Well Name: MARGARITA FEDERAL COM 13

Well Location: T21S / R32E / SEC 13 / NWNW / 32.483292 / -103.634423

County or Parish/State: LEA / NM

Well Number: 17H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM14155

Unit or CA Name:

Unit or CA Number:

US Well Number: 300254824700S1

Well Status: Producing Oil Well

Operator: MATADOR PRODUCTION COMPANY

Notice of Intent

Sundry ID: 2160347

Type of Submission: Notice of Intent

Type of Action: Drilling Operations

Date Sundry Submitted: 05/06/2021

Time Sundry Submitted: 01:00

Date proposed operation will begin: 05/04/2021

Procedure Description: Who: Advance Energy Partners, Hat Mesa What: Change BHL: From: Sec 25, T21S, R32E 2540 FNL & 990 FWL Lat:N 32.450144 Long: W 103.633794 To: Sec 25, T21S, R32E 2540 FNL & 1210 FWL Lat: N 32.450146 Long: 103.633081 When: Spud Well Why: To accommodate new targets and well path.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

Proposed_Cement_Design_for_5_and_update_on_other_casing_20210506123451.docx

Margarita_Federal_Com_17H___Prelim_4_Report_20210506123152.pdf

Margarita_Federal_Com_17H___Prelim_4_Plan_20210506123140.pdf

Margarita_Federal_Com_17H___Prelim_4_AC_20210506123132.pdf

Margarita_Fed_Com_13_17H_Drilling_Plan_for_Revised_APD_20210506123121.docx

Margarita_13_Fed_Com_13_17H_Production_No_Pricing_WTC_20210506123113.pdf

Well Name: MARGARITA FEDERAL COM 13

Well Location: T21S / R32E / SEC 13 / NWNW / 32.483292 / -103.634423

County or Parish/State: LEA / NM

Well Number: 17H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM14155

Unit or CA Name:

Unit or CA Number:

US Well Number: 300254824700S1

Well Status: Producing Oil Well

Operator: MATADOR PRODUCTION COMPANY

Conditions of Approval

Specialist Review

Margarita_Federal_Com_13_17H_Dr_COA_Sundry_ID_2160347_20210510145235.pdf

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: DEBBIE MOUGHON

Signed on: MAY 06, 2021 12:34 PM

Name: ADVANCE ENERGY PARTNERS HAT MESA LLC

Title: Engineer Tech

Street Address: 11490 Westheimer Suite 950

City: Houston **State:** TX

Phone: (346) 444-9739

Email address: dmoughon@advanceenergypartners.com

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

BLM Point of Contact

BLM POC Name: LONG VO

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5759885402

BLM POC Email Address: LVO@BLM.GOV

Disposition: Approved

Disposition Date: 05/10/2021

Signature: Long Vo

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☐ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

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

11. Country or Parish, State

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

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

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

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

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title

Date

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

Office

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law 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, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the 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., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
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 ofthis form to U.S. Department ofthe Interior, Bureau ofLand Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: NWNW / 1046 FNL / 777 FWL / TWSP: 21S / RANGE: 32E / SECTION: 13 / LAT: 32.483292 / LONG: -103.634423 (TVD: 0 feet, MD: 0 feet)

PPP: NWNW / 1291 FNL / 861 FWL / TWSP: 21S / RANGE: 32E / SECTION: 13 / LAT: 32.4826211 / LONG: -103.6341508 (TVD: 11765 feet, MD: 11773 feet)

PPP: SWSW / 1320 FSL / 990 FWL / TWSP: 21S / RANGE: 32E / SECTION: 13 / LAT: 32.475288 / LONG: -103.633757 (TVD: 11900 feet, MD: 20862 feet)

PPP: NWNW / 0 FNL / 990 FWL / TWSP: 21S / RANGE: 32E / SECTION: 24 / LAT: 32.4717 / LONG: -103.63375 (TVD: 11900 feet, MD: 21270 feet)

PPP: NWSW / 2640 FSL / 990 FWL / TWSP: 21S / RANGE: 32E / SECTION: 24 / LAT: 32.464435 / LONG: -103.633772 (TVD: 11900 feet, MD: 22073 feet)

BHL: SWNW / 2540 FNL / 990 FWL / TWSP: 21S / RANGE: 32E / SECTION: 25 / LAT: 32.450144 / LONG: -103.633794 (TVD: 11900 feet, MD: 23652 feet)

Advance Energy Partners

Hat Mesa
Margarita Federal Com - Pad D
Margarita 13 Federal Com 17H

ST - Margarita 13 Federal Com 17H

Plan: Margarita 13 Federal Com 17H - Prelim 4

Standard Planning Report

20 January, 2021

ADVANCE ENERGY PARTNERS

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Company:	Advance Energy Partners	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Project:	Hat Mesa	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site:	Margarita Federal Com - Pad D	**North Reference:**	Grid
Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST - Margarita 13 Federal Com 17H		
Design:	Margarita 13 Federal Com 17H - Prelim 4		

Project Hat Mesa, Lea County, NM

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Margarita Federal Com - Pad D

Site Position:		**Northing:**	540,257.17 usft	**Latitude:**	32° 28' 59.848 N
From:	Lat/Long	**Easting:**	756,717.53 usft	**Longitude:**	103° 38' 5.464 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "		

Well Margarita 13 Federal Com 17H

Well Position	**+N/-S**	0.0 usft	**Northing:**	540,258.40 usft	**Latitude:**	32° 28' 59.851 N
	+E/-W	0.0 usft	**Easting:**	756,849.51 usft	**Longitude:**	103° 38' 3.923 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,917.0 usft
Grid Convergence:		0.38 °				

Wellbore ST - Margarita 13 Federal Com 17H

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/3/2020	6.70	60.25	47,793.22786980

Design Margarita 13 Federal Com 17H - Prelim 4

Audit Notes:

Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	177.66

Plan Survey Tool Program **Date** 1/20/2021

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	23,605.5	Margarita 13 Federal Com 17H -	MWD+HRGM	
				OWSG MWD + HRGM	

ADVANCE ENERGY PARTNERS

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Company:	Advance Energy Partners	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Project:	Hat Mesa	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site:	Margarita Federal Com - Pad D	**North Reference:**	Grid
Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST - Margarita 13 Federal Com 17H		
Design:	Margarita 13 Federal Com 17H - Prelim 4		

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
6,010.0	2.10	170.54	6,010.0	-3.8	0.6	1.00	1.00	0.00	170.54	
9,949.9	2.10	170.54	9,947.2	-146.2	24.4	0.00	0.00	0.00	0.00	
10,159.9	0.00	0.00	10,157.2	-150.0	25.0	1.00	-1.00	0.00	180.00	
10,977.7	0.00	0.00	10,975.0	-150.0	25.0	0.00	0.00	0.00	0.00	
11,294.4	31.67	80.53	11,275.8	-136.0	109.2	10.00	10.00	0.00	80.53	
12,242.3	90.00	179.70	11,806.0	-705.1	435.1	10.00	6.15	10.46	97.83	Margarita 13 Federal
12,358.6	87.67	179.70	11,808.4	-821.4	435.7	2.00	-2.00	0.00	179.94	
14,443.4	87.67	179.70	11,893.0	-2,904.5	446.5	0.00	0.00	0.00	0.00	Margarita 13 Federal
14,547.8	85.59	179.71	11,899.1	-3,008.6	447.0	2.00	-2.00	0.01	179.81	
16,638.3	85.59	179.71	12,060.0	-5,092.9	457.6	0.00	0.00	0.00	0.00	Margarita 13 Federal
16,786.9	88.56	179.71	12,067.6	-5,241.3	458.4	2.00	2.00	0.00	0.01	
19,150.5	88.56	179.71	12,127.0	-7,604.1	470.3	0.00	0.00	0.00	0.00	Margarita 13 Federal
19,307.7	91.71	179.71	12,126.6	-7,761.4	471.1	2.00	2.00	0.00	-0.01	
20,908.3	91.71	179.71	12,079.0	-9,361.2	479.2	0.00	0.00	0.00	0.00	Margarita 13 Federal
21,116.3	87.54	179.71	12,080.4	-9,569.2	480.3	2.00	-2.00	0.00	-179.97	
23,605.5	87.54	179.71	12,187.0	-12,056.0	492.9	0.00	0.00	0.00	0.00	Margarita 13 Federal

ADVANCE ENERGY PARTNERS

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Company:	Advance Energy Partners	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Project:	Hat Mesa	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site:	Margarita Federal Com - Pad D	**North Reference:**	Grid
Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST - Margarita 13 Federal Com 17H		
Design:	Margarita 13 Federal Com 17H - Prelim 4		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,650.0	0.00	0.00	1,650.0	0.0	0.0	0.0	0.00	0.00	0.00
Rustler									
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,318.0	0.00	0.00	3,318.0	0.0	0.0	0.0	0.00	0.00	0.00
Tansill									
3,361.0	0.00	0.00	3,361.0	0.0	0.0	0.0	0.00	0.00	0.00
Yates									
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,565.0	0.00	0.00	3,565.0	0.0	0.0	0.0	0.00	0.00	0.00
Seven Rivers									
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,706.0	0.00	0.00	3,706.0	0.0	0.0	0.0	0.00	0.00	0.00
Capitan Reef									
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00

ADVANCE ENERGY PARTNERS

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Company:	Advance Energy Partners	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Project:	Hat Mesa	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site:	Margarita Federal Com - Pad D	**North Reference:**	Grid
Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST - Margarita 13 Federal Com 17H		
Design:	Margarita 13 Federal Com 17H - Prelim 4		

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)
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,483.0	0.00	0.00	5,483.0	0.0	0.0	0.0	0.00	0.00	0.00
Base of Limestone									
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.00									
5,900.0	1.00	170.54	5,900.0	-0.9	0.1	0.9	1.00	1.00	0.00
6,000.0	2.00	170.54	6,000.0	-3.4	0.6	3.5	1.00	1.00	0.00
6,010.0	2.10	170.54	6,010.0	-3.8	0.6	3.8	1.00	1.00	0.00
Start 3939.9 hold at 6010.0 MD									
6,100.0	2.10	170.54	6,099.9	-7.0	1.2	7.1	0.00	0.00	0.00
6,200.0	2.10	170.54	6,199.8	-10.7	1.8	10.7	0.00	0.00	0.00
6,300.0	2.10	170.54	6,299.8	-14.3	2.4	14.4	0.00	0.00	0.00
6,400.0	2.10	170.54	6,399.7	-17.9	3.0	18.0	0.00	0.00	0.00
6,500.0	2.10	170.54	6,499.6	-21.5	3.6	21.6	0.00	0.00	0.00
6,600.0	2.10	170.54	6,599.6	-25.1	4.2	25.3	0.00	0.00	0.00
6,700.0	2.10	170.54	6,699.5	-28.7	4.8	28.9	0.00	0.00	0.00
6,800.0	2.10	170.54	6,799.4	-32.4	5.4	32.5	0.00	0.00	0.00
6,900.0	2.10	170.54	6,899.4	-36.0	6.0	36.2	0.00	0.00	0.00
7,000.0	2.10	170.54	6,999.3	-39.6	6.6	39.8	0.00	0.00	0.00
7,100.0	2.10	170.54	7,099.2	-43.2	7.2	43.5	0.00	0.00	0.00
7,200.0	2.10	170.54	7,199.2	-46.8	7.8	47.1	0.00	0.00	0.00
7,300.0	2.10	170.54	7,299.1	-50.4	8.4	50.7	0.00	0.00	0.00
7,400.0	2.10	170.54	7,399.0	-54.0	9.0	54.4	0.00	0.00	0.00
7,500.0	2.10	170.54	7,499.0	-57.7	9.6	58.0	0.00	0.00	0.00
7,600.0	2.10	170.54	7,598.9	-61.3	10.2	61.6	0.00	0.00	0.00
7,700.0	2.10	170.54	7,698.8	-64.9	10.8	65.3	0.00	0.00	0.00
7,800.0	2.10	170.54	7,798.8	-68.5	11.4	68.9	0.00	0.00	0.00
7,900.0	2.10	170.54	7,898.7	-72.1	12.0	72.5	0.00	0.00	0.00
8,000.0	2.10	170.54	7,998.6	-75.7	12.6	76.2	0.00	0.00	0.00
8,100.0	2.10	170.54	8,098.5	-79.3	13.2	79.8	0.00	0.00	0.00
8,200.0	2.10	170.54	8,198.5	-83.0	13.8	83.4	0.00	0.00	0.00
8,300.0	2.10	170.54	8,298.4	-86.6	14.4	87.1	0.00	0.00	0.00
8,400.0	2.10	170.54	8,398.3	-90.2	15.0	90.7	0.00	0.00	0.00
8,500.0	2.10	170.54	8,498.3	-93.8	15.6	94.4	0.00	0.00	0.00
8,600.0	2.10	170.54	8,598.2	-97.4	16.2	98.0	0.00	0.00	0.00
8,610.8	2.10	170.54	8,609.0	-97.8	16.3	98.4	0.00	0.00	0.00
Lower Brushy									
8,700.0	2.10	170.54	8,698.1	-101.0	16.8	101.6	0.00	0.00	0.00
8,800.0	2.10	170.54	8,798.1	-104.6	17.4	105.3	0.00	0.00	0.00
8,900.0	2.10	170.54	8,898.0	-108.3	18.0	108.9	0.00	0.00	0.00

ADVANCE ENERGY PARTNERS

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Company:	Advance Energy Partners	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Project:	Hat Mesa	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site:	Margarita Federal Com - Pad D	**North Reference:**	Grid
Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST - Margarita 13 Federal Com 17H		
Design:	Margarita 13 Federal Com 17H - Prelim 4		

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)
9,000.0	2.10	170.54	8,997.9	-111.9	18.6	112.5	0.00	0.00	0.00
9,066.1	2.10	170.54	9,064.0	-114.3	19.0	114.9	0.00	0.00	0.00
Avalon									
9,100.0	2.10	170.54	9,097.9	-115.5	19.2	116.2	0.00	0.00	0.00
9,200.0	2.10	170.54	9,197.8	-119.1	19.8	119.8	0.00	0.00	0.00
9,300.0	2.10	170.54	9,297.7	-122.7	20.5	123.4	0.00	0.00	0.00
9,400.0	2.10	170.54	9,397.7	-126.3	21.1	127.1	0.00	0.00	0.00
9,500.0	2.10	170.54	9,497.6	-129.9	21.7	130.7	0.00	0.00	0.00
9,600.0	2.10	170.54	9,597.5	-133.6	22.3	134.4	0.00	0.00	0.00
9,700.0	2.10	170.54	9,697.5	-137.2	22.9	138.0	0.00	0.00	0.00
9,800.0	2.10	170.54	9,797.4	-140.8	23.5	141.6	0.00	0.00	0.00
9,900.0	2.10	170.54	9,897.3	-144.4	24.1	145.3	0.00	0.00	0.00
9,949.9	2.10	170.54	9,947.2	-146.2	24.4	147.1	0.00	0.00	0.00
Start Drop -1.00									
9,953.7	2.06	170.54	9,951.0	-146.3	24.4	147.2	1.00	-1.00	0.00
1st BS Sand									
10,000.0	1.60	170.54	9,997.3	-147.8	24.6	148.7	1.00	-1.00	0.00
10,100.0	0.60	170.54	10,097.3	-149.7	24.9	150.6	1.00	-1.00	0.00
10,159.9	0.00	0.00	10,157.2	-150.0	25.0	150.9	1.00	-1.00	0.00
Start 817.8 hold at 10159.9 MD									
10,200.0	0.00	0.00	10,197.3	-150.0	25.0	150.9	0.00	0.00	0.00
10,300.0	0.00	0.00	10,297.3	-150.0	25.0	150.9	0.00	0.00	0.00
10,400.0	0.00	0.00	10,397.3	-150.0	25.0	150.9	0.00	0.00	0.00
10,474.7	0.00	0.00	10,472.0	-150.0	25.0	150.9	0.00	0.00	0.00
2nd BS Sand									
10,500.0	0.00	0.00	10,497.3	-150.0	25.0	150.9	0.00	0.00	0.00
10,600.0	0.00	0.00	10,597.3	-150.0	25.0	150.9	0.00	0.00	0.00
10,700.0	0.00	0.00	10,697.3	-150.0	25.0	150.9	0.00	0.00	0.00
10,800.0	0.00	0.00	10,797.3	-150.0	25.0	150.9	0.00	0.00	0.00
10,900.0	0.00	0.00	10,897.3	-150.0	25.0	150.9	0.00	0.00	0.00
10,977.7	0.00	0.00	10,975.0	-150.0	25.0	150.9	0.00	0.00	0.00
KOP #2 - Start Build 10.00									
11,000.0	2.23	80.53	10,997.3	-149.9	25.4	150.8	10.00	10.00	0.00
11,029.8	5.21	80.53	11,027.0	-149.6	27.3	150.6	10.00	10.00	0.00
3rd BS Carb									
11,100.0	12.23	80.53	11,096.3	-147.9	37.8	149.3	10.00	10.00	0.00
11,200.0	22.23	80.53	11,191.7	-143.0	67.0	145.6	10.00	10.00	0.00
11,294.4	31.67	80.53	11,275.8	-136.0	109.2	140.3	10.00	10.00	0.00
Start DLS 10.00 TFO 97.83									
11,300.0	31.60	81.58	11,280.5	-135.5	112.1	140.0	10.00	-1.28	18.91
11,400.0	31.82	100.67	11,365.8	-136.5	164.0	143.1	10.00	0.21	19.09
11,500.0	34.72	118.18	11,449.6	-154.9	215.1	163.6	10.00	2.90	17.51
11,600.0	39.72	132.55	11,529.4	-190.1	263.9	200.7	10.00	5.00	14.37
11,654.1	43.05	139.01	11,570.0	-215.7	288.8	227.3	10.00	6.16	11.93
3rd BS Sand									
11,700.0	46.13	143.86	11,602.7	-240.9	308.8	253.3	10.00	6.71	10.57
11,800.0	53.43	152.84	11,667.3	-305.9	348.5	319.9	10.00	7.30	8.98
11,900.0	61.28	160.21	11,721.2	-383.1	381.8	398.4	10.00	7.85	7.37
12,000.0	69.48	166.52	11,762.9	-470.1	407.6	486.4	10.00	8.20	6.31
12,009.0	70.23	167.06	11,766.0	-478.4	409.5	494.7	10.00	8.33	5.90
Wolfcamp A									
12,100.0	77.88	172.19	11,791.0	-564.3	425.2	581.2	10.00	8.41	5.64

ADVANCE ENERGY PARTNERS

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Company:	Advance Energy Partners	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Project:	Hat Mesa	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site:	Margarita Federal Com - Pad D	**North Reference:**	Grid
Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST - Margarita 13 Federal Com 17H		
Design:	Margarita 13 Federal Com 17H - Prelim 4		

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)
12,200.0	86.39	177.50	11,804.7	-662.9	434.0	680.1	10.00	8.51	5.31
12,242.3	90.00	179.70	11,806.0	-705.1	435.1	722.3	10.00	8.54	5.21
LP - Start DLS 2.00 TFO 179.94 - Margarita 13 Federal Com 17H LP									
12,300.0	88.85	179.70	11,806.6	-762.8	435.4	780.0	2.00	-2.00	0.00
12,358.6	87.67	179.70	11,808.4	-821.4	435.7	838.5	2.00	-2.00	0.00
Start 2084.8 hold at 12358.6 MD									
12,400.0	87.67	179.70	11,810.0	-862.8	435.9	879.9	0.00	0.00	0.00
12,500.0	87.67	179.70	11,814.1	-962.7	436.4	979.7	0.00	0.00	0.00
12,600.0	87.67	179.70	11,818.2	-1,062.6	436.9	1,079.6	0.00	0.00	0.00
12,700.0	87.67	179.70	11,822.2	-1,162.5	437.5	1,179.4	0.00	0.00	0.00
12,800.0	87.67	179.70	11,826.3	-1,262.4	438.0	1,279.3	0.00	0.00	0.00
12,900.0	87.67	179.70	11,830.3	-1,362.3	438.5	1,379.1	0.00	0.00	0.00
13,000.0	87.67	179.70	11,834.4	-1,462.3	439.0	1,479.0	0.00	0.00	0.00
13,100.0	87.67	179.70	11,838.5	-1,562.2	439.5	1,578.8	0.00	0.00	0.00
13,200.0	87.67	179.70	11,842.5	-1,662.1	440.0	1,678.7	0.00	0.00	0.00
13,300.0	87.67	179.70	11,846.6	-1,762.0	440.6	1,778.5	0.00	0.00	0.00
13,400.0	87.67	179.70	11,850.6	-1,861.9	441.1	1,878.4	0.00	0.00	0.00
13,500.0	87.67	179.70	11,854.7	-1,961.8	441.6	1,978.2	0.00	0.00	0.00
13,600.0	87.67	179.70	11,858.8	-2,061.8	442.1	2,078.1	0.00	0.00	0.00
13,700.0	87.67	179.70	11,862.8	-2,161.7	442.6	2,178.0	0.00	0.00	0.00
13,800.0	87.67	179.70	11,866.9	-2,261.6	443.2	2,277.8	0.00	0.00	0.00
13,900.0	87.67	179.70	11,870.9	-2,361.5	443.7	2,377.7	0.00	0.00	0.00
14,000.0	87.67	179.70	11,875.0	-2,461.4	444.2	2,477.5	0.00	0.00	0.00
14,100.0	87.67	179.70	11,879.1	-2,561.3	444.7	2,577.4	0.00	0.00	0.00
14,200.0	87.67	179.70	11,883.1	-2,661.3	445.2	2,677.2	0.00	0.00	0.00
14,300.0	87.67	179.70	11,887.2	-2,761.2	445.8	2,777.1	0.00	0.00	0.00
14,400.0	87.67	179.70	11,891.2	-2,861.1	446.3	2,876.9	0.00	0.00	0.00
14,443.4	87.67	179.70	11,893.0	-2,904.5	446.5	2,920.3	0.00	0.00	0.00
WP1 - Start DLS 2.00 TFO 179.81 - Margarita 13 Federal Com 17H WP1									
14,500.0	86.54	179.71	11,895.9	-2,961.0	446.8	2,976.8	2.00	-2.00	0.01
14,547.8	85.59	179.71	11,899.1	-3,008.6	447.0	3,024.4	2.00	-2.00	0.01
Start 2090.5 hold at 14547.8 MD									
14,600.0	85.59	179.71	11,903.2	-3,060.7	447.3	3,076.4	0.00	0.00	0.00
14,700.0	85.59	179.71	11,910.8	-3,160.4	447.8	3,176.1	0.00	0.00	0.00
14,800.0	85.59	179.71	11,918.5	-3,260.1	448.3	3,275.7	0.00	0.00	0.00
14,900.0	85.59	179.71	11,926.2	-3,359.8	448.8	3,375.3	0.00	0.00	0.00
15,000.0	85.59	179.71	11,933.9	-3,459.5	449.3	3,475.0	0.00	0.00	0.00
15,100.0	85.59	179.71	11,941.6	-3,559.2	449.8	3,574.6	0.00	0.00	0.00
15,200.0	85.59	179.71	11,949.3	-3,658.9	450.3	3,674.3	0.00	0.00	0.00
15,300.0	85.59	179.71	11,957.0	-3,758.6	450.8	3,773.9	0.00	0.00	0.00
15,400.0	85.59	179.71	11,964.7	-3,858.3	451.3	3,873.5	0.00	0.00	0.00
15,500.0	85.59	179.71	11,972.4	-3,958.0	451.8	3,973.2	0.00	0.00	0.00
15,600.0	85.59	179.71	11,980.1	-4,057.7	452.4	4,072.8	0.00	0.00	0.00
15,700.0	85.59	179.71	11,987.8	-4,157.4	452.9	4,172.5	0.00	0.00	0.00
15,800.0	85.59	179.71	11,995.5	-4,257.1	453.4	4,272.1	0.00	0.00	0.00
15,900.0	85.59	179.71	12,003.2	-4,356.8	453.9	4,371.7	0.00	0.00	0.00
16,000.0	85.59	179.71	12,010.9	-4,456.5	454.4	4,471.4	0.00	0.00	0.00
16,100.0	85.59	179.71	12,018.6	-4,556.2	454.9	4,571.0	0.00	0.00	0.00
16,200.0	85.59	179.71	12,026.3	-4,655.9	455.4	4,670.7	0.00	0.00	0.00
16,300.0	85.59	179.71	12,034.0	-4,755.6	455.9	4,770.3	0.00	0.00	0.00
16,400.0	85.59	179.71	12,041.7	-4,855.3	456.4	4,869.9	0.00	0.00	0.00
16,500.0	85.59	179.71	12,049.4	-4,955.1	456.9	4,969.6	0.00	0.00	0.00
16,600.0	85.59	179.71	12,057.1	-5,054.8	457.4	5,069.2	0.00	0.00	0.00
16,638.3	85.59	179.71	12,060.0	-5,092.9	457.6	5,107.3	0.00	0.00	0.00

ADVANCE ENERGY PARTNERS

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Company:	Advance Energy Partners	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Project:	Hat Mesa	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site:	Margarita Federal Com - Pad D	**North Reference:**	Grid
Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST - Margarita 13 Federal Com 17H		
Design:	Margarita 13 Federal Com 17H - Prelim 4		

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)
WP2 - Start DLS 2.00 TFO 0.01 - Margarita 13 Federal Com 17H WP2									
16,700.0	86.82	179.71	12,064.1	-5,154.5	457.9	5,168.9	2.00	2.00	0.00
16,786.9	88.56	179.71	12,067.6	-5,241.3	458.4	5,255.7	2.00	2.00	0.00
Start 2363.5 hold at 16786.9 MD									
16,800.0	88.56	179.71	12,067.9	-5,254.4	458.4	5,268.8	0.00	0.00	0.00
16,900.0	88.56	179.71	12,070.4	-5,354.4	458.9	5,368.7	0.00	0.00	0.00
17,000.0	88.56	179.71	12,072.9	-5,454.4	459.4	5,468.6	0.00	0.00	0.00
17,100.0	88.56	179.71	12,075.5	-5,554.3	459.9	5,568.5	0.00	0.00	0.00
17,200.0	88.56	179.71	12,078.0	-5,654.3	460.4	5,668.4	0.00	0.00	0.00
17,300.0	88.56	179.71	12,080.5	-5,754.3	460.9	5,768.3	0.00	0.00	0.00
17,400.0	88.56	179.71	12,083.0	-5,854.2	461.5	5,868.2	0.00	0.00	0.00
17,500.0	88.56	179.71	12,085.5	-5,954.2	462.0	5,968.1	0.00	0.00	0.00
17,600.0	88.56	179.71	12,088.0	-6,054.2	462.5	6,068.0	0.00	0.00	0.00
17,700.0	88.56	179.71	12,090.5	-6,154.1	463.0	6,167.9	0.00	0.00	0.00
17,800.0	88.56	179.71	12,093.1	-6,254.1	463.5	6,267.8	0.00	0.00	0.00
17,900.0	88.56	179.71	12,095.6	-6,354.1	464.0	6,367.7	0.00	0.00	0.00
18,000.0	88.56	179.71	12,098.1	-6,454.0	464.5	6,467.6	0.00	0.00	0.00
18,100.0	88.56	179.71	12,100.6	-6,554.0	465.0	6,567.5	0.00	0.00	0.00
18,200.0	88.56	179.71	12,103.1	-6,654.0	465.5	6,667.4	0.00	0.00	0.00
18,300.0	88.56	179.71	12,105.6	-6,753.9	466.0	6,767.3	0.00	0.00	0.00
18,400.0	88.56	179.71	12,108.1	-6,853.9	466.5	6,867.2	0.00	0.00	0.00
18,500.0	88.56	179.71	12,110.6	-6,953.9	467.0	6,967.1	0.00	0.00	0.00
18,600.0	88.56	179.71	12,113.2	-7,053.8	467.5	7,067.0	0.00	0.00	0.00
18,700.0	88.56	179.71	12,115.7	-7,153.8	468.0	7,166.9	0.00	0.00	0.00
18,800.0	88.56	179.71	12,118.2	-7,253.8	468.5	7,266.8	0.00	0.00	0.00
18,900.0	88.56	179.71	12,120.7	-7,353.7	469.0	7,366.8	0.00	0.00	0.00
19,000.0	88.56	179.71	12,123.2	-7,453.7	469.5	7,466.7	0.00	0.00	0.00
19,100.0	88.56	179.71	12,125.7	-7,553.7	470.0	7,566.6	0.00	0.00	0.00
19,150.5	88.56	179.71	12,127.0	-7,604.1	470.3	7,617.0	0.00	0.00	0.00
WP3 - Start DLS 2.00 TFO -0.01 - Margarita 13 Federal Com 17H WP3									
19,200.0	89.55	179.71	12,127.8	-7,653.6	470.6	7,666.5	2.00	2.00	0.00
19,300.0	91.55	179.71	12,126.9	-7,753.6	471.1	7,766.4	2.00	2.00	0.00
19,307.7	91.71	179.71	12,126.6	-7,761.4	471.1	7,774.1	2.00	2.00	0.00
Start 1600.6 hold at 19307.7 MD									
19,400.0	91.71	179.71	12,123.9	-7,853.6	471.6	7,866.3	0.00	0.00	0.00
19,500.0	91.71	179.71	12,120.9	-7,953.5	472.1	7,966.2	0.00	0.00	0.00
19,600.0	91.71	179.71	12,117.9	-8,053.5	472.6	8,066.1	0.00	0.00	0.00
19,700.0	91.71	179.71	12,115.0	-8,153.4	473.1	8,166.0	0.00	0.00	0.00
19,800.0	91.71	179.71	12,112.0	-8,253.4	473.6	8,265.9	0.00	0.00	0.00
19,900.0	91.71	179.71	12,109.0	-8,353.4	474.1	8,365.8	0.00	0.00	0.00
20,000.0	91.71	179.71	12,106.0	-8,453.3	474.6	8,465.6	0.00	0.00	0.00
20,100.0	91.71	179.71	12,103.1	-8,553.3	475.1	8,565.5	0.00	0.00	0.00
20,200.0	91.71	179.71	12,100.1	-8,653.2	475.6	8,665.4	0.00	0.00	0.00
20,300.0	91.71	179.71	12,097.1	-8,753.2	476.1	8,765.3	0.00	0.00	0.00
20,400.0	91.71	179.71	12,094.1	-8,853.1	476.6	8,865.2	0.00	0.00	0.00
20,500.0	91.71	179.71	12,091.2	-8,953.1	477.1	8,965.1	0.00	0.00	0.00
20,600.0	91.71	179.71	12,088.2	-9,053.0	477.6	9,065.0	0.00	0.00	0.00
20,700.0	91.71	179.71	12,085.2	-9,153.0	478.1	9,164.9	0.00	0.00	0.00
20,800.0	91.71	179.71	12,082.2	-9,252.9	478.7	9,264.8	0.00	0.00	0.00
20,900.0	91.71	179.71	12,079.2	-9,352.9	479.2	9,364.7	0.00	0.00	0.00
20,908.3	91.71	179.71	12,079.0	-9,361.2	479.2	9,373.0	0.00	0.00	0.00
WP4 - Start DLS 2.00 TFO -179.97 - Margarita 13 Federal Com 17H WP4									
21,000.0	89.87	179.71	12,077.7	-9,452.9	479.7	9,464.6	2.00	-2.00	0.00

ADVANCE ENERGY PARTNERS

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Company:	Advance Energy Partners	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Project:	Hat Mesa	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site:	Margarita Federal Com - Pad D	**North Reference:**	Grid
Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST - Margarita 13 Federal Com 17H		
Design:	Margarita 13 Federal Com 17H - Prelim 4		

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)
21,100.0	87.87	179.71	12,079.7	-9,552.9	480.2	9,564.5	2.00	-2.00	0.00
21,116.3	87.54	179.71	12,080.4	-9,569.2	480.3	9,580.8	2.00	-2.00	0.00
Start 2489.1 hold at 21116.3 MD									
21,200.0	87.54	179.71	12,083.9	-9,652.8	480.7	9,664.3	0.00	0.00	0.00
21,300.0	87.54	179.71	12,088.2	-9,752.7	481.2	9,764.2	0.00	0.00	0.00
21,400.0	87.54	179.71	12,092.5	-9,852.6	481.7	9,864.0	0.00	0.00	0.00
21,500.0	87.54	179.71	12,096.8	-9,952.5	482.2	9,963.9	0.00	0.00	0.00
21,600.0	87.54	179.71	12,101.1	-10,052.4	482.7	10,063.7	0.00	0.00	0.00
21,700.0	87.54	179.71	12,105.4	-10,152.3	483.2	10,163.6	0.00	0.00	0.00
21,800.0	87.54	179.71	12,109.6	-10,252.2	483.7	10,263.4	0.00	0.00	0.00
21,900.0	87.54	179.71	12,113.9	-10,352.1	484.2	10,363.3	0.00	0.00	0.00
22,000.0	87.54	179.71	12,118.2	-10,452.0	484.8	10,463.1	0.00	0.00	0.00
22,100.0	87.54	179.71	12,122.5	-10,551.9	485.3	10,562.9	0.00	0.00	0.00
22,200.0	87.54	179.71	12,126.8	-10,651.8	485.8	10,662.8	0.00	0.00	0.00
22,300.0	87.54	179.71	12,131.1	-10,751.7	486.3	10,762.6	0.00	0.00	0.00
22,400.0	87.54	179.71	12,135.4	-10,851.6	486.8	10,862.5	0.00	0.00	0.00
22,500.0	87.54	179.71	12,139.6	-10,951.6	487.3	10,962.3	0.00	0.00	0.00
22,600.0	87.54	179.71	12,143.9	-11,051.5	487.8	11,062.2	0.00	0.00	0.00
22,700.0	87.54	179.71	12,148.2	-11,151.4	488.3	11,162.0	0.00	0.00	0.00
22,800.0	87.54	179.71	12,152.5	-11,251.3	488.8	11,261.9	0.00	0.00	0.00
22,900.0	87.54	179.71	12,156.8	-11,351.2	489.3	11,361.7	0.00	0.00	0.00
23,000.0	87.54	179.71	12,161.1	-11,451.1	489.9	11,461.5	0.00	0.00	0.00
23,100.0	87.54	179.71	12,165.3	-11,551.0	490.4	11,561.4	0.00	0.00	0.00
23,200.0	87.54	179.71	12,169.6	-11,650.9	490.9	11,661.2	0.00	0.00	0.00
23,300.0	87.54	179.71	12,173.9	-11,750.8	491.4	11,761.1	0.00	0.00	0.00
23,400.0	87.54	179.71	12,178.2	-11,850.7	491.9	11,860.9	0.00	0.00	0.00
23,500.0	87.54	179.71	12,182.5	-11,950.6	492.4	11,960.8	0.00	0.00	0.00
23,600.0	87.54	179.71	12,186.8	-12,050.5	492.9	12,060.6	0.00	0.00	0.00
23,605.5	87.54	179.71	12,187.0	-12,056.0	492.9	12,066.1	0.00	0.00	0.00
TD at 23605.5 - Margarita 13 Federal Com 17H BHL									

ADVANCE ENERGY PARTNERS

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Company:	Advance Energy Partners	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Project:	Hat Mesa	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site:	Margarita Federal Com - Pad D	**North Reference:**	Grid
Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST - Margarita 13 Federal Com 17H		
Design:	Margarita 13 Federal Com 17H - Prelim 4		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Margarita 13 Federal Co - plan hits target center - Point	0.00	0.01	11,806.0	-705.1	435.1	539,553.30	757,284.59	32° 28' 52.846 N	103° 37' 58.898 W
Margarita 13 Federal Co - plan hits target center - Point	0.00	0.00	11,893.0	-2,904.5	446.5	537,353.90	757,296.01	32° 28' 31.082 N	103° 37' 58.933 W
Margarita 13 Federal Co - plan hits target center - Point	0.00	0.00	12,060.0	-5,092.9	457.6	535,165.50	757,307.11	32° 28' 9.428 N	103° 37' 58.971 W
Margarita 13 Federal Co - plan hits target center - Point	0.00	0.00	12,079.0	-9,361.2	479.2	530,897.20	757,328.71	32° 27' 27.192 N	103° 37' 59.046 W
Margarita 13 Federal Co - plan hits target center - Point	0.00	0.00	12,127.0	-7,604.1	470.3	532,654.30	757,319.81	32° 27' 44.579 N	103° 37' 59.015 W
Margarita 13 Federal Co - plan hits target center - Point	0.00	0.00	12,187.0	-12,056.0	492.9	528,202.38	757,342.45	32° 27' 0.526 N	103° 37' 59.092 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
12,242.3	11,806.0	LP - 17H	5-1/2	5-1/2

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,650.0	1,650.0	Rustler		0.00	
3,318.0	3,318.0	Tansill		0.00	
3,361.0	3,361.0	Yates		0.00	
3,565.0	3,565.0	Seven Rivers		0.00	
3,706.0	3,706.0	Capitan Reef		0.00	
5,483.0	5,483.0	Base of Limestone		0.00	
8,610.8	8,609.0	Lower Brushy		0.00	
9,066.1	9,064.0	Avalon		0.00	
9,953.7	9,951.0	1st BS Sand		0.00	
10,474.7	10,472.0	2nd BS Sand		0.00	
11,029.8	11,027.0	3rd BS Carb		0.00	
11,654.1	11,570.0	3rd BS Sand		0.00	
12,009.0	11,766.0	Wolfcamp A		0.00	

ADVANCE ENERGY PARTNERS

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Company:	Advance Energy Partners	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Project:	Hat Mesa	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site:	Margarita Federal Com - Pad D	**North Reference:**	Grid
Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST - Margarita 13 Federal Com 17H		
Design:	Margarita 13 Federal Com 17H - Prelim 4		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
5,800.0	5,800.0	0.0	0.0	KOP - Start Build 1.00
6,010.0	6,010.0	-3.8	0.6	Start 3939.9 hold at 6010.0 MD
9,949.9	9,947.2	-146.2	24.4	Start Drop -1.00
10,159.9	10,157.2	-150.0	25.0	Start 817.8 hold at 10159.9 MD
10,977.7	10,975.0	-150.0	25.0	KOP #2 - Start Build 10.00
11,294.4	11,275.8	-136.0	109.2	Start DLS 10.00 TFO 97.83
12,242.3	11,806.0	-705.1	435.1	LP - Start DLS 2.00 TFO 179.94
12,358.6	11,808.4	-821.4	435.7	Start 2084.8 hold at 12358.6 MD
14,443.4	11,893.0	-2,904.5	446.5	WP1 - Start DLS 2.00 TFO 179.81
14,547.8	11,899.1	-3,008.6	447.0	Start 2090.5 hold at 14547.8 MD
16,638.3	12,060.0	-5,092.9	457.6	WP2 - Start DLS 2.00 TFO 0.01
16,786.9	12,067.6	-5,241.3	458.4	Start 2363.5 hold at 16786.9 MD
19,150.5	12,127.0	-7,604.1	470.3	WP3 - Start DLS 2.00 TFO -0.01
19,307.7	12,126.6	-7,761.4	471.1	Start 1600.6 hold at 19307.7 MD
20,908.3	12,079.0	-9,361.2	479.2	WP4 - Start DLS 2.00 TFO -179.97
21,116.3	12,080.4	-9,569.2	480.3	Start 2489.1 hold at 21116.3 MD
23,605.5	12,187.0	-12,056.0	492.9	TD at 23605.5

ADVANCE ENERGY PARTNERS

WELL DETAILS: Margarita 13 Federal Com 17H

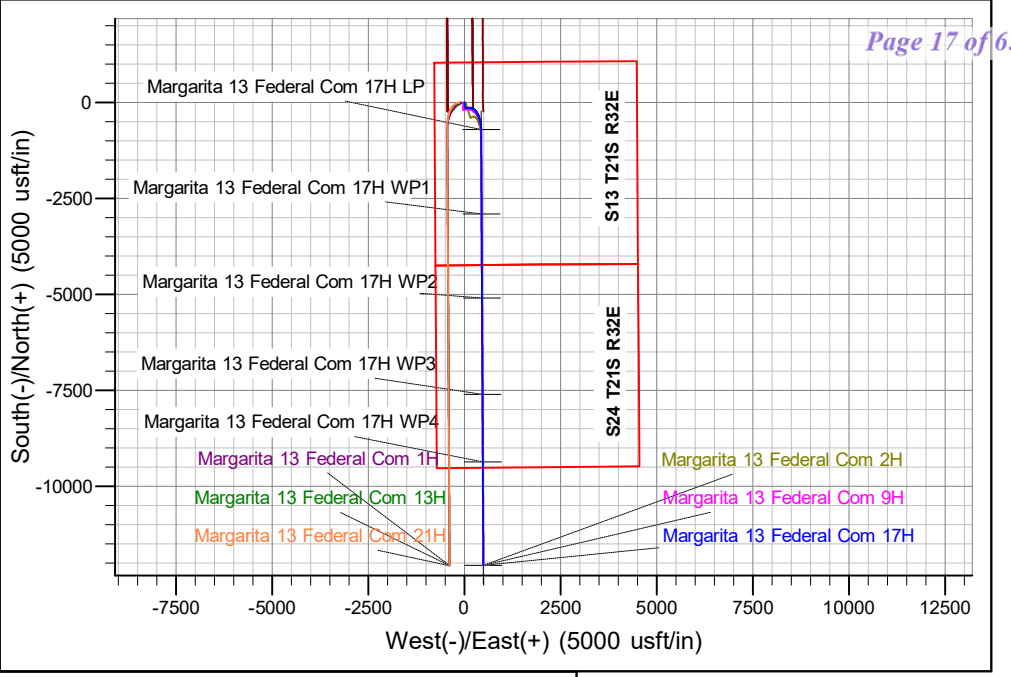
Ground Elev: 3917.0 KB: 3949.5

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.0	0.0	540258.40	756849.51	32° 28' 59.851 N	103° 38' 3.923 W

PROJECT DETAILS: Hat Mesa

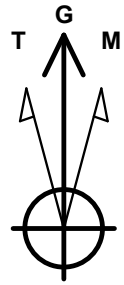
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level



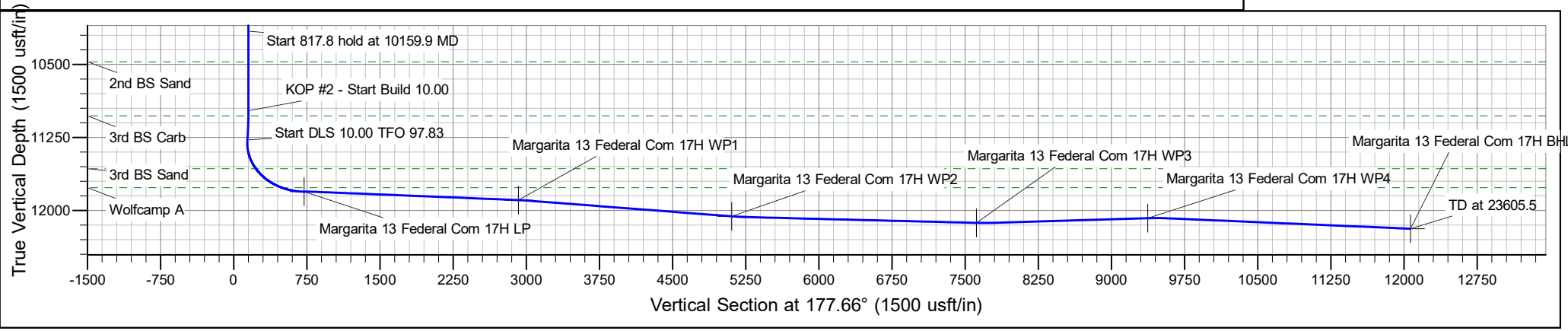
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	5800.0	0.00	0.00	5800.0	0.0	0.0	0.00	0.00	0.0	KOP - Start Build 1.00
3	6010.0	2.10	170.54	6010.0	-3.8	0.6	1.00	170.54	3.8	Start 3939.9 hold at 6010.0 MD
4	9949.9	2.10	170.54	9947.2	-146.2	24.4	0.00	0.00	147.1	Start Drop -1.00
5	10159.9	0.00	0.00	10157.2	-150.0	25.0	1.00	180.00	150.9	Start 817.8 hold at 10159.9 MD
6	10977.7	0.00	0.00	10975.0	-150.0	25.0	0.00	0.00	150.9	KOP #2 - Start Build 10.00
7	11294.4	31.67	80.53	11275.8	-136.0	109.2	10.00	80.53	140.3	Start DLS 10.00 TFO 97.83
8	12242.3	90.00	179.70	11806.0	-705.1	435.1	10.00	97.83	722.3	LP - Start DLS 2.00 TFO 179.94
9	12358.6	87.67	179.70	11808.4	-821.4	435.7	2.00	179.94	838.5	Start 2084.8 hold at 12358.6 MD
10	14443.4	87.67	179.70	11893.0	-2904.5	446.5	0.00	0.00	2920.3	WP1 - Start DLS 2.00 TFO 179.81
11	14547.8	85.59	179.71	11899.1	-3008.6	447.0	2.00	179.81	3024.4	Start 2090.5 hold at 14547.8 MD
12	16638.3	85.59	179.71	12060.0	-5092.9	457.6	0.00	0.00	5107.3	WP2 - Start DLS 2.00 TFO 0.01
13	16786.9	88.56	179.71	12067.6	-5241.3	458.4	2.00	0.01	5255.7	Start 2363.5 hold at 16786.9 MD
14	19150.5	88.56	179.71	12127.0	-7604.1	470.3	0.00	0.00	7617.0	WP3 - Start DLS 2.00 TFO -0.01
15	19307.7	91.71	179.71	12126.6	-7761.4	471.1	2.00	-0.01	7774.1	Start 1600.6 hold at 19307.7 MD
16	20908.3	91.71	179.71	12079.0	-9361.2	479.2	0.00	0.00	9373.0	WP4 - Start DLS 2.00 TFO -179.97
17	21116.3	87.54	179.71	12080.4	-9569.2	480.3	2.00	-179.97	9580.8	Start 2489.1 hold at 21116.3 MD
18	23605.5	87.54	179.71	12187.0	-12056.0	492.9	0.00	0.00	12066.1	TD at 23605.5



Azimuths to Grid North
True North: -0.38°
Magnetic North: 6.32°

Magnetic Field
Strength: 47793.2nT
Dip Angle: 60.25°
Date: 4/3/2020
Model: IGRF2015



Advance Energy Partners

Hat Mesa
Margarita Federal Com - Pad D
Margarita 13 Federal Com 17H

ST - Margarita 13 Federal Com 17H
Margarita 13 Federal Com 17H - Prelim 4

Anticollision Report

20 January, 2021

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Reference Margarita 13 Federal Com 17H - Prelim

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum centre distance of 1,000.0usft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.79 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 1/20/2021

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	23,605.5	Margarita 13 Federal Com 17H - Prelim 4	MWD+HRGM	OWSG MWD + HRGM

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Big Moose Fed Com						
Big Moose Fed Com 307H - Big Moose Fed Com 307H -	9,324.4	15,764.0	201.8	43.3	1.273	Level 3, CC, ES, SF
Big Moose Fed Com 308H - Big Moose Fed Com 308H -	9,322.6	15,786.0	458.7	300.0	2.890	CC, ES, SF
Big Moose Fed Com 404H - Big Moose Fed Com 404H -	10,111.2	16,656.7	197.6	37.8	1.237	Level 3, CC, ES, SF
Big Moose Fed Com 505H - Big Moose Fed Com 505H -	10,838.8	17,204.6	462.3	303.9	2.918	CC, ES, SF
Big Moose Fed Com 506H - Big Moose Fed Com 506H -	10,913.7	17,168.3	471.7	313.2	2.976	CC, ES, SF
Big Moose Fed Com 604H - Big Moose Fed Com 604H -	11,383.1	18,060.2	679.7	532.6	4.620	CC
Big Moose Fed Com 604H - Big Moose Fed Com 604H -	11,450.0	18,070.3	682.8	531.6	4.515	ES
Big Moose Fed Com 604H - Big Moose Fed Com 604H -	11,550.0	18,099.2	698.2	541.5	4.453	SF
Big Moose Fed Com 707H - Big Moose Fed Com 707H -	11,787.6	18,009.3	210.0	74.2	1.547	CC
Big Moose Fed Com 707H - Big Moose Fed Com 707H -	11,800.0	18,009.3	210.5	74.1	1.543	ES, SF
Big Moose Fed Com 708H - Big Moose Fed Com 708H -	11,584.2	18,519.0	813.2	661.3	5.354	CC
Big Moose Fed Com 708H - Big Moose Fed Com 708H -	11,650.0	18,549.8	815.3	659.7	5.240	ES
Big Moose Fed Com 708H - Big Moose Fed Com 708H -	11,750.0	18,565.7	826.2	665.8	5.152	SF
Margarita Federal Com - Pad D						
Margarita 13 Federal Com 13H - Margarita 13 Federal Co	5,800.0	5,799.0	66.0	37.4	2.308	CC
Margarita 13 Federal Com 13H - Margarita 13 Federal Co	5,900.0	5,899.0	66.1	37.3	2.295	ES
Margarita 13 Federal Com 13H - Margarita 13 Federal Co	23,605.5	23,508.2	885.7	398.7	1.819	SF
Margarita 13 Federal Com 1H - Margarita 13 Federal Com	5,800.0	5,799.0	99.0	70.4	3.462	CC, ES, SF
Margarita 13 Federal Com 21H - Margarita 13 Federal Co	5,600.0	5,599.0	132.0	104.0	4.716	CC, ES
Margarita 13 Federal Com 21H - Margarita 13 Federal Co	5,700.0	5,696.8	132.8	104.6	4.703	SF
Margarita 13 Federal Com 2H - Margarita 13 Federal Com	5,600.0	5,600.0	33.0	5.0	1.179	Level 3, CC, ES
Margarita 13 Federal Com 2H - Margarita 13 Federal Com	5,700.0	5,699.8	33.3	5.0	1.179	Level 3, SF
Margarita 13 Federal Com 9H - Margarita 13 Federal Com	5,800.0	5,800.0	33.0	4.4	1.154	Level 3, CC
Margarita 13 Federal Com 9H - Margarita 13 Federal Com	10,332.2	10,346.0	36.8	-12.3	0.750	Level 3, ES, SF

Offset Design: Big Moose Fed Com - Big Moose Fed Com 307H - Big Moose Fed Com 307H - Big Moose Fed Com 307H - Proposal #4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM **Rule Assigned:** **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,400.0	8,398.3	15,726.5	9,159.8	19.1	141.1	-91.40	-84.9	222.2	945.4	841.6	103.80	9.108	
8,500.0	8,498.3	15,730.5	9,159.8	19.4	141.2	-90.29	-88.9	222.2	848.1	743.0	105.11	8.069	
8,600.0	8,598.2	15,734.6	9,159.8	19.7	141.3	-89.16	-93.0	222.2	751.4	644.7	106.75	7.039	
8,700.0	8,698.1	15,738.6	9,159.8	20.0	141.3	-88.03	-97.0	222.2	655.7	546.8	108.90	6.021	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Big Moose Fed Com - Big Moose Fed Com 307H - Big Moose Fed Com 307H - Big Moose Fed Com 307H - Proposal #4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,800.0	8,798.1	15,742.7	9,159.8	20.3	141.4	-86.90	-101.1	222.3	561.5	449.6	111.86	5.020	
8,900.0	8,898.0	15,746.8	9,159.9	20.6	141.5	-85.76	-105.1	222.3	469.6	353.4	116.17	4.043	
9,000.0	8,997.9	15,750.8	9,159.9	20.9	141.6	-84.62	-109.2	222.3	381.8	259.1	122.74	3.111	
9,100.0	9,097.9	15,754.9	9,159.9	21.3	141.7	-83.47	-113.2	222.3	301.7	168.7	132.93	2.269	
9,200.0	9,197.8	15,758.9	9,159.9	21.6	141.7	-82.32	-117.3	222.4	237.0	89.9	147.07	1.612	
9,300.0	9,297.7	15,763.0	9,159.9	21.9	141.8	-81.17	-121.3	222.4	203.3	45.2	158.05	1.286	Level 3
9,324.4	9,322.1	15,764.0	9,159.9	22.0	141.9	-80.89	-122.3	222.4	201.8	43.3	158.50	1.273	Level 3, CC, ES, SF
9,400.0	9,397.7	15,767.0	9,160.0	22.3	141.9	-80.02	-125.4	222.4	215.5	62.4	153.13	1.407	Level 3
9,500.0	9,497.6	15,771.1	9,160.0	22.6	142.0	-78.87	-129.5	222.4	267.4	128.5	138.93	1.925	
9,600.0	9,597.5	15,775.1	9,160.0	23.0	142.1	-77.72	-133.5	222.5	341.4	214.0	127.40	2.680	
9,700.0	9,697.5	15,779.2	9,160.0	23.3	142.2	-76.58	-137.6	222.5	426.1	305.8	120.28	3.543	
9,800.0	9,797.4	15,783.2	9,160.0	23.7	142.2	-75.44	-141.6	222.5	516.3	400.2	116.11	4.447	
9,900.0	9,897.3	15,787.3	9,160.0	24.0	142.3	-74.30	-145.7	222.6	609.5	495.9	113.67	5.362	
9,949.9	9,947.2	15,789.3	9,160.0	24.2	142.4	-73.73	-147.7	222.6	656.8	543.9	112.86	5.820	
10,000.0	9,997.3	15,791.1	9,160.1	24.3	142.4	-74.77	-149.5	222.6	704.6	592.4	112.24	6.278	
10,100.0	10,097.3	15,793.5	9,160.1	24.6	142.4	-77.62	-151.8	222.6	801.0	689.6	111.41	7.189	
10,159.9	10,157.2	15,794.0	9,160.1	24.7	142.5	90.70	-152.4	222.6	859.1	748.0	111.10	7.733	
10,200.0	10,197.3	15,794.2	9,160.1	24.7	142.5	90.75	-152.6	222.6	898.2	787.2	110.95	8.095	
10,300.0	10,297.3	15,794.6	9,160.1	24.8	142.5	90.88	-153.0	222.6	996.0	885.2	110.75	8.993	

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Big Moose Fed Com - Big Moose Fed Com 308H - Big Moose Fed Com 308H - Big Moose Fed Com 308H - Proposal #4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,500.0	8,498.3	15,751.2	9,161.8	19.4	141.6	103.44	-91.6	-438.3	941.2	828.1	113.14	8.319	
8,600.0	8,598.2	15,755.5	9,161.8	19.7	141.7	102.92	-95.8	-438.3	855.4	738.9	116.45	7.345	
8,700.0	8,698.1	15,759.7	9,161.8	20.0	141.8	102.39	-100.1	-438.3	772.9	652.3	120.56	6.411	
8,800.0	8,798.1	15,763.9	9,161.9	20.3	141.9	101.87	-104.3	-438.2	695.0	569.4	125.66	5.531	
8,900.0	8,898.0	15,768.2	9,161.9	20.6	141.9	101.34	-108.5	-438.2	623.4	491.6	131.85	4.728	
9,000.0	8,997.9	15,772.4	9,161.9	20.9	142.0	100.81	-112.8	-438.2	560.6	421.6	139.05	4.032	
9,100.0	9,097.9	15,776.6	9,161.9	21.3	142.1	100.29	-117.0	-438.1	509.8	363.1	146.71	3.475	
9,200.0	9,197.8	15,780.8	9,162.0	21.6	142.2	99.76	-121.2	-438.1	474.8	321.2	153.62	3.091	
9,300.0	9,297.7	15,785.1	9,162.0	21.9	142.3	99.23	-125.4	-438.1	459.3	301.1	158.16	2.904	
9,322.6	9,320.3	15,786.0	9,162.0	22.0	142.3	99.11	-126.4	-438.1	458.7	300.0	158.71	2.890	CC, ES, SF
9,400.0	9,397.7	15,789.3	9,162.0	22.3	142.4	98.70	-129.7	-438.1	465.2	306.0	159.19	2.922	
9,500.0	9,497.6	15,793.5	9,162.1	22.6	142.5	98.17	-133.9	-438.0	491.7	334.9	156.88	3.135	
9,600.0	9,597.5	15,797.8	9,162.1	23.0	142.5	97.65	-138.1	-438.0	535.9	383.5	152.45	3.515	
9,700.0	9,697.5	15,802.0	9,162.1	23.3	142.6	97.12	-142.4	-438.0	593.8	446.5	147.28	4.032	
9,800.0	9,797.4	15,806.2	9,162.1	23.7	142.7	96.59	-146.6	-438.0	661.7	519.4	142.30	4.650	
9,900.0	9,897.3	15,810.4	9,162.2	24.0	142.8	96.07	-150.8	-437.9	737.0	599.1	137.95	5.342	
9,949.9	9,947.2	15,812.6	9,162.2	24.2	142.8	95.80	-152.9	-437.9	776.7	640.6	136.05	5.709	
10,000.0	9,997.3	15,814.5	9,162.2	24.3	142.9	96.27	-154.8	-437.9	817.6	683.2	134.32	6.087	
10,100.0	10,097.3	15,817.0	9,162.2	24.6	142.9	97.52	-157.3	-437.9	901.9	770.6	131.35	6.867	
10,159.9	10,157.2	15,817.6	9,162.2	24.7	142.9	-90.99	-158.0	-437.9	953.9	824.0	129.84	7.347	
10,200.0	10,197.3	15,817.9	9,162.2	24.7	142.9	-91.02	-158.2	-437.9	989.1	860.2	128.93	7.671	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Big Moose Fed Com - Big Moose Fed Com 404H - Big Moose Fed Com 404H - Big Moose Fed Com 404H - Proposal #4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.0	9,197.8	16,626.4	9,947.2	21.6	141.8	-90.25	-118.3	222.4	932.6	824.6	107.98	8.636	
9,300.0	9,297.7	16,630.0	9,947.2	21.9	141.9	-89.24	-121.9	222.4	835.2	725.9	109.26	7.644	
9,400.0	9,397.7	16,633.6	9,947.2	22.3	142.0	-88.22	-125.4	222.4	738.5	627.6	110.85	6.662	
9,500.0	9,497.6	16,637.1	9,947.2	22.6	142.0	-87.20	-129.0	222.4	642.7	529.8	112.94	5.691	
9,600.0	9,597.5	16,640.7	9,947.1	23.0	142.1	-86.18	-132.6	222.4	548.4	432.6	115.83	4.735	
9,700.0	9,697.5	16,644.3	9,947.1	23.3	142.2	-85.15	-136.1	222.5	456.6	336.6	120.06	3.803	
9,800.0	9,797.4	16,647.8	9,947.1	23.7	142.2	-84.12	-139.7	222.5	369.0	242.4	126.57	2.915	
9,900.0	9,897.3	16,651.4	9,947.1	24.0	142.3	-83.09	-143.3	222.5	289.5	152.8	136.73	2.117	
9,949.9	9,947.2	16,653.2	9,947.1	24.2	142.4	-82.57	-145.0	222.5	255.3	111.9	143.35	1.781	
10,000.0	9,997.3	16,654.8	9,947.1	24.3	142.4	-81.77	-146.6	222.5	226.8	76.4	150.47	1.508	
10,100.0	10,097.3	16,656.6	9,947.1	24.6	142.4	-80.93	-148.5	222.5	197.9	38.3	159.64	1.240	Level 3
10,111.2	10,108.4	16,656.7	9,947.1	24.6	142.4	-80.90	-148.6	222.5	197.6	37.8	159.73	1.237	Level 3, CC, ES, SF
10,159.9	10,157.2	16,656.9	9,947.1	24.7	142.4	89.63	-148.7	222.5	203.5	46.0	157.58	1.292	Level 3
10,200.0	10,197.3	16,656.9	9,947.1	24.7	142.4	89.63	-148.7	222.5	216.7	63.4	153.33	1.413	Level 3
10,300.0	10,297.3	16,656.8	9,947.1	24.8	142.4	89.61	-148.7	222.5	273.5	133.4	140.03	1.953	
10,400.0	10,397.3	16,656.8	9,947.1	24.9	142.4	89.60	-148.6	222.5	350.2	220.3	129.85	2.697	
10,500.0	10,497.3	16,656.7	9,947.1	24.9	142.4	89.58	-148.6	222.5	436.4	312.7	123.66	3.529	
10,600.0	10,597.3	16,656.6	9,947.1	25.0	142.4	89.57	-148.5	222.5	527.5	407.5	120.05	4.394	
10,700.0	10,697.3	16,656.6	9,947.1	25.1	142.4	89.55	-148.5	222.5	621.4	503.4	117.94	5.269	
10,800.0	10,797.3	16,656.5	9,947.1	25.1	142.4	89.54	-148.4	222.5	716.9	600.2	116.70	6.143	
10,900.0	10,897.3	16,656.5	9,947.1	25.2	142.4	89.52	-148.3	222.5	813.5	697.5	116.00	7.013	
10,977.7	10,975.0	16,656.4	9,947.1	25.2	142.4	89.51	-148.3	222.5	889.1	773.4	115.70	7.684	
11,000.0	10,997.3	16,656.4	9,947.1	25.2	142.4	7.65	-148.2	222.5	910.7	795.1	115.63	7.876	
11,050.0	11,047.1	16,655.7	9,947.1	25.3	142.4	5.59	-147.5	222.5	958.6	843.1	115.43	8.305	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Big Moose Fed Com - Big Moose Fed Com 505H - Big Moose Fed Com 505H - Big Moose Fed Com 505H

Offset Site Error: 0.0 usft

Survey Program: 199-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,000.0	9,997.3	17,223.3	10,674.1	24.3	141.0	-83.39	-148.0	487.7	957.8	835.8	122.01	7.850	
10,100.0	10,097.3	17,222.6	10,674.1	24.6	141.0	-81.78	-147.3	487.7	871.4	746.7	124.73	6.987	
10,159.9	10,157.2	17,221.3	10,674.1	24.7	141.0	89.50	-145.9	487.6	821.2	694.6	126.63	6.485	
10,200.0	10,197.3	17,220.1	10,674.1	24.7	140.9	89.36	-144.8	487.6	788.4	660.4	128.04	6.158	
10,300.0	10,297.3	17,217.4	10,674.2	24.8	140.9	89.02	-142.1	487.4	709.9	577.8	132.10	5.374	
10,400.0	10,397.3	17,214.8	10,674.3	24.9	140.8	88.70	-139.5	487.3	637.4	500.4	137.00	4.652	
10,500.0	10,497.3	17,212.3	10,674.3	24.9	140.8	88.39	-137.0	487.2	573.1	430.5	142.63	4.018	
10,600.0	10,597.3	17,209.9	10,674.4	25.0	140.7	88.09	-134.6	487.1	520.3	371.8	148.58	3.502	
10,700.0	10,697.3	17,207.6	10,674.4	25.1	140.7	87.81	-132.3	487.0	482.7	328.8	153.95	3.135	
10,800.0	10,797.3	17,205.5	10,674.5	25.1	140.6	87.54	-130.1	486.9	463.9	306.3	157.64	2.943	
10,838.8	10,836.1	17,204.6	10,674.5	25.1	140.6	87.44	-129.3	486.9	462.3	303.9	158.45	2.918	CC, ES, SF
10,900.0	10,897.3	17,203.3	10,674.5	25.2	140.6	87.28	-128.0	486.8	466.3	307.4	158.94	2.934	
10,977.7	10,975.0	17,201.8	10,674.6	25.2	140.6	87.08	-126.5	486.7	482.7	324.5	158.21	3.051	
11,000.0	10,997.3	17,201.3	10,674.6	25.2	140.6	6.42	-126.0	486.7	489.2	331.4	157.75	3.101	
11,050.0	11,047.1	17,199.8	10,674.6	25.3	140.5	6.07	-124.5	486.6	504.0	347.5	156.53	3.220	
11,100.0	11,096.3	17,197.9	10,674.6	25.3	140.5	5.69	-122.6	486.6	519.3	364.4	154.92	3.352	
11,150.0	11,144.7	17,195.6	10,674.7	25.3	140.4	5.27	-120.3	486.5	534.7	381.9	152.83	3.499	
11,200.0	11,191.7	17,192.9	10,674.7	25.3	140.4	4.82	-117.6	486.3	550.3	399.9	150.32	3.661	
11,250.0	11,237.1	17,189.8	10,674.8	25.4	140.3	4.36	-114.5	486.2	565.7	418.3	147.48	3.836	
11,294.4	11,275.8	17,186.7	10,674.9	25.5	140.3	3.93	-111.4	486.1	579.4	434.7	144.70	4.004	
11,300.0	11,280.5	17,186.4	10,674.9	25.5	140.3	3.18	-111.1	486.0	581.1	436.8	144.31	4.027	
11,350.0	11,323.2	17,185.2	10,674.9	25.7	140.2	-3.22	-109.9	486.0	598.8	457.8	140.96	4.248	
11,400.0	11,365.8	17,188.0	10,674.8	26.1	140.3	-8.68	-112.7	486.1	620.2	482.4	137.80	4.501	
11,450.0	11,408.1	17,194.6	10,674.7	26.6	140.4	-12.89	-119.3	486.4	644.6	509.7	134.95	4.777	
11,500.0	11,449.6	17,204.9	10,674.5	27.0	140.6	-15.69	-129.6	486.9	671.5	539.0	132.49	5.068	
11,550.0	11,490.2	17,218.7	10,674.2	27.4	140.9	-17.11	-143.4	487.5	700.2	569.7	130.44	5.368	
11,600.0	11,529.4	17,235.9	10,673.7	27.8	141.2	-17.35	-160.6	488.3	730.0	601.2	128.79	5.668	
11,650.0	11,567.0	17,258.7	10,673.1	28.2	141.7	-16.52	-183.3	489.3	760.4	632.8	127.56	5.961	
11,700.0	11,602.7	17,285.9	10,672.3	28.6	142.2	-15.08	-210.5	490.5	790.6	663.9	126.70	6.239	
11,750.0	11,636.2	17,308.0	10,671.7	29.0	142.7	-13.83	-232.5	491.5	820.1	694.1	125.97	6.510	
11,800.0	11,667.3	17,308.0	10,671.7	29.3	142.7	-13.50	-232.5	491.5	849.4	724.5	124.92	6.800	
11,850.0	11,695.7	17,308.0	10,671.7	29.6	142.7	-12.84	-232.5	491.5	878.5	754.6	123.89	7.091	
11,900.0	11,721.2	17,308.0	10,671.7	29.9	142.7	-11.96	-232.5	491.5	907.3	784.5	122.87	7.385	
11,950.0	11,743.7	17,308.0	10,671.7	30.2	142.7	-10.91	-232.5	491.5	935.6	813.8	121.81	7.681	
12,000.0	11,762.9	17,308.0	10,671.7	30.4	142.7	-9.76	-232.5	491.5	963.2	842.5	120.70	7.980	
12,050.0	11,778.7	17,308.0	10,671.7	30.6	142.7	-8.54	-232.5	491.5	989.9	870.4	119.51	8.283	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Big Moose Fed Com - Big Moose Fed Com 506H - Big Moose Fed Com 506H - Big Moose Fed Com 506H

Offset Site Error: 0.0 usft

Survey Program: 169-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.0	10,097.3	17,137.0	10,748.8	24.6	140.2	103.66	-123.4	-447.0	940.0	819.7	120.26	7.816	
10,159.9	10,157.2	17,138.6	10,748.8	24.7	140.2	-86.97	-125.0	-447.0	888.8	766.8	121.99	7.285	
10,200.0	10,197.3	17,140.3	10,748.9	24.7	140.2	-87.16	-126.6	-447.0	855.1	731.8	123.27	6.936	
10,300.0	10,297.3	17,144.3	10,749.0	24.8	140.3	-87.65	-130.6	-446.9	773.7	646.7	126.97	6.093	
10,400.0	10,397.3	17,148.3	10,749.2	24.9	140.4	-88.13	-134.6	-446.9	697.2	565.7	131.49	5.302	
10,500.0	10,497.3	17,152.2	10,749.3	24.9	140.5	-88.61	-138.6	-446.9	627.2	490.4	136.87	4.583	
10,600.0	10,597.3	17,156.2	10,749.5	25.0	140.5	-89.09	-142.5	-446.8	566.4	423.4	142.95	3.962	
10,700.0	10,697.3	17,160.1	10,749.6	25.1	140.6	-89.56	-146.4	-446.8	517.8	368.6	149.20	3.471	
10,800.0	10,797.3	17,163.9	10,749.8	25.1	140.7	-90.03	-150.3	-446.8	485.2	330.6	154.64	3.138	
10,900.0	10,897.3	17,167.7	10,749.9	25.2	140.8	-90.50	-154.1	-446.7	471.9	313.7	158.23	2.983	
10,913.7	10,910.9	17,168.3	10,749.9	25.2	140.8	-90.56	-154.6	-446.7	471.7	313.2	158.53	2.976	CC, ES, SF
10,977.7	10,975.0	17,170.7	10,750.0	25.2	140.8	-90.85	-157.0	-446.7	476.1	316.7	159.32	2.988	
11,000.0	10,997.3	17,171.5	10,750.1	25.2	140.8	-171.41	-157.8	-446.7	480.0	320.6	159.35	3.012	
11,050.0	11,047.1	17,172.7	10,750.1	25.3	140.9	-171.32	-159.0	-446.7	495.3	336.1	159.21	3.111	
11,100.0	11,096.3	17,173.2	10,750.1	25.3	140.9	-170.98	-159.5	-446.7	518.8	360.1	158.73	3.269	
11,150.0	11,144.7	17,173.0	10,750.1	25.3	140.9	-170.32	-159.3	-446.7	549.3	391.4	157.89	3.479	
11,200.0	11,191.7	17,172.1	10,750.1	25.3	140.9	-169.25	-158.4	-446.7	585.5	428.6	156.92	3.731	
11,250.0	11,237.1	17,170.5	10,750.0	25.4	140.8	-167.58	-156.8	-446.7	626.2	470.2	155.99	4.014	
11,294.4	11,275.8	17,168.5	10,749.9	25.5	140.8	-165.29	-154.8	-446.7	665.2	509.9	155.26	4.284	
11,300.0	11,280.5	17,168.2	10,749.9	25.5	140.8	-167.30	-154.5	-446.7	670.2	515.0	155.18	4.319	
11,350.0	11,323.2	17,168.4	10,749.9	25.7	140.8	173.45	-154.7	-446.7	715.8	561.3	154.47	4.634	
11,400.0	11,365.8	17,173.0	10,750.1	26.1	140.9	153.06	-159.4	-446.7	761.7	607.8	153.92	4.949	
11,450.0	11,408.1	17,181.9	10,750.4	26.6	141.1	133.37	-168.3	-446.6	807.6	654.1	153.52	5.260	
11,500.0	11,449.6	17,195.0	10,750.9	27.0	141.3	115.87	-181.4	-446.4	853.0	699.7	153.29	5.564	
11,550.0	11,490.2	17,212.3	10,751.5	27.4	141.6	101.17	-198.6	-446.3	897.4	744.2	153.20	5.858	
11,600.0	11,529.4	17,233.6	10,752.3	27.8	142.1	89.21	-219.9	-446.1	940.5	787.2	153.24	6.137	
11,650.0	11,567.0	17,244.0	10,752.7	28.2	142.3	80.19	-230.3	-445.9	981.9	828.6	153.28	6.406	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Big Moose Fed Com - Big Moose Fed Com 604H - Big Moose Fed Com 604H - Big Moose Fed Com 604H

Offset Site Error: 0.0 usft

Survey Program: 199-MWD+HRGM **Rule Assigned:** **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,900.0	10,897.3	18,069.2	11,543.2	25.2	142.0	-91.22	-159.6	-425.3	924.1	802.0	122.16	7.565	
10,977.7	10,975.0	18,069.6	11,543.2	25.2	142.0	-91.27	-160.0	-425.3	857.1	732.9	124.21	6.900	
11,000.0	10,997.3	18,069.6	11,543.2	25.2	142.0	-172.27	-160.0	-425.3	838.5	713.6	124.88	6.714	
11,050.0	11,047.1	18,069.3	11,543.2	25.3	142.0	-173.05	-159.7	-425.3	799.2	672.5	126.70	6.308	
11,100.0	11,096.3	18,068.4	11,543.2	25.3	142.0	-173.53	-158.8	-425.3	764.3	635.3	128.99	5.925	
11,150.0	11,144.7	18,066.9	11,543.2	25.3	142.0	-173.80	-157.3	-425.4	734.5	602.8	131.71	5.577	
11,200.0	11,191.7	18,064.8	11,543.2	25.3	141.9	-173.90	-155.2	-425.4	710.8	576.0	134.83	5.272	
11,250.0	11,237.1	18,062.2	11,543.2	25.4	141.9	-173.86	-152.5	-425.5	694.0	555.7	138.26	5.020	
11,294.4	11,275.8	18,059.3	11,543.2	25.5	141.8	-173.71	-149.7	-425.6	685.3	543.9	141.37	4.848	
11,300.0	11,280.5	18,059.0	11,543.2	25.5	141.8	-174.51	-149.3	-425.6	684.6	542.9	141.73	4.830	
11,350.0	11,323.2	18,058.2	11,543.2	25.7	141.8	177.80	-148.6	-425.6	680.5	535.5	145.00	4.693	
11,383.1	11,351.4	18,060.2	11,543.2	26.0	141.8	172.31	-150.6	-425.6	679.7	532.6	147.13	4.620	CC
11,400.0	11,365.8	18,062.0	11,543.2	26.1	141.9	169.43	-152.4	-425.5	679.9	531.7	148.19	4.588	
11,450.0	11,408.1	18,070.3	11,543.2	26.6	142.0	160.76	-160.7	-425.3	682.8	531.6	151.23	4.515	ES
11,500.0	11,449.6	18,082.7	11,543.3	27.0	142.3	152.12	-173.1	-424.9	689.1	535.0	154.10	4.471	
11,550.0	11,490.2	18,099.2	11,543.4	27.4	142.6	143.73	-189.6	-424.4	698.2	541.5	156.79	4.453	SF
11,600.0	11,529.4	18,119.7	11,543.5	27.8	143.0	135.67	-210.1	-423.8	709.9	550.6	159.27	4.457	
11,650.0	11,567.0	18,140.0	11,543.6	28.2	143.4	128.31	-230.3	-423.1	723.5	561.9	161.56	4.478	
11,700.0	11,602.7	18,140.0	11,543.6	28.6	143.4	122.91	-230.3	-423.1	739.1	575.6	163.51	4.520	
11,750.0	11,636.2	18,140.0	11,543.6	29.0	143.4	117.90	-230.3	-423.1	756.8	591.7	165.05	4.585	
11,800.0	11,667.3	18,140.0	11,543.6	29.3	143.4	113.23	-230.3	-423.1	776.2	610.1	166.14	4.672	
11,850.0	11,695.7	18,140.0	11,543.6	29.6	143.4	108.85	-230.3	-423.1	797.2	630.4	166.79	4.780	
11,900.0	11,721.2	18,140.0	11,543.6	29.9	143.4	104.72	-230.3	-423.1	819.4	652.4	167.00	4.907	
11,950.0	11,743.7	18,140.0	11,543.6	30.2	143.4	100.84	-230.3	-423.1	842.7	675.9	166.80	5.052	
12,000.0	11,762.9	18,140.0	11,543.6	30.4	143.4	97.20	-230.3	-423.1	866.6	700.4	166.19	5.215	
12,050.0	11,778.7	18,140.0	11,543.6	30.6	143.4	93.80	-230.3	-423.1	891.1	725.9	165.22	5.393	
12,100.0	11,791.0	18,140.0	11,543.6	30.7	143.4	90.66	-230.3	-423.1	915.8	751.9	163.90	5.588	
12,150.0	11,799.7	18,140.0	11,543.6	30.8	143.4	87.79	-230.3	-423.1	940.6	778.3	162.28	5.796	
12,200.0	11,804.7	18,140.0	11,543.6	30.9	143.4	85.20	-230.3	-423.1	965.3	805.0	160.37	6.019	
12,242.3	11,806.0	18,140.0	11,543.6	31.0	143.4	83.24	-230.3	-423.1	986.0	827.5	158.55	6.219	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Big Moose Fed Com - Big Moose Fed Com 707H - Big Moose Fed Com 707H - Big Moose Fed Com 707H - Proposal #4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,900.0	10,897.3	17,926.4	11,654.5	25.2	138.1	88.01	-143.2	222.2	939.2	824.7	114.47	8.205	
10,977.7	10,975.0	17,926.8	11,654.5	25.2	138.1	88.15	-143.6	222.2	863.3	748.0	115.33	7.486	
11,000.0	10,997.3	17,926.9	11,654.5	25.2	138.1	9.14	-143.7	222.2	841.6	726.0	115.59	7.281	
11,050.0	11,047.1	17,926.5	11,654.5	25.3	138.1	15.58	-143.3	222.2	792.2	676.1	116.10	6.824	
11,100.0	11,096.3	17,925.5	11,654.5	25.3	138.1	43.39	-142.3	222.2	742.4	625.9	116.48	6.374	
11,150.0	11,144.7	17,923.8	11,654.5	25.3	138.0	147.21	-140.6	222.2	692.5	575.8	116.69	5.934	
11,200.0	11,191.7	17,921.4	11,654.5	25.3	138.0	167.45	-138.2	222.2	642.8	526.1	116.69	5.508	
11,250.0	11,237.1	17,918.4	11,654.4	25.4	137.9	173.04	-135.2	222.2	593.8	477.3	116.47	5.098	
11,294.4	11,275.8	17,915.2	11,654.4	25.5	137.9	175.54	-131.9	222.1	551.3	435.3	116.06	4.750	
11,300.0	11,280.5	17,914.7	11,654.4	25.5	137.9	176.27	-131.5	222.1	546.1	430.1	115.99	4.708	
11,350.0	11,323.2	17,913.5	11,654.4	25.7	137.8	-178.37	-130.3	222.1	499.3	383.9	115.43	4.326	
11,400.0	11,365.8	17,916.6	11,654.4	26.1	137.9	-175.82	-133.4	222.1	453.3	338.4	114.94	3.944	
11,450.0	11,408.1	17,924.1	11,654.5	26.6	138.1	-176.08	-140.9	222.2	408.7	294.1	114.60	3.566	
11,500.0	11,449.6	17,935.8	11,654.5	27.0	138.3	-178.49	-152.6	222.3	366.0	251.4	114.58	3.194	
11,550.0	11,490.2	17,951.8	11,654.6	27.4	138.6	177.60	-168.6	222.4	325.9	210.8	115.19	2.830	
11,600.0	11,529.4	17,971.8	11,654.8	27.8	139.0	172.60	-188.6	222.5	289.4	172.5	116.86	2.476	
11,650.0	11,567.0	17,995.7	11,654.9	28.2	139.5	166.71	-212.5	222.6	257.1	136.9	120.16	2.140	
11,700.0	11,602.7	18,009.3	11,655.0	28.6	139.8	162.87	-226.1	222.7	230.5	104.6	125.91	1.831	
11,750.0	11,636.2	18,009.3	11,655.0	29.0	139.8	161.26	-226.1	222.7	214.0	81.5	132.45	1.615	
11,787.6	11,659.8	18,009.3	11,655.0	29.2	139.8	159.58	-226.1	222.7	210.0	74.2	135.80	1.547	CC
11,800.0	11,667.3	18,009.3	11,655.0	29.3	139.8	158.93	-226.1	222.7	210.5	74.1	136.40	1.543	ES, SF
11,850.0	11,695.7	18,009.3	11,655.0	29.6	139.8	155.82	-226.1	222.7	220.6	84.7	135.97	1.623	
11,900.0	11,721.2	18,009.3	11,655.0	29.9	139.8	151.80	-226.1	222.7	242.7	110.8	131.89	1.840	
11,950.0	11,743.7	18,009.3	11,655.0	30.2	139.8	146.69	-226.1	222.7	273.7	147.6	126.07	2.171	
12,000.0	11,762.9	18,009.3	11,655.0	30.4	139.8	140.29	-226.1	222.7	310.7	190.8	119.89	2.591	
12,050.0	11,778.7	18,009.3	11,655.0	30.6	139.8	132.41	-226.1	222.7	351.6	237.6	114.02	3.084	
12,100.0	11,791.0	18,009.3	11,655.0	30.7	139.8	123.04	-226.1	222.7	395.0	286.3	108.66	3.635	
12,150.0	11,799.7	18,009.3	11,655.0	30.8	139.8	112.51	-226.1	222.7	439.8	335.9	103.83	4.236	
12,200.0	11,804.7	18,009.3	11,655.0	30.9	139.8	101.58	-226.1	222.7	485.3	385.8	99.48	4.879	
12,242.3	11,806.0	18,009.3	11,655.0	31.0	139.8	92.73	-226.1	222.7	524.0	427.9	96.15	5.450	
12,300.0	11,806.6	18,009.3	11,655.0	31.1	139.8	95.51	-226.1	222.7	577.4	485.2	92.21	6.262	
12,358.6	11,808.4	18,009.3	11,655.0	31.2	139.8	98.63	-226.1	222.7	632.3	543.3	88.91	7.111	
12,400.0	11,810.0	18,009.3	11,655.0	31.3	139.8	98.63	-226.1	222.7	671.4	584.5	86.94	7.722	
12,500.0	11,814.1	18,009.3	11,655.0	31.9	139.8	98.63	-226.1	222.7	766.9	683.8	83.13	9.226	
12,600.0	11,818.2	18,009.3	11,655.0	32.9	139.8	98.63	-226.1	222.7	863.5	783.1	80.31	10.751	
12,700.0	11,822.2	18,009.3	11,655.0	34.1	139.8	98.63	-226.1	222.7	960.7	882.5	78.19	12.287	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Big Moose Fed Com - Big Moose Fed Com 708H - Big Moose Fed Com 708H - Big Moose Fed Com 708H - Proposal #4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,100.0	11,096.3	18,479.3	11,779.7	25.3	143.6	-172.76	-145.2	-437.9	969.1	842.7	126.47	7.663	
11,150.0	11,144.7	18,477.6	11,779.7	25.3	143.6	-173.23	-143.6	-437.9	933.8	805.5	128.28	7.280	
11,200.0	11,191.7	18,475.3	11,779.7	25.3	143.5	-173.49	-141.2	-437.9	903.2	772.8	130.42	6.926	
11,250.0	11,237.1	18,472.2	11,779.6	25.4	143.5	-173.59	-138.2	-438.0	878.2	745.3	132.89	6.608	
11,294.4	11,275.8	18,469.0	11,779.6	25.5	143.4	-173.57	-135.0	-438.0	861.0	725.7	135.27	6.365	
11,300.0	11,280.5	18,468.6	11,779.6	25.5	143.4	-174.25	-134.6	-438.0	859.2	723.6	135.56	6.338	
11,350.0	11,323.2	18,467.4	11,779.6	25.7	143.4	179.22	-133.4	-438.0	844.4	706.1	138.26	6.107	
11,400.0	11,365.8	18,470.6	11,779.6	26.1	143.4	172.13	-136.5	-438.0	832.3	691.2	141.09	5.899	
11,450.0	11,408.1	18,478.1	11,779.7	26.6	143.6	164.85	-144.0	-437.9	823.2	679.2	144.00	5.717	
11,500.0	11,449.6	18,489.8	11,779.7	27.0	143.8	157.67	-155.8	-437.8	817.1	670.1	146.96	5.560	
11,550.0	11,490.2	18,505.8	11,779.9	27.4	144.1	150.76	-171.7	-437.7	813.8	663.9	149.90	5.429	
11,584.2	11,517.1	18,519.0	11,779.9	27.7	144.4	146.24	-185.0	-437.7	813.2	661.3	151.89	5.354	CC
11,600.0	11,529.4	18,525.8	11,780.0	27.8	144.5	144.21	-191.7	-437.6	813.4	660.6	152.80	5.323	
11,650.0	11,567.0	18,549.8	11,780.1	28.2	145.0	138.02	-215.7	-437.5	815.3	659.7	155.60	5.240	ES
11,700.0	11,602.7	18,565.7	11,780.3	28.6	145.3	132.86	-231.6	-437.4	819.5	661.3	158.18	5.180	
11,750.0	11,636.2	18,565.7	11,780.3	29.0	145.3	129.01	-231.6	-437.4	826.2	665.8	160.35	5.152	SF
11,800.0	11,667.3	18,565.7	11,780.3	29.3	145.3	125.42	-231.6	-437.4	835.6	673.4	162.12	5.154	
11,850.0	11,695.7	18,565.7	11,780.3	29.6	145.3	122.01	-231.6	-437.4	847.4	684.0	163.45	5.185	
11,900.0	11,721.2	18,565.7	11,780.3	29.9	145.3	118.75	-231.6	-437.4	861.6	697.3	164.31	5.244	
11,950.0	11,743.7	18,565.7	11,780.3	30.2	145.3	115.58	-231.6	-437.4	877.8	713.1	164.70	5.330	
12,000.0	11,762.9	18,565.7	11,780.3	30.4	145.3	112.50	-231.6	-437.4	895.9	731.3	164.62	5.442	
12,050.0	11,778.7	18,565.7	11,780.3	30.6	145.3	109.49	-231.6	-437.4	915.6	751.5	164.10	5.580	
12,100.0	11,791.0	18,565.7	11,780.3	30.7	145.3	106.56	-231.6	-437.4	936.6	773.5	163.15	5.741	
12,150.0	11,799.7	18,565.7	11,780.3	30.8	145.3	103.73	-231.6	-437.4	958.8	797.0	161.82	5.925	
12,200.0	11,804.7	18,565.7	11,780.3	30.9	145.3	101.02	-231.6	-437.4	981.8	821.7	160.15	6.131	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.38	-0.4	-66.0	66.0				
100.0	100.0	99.0	99.0	0.5	0.5	-90.38	-0.4	-66.0	66.0	64.9	1.06	62.550	
200.0	200.0	199.0	199.0	1.7	1.7	-90.38	-0.4	-66.0	66.0	62.6	3.41	19.342	
300.0	300.0	299.0	299.0	2.4	2.4	-90.38	-0.4	-66.0	66.0	61.2	4.82	13.703	
400.0	400.0	399.0	399.0	3.0	2.9	-90.38	-0.4	-66.0	66.0	60.1	5.90	11.180	
500.0	500.0	499.0	499.0	3.4	3.4	-90.38	-0.4	-66.0	66.0	59.2	6.83	9.668	
600.0	600.0	599.0	599.0	3.8	3.8	-90.38	-0.4	-66.0	66.0	58.3	7.64	8.632	
700.0	700.0	699.0	699.0	4.2	4.2	-90.38	-0.4	-66.0	66.0	57.6	8.39	7.865	
800.0	800.0	799.0	799.0	4.5	4.5	-90.38	-0.4	-66.0	66.0	56.9	9.08	7.267	
900.0	900.0	899.0	899.0	4.9	4.9	-90.38	-0.4	-66.0	66.0	56.3	9.73	6.784	
1,000.0	1,000.0	999.0	999.0	5.2	5.2	-90.38	-0.4	-66.0	66.0	55.7	10.34	6.383	
1,100.0	1,100.0	1,099.0	1,099.0	5.5	5.5	-90.38	-0.4	-66.0	66.0	55.1	10.92	6.043	
1,200.0	1,200.0	1,199.0	1,199.0	5.7	5.7	-90.38	-0.4	-66.0	66.0	54.5	11.48	5.750	
1,300.0	1,300.0	1,299.0	1,299.0	6.0	6.0	-90.38	-0.4	-66.0	66.0	54.0	12.01	5.494	
1,400.0	1,400.0	1,399.0	1,399.0	6.3	6.3	-90.38	-0.4	-66.0	66.0	53.5	12.53	5.267	
1,500.0	1,500.0	1,499.0	1,499.0	6.5	6.5	-90.38	-0.4	-66.0	66.0	53.0	13.03	5.065	
1,600.0	1,600.0	1,599.0	1,599.0	6.8	6.8	-90.38	-0.4	-66.0	66.0	52.5	13.51	4.883	
1,700.0	1,700.0	1,699.0	1,699.0	7.0	7.0	-90.38	-0.4	-66.0	66.0	52.0	13.99	4.718	
1,800.0	1,800.0	1,799.0	1,799.0	7.2	7.2	-90.38	-0.4	-66.0	66.0	51.5	14.45	4.568	
1,900.0	1,900.0	1,899.0	1,899.0	7.4	7.4	-90.38	-0.4	-66.0	66.0	51.1	14.90	4.430	
2,000.0	2,000.0	1,999.0	1,999.0	7.7	7.7	-90.38	-0.4	-66.0	66.0	50.7	15.34	4.303	
2,100.0	2,100.0	2,099.0	2,099.0	7.9	7.9	-90.38	-0.4	-66.0	66.0	50.2	15.77	4.185	
2,200.0	2,200.0	2,199.0	2,199.0	8.1	8.1	-90.38	-0.4	-66.0	66.0	49.8	16.19	4.076	
2,300.0	2,300.0	2,299.0	2,299.0	8.3	8.3	-90.38	-0.4	-66.0	66.0	49.4	16.61	3.974	
2,400.0	2,400.0	2,399.0	2,399.0	8.5	8.5	-90.38	-0.4	-66.0	66.0	49.0	17.01	3.879	
2,500.0	2,500.0	2,499.0	2,499.0	8.7	8.7	-90.38	-0.4	-66.0	66.0	48.6	17.42	3.789	
2,600.0	2,600.0	2,599.0	2,599.0	8.9	8.9	-90.38	-0.4	-66.0	66.0	48.2	17.81	3.705	
2,700.0	2,700.0	2,699.0	2,699.0	9.1	9.1	-90.38	-0.4	-66.0	66.0	47.8	18.20	3.626	
2,800.0	2,800.0	2,799.0	2,799.0	9.3	9.3	-90.38	-0.4	-66.0	66.0	47.4	18.58	3.551	
2,900.0	2,900.0	2,899.0	2,899.0	9.5	9.5	-90.38	-0.4	-66.0	66.0	47.0	18.96	3.480	
3,000.0	3,000.0	2,999.0	2,999.0	9.7	9.7	-90.38	-0.4	-66.0	66.0	46.7	19.34	3.413	
3,100.0	3,100.0	3,099.0	3,099.0	9.9	9.9	-90.38	-0.4	-66.0	66.0	46.3	19.71	3.349	
3,200.0	3,200.0	3,199.0	3,199.0	10.0	10.0	-90.38	-0.4	-66.0	66.0	45.9	20.07	3.288	
3,300.0	3,300.0	3,299.0	3,299.0	10.2	10.2	-90.38	-0.4	-66.0	66.0	45.6	20.43	3.229	
3,400.0	3,400.0	3,399.0	3,399.0	10.4	10.4	-90.38	-0.4	-66.0	66.0	45.2	20.79	3.174	
3,500.0	3,500.0	3,499.0	3,499.0	10.6	10.6	-90.38	-0.4	-66.0	66.0	44.8	21.15	3.121	
3,600.0	3,600.0	3,599.0	3,599.0	10.7	10.7	-90.38	-0.4	-66.0	66.0	44.5	21.50	3.070	
3,700.0	3,700.0	3,699.0	3,699.0	10.9	10.9	-90.38	-0.4	-66.0	66.0	44.1	21.84	3.021	
3,800.0	3,800.0	3,799.0	3,799.0	11.1	11.1	-90.38	-0.4	-66.0	66.0	43.8	22.19	2.974	
3,900.0	3,900.0	3,899.0	3,899.0	11.3	11.3	-90.38	-0.4	-66.0	66.0	43.5	22.53	2.929	
4,000.0	4,000.0	3,999.0	3,999.0	11.4	11.4	-90.38	-0.4	-66.0	66.0	43.1	22.87	2.886	
4,100.0	4,100.0	4,099.0	4,099.0	11.6	11.6	-90.38	-0.4	-66.0	66.0	42.8	23.21	2.844	
4,200.0	4,200.0	4,199.0	4,199.0	11.8	11.8	-90.38	-0.4	-66.0	66.0	42.5	23.54	2.804	
4,300.0	4,300.0	4,299.0	4,299.0	11.9	11.9	-90.38	-0.4	-66.0	66.0	42.1	23.87	2.765	
4,400.0	4,400.0	4,399.0	4,399.0	12.1	12.1	-90.38	-0.4	-66.0	66.0	41.8	24.20	2.727	
4,500.0	4,500.0	4,499.0	4,499.0	12.3	12.3	-90.38	-0.4	-66.0	66.0	41.5	24.52	2.691	
4,600.0	4,600.0	4,599.0	4,599.0	12.4	12.4	-90.38	-0.4	-66.0	66.0	41.1	24.85	2.656	
4,700.0	4,700.0	4,699.0	4,699.0	12.6	12.6	-90.38	-0.4	-66.0	66.0	40.8	25.17	2.622	
4,800.0	4,800.0	4,799.0	4,799.0	12.7	12.7	-90.38	-0.4	-66.0	66.0	40.5	25.49	2.589	
4,900.0	4,900.0	4,899.0	4,899.0	12.9	12.9	-90.38	-0.4	-66.0	66.0	40.2	25.81	2.557	
5,000.0	5,000.0	4,999.0	4,999.0	13.1	13.1	-90.38	-0.4	-66.0	66.0	39.9	26.12	2.526	
5,100.0	5,100.0	5,099.0	5,099.0	13.2	13.2	-90.38	-0.4	-66.0	66.0	39.6	26.44	2.496	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.0	5,200.0	5,199.0	5,199.0	13.4	13.4	-90.38	-0.4	-66.0	66.0	39.2	26.75	2.467	
5,300.0	5,300.0	5,299.0	5,299.0	13.5	13.5	-90.38	-0.4	-66.0	66.0	38.9	27.06	2.439	
5,400.0	5,400.0	5,399.0	5,399.0	13.7	13.7	-90.38	-0.4	-66.0	66.0	38.6	27.37	2.411	
5,500.0	5,500.0	5,499.0	5,499.0	13.8	13.8	-90.38	-0.4	-66.0	66.0	38.3	27.68	2.384	
5,600.0	5,600.0	5,599.0	5,599.0	14.0	14.0	-90.38	-0.4	-66.0	66.0	38.0	27.98	2.358	
5,700.0	5,700.0	5,699.0	5,699.0	14.1	14.1	-90.38	-0.4	-66.0	66.0	37.7	28.29	2.333	
5,800.0	5,800.0	5,799.0	5,799.0	14.3	14.3	-90.38	-0.4	-66.0	66.0	37.4	28.59	2.308 CC	
5,900.0	5,900.0	5,899.0	5,899.0	14.4	14.4	99.83	-0.4	-66.0	66.1	37.3	28.82	2.295 ES	
6,000.0	6,000.0	5,999.0	5,999.0	14.4	14.6	102.04	-0.4	-66.0	66.6	37.6	29.01	2.297	
6,010.0	6,010.0	6,008.9	6,008.9	14.4	14.6	102.34	-0.4	-66.0	66.7	37.7	29.02	2.299	
6,100.0	6,099.9	6,098.0	6,098.0	14.5	14.7	104.63	-0.9	-66.7	68.2	39.1	29.12	2.341	
6,200.0	6,199.8	6,197.5	6,197.4	14.6	14.7	106.39	-2.0	-68.7	71.0	41.8	29.19	2.432	
6,300.0	6,299.8	6,297.4	6,297.3	14.6	14.8	107.93	-3.3	-70.8	74.0	44.7	29.32	2.525	
6,400.0	6,399.7	6,397.3	6,397.2	14.8	14.9	109.35	-4.6	-72.9	77.1	47.6	29.46	2.616	
6,500.0	6,499.6	6,497.3	6,497.2	14.9	15.0	110.66	-5.9	-75.0	80.2	50.6	29.61	2.708	
6,600.0	6,599.6	6,597.2	6,597.1	15.0	15.1	111.88	-7.1	-77.2	83.3	53.6	29.78	2.798	
6,700.0	6,699.5	6,697.1	6,697.0	15.2	15.3	113.00	-8.4	-79.3	86.5	56.6	29.95	2.889	
6,800.0	6,799.4	6,797.1	6,796.9	15.3	15.4	114.04	-9.7	-81.4	89.7	59.6	30.13	2.978	
6,900.0	6,899.4	6,897.0	6,896.8	15.5	15.5	115.02	-11.0	-83.5	93.0	62.7	30.32	3.066	
7,000.0	6,999.3	6,997.0	6,996.7	15.7	15.7	115.92	-12.2	-85.7	96.2	65.7	30.52	3.154	
7,100.0	7,099.2	7,096.9	7,096.6	15.9	15.9	116.77	-13.5	-87.8	99.5	68.8	30.72	3.240	
7,200.0	7,199.2	7,196.8	7,196.5	16.1	16.0	117.56	-14.8	-89.9	102.8	71.9	30.94	3.324	
7,300.0	7,299.1	7,296.8	7,296.4	16.3	16.2	118.30	-16.1	-92.0	106.2	75.0	31.16	3.407	
7,400.0	7,399.0	7,396.7	7,396.3	16.5	16.4	119.00	-17.3	-94.2	109.5	78.1	31.39	3.489	
7,500.0	7,499.0	7,496.6	7,496.2	16.7	16.6	119.66	-18.6	-96.3	112.9	81.2	31.63	3.569	
7,600.0	7,598.9	7,596.6	7,596.1	16.9	16.8	120.27	-19.9	-98.4	116.2	84.4	31.87	3.648	
7,700.0	7,698.8	7,696.5	7,696.0	17.2	17.0	120.86	-21.2	-100.5	119.6	87.5	32.12	3.724	
7,800.0	7,798.8	7,796.4	7,795.9	17.4	17.3	121.41	-22.4	-102.7	123.0	90.7	32.38	3.800	
7,900.0	7,898.7	7,896.4	7,895.8	17.7	17.5	121.93	-23.7	-104.8	126.4	93.8	32.65	3.873	
8,000.0	7,998.6	7,996.3	7,995.7	18.0	17.7	122.42	-25.0	-106.9	129.9	96.9	32.92	3.945	
8,100.0	8,098.5	8,096.2	8,095.6	18.2	17.9	122.89	-26.3	-109.0	133.3	100.1	33.20	4.015	
8,200.0	8,198.5	8,196.2	8,195.5	18.5	18.2	123.34	-27.5	-111.1	136.7	103.2	33.49	4.083	
8,300.0	8,298.4	8,296.1	8,295.4	18.8	18.4	123.76	-28.8	-113.3	140.2	106.4	33.78	4.150	
8,400.0	8,398.3	8,396.0	8,395.3	19.1	18.7	124.16	-30.1	-115.4	143.6	109.5	34.08	4.215	
8,500.0	8,498.3	8,496.0	8,495.2	19.4	19.0	124.55	-31.4	-117.5	147.1	112.7	34.38	4.278	
8,600.0	8,598.2	8,595.9	8,595.2	19.7	19.2	124.91	-32.6	-119.6	150.5	115.9	34.69	4.339	
8,700.0	8,698.1	8,695.9	8,695.1	20.0	19.5	125.26	-33.9	-121.8	154.0	119.0	35.01	4.399	
8,800.0	8,798.1	8,795.8	8,795.0	20.3	19.8	125.60	-35.2	-123.9	157.5	122.2	35.33	4.457	
8,900.0	8,898.0	8,895.7	8,894.9	20.6	20.0	125.92	-36.4	-126.0	161.0	125.3	35.66	4.514	
9,000.0	8,997.9	8,995.7	8,994.8	20.9	20.3	126.22	-37.7	-128.1	164.5	128.5	35.99	4.569	
9,100.0	9,097.9	9,095.6	9,094.7	21.3	20.6	126.52	-39.0	-130.3	168.0	131.6	36.33	4.623	
9,200.0	9,197.8	9,195.5	9,194.6	21.6	20.9	126.80	-40.3	-132.4	171.4	134.8	36.68	4.675	
9,300.0	9,297.7	9,295.5	9,294.5	21.9	21.2	127.07	-41.5	-134.5	174.9	137.9	37.02	4.725	
9,400.0	9,397.7	9,395.4	9,394.4	22.3	21.5	127.33	-42.8	-136.6	178.4	141.1	37.38	4.774	
9,500.0	9,497.6	9,495.3	9,494.3	22.6	21.8	127.58	-44.1	-138.8	182.0	144.2	37.73	4.822	
9,600.0	9,597.5	9,595.3	9,594.2	23.0	22.1	127.82	-45.4	-140.9	185.5	147.4	38.10	4.868	
9,700.0	9,697.5	9,695.2	9,694.1	23.3	22.4	128.05	-46.6	-143.0	189.0	150.5	38.46	4.913	
9,800.0	9,797.4	9,795.1	9,794.0	23.7	22.7	128.27	-47.9	-145.1	192.5	153.7	38.83	4.957	
9,900.0	9,897.3	9,895.1	9,893.9	24.0	23.0	128.49	-49.2	-147.2	196.0	156.8	39.21	4.999	
9,949.9	9,947.2	9,945.0	9,943.8	24.2	23.2	128.59	-49.8	-148.3	197.8	158.4	39.38	5.023	
10,000.0	9,997.3	9,995.0	9,993.8	24.3	23.4	128.66	-50.5	-149.4	199.4	159.9	39.54	5.043	
10,100.0	10,097.3	10,095.0	10,093.8	24.6	23.7	128.49	-51.7	-151.5	201.8	162.0	39.87	5.062	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,159.9	10,157.2	10,154.9	10,153.6	24.7	23.9	-61.26	-52.5	-152.8	202.8	162.8	40.01	5.068	
10,200.0	10,197.3	10,195.0	10,193.7	24.7	24.0	-61.50	-53.0	-153.6	203.3	163.2	40.08	5.072	
10,300.0	10,297.3	10,294.9	10,293.6	24.8	24.3	-62.10	-54.3	-155.7	204.5	164.2	40.30	5.076	
10,400.0	10,397.3	10,394.9	10,393.6	24.9	24.6	-62.69	-55.6	-157.9	205.8	165.3	40.53	5.078	
10,500.0	10,497.3	10,494.9	10,493.5	24.9	25.0	-63.27	-56.8	-160.0	207.1	166.4	40.77	5.081	
10,600.0	10,597.3	10,594.8	10,593.5	25.0	25.3	-63.85	-58.1	-162.1	208.5	167.5	41.02	5.082	
10,700.0	10,697.3	10,694.8	10,693.4	25.1	25.6	-64.41	-59.4	-164.2	209.8	168.6	41.28	5.083	
10,800.0	10,797.3	10,796.6	10,795.2	25.1	25.9	-64.82	-60.3	-165.8	210.8	169.3	41.53	5.076	
10,900.0	10,897.3	10,897.7	10,896.3	25.2	26.0	-64.87	-60.4	-166.0	210.9	169.3	41.69	5.060	
10,977.7	10,975.0	10,975.4	10,974.0	25.2	26.1	-64.87	-60.4	-166.0	210.9	169.1	41.80	5.047	
11,000.0	10,997.3	10,997.7	10,996.3	25.2	26.1	-145.45	-60.4	-166.0	211.3	169.5	41.84	5.050	
11,050.0	11,047.1	11,047.5	11,046.1	25.3	26.1	-145.88	-60.4	-166.0	214.7	172.6	42.13	5.096	
11,100.0	11,096.3	11,090.8	11,089.4	25.3	26.2	-146.80	-61.2	-166.8	222.3	179.7	42.62	5.217	
11,150.0	11,144.7	11,130.8	11,129.1	25.3	26.6	-148.39	-63.8	-169.8	235.3	192.1	43.27	5.438	
11,200.0	11,191.7	11,167.2	11,165.0	25.3	26.9	-150.24	-67.8	-174.2	253.9	209.9	44.08	5.761	
11,250.0	11,237.1	11,200.0	11,197.0	25.4	27.3	-152.01	-72.7	-179.6	278.3	233.3	45.00	6.184	
11,294.4	11,275.8	11,224.1	11,220.2	25.5	27.5	-153.10	-77.1	-184.5	304.4	258.6	45.85	6.640	
11,300.0	11,280.5	11,227.0	11,223.0	25.5	27.6	-154.76	-77.7	-185.1	308.0	262.1	45.94	6.704	
11,350.0	11,323.2	11,250.0	11,244.8	25.7	27.8	-169.51	-82.5	-190.5	341.4	294.7	46.77	7.300	
11,400.0	11,365.8	11,275.7	11,268.8	26.1	28.1	175.61	-88.7	-197.3	376.9	329.4	47.50	7.936	
11,450.0	11,408.1	11,300.0	11,291.1	26.6	28.3	161.49	-95.1	-204.5	413.8	365.6	48.19	8.587	
11,500.0	11,449.6	11,319.7	11,308.9	27.0	28.5	148.46	-100.8	-210.8	451.5	402.6	48.92	9.229	
11,550.0	11,490.2	11,340.2	11,327.1	27.4	28.7	136.58	-107.1	-217.8	489.7	440.1	49.58	9.877	
11,600.0	11,529.4	11,359.9	11,344.3	27.8	28.9	125.97	-113.6	-225.1	528.0	477.9	50.18	10.523	
11,650.0	11,567.0	11,379.0	11,360.5	28.2	29.1	116.61	-120.3	-232.4	566.3	515.6	50.72	11.166	
11,700.0	11,602.7	11,400.0	11,378.0	28.6	29.3	108.54	-128.1	-241.1	604.3	553.1	51.14	11.815	
11,750.0	11,636.2	11,415.1	11,390.4	29.0	29.4	101.28	-133.9	-247.6	641.7	590.2	51.55	12.448	
11,800.0	11,667.3	11,432.4	11,404.2	29.3	29.6	95.10	-140.9	-255.3	678.6	626.7	51.86	13.086	
11,850.0	11,695.7	11,450.0	11,417.9	29.6	29.7	89.81	-148.2	-263.4	714.7	662.6	52.08	13.723	
11,900.0	11,721.2	11,466.8	11,430.7	29.9	29.8	85.24	-155.5	-271.5	749.9	697.7	52.21	14.364	
11,950.0	11,743.7	11,525.1	11,473.5	30.2	30.1	83.73	-183.9	-299.2	783.4	731.2	52.16	15.018	
12,000.0	11,762.9	11,597.2	11,522.6	30.4	30.5	83.06	-225.9	-331.0	813.9	761.4	52.47	15.511	
12,050.0	11,778.7	11,687.7	11,577.5	30.6	31.0	83.07	-288.5	-366.3	840.5	787.3	53.21	15.796	
12,100.0	11,791.0	11,801.3	11,633.5	30.7	31.6	83.47	-380.2	-402.4	862.1	807.6	54.56	15.800	
12,150.0	11,799.7	11,939.0	11,679.7	30.8	32.2	83.77	-506.2	-431.8	877.2	820.6	56.67	15.480	
12,200.0	11,804.7	12,093.5	11,699.9	30.9	32.9	83.44	-658.4	-444.2	884.3	824.9	59.39	14.891	
12,242.3	11,806.0	12,146.0	11,700.3	31.0	33.2	83.21	-710.9	-444.0	885.3	824.9	60.39	14.659	
12,300.0	11,806.6	12,205.9	11,701.7	31.1	33.6	83.26	-770.8	-443.7	885.2	823.7	61.54	14.383	
12,358.6	11,808.4	12,265.5	11,704.2	31.2	34.0	83.30	-830.3	-443.4	885.2	822.4	62.75	14.107	
12,400.0	11,810.0	12,306.9	11,706.1	31.3	34.3	83.31	-871.7	-443.2	885.1	821.5	63.62	13.912	
12,500.0	11,814.1	12,406.9	11,710.5	31.9	35.1	83.34	-971.6	-442.7	885.1	819.2	65.88	13.435	
12,600.0	11,818.2	12,506.9	11,714.9	32.9	36.1	83.36	-1,071.5	-442.2	885.1	816.8	68.31	12.957	
12,700.0	11,822.2	12,606.9	11,719.3	34.1	37.1	83.38	-1,171.4	-441.7	885.1	814.2	70.88	12.487	
12,800.0	11,826.3	12,706.9	11,723.7	35.5	38.3	83.41	-1,271.3	-441.2	885.1	811.5	73.59	12.028	
12,900.0	11,830.3	12,806.9	11,728.1	37.0	39.6	83.43	-1,371.2	-440.7	885.1	808.7	76.40	11.584	
13,000.0	11,834.4	12,906.9	11,732.6	38.5	40.9	83.45	-1,471.1	-440.2	885.0	805.7	79.32	11.158	
13,100.0	11,838.5	13,006.9	11,737.0	40.1	42.3	83.47	-1,571.0	-439.7	885.0	802.7	82.33	10.750	
13,200.0	11,842.5	13,106.9	11,741.4	41.7	43.8	83.50	-1,670.9	-439.2	885.0	799.6	85.42	10.360	
13,300.0	11,846.6	13,206.9	11,745.8	43.4	45.3	83.52	-1,770.8	-438.7	885.0	796.4	88.59	9.990	
13,400.0	11,850.6	13,306.9	11,750.2	45.0	46.8	83.54	-1,870.7	-438.2	885.0	793.2	91.82	9.638	
13,500.0	11,854.7	13,406.9	11,754.6	46.7	48.4	83.57	-1,970.6	-437.7	885.0	789.8	95.12	9.304	
13,600.0	11,858.8	13,506.9	11,759.0	48.5	50.0	83.59	-2,070.5	-437.3	884.9	786.5	98.46	8.988	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,700.0	11,862.8	13,606.9	11,763.5	50.2	51.7	83.61	-2,170.4	-436.8	884.9	783.1	101.86	8.688	
13,800.0	11,866.9	13,706.9	11,767.9	52.0	53.4	83.64	-2,270.3	-436.3	884.9	779.6	105.29	8.404	
13,900.0	11,870.9	13,806.9	11,772.3	53.8	55.1	83.66	-2,370.2	-435.8	884.9	776.1	108.77	8.135	
14,000.0	11,875.0	13,906.9	11,776.7	55.6	56.8	83.68	-2,470.1	-435.3	884.9	772.6	112.28	7.881	
14,100.0	11,879.1	14,006.9	11,781.1	57.4	58.5	83.71	-2,570.0	-434.8	884.9	769.0	115.83	7.639	
14,200.0	11,883.1	14,106.9	11,785.5	59.3	60.3	83.73	-2,669.9	-434.3	884.8	765.4	119.41	7.410	
14,300.0	11,887.2	14,206.9	11,790.0	61.1	62.1	83.75	-2,769.8	-433.8	884.8	761.8	123.01	7.193	
14,400.0	11,891.2	14,306.9	11,794.4	63.0	63.8	83.77	-2,869.7	-433.3	884.8	758.2	126.64	6.987	
14,443.4	11,893.0	14,350.3	11,796.3	63.8	64.6	83.78	-2,913.1	-433.1	884.8	756.6	128.22	6.901	
14,447.5	11,893.2	14,354.4	11,796.5	63.8	64.7	83.79	-2,917.2	-433.1	884.8	756.4	128.37	6.893	
14,500.0	11,895.9	14,406.9	11,798.8	64.8	65.6	83.76	-2,969.6	-432.8	884.9	754.6	130.28	6.792	
14,547.8	11,899.1	14,454.7	11,800.9	65.7	66.5	83.69	-3,017.3	-432.6	885.0	753.0	132.02	6.703	
14,600.0	11,903.2	14,506.8	11,803.2	66.7	67.5	83.58	-3,069.4	-432.3	885.2	751.3	133.93	6.609	
14,700.0	11,910.8	14,608.2	11,807.9	68.5	69.3	83.38	-3,170.7	-431.8	885.6	747.9	137.64	6.434	
14,800.0	11,918.5	14,708.2	11,813.7	70.4	71.1	83.26	-3,270.5	-431.3	885.8	744.5	141.33	6.267	
14,900.0	11,926.2	14,808.2	11,819.4	72.3	73.0	83.13	-3,370.3	-430.8	886.0	741.0	145.04	6.109	
15,000.0	11,933.9	14,908.1	11,825.2	74.2	74.8	83.01	-3,470.1	-430.3	886.3	737.5	148.77	5.957	
15,100.0	11,941.6	15,008.1	11,831.0	76.1	76.7	82.88	-3,569.9	-429.8	886.5	734.0	152.50	5.813	
15,200.0	11,949.3	15,108.1	11,836.7	78.0	78.6	82.76	-3,669.8	-429.3	886.8	730.5	156.25	5.675	
15,300.0	11,957.0	15,208.1	11,842.5	80.0	80.4	82.63	-3,769.6	-428.8	887.0	727.0	160.00	5.544	
15,400.0	11,964.7	15,308.1	11,848.2	81.9	82.3	82.51	-3,869.4	-428.3	887.3	723.5	163.77	5.418	
15,500.0	11,972.4	15,408.0	11,854.0	83.8	84.2	82.39	-3,969.2	-427.8	887.5	720.0	167.54	5.297	
15,600.0	11,980.1	15,508.0	11,859.7	85.7	86.1	82.26	-4,069.0	-427.3	887.8	716.5	171.33	5.182	
15,700.0	11,987.8	15,608.0	11,865.5	87.7	88.0	82.14	-4,168.8	-426.8	888.1	713.0	175.11	5.071	
15,800.0	11,995.5	15,708.0	11,871.3	89.6	89.9	82.01	-4,268.6	-426.3	888.3	709.4	178.91	4.965	
15,900.0	12,003.2	15,808.0	11,877.0	91.5	91.8	81.89	-4,368.5	-425.8	888.6	705.9	182.71	4.864	
16,000.0	12,010.9	15,907.9	11,882.8	93.5	93.7	81.77	-4,468.3	-425.3	888.9	702.4	186.51	4.766	
16,100.0	12,018.6	16,007.9	11,888.5	95.4	95.6	81.64	-4,568.1	-424.8	889.2	698.9	190.32	4.672	
16,200.0	12,026.3	16,107.9	11,894.3	97.4	97.6	81.52	-4,667.9	-424.3	889.5	695.3	194.14	4.582	
16,300.0	12,034.0	16,207.9	11,900.1	99.3	99.5	81.40	-4,767.7	-423.8	889.8	691.8	197.96	4.495	
16,400.0	12,041.7	16,307.9	11,905.8	101.3	101.4	81.27	-4,867.5	-423.3	890.1	688.3	201.78	4.411	
16,500.0	12,049.4	16,407.9	11,911.6	103.2	103.3	81.15	-4,967.3	-422.8	890.4	684.8	205.60	4.331	
16,600.0	12,057.1	16,507.8	11,917.3	105.2	105.3	81.03	-5,067.2	-422.3	890.7	681.3	209.43	4.253	
16,638.3	12,060.0	16,546.1	11,919.5	105.9	106.0	80.98	-5,105.3	-422.1	890.8	679.9	210.89	4.224	
16,700.0	12,064.1	16,607.8	11,923.1	107.1	107.2	80.94	-5,167.0	-421.8	890.9	677.6	213.27	4.177	
16,786.9	12,067.6	16,694.7	11,928.1	108.8	108.9	81.04	-5,253.7	-421.4	890.7	674.0	216.65	4.111	
16,800.0	12,067.9	16,707.8	11,928.9	109.1	109.1	81.07	-5,266.8	-421.3	890.6	673.4	217.17	4.101	
16,900.0	12,070.4	16,807.7	11,934.6	111.1	111.1	81.28	-5,366.6	-420.8	890.1	669.0	221.09	4.026	
17,000.0	12,072.9	16,907.7	11,940.4	113.0	113.0	81.48	-5,466.3	-420.3	889.6	664.6	225.03	3.953	
17,100.0	12,075.5	17,007.6	11,946.1	115.0	115.0	81.69	-5,566.1	-419.8	889.2	660.2	228.97	3.883	
17,200.0	12,078.0	17,107.6	11,951.9	117.0	116.9	81.90	-5,665.9	-419.3	888.7	655.8	232.91	3.816	
17,300.0	12,080.5	17,207.5	11,957.6	118.9	118.9	82.11	-5,765.7	-418.8	888.3	651.4	236.86	3.750	
17,400.0	12,083.0	17,307.5	11,963.4	120.9	120.8	82.31	-5,865.5	-418.3	887.8	647.0	240.82	3.687	
17,500.0	12,085.5	17,407.4	11,969.2	122.9	122.8	82.52	-5,965.2	-417.8	887.4	642.6	244.78	3.625	
17,600.0	12,088.0	17,507.4	11,974.9	124.9	124.7	82.73	-6,065.0	-417.3	887.0	638.2	248.74	3.566	
17,700.0	12,090.5	17,606.3	11,980.5	126.8	126.7	82.93	-6,163.8	-416.9	886.6	633.9	252.68	3.509	
17,766.8	12,092.2	17,670.7	11,982.8	128.2	127.9	82.97	-6,228.1	-416.5	886.5	631.3	255.26	3.473	
17,800.0	12,093.1	17,702.6	11,983.5	128.8	128.6	82.96	-6,260.1	-416.4	886.5	630.0	256.53	3.456	
17,900.0	12,095.6	17,801.8	11,984.2	130.8	130.5	82.85	-6,359.2	-415.9	886.8	626.4	260.40	3.405	
18,000.0	12,098.1	17,901.7	11,984.8	132.8	132.5	82.73	-6,459.2	-415.4	887.0	622.7	264.29	3.356	
18,100.0	12,100.6	18,001.7	11,985.4	134.8	134.4	82.61	-6,559.1	-414.9	887.2	619.1	268.18	3.308	
18,200.0	12,103.1	18,101.7	11,986.1	136.8	136.4	82.49	-6,659.1	-414.4	887.5	615.4	272.07	3.262	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Offset Well Error: 0.0 usft

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
18,300.0	12,105.6	18,201.7	11,986.7	138.7	138.4	82.37	-6,759.1	-413.9	887.7	611.8	275.96	3.217	
18,400.0	12,108.1	18,301.7	11,987.3	140.7	140.4	82.25	-6,859.1	-413.3	888.0	608.1	279.85	3.173	
18,500.0	12,110.6	18,401.7	11,988.0	142.7	142.3	82.13	-6,959.1	-412.8	888.2	604.5	283.74	3.130	
18,600.0	12,113.2	18,501.6	11,988.6	144.7	144.3	82.01	-7,059.0	-412.3	888.5	600.9	287.63	3.089	
18,700.0	12,115.7	18,601.6	11,989.2	146.7	146.3	81.89	-7,159.0	-411.8	888.8	597.2	291.52	3.049	
18,800.0	12,118.2	18,701.6	11,989.9	148.7	148.2	81.77	-7,259.0	-411.3	889.0	593.6	295.41	3.009	
18,900.0	12,120.7	18,801.6	11,990.5	150.7	150.2	81.65	-7,359.0	-410.8	889.3	590.0	299.30	2.971	
19,000.0	12,123.2	18,901.6	11,991.1	152.6	152.2	81.53	-7,459.0	-410.3	889.6	586.4	303.19	2.934	
19,100.0	12,125.7	19,001.5	11,991.8	154.6	154.2	81.41	-7,558.9	-409.8	889.9	582.8	307.08	2.898	
19,150.5	12,127.0	19,052.0	11,992.1	155.6	155.2	81.35	-7,609.4	-409.6	890.0	581.0	309.03	2.880	
19,200.0	12,127.8	19,101.5	11,992.4	156.6	156.2	81.31	-7,658.9	-409.3	890.1	579.1	310.97	2.862	
19,307.7	12,126.6	19,209.3	11,993.1	158.8	158.3	81.44	-7,766.6	-408.8	889.8	574.6	315.27	2.822	
19,400.0	12,123.9	19,301.5	11,993.7	160.6	160.1	81.65	-7,858.8	-408.3	889.3	570.3	319.00	2.788	
19,500.0	12,120.9	19,401.4	11,994.3	162.6	162.1	81.88	-7,958.8	-407.8	888.8	565.8	323.04	2.751	
19,600.0	12,117.9	19,501.3	11,994.9	164.6	164.1	82.11	-8,058.7	-407.3	888.3	561.2	327.08	2.716	
19,700.0	12,115.0	19,601.3	11,995.6	166.6	166.1	82.34	-8,158.6	-406.8	887.8	556.7	331.13	2.681	
19,800.0	12,112.0	19,701.2	11,996.2	168.6	168.0	82.57	-8,258.6	-406.3	887.4	552.2	335.18	2.647	
19,900.0	12,109.0	19,801.1	11,996.8	170.6	170.0	82.80	-8,358.5	-405.8	886.9	547.7	339.22	2.615	
20,000.0	12,106.0	19,901.1	11,997.5	172.6	172.0	83.03	-8,458.4	-405.3	886.5	543.2	343.27	2.582	
20,100.0	12,103.1	20,001.0	11,998.1	174.5	174.0	83.27	-8,558.4	-404.8	886.0	538.7	347.32	2.551	
20,200.0	12,100.1	20,100.9	11,998.7	176.5	176.0	83.50	-8,658.3	-404.3	885.6	534.3	351.37	2.520	
20,300.0	12,097.1	20,200.9	11,999.4	178.5	178.0	83.73	-8,758.2	-403.8	885.2	529.8	355.42	2.491	
20,400.0	12,094.1	20,300.8	12,000.0	180.5	180.0	83.96	-8,858.2	-403.3	884.8	525.4	359.47	2.462	
20,500.0	12,091.2	20,400.7	12,000.6	182.5	182.0	84.19	-8,958.1	-402.8	884.5	521.0	363.52	2.433	
20,600.0	12,088.2	20,500.7	12,001.2	184.5	183.9	84.43	-9,058.0	-402.3	884.1	516.5	367.56	2.405	
20,700.0	12,085.2	20,600.6	12,001.9	186.5	185.9	84.66	-9,157.9	-401.8	883.8	512.2	371.61	2.378	
20,800.0	12,082.2	20,700.5	12,002.5	188.5	187.9	84.89	-9,257.9	-401.3	883.4	507.8	375.66	2.352	
20,908.3	12,079.0	20,808.8	12,003.2	190.7	190.1	85.14	-9,366.1	-400.7	883.1	503.1	380.04	2.324	
21,000.0	12,077.7	20,900.5	12,003.8	192.5	191.9	85.26	-9,457.8	-400.3	883.0	499.2	383.72	2.301	
21,010.1	12,077.8	20,910.6	12,003.8	192.7	192.1	85.26	-9,467.9	-400.2	883.0	498.8	384.13	2.299	
21,100.0	12,079.7	21,000.4	12,004.4	194.5	193.9	85.18	-9,557.8	-399.8	883.1	495.4	387.68	2.278	
21,116.3	12,080.4	21,016.8	12,004.5	194.8	194.2	85.14	-9,574.1	-399.7	883.1	494.8	388.32	2.274	
21,200.0	12,083.9	21,100.4	12,005.0	196.5	195.9	84.94	-9,657.7	-399.3	883.4	491.8	391.59	2.256	
21,300.0	12,088.2	21,200.3	12,005.7	198.5	197.9	84.71	-9,757.6	-398.8	883.7	488.2	395.49	2.234	
21,400.0	12,092.5	21,301.7	12,006.7	200.5	199.9	84.50	-9,859.0	-398.2	884.0	484.6	399.43	2.213	
21,500.0	12,096.8	21,402.8	12,010.2	202.5	201.9	84.44	-9,960.0	-397.7	884.1	480.7	403.42	2.192	
21,600.0	12,101.1	21,502.8	12,013.8	204.5	203.9	84.40	-10,060.0	-397.2	884.2	476.8	407.39	2.170	
21,700.0	12,105.4	21,602.8	12,017.5	206.5	205.9	84.36	-10,159.9	-396.7	884.3	472.9	411.36	2.150	
21,800.0	12,109.6	21,702.8	12,021.1	208.5	207.9	84.32	-10,259.8	-396.2	884.3	469.0	415.32	2.129	
21,900.0	12,113.9	21,802.8	12,024.8	210.5	209.9	84.28	-10,359.8	-395.7	884.4	465.1	419.29	2.109	
22,000.0	12,118.2	21,902.8	12,028.4	212.5	211.9	84.23	-10,459.7	-395.2	884.5	461.2	423.26	2.090	
22,100.0	12,122.5	22,002.8	12,032.1	214.5	213.9	84.19	-10,559.6	-394.7	884.5	457.3	427.23	2.070	
22,200.0	12,126.8	22,102.8	12,035.7	216.5	215.9	84.15	-10,659.6	-394.2	884.6	453.4	431.20	2.052	
22,300.0	12,131.1	22,202.8	12,039.4	218.5	217.9	84.11	-10,759.5	-393.7	884.7	449.5	435.17	2.033	
22,400.0	12,135.4	22,302.8	12,043.0	220.5	219.9	84.07	-10,859.4	-393.2	884.8	445.6	439.14	2.015	
22,500.0	12,139.6	22,402.8	12,046.7	222.5	221.9	84.03	-10,959.3	-392.7	884.8	441.7	443.10	1.997	
22,600.0	12,143.9	22,502.8	12,050.3	224.5	223.9	83.99	-11,059.3	-392.2	884.9	437.8	447.07	1.979	
22,700.0	12,148.2	22,602.8	12,053.9	226.5	225.9	83.95	-11,159.2	-391.7	885.0	433.9	451.04	1.962	
22,800.0	12,152.5	22,702.8	12,057.6	228.5	227.9	83.91	-11,259.1	-391.2	885.0	430.0	455.01	1.945	
22,900.0	12,156.8	22,802.8	12,061.2	230.5	229.9	83.86	-11,359.1	-390.7	885.1	426.1	458.98	1.928	
23,000.0	12,161.1	22,902.8	12,064.9	232.5	231.9	83.82	-11,459.0	-390.2	885.2	422.2	462.94	1.912	
23,100.0	12,165.3	23,002.8	12,068.5	234.6	233.9	83.78	-11,558.9	-389.7	885.3	418.4	466.91	1.896	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Margarita 13 Federal Com 13H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
23,200.0	12,169.6	23,102.8	12,072.2	236.6	235.9	83.74	-11,658.9	-389.2	885.3	414.5	470.88	1.880	
23,300.0	12,173.9	23,202.8	12,075.8	238.6	237.9	83.70	-11,758.8	-388.7	885.4	410.6	474.85	1.865	
23,400.0	12,178.2	23,302.8	12,079.5	240.6	239.9	83.66	-11,858.7	-388.2	885.5	406.7	478.82	1.849	
23,500.0	12,182.5	23,402.8	12,083.1	242.6	241.9	83.62	-11,958.7	-387.7	885.6	402.8	482.78	1.834	
23,605.5	12,187.0	23,508.2	12,087.0	244.7	244.0	83.58	-12,064.1	-387.1	885.7	398.7	486.97	1.819 SF	

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 1H - Margarita 13 Federal Com 1H - Margarita 13 Federal Com 1H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.59	-1.0	-99.0	99.0				
100.0	100.0	99.0	99.0	0.5	0.5	-90.59	-1.0	-99.0	99.0	97.9	1.06	93.826	
200.0	200.0	199.0	199.0	1.7	1.7	-90.59	-1.0	-99.0	99.0	95.6	3.41	29.014	
300.0	300.0	299.0	299.0	2.4	2.4	-90.59	-1.0	-99.0	99.0	94.2	4.82	20.554	
400.0	400.0	399.0	399.0	3.0	2.9	-90.59	-1.0	-99.0	99.0	93.1	5.90	16.770	
500.0	500.0	499.0	499.0	3.4	3.4	-90.59	-1.0	-99.0	99.0	92.2	6.83	14.502	
600.0	600.0	599.0	599.0	3.8	3.8	-90.59	-1.0	-99.0	99.0	91.3	7.64	12.949	
700.0	700.0	699.0	699.0	4.2	4.2	-90.59	-1.0	-99.0	99.0	90.6	8.39	11.798	
800.0	800.0	799.0	799.0	4.5	4.5	-90.59	-1.0	-99.0	99.0	89.9	9.08	10.901	
900.0	900.0	899.0	899.0	4.9	4.9	-90.59	-1.0	-99.0	99.0	89.3	9.73	10.176	
1,000.0	1,000.0	999.0	999.0	5.2	5.2	-90.59	-1.0	-99.0	99.0	88.6	10.34	9.575	
1,100.0	1,100.0	1,099.0	1,099.0	5.5	5.5	-90.59	-1.0	-99.0	99.0	88.1	10.92	9.065	
1,200.0	1,200.0	1,199.0	1,199.0	5.7	5.7	-90.59	-1.0	-99.0	99.0	87.5	11.48	8.625	
1,300.0	1,300.0	1,299.0	1,299.0	6.0	6.0	-90.59	-1.0	-99.0	99.0	87.0	12.01	8.240	
1,400.0	1,400.0	1,399.0	1,399.0	6.3	6.3	-90.59	-1.0	-99.0	99.0	86.5	12.53	7.901	
1,500.0	1,500.0	1,499.0	1,499.0	6.5	6.5	-90.59	-1.0	-99.0	99.0	86.0	13.03	7.597	
1,600.0	1,600.0	1,599.0	1,599.0	6.8	6.8	-90.59	-1.0	-99.0	99.0	85.5	13.51	7.324	
1,700.0	1,700.0	1,699.0	1,699.0	7.0	7.0	-90.59	-1.0	-99.0	99.0	85.0	13.99	7.077	
1,800.0	1,800.0	1,799.0	1,799.0	7.2	7.2	-90.59	-1.0	-99.0	99.0	84.5	14.45	6.852	
1,900.0	1,900.0	1,899.0	1,899.0	7.4	7.4	-90.59	-1.0	-99.0	99.0	84.1	14.90	6.645	
2,000.0	2,000.0	1,999.0	1,999.0	7.7	7.7	-90.59	-1.0	-99.0	99.0	83.6	15.34	6.454	
2,100.0	2,100.0	2,099.0	2,099.0	7.9	7.9	-90.59	-1.0	-99.0	99.0	83.2	15.77	6.278	
2,200.0	2,200.0	2,199.0	2,199.0	8.1	8.1	-90.59	-1.0	-99.0	99.0	82.8	16.19	6.114	
2,300.0	2,300.0	2,299.0	2,299.0	8.3	8.3	-90.59	-1.0	-99.0	99.0	82.4	16.61	5.961	
2,400.0	2,400.0	2,399.0	2,399.0	8.5	8.5	-90.59	-1.0	-99.0	99.0	82.0	17.01	5.818	
2,500.0	2,500.0	2,499.0	2,499.0	8.7	8.7	-90.59	-1.0	-99.0	99.0	81.6	17.42	5.684	
2,600.0	2,600.0	2,599.0	2,599.0	8.9	8.9	-90.59	-1.0	-99.0	99.0	81.2	17.81	5.558	
2,700.0	2,700.0	2,699.0	2,699.0	9.1	9.1	-90.59	-1.0	-99.0	99.0	80.8	18.20	5.439	
2,800.0	2,800.0	2,799.0	2,799.0	9.3	9.3	-90.59	-1.0	-99.0	99.0	80.4	18.58	5.326	
2,900.0	2,900.0	2,899.0	2,899.0	9.5	9.5	-90.59	-1.0	-99.0	99.0	80.0	18.96	5.220	
3,000.0	3,000.0	2,999.0	2,999.0	9.7	9.7	-90.59	-1.0	-99.0	99.0	79.6	19.34	5.119	
3,100.0	3,100.0	3,099.0	3,099.0	9.9	9.9	-90.59	-1.0	-99.0	99.0	79.3	19.71	5.023	
3,200.0	3,200.0	3,199.0	3,199.0	10.0	10.0	-90.59	-1.0	-99.0	99.0	78.9	20.07	4.931	
3,300.0	3,300.0	3,299.0	3,299.0	10.2	10.2	-90.59	-1.0	-99.0	99.0	78.6	20.43	4.844	
3,400.0	3,400.0	3,399.0	3,399.0	10.4	10.4	-90.59	-1.0	-99.0	99.0	78.2	20.79	4.761	
3,500.0	3,500.0	3,499.0	3,499.0	10.6	10.6	-90.59	-1.0	-99.0	99.0	77.8	21.15	4.681	
3,600.0	3,600.0	3,599.0	3,599.0	10.7	10.7	-90.59	-1.0	-99.0	99.0	77.5	21.50	4.605	
3,700.0	3,700.0	3,699.0	3,699.0	10.9	10.9	-90.59	-1.0	-99.0	99.0	77.1	21.84	4.531	
3,800.0	3,800.0	3,799.0	3,799.0	11.1	11.1	-90.59	-1.0	-99.0	99.0	76.8	22.19	4.461	
3,900.0	3,900.0	3,899.0	3,899.0	11.3	11.3	-90.59	-1.0	-99.0	99.0	76.5	22.53	4.393	
4,000.0	4,000.0	3,999.0	3,999.0	11.4	11.4	-90.59	-1.0	-99.0	99.0	76.1	22.87	4.328	
4,100.0	4,100.0	4,099.0	4,099.0	11.6	11.6	-90.59	-1.0	-99.0	99.0	75.8	23.21	4.266	
4,200.0	4,200.0	4,199.0	4,199.0	11.8	11.8	-90.59	-1.0	-99.0	99.0	75.4	23.54	4.205	
4,300.0	4,300.0	4,299.0	4,299.0	11.9	11.9	-90.59	-1.0	-99.0	99.0	75.1	23.87	4.147	
4,400.0	4,400.0	4,399.0	4,399.0	12.1	12.1	-90.59	-1.0	-99.0	99.0	74.8	24.20	4.091	
4,500.0	4,500.0	4,499.0	4,499.0	12.3	12.3	-90.59	-1.0	-99.0	99.0	74.5	24.52	4.036	
4,600.0	4,600.0	4,599.0	4,599.0	12.4	12.4	-90.59	-1.0	-99.0	99.0	74.1	24.85	3.984	
4,700.0	4,700.0	4,699.0	4,699.0	12.6	12.6	-90.59	-1.0	-99.0	99.0	73.8	25.17	3.933	
4,800.0	4,800.0	4,799.0	4,799.0	12.7	12.7	-90.59	-1.0	-99.0	99.0	73.5	25.49	3.883	
4,900.0	4,900.0	4,899.0	4,899.0	12.9	12.9	-90.59	-1.0	-99.0	99.0	73.2	25.81	3.836	
5,000.0	5,000.0	4,999.0	4,999.0	13.1	13.1	-90.59	-1.0	-99.0	99.0	72.9	26.12	3.789	
5,100.0	5,100.0	5,099.0	5,099.0	13.2	13.2	-90.59	-1.0	-99.0	99.0	72.5	26.44	3.744	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 1H - Margarita 13 Federal Com 1H - Margarita 13 Federal Com 1H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.0	5,200.0	5,199.0	5,199.0	13.4	13.4	-90.59	-1.0	-99.0	99.0	72.2	26.75	3.700	
5,300.0	5,300.0	5,299.0	5,299.0	13.5	13.5	-90.59	-1.0	-99.0	99.0	71.9	27.06	3.658	
5,400.0	5,400.0	5,399.0	5,399.0	13.7	13.7	-90.59	-1.0	-99.0	99.0	71.6	27.37	3.617	
5,500.0	5,500.0	5,499.0	5,499.0	13.8	13.8	-90.59	-1.0	-99.0	99.0	71.3	27.68	3.576	
5,600.0	5,600.0	5,599.0	5,599.0	14.0	14.0	-90.59	-1.0	-99.0	99.0	71.0	27.98	3.537	
5,700.0	5,700.0	5,699.0	5,699.0	14.1	14.1	-90.59	-1.0	-99.0	99.0	70.7	28.29	3.499	
5,800.0	5,800.0	5,799.0	5,799.0	14.3	14.3	-90.59	-1.0	-99.0	99.0	70.4	28.59	3.462	CC, ES, SF
5,900.0	5,900.0	5,897.4	5,897.4	14.4	14.4	99.16	-1.4	-99.7	99.9	71.1	28.76	3.473	
6,000.0	6,000.0	5,996.4	5,996.4	14.4	14.4	100.01	-2.4	-101.9	102.6	73.7	28.84	3.556	
6,010.0	6,010.0	6,006.4	6,006.4	14.4	14.4	100.14	-2.5	-102.2	102.9	74.0	28.84	3.567	
6,100.0	6,099.9	6,096.3	6,096.2	14.5	14.5	101.32	-3.5	-104.5	105.7	76.8	28.93	3.655	
6,200.0	6,199.8	6,196.2	6,196.1	14.6	14.6	102.56	-4.7	-107.0	109.0	79.9	29.08	3.748	
6,300.0	6,299.8	6,296.2	6,296.0	14.6	14.7	103.72	-5.8	-109.6	112.3	83.0	29.25	3.840	
6,400.0	6,399.7	6,396.1	6,395.9	14.8	14.9	104.82	-7.0	-112.1	115.6	86.2	29.42	3.931	
6,500.0	6,499.6	6,496.0	6,495.8	14.9	15.0	105.86	-8.1	-114.6	119.0	89.4	29.60	4.021	
6,600.0	6,599.6	6,595.9	6,595.7	15.0	15.2	106.84	-9.3	-117.2	122.4	92.6	29.79	4.110	
6,700.0	6,699.5	6,695.8	6,695.5	15.2	15.3	107.76	-10.4	-119.7	125.9	95.9	29.99	4.197	
6,800.0	6,799.4	6,795.8	6,795.4	15.3	15.5	108.64	-11.6	-122.3	129.4	99.2	30.20	4.284	
6,900.0	6,899.4	6,895.7	6,895.3	15.5	15.7	109.47	-12.7	-124.8	132.9	102.5	30.42	4.368	
7,000.0	6,999.3	6,995.6	6,995.2	15.7	15.9	110.26	-13.9	-127.3	136.4	105.8	30.64	4.452	
7,100.0	7,099.2	7,095.5	7,095.1	15.9	16.1	111.00	-15.1	-129.9	140.0	109.1	30.88	4.533	
7,200.0	7,199.2	7,195.4	7,194.9	16.1	16.3	111.71	-16.2	-132.4	143.6	112.4	31.12	4.613	
7,300.0	7,299.1	7,295.4	7,294.8	16.3	16.5	112.39	-17.4	-135.0	147.2	115.8	31.37	4.691	
7,400.0	7,399.0	7,395.3	7,394.7	16.5	16.7	113.03	-18.5	-137.5	150.8	119.2	31.63	4.768	
7,500.0	7,499.0	7,495.2	7,494.6	16.7	16.9	113.65	-19.7	-140.0	154.4	122.5	31.89	4.842	
7,600.0	7,598.9	7,595.1	7,594.5	16.9	17.2	114.23	-20.8	-142.6	158.1	125.9	32.16	4.915	
7,700.0	7,698.8	7,695.0	7,694.3	17.2	17.4	114.79	-22.0	-145.1	161.8	129.3	32.45	4.986	
7,800.0	7,798.8	7,795.0	7,794.2	17.4	17.7	115.32	-23.1	-147.7	165.5	132.7	32.73	5.055	
7,900.0	7,898.7	7,894.9	7,894.1	17.7	17.9	115.83	-24.3	-150.2	169.2	136.1	33.03	5.122	
8,000.0	7,998.6	7,994.8	7,994.0	18.0	18.2	116.32	-25.4	-152.7	172.9	139.5	33.33	5.187	
8,100.0	8,098.5	8,094.7	8,093.9	18.2	18.4	116.79	-26.6	-155.3	176.6	143.0	33.64	5.250	
8,200.0	8,198.5	8,194.6	8,193.8	18.5	18.7	117.24	-27.8	-157.8	180.3	146.4	33.95	5.312	
8,300.0	8,298.4	8,294.6	8,293.6	18.8	19.0	117.66	-28.9	-160.4	184.1	149.8	34.27	5.371	
8,400.0	8,398.3	8,394.5	8,393.5	19.1	19.3	118.08	-30.1	-162.9	187.8	153.2	34.60	5.429	
8,500.0	8,498.3	8,494.4	8,493.4	19.4	19.5	118.47	-31.2	-165.4	191.6	156.7	34.94	5.485	
8,600.0	8,598.2	8,594.3	8,593.3	19.7	19.8	118.86	-32.4	-168.0	195.4	160.1	35.27	5.539	
8,700.0	8,698.1	8,694.2	8,693.2	20.0	20.1	119.22	-33.5	-170.5	199.2	163.6	35.62	5.592	
8,800.0	8,798.1	8,794.2	8,793.0	20.3	20.4	119.57	-34.7	-173.1	203.0	167.0	35.97	5.643	
8,900.0	8,898.0	8,894.1	8,892.9	20.6	20.7	119.91	-35.8	-175.6	206.8	170.4	36.33	5.692	
9,000.0	8,997.9	8,994.0	8,992.8	20.9	21.0	120.24	-37.0	-178.1	210.6	173.9	36.69	5.739	
9,100.0	9,097.9	9,093.9	9,092.7	21.3	21.3	120.56	-38.1	-180.7	214.4	177.3	37.06	5.785	
9,200.0	9,197.8	9,193.9	9,192.6	21.6	21.7	120.86	-39.3	-183.2	218.2	180.8	37.43	5.830	
9,300.0	9,297.7	9,293.8	9,292.5	21.9	22.0	121.16	-40.5	-185.8	222.1	184.2	37.81	5.873	
9,400.0	9,397.7	9,393.7	9,392.3	22.3	22.3	121.44	-41.6	-188.3	225.9	187.7	38.19	5.914	
9,500.0	9,497.6	9,493.6	9,492.2	22.6	22.6	121.72	-42.8	-190.8	229.7	191.1	38.58	5.955	
9,600.0	9,597.5	9,593.5	9,592.1	23.0	22.9	121.98	-43.9	-193.4	233.6	194.6	38.97	5.993	
9,700.0	9,697.5	9,693.5	9,692.0	23.3	23.3	122.24	-45.1	-195.9	237.4	198.0	39.37	6.031	
9,800.0	9,797.4	9,793.4	9,791.9	23.7	23.6	122.49	-46.2	-198.5	241.3	201.5	39.77	6.067	
9,900.0	9,897.3	9,893.3	9,891.7	24.0	23.9	122.73	-47.4	-201.0	245.1	205.0	40.17	6.102	
9,949.9	9,947.2	9,943.2	9,941.6	24.2	24.1	122.85	-48.0	-202.3	247.1	206.7	40.36	6.122	
10,000.0	9,997.3	9,993.2	9,991.6	24.3	24.3	122.94	-48.5	-203.5	248.9	208.3	40.54	6.139	
10,100.0	10,097.3	10,093.2	10,091.5	24.6	24.6	122.86	-49.7	-206.1	251.8	210.9	40.91	6.154	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 1H - Margarita 13 Federal Com 1H - Margarita 13 Federal Com 1H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Offset Well Error: 0.0 usft

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,159.9	10,157.2	10,153.9	10,152.2	24.7	24.8	-66.81	-50.4	-207.6	253.0	212.0	41.07	6.161	
10,200.0	10,197.3	10,195.2	10,193.5	24.7	24.9	-66.95	-50.7	-208.3	253.6	212.4	41.16	6.161	
10,300.0	10,297.3	10,297.9	10,296.3	24.8	25.1	-67.07	-51.0	-209.0	254.1	212.7	41.35	6.144	
10,400.0	10,397.3	10,397.9	10,396.3	24.9	25.2	-67.07	-51.0	-209.0	254.1	212.5	41.51	6.120	
10,500.0	10,497.3	10,497.9	10,496.3	24.9	25.2	-67.07	-51.0	-209.0	254.1	212.4	41.68	6.095	
10,600.0	10,597.3	10,597.9	10,596.3	25.0	25.3	-67.07	-51.0	-209.0	254.1	212.2	41.85	6.070	
10,700.0	10,697.3	10,687.8	10,685.8	25.1	25.8	-68.58	-56.6	-213.1	256.0	213.9	42.08	6.084	
10,800.0	10,797.3	10,773.5	10,769.2	25.1	26.6	-72.71	-72.3	-224.7	262.9	220.3	42.60	6.172	
10,900.0	10,897.3	10,850.0	10,840.4	25.2	27.3	-78.25	-94.6	-241.2	277.6	233.8	43.83	6.334	
10,977.7	10,975.0	10,906.6	10,890.4	25.2	27.8	-83.11	-115.9	-257.0	296.1	250.8	45.33	6.532	
11,000.0	10,997.3	10,921.2	10,902.7	25.2	27.9	-164.77	-122.0	-261.5	303.1	257.2	45.88	6.606	
11,050.0	11,047.1	10,950.0	10,926.7	25.3	28.2	-167.05	-134.9	-271.1	323.7	276.3	47.43	6.824	
11,100.0	11,096.3	10,976.9	10,948.4	25.3	28.4	-169.22	-147.8	-280.6	350.7	301.6	49.05	7.148	
11,150.0	11,144.7	11,000.0	10,966.3	25.3	28.6	-171.05	-159.4	-289.2	383.3	332.8	50.53	7.586	
11,200.0	11,191.7	11,017.1	10,979.2	25.3	28.7	-172.27	-168.4	-295.9	420.8	368.9	51.85	8.116	
11,250.0	11,237.1	11,031.7	10,990.0	25.4	28.8	-173.24	-176.4	-301.8	462.1	409.2	52.92	8.733	
11,294.4	11,275.8	11,050.0	11,003.1	25.5	29.0	-174.99	-186.6	-309.3	501.5	448.0	53.56	9.364	
11,300.0	11,280.5	11,050.0	11,003.1	25.5	29.0	-177.06	-186.6	-309.3	506.6	452.9	53.66	9.440	
11,350.0	11,323.2	11,050.0	11,003.1	25.7	29.0	163.97	-186.6	-309.3	552.0	497.6	54.47	10.135	
11,400.0	11,365.8	11,064.8	11,013.4	26.1	29.0	144.60	-195.1	-315.6	597.5	542.5	54.96	10.870	
11,450.0	11,408.1	11,080.3	11,023.9	26.6	29.1	127.80	-204.4	-322.4	642.5	587.1	55.42	11.593	
11,500.0	11,449.6	11,100.0	11,037.0	27.0	29.2	113.72	-216.5	-330.7	686.5	630.7	55.81	12.299	
11,550.0	11,490.2	11,124.1	11,052.5	27.4	29.3	102.24	-232.1	-340.7	729.1	672.9	56.20	12.974	
11,600.0	11,529.4	11,150.0	11,068.5	27.8	29.5	92.92	-249.7	-350.9	770.1	713.5	56.57	13.612	
11,650.0	11,567.0	11,175.6	11,083.6	28.2	29.6	85.29	-267.8	-360.6	809.3	752.3	56.98	14.202	
11,700.0	11,602.7	11,204.5	11,099.9	28.6	29.7	79.12	-289.4	-371.0	846.4	789.0	57.38	14.749	
11,750.0	11,636.2	11,235.7	11,116.4	29.0	29.9	74.10	-313.6	-381.6	881.1	823.3	57.79	15.246	
11,800.0	11,667.3	11,269.2	11,132.9	29.3	30.1	70.01	-340.9	-392.1	913.3	855.1	58.22	15.688	
11,850.0	11,695.7	11,305.2	11,149.1	29.6	30.2	66.69	-371.3	-402.4	942.8	884.2	58.68	16.067	
11,900.0	11,721.2	11,343.7	11,164.6	29.9	30.4	63.99	-405.1	-412.2	969.4	910.2	59.18	16.379	
11,950.0	11,743.7	11,384.5	11,178.9	30.2	30.6	61.82	-442.2	-421.3	992.8	933.0	59.75	16.616	

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 21H - Margarita 13 Federal Com 21H - Margarita 13 Federal Com 21H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.53	-1.2	-132.0	132.0				
100.0	100.0	99.0	99.0	0.5	0.5	-90.53	-1.2	-132.0	132.0	130.9	1.06	125.101	
200.0	200.0	199.0	199.0	1.7	1.7	-90.53	-1.2	-132.0	132.0	128.6	3.41	38.685	
300.0	300.0	299.0	299.0	2.4	2.4	-90.53	-1.2	-132.0	132.0	127.2	4.82	27.405	
400.0	400.0	399.0	399.0	3.0	2.9	-90.53	-1.2	-132.0	132.0	126.1	5.90	22.360	
500.0	500.0	499.0	499.0	3.4	3.4	-90.53	-1.2	-132.0	132.0	125.2	6.83	19.336	
600.0	600.0	599.0	599.0	3.8	3.8	-90.53	-1.2	-132.0	132.0	124.3	7.64	17.265	
700.0	700.0	699.0	699.0	4.2	4.2	-90.53	-1.2	-132.0	132.0	123.6	8.39	15.731	
800.0	800.0	799.0	799.0	4.5	4.5	-90.53	-1.2	-132.0	132.0	122.9	9.08	14.535	
900.0	900.0	899.0	899.0	4.9	4.9	-90.53	-1.2	-132.0	132.0	122.3	9.73	13.569	
1,000.0	1,000.0	999.0	999.0	5.2	5.2	-90.53	-1.2	-132.0	132.0	121.6	10.34	12.766	
1,100.0	1,100.0	1,099.0	1,099.0	5.5	5.5	-90.53	-1.2	-132.0	132.0	121.1	10.92	12.086	
1,200.0	1,200.0	1,199.0	1,199.0	5.7	5.7	-90.53	-1.2	-132.0	132.0	120.5	11.48	11.500	
1,300.0	1,300.0	1,299.0	1,299.0	6.0	6.0	-90.53	-1.2	-132.0	132.0	120.0	12.01	10.987	
1,400.0	1,400.0	1,399.0	1,399.0	6.3	6.3	-90.53	-1.2	-132.0	132.0	119.5	12.53	10.534	
1,500.0	1,500.0	1,499.0	1,499.0	6.5	6.5	-90.53	-1.2	-132.0	132.0	119.0	13.03	10.130	
1,600.0	1,600.0	1,599.0	1,599.0	6.8	6.8	-90.53	-1.2	-132.0	132.0	118.5	13.51	9.766	
1,700.0	1,700.0	1,699.0	1,699.0	7.0	7.0	-90.53	-1.2	-132.0	132.0	118.0	13.99	9.436	
1,800.0	1,800.0	1,799.0	1,799.0	7.2	7.2	-90.53	-1.2	-132.0	132.0	117.5	14.45	9.135	
1,900.0	1,900.0	1,899.0	1,899.0	7.4	7.4	-90.53	-1.2	-132.0	132.0	117.1	14.90	8.860	
2,000.0	2,000.0	1,999.0	1,999.0	7.7	7.7	-90.53	-1.2	-132.0	132.0	116.6	15.34	8.605	
2,100.0	2,100.0	2,099.0	2,099.0	7.9	7.9	-90.53	-1.2	-132.0	132.0	116.2	15.77	8.370	
2,200.0	2,200.0	2,199.0	2,199.0	8.1	8.1	-90.53	-1.2	-132.0	132.0	115.8	16.19	8.152	
2,300.0	2,300.0	2,299.0	2,299.0	8.3	8.3	-90.53	-1.2	-132.0	132.0	115.4	16.61	7.948	
2,400.0	2,400.0	2,399.0	2,399.0	8.5	8.5	-90.53	-1.2	-132.0	132.0	115.0	17.01	7.757	
2,500.0	2,500.0	2,499.0	2,499.0	8.7	8.7	-90.53	-1.2	-132.0	132.0	114.6	17.42	7.579	
2,600.0	2,600.0	2,599.0	2,599.0	8.9	8.9	-90.53	-1.2	-132.0	132.0	114.2	17.81	7.410	
2,700.0	2,700.0	2,699.0	2,699.0	9.1	9.1	-90.53	-1.2	-132.0	132.0	113.8	18.20	7.252	
2,800.0	2,800.0	2,799.0	2,799.0	9.3	9.3	-90.53	-1.2	-132.0	132.0	113.4	18.58	7.102	
2,900.0	2,900.0	2,899.0	2,899.0	9.5	9.5	-90.53	-1.2	-132.0	132.0	113.0	18.96	6.960	
3,000.0	3,000.0	2,999.0	2,999.0	9.7	9.7	-90.53	-1.2	-132.0	132.0	112.6	19.34	6.825	
3,100.0	3,100.0	3,099.0	3,099.0	9.9	9.9	-90.53	-1.2	-132.0	132.0	112.3	19.71	6.697	
3,200.0	3,200.0	3,199.0	3,199.0	10.0	10.0	-90.53	-1.2	-132.0	132.0	111.9	20.07	6.575	
3,300.0	3,300.0	3,299.0	3,299.0	10.2	10.2	-90.53	-1.2	-132.0	132.0	111.5	20.43	6.459	
3,400.0	3,400.0	3,399.0	3,399.0	10.4	10.4	-90.53	-1.2	-132.0	132.0	111.2	20.79	6.348	
3,500.0	3,500.0	3,499.0	3,499.0	10.6	10.6	-90.53	-1.2	-132.0	132.0	110.8	21.15	6.241	
3,600.0	3,600.0	3,599.0	3,599.0	10.7	10.7	-90.53	-1.2	-132.0	132.0	110.5	21.50	6.139	
3,700.0	3,700.0	3,699.0	3,699.0	10.9	10.9	-90.53	-1.2	-132.0	132.0	110.1	21.84	6.042	
3,800.0	3,800.0	3,799.0	3,799.0	11.1	11.1	-90.53	-1.2	-132.0	132.0	109.8	22.19	5.948	
3,900.0	3,900.0	3,899.0	3,899.0	11.3	11.3	-90.53	-1.2	-132.0	132.0	109.5	22.53	5.858	
4,000.0	4,000.0	3,999.0	3,999.0	11.4	11.4	-90.53	-1.2	-132.0	132.0	109.1	22.87	5.771	
4,100.0	4,100.0	4,099.0	4,099.0	11.6	11.6	-90.53	-1.2	-132.0	132.0	108.8	23.21	5.688	
4,200.0	4,200.0	4,199.0	4,199.0	11.8	11.8	-90.53	-1.2	-132.0	132.0	108.4	23.54	5.607	
4,300.0	4,300.0	4,299.0	4,299.0	11.9	11.9	-90.53	-1.2	-132.0	132.0	108.1	23.87	5.529	
4,400.0	4,400.0	4,399.0	4,399.0	12.1	12.1	-90.53	-1.2	-132.0	132.0	107.8	24.20	5.454	
4,500.0	4,500.0	4,499.0	4,499.0	12.3	12.3	-90.53	-1.2	-132.0	132.0	107.5	24.52	5.382	
4,600.0	4,600.0	4,599.0	4,599.0	12.4	12.4	-90.53	-1.2	-132.0	132.0	107.1	24.85	5.312	
4,700.0	4,700.0	4,699.0	4,699.0	12.6	12.6	-90.53	-1.2	-132.0	132.0	106.8	25.17	5.244	
4,800.0	4,800.0	4,799.0	4,799.0	12.7	12.7	-90.53	-1.2	-132.0	132.0	106.5	25.49	5.178	
4,900.0	4,900.0	4,899.0	4,899.0	12.9	12.9	-90.53	-1.2	-132.0	132.0	106.2	25.81	5.114	
5,000.0	5,000.0	4,999.0	4,999.0	13.1	13.1	-90.53	-1.2	-132.0	132.0	105.9	26.12	5.052	
5,100.0	5,100.0	5,099.0	5,099.0	13.2	13.2	-90.53	-1.2	-132.0	132.0	105.5	26.44	4.992	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 21H - Margarita 13 Federal Com 21H - Margarita 13 Federal Com 21H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.0	5,200.0	5,199.0	5,199.0	13.4	13.4	-90.53	-1.2	-132.0	132.0	105.2	26.75	4.934	
5,300.0	5,300.0	5,299.0	5,299.0	13.5	13.5	-90.53	-1.2	-132.0	132.0	104.9	27.06	4.877	
5,400.0	5,400.0	5,399.0	5,399.0	13.7	13.7	-90.53	-1.2	-132.0	132.0	104.6	27.37	4.822	
5,500.0	5,500.0	5,499.0	5,499.0	13.8	13.8	-90.53	-1.2	-132.0	132.0	104.3	27.68	4.769	
5,600.0	5,600.0	5,599.0	5,599.0	14.0	14.0	-90.53	-1.2	-132.0	132.0	104.0	27.98	4.716	CC, ES
5,700.0	5,700.0	5,696.8	5,696.8	14.1	14.1	-90.62	-1.4	-132.8	132.8	104.6	28.24	4.703	SF
5,800.0	5,800.0	5,795.7	5,795.7	14.3	14.1	-90.84	-2.0	-135.0	135.0	106.6	28.43	4.750	
5,900.0	5,900.0	5,895.7	5,895.6	14.4	14.2	98.72	-2.6	-137.4	137.6	109.0	28.60	4.812	
6,000.0	6,000.0	5,995.6	5,995.5	14.4	14.4	99.51	-3.2	-139.9	140.5	111.7	28.77	4.884	
6,010.0	6,010.0	6,005.6	6,005.5	14.4	14.4	99.62	-3.3	-140.1	140.8	112.0	28.77	4.893	
6,100.0	6,099.9	6,095.5	6,095.4	14.5	14.5	100.70	-3.8	-142.3	143.6	114.6	28.91	4.966	
6,200.0	6,199.8	6,195.4	6,195.3	14.6	14.6	101.85	-4.4	-144.7	146.7	117.6	29.09	5.043	
6,300.0	6,299.8	6,295.4	6,295.2	14.6	14.8	102.94	-5.0	-147.2	149.9	120.6	29.28	5.118	
6,400.0	6,399.7	6,395.3	6,395.0	14.8	14.9	104.00	-5.6	-149.6	153.1	123.6	29.49	5.193	
6,500.0	6,499.6	6,495.2	6,494.9	14.9	15.1	105.01	-6.2	-152.0	156.4	126.7	29.70	5.266	
6,600.0	6,599.6	6,595.1	6,594.8	15.0	15.3	105.97	-6.9	-154.5	159.8	129.8	29.93	5.338	
6,700.0	6,699.5	6,695.0	6,694.7	15.2	15.5	106.90	-7.5	-156.9	163.1	133.0	30.16	5.409	
6,800.0	6,799.4	6,794.9	6,794.6	15.3	15.7	107.79	-8.1	-159.4	166.6	136.2	30.41	5.478	
6,900.0	6,899.4	6,894.8	6,894.4	15.5	15.9	108.64	-8.7	-161.8	170.0	139.4	30.66	5.546	
7,000.0	6,999.3	6,994.7	6,994.3	15.7	16.1	109.46	-9.3	-164.2	173.5	142.6	30.92	5.612	
7,100.0	7,099.2	7,094.6	7,094.2	15.9	16.3	110.25	-9.9	-166.7	177.1	145.9	31.19	5.677	
7,200.0	7,199.2	7,194.5	7,194.1	16.1	16.5	111.00	-10.5	-169.1	180.6	149.2	31.47	5.740	
7,300.0	7,299.1	7,294.4	7,293.9	16.3	16.7	111.73	-11.1	-171.5	184.2	152.5	31.75	5.802	
7,400.0	7,399.0	7,394.4	7,393.8	16.5	17.0	112.43	-11.7	-174.0	187.8	155.8	32.05	5.862	
7,500.0	7,499.0	7,494.3	7,493.7	16.7	17.2	113.10	-12.3	-176.4	191.5	159.1	32.35	5.920	
7,600.0	7,598.9	7,594.2	7,593.6	16.9	17.5	113.74	-12.9	-178.8	195.2	162.5	32.66	5.976	
7,700.0	7,698.8	7,694.1	7,693.4	17.2	17.7	114.37	-13.6	-181.3	198.9	165.9	32.98	6.030	
7,800.0	7,798.8	7,794.0	7,793.3	17.4	18.0	114.97	-14.2	-183.7	202.6	169.3	33.30	6.083	
7,900.0	7,898.7	7,893.9	7,893.2	17.7	18.3	115.54	-14.8	-186.1	206.3	172.7	33.64	6.134	
8,000.0	7,998.6	7,993.8	7,993.1	18.0	18.5	116.10	-15.4	-188.6	210.1	176.1	33.98	6.183	
8,100.0	8,098.5	8,093.7	8,093.0	18.2	18.8	116.64	-16.0	-191.0	213.9	179.6	34.33	6.231	
8,200.0	8,198.5	8,193.6	8,192.8	18.5	19.1	117.16	-16.6	-193.5	217.7	183.0	34.68	6.277	
8,300.0	8,298.4	8,293.5	8,292.7	18.8	19.4	117.66	-17.2	-195.9	221.5	186.5	35.04	6.321	
8,400.0	8,398.3	8,393.4	8,392.6	19.1	19.7	118.14	-17.8	-198.3	225.3	189.9	35.41	6.364	
8,500.0	8,498.3	8,493.3	8,492.5	19.4	19.9	118.61	-18.4	-200.8	229.2	193.4	35.79	6.404	
8,600.0	8,598.2	8,593.3	8,592.3	19.7	20.2	119.06	-19.0	-203.2	233.1	196.9	36.17	6.444	
8,700.0	8,698.1	8,693.2	8,692.2	20.0	20.5	119.50	-19.6	-205.6	236.9	200.4	36.56	6.482	
8,800.0	8,798.1	8,793.1	8,792.1	20.3	20.8	119.92	-20.3	-208.1	240.8	203.9	36.95	6.518	
8,900.0	8,898.0	8,893.0	8,892.0	20.6	21.2	120.33	-20.9	-210.5	244.7	207.4	37.35	6.553	
9,000.0	8,997.9	8,992.9	8,991.8	20.9	21.5	120.73	-21.5	-212.9	248.7	210.9	37.75	6.586	
9,100.0	9,097.9	9,092.8	9,091.7	21.3	21.8	121.12	-22.1	-215.4	252.6	214.4	38.17	6.618	
9,200.0	9,197.8	9,192.7	9,191.6	21.6	22.1	121.49	-22.7	-217.8	256.5	217.9	38.58	6.649	
9,300.0	9,297.7	9,292.6	9,291.5	21.9	22.4	121.85	-23.3	-220.2	260.5	221.5	39.00	6.678	
9,400.0	9,397.7	9,392.5	9,391.4	22.3	22.7	122.20	-23.9	-222.7	264.4	225.0	39.43	6.706	
9,500.0	9,497.6	9,492.4	9,491.2	22.6	23.1	122.54	-24.5	-225.1	268.4	228.5	39.86	6.733	
9,600.0	9,597.5	9,592.3	9,591.1	23.0	23.4	122.87	-25.1	-227.6	272.4	232.1	40.30	6.759	
9,700.0	9,697.5	9,692.2	9,691.0	23.3	23.7	123.19	-25.7	-230.0	276.4	235.6	40.74	6.783	
9,800.0	9,797.4	9,795.8	9,794.5	23.7	24.0	123.62	-26.2	-231.8	279.8	238.6	41.17	6.795	
9,900.0	9,897.3	9,892.4	9,891.1	24.0	24.2	124.01	-26.9	-232.6	282.3	240.9	41.47	6.809	
9,949.9	9,947.2	9,935.1	9,933.7	24.2	24.5	123.52	-29.8	-235.4	284.9	243.3	41.63	6.843	
10,000.0	9,997.3	9,977.3	9,975.2	24.3	24.8	122.45	-34.8	-240.2	288.7	246.9	41.84	6.901	
10,100.0	10,097.3	10,057.6	10,052.4	24.6	25.5	118.87	-50.5	-255.3	300.5	258.0	42.44	7.080	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 21H - Margarita 13 Federal Com 21H - Margarita 13 Federal Com 21H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,159.9	10,157.2	10,100.0	10,091.8	24.7	25.9	-73.17	-61.9	-266.2	311.0	268.0	42.98	7.235	
10,200.0	10,197.3	10,130.4	10,119.2	24.7	26.2	-75.33	-71.4	-275.2	319.8	276.4	43.40	7.369	
10,300.0	10,297.3	10,200.0	10,179.1	24.8	26.8	-80.71	-96.9	-299.7	349.2	304.3	44.87	7.784	
10,400.0	10,397.3	10,275.1	10,239.3	24.9	27.2	-86.97	-131.3	-328.5	387.2	340.8	46.44	8.339	
10,500.0	10,497.3	10,350.0	10,294.7	24.9	27.7	-93.62	-174.0	-355.0	430.8	382.6	48.27	8.925	
10,600.0	10,597.3	10,410.5	10,335.5	25.0	28.0	-99.12	-214.1	-374.5	481.4	431.1	50.29	9.573	
10,700.0	10,697.3	10,461.3	10,366.7	25.1	28.3	-103.74	-251.4	-389.4	539.1	486.8	52.25	10.317	
10,800.0	10,797.3	10,500.0	10,388.4	25.1	28.5	-107.23	-281.7	-399.7	603.4	549.3	54.07	11.159	
10,900.0	10,897.3	10,538.4	10,408.1	25.2	28.7	-110.62	-313.3	-409.0	673.3	617.7	55.66	12.097	
10,977.7	10,975.0	10,561.7	10,419.1	25.2	28.8	-112.64	-333.2	-414.2	731.1	674.3	56.77	12.877	
11,000.0	10,997.3	10,567.8	10,421.8	25.2	28.8	165.66	-338.4	-415.5	748.3	691.3	57.07	13.113	
11,050.0	11,047.1	10,579.9	10,427.1	25.3	28.9	162.56	-349.0	-418.0	789.5	731.8	57.70	13.683	
11,100.0	11,096.3	10,600.0	10,435.5	25.3	29.0	157.49	-366.9	-422.0	833.5	775.3	58.28	14.303	
11,150.0	11,144.7	10,600.0	10,435.5	25.3	29.0	152.54	-366.9	-422.0	879.5	820.7	58.75	14.970	
11,200.0	11,191.7	10,600.0	10,435.5	25.3	29.0	144.24	-366.9	-422.0	927.1	868.0	59.14	15.677	
11,250.0	11,237.1	10,600.0	10,435.5	25.4	29.0	129.06	-366.9	-422.0	975.9	916.4	59.46	16.413	

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	88.99	0.6	33.0	33.0				
100.0	100.0	100.0	100.0	0.5	0.5	88.99	0.6	33.0	33.0	31.9	1.06	31.121	
200.0	200.0	200.0	200.0	1.7	1.7	88.99	0.6	33.0	33.0	29.6	3.42	9.638	
300.0	300.0	300.0	300.0	2.4	2.4	88.99	0.6	33.0	33.0	28.2	4.82	6.842	
400.0	400.0	400.0	400.0	3.0	3.0	88.99	0.6	33.0	33.0	27.1	5.91	5.585	
500.0	500.0	500.0	500.0	3.4	3.4	88.99	0.6	33.0	33.0	26.2	6.83	4.831	
600.0	600.0	600.0	600.0	3.8	3.8	88.99	0.6	33.0	33.0	25.3	7.65	4.314	
700.0	700.0	700.0	700.0	4.2	4.2	88.99	0.6	33.0	33.0	24.6	8.39	3.931	
800.0	800.0	800.0	800.0	4.5	4.5	88.99	0.6	33.0	33.0	23.9	9.08	3.633	
900.0	900.0	900.0	900.0	4.9	4.9	88.99	0.6	33.0	33.0	23.3	9.73	3.391	
1,000.0	1,000.0	1,000.0	1,000.0	5.2	5.2	88.99	0.6	33.0	33.0	22.7	10.34	3.191	
1,100.0	1,100.0	1,100.0	1,100.0	5.5	5.5	88.99	0.6	33.0	33.0	22.1	10.92	3.021	
1,200.0	1,200.0	1,200.0	1,200.0	5.7	5.7	88.99	0.6	33.0	33.0	21.5	11.48	2.874	
1,300.0	1,300.0	1,300.0	1,300.0	6.0	6.0	88.99	0.6	33.0	33.0	21.0	12.01	2.746	
1,400.0	1,400.0	1,400.0	1,400.0	6.3	6.3	88.99	0.6	33.0	33.0	20.5	12.53	2.633	
1,500.0	1,500.0	1,500.0	1,500.0	6.5	6.5	88.99	0.6	33.0	33.0	20.0	13.03	2.532	
1,600.0	1,600.0	1,600.0	1,600.0	6.8	6.8	88.99	0.6	33.0	33.0	19.5	13.52	2.441	
1,700.0	1,700.0	1,700.0	1,700.0	7.0	7.0	88.99	0.6	33.0	33.0	19.0	13.99	2.359	
1,800.0	1,800.0	1,800.0	1,800.0	7.2	7.2	88.99	0.6	33.0	33.0	18.5	14.45	2.284	
1,900.0	1,900.0	1,900.0	1,900.0	7.4	7.4	88.99	0.6	33.0	33.0	18.1	14.90	2.215	
2,000.0	2,000.0	2,000.0	2,000.0	7.7	7.7	88.99	0.6	33.0	33.0	17.7	15.34	2.151	
2,100.0	2,100.0	2,100.0	2,100.0	7.9	7.9	88.99	0.6	33.0	33.0	17.2	15.77	2.092	
2,200.0	2,200.0	2,200.0	2,200.0	8.1	8.1	88.99	0.6	33.0	33.0	16.8	16.19	2.038	
2,300.0	2,300.0	2,300.0	2,300.0	8.3	8.3	88.99	0.6	33.0	33.0	16.4	16.61	1.987	
2,400.0	2,400.0	2,400.0	2,400.0	8.5	8.5	88.99	0.6	33.0	33.0	16.0	17.02	1.939	
2,500.0	2,500.0	2,500.0	2,500.0	8.7	8.7	88.99	0.6	33.0	33.0	15.6	17.42	1.895	
2,600.0	2,600.0	2,600.0	2,600.0	8.9	8.9	88.99	0.6	33.0	33.0	15.2	17.81	1.853	
2,700.0	2,700.0	2,700.0	2,700.0	9.1	9.1	88.99	0.6	33.0	33.0	14.8	18.20	1.813	
2,800.0	2,800.0	2,800.0	2,800.0	9.3	9.3	88.99	0.6	33.0	33.0	14.4	18.59	1.775	
2,900.0	2,900.0	2,900.0	2,900.0	9.5	9.5	88.99	0.6	33.0	33.0	14.0	18.96	1.740	
3,000.0	3,000.0	3,000.0	3,000.0	9.7	9.7	88.99	0.6	33.0	33.0	13.7	19.34	1.706	
3,100.0	3,100.0	3,100.0	3,100.0	9.9	9.9	88.99	0.6	33.0	33.0	13.3	19.71	1.674	
3,200.0	3,200.0	3,200.0	3,200.0	10.0	10.0	88.99	0.6	33.0	33.0	12.9	20.07	1.644	
3,300.0	3,300.0	3,300.0	3,300.0	10.2	10.2	88.99	0.6	33.0	33.0	12.6	20.44	1.615	
3,400.0	3,400.0	3,400.0	3,400.0	10.4	10.4	88.99	0.6	33.0	33.0	12.2	20.79	1.587	
3,500.0	3,500.0	3,500.0	3,500.0	10.6	10.6	88.99	0.6	33.0	33.0	11.8	21.15	1.560	
3,600.0	3,600.0	3,600.0	3,600.0	10.7	10.7	88.99	0.6	33.0	33.0	11.5	21.50	1.535	
3,700.0	3,700.0	3,700.0	3,700.0	10.9	10.9	88.99	0.6	33.0	33.0	11.2	21.85	1.510	
3,800.0	3,800.0	3,800.0	3,800.0	11.1	11.1	88.99	0.6	33.0	33.0	10.8	22.19	1.487	Level 3
3,900.0	3,900.0	3,900.0	3,900.0	11.3	11.3	88.99	0.6	33.0	33.0	10.5	22.53	1.464	Level 3
4,000.0	4,000.0	4,000.0	4,000.0	11.4	11.4	88.99	0.6	33.0	33.0	10.1	22.87	1.443	Level 3
4,100.0	4,100.0	4,100.0	4,100.0	11.6	11.6	88.99	0.6	33.0	33.0	9.8	23.21	1.422	Level 3
4,200.0	4,200.0	4,200.0	4,200.0	11.8	11.8	88.99	0.6	33.0	33.0	9.5	23.54	1.402	Level 3
4,300.0	4,300.0	4,300.0	4,300.0	11.9	11.9	88.99	0.6	33.0	33.0	9.1	23.87	1.382	Level 3
4,400.0	4,400.0	4,400.0	4,400.0	12.1	12.1	88.99	0.6	33.0	33.0	8.8	24.20	1.364	Level 3
4,500.0	4,500.0	4,500.0	4,500.0	12.3	12.3	88.99	0.6	33.0	33.0	8.5	24.53	1.345	Level 3
4,600.0	4,600.0	4,600.0	4,600.0	12.4	12.4	88.99	0.6	33.0	33.0	8.1	24.85	1.328	Level 3
4,700.0	4,700.0	4,700.0	4,700.0	12.6	12.6	88.99	0.6	33.0	33.0	7.8	25.17	1.311	Level 3
4,800.0	4,800.0	4,800.0	4,800.0	12.7	12.7	88.99	0.6	33.0	33.0	7.5	25.49	1.294	Level 3
4,900.0	4,900.0	4,900.0	4,900.0	12.9	12.9	88.99	0.6	33.0	33.0	7.2	25.81	1.279	Level 3
5,000.0	5,000.0	5,000.0	5,000.0	13.1	13.1	88.99	0.6	33.0	33.0	6.9	26.12	1.263	Level 3
5,100.0	5,100.0	5,100.0	5,100.0	13.2	13.2	88.99	0.6	33.0	33.0	6.6	26.44	1.248	Level 3

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.0	5,200.0	5,200.0	5,200.0	13.4	13.4	88.99	0.6	33.0	33.0	6.2	26.75	1.233	Level 3
5,300.0	5,300.0	5,300.0	5,300.0	13.5	13.5	88.99	0.6	33.0	33.0	5.9	27.06	1.219	Level 3
5,400.0	5,400.0	5,400.0	5,400.0	13.7	13.7	88.99	0.6	33.0	33.0	5.6	27.37	1.206	Level 3
5,500.0	5,500.0	5,500.0	5,500.0	13.8	13.8	88.99	0.6	33.0	33.0	5.3	27.68	1.192	Level 3
5,566.7	5,566.7	5,566.7	5,566.7	13.9	13.9	88.99	0.6	33.0	33.0	5.1	27.88	1.183	Level 3
5,600.0	5,600.0	5,600.0	5,600.0	14.0	14.0	88.99	0.6	33.0	33.0	5.0	27.98	1.179	Level 3, CC, ES
5,700.0	5,700.0	5,699.8	5,699.8	14.1	14.1	90.43	-0.3	33.2	33.3	5.0	28.21	1.179	Level 3, SF
5,800.0	5,800.0	5,799.6	5,799.6	14.3	14.1	94.61	-2.7	34.0	34.1	5.7	28.42	1.201	Level 3
5,900.0	5,900.0	5,899.3	5,899.2	14.4	14.2	-70.79	-6.9	35.3	35.7	7.1	28.55	1.250	Level 3
6,000.0	6,000.0	5,998.9	5,998.6	14.4	14.3	-66.28	-12.7	37.1	37.7	9.0	28.66	1.315	Level 3
6,010.0	6,010.0	6,008.9	6,008.5	14.4	14.3	-65.87	-13.4	37.3	37.9	9.3	28.66	1.323	Level 3
6,100.0	6,099.9	6,098.4	6,097.8	14.5	14.4	-61.57	-20.1	39.4	40.4	11.7	28.75	1.406	Level 3
6,200.0	6,199.8	6,198.1	6,197.0	14.6	14.5	-55.98	-29.0	42.1	44.4	15.6	28.85	1.539	
6,300.0	6,299.8	6,297.9	6,296.4	14.6	14.7	-51.16	-38.1	44.9	48.9	19.9	29.04	1.684	
6,400.0	6,399.7	6,397.7	6,395.7	14.8	14.8	-47.18	-47.3	47.8	53.7	24.4	29.28	1.834	
6,500.0	6,499.6	6,497.5	6,495.1	14.9	15.0	-43.85	-56.4	50.6	58.7	29.1	29.56	1.986	
6,600.0	6,599.6	6,597.3	6,594.5	15.0	15.2	-41.06	-65.5	53.4	63.9	34.0	29.86	2.139	
6,700.0	6,699.5	6,697.2	6,693.8	15.2	15.5	-38.69	-74.6	56.2	69.2	39.0	30.20	2.290	
6,800.0	6,799.4	6,797.0	6,793.2	15.3	15.7	-36.66	-83.8	59.0	74.6	44.0	30.58	2.439	
6,900.0	6,899.4	6,896.8	6,892.5	15.5	16.0	-34.90	-92.9	61.8	80.0	49.1	30.98	2.584	
7,000.0	6,999.3	6,996.6	6,991.9	15.7	16.3	-33.37	-102.0	64.7	85.6	54.2	31.41	2.725	
7,100.0	7,099.2	7,096.5	7,091.3	15.9	16.5	-32.03	-111.1	67.5	91.2	59.3	31.86	2.862	
7,200.0	7,199.2	7,196.3	7,190.6	16.1	16.8	-30.85	-120.3	70.3	96.8	64.5	32.34	2.994	
7,300.0	7,299.1	7,296.1	7,290.0	16.3	17.2	-29.79	-129.4	73.1	102.5	69.7	32.84	3.121	
7,400.0	7,399.0	7,395.9	7,389.4	16.5	17.5	-28.85	-138.5	75.9	108.2	74.8	33.37	3.243	
7,500.0	7,499.0	7,495.7	7,488.7	16.7	17.8	-28.00	-147.6	78.7	113.9	80.0	33.91	3.360	
7,600.0	7,598.9	7,595.6	7,588.1	16.9	18.2	-27.23	-156.8	81.6	119.7	85.2	34.48	3.472	
7,700.0	7,698.8	7,695.4	7,687.5	17.2	18.5	-26.53	-165.9	84.4	125.5	90.4	35.06	3.579	
7,800.0	7,798.8	7,795.2	7,786.8	17.4	18.9	-25.89	-175.0	87.2	131.3	95.6	35.67	3.681	
7,900.0	7,898.7	7,895.0	7,886.2	17.7	19.3	-25.31	-184.1	90.0	137.1	100.8	36.29	3.778	
8,000.0	7,998.6	7,994.9	7,985.5	18.0	19.7	-24.78	-193.3	92.8	142.9	106.0	36.92	3.870	
8,100.0	8,098.5	8,094.7	8,084.9	18.2	20.1	-24.28	-202.4	95.6	148.7	111.2	37.57	3.959	
8,200.0	8,198.5	8,194.5	8,184.3	18.5	20.5	-23.83	-211.5	98.5	154.6	116.3	38.24	4.042	
8,300.0	8,298.4	8,294.3	8,283.6	18.8	20.9	-23.41	-220.7	101.3	160.4	121.5	38.92	4.122	
8,400.0	8,398.3	8,394.1	8,383.0	19.1	21.3	-23.01	-229.8	104.1	166.3	126.7	39.61	4.198	
8,500.0	8,498.3	8,494.0	8,482.4	19.4	21.7	-22.65	-238.9	106.9	172.2	131.8	40.31	4.270	
8,600.0	8,598.2	8,593.8	8,581.7	19.7	22.1	-22.31	-248.0	109.7	178.0	137.0	41.03	4.339	
8,700.0	8,698.1	8,693.6	8,681.1	20.0	22.6	-21.99	-257.2	112.5	183.9	142.2	41.76	4.404	
8,800.0	8,798.1	8,793.4	8,780.5	20.3	23.0	-21.68	-266.3	115.4	189.8	147.3	42.49	4.466	
8,900.0	8,898.0	8,893.3	8,879.8	20.6	23.4	-21.40	-275.4	118.2	195.7	152.5	43.24	4.526	
9,000.0	8,997.9	8,993.1	8,979.2	20.9	23.9	-21.14	-284.5	121.0	201.6	157.6	44.00	4.582	
9,100.0	9,097.9	9,092.9	9,078.6	21.3	24.3	-20.89	-293.7	123.8	207.5	162.7	44.76	4.635	
9,200.0	9,197.8	9,192.7	9,177.9	21.6	24.8	-20.65	-302.8	126.6	213.4	167.9	45.54	4.686	
9,300.0	9,297.7	9,292.5	9,277.3	21.9	25.3	-20.43	-311.9	129.4	219.3	173.0	46.32	4.734	
9,400.0	9,397.7	9,392.4	9,376.6	22.3	25.7	-20.21	-321.0	132.3	225.2	178.1	47.11	4.781	
9,500.0	9,497.6	9,492.2	9,476.0	22.6	26.2	-20.01	-330.2	135.1	231.1	183.2	47.91	4.824	
9,600.0	9,597.5	9,592.0	9,575.4	23.0	26.7	-19.82	-339.3	137.9	237.0	188.3	48.71	4.866	
9,700.0	9,697.5	9,691.8	9,674.7	23.3	27.1	-19.64	-348.4	140.7	242.9	193.4	49.52	4.906	
9,800.0	9,797.4	9,791.6	9,774.1	23.7	27.6	-19.47	-357.5	143.5	248.9	198.5	50.34	4.944	
9,900.0	9,897.3	9,891.5	9,873.5	24.0	28.1	-19.30	-366.7	146.3	254.8	203.6	51.16	4.980	
9,949.9	9,947.2	9,941.3	9,923.1	24.2	28.3	-19.22	-371.2	147.7	257.7	206.2	51.55	5.000	
10,000.0	9,997.3	9,991.3	9,972.8	24.3	28.6	-19.14	-375.8	149.2	260.9	209.0	51.95	5.023	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.0	10,097.3	10,093.9	10,075.0	24.6	29.0	-18.90	-384.8	151.9	268.2	215.4	52.72	5.087	
10,159.9	10,157.2	10,156.6	10,137.5	24.7	29.3	151.81	-389.6	153.4	272.5	219.4	53.09	5.133	
10,200.0	10,197.3	10,198.5	10,179.3	24.7	29.5	151.93	-392.4	154.3	275.3	222.0	53.30	5.164	
10,300.0	10,297.3	10,303.4	10,284.0	24.8	30.0	152.16	-398.1	156.0	280.9	227.1	53.82	5.219	
10,400.0	10,397.3	10,408.4	10,388.9	24.9	30.4	152.31	-402.0	157.2	284.7	230.4	54.30	5.243	
10,500.0	10,497.3	10,513.5	10,494.0	24.9	30.7	152.39	-404.1	157.9	286.7	232.0	54.70	5.242	
10,600.0	10,597.3	10,618.5	10,599.0	25.0	30.8	152.19	-403.8	158.9	287.0	232.1	54.84	5.233	
10,700.0	10,697.3	10,721.2	10,700.3	25.1	30.7	149.12	-395.4	171.7	285.9	231.4	54.46	5.250	
10,746.9	10,744.1	10,766.7	10,744.1	25.1	30.7	146.59	-388.4	182.3	285.6	231.5	54.09	5.280	
10,800.0	10,797.3	10,815.6	10,789.8	25.1	30.7	143.12	-378.9	196.7	286.2	232.7	53.55	5.345	
10,900.0	10,897.3	10,882.1	10,851.6	25.2	30.8	138.38	-368.2	218.9	295.5	242.2	53.22	5.552	
10,977.7	10,975.0	10,935.0	10,901.3	25.2	31.1	135.47	-365.2	236.7	310.8	257.4	53.39	5.821	
11,000.0	10,997.3	10,950.0	10,915.4	25.2	31.2	53.88	-365.3	241.8	316.0	262.5	53.52	5.905	
11,050.0	11,047.1	10,985.2	10,948.5	25.3	31.4	52.05	-366.9	253.7	327.7	273.6	54.06	6.061	
11,100.0	11,096.3	11,020.3	10,981.3	25.3	31.7	51.05	-370.7	265.5	338.7	283.8	54.90	6.169	
11,150.0	11,144.7	11,050.0	11,008.9	25.3	31.9	50.66	-375.6	275.4	349.1	293.1	56.02	6.233	
11,200.0	11,191.7	11,088.7	11,044.3	25.3	32.2	51.14	-384.2	288.2	358.9	301.8	57.09	6.287	
11,250.0	11,237.1	11,120.8	11,073.3	25.4	32.4	51.96	-393.2	298.7	368.4	310.1	58.33	6.315	
11,294.4	11,275.8	11,150.0	11,099.2	25.5	32.7	53.11	-402.9	308.0	376.8	317.4	59.40	6.345	
11,300.0	11,280.5	11,150.0	11,099.2	25.5	32.7	52.28	-402.9	308.0	377.9	318.3	59.56	6.345	
11,350.0	11,323.2	11,180.4	11,125.6	25.7	32.9	46.71	-414.5	317.6	387.4	326.7	60.68	6.384	
11,400.0	11,365.8	11,209.6	11,150.4	26.1	33.2	40.88	-427.1	326.6	396.5	334.7	61.83	6.413	
11,450.0	11,408.1	11,238.6	11,174.5	26.6	33.4	35.24	-440.8	335.3	405.1	342.2	62.88	6.443	
11,500.0	11,449.6	11,267.6	11,197.7	27.0	33.6	30.06	-455.8	343.7	413.0	349.1	63.85	6.467	
11,550.0	11,490.2	11,300.0	11,222.9	27.4	33.9	25.63	-474.1	352.8	420.0	355.2	64.76	6.486	
11,600.0	11,529.4	11,325.2	11,241.8	27.8	34.1	21.57	-489.4	359.7	426.0	360.3	65.64	6.490	
11,650.0	11,567.0	11,350.0	11,259.7	28.2	34.3	18.14	-505.2	366.2	430.9	364.5	66.46	6.484	
11,700.0	11,602.7	11,382.8	11,282.4	28.6	34.5	15.49	-527.3	374.5	434.7	367.4	67.26	6.463	
11,750.0	11,636.2	11,411.5	11,301.3	29.0	34.8	13.16	-547.9	381.4	437.2	369.2	68.02	6.427	
11,800.0	11,667.3	11,450.0	11,325.0	29.3	35.0	11.41	-576.9	390.1	438.6	369.8	68.78	6.376	
11,850.0	11,695.7	11,469.1	11,336.0	29.6	35.1	9.54	-591.9	394.1	438.2	368.8	69.44	6.311	
11,900.0	11,721.2	11,500.0	11,352.9	29.9	35.3	8.14	-617.0	400.3	436.7	366.6	70.11	6.229	
11,950.0	11,743.7	11,526.8	11,366.5	30.2	35.4	6.85	-639.6	405.3	433.8	363.0	70.72	6.134	
12,000.0	11,762.9	11,550.0	11,377.5	30.4	35.6	5.69	-659.6	409.4	429.5	358.2	71.24	6.028	
12,050.0	11,778.7	11,584.8	11,392.5	30.6	35.7	4.71	-690.5	414.9	423.6	351.8	71.85	5.896	
12,100.0	11,791.0	11,613.9	11,403.6	30.7	35.8	3.74	-717.0	419.1	416.4	344.1	72.35	5.756	
12,150.0	11,799.7	11,650.0	11,415.7	30.8	35.9	2.79	-750.8	423.6	407.9	335.0	72.92	5.594	
12,200.0	11,804.7	11,672.4	11,422.2	30.9	36.0	1.89	-772.1	426.0	397.9	324.6	73.23	5.433	
12,242.3	11,806.0	11,700.0	11,429.0	31.0	36.1	1.06	-798.7	428.6	388.5	314.9	73.57	5.280	
12,300.0	11,806.6	11,731.8	11,435.5	31.1	36.1	0.71	-829.7	431.1	377.1	303.4	73.78	5.112	
12,358.6	11,808.4	11,767.8	11,440.7	31.2	36.2	0.42	-865.2	433.2	370.2	296.3	73.91	5.009	
12,400.0	11,810.0	11,800.0	11,443.7	31.3	36.2	0.26	-897.3	434.4	368.0	293.8	74.13	4.964	
12,434.8	11,811.5	11,815.1	11,444.5	31.5	36.2	0.22	-912.4	434.8	367.3	293.3	73.93	4.968	
12,500.0	11,814.1	11,869.2	11,445.2	31.9	36.2	0.19	-966.5	435.2	369.0	294.8	74.15	4.976	
12,600.0	11,818.2	11,984.0	11,448.6	32.9	36.3	0.19	-1,081.2	435.8	370.0	294.7	75.33	4.911	
12,700.0	11,822.2	12,083.3	11,453.4	34.1	36.5	0.19	-1,180.4	436.3	369.2	293.1	76.08	4.853	
12,800.0	11,826.3	12,183.3	11,458.3	35.5	36.7	0.19	-1,280.3	436.9	368.4	291.5	76.91	4.791	
12,900.0	11,830.3	12,283.3	11,463.1	37.0	37.4	0.19	-1,380.2	437.4	367.7	289.9	77.79	4.726	
13,000.0	11,834.4	12,383.3	11,468.0	38.5	38.5	0.19	-1,480.0	437.9	366.9	288.1	78.72	4.660	
13,100.0	11,838.5	12,483.3	11,472.8	40.1	40.0	0.19	-1,579.9	438.4	366.1	286.4	79.71	4.593	
13,200.0	11,842.5	12,583.3	11,477.6	41.7	41.5	0.19	-1,679.8	438.9	365.3	284.6	80.74	4.525	
13,300.0	11,846.6	12,683.3	11,482.5	43.4	43.2	0.19	-1,779.7	439.5	364.5	282.7	81.81	4.456	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,400.0	11,850.6	12,783.3	11,487.3	45.0	44.9	0.19	-1,879.5	440.0	363.7	280.8	82.93	4.386	
13,500.0	11,854.7	12,883.3	11,492.2	46.7	46.6	0.19	-1,979.4	440.5	363.0	278.9	84.09	4.316	
13,600.0	11,858.8	12,983.3	11,497.0	48.5	48.4	0.19	-2,079.3	441.0	362.2	276.9	85.29	4.246	
13,700.0	11,862.8	13,083.3	11,501.9	50.2	50.1	0.19	-2,179.2	441.5	361.4	274.9	86.53	4.176	
13,800.0	11,866.9	13,183.3	11,506.7	52.0	51.9	0.19	-2,279.1	442.1	360.6	272.8	87.81	4.107	
13,900.0	11,870.9	13,283.3	11,511.5	53.8	53.7	0.19	-2,378.9	442.6	359.8	270.7	89.12	4.038	
14,000.0	11,875.0	13,383.3	11,516.4	55.6	55.6	0.19	-2,478.8	443.1	359.0	268.6	90.47	3.969	
14,100.0	11,879.1	13,483.3	11,521.2	57.4	57.4	0.19	-2,578.7	443.6	358.3	266.4	91.85	3.901	
14,200.0	11,883.1	13,583.3	11,526.1	59.3	59.2	0.19	-2,678.6	444.1	357.5	264.2	93.26	3.833	
14,300.0	11,887.2	13,683.2	11,530.9	61.1	61.1	0.19	-2,778.4	444.7	356.7	262.0	94.70	3.767	
14,400.0	11,891.2	13,783.2	11,535.7	63.0	63.0	0.19	-2,878.3	445.2	355.9	259.7	96.16	3.701	
14,443.4	11,893.0	13,826.7	11,537.8	63.8	63.8	0.19	-2,921.7	445.4	355.6	258.8	96.81	3.673	
14,465.9	11,894.0	13,849.1	11,538.9	64.2	64.2	0.19	-2,944.1	445.5	355.5	258.3	97.14	3.659	
14,500.0	11,895.9	13,883.2	11,540.6	64.8	64.8	0.19	-2,978.2	445.7	355.7	258.0	97.66	3.642	
14,547.8	11,899.1	13,931.0	11,542.9	65.7	65.7	0.19	-3,025.9	445.9	356.7	258.3	98.39	3.625	
14,600.0	11,903.2	13,983.2	11,545.4	66.7	66.7	0.19	-3,078.1	446.2	358.1	259.0	99.19	3.611	
14,700.0	11,910.8	14,083.2	11,550.3	68.5	68.6	0.18	-3,177.9	446.7	361.0	260.3	100.74	3.584	
14,800.0	11,918.5	14,183.1	11,555.1	70.4	70.5	0.18	-3,277.7	447.3	363.9	261.6	102.31	3.556	
14,900.0	11,926.2	14,283.1	11,559.9	72.3	72.4	0.18	-3,377.6	447.8	366.7	262.8	103.91	3.529	
15,000.0	11,933.9	14,383.0	11,564.8	74.2	74.3	0.17	-3,477.4	448.3	369.6	264.1	105.53	3.502	
15,100.0	11,941.6	14,483.0	11,569.6	76.1	76.3	0.17	-3,577.3	448.8	372.4	265.3	107.17	3.475	
15,200.0	11,949.3	14,583.0	11,574.5	78.0	78.2	0.17	-3,677.1	449.3	375.3	266.5	108.83	3.449	
15,300.0	11,957.0	14,682.9	11,579.3	80.0	80.1	0.16	-3,776.9	449.9	378.2	267.7	110.50	3.422	
15,400.0	11,964.7	14,782.9	11,584.1	81.9	82.0	0.16	-3,876.8	450.4	381.0	268.8	112.20	3.396	
15,500.0	11,972.4	14,882.8	11,589.0	83.8	84.0	0.16	-3,976.6	450.9	383.9	270.0	113.91	3.370	
15,600.0	11,980.1	14,982.8	11,593.8	85.7	85.9	0.15	-4,076.5	451.4	386.7	271.1	115.64	3.344	
15,700.0	11,987.8	15,082.8	11,598.7	87.7	87.8	0.15	-4,176.3	451.9	389.6	272.2	117.38	3.319	
15,800.0	11,995.5	15,182.7	11,603.5	89.6	89.8	0.15	-4,276.1	452.5	392.4	273.3	119.14	3.294	
15,900.0	12,003.2	15,282.7	11,608.3	91.5	91.7	0.14	-4,376.0	453.0	395.3	274.4	120.91	3.269	
16,000.0	12,010.9	15,382.6	11,613.2	93.5	93.7	0.14	-4,475.8	453.5	398.2	275.5	122.70	3.245	
16,100.0	12,018.6	15,482.6	11,618.0	95.4	95.6	0.14	-4,575.7	454.0	401.0	276.5	124.49	3.221	
16,200.0	12,026.3	15,582.6	11,622.9	97.4	97.6	0.14	-4,675.5	454.5	403.9	277.6	126.30	3.198	
16,300.0	12,034.0	15,682.5	11,627.7	99.3	99.5	0.13	-4,775.3	455.0	406.7	278.6	128.13	3.175	
16,400.0	12,041.7	15,782.5	11,632.5	101.3	101.5	0.13	-4,875.2	455.6	409.6	279.6	129.96	3.152	
16,500.0	12,049.4	15,882.4	11,637.4	103.2	103.5	0.13	-4,975.0	456.1	412.5	280.7	131.80	3.129	
16,600.0	12,057.1	15,982.4	11,642.2	105.2	105.4	0.12	-5,074.9	456.6	415.3	281.7	133.66	3.107	
16,638.3	12,060.0	16,020.6	11,644.1	105.9	106.2	0.12	-5,113.1	456.8	416.4	282.0	134.37	3.099	
16,700.0	12,064.1	16,082.4	11,647.1	107.1	107.4	0.12	-5,174.7	457.1	417.5	282.0	135.52	3.081	
16,786.9	12,067.6	16,169.3	11,651.3	108.8	109.1	0.12	-5,261.5	457.6	416.8	279.6	137.17	3.039	
16,800.0	12,067.9	16,182.4	11,651.9	109.1	109.4	0.12	-5,274.6	457.6	416.5	279.1	137.42	3.031	
16,900.0	12,070.4	16,282.3	11,656.8	111.1	111.3	0.12	-5,374.4	458.2	414.2	274.9	139.29	2.973	
17,000.0	12,072.9	16,382.3	11,661.6	113.0	113.3	0.12	-5,474.3	458.7	411.8	270.7	141.17	2.917	
17,100.0	12,075.5	16,482.3	11,666.4	115.0	115.3	0.12	-5,574.2	459.2	409.5	266.4	143.07	2.862	
17,200.0	12,078.0	16,582.2	11,671.3	117.0	117.2	0.11	-5,674.0	459.7	407.2	262.2	144.97	2.809	
17,300.0	12,080.5	16,682.2	11,676.1	118.9	119.2	0.11	-5,773.9	460.2	404.8	258.0	146.88	2.756	
17,400.0	12,083.0	16,782.2	11,681.0	120.9	121.2	0.11	-5,873.7	460.8	402.5	253.7	148.79	2.705	
17,500.0	12,085.5	16,882.2	11,685.8	122.9	123.2	0.11	-5,973.6	461.3	400.2	249.5	150.72	2.655	
17,600.0	12,088.0	16,982.1	11,690.6	124.9	125.1	0.11	-6,073.4	461.8	397.9	245.2	152.65	2.606	
17,700.0	12,090.5	17,082.1	11,695.5	126.8	127.1	0.11	-6,173.3	462.3	395.5	240.9	154.59	2.559	
17,800.0	12,093.1	17,176.3	11,699.7	128.8	129.0	0.11	-6,267.4	462.8	393.6	237.4	156.13	2.521	
17,827.1	12,093.7	17,200.0	11,700.4	129.4	129.4	0.11	-6,291.1	462.9	393.4	237.0	156.41	2.515	
17,900.0	12,095.6	17,264.2	11,701.3	130.8	130.7	0.10	-6,355.3	463.3	394.2	237.0	157.19	2.508	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Offset Well Error: 0.0 usft

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
18,000.0	12,098.1	17,358.9	11,700.6	132.8	132.6	0.10	-6,450.0	463.8	397.5	238.7	158.73	2.504	
18,100.0	12,100.6	17,458.9	11,699.6	134.8	134.6	0.10	-6,549.9	464.3	401.0	240.3	160.69	2.495	
18,200.0	12,103.1	17,558.8	11,698.6	136.8	136.6	0.09	-6,649.8	464.8	404.5	241.9	162.65	2.487	
18,300.0	12,105.6	17,658.7	11,697.6	138.7	138.5	0.09	-6,749.8	465.3	408.1	243.5	164.61	2.479	
18,400.0	12,108.1	17,758.7	11,696.6	140.7	140.5	0.09	-6,849.7	465.9	411.6	245.0	166.58	2.471	
18,500.0	12,110.6	17,858.6	11,695.5	142.7	142.5	0.08	-6,949.6	466.4	415.1	246.6	168.55	2.463	
18,600.0	12,113.2	17,958.6	11,694.5	144.7	144.5	0.08	-7,049.6	466.9	418.7	248.1	170.53	2.455	
18,700.0	12,115.7	18,052.3	11,693.3	146.7	146.4	0.08	-7,143.3	467.4	422.5	250.6	171.99	2.457	
18,800.0	12,118.2	18,149.6	11,690.3	148.7	148.3	0.07	-7,240.5	467.9	428.1	254.3	173.75	2.464	
18,900.0	12,120.7	18,249.4	11,687.2	150.7	150.3	0.07	-7,340.3	468.4	433.7	258.0	175.74	2.468	
19,000.0	12,123.2	18,349.3	11,684.1	152.6	152.3	0.07	-7,440.1	468.9	439.3	261.6	177.73	2.472	
19,100.0	12,125.7	18,449.1	11,681.0	154.6	154.2	0.07	-7,539.9	469.5	444.9	265.2	179.72	2.475	
19,150.5	12,127.0	18,499.5	11,679.5	155.6	155.2	0.06	-7,590.3	469.7	447.7	267.0	180.73	2.477	
19,200.0	12,127.8	18,549.0	11,677.9	156.6	156.2	0.06	-7,639.7	470.0	450.1	268.4	181.72	2.477	
19,307.7	12,126.6	18,656.7	11,674.6	158.8	158.4	0.06	-7,747.4	470.5	452.2	268.3	183.92	2.459	
19,400.0	12,123.9	18,748.9	11,671.8	160.6	160.2	0.06	-7,839.6	471.0	452.3	266.6	185.79	2.435	
19,500.0	12,120.9	18,848.9	11,668.7	162.6	162.2	0.06	-7,939.5	471.5	452.5	264.7	187.79	2.409	
19,600.0	12,117.9	18,948.9	11,665.6	164.6	164.2	0.06	-8,039.5	472.0	452.6	262.8	189.81	2.384	
19,700.0	12,115.0	19,048.9	11,662.5	166.6	166.2	0.06	-8,139.4	472.6	452.7	260.9	191.83	2.360	
19,800.0	12,112.0	19,148.9	11,659.4	168.6	168.2	0.06	-8,239.4	473.1	452.8	259.0	193.85	2.336	
19,900.0	12,109.0	19,248.9	11,656.3	170.6	170.2	0.05	-8,339.4	473.6	452.9	257.1	195.87	2.312	
20,000.0	12,106.0	19,348.9	11,653.2	172.6	172.2	0.05	-8,439.3	474.1	453.0	255.1	197.90	2.289	
20,100.0	12,103.1	19,448.9	11,650.1	174.5	174.2	0.05	-8,539.3	474.6	453.2	253.2	199.93	2.267	
20,200.0	12,100.1	19,548.9	11,647.0	176.5	176.2	0.05	-8,639.2	475.1	453.3	251.3	201.96	2.244	
20,300.0	12,097.1	19,648.9	11,643.9	178.5	178.1	0.05	-8,739.2	475.7	453.4	249.4	204.00	2.222	
20,400.0	12,094.1	19,748.9	11,640.8	180.5	180.1	0.05	-8,839.1	476.2	453.5	247.5	206.04	2.201	
20,500.0	12,091.2	19,848.9	11,637.7	182.5	182.1	0.05	-8,939.1	476.7	453.6	245.5	208.09	2.180	
20,600.0	12,088.2	19,948.9	11,634.6	184.5	184.1	0.05	-9,039.0	477.2	453.7	243.6	210.13	2.159	
20,700.0	12,085.2	20,048.9	11,631.6	186.5	186.1	0.04	-9,139.0	477.7	453.9	241.7	212.18	2.139	
20,800.0	12,082.2	20,148.9	11,628.5	188.5	188.1	0.04	-9,238.9	478.2	454.0	239.7	214.24	2.119	
20,908.3	12,079.0	20,257.2	11,625.1	190.7	190.3	0.04	-9,347.2	478.8	454.1	237.6	216.46	2.098	
21,000.0	12,077.7	20,348.9	11,622.3	192.5	192.1	0.04	-9,438.8	479.3	455.7	237.3	218.36	2.087	
21,100.0	12,079.7	20,448.8	11,619.2	194.5	194.1	0.04	-9,538.6	479.8	460.7	240.3	220.47	2.090	
21,116.3	12,080.4	20,465.1	11,618.7	194.8	194.4	0.04	-9,554.9	479.9	461.9	241.1	220.80	2.092	
21,200.0	12,083.9	20,548.5	11,616.1	196.5	196.1	0.04	-9,638.3	480.3	468.1	245.5	222.53	2.103	
21,300.0	12,088.2	20,661.0	11,613.7	198.5	198.4	0.04	-9,750.7	480.9	474.6	249.0	225.61	2.104	
21,400.0	12,092.5	20,773.7	11,615.2	200.5	200.6	0.03	-9,863.4	481.5	477.5	248.9	228.57	2.089	
21,500.0	12,096.8	20,873.7	11,617.5	202.5	202.6	0.03	-9,963.4	482.0	479.5	248.8	230.65	2.079	
21,600.0	12,101.1	20,973.7	11,619.7	204.5	204.6	0.03	-10,063.3	482.5	481.5	248.8	232.73	2.069	
21,700.0	12,105.4	21,073.6	11,622.0	206.5	206.6	0.03	-10,163.3	483.0	483.5	248.7	234.82	2.059	
21,800.0	12,109.6	21,173.6	11,624.3	208.5	208.6	0.03	-10,263.2	483.6	485.5	248.6	236.90	2.049	
21,900.0	12,113.9	21,273.6	11,626.5	210.5	210.6	0.03	-10,363.2	484.1	487.5	248.5	238.99	2.040	
22,000.0	12,118.2	21,373.6	11,628.8	212.5	212.6	0.02	-10,463.1	484.6	489.5	248.5	241.09	2.031	
22,100.0	12,122.5	21,473.6	11,631.1	214.5	214.6	0.02	-10,563.1	485.1	491.6	248.4	243.18	2.021	
22,200.0	12,126.8	21,573.5	11,633.3	216.5	216.6	0.02	-10,663.0	485.7	493.6	248.3	245.27	2.012	
22,300.0	12,131.1	21,673.5	11,635.6	218.5	218.6	0.02	-10,763.0	486.2	495.6	248.2	247.37	2.003	
22,400.0	12,135.4	21,773.5	11,637.9	220.5	220.6	0.02	-10,863.0	486.7	497.6	248.1	249.47	1.995	
22,500.0	12,139.6	21,873.5	11,640.2	222.5	222.6	0.02	-10,962.9	487.2	499.6	248.0	251.57	1.986	
22,600.0	12,143.9	21,973.5	11,642.4	224.5	224.6	0.01	-11,062.9	487.7	501.6	248.0	253.67	1.977	
22,700.0	12,148.2	22,073.4	11,644.7	226.5	226.6	0.01	-11,162.8	488.3	503.6	247.9	255.77	1.969	
22,800.0	12,152.5	22,173.4	11,647.0	228.5	228.7	0.01	-11,262.8	488.8	505.6	247.8	257.87	1.961	
22,900.0	12,156.8	22,273.4	11,649.2	230.5	230.7	0.01	-11,362.7	489.3	507.7	247.7	259.98	1.953	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Margarita 13 Federal Com 2H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
23,000.0	12,161.1	22,373.4	11,651.5	232.5	232.7	0.01	-11,462.7	489.8	509.7	247.6	262.09	1.945	
23,100.0	12,165.3	22,473.4	11,653.8	234.6	234.7	0.01	-11,562.6	490.4	511.7	247.5	264.19	1.937	
23,200.0	12,169.6	22,573.3	11,656.1	236.6	236.7	0.01	-11,662.6	490.9	513.7	247.4	266.30	1.929	
23,300.0	12,173.9	22,673.3	11,658.3	238.6	238.7	0.00	-11,762.5	491.4	515.7	247.3	268.41	1.921	
23,400.0	12,178.2	22,773.3	11,660.6	240.6	240.7	0.00	-11,862.5	491.9	517.7	247.2	270.53	1.914	
23,500.0	12,182.5	22,873.3	11,662.9	242.6	242.7	0.00	-11,962.4	492.4	519.7	247.1	272.64	1.906	
23,605.5	12,187.0	22,966.9	11,665.0	244.7	244.6	0.00	-12,056.0	492.9	522.0	247.9	274.10	1.904	

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 9H - Margarita 13 Federal Com 9H - Margarita 13 Federal Com 9H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.38	-0.2	-33.0	33.0				
100.0	100.0	100.0	100.0	0.5	0.5	-90.38	-0.2	-33.0	33.0	31.9	1.06	31.119	
200.0	200.0	200.0	200.0	1.7	1.7	-90.38	-0.2	-33.0	33.0	29.6	3.42	9.638	
300.0	300.0	300.0	300.0	2.4	2.4	-90.38	-0.2	-33.0	33.0	28.2	4.82	6.841	
400.0	400.0	400.0	400.0	3.0	3.0	-90.38	-0.2	-33.0	33.0	27.1	5.91	5.585	
500.0	500.0	500.0	500.0	3.4	3.4	-90.38	-0.2	-33.0	33.0	26.2	6.83	4.831	
600.0	600.0	600.0	600.0	3.8	3.8	-90.38	-0.2	-33.0	33.0	25.3	7.65	4.314	
700.0	700.0	700.0	700.0	4.2	4.2	-90.38	-0.2	-33.0	33.0	24.6	8.39	3.931	
800.0	800.0	800.0	800.0	4.5	4.5	-90.38	-0.2	-33.0	33.0	23.9	9.08	3.632	
900.0	900.0	900.0	900.0	4.9	4.9	-90.38	-0.2	-33.0	33.0	23.3	9.73	3.391	
1,000.0	1,000.0	1,000.0	1,000.0	5.2	5.2	-90.38	-0.2	-33.0	33.0	22.7	10.34	3.191	
1,100.0	1,100.0	1,100.0	1,100.0	5.5	5.5	-90.38	-0.2	-33.0	33.0	22.1	10.92	3.021	
1,200.0	1,200.0	1,200.0	1,200.0	5.7	5.7	-90.38	-0.2	-33.0	33.0	21.5	11.48	2.874	
1,300.0	1,300.0	1,300.0	1,300.0	6.0	6.0	-90.38	-0.2	-33.0	33.0	21.0	12.01	2.746	
1,400.0	1,400.0	1,400.0	1,400.0	6.3	6.3	-90.38	-0.2	-33.0	33.0	20.5	12.53	2.633	
1,500.0	1,500.0	1,500.0	1,500.0	6.5	6.5	-90.38	-0.2	-33.0	33.0	20.0	13.03	2.532	
1,600.0	1,600.0	1,600.0	1,600.0	6.8	6.8	-90.38	-0.2	-33.0	33.0	19.5	13.52	2.441	
1,700.0	1,700.0	1,700.0	1,700.0	7.0	7.0	-90.38	-0.2	-33.0	33.0	19.0	13.99	2.359	
1,800.0	1,800.0	1,800.0	1,800.0	7.2	7.2	-90.38	-0.2	-33.0	33.0	18.5	14.45	2.283	
1,900.0	1,900.0	1,900.0	1,900.0	7.4	7.4	-90.38	-0.2	-33.0	33.0	18.1	14.90	2.215	
2,000.0	2,000.0	2,000.0	2,000.0	7.7	7.7	-90.38	-0.2	-33.0	33.0	17.7	15.34	2.151	
2,100.0	2,100.0	2,100.0	2,100.0	7.9	7.9	-90.38	-0.2	-33.0	33.0	17.2	15.77	2.092	
2,200.0	2,200.0	2,200.0	2,200.0	8.1	8.1	-90.38	-0.2	-33.0	33.0	16.8	16.19	2.038	
2,300.0	2,300.0	2,300.0	2,300.0	8.3	8.3	-90.38	-0.2	-33.0	33.0	16.4	16.61	1.987	
2,400.0	2,400.0	2,400.0	2,400.0	8.5	8.5	-90.38	-0.2	-33.0	33.0	16.0	17.02	1.939	
2,500.0	2,500.0	2,500.0	2,500.0	8.7	8.7	-90.38	-0.2	-33.0	33.0	15.6	17.42	1.894	
2,600.0	2,600.0	2,600.0	2,600.0	8.9	8.9	-90.38	-0.2	-33.0	33.0	15.2	17.81	1.852	
2,700.0	2,700.0	2,700.0	2,700.0	9.1	9.1	-90.38	-0.2	-33.0	33.0	14.8	18.20	1.813	
2,800.0	2,800.0	2,800.0	2,800.0	9.3	9.3	-90.38	-0.2	-33.0	33.0	14.4	18.59	1.775	
2,900.0	2,900.0	2,900.0	2,900.0	9.5	9.5	-90.38	-0.2	-33.0	33.0	14.0	18.96	1.740	
3,000.0	3,000.0	3,000.0	3,000.0	9.7	9.7	-90.38	-0.2	-33.0	33.0	13.7	19.34	1.706	
3,100.0	3,100.0	3,100.0	3,100.0	9.9	9.9	-90.38	-0.2	-33.0	33.0	13.3	19.71	1.674	
3,200.0	3,200.0	3,200.0	3,200.0	10.0	10.0	-90.38	-0.2	-33.0	33.0	12.9	20.07	1.644	
3,300.0	3,300.0	3,300.0	3,300.0	10.2	10.2	-90.38	-0.2	-33.0	33.0	12.6	20.44	1.615	
3,400.0	3,400.0	3,400.0	3,400.0	10.4	10.4	-90.38	-0.2	-33.0	33.0	12.2	20.79	1.587	
3,500.0	3,500.0	3,500.0	3,500.0	10.6	10.6	-90.38	-0.2	-33.0	33.0	11.8	21.15	1.560	
3,600.0	3,600.0	3,600.0	3,600.0	10.7	10.7	-90.38	-0.2	-33.0	33.0	11.5	21.50	1.535	
3,700.0	3,700.0	3,700.0	3,700.0	10.9	10.9	-90.38	-0.2	-33.0	33.0	11.1	21.85	1.510	
3,800.0	3,800.0	3,800.0	3,800.0	11.1	11.1	-90.38	-0.2	-33.0	33.0	10.8	22.19	1.487	Level 3
3,900.0	3,900.0	3,900.0	3,900.0	11.3	11.3	-90.38	-0.2	-33.0	33.0	10.5	22.53	1.464	Level 3
4,000.0	4,000.0	4,000.0	4,000.0	11.4	11.4	-90.38	-0.2	-33.0	33.0	10.1	22.87	1.443	Level 3
4,100.0	4,100.0	4,100.0	4,100.0	11.6	11.6	-90.38	-0.2	-33.0	33.0	9.8	23.21	1.422	Level 3
4,200.0	4,200.0	4,200.0	4,200.0	11.8	11.8	-90.38	-0.2	-33.0	33.0	9.5	23.54	1.402	Level 3
4,300.0	4,300.0	4,300.0	4,300.0	11.9	11.9	-90.38	-0.2	-33.0	33.0	9.1	23.87	1.382	Level 3
4,400.0	4,400.0	4,400.0	4,400.0	12.1	12.1	-90.38	-0.2	-33.0	33.0	8.8	24.20	1.363	Level 3
4,500.0	4,500.0	4,500.0	4,500.0	12.3	12.3	-90.38	-0.2	-33.0	33.0	8.5	24.53	1.345	Level 3
4,600.0	4,600.0	4,600.0	4,600.0	12.4	12.4	-90.38	-0.2	-33.0	33.0	8.1	24.85	1.328	Level 3
4,700.0	4,700.0	4,700.0	4,700.0	12.6	12.6	-90.38	-0.2	-33.0	33.0	7.8	25.17	1.311	Level 3
4,800.0	4,800.0	4,800.0	4,800.0	12.7	12.7	-90.38	-0.2	-33.0	33.0	7.5	25.49	1.294	Level 3
4,900.0	4,900.0	4,900.0	4,900.0	12.9	12.9	-90.38	-0.2	-33.0	33.0	7.2	25.81	1.278	Level 3
5,000.0	5,000.0	5,000.0	5,000.0	13.1	13.1	-90.38	-0.2	-33.0	33.0	6.9	26.12	1.263	Level 3
5,100.0	5,100.0	5,100.0	5,100.0	13.2	13.2	-90.38	-0.2	-33.0	33.0	6.6	26.44	1.248	Level 3

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 9H - Margarita 13 Federal Com 9H - Margarita 13 Federal Com 9H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Offset Well Error: 0.0 usft

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.0	5,200.0	5,200.0	5,200.0	13.4	13.4	-90.38	-0.2	-33.0	33.0	6.2	26.75	1.233	Level 3
5,300.0	5,300.0	5,300.0	5,300.0	13.5	13.5	-90.38	-0.2	-33.0	33.0	5.9	27.06	1.219	Level 3
5,400.0	5,400.0	5,400.0	5,400.0	13.7	13.7	-90.38	-0.2	-33.0	33.0	5.6	27.37	1.205	Level 3
5,500.0	5,500.0	5,500.0	5,500.0	13.8	13.8	-90.38	-0.2	-33.0	33.0	5.3	27.68	1.192	Level 3
5,600.0	5,600.0	5,600.0	5,600.0	14.0	14.0	-90.38	-0.2	-33.0	33.0	5.0	27.98	1.179	Level 3
5,700.0	5,700.0	5,700.0	5,700.0	14.1	14.1	-90.38	-0.2	-33.0	33.0	4.7	28.29	1.166	Level 3
5,800.0	5,800.0	5,800.0	5,800.0	14.3	14.3	-90.38	-0.2	-33.0	33.0	4.4	28.59	1.154	Level 3, CC
5,900.0	5,900.0	5,900.0	5,900.0	14.4	14.4	100.58	-0.2	-33.0	33.1	4.3	28.82	1.150	Level 3
6,000.0	6,000.0	6,000.0	6,000.0	14.4	14.6	104.94	-0.2	-33.0	33.7	4.7	29.01	1.162	Level 3
6,010.0	6,010.0	6,010.0	6,010.0	14.4	14.6	105.51	-0.2	-33.0	33.8	4.8	29.02	1.165	Level 3
6,100.0	6,099.9	6,100.0	6,100.0	14.5	14.7	109.35	-1.1	-33.0	34.7	5.6	29.10	1.192	Level 3
6,200.0	6,199.8	6,200.1	6,200.1	14.6	14.7	110.77	-3.7	-33.0	35.5	6.3	29.20	1.215	Level 3
6,300.0	6,299.8	6,300.2	6,300.1	14.6	14.8	109.41	-8.1	-33.0	35.9	6.6	29.29	1.226	Level 3
6,400.0	6,399.7	6,400.2	6,399.9	14.8	14.8	106.22	-13.6	-33.0	36.2	6.9	29.34	1.235	Level 3
6,500.0	6,499.6	6,500.2	6,499.8	14.9	14.9	103.06	-19.2	-33.0	36.7	7.2	29.43	1.245	Level 3
6,600.0	6,599.6	6,600.2	6,599.6	15.0	15.1	99.97	-24.8	-33.0	37.2	7.7	29.53	1.259	Level 3
6,700.0	6,699.5	6,700.2	6,699.4	15.2	15.2	96.97	-30.4	-33.0	37.8	8.2	29.63	1.276	Level 3
6,800.0	6,799.4	6,800.1	6,799.2	15.3	15.3	94.09	-36.0	-33.0	38.6	8.8	29.73	1.297	Level 3
6,900.0	6,899.4	6,900.1	6,899.0	15.5	15.5	91.32	-41.5	-33.0	39.4	9.5	29.85	1.320	Level 3
7,000.0	6,999.3	7,000.1	6,998.9	15.7	15.7	88.67	-47.1	-33.0	40.3	10.3	29.97	1.345	Level 3
7,100.0	7,099.2	7,100.1	7,098.7	15.9	15.8	86.14	-52.7	-33.0	41.3	11.2	30.11	1.372	Level 3
7,200.0	7,199.2	7,200.1	7,198.5	16.1	16.0	83.73	-58.3	-33.0	42.4	12.1	30.26	1.401	Level 3
7,300.0	7,299.1	7,300.0	7,298.3	16.3	16.3	81.45	-63.9	-33.0	43.5	13.1	30.43	1.431	Level 3
7,400.0	7,399.0	7,400.0	7,398.2	16.5	16.5	79.29	-69.4	-33.0	44.7	14.1	30.62	1.461	Level 3
7,500.0	7,499.0	7,500.0	7,498.0	16.7	16.7	77.25	-75.0	-33.0	46.0	15.2	30.82	1.493	Level 3
7,600.0	7,598.9	7,600.0	7,597.8	16.9	17.0	75.32	-80.6	-33.0	47.3	16.3	31.06	1.525	
7,700.0	7,698.8	7,699.9	7,697.6	17.2	17.2	73.49	-86.2	-33.0	48.7	17.4	31.31	1.556	
7,800.0	7,798.8	7,799.9	7,797.4	17.4	17.5	71.77	-91.8	-33.0	50.2	18.6	31.59	1.588	
7,900.0	7,898.7	7,899.9	7,897.3	17.7	17.7	70.15	-97.3	-33.0	51.6	19.7	31.88	1.619	
8,000.0	7,998.6	7,999.9	7,997.1	18.0	18.0	68.61	-102.9	-33.0	53.1	20.9	32.21	1.650	
8,100.0	8,098.5	8,099.9	8,096.9	18.2	18.3	67.16	-108.5	-33.0	54.7	22.1	32.55	1.680	
8,200.0	8,198.5	8,199.8	8,196.7	18.5	18.6	65.80	-114.1	-33.0	56.3	23.3	32.92	1.709	
8,300.0	8,298.4	8,299.8	8,296.6	18.8	18.9	64.50	-119.7	-33.0	57.9	24.6	33.31	1.737	
8,400.0	8,398.3	8,399.8	8,396.4	19.1	19.2	63.28	-125.2	-33.0	59.5	25.8	33.71	1.765	
8,500.0	8,498.3	8,499.8	8,496.2	19.4	19.6	62.13	-130.8	-33.0	61.2	27.0	34.14	1.791	
8,600.0	8,598.2	8,599.8	8,596.0	19.7	19.9	61.03	-136.4	-33.0	62.8	28.3	34.59	1.817	
8,700.0	8,698.1	8,699.7	8,695.9	20.0	20.2	59.99	-142.0	-33.0	64.5	29.5	35.06	1.841	
8,800.0	8,798.1	8,799.7	8,795.7	20.3	20.6	59.01	-147.6	-33.0	66.3	30.7	35.54	1.865	
8,900.0	8,898.0	8,899.7	8,895.5	20.6	20.9	58.08	-153.2	-33.0	68.0	32.0	36.04	1.887	
9,000.0	8,997.9	8,999.7	8,995.3	20.9	21.3	57.19	-158.7	-33.0	69.8	33.2	36.56	1.909	
9,100.0	9,097.9	9,099.6	9,095.1	21.3	21.6	56.35	-164.3	-33.0	71.6	34.5	37.09	1.929	
9,200.0	9,197.8	9,199.6	9,195.0	21.6	22.0	55.55	-169.9	-33.0	73.4	35.7	37.64	1.949	
9,300.0	9,297.7	9,299.6	9,294.8	21.9	22.4	54.78	-175.5	-33.0	75.2	37.0	38.20	1.967	
9,400.0	9,397.7	9,399.6	9,394.6	22.3	22.7	54.05	-181.1	-33.0	77.0	38.2	38.78	1.985	
9,500.0	9,497.6	9,499.6	9,494.4	22.6	23.1	53.36	-186.6	-33.0	78.8	39.4	39.36	2.002	
9,600.0	9,597.5	9,599.7	9,594.4	23.0	23.5	52.71	-192.2	-33.0	80.6	40.7	39.94	2.019	
9,700.0	9,697.5	9,700.8	9,695.4	23.3	23.8	52.64	-196.7	-33.0	81.6	41.2	40.39	2.021	
9,800.0	9,797.4	9,801.8	9,796.4	23.7	24.2	53.42	-199.3	-33.0	81.3	40.7	40.63	2.002	
9,900.0	9,897.3	9,902.8	9,897.3	24.0	24.3	55.11	-200.2	-33.0	79.8	39.3	40.55	1.968	
9,949.9	9,947.2	9,952.6	9,947.2	24.2	24.4	56.20	-200.2	-33.0	78.8	38.4	40.40	1.950	
10,000.0	9,997.3	10,002.7	9,997.3	24.3	24.4	57.18	-200.2	-33.0	77.9	37.6	40.26	1.935	
10,100.0	10,097.3	10,107.6	10,102.1	24.6	24.4	57.84	-199.9	-31.5	75.7	35.3	40.36	1.875	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 9H - Margarita 13 Federal Com 9H - Margarita 13 Federal Com 9H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,159.9	10,157.2	10,174.2	10,168.1	24.7	24.4	-135.06	-198.0	-22.9	68.7	27.0	41.72	1.648	
10,200.0	10,197.3	10,217.3	10,210.1	24.7	24.4	-140.10	-196.0	-13.4	61.3	18.0	43.27	1.416	Level 3
10,300.0	10,297.3	10,316.8	10,303.4	24.8	24.4	-172.68	-188.7	20.0	39.5	-9.2	48.66	0.812	Level 3
10,332.2	10,329.5	10,346.0	10,329.5	24.8	24.4	167.75	-185.9	32.8	36.8	-12.3	49.04	0.750	Level 3, ES, SF
10,400.0	10,397.3	10,402.5	10,377.9	24.9	24.4	129.51	-179.8	61.1	50.6	4.3	46.28	1.094	Level 3
10,500.0	10,497.3	10,480.8	10,442.4	24.9	24.7	106.56	-173.8	105.2	100.0	54.0	46.04	2.173	
10,600.0	10,597.3	10,559.5	10,507.0	25.0	25.4	102.85	-178.4	149.7	156.5	109.7	46.74	3.348	
10,700.0	10,697.3	10,635.4	10,568.4	25.1	26.1	104.46	-193.0	191.9	215.2	167.3	47.93	4.491	
10,800.0	10,797.3	10,706.3	10,623.7	25.1	26.8	107.70	-215.4	230.1	276.5	227.0	49.54	5.582	
10,900.0	10,897.3	10,770.8	10,671.7	25.2	27.4	111.30	-242.8	263.2	340.9	289.6	51.38	6.635	
10,977.7	10,975.0	10,816.0	10,703.7	25.2	27.8	114.01	-265.9	285.3	393.5	340.6	52.85	7.444	
11,000.0	10,997.3	10,828.3	10,712.1	25.2	27.9	33.11	-272.7	291.1	408.6	355.4	53.28	7.669	
11,050.0	11,047.1	10,850.0	10,726.7	25.3	28.1	32.20	-285.2	301.2	441.6	387.0	54.53	8.097	
11,100.0	11,096.3	10,881.5	10,747.1	25.3	28.4	32.34	-304.6	315.3	472.8	417.2	55.65	8.497	
11,150.0	11,144.7	10,900.0	10,758.7	25.3	28.5	31.77	-316.6	323.4	502.7	445.7	56.99	8.820	
11,200.0	11,191.7	10,929.1	10,776.2	25.3	28.7	32.21	-336.4	335.5	531.2	473.0	58.15	9.135	
11,250.0	11,237.1	10,950.0	10,788.3	25.4	28.9	32.16	-351.2	343.9	558.5	499.1	59.36	9.409	
11,294.4	11,275.8	10,967.7	10,798.2	25.5	29.1	32.14	-364.2	350.8	581.9	521.5	60.35	9.642	
11,300.0	11,280.5	10,969.8	10,799.4	25.5	29.1	31.72	-365.8	351.6	584.8	524.3	60.45	9.673	
11,350.0	11,323.2	10,988.9	10,809.6	25.7	29.2	27.74	-380.2	358.7	610.9	549.5	61.39	9.952	
11,400.0	11,365.8	11,000.0	10,815.3	26.1	29.3	23.06	-388.8	362.7	637.3	575.0	62.29	10.231	
11,450.0	11,408.1	11,028.3	10,829.4	26.6	29.5	19.57	-411.3	372.4	663.3	600.2	63.05	10.519	
11,500.0	11,449.6	11,050.0	10,839.5	27.0	29.7	15.98	-429.2	379.5	688.8	625.0	63.78	10.799	
11,550.0	11,490.2	11,069.0	10,848.0	27.4	29.8	12.75	-445.1	385.4	713.5	649.0	64.47	11.067	
11,600.0	11,529.4	11,100.0	10,860.8	27.8	30.0	10.45	-471.9	394.3	737.2	672.1	65.13	11.319	
11,650.0	11,567.0	11,100.0	10,860.8	28.2	30.0	7.65	-471.9	394.3	759.6	693.9	65.68	11.565	
11,700.0	11,602.7	11,131.8	10,872.6	28.6	30.2	6.21	-500.3	402.6	780.4	714.1	66.30	11.772	
11,750.0	11,636.2	11,150.0	10,878.8	29.0	30.3	4.75	-516.8	407.0	799.8	733.0	66.82	11.969	
11,800.0	11,667.3	11,174.6	10,886.5	29.3	30.4	3.71	-539.5	412.4	817.5	750.1	67.36	12.136	
11,850.0	11,695.7	11,200.0	10,893.6	29.6	30.6	2.88	-563.4	417.4	833.4	765.5	67.88	12.279	
11,900.0	11,721.2	11,217.8	10,898.0	29.9	30.7	2.13	-580.4	420.5	847.4	779.1	68.30	12.407	
11,950.0	11,743.7	11,250.0	10,904.9	30.2	30.8	1.66	-611.4	425.4	859.6	790.8	68.82	12.490	
12,000.0	11,762.9	11,250.0	10,904.9	30.4	30.8	1.05	-611.4	425.4	869.7	800.7	69.00	12.604	
12,050.0	11,778.7	11,283.2	10,910.6	30.6	31.0	0.77	-643.9	429.4	877.5	808.0	69.48	12.630	
12,100.0	11,791.0	11,300.0	10,912.8	30.7	31.1	0.47	-660.5	431.1	883.4	813.7	69.75	12.666	
12,150.0	11,799.7	11,327.0	10,915.6	30.8	31.2	0.27	-687.2	433.1	887.2	817.1	70.11	12.655	
12,200.0	11,804.7	11,350.0	10,917.1	30.9	31.3	0.12	-710.2	434.3	888.8	818.4	70.39	12.627	
12,242.3	11,806.0	11,367.5	10,917.8	31.0	31.3	0.02	-727.6	434.8	888.5	818.0	70.51	12.601	
12,272.9	11,806.2	11,385.1	10,918.0	31.0	31.4	0.01	-745.2	435.1	888.2	817.6	70.61	12.578	
12,300.0	11,806.6	11,410.6	10,918.1	31.1	31.5	0.01	-770.7	435.2	888.5	817.7	70.79	12.551	
12,358.6	11,808.4	11,478.1	10,919.2	31.2	31.8	0.01	-838.2	435.6	889.3	818.0	71.28	12.477	
12,400.0	11,810.0	11,519.5	10,920.0	31.3	32.1	0.01	-879.6	435.8	890.2	818.6	71.56	12.440	
12,500.0	11,814.1	11,619.5	10,921.9	31.9	32.8	0.02	-979.6	436.3	892.3	820.1	72.27	12.347	
12,600.0	11,818.2	11,719.5	10,923.8	32.9	33.7	0.02	-1,079.5	436.8	894.5	821.5	73.05	12.245	
12,700.0	11,822.2	11,819.5	10,925.7	34.1	34.8	0.02	-1,179.5	437.3	896.7	822.8	73.89	12.136	
12,800.0	11,826.3	11,919.4	10,927.6	35.5	36.0	0.02	-1,279.5	437.8	898.8	824.1	74.78	12.020	
12,900.0	11,830.3	12,019.4	10,929.5	37.0	37.4	0.02	-1,379.4	438.3	901.0	825.3	75.72	11.899	
13,000.0	11,834.4	12,119.4	10,931.4	38.5	38.9	0.02	-1,479.4	438.8	903.2	826.4	76.72	11.773	
13,100.0	11,838.5	12,219.4	10,933.3	40.1	40.4	0.02	-1,579.3	439.3	905.3	827.6	77.76	11.642	
13,200.0	11,842.5	12,319.3	10,935.2	41.7	42.0	0.02	-1,679.3	439.8	907.5	828.6	78.85	11.509	
13,300.0	11,846.6	12,419.3	10,937.1	43.4	43.6	0.02	-1,779.2	440.3	909.7	829.7	79.99	11.372	
13,400.0	11,850.6	12,519.3	10,939.0	45.0	45.2	0.02	-1,879.2	440.8	911.8	830.7	81.17	11.234	

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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Reference Site:	Margarita Federal Com - Pad D	**MD Reference:**	WELL @ 3949.5usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Offset Design: Margarita Federal Com - Pad D - Margarita 13 Federal Com 9H - Margarita 13 Federal Com 9H - Margarita 13 Federal Com 9H - Prelim 4

Offset Site Error: 0.0 usft

Survey Program: 0-MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,500.0	11,854.7	12,619.3	10,940.9	46.7	46.9	0.02	-1,979.2	441.4	914.0	831.6	82.39	11.094	
13,600.0	11,858.8	12,719.2	10,942.8	48.5	48.7	0.02	-2,079.1	441.9	916.2	832.5	83.65	10.953	
13,700.0	11,862.8	12,819.2	10,944.7	50.2	50.4	0.02	-2,179.1	442.4	918.3	833.4	84.95	10.811	
13,800.0	11,866.9	12,919.2	10,946.6	52.0	52.2	0.02	-2,279.0	442.9	920.5	834.2	86.28	10.669	
13,900.0	11,870.9	13,019.2	10,948.4	53.8	54.0	0.02	-2,379.0	443.4	922.7	835.0	87.65	10.527	
14,000.0	11,875.0	13,119.1	10,950.3	55.6	55.8	0.02	-2,478.9	443.9	924.8	835.8	89.05	10.386	
14,100.0	11,879.1	13,219.1	10,952.2	57.4	57.6	0.02	-2,578.9	444.4	927.0	836.5	90.48	10.245	
14,200.0	11,883.1	13,319.1	10,954.1	59.3	59.4	0.03	-2,678.9	444.9	929.2	837.2	91.94	10.106	
14,300.0	11,887.2	13,419.1	10,956.0	61.1	61.3	0.03	-2,778.8	445.4	931.3	837.9	93.43	9.968	
14,400.0	11,891.2	13,519.1	10,957.9	63.0	63.1	0.03	-2,878.8	445.9	933.5	838.5	94.95	9.832	
14,443.4	11,893.0	13,562.5	10,958.7	63.8	63.9	0.03	-2,922.2	446.2	934.4	838.8	95.61	9.773	
14,500.0	11,895.9	13,619.0	10,959.8	64.8	65.0	0.03	-2,978.7	446.4	936.2	839.7	96.49	9.703	
14,547.8	11,899.1	13,666.7	10,960.7	65.7	65.9	0.03	-3,026.4	446.7	938.6	841.3	97.24	9.652	
14,600.0	11,903.2	13,718.9	10,961.7	66.7	66.8	0.03	-3,078.6	447.0	941.6	843.6	98.06	9.602	
14,700.0	11,910.8	13,818.7	10,963.6	68.5	68.7	0.03	-3,178.4	447.5	947.4	847.8	99.66	9.507	
14,800.0	11,918.5	13,918.5	10,965.5	70.4	70.6	0.03	-3,278.2	448.0	953.2	852.0	101.27	9.412	
14,900.0	11,926.2	14,018.4	10,967.4	72.3	72.5	0.03	-3,378.0	448.5	959.0	856.1	102.91	9.319	
15,000.0	11,933.9	14,118.2	10,969.3	74.2	74.4	0.03	-3,477.8	449.0	964.8	860.3	104.57	9.227	
15,100.0	11,941.6	14,218.0	10,971.2	76.1	76.3	0.03	-3,577.6	449.5	970.6	864.4	106.25	9.136	
15,200.0	11,949.3	14,317.9	10,973.1	78.0	78.2	0.02	-3,677.4	450.0	976.4	868.5	107.94	9.046	
15,300.0	11,957.0	14,417.7	10,974.9	80.0	80.1	0.02	-3,777.2	450.5	982.3	872.6	109.66	8.958	
15,400.0	11,964.7	14,517.5	10,976.8	81.9	82.1	0.02	-3,877.0	451.0	988.1	876.7	111.39	8.871	
15,500.0	11,972.4	14,617.4	10,978.7	83.8	84.0	0.02	-3,976.9	451.5	993.9	880.7	113.13	8.785	
15,600.0	11,980.1	14,717.2	10,980.6	85.7	85.9	0.02	-4,076.7	452.0	999.7	884.8	114.89	8.701	

ADVANCE ENERGY PARTNERS

Anticollision Report

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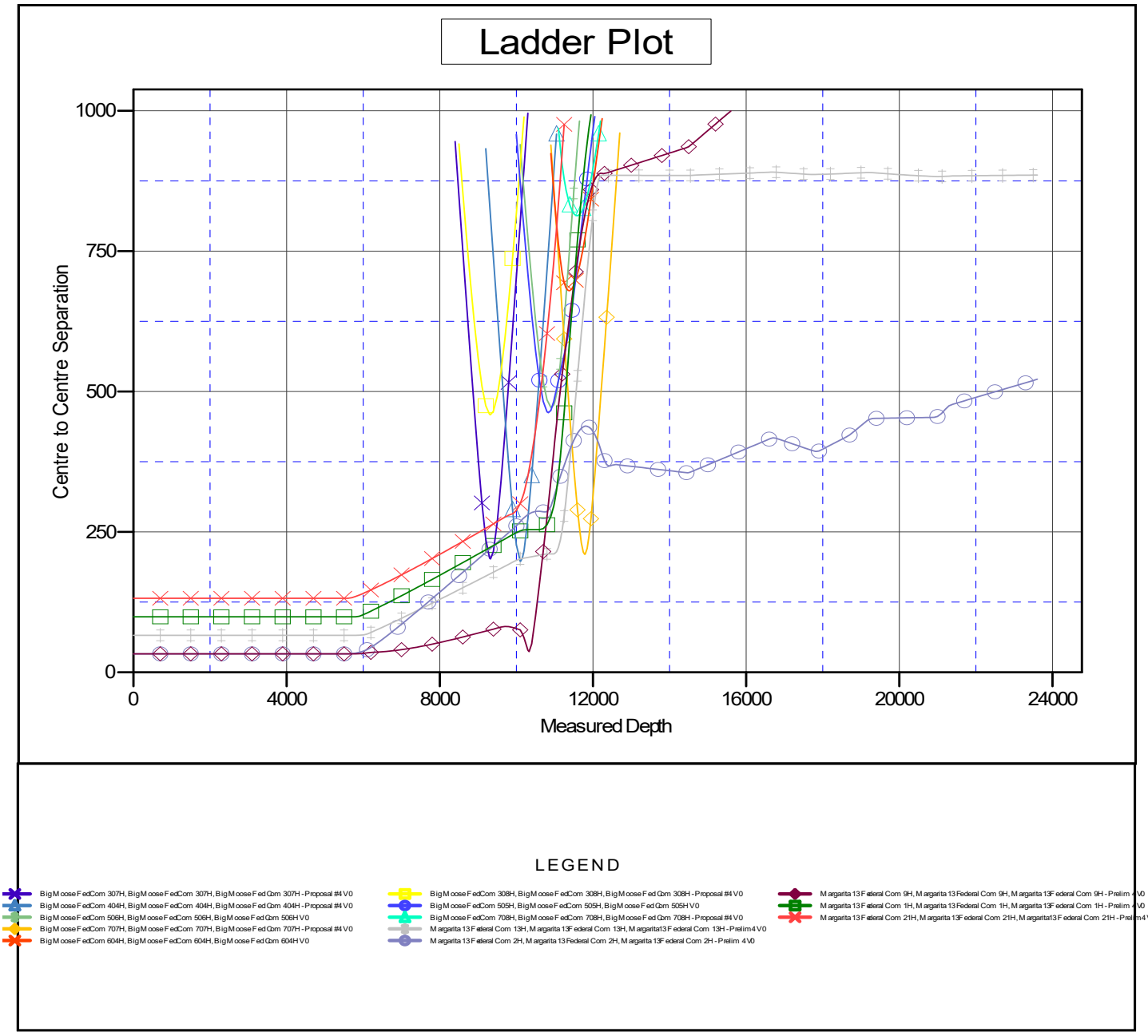
Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 3949.5usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Margarita 13 Federal Com 17H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.38°



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

ADVANCE ENERGY PARTNERS

Anticollision Report

Company:	Advance Energy Partners	**Local Co-ordinate Reference:**	Well Margarita 13 Federal Com 17H
Project:	Hat Mesa	**TVD Reference:**	WELL @ 3949.5usft (Original Well Elev)
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Reference Well:	Margarita 13 Federal Com 17H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.79 sigma
Reference Wellbore	ST - Margarita 13 Federal Com 17H	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Margarita 13 Federal Com 17H - Prelim 4	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 3949.5usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Margarita 13 Federal Com 17H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
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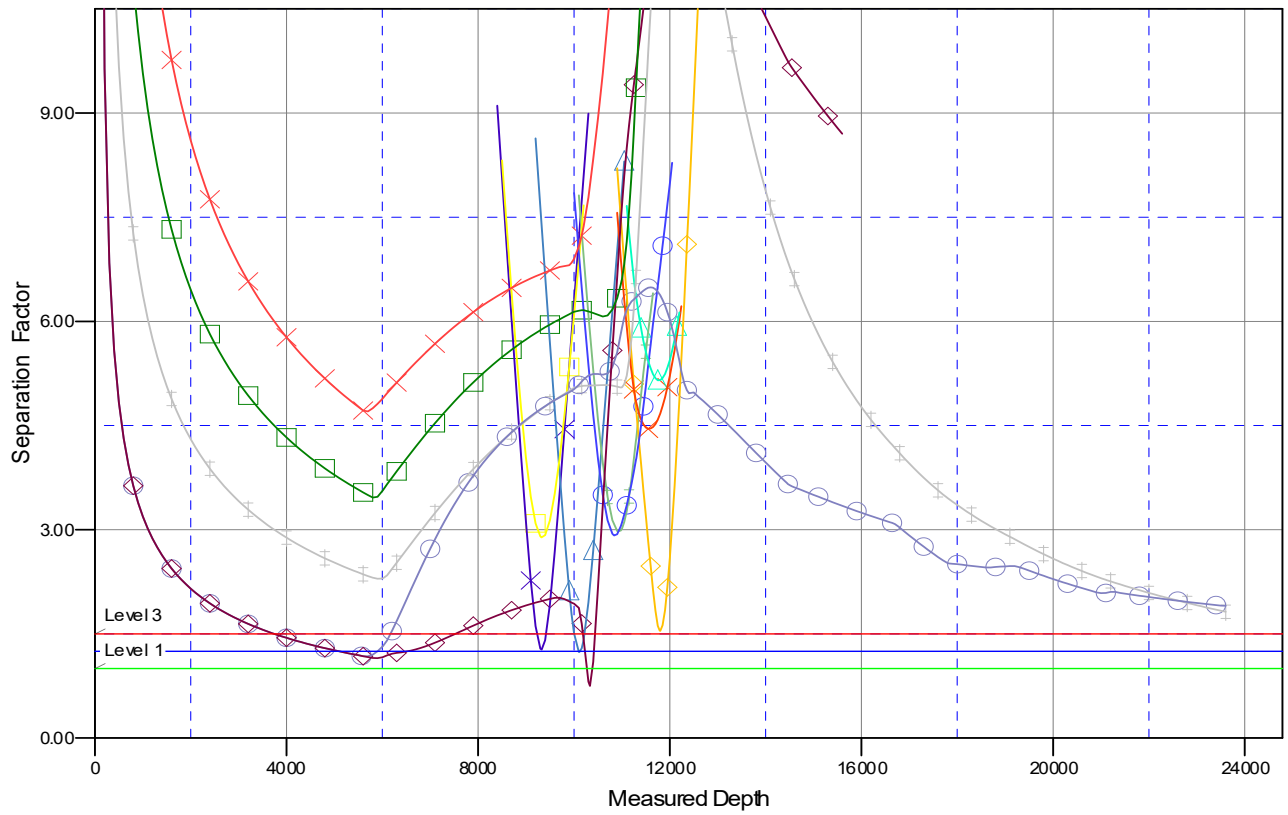
Separation Factor Plot



LEGEND

BigMooseFedCom 307H, BigMooseFedCom 307H, BigMooseFedCom 307H - Proposal #4 V0
BigMooseFedCom 404H, BigMooseFedCom 404H, BigMooseFedCom 404H - Proposal #4 V0
BigMooseFedCom 506H, BigMooseFedCom 506H, BigMooseFedCom 506H V0
BigMooseFedCom 707H, BigMooseFedCom 707H, BigMooseFedCom 707H - Proposal #4 V0
BigMooseFedCom 604H, BigMooseFedCom 604H, BigMooseFedCom 604H V0
BigMooseFedCom 308H, BigMooseFedCom 308H, BigMooseFedCom 308H - Proposal #4 V0
BigMooseFedCom 505H, BigMooseFedCom 505H, BigMooseFedCom 505H V0
BigMooseFedCom 708H, BigMooseFedCom 708H, BigMooseFedCom 708H - Proposal #4 V0
Margarita 13 Federal Com 13H, Margarita 13 Federal Com 13H, Margarita13 Federal Com 13H - Prelim 4 V0
Margarita 13 Federal Com 2H, Margarita 13 Federal Com 2H, Margarita 13 Federal Com 2H - Prelim 4 V0
Margarita 13 Federal Com 9H, Margarita 13 Federal Com 9H, Margarita 13 Federal Com 9H - Prelim 4 V0
Margarita 13 Federal Com 1H, Margarita 13 Federal Com 1H, Margarita 13 Federal Com 1H - Prelim 4 V0
Margarita 13 Federal Com 21H, Margarita 13 Federal Com 21H, Margarita13 Federal Com 21H - Prelim 4 V

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

PROPOSAL#: 201008134554-P

CEMENT PROCEDURE & PROPOSAL

PREPARED FOR:

Mr. Braden Harris
EMAIL: BHarris@advanceenergypartners.com
PHONE NUMBER: 406-600-3310

Advance Energy Partners

Margarita Fed Com 13 #17H

Lea County, NM
Rig: Nabors X50

Service Point

Odessa
1400 S JBS Parkway Odessa, TX 79766
432-888-0413

Technical Writer
Kevin Swikert
kevin@wtcementers.com
713-562-0805

WTC Representative
Jon Reynolds
jon@wtcementers.com
432-257-1234

PRINTED 4/21/2021 9:40 VERSION: v0.26

Advance Energy Partners
Margarita Fed Com 13 #17H
Lea County, NM
Rig: Nabors X50

Production

PROPOSAL#: 201008134554-P

WELL INFORMATION	
MUD	9.5# OBM
PREVIOUS PIPE	9.625'' 40# CSG to 10511
OPEN HOLE	8.75'' OH to 12338; 8.5'' OH to 23669
CASING/INJECTION	5.5'' 20# HCP110/GBCD to 23669
MD	23669
TVD	11900
EST BHST/BHCT	233-F / 216-F
KOP	11084
NOTES	Standby charges start after WTC has been on location for more than 8-hrs.

VOLUMES

FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	10511	8.835	5.5		0.0464	488.1
Lead	573	8.75	5.5	35%	0.0607	34.8
Tail	1254	8.75	5.5	20%	0.0540	67.7
Tail	11331	8.5	5.5	20%	0.0490	554.7
SHOE JOINT	80	5.5	4.778		0.0222	1.8

FLUIDS

SPACER

Wt. Spacer 36GPB Water+10PPB PolyScrub 4320+87.35PPB Barite+2GPB HoleScrub 4310+0.5GPB HoleScrub 4305+1PPB R-1300

VOLUME	40-bbl
DENSITY	10-ppg

Lead

50% B_Poz+50% Class H+3% Gel+5% SALT+0.25% SMS+0.5% C-20+0.005GPS NoFoam V1A

VOLUME	1670-SX	*523.5-bbls*
DENSITY	12.8-ppg	
YIELD	1.76-cf/sx	
MIX WATER	9.25-gps	
TOP OF CEMENT	Surface	
EXCESS	35%	
COMPRESSIVE STRENGTH	483-psi @ 24-hrs; 6092-psi @ 72-hrs; 500-psi @ 27:51	

Advance Energy Partners
Margarita Fed Com 13 #17H
Lea County, NM
Rig: Nabors X50

Production

PROPOSAL#: 201008134554-P

Tail		
100% Class H+0.1% SuspendaCem 6302+0.3% C-20+0.4% C-47B+0.005GPS NoFoam V1A		
VOLUME	2630-SX	*623-bbls*
DENSITY	14.8-ppg	
YIELD	1.33-cf/sx	
MIX WATER	6.33-gps	
TOP OF CEMENT	11084-ft	
EXCESS	20%	
COMPRESSIVE STRENGTH	955-psi @ 24-hrs; 2165-psi @ 72-hrs; 500-psi @ 11:24	
DISPLACEMENT		
Fresh Water+ 0.25GPT Plexcide 24L+1GPT Corplex		
VOLUME	523.1-bbl	
DENSITY	8.34-ppg	

Advance Energy Partners
Margarita Fed Com 13 #17H
Lea County, NM
Rig: Nabors X50

Production

PROPOSAL#: 201008134554-P

PRICING

ROUNDTIP MILEAGE USED: 200

REF #	DESCRIPTION	QTY	UNIT	GROSS	DISC.	NET
	EQUIPMENT / SERVICES					
WTC170	Bulk Cement Delivery/Return	20265	$ 3.00	$ 60,795.00	76.0%	$ 14,590.80
WTC191	Bulk Material Mixing Service Charge	4584	$ 3.50	$ 16,044.00	76.0%	$ 3,850.56
WTC168	Pickup Mileage	200	$ 4.50	$ 900.00	76.0%	$ 216.00
WTC169	Pump Truck/Heavy Vehicle Mileage	1400	$ 7.50	$ 10,500.00	76.0%	$ 2,520.00
WTC056	Pump Charge 14001-15,000'	1	$ 23,000.00	$ 23,000.00	76.0%	$ 5,520.00
WTC057	Pump Charge Every 1,000' Over 15,000'	9	$ 3,400.00	$ 30,600.00	76.0%	$ 7,344.00
WTC155	Data Acquisition System	1	$ 1,437.48	$ 1,437.48	76.0%	$ 345.00
WTC024	1" to 2" valves	1	$ 450.00	$ 450.00	76.0%	$ 108.00
WTC018	Hi Volume Air compressor	1	$ 500.00	$ 500.00	76.0%	$ 120.00
WTC194	Employee/Supervisor Retention/perdiem	1	$ 1,306.80	$ 1,306.80	0.0%	$ 1,306.80
WTC021	Portable Field Storage Bin (3 days)	4	$ 2,000.00	$ 8,000.00	76.0%	$ 1,920.00
WTC179	Fuel Surcharge *	7	$ 700.00	$ 4,900.00	50.0%	$ 2,450.00
WTC202	Reserve (standby) Pump	1	$ 3,500.00	$ 3,500.00	76.0%	$ 840.00
WTC040	Batch Mixer	1	$ 2,500.00	$ 2,500.00	76.0%	$ 600.00
WTC019	Cement Head with manifold	1	$ 1,200.00	$ 1,200.00	76.0%	$ 288.00
WTC023	Transfer Pump	1	$ 1,000.00	$ 1,000.00	76.0%	$ 240.00
WTC180	DOT Vehicle Charge	1	$ 500.00	$ 500.00	76.0%	$ 120.00
WTC036	Portable Radios *	1	$ 350.00	$ 350.00	76.0%	$ 84.00
	PRODUCTS / CHEMICALS					
WTC228	Boral POZ (Fly Ash) (74 lbs/ft3)	835	$ 22.00	$ 18,370.00	76.0%	$ 4,408.80
WTC101	H (Premium Cement) (94 lbs/ft3)	3465	$ 44.00	$ 152,460.00	76.0%	$ 36,590.40
WTC114	Salt (NaCl), 100 mesh sacked	6444	$ 0.70	$ 4,510.80	76.0%	$ 1,082.59
WTC102	GEL	4209	$ 0.70	$ 2,946.30	76.0%	$ 707.11
WTC115	Sodium Metasilicate	351	$ 3.20	$ 1,123.20	76.0%	$ 269.57
WTC005	SuspendaCem 6302 (Anti settling agent)	248	$ 30.00	$ 7,440.00	76.0%	$ 1,785.60
WTC223	C-20	1444	$ 6.00	$ 8,664.00	76.0%	$ 2,079.36
WTC216	C-47B	989	$ 29.00	$ 28,681.00	76.0%	$ 6,883.44
WTC105	NoFoam V1A (Liquid Foam Preventer)	22	$ 80.00	$ 1,760.00	76.0%	$ 422.40
WTC232	PolyScrub 4320	400	$ 27.30	$ 10,920.00	76.0%	$ 2,620.80
WTC116	Barite (weighting material)	3494	$ 1.20	$ 4,192.80	76.0%	$ 1,006.27
WTC234	HoleScrub 4310	80	$ 146.50	$ 11,720.00	76.0%	$ 2,812.80
WTC213	HoleScrub 4305	20	$ 49.50	$ 990.00	76.0%	$ 237.60
WTC201	R-1300 (powder citric acid)	40	$ 13.50	$ 540.00	76.0%	$ 129.60
WTC166	Plexcide 24L	6	$ 100.00	$ 600.00	76.0%	$ 144.00
WTC134	Corplex (Packer Fluid)	22	$ 50.00	$ 1,100.00	76.0%	$ 264.00
			GROSS TOTAL	$ 423,501.38		
			NET TOTAL**	**$ 103,907.50**		

IF NEEDED ITEMS

WTC027	Bulk Unit Additional Hours	1	$ 140.00	$ 140.00	50.0%	$ 70.00
WTC058	Pump Charge Additional Hours	1	$ 600.00	$ 600.00	50.0%	$ 300.00
WTC020	Circulation Equipment(40' of equipment)	1	$ 2,000.00	$ 2,000.00	50.0%	$ 1,000.00

NOTES

Unplanned remedial work @ 55% discount.

***** All applicable Sales Taxes Well Servicing Taxes and Gross Receipts Taxes will be added to the estimated job cost shown above at the time of invoicing.***

CHEMICAL DESCRIPTIONS		
CHEMICAL NAME	CODE	DESCRIPTION
B_Poz	WTC228	Poz - Fly Ash, Extender
Class H	WTC101	API Cement
Class C	WTC100	API Cement
Di_Poz	WTC235	Poz - Fly Ash, Extender
PowerCem		Blended Based Cement
Plexcrete SFA	WTC129	Cement Strength Enhancer
Gel	WTC102	Extender
Micro Crystal	WTC212	Cement Strength Enhancer
GB-52	WTC008	Microspheres, Extender
Plexcrete STE	WTC127	Cement Strength Enhancer
Micro Shell	WTC209	Cement Strength Enhancer
Gilsonite	WTC003	Premium Lost Circulation Material, Free Water Control
Gypsum	WTC111	Free Water Control, Extender
CaCl2	WTC112	Accelerator
SMS	WTC115	Free Water Control, Extender
SuspendaCem 6201	WTC123	Free Water Control, Extender
SuspendaCem 6302	WTC005	Free Water Control, Anti-Settling Agent
R-33	WTC243	Lignosulfonate Retarder
R-1300	WTC201	Low Temperature Retarder
C-20	WTC223	Lignosulfonate Retarder
C-37	WTC224	Dispersant, Friction Reducer
C-47B	WTC216	Fluid Loss (polymers/copolymers - 300-F max)
C-17	WTC226	Fluid Loss and Gas Migration Control
PVOH	WTC238	Fluid Loss and Gas Migration Control
C-19	WTC229	Lightweight Fluid Loss Additive
FL-2252	WTC007	Fluid Loss for low density slurries.
FL-2202	WTC125	Low Temperature Fluid Loss
Gas Bond	WTC126	Gas Migration Control (Hydrogen Generating)
Kol-Seal	WTC107	Lost Circulation Material
Pol-E-Flake	WTC106	Lost Circulation Material
Web Seal	WTC133	Premium Fiber Lost Circulation Material
Zone Seal	WTC207	Premium Lost Circulation Material
NoFoam V1A	WTC105	Liquid Defoamer
Water		Fresh Water
PolyScrub 4320	WTC232	Spacer Gelling Agent
Barite	WTC116	Weighting Agent
HoleScrub 4310	WTC234	Surfactant
HoleScrub 4305	WTC213	Surfactant
Soda Ash	WTC164	pH Control
R-1300	WTC201	Low Temperature Retarder
SuspendaCem 6302	WTC005	Free Water Control, Anti-Settling Agent
Sugar	WTC119	Retarder
Plexcide 24L	WTC166	Biocide
Corplex	WTC134	Corrosion Inhibitor
Zone Seal	WTC207	Premium Lost Circulation Material

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Advance Energy Partners Hat Mesa LLC**
LEASE NO.:	**NMNM014155**
WELL NAME & NO.:	Margarita Federal Com 13 17H
SURFACE HOLE FOOTAGE:	1046'/N & 777'/W
BOTTOM HOLE FOOTAGE	2540'/N & 1210'/W
LOCATION:	Section 13, T.21 S., R.32 E., NMPM
COUNTY:	Lea County, New Mexico

COA

H2S	☐ Yes	☒ No	
Potash	☐ None	☐ Secretary	☒ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Cave/Karst Potential	☐ Critical		
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☐ Multibowl	☒ Both
Other	☑ 4 String Area	☑ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

All Previous COAs Still Apply.

A. CASING

1. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
   b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

   c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
   d. If cement falls back, remedial cementing will be done prior to drilling out that string.

B. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not

hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 4, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-48247	98033	WC-025 G-10 S213328O;WOLFCAMP

Property Code	Property Name	Well Number
334604	MARGARITA 13 FEDERAL COM	17H

OGRID No.	Operator Name	Elevation
228937	MATADOR PRODUCTION COMPANY	3917'

Surface Location

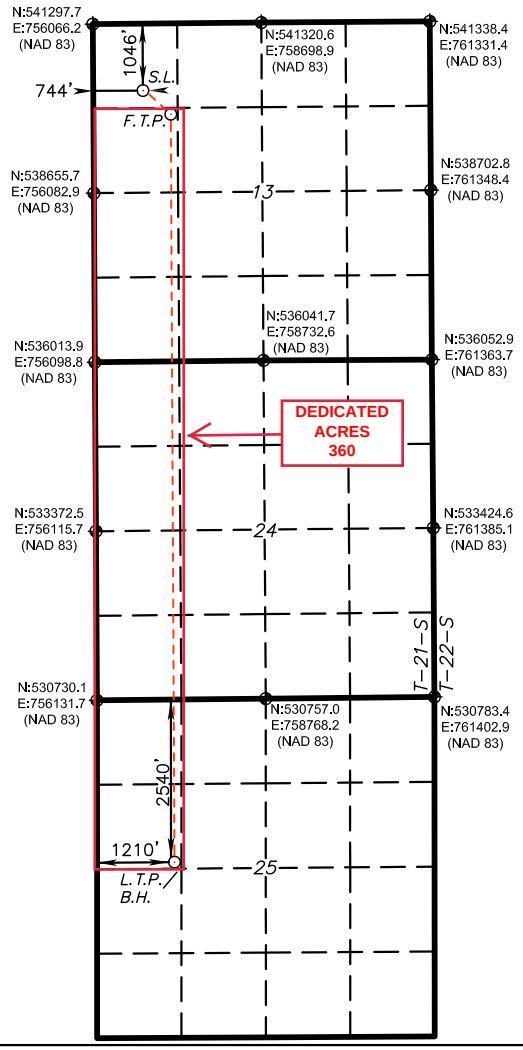
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
D	13	21 S	32 E		1046	NORTH	777	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
E	25	21 S	32 E		2540	NORTH	1210	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
360		C	

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



SURFACE LOCATION
Lat – N 32.483292°
Long – W 103.634423°
NMSPCE– N 540258.5
E 756849.5
(NAD-83)

FIRST TAKE POINT
1420 FNL & 1210 FWL
Lat – N 32.482267°
Long – W 103.633020°
NMSPCE– N 539888.3
E 757284.7
(NAD-83)

LAST TAKE POINT/ BOTTOM HOLE
Lat – N 32.450146°
Long – W 103.633081°
NMSPCE– N 528202.4
E 757342.4
(NAD-83)

OPERATOR CERTIFICATION

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

Eileen M Kosakowski 2/2/2024
Signature Date

Eileen M Kosakowski
Printed Name

eileen.kosakowski@matadorresources.com
Email Address

SURVEYOR CERTIFICATION

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

DECEMBER 23, 2020
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate No. Gary L. Jones 7977
BASIN SURVEYS

0' 1500' 3000' 4500' 6000' N
SCALE: 1" = 3000'
WO Num.: 35070

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 310760

CONDITIONS

Operator: MATADOR PRODUCTION COMPANY One Lincoln Centre Dallas, TX 75240	OGRID: 228937
	Action Number: 310760
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	3/13/2024