11,126.87	44.18	82.69	-95.01	-275.34	-1,099.38	1,561.84	1,468.91	92.92	16.808	
12,700.00	12,427.27	15,345.72	11,128.33	44.25	82.23	-95.06	-305.97	-1,098.72	1,564.32	1,471.74	92.58	16.897	
12,750.00	12,433.09	15,298.00	11,130.54	44.36	81.52	-94.94	-353.62	-1,097.55	1,566.70	1,474.62	92.07	17.016	
12,800.00	12,436.31	15,254.11	11,132.42	44.48	80.87	-94.56	-397.46	-1,096.48	1,567.08	1,475.43	91.66	17.097	
12,836.44	12,437.00	15,224.00	11,133.59	44.57	80.42	-94.17	-427.54	-1,095.82	1,566.20	1,474.79	91.41	17.134	
12,900.00	12,437.00	15,157.80	11,136.06	44.74	79.44	-94.33	-493.68	-1,094.56	1,563.85	1,472.95	90.90	17.204	
13,000.00	12,437.00	15,062.89	11,140.16	45.06	78.04	-94.01	-588.48	-1,092.88	1,559.77	1,469.54	90.22	17.289	
13,100.00	12,437.00	14,972.54	11,143.03	45.43	76.72	-93.40	-678.78	-1,091.40	1,556.65	1,467.04	89.61	17.371	
13,200.00	12,437.00	14,867.71	11,146.98	45.86	75.19	-93.70	-783.52	-1,090.37	1,553.46	1,464.51	88.95	17.465	
13,300.00	12,437.00	14,779.30	11,149.89	46.35	73.91	-92.97	-871.88	-1,088.94	1,550.31	1,461.87	88.44	17.529	
13,400.00	12,437.00	14,704.18	11,151.16	46.88	72.83	-91.40	-946.97	-1,087.73	1,548.47	1,460.40	88.07	17.583	
13,489.78	12,437.00	14,609.20	11,150.92	47.41	71.47	-91.73	-1,041.93	-1,085.99	1,548.13	1,460.66	87.47	17.699	
13,500.00	12,437.00	14,622.89	11,150.48	47.47	71.66	-90.21	-1,028.25	-1,086.25	1,548.45	1,460.82	87.63	17.671	
13,600.00	12,437.00	14,473.44	11,153.57	48.11	69.54	-93.35	-1,177.62	-1,083.34	1,545.58	1,458.93	86.65	17.837	
13,700.00	12,437.00	14,385.36	11,155.54	48.80	68.29	-92.59	-1,265.66	-1,081.50	1,542.99	1,456.72	86.27	17.885	

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Roy Batty Federal COM - Roy Batty Federal COM #3H - Wellbore #1 - Surveys													Offset Site Error: 0.00 usft	
Survey Program: 100-GYRO-NS, 10518-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)	Azimuth from North (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
13,800.00	12,437.00	14,291.39	11,156.77	49.53	66.98	-92.21	-1,359.60	-1,079.39	1,541.07	1,455.21	85.86	17.948		
13,900.00	12,437.00	14,199.28	11,157.27	50.30	65.70	-91.71	-1,451.67	-1,076.85	1,539.46	1,453.99	85.48	18.010		
14,000.00	12,437.00	14,095.68	11,156.96	51.12	64.27	-91.94	-1,555.21	-1,073.41	1,538.22	1,453.24	84.98	18.101		
14,099.33	12,437.00	14,019.74	11,156.01	51.97	63.23	-90.44	-1,631.07	-1,070.09	1,537.23	1,452.46	84.77	18.135		
14,100.00	12,437.00	14,019.29	11,156.01	51.97	63.22	-90.42	-1,631.52	-1,070.08	1,537.23	1,452.46	84.77	18.135		
14,200.00	12,437.00	13,927.18	11,153.46	52.87	61.97	-89.91	-1,723.55	-1,067.10	1,538.00	1,453.58	84.42	18.218		
14,300.00	12,437.00	13,805.02	11,150.24	53.80	60.33	-91.33	-1,845.52	-1,061.03	1,537.71	1,453.97	83.74	18.364		
14,400.00	12,437.00	13,682.14	11,147.98	54.76	58.71	-92.82	-1,968.12	-1,053.22	1,536.00	1,452.94	83.06	18.494		
14,500.00	12,437.00	13,552.90	11,146.22	55.75	57.02	-94.74	-2,096.98	-1,043.55	1,533.46	1,451.15	82.31	18.629		
14,600.00	12,437.00	13,442.55	11,147.10	56.78	55.60	-95.45	-2,206.87	-1,033.51	1,528.00	1,446.18	81.82	18.675		
14,700.00	12,437.00	13,362.07	11,146.50	57.84	54.59	-94.17	-2,286.99	-1,025.93	1,523.74	1,442.06	81.68	18.656		
14,800.00	12,437.00	13,279.51	11,145.04	58.92	53.56	-93.00	-2,369.21	-1,018.63	1,520.69	1,439.15	81.54	18.650		
14,900.00	12,437.00	13,145.72	11,142.14	60.03	51.94	-95.31	-2,502.42	-1,006.61	1,518.20	1,437.38	80.82	18.785		
15,000.00	12,437.00	13,005.46	11,144.71	61.16	50.28	-98.11	-2,642.02	-993.35	1,511.78	1,431.61	80.16	18.858		
15,100.00	12,437.00	12,915.25	11,148.17	62.32	49.25	-97.48	-2,731.84	-985.70	1,504.39	1,424.24	80.15	18.770		
15,200.00	12,437.00	12,845.00	11,149.69	63.49	48.47	-95.42	-2,801.90	-980.72	1,498.99	1,418.62	80.37	18.651		
15,300.00	12,437.00	12,775.83	11,149.77	64.69	47.71	-93.26	-2,870.91	-976.17	1,495.61	1,414.98	80.63	18.550		
15,400.00	12,437.00	12,685.83	11,148.70	65.91	46.76	-92.56	-2,960.70	-970.13	1,493.39	1,412.72	80.67	18.512		
15,500.00	12,437.00	12,584.91	11,147.91	67.15	45.72	-92.63	-3,061.46	-964.45	1,491.44	1,410.76	80.68	18.486		
15,600.00	12,437.00	12,490.45	11,148.34	68.40	44.78	-92.23	-3,155.85	-960.99	1,489.52	1,408.66	80.86	18.421		
15,700.00	12,437.00	12,376.44	11,148.51	69.67	43.70	-93.25	-3,269.76	-956.17	1,487.56	1,406.68	80.88	18.392		
15,800.00	12,437.00	12,279.00	11,149.53	70.96	42.83	-93.07	-3,367.09	-951.75	1,484.69	1,403.59	81.10	18.306		
15,900.00	12,437.00	12,184.00	11,149.61	72.26	42.01	-92.71	-3,461.97	-946.95	1,482.35	1,401.00	81.35	18.221		
15,963.33	12,437.00	12,151.75	11,149.11	73.10	41.75	-90.44	-3,494.18	-945.42	1,481.77	1,400.00	81.77	18.122		
16,000.00	12,437.00	12,130.40	11,148.60	73.58	41.58	-89.31	-3,515.51	-944.64	1,481.96	1,399.97	81.99	18.075		
16,100.00	12,437.00	12,044.58	11,145.62	74.91	40.91	-88.27	-3,601.26	-942.86	1,484.12	1,401.72	82.40	18.012		
16,200.00	12,437.00	11,931.17	11,143.30	76.25	40.09	-89.25	-3,714.62	-940.81	1,485.27	1,402.60	82.66	17.968		
16,300.00	12,437.00	11,816.63	11,142.96	77.60	39.33	-90.32	-3,829.16	-941.07	1,486.06	1,402.99	83.08	17.888		
16,400.00	12,437.00	11,715.09	11,144.51	78.97	38.73	-90.43	-3,930.66	-942.82	1,486.07	1,402.36	83.71	17.753		
16,500.00	12,437.00	11,621.62	11,146.35	80.35	38.23	-89.94	-4,024.08	-945.48	1,486.30	1,401.84	84.46	17.597		
16,600.00	12,437.00	11,523.00	11,147.23	81.73	37.77	-89.84	-4,122.68	-947.13	1,486.84	1,401.65	85.19	17.454		
16,700.00	12,437.00	11,468.88	11,146.48	83.13	37.55	-86.52	-4,176.79	-947.68	1,488.94	1,402.82	86.12	17.289		
16,800.00	12,437.00	11,429.00	11,144.60	84.53	37.38	-82.20	-4,216.62	-947.95	1,494.23	1,407.13	87.10	17.156		
16,900.00	12,437.00	11,380.71	11,140.13	85.95	37.21	-78.56	-4,264.69	-948.30	1,503.25	1,415.25	87.99	17.083		
17,000.00	12,437.00	11,335.00	11,133.25	87.37	37.07	-74.82	-4,309.88	-948.52	1,516.36	1,427.51	88.85	17.067		
17,100.00	12,437.00	11,318.64	11,129.89	88.80	37.02	-69.35	-4,325.89	-948.56	1,533.74	1,443.89	89.86	17.068		
17,193.91	12,437.00	11,303.00	11,126.03	90.15	36.97	-64.56	-4,341.04	-948.57	1,554.58	1,463.83	90.75	17.131		



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Roy Batty Federal COM - Roy Batty Federal COM #4H - Wellbore #1 - Surveys												Offset Site Error:	0.00 usft
Survey Program: 100-GYRO-NS, 10554-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	174.64	-4,758.50	446.17	4,779.48				
100.00	100.00	95.19	95.19	0.13	0.14	174.65	-4,758.27	445.85	4,779.19	4,778.92	0.27	N/A	
200.00	200.00	180.19	180.19	0.49	0.43	174.65	-4,757.97	445.26	4,778.77	4,777.86	0.91	5,237.838	
300.00	300.00	274.23	274.22	0.85	0.75	174.66	-4,757.89	444.67	4,778.63	4,777.03	1.60	2,988.107	
400.00	400.00	372.58	372.57	1.20	1.10	174.67	-4,757.85	444.13	4,778.54	4,776.23	2.30	2,076.818	
500.00	500.00	470.25	470.24	1.56	1.44	174.67	-4,757.85	443.59	4,778.48	4,775.48	3.00	1,592.759	
600.00	600.00	591.33	591.32	1.92	1.87	174.68	-4,757.67	443.07	4,778.31	4,774.53	3.78	1,263.671	
633.24	633.24	626.29	626.28	2.04	1.99	174.68	-4,757.50	442.93	4,778.22	4,774.20	4.02	1,187.973	
700.00	699.99	692.15	692.14	2.28	2.22	174.68	-4,757.20	442.68	4,778.57	4,774.08	4.49	1,064.090	
800.00	799.96	794.80	794.79	2.63	2.58	174.67	-4,756.71	442.33	4,780.34	4,775.13	5.21	918.123	
900.00	899.86	884.02	884.00	2.99	2.89	174.64	-4,756.33	442.13	4,783.70	4,777.82	5.88	813.957	
999.59	999.27	977.60	977.59	3.35	3.22	174.61	-4,756.11	441.99	4,788.75	4,782.19	6.56	729.700	
1,000.00	999.68	977.99	977.97	3.35	3.22	174.61	-4,756.11	441.99	4,788.77	4,782.21	6.57	729.391	
1,100.00	1,099.43	1,078.66	1,078.64	3.72	3.57	174.57	-4,755.94	441.77	4,794.65	4,787.38	7.28	658.829	
1,200.00	1,199.19	1,184.98	1,184.97	4.08	3.95	174.53	-4,755.68	441.42	4,800.46	4,792.45	8.01	599.330	
1,300.00	1,298.95	1,285.46	1,285.44	4.45	4.30	174.50	-4,755.35	440.99	4,806.17	4,797.45	8.72	551.028	
1,400.00	1,398.70	1,387.90	1,387.88	4.82	4.66	174.46	-4,755.00	440.45	4,811.86	4,802.42	9.44	509.618	
1,500.00	1,498.46	1,509.92	1,509.90	5.18	5.09	174.43	-4,754.30	439.61	4,817.32	4,807.08	10.23	470.841	
1,600.00	1,598.22	1,623.47	1,623.44	5.55	5.48	174.41	-4,753.19	438.25	4,822.30	4,811.31	10.99	438.726	
1,700.00	1,697.97	1,713.63	1,713.58	5.92	5.80	174.38	-4,752.36	437.14	4,827.35	4,815.68	11.67	413.650	
1,800.00	1,797.73	1,823.13	1,823.07	6.29	6.18	174.35	-4,751.28	436.00	4,832.36	4,819.94	12.42	389.182	
1,900.00	1,897.49	1,925.88	1,925.80	6.66	6.54	174.32	-4,750.15	435.00	4,837.25	4,824.11	13.14	368.136	
2,000.00	1,997.24	2,022.87	2,022.79	7.03	6.88	174.29	-4,749.03	434.06	4,842.10	4,828.26	13.84	349.789	
2,100.00	2,097.00	2,106.60	2,106.51	7.40	7.18	174.26	-4,748.25	433.46	4,847.20	4,832.70	14.50	334.307	
2,200.00	2,196.76	2,200.00	2,199.91	7.78	7.50	174.22	-4,747.57	433.01	4,852.52	4,837.33	15.19	319.461	
2,300.00	2,296.51	2,294.49	2,294.40	8.15	7.84	174.18	-4,746.99	432.58	4,857.96	4,842.08	15.88	305.841	
2,400.00	2,396.27	2,399.00	2,398.90	8.52	8.20	174.15	-4,746.38	432.02	4,863.43	4,846.81	16.61	292.736	
2,500.00	2,496.03	2,501.64	2,501.54	8.89	8.56	174.12	-4,745.69	431.43	4,868.81	4,851.47	17.34	280.833	
2,600.00	2,595.79	2,609.02	2,608.91	9.26	8.94	174.08	-4,744.85	430.83	4,874.07	4,855.99	18.08	269.624	
2,700.00	2,695.54	2,706.41	2,706.30	9.63	9.28	174.05	-4,744.04	430.28	4,879.30	4,860.52	18.78	259.782	
2,800.00	2,795.30	2,800.00	2,799.88	10.01	9.61	174.01	-4,743.26	429.89	4,884.54	4,865.06	19.47	250.827	
2,900.00	2,895.06	2,889.87	2,889.75	10.38	9.92	173.98	-4,742.63	429.73	4,889.95	4,869.79	20.15	242.653	
3,000.00	2,994.81	2,984.11	2,983.99	10.75	10.25	173.94	-4,742.22	429.60	4,895.60	4,874.75	20.85	234.848	
3,100.00	3,094.57	3,095.30	3,095.17	11.12	10.64	173.90	-4,741.67	429.39	4,901.21	4,879.61	21.60	226.905	
3,200.00	3,194.33	3,185.11	3,184.99	11.50	10.96	173.86	-4,741.17	429.36	4,906.77	4,884.49	22.28	220.249	
3,300.00	3,294.08	3,298.93	3,298.81	11.87	11.35	173.82	-4,740.52	429.59	4,912.35	4,889.31	23.04	213.190	
3,400.00	3,393.84	3,393.04	3,392.91	12.24	11.68	173.78	-4,739.85	429.84	4,917.80	4,894.06	23.74	207.192	
3,500.00	3,493.60	3,500.71	3,500.58	12.61	12.06	173.73	-4,739.08	430.12	4,923.24	4,898.76	24.48	201.134	
3,600.00	3,593.35	3,600.00	3,599.87	12.99	12.41	173.69	-4,738.26	430.36	4,928.57	4,903.38	25.19	195.661	
3,700.00	3,693.11	3,695.79	3,695.66	13.36	12.74	173.65	-4,737.51	430.60	4,933.95	4,908.06	25.89	190.583	
3,800.00	3,792.87	3,803.24	3,803.10	13.73	13.12	173.60	-4,736.65	430.98	4,939.33	4,912.70	26.63	185.481	
3,900.00	3,892.63	3,895.06	3,894.92	14.11	13.44	173.56	-4,735.92	431.34	4,944.72	4,917.40	27.31	181.027	
4,000.00	3,992.38	3,965.90	3,965.75	14.48	13.68	173.52	-4,735.61	431.55	4,950.46	4,922.54	27.92	177.295	
4,100.00	4,092.14	4,034.02	4,033.87	14.85	13.92	173.48	-4,735.76	431.59	4,956.82	4,928.30	28.52	173.815	
4,200.00	4,191.90	4,100.00	4,099.85	15.22	14.15	173.44	-4,736.32	431.73	4,963.84	4,934.73	29.10	170.557	
4,300.00	4,291.65	4,195.17	4,195.02	15.60	14.48	173.40	-4,737.50	432.00	4,971.24	4,941.44	29.80	166.844	
4,400.00	4,391.41	4,287.12	4,286.96	15.97	14.79	173.36	-4,738.76	432.32	4,978.77	4,948.30	30.48	163.366	
4,500.00	4,491.17	4,368.82	4,368.64	16.34	15.08	173.32	-4,740.05	432.75	4,986.55	4,955.44	31.12	160.243	
4,600.00	4,590.92	4,445.08	4,444.88	16.72	15.34	173.28	-4,741.57	433.25	4,994.75	4,963.01	31.74	157.363	
4,700.00	4,690.68	4,521.39	4,521.16	17.09	15.60	173.23	-4,743.40	434.36	5,003.45	4,971.09	32.36	154.610	
4,800.00	4,790.44	4,600.00	4,599.73	17.46	15.88	173.18	-4,745.49	436.16	5,012.52	4,979.53	32.99	151.935	
4,900.00	4,890.19	4,690.17	4,689.82	17.83	16.19	173.12	-4,748.11	438.73	5,021.89	4,988.23	33.66	149.174	

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



MS Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Roy Batty Federal COM - Roy Batty Federal COM #4H - Wellbore #1 - Surveys													Offset Site Error:	0.00 usft
Survey Program: 100-GYRO-NS, 10554-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,989.95	4,861.55	4,861.07	18.21	16.78	173.02	-4,751.99	444.00	5,030.64	4,995.99	34.65	145.197		
5,100.00	5,089.71	4,982.65	4,982.13	18.58	17.20	172.95	-4,753.65	447.21	5,038.48	5,003.04	35.44	142.177		
5,200.00	5,189.47	5,106.35	5,105.79	18.95	17.63	172.89	-4,754.97	449.56	5,045.94	5,009.70	36.24	139.244		
5,300.00	5,289.22	5,200.00	5,199.43	19.33	17.96	172.84	-4,755.90	450.80	5,053.26	5,016.33	36.93	136.847		
5,400.00	5,388.98	5,305.31	5,304.73	19.70	18.33	172.80	-4,756.97	451.88	5,060.57	5,022.91	37.66	134.382		
5,500.00	5,488.74	5,413.91	5,413.31	20.07	18.71	172.75	-4,757.90	452.88	5,067.71	5,029.31	38.40	131.965		
5,520.13	5,508.82	5,435.77	5,435.18	20.15	18.78	172.74	-4,758.06	453.07	5,069.13	5,030.57	38.55	131.489		
5,600.00	5,588.54	5,522.32	5,521.72	20.44	19.08	172.71	-4,758.64	453.77	5,073.94	5,034.79	39.14	129.624		
5,700.00	5,688.48	5,627.28	5,626.67	20.80	19.45	172.68	-4,759.19	454.79	5,077.74	5,037.88	39.87	127.361		
5,786.53	5,775.00	5,711.08	5,710.47	21.11	19.74	172.67	-4,759.61	455.58	5,079.15	5,038.68	40.47	125.515		
5,800.00	5,788.47	5,722.98	5,722.37	21.15	19.78	172.66	-4,759.68	455.69	5,079.24	5,038.69	40.55	125.244		
5,900.00	5,888.47	5,816.49	5,815.87	21.50	20.11	172.65	-4,760.29	456.80	5,080.04	5,038.81	41.23	123.211		
6,000.00	5,988.47	5,556.00	5,899.41	21.84	86.51	115.81	-17.68	418.34	4,988.45	4,935.71	52.74	94.587		
6,100.00	6,088.47	5,556.00	5,899.41	22.19	86.51	115.81	-17.68	418.34	4,889.40	4,836.41	52.99	92.270		
6,200.00	6,188.47	5,556.00	5,899.41	22.53	86.51	115.81	-17.68	418.34	4,790.39	4,737.14	53.25	89.964		
6,300.00	6,288.47	5,556.00	5,899.41	22.88	86.51	115.81	-17.68	418.34	4,691.42	4,637.91	53.51	87.672		
6,400.00	6,388.47	5,556.00	5,899.41	23.23	86.51	115.81	-17.68	418.34	4,592.49	4,538.71	53.78	85.392		
6,500.00	6,488.47	5,556.00	5,899.41	23.57	86.51	115.81	-17.68	418.34	4,493.62	4,439.56	54.06	83.124		
6,600.00	6,588.47	5,556.00	5,899.41	23.92	86.51	115.81	-17.68	418.34	4,394.79	4,340.44	54.34	80.870		
6,700.00	6,688.47	5,556.00	5,899.41	24.27	86.51	115.81	-17.68	418.34	4,296.02	4,241.38	54.64	78.628		
6,800.00	6,788.47	5,556.00	5,899.41	24.62	86.51	115.81	-17.68	418.34	4,197.30	4,142.36	54.94	76.400		
6,900.00	6,888.47	5,556.00	5,899.41	24.97	86.51	115.81	-17.68	418.34	4,098.65	4,043.40	55.25	74.185		
7,000.00	6,988.47	5,556.00	5,899.41	25.32	86.51	115.81	-17.68	418.34	4,000.07	3,944.50	55.57	71.984		
7,100.00	7,088.47	5,556.00	5,899.41	25.66	86.51	115.81	-17.68	418.34	3,901.56	3,845.66	55.90	69.796		
7,200.00	7,188.47	5,556.00	5,899.41	26.01	86.51	115.81	-17.68	418.34	3,803.12	3,746.88	56.24	67.623		
7,300.00	7,288.47	5,556.00	5,899.41	26.36	86.51	115.81	-17.68	418.34	3,704.77	3,648.18	56.59	65.463		
7,400.00	7,388.47	5,556.00	5,899.41	26.71	86.51	115.81	-17.68	418.34	3,606.51	3,549.55	56.96	63.318		
7,500.00	7,488.47	5,556.00	5,899.41	27.06	86.51	115.81	-17.68	418.34	3,508.35	3,451.01	57.34	61.186		
7,600.00	7,588.47	5,556.00	5,899.41	27.41	86.51	115.81	-17.68	418.34	3,410.29	3,352.56	57.73	59.070		
7,700.00	7,688.47	5,556.00	5,899.41	27.76	86.51	115.81	-17.68	418.34	3,312.35	3,254.21	58.14	56.968		
7,800.00	7,788.47	5,556.00	5,899.41	28.11	86.51	115.81	-17.68	418.34	3,214.54	3,155.97	58.57	54.881		
7,900.00	7,888.47	5,556.00	5,899.41	28.46	86.51	115.81	-17.68	418.34	3,116.87	3,057.85	59.02	52.809		
8,000.00	7,988.47	5,556.00	5,899.41	28.82	86.51	115.81	-17.68	418.34	3,019.35	2,959.86	59.49	50.752		
8,100.00	8,088.47	5,556.00	5,899.41	29.17	86.51	115.81	-17.68	418.34	2,922.00	2,862.01	59.99	48.710		
8,200.00	8,188.47	5,556.00	5,899.41	29.52	86.51	115.81	-17.68	418.34	2,824.83	2,764.32	60.51	46.684		
8,300.00	8,288.47	5,556.00	5,899.41	29.87	86.51	115.81	-17.68	418.34	2,727.86	2,666.80	61.06	44.674		
8,400.00	8,388.47	5,556.00	5,899.41	30.22	86.51	115.81	-17.68	418.34	2,631.13	2,569.48	61.65	42.680		
8,500.00	8,488.47	5,556.00	5,899.41	30.57	86.51	115.81	-17.68	418.34	2,534.65	2,472.38	62.27	40.703		
8,600.00	8,588.47	5,556.00	5,899.41	30.93	86.51	115.81	-17.68	418.34	2,438.45	2,375.51	62.94	38.743		
8,700.00	8,688.47	5,556.00	5,899.41	31.28	86.51	115.81	-17.68	418.34	2,342.57	2,278.91	63.65	36.801		
8,800.00	8,788.47	5,556.00	5,899.41	31.63	86.51	115.81	-17.68	418.34	2,247.04	2,182.62	64.43	34.877		
8,900.00	8,888.47	5,556.00	5,899.41	31.98	86.51	115.81	-17.68	418.34	2,151.93	2,086.67	65.26	32.973		
9,000.00	8,988.47	5,556.00	5,899.41	32.33	86.51	115.81	-17.68	418.34	2,057.28	1,991.10	66.17	31.089		
9,100.00	9,088.47	5,556.00	5,899.41	32.69	86.51	115.81	-17.68	418.34	1,963.16	1,895.99	67.17	29.226		
9,200.00	9,188.47	5,556.00	5,899.41	33.04	86.51	115.81	-17.68	418.34	1,869.65	1,801.38	68.27	27.387		
9,300.00	9,288.47	5,556.00	5,899.41	33.39	86.51	115.81	-17.68	418.34	1,776.84	1,707.36	69.48	25.573		
9,400.00	9,388.47	5,556.00	5,899.41	33.75	86.51	115.81	-17.68	418.34	1,684.86	1,614.04	70.83	23.788		
9,500.00	9,488.47	5,556.00	5,899.41	34.10	86.51	115.81	-17.68	418.34	1,593.85	1,521.51	72.34	22.034		
9,600.00	9,588.47	5,556.00	5,899.41	34.45	86.51	115.81	-17.68	418.34	1,503.98	1,429.95	74.03	20.315		
9,700.00	9,688.47	5,556.00	5,899.41	34.81	86.51	115.81	-17.68	418.34	1,415.47	1,339.52	75.95	18.637		
9,800.00	9,788.47	5,556.00	5,899.41	35.16	86.51	115.81	-17.68	418.34	1,328.59	1,250.46	78.12	17.007		
9,900.00	9,888.47	5,556.00	5,899.41	35.51	86.51	115.81	-17.68	418.34	1,243.68	1,163.08	80.59	15.432		

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



MS Directional
Anticollision Report



Company: Matador Resources
Project: Lea County, New Mexico (NAD 27)
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #214H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

Offset Design Roy Batty Federal COM - Roy Batty Federal COM #4H - Wellbore #1 - Surveys													Offset Site Error: 0.00 usft
Survey Program: 100-GYRO-NS, 10554-MWD													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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,000.00	9,988.47	15,556.00	10,899.41	35.87	86.51	115.81	-17.68	418.34	1,161.17	1,077.76	83.41	13.921	
10,100.00	10,088.47	15,556.00	10,899.41	36.22	86.51	115.81	-17.68	418.34	1,081.63	995.01	86.61	12.488	
10,200.00	10,188.47	15,556.00	10,899.41	36.57	86.51	115.81	-17.68	418.34	1,005.74	915.50	90.24	11.145	
10,300.00	10,288.47	15,556.00	10,899.41	36.93	86.51	115.81	-17.68	418.34	934.40	840.11	94.29	9.909	
10,400.00	10,388.47	15,556.00	10,899.41	37.28	86.51	115.81	-17.68	418.34	868.73	770.00	98.74	8.798	
10,500.00	10,488.47	15,556.00	10,899.41	37.64	86.51	115.81	-17.68	418.34	810.12	706.68	103.44	7.832	
10,600.00	10,588.47	15,556.00	10,899.41	37.99	86.51	115.81	-17.68	418.34	760.19	652.04	108.15	7.029	
10,700.00	10,688.47	15,556.00	10,899.41	38.35	86.51	115.81	-17.68	418.34	720.75	608.28	112.47	6.408	
10,800.00	10,788.47	15,556.00	10,899.41	38.70	86.51	115.81	-17.68	418.34	693.59	577.71	115.88	5.985	
10,900.00	10,888.47	15,556.00	10,899.41	39.05	86.51	115.81	-17.68	418.34	680.19	562.32	117.87	5.770	
10,942.04	10,930.51	15,556.00	10,899.41	39.20	86.51	115.81	-17.68	418.34	678.89	560.69	118.20	5.743 CC, ES, SF	
11,000.00	10,988.47	15,556.00	10,899.41	39.41	86.51	115.81	-17.68	418.34	681.36	563.23	118.14	5.768	
11,100.00	11,088.47	15,556.00	10,899.41	39.76	86.51	115.81	-17.68	418.34	697.03	580.34	116.68	5.974	
11,200.00	11,188.47	15,556.00	10,899.41	40.12	86.51	115.81	-17.68	418.34	726.25	612.39	113.86	6.378	
11,300.00	11,288.47	15,556.00	10,899.41	40.47	86.51	115.81	-17.68	418.34	767.48	657.29	110.19	6.965	
11,400.00	11,388.47	15,556.00	10,899.41	40.83	86.51	115.81	-17.68	418.34	818.92	712.75	106.17	7.713	
11,500.00	11,488.47	15,556.00	10,899.41	41.18	86.51	115.81	-17.68	418.34	878.76	776.57	102.18	8.600	
11,600.00	11,588.47	15,556.00	10,899.41	41.54	86.51	115.81	-17.68	418.34	945.42	846.95	98.47	9.601	
11,700.00	11,688.47	15,556.00	10,899.41	41.89	86.51	115.81	-17.68	418.34	1,017.55	922.40	95.14	10.695	
11,800.00	11,788.47	15,556.00	10,899.41	42.25	86.51	115.81	-17.68	418.34	1,094.07	1,001.83	92.24	11.861	
11,869.77	11,858.24	15,556.00	10,899.41	42.50	86.51	115.81	-17.68	418.34	1,149.60	1,059.14	90.46	12.708	
11,900.00	11,888.46	15,556.00	10,899.41	42.60	86.51	115.75	-17.68	418.34	1,173.92	1,084.17	89.75	13.080	
11,950.00	11,938.21	15,556.00	10,899.41	42.75	86.51	115.38	-17.68	418.34	1,213.68	1,125.03	88.65	13.691	
12,000.00	11,987.35	15,556.00	10,899.41	42.90	86.51	114.68	-17.68	418.34	1,252.67	1,165.04	87.63	14.294	
12,050.00	12,035.51	15,556.00	10,899.41	43.03	86.51	113.64	-17.68	418.34	1,290.68	1,203.97	86.71	14.885	
12,100.00	12,082.33	15,556.00	10,899.41	43.16	86.51	112.25	-17.68	418.34	1,327.50	1,241.64	85.86	15.461	
12,150.00	12,127.43	15,556.00	10,899.41	43.28	86.51	110.51	-17.68	418.34	1,362.97	1,277.88	85.09	16.018	
12,200.00	12,170.49	15,556.00	10,899.41	43.39	86.51	108.39	-17.68	418.34	1,396.94	1,312.54	84.40	16.552	
12,250.00	12,211.17	15,556.00	10,899.41	43.48	86.51	105.91	-17.68	418.34	1,429.25	1,345.49	83.77	17.062	
12,300.00	12,249.17	15,556.00	10,899.41	43.57	86.51	103.06	-17.68	418.34	1,459.79	1,376.58	83.20	17.545	
12,350.00	12,284.19	15,556.00	10,899.41	43.65	86.51	99.85	-17.68	418.34	1,488.43	1,405.72	82.71	17.997	
12,400.00	12,315.96	15,556.00	10,899.41	43.71	86.51	96.30	-17.68	418.34	1,515.06	1,432.79	82.27	18.416	
12,450.00	12,344.26	15,528.52	10,900.94	43.78	86.10	95.01	-45.10	419.49	1,539.36	1,457.61	81.75	18.829	
12,500.00	12,368.85	15,483.55	10,903.45	43.86	85.42	95.12	-89.96	421.36	1,560.30	1,479.10	81.20	19.215	
12,550.00	12,389.56	15,436.13	10,906.07	43.95	84.70	95.27	-137.27	423.23	1,577.60	1,496.92	80.69	19.553	
12,600.00	12,406.23	15,388.38	10,908.66	44.04	83.99	95.31	-184.92	424.94	1,591.11	1,510.90	80.21	19.836	
12,650.00	12,418.73	15,343.09	10,911.03	44.14	83.31	95.01	-230.12	426.52	1,600.81	1,521.00	79.80	20.060	
12,669.77	12,422.49	15,325.00	10,911.94	44.18	83.04	94.88	-248.17	427.15	1,603.58	1,523.93	79.65	20.132	
12,700.00	12,427.27	15,297.31	10,913.30	44.25	82.62	94.67	-275.82	428.12	1,606.94	1,527.51	79.43	20.230	
12,750.00	12,433.09	15,251.74	10,915.45	44.36	81.95	94.27	-321.30	429.73	1,610.68	1,531.57	79.10	20.361	
12,800.00	12,436.31	15,210.00	10,917.32	44.48	81.32	93.51	-362.97	431.24	1,612.14	1,533.31	78.83	20.452	
12,836.44	12,437.00	15,173.69	10,918.86	44.57	80.78	93.49	-399.22	432.58	1,611.77	1,533.15	78.61	20.502	
12,900.00	12,437.00	15,115.00	10,921.14	44.74	79.91	93.02	-457.83	434.80	1,610.23	1,531.94	78.29	20.568	
13,000.00	12,437.00	15,014.49	10,924.82	45.06	78.43	93.04	-558.21	438.56	1,608.00	1,530.25	77.75	20.681	
13,100.00	12,437.00	14,892.09	10,930.13	45.43	76.63	95.05	-680.45	441.60	1,604.61	1,527.52	77.09	20.814	
13,200.00	12,437.00	14,795.54	10,934.24	45.86	75.23	94.73	-776.90	443.11	1,601.01	1,524.41	76.60	20.901	
13,300.00	12,437.00	14,673.98	10,939.47	46.35	73.47	96.66	-898.34	444.19	1,597.17	1,521.21	75.96	21.026	
13,400.00	12,437.00	14,577.87	10,944.95	46.88	72.09	96.29	-994.29	445.22	1,592.07	1,516.53	75.54	21.076	
13,500.00	12,437.00	14,477.35	10,949.95	47.47	70.66	96.33	-1,094.68	446.20	1,587.57	1,512.46	75.11	21.137	
13,600.00	12,437.00	14,347.03	10,957.49	48.11	68.83	99.03	-1,224.77	445.91	1,581.86	1,507.35	74.51	21.230	
13,700.00	12,437.00	14,257.91	10,962.64	48.80	67.58	98.08	-1,313.73	444.47	1,575.61	1,501.44	74.16	21.245	
13,800.00	12,437.00	14,159.29	10,967.90	49.53	66.22	97.97	-1,412.20	442.62	1,569.66	1,495.88	73.78	21.275	

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Roy Batty Federal COM - Roy Batty Federal COM #4H - Wellbore #1 - Surveys													Offset Site Error:	0.00 usft
Survey Program: 100-GYRO-NS, 10554-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
13,900.00	12,437.00	14,069.72	10,972.65	50.30	64.99	97.03	-1,501.63	441.81	1,564.14	1,490.63	73.51	21.278		
14,000.00	12,437.00	13,983.00	10,976.95	51.12	63.81	95.83	-1,588.25	441.51	1,559.18	1,485.87	73.30	21.271		
14,100.00	12,437.00	13,889.00	10,980.96	51.97	62.54	95.28	-1,682.16	441.27	1,554.85	1,481.78	73.07	21.278		
14,200.00	12,437.00	13,753.34	10,986.49	52.87	60.74	98.54	-1,817.71	440.59	1,550.93	1,478.34	72.60	21.364		
14,300.00	12,437.00	13,630.83	10,996.16	53.80	59.14	100.58	-1,939.81	438.31	1,542.36	1,470.10	72.26	21.345		
14,400.00	12,437.00	13,553.19	11,001.18	54.76	58.14	98.57	-2,017.27	436.89	1,535.38	1,463.17	72.22	21.261		
14,500.00	12,437.00	13,466.48	11,005.80	55.75	57.03	97.36	-2,103.85	435.62	1,529.60	1,457.45	72.14	21.203		
14,600.00	12,437.00	13,365.87	11,010.60	56.78	55.77	97.44	-2,204.33	433.89	1,524.23	1,452.23	72.00	21.171		
14,700.00	12,437.00	13,265.18	11,015.25	57.84	54.53	97.53	-2,304.87	431.11	1,518.58	1,446.73	71.85	21.134		
14,800.00	12,437.00	13,182.48	11,018.67	58.92	53.52	95.94	-2,387.47	428.82	1,513.42	1,441.56	71.86	21.061		
14,900.00	12,437.00	13,092.40	11,022.00	60.03	52.45	95.00	-2,477.49	428.68	1,509.63	1,437.73	71.90	20.996		
15,000.00	12,437.00	12,998.31	11,026.02	61.16	51.34	94.44	-2,571.49	429.27	1,505.68	1,433.71	71.97	20.921		
15,100.00	12,437.00	12,919.31	11,028.91	62.32	50.43	92.43	-2,650.40	431.44	1,503.09	1,430.88	72.20	20.818		
15,200.00	12,437.00	12,816.13	11,032.06	63.49	49.26	92.71	-2,753.48	434.80	1,501.29	1,428.96	72.34	20.754		
15,300.00	12,437.00	12,705.05	11,036.49	64.69	48.04	93.73	-2,864.44	437.51	1,498.28	1,425.83	72.45	20.679		
15,400.00	12,437.00	12,600.97	11,040.35	65.91	46.93	94.10	-2,968.43	439.70	1,495.45	1,422.81	72.63	20.589		
15,500.00	12,437.00	12,496.05	11,044.65	67.15	45.86	94.54	-3,073.25	441.12	1,491.93	1,419.10	72.83	20.486		
15,600.00	12,437.00	12,405.59	11,048.07	68.40	44.97	93.64	-3,163.63	442.12	1,488.63	1,415.51	73.12	20.359		
15,700.00	12,437.00	12,329.99	11,050.08	69.67	44.25	91.35	-3,239.20	443.01	1,486.41	1,412.90	73.51	20.220		
15,762.97	12,437.00	12,286.00	11,050.46	70.48	43.84	89.56	-3,283.19	443.49	1,486.00	1,412.22	73.78	20.141		
15,800.00	12,437.00	12,256.49	11,050.42	70.96	43.58	88.85	-3,312.69	443.80	1,486.09	1,412.17	73.92	20.104		
15,900.00	12,437.00	12,169.73	11,049.37	72.26	42.81	87.61	-3,399.45	444.69	1,487.27	1,413.00	74.27	20.026		
16,000.00	12,437.00	12,065.44	11,048.43	73.58	41.94	88.01	-3,503.72	445.54	1,488.10	1,413.55	74.55	19.962		
16,100.00	12,437.00	11,986.76	11,047.41	74.91	41.31	86.02	-3,582.37	447.67	1,490.04	1,415.00	75.04	19.857		
16,200.00	12,437.00	11,908.00	11,046.17	76.25	40.71	84.05	-3,661.07	450.34	1,492.71	1,417.14	75.57	19.752		
16,300.00	12,437.00	11,814.00	11,043.46	77.60	40.05	83.52	-3,754.95	454.19	1,496.72	1,420.64	76.07	19.675		
16,400.00	12,437.00	11,690.94	11,038.75	78.97	39.26	85.66	-3,877.81	459.15	1,501.84	1,425.37	76.47	19.641		
16,500.00	12,437.00	11,558.20	11,037.46	80.35	38.51	88.68	-4,010.49	462.45	1,503.40	1,426.52	76.88	19.555		
16,600.00	12,437.00	11,437.00	11,038.22	81.73	37.92	90.62	-4,131.64	465.28	1,503.51	1,426.09	77.42	19.420		
16,673.56	12,437.00	11,375.00	11,039.03	82.76	37.66	89.56	-4,193.62	466.58	1,503.07	1,425.13	77.94	19.285		
16,700.00	12,437.00	11,375.00	11,039.03	83.13	37.66	87.14	-4,193.62	466.58	1,503.30	1,425.10	78.20	19.225		
16,800.00	12,437.00	11,343.00	11,038.42	84.53	37.54	80.98	-4,225.61	467.14	1,506.72	1,427.64	79.07	19.054		
16,900.00	12,437.00	11,307.00	11,035.85	85.95	37.40	75.36	-4,261.49	468.42	1,514.84	1,434.88	79.96	18.945		
17,000.00	12,437.00	11,277.00	11,032.40	87.37	37.30	69.54	-4,291.25	469.93	1,527.42	1,446.54	80.88	18.886		
17,100.00	12,437.00	11,246.00	11,027.63	88.80	37.20	64.21	-4,321.83	471.61	1,544.19	1,462.40	81.78	18.881		
17,193.91	12,437.00	11,214.00	11,021.28	90.15	37.11	59.80	-4,353.13	473.53	1,563.79	1,481.18	82.61	18.930		



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Tyrell Fee - 001H - Wellbore #1 - Surveys													Offset Site Error:	0.00 usft
Survey Program: 100-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	178.03	-5,145.36	177.29	5,148.49					
100.00	100.00	101.04	101.04	0.13	0.15	178.03	-5,145.08	176.92	5,148.20	5,147.93	0.28	N/A		
200.00	200.00	205.52	205.52	0.49	0.53	178.04	-5,144.45	176.26	5,147.58	5,146.57	1.01	5,085.243		
300.00	300.00	300.00	299.99	0.85	0.86	178.04	-5,143.90	175.73	5,146.98	5,145.27	1.71	3,011.094		
400.00	400.00	391.19	391.18	1.20	1.19	178.05	-5,143.50	175.19	5,146.52	5,144.12	2.39	2,149.233		
500.00	500.00	491.73	491.72	1.56	1.55	178.06	-5,143.13	174.55	5,146.13	5,143.02	3.11	1,652.925		
600.00	600.00	587.57	587.55	1.92	1.89	178.06	-5,142.81	173.98	5,145.77	5,141.96	3.82	1,348.712		
620.40	620.40	607.11	607.09	1.99	1.96	178.06	-5,142.75	173.88	5,145.74	5,141.78	3.96	1,300.024		
700.00	699.99	684.03	684.01	2.28	2.24	178.06	-5,142.56	173.38	5,146.23	5,141.71	4.52	1,139.108		
800.00	799.96	785.29	785.27	2.63	2.60	178.06	-5,142.33	172.43	5,148.17	5,142.94	5.24	983.046		
900.00	899.86	877.75	877.73	2.99	2.93	178.04	-5,142.17	171.34	5,151.63	5,145.70	5.93	869.357		
999.59	999.27	962.36	962.32	3.35	3.23	178.02	-5,142.21	170.16	5,156.74	5,150.15	6.59	783.010		
1,000.00	999.68	962.69	962.66	3.35	3.24	178.02	-5,142.21	170.16	5,156.76	5,150.17	6.59	782.697		
1,100.00	1,099.43	1,046.23	1,046.18	3.72	3.53	177.99	-5,142.53	168.75	5,162.94	5,155.70	7.25	712.516		
1,200.00	1,199.19	1,140.17	1,140.10	4.08	3.87	177.97	-5,143.16	166.76	5,169.39	5,161.45	7.94	650.967		
1,300.00	1,298.95	1,248.56	1,248.45	4.45	4.26	177.96	-5,143.79	163.95	5,175.74	5,167.05	8.69	595.595		
1,400.00	1,398.70	1,346.82	1,346.67	4.82	4.61	177.95	-5,144.29	161.19	5,182.01	5,172.61	9.40	551.020		
1,500.00	1,498.46	1,443.67	1,443.48	5.18	4.96	177.94	-5,144.88	158.38	5,188.38	5,178.26	10.11	512.963		
1,600.00	1,598.22	1,557.36	1,557.12	5.55	5.36	177.93	-5,145.46	155.44	5,194.67	5,183.78	10.89	477.197		
1,700.00	1,697.97	1,685.74	1,685.50	5.92	5.82	177.90	-5,145.46	154.40	5,200.50	5,188.80	11.70	444.468		
1,800.00	1,797.73	1,847.21	1,846.92	6.29	6.35	177.83	-5,143.72	157.40	5,205.31	5,192.70	12.60	412.987		
1,900.00	1,897.49	1,940.08	1,939.73	6.66	6.66	177.75	-5,142.20	160.41	5,209.67	5,196.39	13.28	392.397		
2,000.00	1,997.24	2,021.78	2,021.37	7.03	6.94	177.68	-5,141.15	163.28	5,214.40	5,200.49	13.91	374.780		
2,100.00	2,097.00	2,117.42	2,116.94	7.40	7.26	177.60	-5,140.04	166.70	5,219.28	5,204.68	14.60	357.519		
2,200.00	2,196.76	2,200.00	2,199.49	7.78	7.54	177.54	-5,139.37	168.91	5,224.46	5,209.22	15.24	342.783		
2,300.00	2,296.51	2,279.52	2,278.99	8.15	7.81	177.48	-5,139.04	170.47	5,230.01	5,214.13	15.87	329.460		
2,400.00	2,396.27	2,389.60	2,389.05	8.52	8.18	177.41	-5,138.66	172.58	5,235.65	5,219.03	16.61	315.131		
2,500.00	2,496.03	2,485.04	2,484.48	8.89	8.51	177.35	-5,138.20	174.53	5,241.16	5,223.86	17.31	302.866		
2,600.00	2,595.79	2,579.82	2,579.22	9.26	8.83	177.29	-5,137.83	176.73	5,246.79	5,228.79	17.99	291.571		
2,700.00	2,695.54	2,676.65	2,676.02	9.63	9.17	177.22	-5,137.53	179.12	5,252.50	5,233.81	18.69	280.991		
2,800.00	2,795.30	2,772.97	2,772.32	10.01	9.50	177.16	-5,137.27	181.47	5,258.27	5,238.88	19.39	271.187		
2,900.00	2,895.06	2,865.17	2,864.50	10.38	9.82	177.10	-5,137.13	183.31	5,264.14	5,244.07	20.07	262.252		
3,000.00	2,994.81	2,962.93	2,962.26	10.75	10.16	177.04	-5,137.15	184.52	5,270.14	5,249.36	20.78	253.666		
3,100.00	3,094.57	3,072.09	3,071.41	11.12	10.54	176.99	-5,137.09	185.81	5,276.07	5,254.55	21.52	245.164		
3,200.00	3,194.33	3,180.54	3,179.85	11.50	10.92	176.94	-5,136.82	186.83	5,281.80	5,259.54	22.26	237.227		
3,300.00	3,294.08	3,282.25	3,281.56	11.87	11.27	176.89	-5,136.50	187.25	5,287.44	5,264.45	22.99	230.023		
3,400.00	3,393.84	3,409.77	3,409.08	12.24	11.72	176.85	-5,135.79	187.76	5,292.85	5,269.04	23.80	222.366		
3,500.00	3,493.60	3,536.08	3,535.37	12.61	12.17	176.80	-5,134.37	188.25	5,297.68	5,273.06	24.62	215.221		
3,600.00	3,593.35	3,637.96	3,637.24	12.99	12.53	176.76	-5,132.90	188.44	5,302.19	5,276.85	25.34	209.238		
3,700.00	3,693.11	3,718.92	3,718.20	13.36	12.82	176.72	-5,131.90	188.80	5,306.93	5,280.94	25.99	204.186		
3,800.00	3,792.87	3,800.00	3,799.27	13.73	13.10	176.67	-5,131.26	189.52	5,312.12	5,285.48	26.64	199.402		
3,900.00	3,892.63	3,850.00	3,849.27	14.11	13.28	176.62	-5,131.18	190.13	5,317.93	5,290.75	27.17	195.696		
4,000.00	3,992.38	3,900.00	3,899.26	14.48	13.45	176.58	-5,131.46	190.84	5,324.57	5,296.86	27.71	192.180		
4,100.00	4,092.14	3,965.92	3,965.17	14.85	13.68	176.53	-5,132.35	191.73	5,331.98	5,303.69	28.29	188.465		
4,200.00	4,191.90	4,027.16	4,026.39	15.22	13.89	176.48	-5,133.67	192.34	5,340.14	5,311.28	28.86	185.048		
4,300.00	4,291.65	4,100.00	4,099.20	15.60	14.14	176.44	-5,135.79	192.76	5,349.00	5,319.53	29.47	181.535		
4,400.00	4,391.41	4,241.77	4,240.92	15.97	14.63	176.41	-5,139.67	192.13	5,357.66	5,327.34	30.33	176.665		
4,500.00	4,491.17	4,359.99	4,359.09	16.34	15.03	176.39	-5,142.27	190.54	5,365.73	5,334.63	31.10	172.522		
4,600.00	4,590.92	4,461.11	4,460.18	16.72	15.38	176.37	-5,144.24	188.98	5,373.54	5,341.73	31.82	168.900		
4,700.00	4,690.68	4,571.42	4,570.46	17.09	15.76	176.35	-5,146.39	187.62	5,381.38	5,348.82	32.56	165.262		
4,800.00	4,790.44	4,676.15	4,675.17	17.46	16.12	176.32	-5,148.14	186.85	5,388.95	5,355.66	33.29	161.876		
4,900.00	4,890.19	4,778.88	4,777.89	17.83	16.48	176.29	-5,149.80	186.40	5,396.50	5,362.49	34.01	158.666		

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



MS Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Tyrell Fee - 001H - Wellbore #1 - Surveys													Offset Site Error:	0.00 usft
Survey Program: 100-MWD													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)	Azimuth from North (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,000.00	4,989.95	4,937.56	4,936.56	18.21	17.03	176.26	-5,151.27	185.92	5,403.32	5,368.38	34.94	154.653		
5,100.00	5,089.71	5,029.28	5,028.28	18.58	17.35	176.22	-5,151.75	186.25	5,409.84	5,374.22	35.62	151.872		
5,200.00	5,189.47	5,123.60	5,122.60	18.95	17.68	176.17	-5,152.32	186.64	5,416.45	5,380.13	36.31	149.159		
5,300.00	5,289.22	5,218.52	5,217.51	19.33	18.01	176.13	-5,153.08	186.98	5,423.24	5,386.24	37.01	146.543		
5,400.00	5,388.98	5,357.59	5,356.58	19.70	18.50	176.10	-5,153.58	186.88	5,429.55	5,391.68	37.86	143.396		
5,500.00	5,488.74	5,464.03	5,463.02	20.07	18.87	176.06	-5,153.59	186.38	5,435.51	5,396.90	38.60	140.813		
5,520.13	5,508.82	5,484.44	5,483.43	20.15	18.94	176.06	-5,153.59	186.26	5,436.70	5,397.95	38.75	140.318		
5,600.00	5,588.54	5,566.04	5,565.03	20.44	19.22	176.04	-5,153.57	185.65	5,440.70	5,401.38	39.32	138.368		
5,700.00	5,688.48	5,667.21	5,666.19	20.80	19.58	176.03	-5,153.53	184.54	5,443.66	5,403.63	40.03	135.979		
5,786.53	5,775.00	5,763.00	5,761.98	21.11	19.91	176.03	-5,153.43	183.64	5,444.35	5,403.68	40.68	133.848		
5,800.00	5,788.47	5,778.74	5,777.72	21.15	19.97	176.04	-5,153.39	183.47	5,444.31	5,403.53	40.78	133.510		
5,900.00	5,888.47	5,911.99	5,910.96	21.50	20.43	176.05	-5,152.63	182.56	5,443.70	5,402.10	41.60	130.861		
6,000.00	5,988.47	6,003.79	6,002.76	21.84	20.75	176.05	-5,151.90	182.18	5,442.88	5,400.61	42.27	128.763		
6,100.00	6,088.47	6,103.01	6,101.97	22.19	21.10	176.05	-5,151.16	181.68	5,442.09	5,399.12	42.97	126.651		
6,200.00	6,188.47	6,200.00	6,198.96	22.53	21.44	176.06	-5,150.46	181.38	5,441.35	5,397.69	43.66	124.629		
6,300.00	6,288.47	6,300.65	6,299.61	22.88	21.79	176.06	-5,149.74	181.28	5,440.64	5,396.27	44.36	122.634		
6,400.00	6,388.47	6,389.62	6,388.58	23.23	22.11	176.06	-5,149.18	181.26	5,440.01	5,394.98	45.03	120.816		
6,500.00	6,488.47	6,495.64	6,494.60	23.57	22.48	176.06	-5,148.58	181.28	5,439.44	5,393.69	45.75	118.890		
6,600.00	6,588.47	6,602.22	6,601.17	23.92	22.85	176.05	-5,147.82	181.37	5,438.74	5,392.26	46.48	117.015		
6,700.00	6,688.47	6,700.00	6,698.95	24.27	23.19	176.05	-5,147.10	181.45	5,438.01	5,390.83	47.17	115.275		
6,800.00	6,788.47	6,800.74	6,799.68	24.62	23.55	176.05	-5,146.37	181.56	5,437.29	5,389.41	47.88	113.559		
6,900.00	6,888.47	6,897.89	6,896.83	24.97	23.89	176.05	-5,145.67	181.66	5,436.58	5,388.01	48.57	111.922		
7,000.00	6,988.47	7,008.25	7,007.19	25.32	24.28	176.05	-5,144.79	181.79	5,435.79	5,386.48	49.32	110.222		
7,100.00	7,088.47	7,100.00	7,098.94	25.66	24.60	176.05	-5,144.06	181.92	5,435.00	5,385.01	49.99	108.718		
7,200.00	7,188.47	7,214.18	7,213.11	26.01	25.00	176.04	-5,143.03	182.27	5,434.12	5,383.37	50.75	107.080		
7,300.00	7,288.47	7,303.30	7,302.23	26.36	25.31	176.04	-5,142.22	182.65	5,433.24	5,381.83	51.41	105.677		
7,400.00	7,388.47	7,400.00	7,398.92	26.71	25.65	176.03	-5,141.39	183.13	5,432.43	5,380.33	52.11	104.255		
7,500.00	7,488.47	7,492.09	7,491.00	27.06	25.98	176.03	-5,140.70	183.61	5,431.73	5,378.94	52.78	102.905		
7,600.00	7,588.47	7,569.54	7,568.45	27.41	26.25	176.02	-5,140.39	183.93	5,431.35	5,377.95	53.41	101.700		
7,700.00	7,688.47	7,664.51	7,663.43	27.76	26.58	176.02	-5,140.31	184.50	5,431.31	5,377.21	54.09	100.411		
7,800.00	7,788.47	7,813.78	7,812.67	28.11	27.10	175.99	-5,139.47	187.22	5,430.91	5,375.94	54.97	98.794		
7,900.00	7,888.47	7,892.51	7,891.37	28.46	27.38	175.97	-5,138.78	189.20	5,430.20	5,374.60	55.60	97.665		
8,000.00	7,988.47	7,995.77	7,994.59	28.82	27.74	175.94	-5,137.98	191.84	5,429.61	5,373.29	56.32	96.411		
8,100.00	8,088.47	8,132.83	8,131.59	29.17	28.22	175.89	-5,136.36	195.74	5,428.64	5,371.48	57.16	94.979		
8,200.00	8,188.47	8,284.65	8,283.29	29.52	28.76	175.84	-5,133.31	200.95	5,426.90	5,368.85	58.05	93.494		
8,300.00	8,288.47	8,383.22	8,381.77	29.87	29.11	175.80	-5,130.78	204.27	5,424.58	5,365.83	58.75	92.337		
8,400.00	8,388.47	8,469.01	8,467.48	30.22	29.41	175.77	-5,128.74	207.06	5,422.45	5,363.04	59.41	91.279		
8,500.00	8,488.47	8,553.38	8,551.80	30.57	29.71	175.74	-5,126.98	209.82	5,420.61	5,360.55	60.06	90.256		
8,600.00	8,588.47	8,641.09	8,639.45	30.93	30.02	175.71	-5,125.43	212.17	5,419.04	5,358.32	60.72	89.244		
8,700.00	8,688.47	8,739.14	8,737.47	31.28	30.36	175.69	-5,123.84	214.74	5,417.63	5,356.20	61.42	88.202		
8,800.00	8,788.47	8,848.61	8,846.89	31.63	30.75	175.66	-5,121.99	217.22	5,416.10	5,353.94	62.17	87.124		
8,900.00	8,888.47	8,953.26	8,951.50	31.98	31.12	175.63	-5,120.08	219.19	5,414.43	5,351.54	62.89	86.093		
9,000.00	8,988.47	9,043.40	9,041.61	32.33	31.44	175.62	-5,118.46	220.84	5,412.79	5,349.22	63.56	85.154		
9,100.00	9,088.47	9,123.97	9,122.16	32.69	31.72	175.60	-5,117.27	222.21	5,411.45	5,347.24	64.20	84.285		
9,200.00	9,188.47	9,204.62	9,202.80	33.04	32.01	175.59	-5,116.43	223.18	5,410.49	5,345.65	64.84	83.440		
9,300.00	9,288.47	9,369.46	9,367.61	33.39	32.59	175.57	-5,114.15	225.31	5,409.29	5,343.50	65.78	82.227		
9,400.00	9,388.47	9,644.35	9,642.28	33.75	33.57	175.52	-5,104.37	229.05	5,406.14	5,339.05	67.09	80.584		
9,500.00	9,488.47	9,737.05	9,734.86	34.10	33.89	175.51	-5,099.56	229.06	5,400.97	5,333.19	67.77	79.693		
9,600.00	9,588.47	9,777.00	9,774.75	34.45	34.04	175.52	-5,097.56	228.76	5,396.22	5,327.94	68.28	79.027		
9,700.00	9,688.47	9,832.70	9,830.40	34.81	34.23	175.52	-5,095.31	228.18	5,392.36	5,323.51	68.84	78.330		
9,800.00	9,788.47	9,872.00	9,869.69	35.16	34.37	175.52	-5,094.36	227.75	5,389.79	5,320.45	69.34	77.731		
9,900.00	9,888.47	9,913.20	9,910.89	35.51	34.51	175.53	-5,093.80	227.45	5,388.34	5,318.50	69.84	77.156		

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



MS Directional Anticollision Report



Company: Matador Resources
Project: Lea County, New Mexico (NAD 27)
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #214H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

Offset Design Tyrell Fee - 001H - Wellbore #1 - Surveys														Offset Site Error:	0.00 usft
Survey Program: 100-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)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
10,000.00	9,988.47	9,968.00	9,965.68	35.87	34.71	175.53	-5,093.61	227.54	5,387.91	5,317.53	70.38	76.555			
10,005.91	9,994.38	9,968.00	9,965.68	35.89	34.71	175.53	-5,093.61	227.54	5,387.90	5,317.50	70.40	76.534			
10,100.00	10,088.47	10,031.26	10,028.94	36.22	34.92	175.52	-5,093.85	227.73	5,388.25	5,317.31	70.95	75.948			
10,200.00	10,188.47	10,119.57	10,117.25	36.57	35.23	175.53	-5,094.52	227.39	5,388.97	5,317.37	71.60	75.263			
10,300.00	10,288.47	10,214.39	10,212.07	36.93	35.55	175.53	-5,095.36	226.84	5,389.81	5,317.52	72.28	74.568			
10,400.00	10,388.47	10,308.75	10,306.41	37.28	35.87	175.54	-5,096.28	226.31	5,390.74	5,317.78	72.96	73.888			
10,500.00	10,488.47	10,349.00	10,346.67	37.64	36.01	175.54	-5,096.69	226.32	5,392.07	5,318.64	73.43	73.428			
10,600.00	10,588.47	10,365.24	10,362.91	37.99	36.07	175.54	-5,097.08	226.25	5,394.86	5,321.05	73.81	73.093			
10,700.00	10,688.47	10,380.00	10,377.64	38.35	36.12	175.54	-5,097.82	226.00	5,399.35	5,325.19	74.16	72.802			
10,800.00	10,788.47	10,380.00	10,377.64	38.70	36.12	175.54	-5,097.82	226.00	5,405.50	5,331.06	74.45	72.610			
10,900.00	10,888.47	10,395.17	10,392.77	39.05	36.17	175.55	-5,098.96	225.67	5,413.27	5,338.50	74.78	72.393			
11,000.00	10,988.47	10,412.00	10,409.50	39.41	36.23	175.55	-5,100.68	225.33	5,422.77	5,347.67	75.10	72.206			
11,100.00	11,088.47	10,412.00	10,409.50	39.76	36.23	175.55	-5,100.68	225.33	5,433.83	5,358.50	75.34	72.127			
11,200.00	11,188.47	10,412.00	10,409.50	40.12	36.23	175.55	-5,100.68	225.33	5,446.70	5,371.15	75.56	72.088			
11,300.00	11,288.47	10,428.57	10,425.92	40.47	36.28	175.56	-5,102.93	225.05	5,461.04	5,385.20	75.84	72.006			
11,400.00	11,388.47	10,444.00	10,441.11	40.83	36.33	175.56	-5,105.57	224.86	5,477.22	5,401.11	76.11	71.965			
11,500.00	11,488.47	10,444.00	10,441.11	41.18	36.33	175.56	-5,105.57	224.86	5,494.87	5,418.59	76.29	72.030			
11,600.00	11,588.47	10,444.00	10,441.11	41.54	36.33	175.56	-5,105.57	224.86	5,514.29	5,437.84	76.45	72.131			
11,700.00	11,688.47	10,444.00	10,441.11	41.89	36.33	175.56	-5,105.57	224.86	5,535.44	5,458.84	76.60	72.088			
11,800.00	11,788.47	10,476.00	10,472.25	42.25	36.44	175.57	-5,112.90	224.75	5,558.10	5,481.19	76.91	72.269			
11,869.77	11,858.24	10,476.00	10,472.25	42.50	36.44	175.57	-5,112.90	224.75	5,574.68	5,497.68	77.00	72.401			
11,900.00	11,888.46	10,476.00	10,472.25	42.60	36.44	175.57	-5,112.90	224.75	5,581.34	5,504.31	77.03	72.459			
11,950.00	11,938.21	10,476.00	10,472.25	42.75	36.44	175.57	-5,112.90	224.75	5,589.28	5,512.22	77.06	72.529			
12,000.00	11,987.35	10,476.00	10,472.25	42.90	36.44	175.56	-5,112.90	224.75	5,593.34	5,516.25	77.09	72.557			
12,050.00	12,035.51	10,476.00	10,472.25	43.03	36.44	175.55	-5,112.90	224.75	5,593.50	5,516.39	77.11	72.543			
12,100.00	12,082.33	10,492.69	10,488.31	43.16	36.49	175.54	-5,117.48	224.87	5,589.62	5,512.41	77.21	72.393			
12,150.00	12,127.43	10,508.00	10,502.97	43.28	36.54	175.52	-5,121.85	225.09	5,581.82	5,504.52	77.30	72.210			
12,200.00	12,170.49	10,508.00	10,502.97	43.39	36.54	175.50	-5,121.85	225.09	5,570.08	5,492.79	77.29	72.071			
12,250.00	12,211.17	10,508.00	10,502.97	43.48	36.54	175.48	-5,121.85	225.09	5,554.56	5,477.30	77.26	71.895			
12,300.00	12,249.17	10,508.00	10,502.97	43.57	36.54	175.46	-5,121.85	225.09	5,535.36	5,458.14	77.22	71.682			
12,350.00	12,284.19	10,540.00	10,533.38	43.65	36.64	175.43	-5,131.79	225.75	5,512.46	5,435.09	77.37	71.246			
12,400.00	12,315.96	10,540.00	10,533.38	43.71	36.64	175.40	-5,131.79	225.75	5,486.00	5,408.68	77.32	70.956			
12,450.00	12,344.26	10,540.00	10,533.38	43.78	36.64	175.37	-5,131.79	225.75	5,456.25	5,379.00	77.25	70.631			
12,500.00	12,368.85	10,540.00	10,533.38	43.86	36.64	175.33	-5,131.79	225.75	5,423.40	5,346.22	77.18	70.273			
12,550.00	12,389.56	10,540.00	10,533.38	43.95	36.64	175.29	-5,131.79	225.75	5,387.63	5,310.54	77.10	69.881			
12,600.00	12,406.23	10,540.00	10,533.38	44.04	36.64	175.25	-5,131.79	225.75	5,349.17	5,272.16	77.01	69.457			
12,650.00	12,418.73	10,540.00	10,533.38	44.14	36.64	175.21	-5,131.79	225.75	5,308.26	5,231.33	76.93	69.001			
12,669.77	12,422.49	10,540.00	10,533.38	44.18	36.64	175.19	-5,131.79	225.75	5,291.46	5,214.56	76.90	68.811			
12,700.00	12,427.27	10,554.73	10,547.23	44.25	36.69	175.17	-5,136.82	226.13	5,265.12	5,188.18	76.95	68.427			
12,750.00	12,433.09	10,571.00	10,562.39	44.36	36.74	175.12	-5,142.69	226.65	5,221.02	5,144.04	76.97	67.831			
12,800.00	12,436.31	10,571.00	10,562.39	44.48	36.74	175.08	-5,142.69	226.65	5,175.65	5,098.76	76.89	67.311			
12,836.44	12,437.00	10,571.00	10,562.39	44.57	36.74	175.04	-5,142.69	226.65	5,141.99	5,065.15	76.84	66.921			
12,900.00	12,437.00	10,571.00	10,562.39	44.74	36.74	174.98	-5,142.69	226.65	5,082.90	5,006.16	76.74	66.237			
13,000.00	12,437.00	10,571.00	10,562.39	45.06	36.74	174.88	-5,142.69	226.65	4,990.16	4,913.58	76.58	65.164			
13,100.00	12,437.00	10,571.00	10,562.39	45.43	36.74	174.78	-5,142.69	226.65	4,897.71	4,821.29	76.41	64.094			
13,200.00	12,437.00	10,571.00	10,562.39	45.86	36.74	174.67	-5,142.69	226.65	4,805.56	4,729.31	76.25	63.028			
13,300.00	12,437.00	10,587.14	10,577.31	46.35	36.79	174.56	-5,148.80	227.24	4,713.57	4,637.37	76.19	61.865			
13,400.00	12,437.00	10,603.00	10,591.87	46.88	36.83	174.44	-5,155.05	227.86	4,621.96	4,545.83	76.14	60.707			
13,500.00	12,437.00	10,603.00	10,591.87	47.47	36.83	174.32	-5,155.05	227.86	4,530.56	4,454.60	75.96	59.647			
13,600.00	12,437.00	10,603.00	10,591.87	48.11	36.83	174.19	-5,155.05	227.86	4,439.52	4,363.74	75.77	58.591			
13,700.00	12,437.00	10,603.00	10,591.87	48.80	36.83	174.06	-5,155.05	227.86	4,348.87	4,273.29	75.58	57.539			
13,800.00	12,437.00	10,618.94	10,606.39	49.53	36.88	173.91	-5,161.61	228.50	4,258.44	4,182.93	75.52	56.392			

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



MS Directional
Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well Charles Ling Fed Com #214H
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3654.50usft (Patterson 282)
Reference Site:	Charles Ling Fed Com	MD Reference:	WELL @ 3654.50usft (Patterson 282)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Charles Ling Fed Com #214H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Tyrell Fee - 001H - Wellbore #1 - Surveys													Offset Site Error:	0.00 usft
Survey Program: 100-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
13,900.00	12,437.00	10,634.00	10,619.97	50.30	36.93	173.77	-5,168.09	229.12	4,168.53	4,093.09	75.44	55.256		
14,000.00	12,437.00	10,634.00	10,619.97	51.12	36.93	173.61	-5,168.09	229.12	4,078.90	4,003.66	75.24	54.213		
14,100.00	12,437.00	10,634.00	10,619.97	51.97	36.93	173.44	-5,168.09	229.12	3,989.76	3,914.73	75.03	53.177		
14,200.00	12,437.00	10,634.00	10,619.97	52.87	36.93	173.26	-5,168.09	229.12	3,901.14	3,826.33	74.81	52.146		
14,300.00	12,437.00	10,634.00	10,619.97	53.80	36.93	173.08	-5,168.09	229.12	3,813.09	3,738.50	74.59	51.121		
14,400.00	12,437.00	10,666.00	10,648.18	54.76	37.03	172.89	-5,183.13	230.47	3,725.48	3,650.82	74.65	49.904		
14,500.00	12,437.00	10,666.00	10,648.18	55.75	37.03	172.68	-5,183.13	230.47	3,638.26	3,563.84	74.42	48.886		
14,600.00	12,437.00	10,666.00	10,648.18	56.78	37.03	172.46	-5,183.13	230.47	3,551.72	3,477.53	74.19	47.875		
14,700.00	12,437.00	10,666.00	10,648.18	57.84	37.03	172.22	-5,183.13	230.47	3,465.90	3,391.95	73.95	46.871		
14,800.00	12,437.00	10,666.00	10,648.18	58.92	37.03	171.97	-5,183.13	230.47	3,380.86	3,307.16	73.70	45.875		
14,900.00	12,437.00	10,680.87	10,660.91	60.03	37.08	171.71	-5,190.78	231.07	3,296.37	3,222.78	73.59	44.793		
15,000.00	12,437.00	10,699.00	10,676.06	61.16	37.14	171.43	-5,200.71	231.72	3,212.96	3,139.44	73.52	43.704		
15,100.00	12,437.00	10,699.00	10,676.06	62.32	37.14	171.12	-5,200.71	231.72	3,130.07	3,056.82	73.26	42.727		
15,200.00	12,437.00	10,720.26	10,693.58	63.49	37.21	170.82	-5,212.75	232.10	3,048.16	2,974.94	73.22	41.632		
15,300.00	12,437.00	10,763.00	10,728.52	64.69	37.34	170.60	-5,237.28	230.46	2,966.64	2,893.25	73.39	40.421		
15,400.00	12,437.00	10,763.00	10,728.52	65.91	37.34	170.21	-5,237.28	230.46	2,885.80	2,812.67	73.14	39.458		
15,500.00	12,437.00	10,780.62	10,742.54	67.15	37.40	169.89	-5,247.79	228.58	2,805.89	2,732.84	73.05	38.408		
15,600.00	12,437.00	10,795.00	10,753.65	68.40	37.44	169.54	-5,256.69	226.59	2,727.13	2,654.19	72.94	37.388		
15,700.00	12,437.00	10,795.00	10,753.65	69.67	37.44	169.06	-5,256.69	226.59	2,649.59	2,576.90	72.69	36.451		
15,800.00	12,437.00	10,795.00	10,753.65	70.96	37.44	168.53	-5,256.69	226.59	2,573.59	2,501.15	72.44	35.527		
15,900.00	12,437.00	10,826.00	10,776.35	72.26	37.54	168.22	-5,277.22	221.73	2,498.73	2,426.23	72.50	34.466		
16,000.00	12,437.00	10,826.00	10,776.35	73.58	37.54	167.59	-5,277.22	221.73	2,425.40	2,353.14	72.27	33.562		
16,100.00	12,437.00	10,826.00	10,776.35	74.91	37.54	166.89	-5,277.22	221.73	2,354.05	2,282.00	72.05	32.674		
16,200.00	12,437.00	10,843.95	10,788.65	76.25	37.59	166.31	-5,289.99	218.91	2,284.34	2,212.33	72.01	31.722		
16,300.00	12,437.00	10,858.00	10,797.84	77.60	37.64	165.62	-5,300.40	216.84	2,216.73	2,144.78	71.96	30.807		
16,400.00	12,437.00	10,858.00	10,797.84	78.97	37.64	164.65	-5,300.40	216.84	2,151.33	2,079.53	71.80	29.963		
16,500.00	12,437.00	10,889.00	10,816.73	80.35	37.73	164.01	-5,324.61	212.62	2,088.36	2,016.42	71.94	29.030		
16,600.00	12,437.00	10,889.00	10,816.73	81.73	37.73	162.78	-5,324.61	212.62	2,027.50	1,955.65	71.84	28.221		
16,700.00	12,437.00	10,889.00	10,816.73	83.13	37.73	161.36	-5,324.61	212.62	1,969.83	1,898.03	71.80	27.436		
16,800.00	12,437.00	10,921.00	10,833.97	84.53	37.83	160.35	-5,351.30	208.96	1,914.82	1,842.79	72.04	26.582		
16,900.00	12,437.00	10,921.00	10,833.97	85.95	37.83	158.45	-5,351.30	208.96	1,862.98	1,790.89	72.09	25.843		
17,000.00	12,437.00	10,953.00	10,848.74	87.37	37.92	157.04	-5,379.52	205.95	1,814.88	1,742.47	72.41	25.065		
17,100.00	12,437.00	10,953.00	10,848.74	88.80	37.92	154.42	-5,379.52	205.95	1,769.83	1,697.25	72.59	24.382		
17,193.91	12,437.00	10,968.94	10,855.14	90.15	37.97	151.99	-5,394.05	204.57	1,731.29	1,658.38	72.91	23.746 CC, ES, SF		

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



MS Directional Anticollision Report

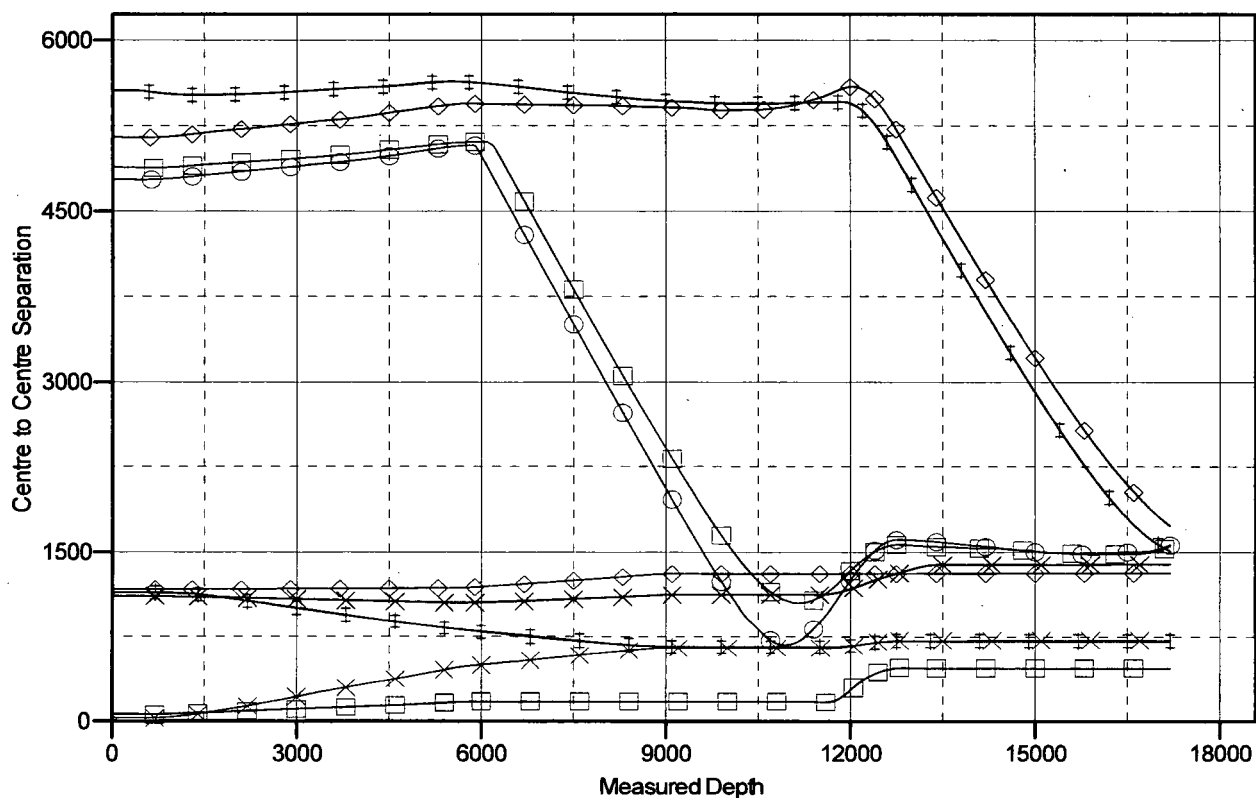


Company: Matador Resources
Project: Lea County, New Mexico (NAD 27)
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #214H
Well Error: 0.00 usft
Reference Wellbore Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 3654.50usft (Patterson 282) Coordinates are relative to: Charles Ling Fed Com #214H
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.43°

Ladder Plot



LEGEND

Charles Ling Fed Com #214H Wellbore #1, Survey V0
Charles Ling Fed Com #214H Wellbore #1, Design #1 V0
Charles Ling Fed Com #214H Wellbore #1, Design #1 V0
Charles Ling Fed Com #214H Wellbore #1, Design #1 V0
Charles Ling Fed Com #214H Wellbore #1, Design #1 V0
Charles Ling Fed Com #214H Wellbore #1, Design #1 V0



MS Directional Anticollision Report

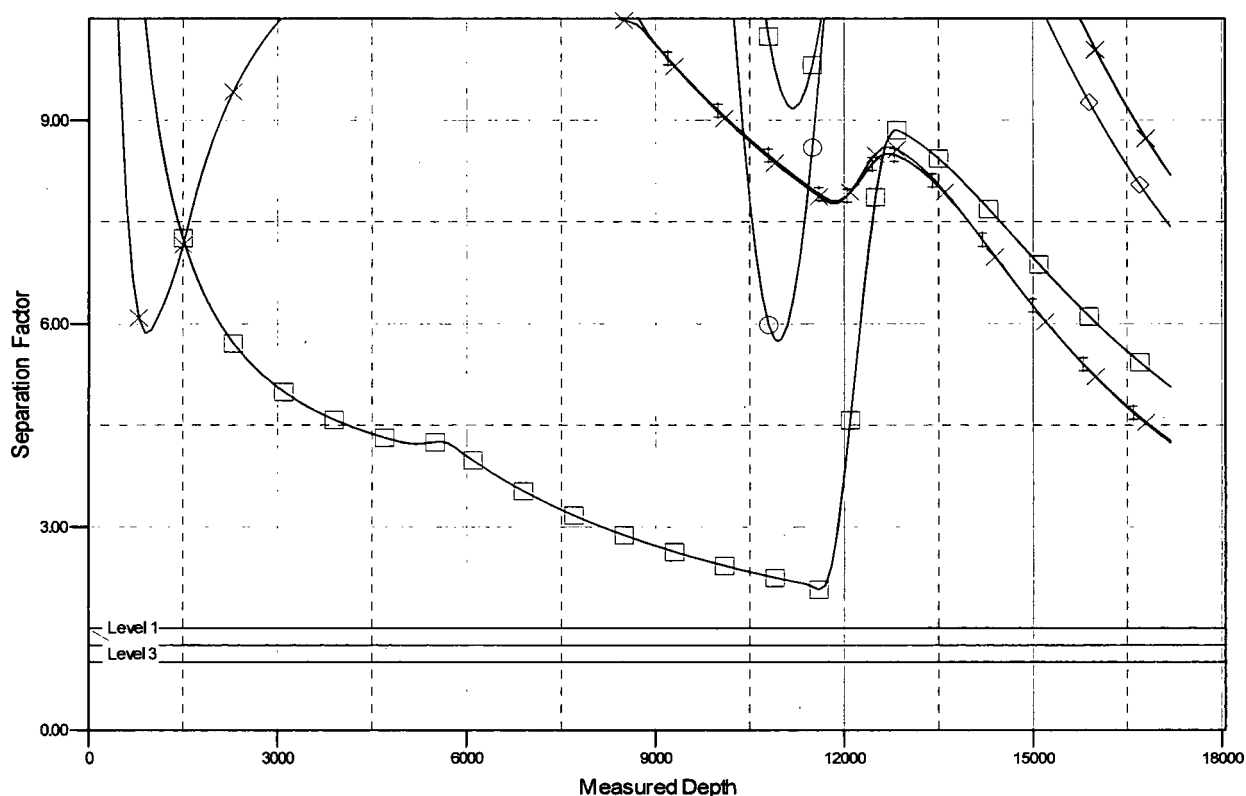


Company: Matador Resources
Project: Lea County, New Mexico (NAD 27)
Reference Site: Charles Ling Fed Com
Site Error: 0.00 usft
Reference Well: Charles Ling Fed Com #214H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Charles Ling Fed Com #214H
TVD Reference: WELL @ 3654.50usft (Patterson 282)
MD Reference: WELL @ 3654.50usft (Patterson 282)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.14 Conroe DB
Offset TVD Reference: Offset Datum

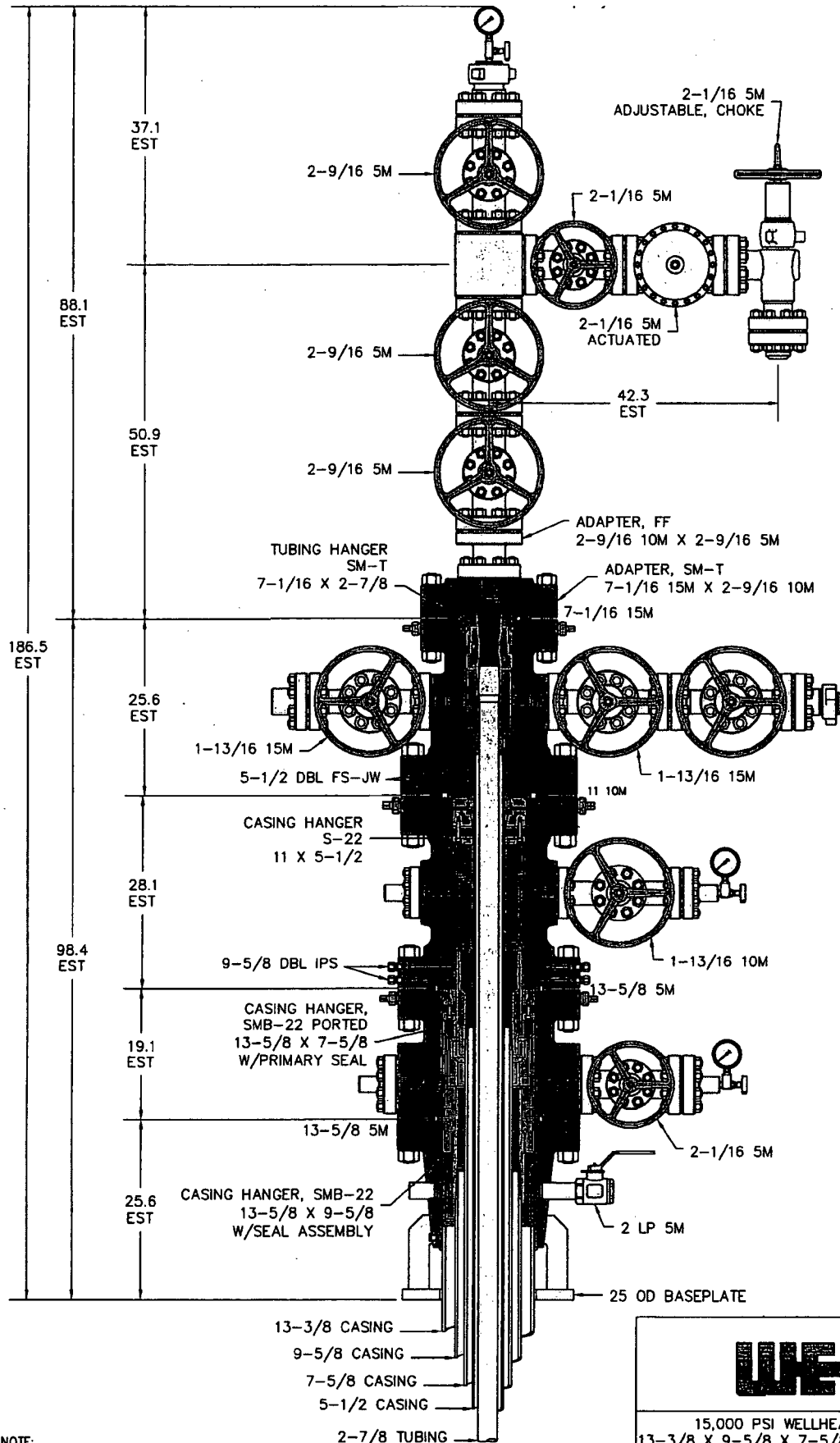
Reference Depths are relative to WELL @ 3654.50usft (Patterson 282) Coordinates are relative to: Charles Ling Fed Com #214H
Offset Depths are relative to Offset Datum
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Central Meridian is 104° 20' 0.000 W
Grid Convergence at Surface is: 0.43°

Separation Factor Plot



LEGEND

● #211H Wellbore #1, Survey V0
● 001H Wellbore #1, Survey V0
● Rydell Federal COMER Wellbore #, Survey V0
● Rydell Federal COMER Wellbore #, Design #1 V0
● Charles Ling Fed Com #214H Wellbore #, Design #1 V0
● Charles Ling Fed Com #213H Wellbore #, Design #1 V0
● Charles Ling Fed Com #212H Wellbore #, Design #1 V0
● Charles Ling Fed Com #211H Wellbore #, Design #1 V0



NOTE:
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WEIR

15,000 PSI WELLHEAD ASSEMBLY
13-3/8 X 9-5/8 X 7-5/8 X 5-1/2 X 2-7/8

DRAWN BY: RPL	SCALE: 1-11	DATE: 06OCT17	REV:
CHECKED BY:	DRAWING NO. P-22401		
APPROVED BY:			



**U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT**

Bond Info Data Report

07/18/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001079

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

PWD Data Report

07/18/2018

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

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Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHARLES LING FED COM

Well Number: 214H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
PPP Leg #1	528 0	FSL	985	FEL	24S	33E	11	Aliquot NESE	32.23213 2	- 103.5378 01	LEA	NEW MEXI CO	NEW MEXI CO	F	FEE	- 881 1	147 87	124 37
EXIT Leg #1	240	FSL	330	FEL	24S	33E	11	Aliquot SESE	32.22551 53	- 103.5378 001	LEA	NEW MEXI CO	NEW MEXI CO	F	FEE	- 881 1	171 94	124 37
BHL Leg #1	240	FSL	330	FEL	24S	33E	11	Aliquot SESE	32.22551 53	- 103.5378 001	LEA	NEW MEXI CO	NEW MEXI CO	F	FEE	- 881 1	171 94	124 37