

Well Name: EMERALD FEDERAL COM	Well Location: T19S / R33E / SEC 6 / SWSE / 32.68305 / -103.698025	County or Parish/State: LEA / NM
Well Number: 503H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0077002	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002550996	Operator: AVANT OPERATING LLC	

Notice of Intent

Sundry ID: 2798584

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 07/02/2024	Time Sundry Submitted: 03:29
Date proposed operation will begin: 10/04/2024	

Procedure Description: Avant Operating, LLC requests to move the SHL & BHL from what was originally permitted. Please see below updated footage calls, as well as updated plat & directional survey to reflect this change. Avant would also like to update the dedicated acreage of this well from 320 Ac. to 1302.98 Ac total. Old SHL is 350' FSL & 1310' FEL. New SHL is 350' FSL & 1320' FEL. Old BHL is 100'FNL & 1980' FEL. New BHL is 100' FNL & 2178' FWL.

NOI Attachments

Procedure Description

Emerald_Federal_Com_503H_Sundry_Change_Attachments_20240916145509.pdf

Received by OCD: 9/17/2024 6:11:13 PM

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Conditions of Approval

Additional

6_19_33_Sundry_ID_2798584_Emerald_Federal_Com_503H_Lea_NM0077002_AVANT_OPERATING_LLC_13_22g_2_27_2024_LV_20240917084351.pdf
Emerald_Federal_Com_503H_Dr_COA_20240917084351.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: MEGHAN TWELE	Signed on: SEP 16, 2024 03:00 PM
Name: AVANT OPERATING LLC	
Title: Contract Regulatory Analyst	
Street Address: 1515 WYNKOOP ST SUITE 700	
City: DENVER	State: CO
Phone: (720) 339-6880	
Email address: MTWELE@OUTLOOK.COM	

Field

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752342234	BLM POC Email Address: cwalls@blm.gov
Disposition: Approved	Disposition Date: 09/17/2024
Signature: Chris Walls	

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.

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

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

2. Name of Operator

3a. Address 3b. Phone No. (include area code)

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

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

8. Well Name and No.

9. API Well No.

10. Field and Pool or Exploratory Area

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	
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity	
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other	
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon		
	☐ 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 recompleate 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 OFFICE 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 of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: SWSE / 350 FSL / 1310 FEL / TWSP: 19S / RANGE: 33E / SECTION: 6 / LAT: 32.68305 / LONG: -103.698025 (TVD: 0 feet, MD: 0 feet)

PPP: SWSE / 0 FSL / 1985 FEL / TWSP: 18S / RANGE: 33E / SECTION: 31 / LAT: 32.696635 / LONG: -103.700214 (TVD: 9700 feet, MD: 14700 feet)

PPP: SWSE / 100 FSL / 1980 FWL / TWSP: 19S / RANGE: 33E / SECTION: 6 / LAT: 32.682365 / LONG: -103.700203 (TVD: 9700 feet, MD: 10089 feet)

BHL: NWNW / 100 FNL / 1980 FWL / TWSP: 18S / RANGE: 33E / SECTION: 31 / LAT: 32.710882 / LONG: -103.700225 (TVD: 9700 feet, MD: 19891 feet)

CONFIDENTIAL

6-19-33 Sundry ID 2798584 Emerald Federal Com 503H Lea NM0077002 AVANT OPERATING LLC 13-22g 2-27-2024 LV

Emerald Federal Com 503H

13 3/8	surface csg in a		17 1/2	inch hole.		Design Factors				Surface		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	54.50		j 55	ltc	6.35	1.63	1.06	1,485	4	1.91	3.07	80,933
"B"				ltc				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,270				Tail Cmt	does not	circ to sfc.		Totals:	1,485			80,933
Comparison of Proposed to Minimum Required Cement Volumes												
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist			
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg			
17 1/2	0.6946	865	1521	1032	47	9.00	1436	2M	2.06			
Site plot (pipe racks 3 or 4) as per O.D. 1.31/D 3.1 not found												

9 5/8		casing inside the		13 3/8		Design Factors				Int 1		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.00		j 55	ltc	2.48	0.99	0.82	5,361	2	1.48	1.79	214,440
"B"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 474								Totals:	5,361			214,440
The cement volume(s) are intended to achieve a top of 0								ft from surface or a 1485		overlap.		
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd				Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cplg
12 1/4	0.3132	1290	2284	1753	30	9.50	2662	3M				0.81
r D V Tool(s):								sum of sx	Σ CuFt	Σ%excess		
t by stage % :								1290	2284	30		
Class 'C' tail cmt yld > 1.35												
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.75, b, c, d All > 0.70, OK.												

5 1/2		casing inside the		9 5/8		Design Factors				Prod 1			
Segment	#/ft	Grade		Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight	
"A"	20.00		p 110	gbcd	3.29	2.31	2.63	20,208	3	4.75	4.17	404,160	
"B"								0				0	
"C"								0				0	
"D"								0				0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,141								Totals:	20,208				404,160
The cement volume(s) are intended to achieve a top of								5161	ft from surface or a		200	overlap.	
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE				Min Dist Hole-Cplg	
8 3/4	0.2526	3570	6229	3802	64	9.50						1.23	
Class 'C' tail cmt yld > 1.35													

#N/A											
0	5 1/2			Design Factors				<Choose Casing>			
Segment	#/ft	Grade	Coupling	#N/A	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"			0.00				0				0
"B"			0.00				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig:							Totals:	0			0
Cmt vol calc below includes this csg, TOC intended							#N/A	ft from surface or a	#N/A		overlap.
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE			Min Dist Hole-Cplg
0		#N/A	#N/A	0	#N/A						
#N/A Capitan Reef est top XXXX.											

**PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Avant Operating LLC
LEASE NO.:	NMNM0077002
LOCATION:	Section 6, T.19 S., R.33 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Emerald Federal Com 503H
BOTTOM HOLE FOOTAGE	100'/N & 2178'/W
ATS/API ID:	30-025-50996
APD ID:	10400084370
Sundry ID:	2798584

COA

H2S	Yes		
Potash	None	None	
Cave/Karst Potential	Low		
Cave/Karst Potential	☐ Critical		
Variance	☒ None	☒ Flex Hose	☒ Other
Wellhead	Conventional and Multibowl		
Other	☐ 4 String	Capitan Reef None	☐ WIPP
Other	Pilot Hole None	☐ Open Annulus	
Cementing	Contingency Squeeze None	Echo-Meter None	Primary Cement Squeeze None
Special Requirements	☐ Water Disposal/Injection	☒ COM	☐ Unit
Special Requirements	☐ Batch Sundry	Waste Prevention None	
Special Requirements Variance	☐ Break Testing	☐ Offline Cementing	☐ Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet **43 CFR part 3170 Subpart 3176** requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately 1485 feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **17 1/2** inch in diameter.
 - 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 **8 hours** 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.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. 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.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8** inch surface casing. 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.

- 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. 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.
- e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record),

or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in **43 CFR part 3170 Subpart 3171**
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

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)

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981

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 **43 CFR part 3170 Subpart 3172** 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.

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 of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity 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 integrity 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 **43 CFR part 3170 Subpart 3172 and API STD 53 Sec. 5.3**.
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 43 CFR 3172.6(b)(9) 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 cement), 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 cement plug. The BOPE test can be

initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** 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 8 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 **43 CFR part 3170 Subpart 3172**.

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.

Long Vo (LVO) 9/17/2024

☐ AMENDED REPORT

Equipment

A minimum 5M system will be used. The minimum blowout preventer equipment (BOPE) shown in the BOP Diagram will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer, and an annular preventer (5000-psi WP). Both units will be hydraulically operated, and the ram-type will be equipped with blind rams on top and drill pipe rams on bottom. All BOPE will be tested in accordance with 43 CFR 3172.

Variance Request

Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line). Co-flex line will be tested in accordance with highest BOP test pressures (5000 psi) before drilling out of surface casing and (5000 psi) before drilling out of intermediate casing. Pressure tests will be charted for records. The manufacturers hydrostatic test report will be kept on location for inspection.

Testing Procedure

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000 (high) / 250 (low) psig and the annular preventer to 3500 (high) / 250 (low) psig by an independent service company. Test charts will always be kept on location.

Surface casing will be tested to 1500 psi for 30 minutes. Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000 (high) / 250 (low) psig and the annular preventer to 3500 (high) / 250 (low) psig by an independent service company. Test charts will always be kept on location.

Intermediate casing will be tested to 1500 psi for 30 minutes. A solid steel body pack-off will be used after running and cementing the intermediate casing. After installation, pack-off and lower flange will be pressure tested to 5000 psi.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe. This pressure test will be repeated at least once every 30 days, as per 43 CFR 3172.

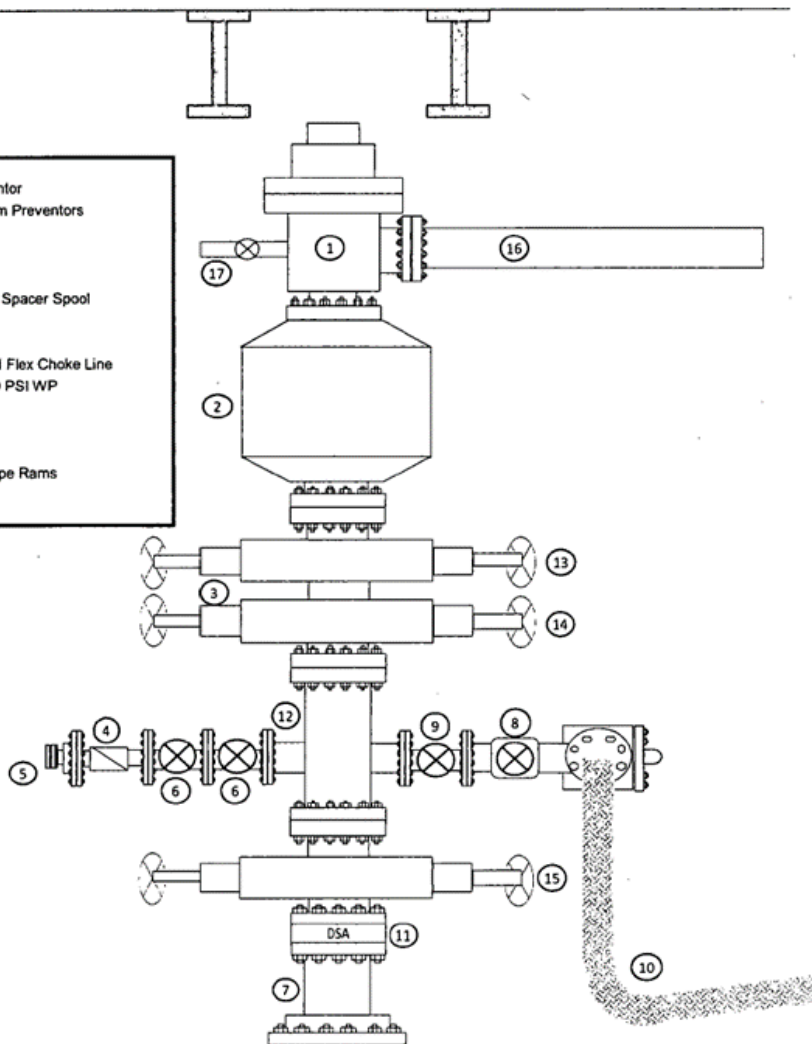
Kelly cock will always be in the drill string. Full opening drill pipe stabbing valve (inside BOP) with proper drill pipe connections will always be on the rig floor.

The multi-bowl wellhead will be installed by a third-party welder while being monitored by the vendors representative.

All BOP equipment will be tested using a conventional test plug - not a cup or J-packer type. Both the surface and intermediate casing strings will be tested as per 43 CFR 3172. to at least 0.22 psi/ft or 1500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield.

Avant Natural Resources 5M BOP Diagram

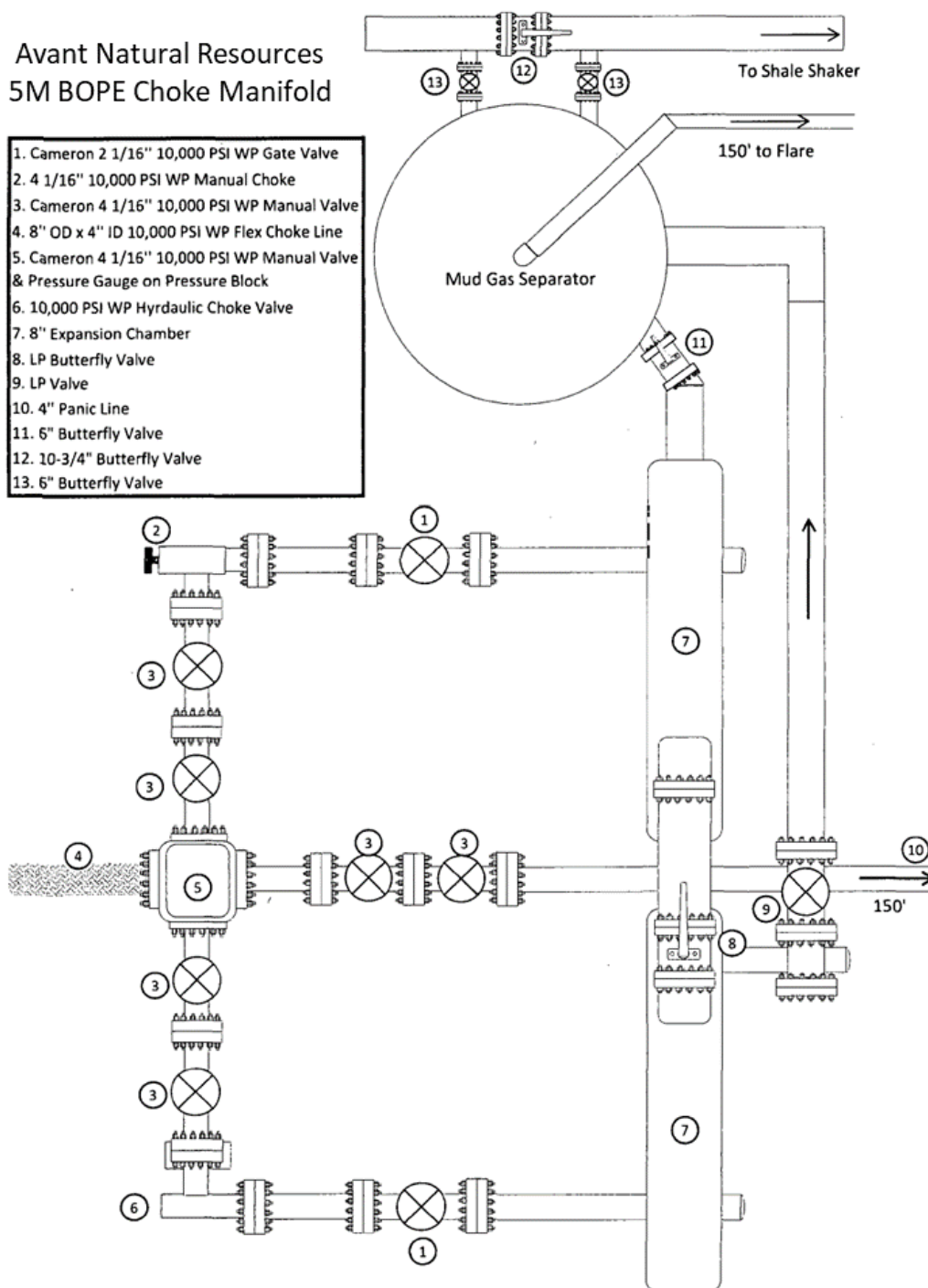
1. 13 5/8" Rotating Head
2. NOV 13 5/8" 5,000 PSI WP GK Annular Preventor
3. 13 5/8" Cameron Type "U" 10,000 PSI WP Ram Preventors
4. 2 1/16" - 10,000 PSI WP Check Valve
5. 10,000 PSI WP - 1502 Union to kill line
6. 2 1/16" - 10,000 PSI WP Manual Valves
7. 13 5/8" 3,000 PSI WP x 13 5/8" 5,000 PSI WP Spacer Spool
8. 4 1/16" 10,000 PSI WP HCR Valve
9. 4 1/16" 10,000 PSI WP Manual Valve
10. 6" OD x 3" ID 10,000 PSI WP Steel Armoured Flex Choke Line
11. DSA - 13 5/8" 10,000 PSI WP x 13 5/8" 5,000 PSI WP
12. Mud Cross - 13 5/8" 10,000 PSI WP
13. Blind Rams
14. Pipe Rams
15. 13 5/8" Cameron Type "U" 10,000 PSI WP Pipe Rams
16. Flow Line
17. 2" Fill Line



Choke Manifold Diagram

Avant Natural Resources
5M BOPE Choke Manifold

1. Cameron 2 1/16" 10,000 PSI WP Gate Valve
2. 4 1/16" 10,000 PSI WP Manual Choke
3. Cameron 4 1/16" 10,000 PSI WP Manual Valve
4. 8" OD x 4" ID 10,000 PSI WP Flex Choke Line
5. Cameron 4 1/16" 10,000 PSI WP Manual Valve & Pressure Gauge on Pressure Block
6. 10,000 PSI WP Hydraulic Choke Valve
7. 8" Expansion Chamber
8. LP Butterfly Valve
9. LP Valve
10. 4" Panic Line
11. 5" Butterfly Valve
12. 10-3/4" Butterfly Valve
13. 6" Butterfly Valve



AFE: 0



Emerald Federal Com 503H

API:
REGULATORY: NMOCD
PERMIT #

Bone Spring

Lea County, NM

RIG: H&P 460

KB: 3709.5 (26.5')

CAMERON WELLHEAD
13" x 7-1/16" NOM

SHL:

Sec. 6, T-19S, R-33E; 350 FSL, 1320 FEL

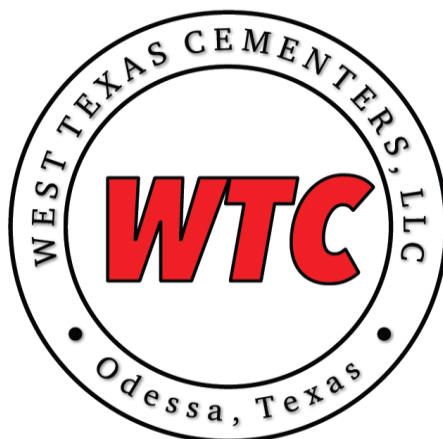
GL: 3683'

Lat: 32.6830514, Long: -103.5980587 (NAD83)

[illegible]

DIRECTIONS TO LOCATION:

PROPOSAL#: 240625131215-A



CEMENT PROCEDURE & PROPOSAL

PREPARED FOR:

Mr. Braden Harris

EMAIL: braden@avantnr.com

PHONE NUMBER: 406-600-3310

Avant Natural Resources

Emerald Federal Com #503H

Lea County, NM

Rig: H&P 460

Service Point

Odessa

1400 S JBS Parkway Odessa, TX 79766

432-701-8955

Technical Writer

Jonathan Smith

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Jon Reynolds

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432-257-1234

.Disclaimer Notice:

The ability of West Texas Cementers to complete this work is subject to the availability of the raw materials required to complete the job.

This information is presented in good faith, but no warranty is given by and West Texas Cementers LLC assumes no liability for advice or recommendations made concerning results to be obtained from the use of any product or service. The results given are estimates based on calculations produced by a computer model including various assumptions on the well, reservoir and treatment. The results depend on input data provided by the Operator and estimates as to unknown data and can be no more accurate than the model, the assumptions and such input data. The information presented is WTC LLC best estimate of the actual results that may be achieved and should be used for comparison purposes rather than absolute values. The quality of input data, and hence results, may be improved through the use of certain tests and procedures which West Texas Cementers LLC can assist in selecting. The Operator has superior knowledge of the well, the reservoir, the field and conditions affecting them. If the Operator is aware of any conditions whereby a neighboring well or wells might be affected by the treatment proposed herein it is the Operator's responsibility to notify the owner or owners of the well or wells accordingly. Prices quoted are estimates only and are good for 30 days from the date of issue. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Freedom from infringement of patents of West Texas Cementers LLC or others is not to be inferred.

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6/25/2024 13:13

VERSION: v0.29b

Avant Natural Resources
Emerald Federal Com #503H
Lea County, NM
Rig: H&P 460

Surface



PROPOSAL#: 240625131215-A

WELL INFORMATION						
MUD	8.4# Fresh Water					
PREVIOUS PIPE	20" 94# CSG to 120					
OPEN HOLE	17.5" OH to 1485					
CASING/INJECTION	13.375" 54.5# J-55/LTC to 1485					
MD	1485					
EST BHST/BHCT	92-F / 85-F (0.8-F/100-FT)					
NOTES	Standby charges start after WTC has been on location for more than 4-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	120	19.124	13.375		0.1815	21.8
Lead	1065	17.5	13.375	50%	0.1856	197.6
Tail	300	17.5	13.375	20%	0.1485	44.5
SHOE JOINT	40	13.375	12.615		0.1546	6.2
FLUIDS						
SPACER						
Fresh Water						
VOLUME	20-bbl					
Lead						
35% B_Poz+65% Class C+6% Gel+5% SALT+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A						
VOLUME	650-SX		Slurry Volume: 220-bbls			
DENSITY	12.8-ppg		Mix Water Required: 158-bbls			
YIELD	1.9-cf/sx					
MIX WATER	10.17-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					

Avant Natural Resources
Emerald Federal Com #503H
Lea County, NM
Rig: H&P 460

Surface



PROPOSAL#: 240625131215-A

Tail		
100% Class C+1% CaCl2+0.005GPS NoFoam V1A		
VOLUME	215-SX	Slurry Volume: 50.9-bbls
DENSITY	14.8-ppg	Mix Water Required: 33-bbls
YIELD	1.33-cf/sx	
MIX WATER	6.34-gps	
TOP OF CEMENT	1185-ft	
EXCESS	20%	
DISPLACEMENT		
Displacement		
VOLUME	223.4-bbl	

Avant Natural Resources
Emerald Federal Com #503H
Lea County, NM
Rig: H&P 460

Intermediate



PROPOSAL#: 240625131215-A

WELL INFORMATION						
MUD	9.5# Cut Brine					
PREVIOUS PIPE	13.375" 54.5# CSG to 1485					
OPEN HOLE	12.25" OH to 5361					
CASING/INJECTION	9.625" 40# J-55/LTC to 5361					
MD	5361					
TVD	5251					
EST BHST/BHCT	123-F / 107-F (0.8-F/100-FT)					
NOTES	Standby charges start after WTC has been on location for more than 4-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	1485	12.615	9.625		0.0646	95.9
Lead	2803	12.25	9.625	50%	0.0837	234.5
Tail	1073	12.25	9.625	20%	0.0669	71.8
SHOE JOINT	40	9.625	8.835		0.0758	3.0
FLUIDS						
SPACER						
Fresh Water						
VOLUME	25-bbl					
Lead						
35% B_Poz+65% Class C+6% Gel+5% SALT+0.5% R-1300+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A						
VOLUME	980-SX				Slurry Volume: 331.6-bbls	
DENSITY	12.8-ppg				Mix Water Required: 238-bbls	
YIELD	1.9-cf/sx					
MIX WATER	10.18-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					

Avant Natural Resources
Emerald Federal Com #503H
Lea County, NM
Rig: H&P 460

Intermediate



PROPOSAL#: 240625131215-A

Tail		
	100% Class C+5% SALT+0.005GPS NoFoam V1A	
VOLUME	310-SX	Slurry Volume: 75.1-bbbls
DENSITY	14.8-ppg	Mix Water Required: 49-bbbls
YIELD	1.36-cf/sx	
MIX WATER	6.51-gps	
TOP OF CEMENT	4288-ft	
EXCESS	20%	
DISPLACEMENT		
	Displacement	
VOLUME	403.4-bbl	

Avant Natural Resources
Emerald Federal Com #503H
Lea County, NM
Rig: H&P 460

Production



PROPOSAL#: 240625131215-A

WELL INFORMATION						
MUD	9.2# OBM					
PREVIOUS PIPE	9.625" 40# CSG to 5361					
OPEN HOLE	8.75" OH to 20208					
CASING/INJECTION	5.5" 20# P-110 HC/GBCD to 20208					
MD	20208					
TVD	9734					
EST BHST/BHCT	211-F / 194-F (1.34-F/100-FT)					
KOP	9513					
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	5361	8.835	5.5		0.0464	249.0
Lead	4152	8.75	5.5	50%	0.0675	280.2
Tail	10695	8.75	5.5	20%	0.0540	577.4
SHOE JOINT	80	5.5	4.778		0.0222	1.8
FLUIDS						
SPACER						
Wt. Spacer 38.01GPB Water+8PPB PolyScrub 4320+73.29PPB Barite+1GPB HoleScrub 4311+1PPB R-1300						
VOLUME	40-bbl					
DENSITY	9.7-ppg					
Lead						
100% ProLite+5PPS Plexcrete STE+2% SMS+0.65% R-1300+0.2% FL-24+3PPS Gilsonite+0.005GPS NoFoam V1A						
VOLUME	880-SX				Slurry Volume: 529.7-bbls	
DENSITY	10.7-ppg				Mix Water Required: 442-bbls	
YIELD	3.38-cf/sx					
MIX WATER	21.06-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					

Avant Natural Resources
Emerald Federal Com #503H
Lea County, NM
Rig: H&P 460

Production



PROPOSAL#: 240625131215-A

Tail		
50% B_Poz+50% Class H+5% SALT+0.05% RCKCAS-100+0.75% FR-5+0.5% FL-24+0.005GPS NoFoam V1A		
VOLUME	2690-SX	Slurry Volume: 579.7-bbls
DENSITY	14.5-ppg	Mix Water Required: 339-bbls
YIELD	1.21-cf/sx	
MIX WATER	5.28-gps	
TOP OF CEMENT	9513-ft	
EXCESS	20%	
DISPLACEMENT		
Fresh Water+ 0.25GPT Plexicide 24L+1GPT Corplex		
VOLUME	446.3-bbl	
DENSITY	8.34-ppg	

CHEMICAL DESCRIPTIONS		
CHEMICAL NAME	CODE	DESCRIPTION
B_Poz	WTC228	Poz - Fly Ash, Extender
Class H	WTC101	API Cement
Class C	WTC100	API Cement
M_Poz	WTC280	Poz - Fly Ash, Extender
ProLite		Blended Based Cement
Plexcrete SFA	WTC129	Cement Strength Enhancer
Gel	WTC102	Extender
Micro Crystal	WTC212	Cement Strength Enhancer
Micro Shell	WTC209	Cement Strength Enhancer
WTC1	WTC250	Extender
GB-52	WTC008	Microspheres, Extender
Plexcrete STE	WTC127	Cement Strength Enhancer
CSE-NP	WTC236	Cement Strength Enhancer
Gypsum	WTC111	Free Water Control, Extender
CaCl2	WTC112	Accelerator
SMS	WTC115	Free Water Control, Extender
RCKCAS-100	WTC276	Free Water Control, Anti-Settling Agent
R-1300	WTC201	Low Temperature Retarder
CRT-201	WTC278	Lignosulfonate Retarder
FR-5	WTC258	Lignosulfonate Retarder
C-37	WTC224	Dispersant, Friction Reducer
CFL-312	WTC265	Fluid Loss and Gas Migration Control
FL-24	WTC277	Fluid Loss (polymers/copolymers - 300-F max)
FL-17	WTC130	Fluid Loss and Gas Migration Control (400-F max)
MagBond	WTC271	Expanding Agent
Gilsonite	WTC003	Premium Lost Circulation Material, Free Water Control
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 4311	WTC281	Surfactant
HoleScrub 4305	WTC213	Surfactant
HoleScrub 4308	WTC215	Surfactant
Soda Ash	WTC164	pH Control
R-1300	WTC201	Low Temperature Retarder
RCKCAS-100	WTC276	Free Water Control, Anti-Settling Agent
Sugar	WTC119	Retarder
R-33	WTC243	Lignosulfonate Retarder
Plexcide 24L	WTC166	Biocide
Corplex	WTC134	Corrosion Inhibitor
Clay Max	WTC096	KCL Substitute
Zone Seal	WTC207	Premium Lost Circulation Material

CASING DESIGN CRITERIA & LOAD CASE ASSUMPTIONS

SURFACE CASING:

SIZE (in)	SURFACE CASING	ID (in)	DRIFT (in)	BURST (psi)	COLLAPSE (psi)	TENSION (k-lbs)	JOINT STRENGTH (k-lbs)	DEPTHS
13.375"	54.5# J-55 LTC	10.05	9.894	3130	1580	629	700	0' – SCP'

Collapse: $DF_c = 1.25$

- Full internal evacuation: Collapse force equal to the mud gradient in which the casing will be ran.
- Cementing: Collapse force equal to the gradient of the planned cement slurries to planned depths and an internal force equal to the fluid gradient of displacement fluid.

Burst: $DF_B = 1.25$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the gradient in which the casing will be ran.

Tension: $DF_T = 1.6$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string, without considering buoyancy.

INTERMEIDATE CASING:

SIZE (in)	INTERMEDIATE CASING	ID (in)	DRIFT (in)	BURST (psi)	COLLAPSE (psi)	TENSION (k-lbs)	JOINT STRENGTH (k-lbs)	DEPTHS
9-5/8"	40# J-55 LTC	6.875	6.75	9470	7150	940	769	0' – ICP'

Collapse: $DF_c = 1.25$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be ran.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to fluid gradient of displacement fluid.

Burst: $DF_B = 1.25$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be ran.
- Gas Kick Profile: Internal burst force at the shoe will be fracture pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be ran above that. External force will be equal to the mud gradient in which the casing will be ran.

- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be fracture pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be ran.

Tension: $DF_T = 1.6$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string, without considering buoyancy.

PRODUCTION CASING:

SIZE (in)	PRODUCTION CASING	ID (in)	DRIFT (in)	BURST (psi)	COLLAPSE (psi)	TENSION (k-lbs)	CONN OD (in)	JOINT TENSION (k-lbs)	DEPTHS
5-1/2"	20# HCP-110 GBCD	4.778	4.653	12,640	12,200	641	6.300	641	0' – MD'

Collapse: $DF_C = 1.25$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be ran. Internal force equal to gas gradient over one-third of setting depth and mud gradient with which the next hole section will be ran below that.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be ran above that and an internal force equal to the fluid gradient of displacement fluid.

Burst: $DF_B = 1.25$

- Pressure Test: 80% of burst casing test with an external force equal to the mud gradient in which the casing will be ran.
- Injection Down Casing: 9800 psi surface injection pressure plus an internal pressure gradient of with an external force equal to the mud gradient in which the casing will be ran.

Tension: $DF_T = 1.6$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string, without considering buoyancy.

WELL DETAILS: Emerald Fed Com 503H

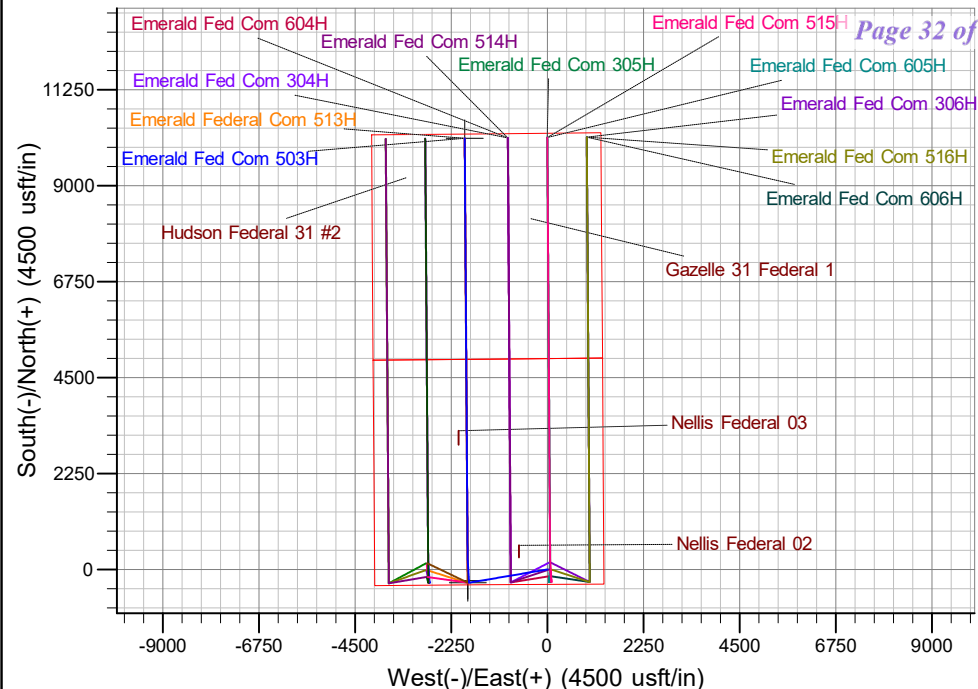
Ground Elev: 3682.6 KB: Original Well Elev

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	612810.41	736792.86	32.683051	-103.698059

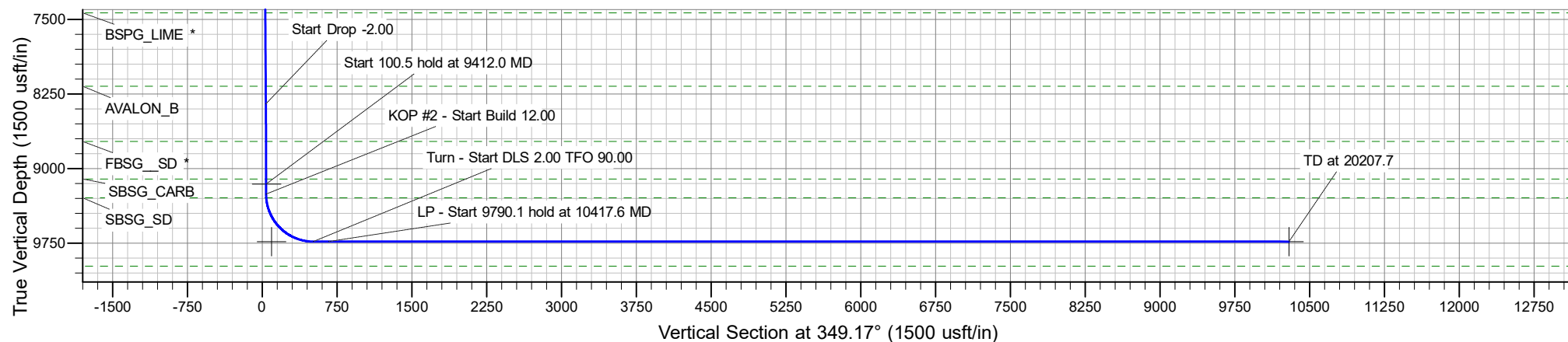
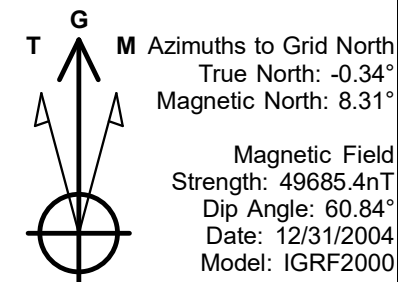
PROJECT DETAILS: Lea Co., NM (NAD 83)

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	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	KOP - Start Build 2.00
3	2817.9	16.36	260.36	2806.8	-19.4	-114.3	2.00	260.36	2.4	Start 5776.1 hold at 2817.9 MD
4	8594.0	16.36	260.36	8349.2	-291.7	-1718.2	0.00	0.00	36.4	Start Drop -2.00
5	9412.0	0.00	0.00	9156.0	-311.1	-1832.5	2.00	180.00	38.9	Start 100.5 hold at 9412.0 MD
6	9512.5	0.00	0.00	9256.5	-311.1	-1832.5	0.00	0.00	38.9	KOP #2 - Start Build 12.00
7	10262.5	90.00	356.50	9734.0	165.4	-1861.6	12.00	356.50	512.4	Turn - Start DLS 2.00 TFO 90.00
8	10417.6	90.00	359.60	9734.0	320.5	-1866.9	2.00	90.00	665.7	LP - Start 9790.1 hold at 10417.6 MD
9	20207.7	90.00	359.60	9734.0	10110.3	-1934.8	0.00	0.00	10293.8	TD at 20207.7



Avant Operating, LLC

Lea Co., NM (NAD 83)

Emerald Pad 2

Emerald Fed Com 503H

OH

Plan: Plan 0.1

Standard Planning Report

24 June, 2024

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Project	Lea Co., NM (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Emerald Pad 2				
Site Position:		Northing:	612,970.48 usft	Latitude:	32.683491
From:	Lat/Long	Easting:	736,832.01 usft	Longitude:	-103.697929
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "		

Well	Emerald Fed Com 503H					
Well Position	+N/-S	0.0 usft	Northing:	612,810.41 usft	Latitude:	32.683052
	+E/-W	0.0 usft	Easting:	736,792.86 usft	Longitude:	-103.698059
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,682.6 usft	
Grid Convergence:	0.34 °					

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2000	12/31/2004	8.66	60.84	49,685.43656772

Design	Plan 0.1			
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	349.17

Plan Survey Tool Program	Date	6/24/2024		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	20,207.3	Plan 0.1 (OH)	B001Mb_MWD+HRGM
				OWSG MWD + HRGM

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

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	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,817.9	16.36	260.36	2,806.8	-19.4	-114.3	2.00	2.00	0.00	260.36	
8,594.0	16.36	260.36	8,349.2	-291.7	-1,718.2	0.00	0.00	0.00	0.00	
9,411.9	0.00	0.00	9,156.0	-311.1	-1,832.5	2.00	-2.00	0.00	180.00	
9,512.4	0.00	0.00	9,256.5	-311.1	-1,832.5	0.00	0.00	0.00	0.00	
10,262.4	90.00	356.50	9,734.0	165.4	-1,861.6	12.00	12.00	0.00	356.50	
10,417.6	90.00	359.60	9,734.0	320.5	-1,866.9	2.00	0.00	2.00	90.00	
20,207.7	90.00	359.60	9,734.0	10,110.3	-1,934.8	0.00	0.00	0.00	0.00	LTP/BHL - Emerald F

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	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
1,460.0	0.00	0.00	1,460.0	0.0	0.0	0.0	0.00	0.00	0.00
RUSTLER									
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
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,754.0	0.00	0.00	1,754.0	0.0	0.0	0.0	0.00	0.00	0.00
SOLADO									
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
KOP - Start Build 2.00									
2,100.0	2.00	260.36	2,100.0	-0.3	-1.7	0.0	2.00	2.00	0.00
2,200.0	4.00	260.36	2,199.8	-1.2	-6.9	0.1	2.00	2.00	0.00
2,300.0	6.00	260.36	2,299.5	-2.6	-15.5	0.3	2.00	2.00	0.00
2,400.0	8.00	260.36	2,398.7	-4.7	-27.5	0.6	2.00	2.00	0.00
2,500.0	10.00	260.36	2,497.5	-7.3	-42.9	0.9	2.00	2.00	0.00
2,600.0	12.00	260.36	2,595.6	-10.5	-61.7	1.3	2.00	2.00	0.00
2,700.0	14.00	260.36	2,693.1	-14.2	-83.9	1.8	2.00	2.00	0.00
2,800.0	16.00	260.36	2,789.6	-18.6	-109.4	2.3	2.00	2.00	0.00
2,817.9	16.36	260.36	2,806.8	-19.4	-114.3	2.4	2.00	2.00	0.00
Start 5776.1 hold at 2817.9 MD									
2,900.0	16.36	260.36	2,885.6	-23.3	-137.1	2.9	0.00	0.00	0.00
3,000.0	16.36	260.36	2,981.6	-28.0	-164.9	3.5	0.00	0.00	0.00
3,100.0	16.36	260.36	3,077.5	-32.7	-192.7	4.1	0.00	0.00	0.00
3,200.0	16.36	260.36	3,173.5	-37.4	-220.4	4.7	0.00	0.00	0.00
3,300.0	16.36	260.36	3,269.4	-42.1	-248.2	5.3	0.00	0.00	0.00
3,400.0	16.36	260.36	3,365.4	-46.9	-276.0	5.9	0.00	0.00	0.00
3,491.3	16.36	260.36	3,453.0	-51.2	-301.3	6.4	0.00	0.00	0.00
YATES									
3,500.0	16.36	260.36	3,461.3	-51.6	-303.7	6.4	0.00	0.00	0.00
3,600.0	16.36	260.36	3,557.3	-56.3	-331.5	7.0	0.00	0.00	0.00
3,700.0	16.36	260.36	3,653.2	-61.0	-359.3	7.6	0.00	0.00	0.00
3,800.0	16.36	260.36	3,749.2	-65.7	-387.0	8.2	0.00	0.00	0.00
3,900.0	16.36	260.36	3,845.1	-70.4	-414.8	8.8	0.00	0.00	0.00
4,000.0	16.36	260.36	3,941.1	-75.1	-442.6	9.4	0.00	0.00	0.00
4,100.0	16.36	260.36	4,037.0	-79.9	-470.3	10.0	0.00	0.00	0.00
4,200.0	16.36	260.36	4,133.0	-84.6	-498.1	10.6	0.00	0.00	0.00
4,300.0	16.36	260.36	4,228.9	-89.3	-525.9	11.1	0.00	0.00	0.00
4,400.0	16.36	260.36	4,324.9	-94.0	-553.6	11.7	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.0	16.36	260.36	4,420.8	-98.7	-581.4	12.3	0.00	0.00	0.00
4,600.0	16.36	260.36	4,516.8	-103.4	-609.2	12.9	0.00	0.00	0.00
4,700.0	16.36	260.36	4,612.7	-108.1	-636.9	13.5	0.00	0.00	0.00
4,800.0	16.36	260.36	4,708.7	-112.9	-664.7	14.1	0.00	0.00	0.00
4,822.2	16.36	260.36	4,730.0	-113.9	-670.9	14.2	0.00	0.00	0.00
CAPITAN_REEF									
4,900.0	16.36	260.36	4,804.7	-117.6	-692.5	14.7	0.00	0.00	0.00
5,000.0	16.36	260.36	4,900.6	-122.3	-720.2	15.3	0.00	0.00	0.00
5,100.0	16.36	260.36	4,996.6	-127.0	-748.0	15.9	0.00	0.00	0.00
5,200.0	16.36	260.36	5,092.5	-131.7	-775.8	16.4	0.00	0.00	0.00
5,261.0	16.36	260.36	5,151.0	-134.6	-792.7	16.8	0.00	0.00	0.00
CHERRY_CNYN									
5,300.0	16.36	260.36	5,188.5	-136.4	-803.5	17.0	0.00	0.00	0.00
5,400.0	16.36	260.36	5,284.4	-141.1	-831.3	17.6	0.00	0.00	0.00
5,500.0	16.36	260.36	5,380.4	-145.9	-859.1	18.2	0.00	0.00	0.00
5,600.0	16.36	260.36	5,476.3	-150.6	-886.8	18.8	0.00	0.00	0.00
5,700.0	16.36	260.36	5,572.3	-155.3	-914.6	19.4	0.00	0.00	0.00
5,800.0	16.36	260.36	5,668.2	-160.0	-942.4	20.0	0.00	0.00	0.00
5,900.0	16.36	260.36	5,764.2	-164.7	-970.1	20.6	0.00	0.00	0.00
5,904.0	16.36	260.36	5,768.0	-164.9	-971.2	20.6	0.00	0.00	0.00
BRUSHY_CANYON									
6,000.0	16.36	260.36	5,860.1	-169.4	-997.9	21.2	0.00	0.00	0.00
6,100.0	16.36	260.36	5,956.1	-174.1	-1,025.7	21.7	0.00	0.00	0.00
6,200.0	16.36	260.36	6,052.0	-178.9	-1,053.4	22.3	0.00	0.00	0.00
6,300.0	16.36	260.36	6,148.0	-183.6	-1,081.2	22.9	0.00	0.00	0.00
6,400.0	16.36	260.36	6,243.9	-188.3	-1,109.0	23.5	0.00	0.00	0.00
6,500.0	16.36	260.36	6,339.9	-193.0	-1,136.7	24.1	0.00	0.00	0.00
6,600.0	16.36	260.36	6,435.8	-197.7	-1,164.5	24.7	0.00	0.00	0.00
6,700.0	16.36	260.36	6,531.8	-202.4	-1,192.3	25.3	0.00	0.00	0.00
6,800.0	16.36	260.36	6,627.7	-207.1	-1,220.0	25.9	0.00	0.00	0.00
6,900.0	16.36	260.36	6,723.7	-211.9	-1,247.8	26.5	0.00	0.00	0.00
7,000.0	16.36	260.36	6,819.6	-216.6	-1,275.6	27.0	0.00	0.00	0.00
7,100.0	16.36	260.36	6,915.6	-221.3	-1,303.3	27.6	0.00	0.00	0.00
7,200.0	16.36	260.36	7,011.5	-226.0	-1,331.1	28.2	0.00	0.00	0.00
7,300.0	16.36	260.36	7,107.5	-230.7	-1,358.9	28.8	0.00	0.00	0.00
7,400.0	16.36	260.36	7,203.5	-235.4	-1,386.6	29.4	0.00	0.00	0.00
7,500.0	16.36	260.36	7,299.4	-240.1	-1,414.4	30.0	0.00	0.00	0.00
7,600.0	16.36	260.36	7,395.4	-244.9	-1,442.2	30.6	0.00	0.00	0.00
7,640.3	16.36	260.36	7,434.0	-246.8	-1,453.3	30.8	0.00	0.00	0.00
BSPG_LIME *									
7,700.0	16.36	260.36	7,491.3	-249.6	-1,469.9	31.2	0.00	0.00	0.00
7,800.0	16.36	260.36	7,587.3	-254.3	-1,497.7	31.8	0.00	0.00	0.00
7,900.0	16.36	260.36	7,683.2	-259.0	-1,525.5	32.3	0.00	0.00	0.00
8,000.0	16.36	260.36	7,779.2	-263.7	-1,553.2	32.9	0.00	0.00	0.00
8,100.0	16.36	260.36	7,875.1	-268.4	-1,581.0	33.5	0.00	0.00	0.00
8,200.0	16.36	260.36	7,971.1	-273.1	-1,608.8	34.1	0.00	0.00	0.00
8,300.0	16.36	260.36	8,067.0	-277.9	-1,636.5	34.7	0.00	0.00	0.00
8,400.0	16.36	260.36	8,163.0	-282.6	-1,664.3	35.3	0.00	0.00	0.00
8,409.4	16.36	260.36	8,172.0	-283.0	-1,666.9	35.3	0.00	0.00	0.00
AVALON_B									
8,500.0	16.36	260.36	8,258.9	-287.3	-1,692.1	35.9	0.00	0.00	0.00
8,594.0	16.36	260.36	8,349.2	-291.7	-1,718.2	36.4	0.00	0.00	0.00
Start Drop -2.00									

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,600.0	16.24	260.36	8,354.9	-292.0	-1,719.8	36.5	2.00	-2.00	0.00	
8,700.0	14.24	260.36	8,451.4	-296.4	-1,745.7	37.0	2.00	-2.00	0.00	
8,800.0	12.24	260.36	8,548.7	-300.2	-1,768.3	37.5	2.00	-2.00	0.00	
8,900.0	10.24	260.36	8,646.8	-303.5	-1,787.5	37.9	2.00	-2.00	0.00	
8,981.3	8.61	260.36	8,727.0	-305.7	-1,800.7	38.2	2.00	-2.00	0.00	
FBSG_SD *										
9,000.0	8.24	260.36	8,745.5	-306.2	-1,803.3	38.2	2.00	-2.00	0.00	
9,100.0	6.24	260.36	8,844.7	-308.3	-1,815.8	38.5	2.00	-2.00	0.00	
9,200.0	4.24	260.36	8,944.2	-309.8	-1,824.8	38.7	2.00	-2.00	0.00	
9,300.0	2.24	260.36	9,044.1	-310.8	-1,830.3	38.8	2.00	-2.00	0.00	
9,359.9	1.04	260.36	9,104.0	-311.1	-1,832.0	38.8	2.00	-2.00	0.00	
SBSG_CARB										
9,400.0	0.24	260.36	9,144.0	-311.1	-1,832.5	38.9	2.00	-2.00	0.00	
9,411.9	0.00	0.00	9,156.0	-311.1	-1,832.5	38.9	2.00	-2.00	0.00	
Start 100.5 hold at 9412.0 MD - KOP - Emerald Fed Com 503H										
9,500.0	0.00	0.00	9,244.0	-311.1	-1,832.5	38.9	0.00	0.00	0.00	
9,512.4	0.00	0.00	9,256.5	-311.1	-1,832.5	38.9	0.00	0.00	0.00	
KOP #2 - Start Build 12.00										
9,525.0	1.51	356.50	9,269.0	-311.0	-1,832.5	39.0	12.00	12.00	0.00	
9,550.0	4.50	356.50	9,294.0	-309.7	-1,832.6	40.3	12.00	12.00	0.00	
SBSG_SD										
9,575.0	7.51	356.50	9,318.9	-307.0	-1,832.7	42.9	12.00	12.00	0.00	
9,600.0	10.51	356.50	9,343.6	-303.1	-1,833.0	46.8	12.00	12.00	0.00	
9,625.0	13.51	356.50	9,368.0	-298.0	-1,833.3	51.9	12.00	12.00	0.00	
9,650.0	16.51	356.50	9,392.2	-291.5	-1,833.7	58.4	12.00	12.00	0.00	
9,675.0	19.51	356.50	9,415.9	-283.8	-1,834.2	66.0	12.00	12.00	0.00	
9,700.0	22.51	356.50	9,439.3	-274.8	-1,834.7	74.9	12.00	12.00	0.00	
9,725.0	25.51	356.50	9,462.1	-264.7	-1,835.3	85.0	12.00	12.00	0.00	
9,750.0	28.51	356.50	9,484.4	-253.4	-1,836.0	96.3	12.00	12.00	0.00	
9,775.0	31.51	356.50	9,506.0	-240.9	-1,836.8	108.7	12.00	12.00	0.00	
9,800.0	34.51	356.50	9,527.0	-227.3	-1,837.6	122.2	12.00	12.00	0.00	
9,825.0	37.51	356.50	9,547.2	-212.6	-1,838.5	136.7	12.00	12.00	0.00	
9,850.0	40.51	356.50	9,566.6	-196.9	-1,839.5	152.3	12.00	12.00	0.00	
9,875.0	43.51	356.50	9,585.2	-180.2	-1,840.5	168.9	12.00	12.00	0.00	
9,900.0	46.51	356.50	9,602.9	-162.6	-1,841.6	186.5	12.00	12.00	0.00	
9,915.6	48.38	356.50	9,613.4	-151.1	-1,842.3	197.9	12.00	12.00	0.00	
FTP - Emerald Fed Com 503H										
9,925.0	49.51	356.50	9,619.6	-144.0	-1,842.7	204.9	12.00	12.00	0.00	
9,950.0	52.51	356.50	9,635.3	-124.6	-1,843.9	224.2	12.00	12.00	0.00	
9,975.0	55.51	356.50	9,650.0	-104.4	-1,845.1	244.2	12.00	12.00	0.00	
10,000.0	58.51	356.50	9,663.6	-83.5	-1,846.4	265.0	12.00	12.00	0.00	
10,025.0	61.51	356.50	9,676.1	-61.9	-1,847.7	286.5	12.00	12.00	0.00	
10,050.0	64.51	356.50	9,687.5	-39.7	-1,849.1	308.6	12.00	12.00	0.00	
10,075.0	67.51	356.50	9,697.6	-16.9	-1,850.5	331.2	12.00	12.00	0.00	
10,100.0	70.51	356.50	9,706.6	6.4	-1,851.9	354.4	12.00	12.00	0.00	
10,125.0	73.51	356.50	9,714.3	30.1	-1,853.4	378.0	12.00	12.00	0.00	
10,150.0	76.51	356.50	9,720.8	54.2	-1,854.8	401.9	12.00	12.00	0.00	
10,175.0	79.51	356.50	9,726.0	78.6	-1,856.3	426.2	12.00	12.00	0.00	
10,200.0	82.51	356.50	9,729.9	103.3	-1,857.8	450.6	12.00	12.00	0.00	
10,225.0	85.51	356.50	9,732.5	128.1	-1,859.4	475.3	12.00	12.00	0.00	
10,250.0	88.51	356.50	9,733.8	153.0	-1,860.9	500.1	12.00	12.00	0.00	
10,262.4	90.00	356.50	9,734.0	165.4	-1,861.6	512.4	12.00	12.00	0.00	
Turn - Start DLS 2.00 TFO 90.00										

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,300.0	90.00	357.25	9,734.0	202.9	-1,863.7	549.6	2.00	0.00	2.00
10,400.0	90.00	359.25	9,734.0	302.9	-1,866.7	648.4	2.00	0.00	2.00
10,417.6	90.00	359.60	9,734.0	320.5	-1,866.9	665.7	2.00	0.00	2.00
LP - Start 9790.1 hold at 10417.6 MD									
10,500.0	90.00	359.60	9,734.0	402.9	-1,867.5	746.7	0.00	0.00	0.00
10,600.0	90.00	359.60	9,734.0	502.9	-1,868.2	845.1	0.00	0.00	0.00
10,700.0	90.00	359.60	9,734.0	602.9	-1,868.9	943.4	0.00	0.00	0.00
10,800.0	90.00	359.60	9,734.0	702.9	-1,869.6	1,041.8	0.00	0.00	0.00
10,900.0	90.00	359.60	9,734.0	802.9	-1,870.3	1,140.1	0.00	0.00	0.00
11,000.0	90.00	359.60	9,734.0	902.9	-1,871.0	1,238.4	0.00	0.00	0.00
11,100.0	90.00	359.60	9,734.0	1,002.9	-1,871.7	1,336.8	0.00	0.00	0.00
11,200.0	90.00	359.60	9,734.0	1,102.9	-1,872.3	1,435.1	0.00	0.00	0.00
11,300.0	90.00	359.60	9,734.0	1,202.9	-1,873.0	1,533.5	0.00	0.00	0.00
11,400.0	90.00	359.60	9,734.0	1,302.9	-1,873.7	1,631.8	0.00	0.00	0.00
11,500.0	90.00	359.60	9,734.0	1,402.9	-1,874.4	1,730.2	0.00	0.00	0.00
11,600.0	90.00	359.60	9,734.0	1,502.9	-1,875.1	1,828.5	0.00	0.00	0.00
11,700.0	90.00	359.60	9,734.0	1,602.9	-1,875.8	1,926.9	0.00	0.00	0.00
11,800.0	90.00	359.60	9,734.0	1,702.9	-1,876.5	2,025.2	0.00	0.00	0.00
11,900.0	90.00	359.60	9,734.0	1,802.8	-1,877.2	2,123.6	0.00	0.00	0.00
12,000.0	90.00	359.60	9,734.0	1,902.8	-1,877.9	2,221.9	0.00	0.00	0.00
12,100.0	90.00	359.60	9,734.0	2,002.8	-1,878.6	2,320.2	0.00	0.00	0.00
12,200.0	90.00	359.60	9,734.0	2,102.8	-1,879.3	2,418.6	0.00	0.00	0.00
12,300.0	90.00	359.60	9,734.0	2,202.8	-1,880.0	2,516.9	0.00	0.00	0.00
12,400.0	90.00	359.60	9,734.0	2,302.8	-1,880.7	2,615.3	0.00	0.00	0.00
12,500.0	90.00	359.60	9,734.0	2,402.8	-1,881.4	2,713.6	0.00	0.00	0.00
12,600.0	90.00	359.60	9,734.0	2,502.8	-1,882.1	2,812.0	0.00	0.00	0.00
12,700.0	90.00	359.60	9,734.0	2,602.8	-1,882.8	2,910.3	0.00	0.00	0.00
12,800.0	90.00	359.60	9,734.0	2,702.8	-1,883.4	3,008.7	0.00	0.00	0.00
12,900.0	90.00	359.60	9,734.0	2,802.8	-1,884.1	3,107.0	0.00	0.00	0.00
13,000.0	90.00	359.60	9,734.0	2,902.8	-1,884.8	3,205.4	0.00	0.00	0.00
13,100.0	90.00	359.60	9,734.0	3,002.8	-1,885.5	3,303.7	0.00	0.00	0.00
13,200.0	90.00	359.60	9,734.0	3,102.8	-1,886.2	3,402.0	0.00	0.00	0.00
13,300.0	90.00	359.60	9,734.0	3,202.8	-1,886.9	3,500.4	0.00	0.00	0.00
13,400.0	90.00	359.60	9,734.0	3,302.8	-1,887.6	3,598.7	0.00	0.00	0.00
13,500.0	90.00	359.60	9,734.0	3,402.8	-1,888.3	3,697.1	0.00	0.00	0.00
13,600.0	90.00	359.60	9,734.0	3,502.8	-1,889.0	3,795.4	0.00	0.00	0.00
13,700.0	90.00	359.60	9,734.0	3,602.8	-1,889.7	3,893.8	0.00	0.00	0.00
13,800.0	90.00	359.60	9,734.0	3,702.8	-1,890.4	3,992.1	0.00	0.00	0.00
13,900.0	90.00	359.60	9,734.0	3,802.8	-1,891.1	4,090.5	0.00	0.00	0.00
14,000.0	90.00	359.60	9,734.0	3,902.8	-1,891.8	4,188.8	0.00	0.00	0.00
14,100.0	90.00	359.60	9,734.0	4,002.8	-1,892.5	4,287.2	0.00	0.00	0.00
14,200.0	90.00	359.60	9,734.0	4,102.8	-1,893.2	4,385.5	0.00	0.00	0.00
14,300.0	90.00	359.60	9,734.0	4,202.8	-1,893.8	4,483.9	0.00	0.00	0.00
14,400.0	90.00	359.60	9,734.0	4,302.8	-1,894.5	4,582.2	0.00	0.00	0.00
14,500.0	90.00	359.60	9,734.0	4,402.8	-1,895.2	4,680.5	0.00	0.00	0.00
14,600.0	90.00	359.60	9,734.0	4,502.8	-1,895.9	4,778.9	0.00	0.00	0.00
14,700.0	90.00	359.60	9,734.0	4,602.8	-1,896.6	4,877.2	0.00	0.00	0.00
14,800.0	90.00	359.60	9,734.0	4,702.8	-1,897.3	4,975.6	0.00	0.00	0.00
14,900.0	90.00	359.60	9,734.0	4,802.8	-1,898.0	5,073.9	0.00	0.00	0.00
15,000.0	90.00	359.60	9,734.0	4,902.8	-1,898.7	5,172.3	0.00	0.00	0.00
15,100.0	90.00	359.60	9,734.0	5,002.8	-1,899.4	5,270.6	0.00	0.00	0.00
15,200.0	90.00	359.60	9,734.0	5,102.8	-1,900.1	5,369.0	0.00	0.00	0.00
15,300.0	90.00	359.60	9,734.0	5,202.8	-1,900.8	5,467.3	0.00	0.00	0.00
15,400.0	90.00	359.60	9,734.0	5,302.8	-1,901.5	5,565.7	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,500.0	90.00	359.60	9,734.0	5,402.8	-1,902.2	5,664.0	0.00	0.00	0.00
15,600.0	90.00	359.60	9,734.0	5,502.8	-1,902.9	5,762.3	0.00	0.00	0.00
15,700.0	90.00	359.60	9,734.0	5,602.8	-1,903.6	5,860.7	0.00	0.00	0.00
15,800.0	90.00	359.60	9,734.0	5,702.8	-1,904.3	5,959.0	0.00	0.00	0.00
15,900.0	90.00	359.60	9,734.0	5,802.8	-1,904.9	6,057.4	0.00	0.00	0.00
16,000.0	90.00	359.60	9,734.0	5,902.8	-1,905.6	6,155.7	0.00	0.00	0.00
16,100.0	90.00	359.60	9,734.0	6,002.7	-1,906.3	6,254.1	0.00	0.00	0.00
16,200.0	90.00	359.60	9,734.0	6,102.7	-1,907.0	6,352.4	0.00	0.00	0.00
16,300.0	90.00	359.60	9,734.0	6,202.7	-1,907.7	6,450.8	0.00	0.00	0.00
16,400.0	90.00	359.60	9,734.0	6,302.7	-1,908.4	6,549.1	0.00	0.00	0.00
16,500.0	90.00	359.60	9,734.0	6,402.7	-1,909.1	6,647.5	0.00	0.00	0.00
16,600.0	90.00	359.60	9,734.0	6,502.7	-1,909.8	6,745.8	0.00	0.00	0.00
16,700.0	90.00	359.60	9,734.0	6,602.7	-1,910.5	6,844.1	0.00	0.00	0.00
16,800.0	90.00	359.60	9,734.0	6,702.7	-1,911.2	6,942.5	0.00	0.00	0.00
16,900.0	90.00	359.60	9,734.0	6,802.7	-1,911.9	7,040.8	0.00	0.00	0.00
17,000.0	90.00	359.60	9,734.0	6,902.7	-1,912.6	7,139.2	0.00	0.00	0.00
17,100.0	90.00	359.60	9,734.0	7,002.7	-1,913.3	7,237.5	0.00	0.00	0.00
17,200.0	90.00	359.60	9,734.0	7,102.7	-1,914.0	7,335.9	0.00	0.00	0.00
17,300.0	90.00	359.60	9,734.0	7,202.7	-1,914.7	7,434.2	0.00	0.00	0.00
17,400.0	90.00	359.60	9,734.0	7,302.7	-1,915.3	7,532.6	0.00	0.00	0.00
17,500.0	90.00	359.60	9,734.0	7,402.7	-1,916.0	7,630.9	0.00	0.00	0.00
17,600.0	90.00	359.60	9,734.0	7,502.7	-1,916.7	7,729.3	0.00	0.00	0.00
17,700.0	90.00	359.60	9,734.0	7,602.7	-1,917.4	7,827.6	0.00	0.00	0.00
17,800.0	90.00	359.60	9,734.0	7,702.7	-1,918.1	7,926.0	0.00	0.00	0.00
17,900.0	90.00	359.60	9,734.0	7,802.7	-1,918.8	8,024.3	0.00	0.00	0.00
18,000.0	90.00	359.60	9,734.0	7,902.7	-1,919.5	8,122.6	0.00	0.00	0.00
18,100.0	90.00	359.60	9,734.0	8,002.7	-1,920.2	8,221.0	0.00	0.00	0.00
18,200.0	90.00	359.60	9,734.0	8,102.7	-1,920.9	8,319.3	0.00	0.00	0.00
18,300.0	90.00	359.60	9,734.0	8,202.7	-1,921.6	8,417.7	0.00	0.00	0.00
18,400.0	90.00	359.60	9,734.0	8,302.7	-1,922.3	8,516.0	0.00	0.00	0.00
18,500.0	90.00	359.60	9,734.0	8,402.7	-1,923.0	8,614.4	0.00	0.00	0.00
18,600.0	90.00	359.60	9,734.0	8,502.7	-1,923.7	8,712.7	0.00	0.00	0.00
18,700.0	90.00	359.60	9,734.0	8,602.7	-1,924.4	8,811.1	0.00	0.00	0.00
18,800.0	90.00	359.60	9,734.0	8,702.7	-1,925.1	8,909.4	0.00	0.00	0.00
18,900.0	90.00	359.60	9,734.0	8,802.7	-1,925.8	9,007.8	0.00	0.00	0.00
19,000.0	90.00	359.60	9,734.0	8,902.7	-1,926.4	9,106.1	0.00	0.00	0.00
19,100.0	90.00	359.60	9,734.0	9,002.7	-1,927.1	9,204.4	0.00	0.00	0.00
19,200.0	90.00	359.60	9,734.0	9,102.7	-1,927.8	9,302.8	0.00	0.00	0.00
19,300.0	90.00	359.60	9,734.0	9,202.7	-1,928.5	9,401.1	0.00	0.00	0.00
19,400.0	90.00	359.60	9,734.0	9,302.7	-1,929.2	9,499.5	0.00	0.00	0.00
19,500.0	90.00	359.60	9,734.0	9,402.7	-1,929.9	9,597.8	0.00	0.00	0.00
19,600.0	90.00	359.60	9,734.0	9,502.7	-1,930.6	9,696.2	0.00	0.00	0.00
19,700.0	90.00	359.60	9,734.0	9,602.7	-1,931.3	9,794.5	0.00	0.00	0.00
19,800.0	90.00	359.60	9,734.0	9,702.7	-1,932.0	9,892.9	0.00	0.00	0.00
19,900.0	90.00	359.60	9,734.0	9,802.7	-1,932.7	9,991.2	0.00	0.00	0.00
20,000.0	90.00	359.60	9,734.0	9,902.7	-1,933.4	10,089.6	0.00	0.00	0.00
20,100.0	90.00	359.60	9,734.0	10,002.7	-1,934.1	10,187.9	0.00	0.00	0.00
20,207.7	90.00	359.60	9,734.0	10,110.3	-1,934.8	10,293.8	0.00	0.00	0.00
TD at 20207.7 - LTP/BHL - Emerald Fed Com 503H									

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
KOP - Emerald Fed Con	0.00	0.00	9,156.0	-311.1	-1,862.5	612,499.28	734,930.39	32.682227	-103.704118
- plan misses target center by 30.0usft at 9412.0usft MD (9156.0 TVD, -311.1 N, -1832.5 E)									
- Point									
LTP/BHL - Emerald Fed	0.00	0.00	9,734.0	10,110.3	-1,934.8	622,920.76	734,858.04	32.710872	-103.704152
- plan hits target center									
- Point									
FTP - Emerald Fed Com	0.00	0.00	9,734.0	-261.1	-1,862.8	612,549.28	734,930.02	32.682364	-103.704118
- plan misses target center by 164.5usft at 9915.6usft MD (9613.4 TVD, -151.1 N, -1842.3 E)									
- Point									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
20,210.0		20" Casing	20	24

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,460.0	1,460.0	RUSTLER			
1,754.0	1,754.0	SOLADO			
3,491.3	3,453.0	YATES			
4,822.2	4,730.0	CAPITAN_REEF			
5,261.0	5,151.0	CHERRY_CNYN			
5,904.0	5,768.0	BRUSHY_CANYON			
7,640.3	7,434.0	BSPG_LIME *			
8,409.4	8,172.0	AVALON_B			
8,981.3	8,727.0	FBSG_SD *			
9,359.9	9,104.0	SBSG_CARB			
9,550.0	9,294.0	SBSG_SD			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.0	2,000.0	0.0	0.0	KOP - Start Build 2.00
2,817.9	2,806.8	-19.4	-114.3	Start 5776.1 hold at 2817.9 MD
8,594.0	8,349.2	-291.7	-1,718.2	Start Drop -2.00
9,411.9	9,156.0	-311.1	-1,832.5	Start 100.5 hold at 9412.0 MD
9,512.4	9,256.5	-311.1	-1,832.5	KOP #2 - Start Build 12.00
10,262.4	9,734.0	165.4	-1,861.6	Turn - Start DLS 2.00 TFO 90.00
10,417.6	9,734.0	320.5	-1,866.9	LP - Start 9790.1 hold at 10417.6 MD
20,207.7	9,734.0	10,110.3	-1,934.8	TD at 20207.7

Avant Operating, LLC

Lea Co., NM (NAD 83)

Emerald Pad 2

Emerald Fed Com 503H

OH

Plan 0.1

Anticollision Report

24 June, 2024

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Reference	Plan 0.1		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 2,220.8usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	6/24/2024		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,207.3	Plan 0.1 (OH)	B001Mb_MWD+HRGM	OWSG MWD + HRGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Emerald						
Emerald Federal Com 513H - OH - Plan 0.1	9,498.2	9,365.8	32.9	-35.7	0.480	Level 1, CC
Emerald Federal Com 513H - OH - Plan 0.1	20,207.7	20,156.3	74.6	-97.1	0.434	Level 1, ES, SF
Nellis Federal 02 - OH - OH	4,454.9	4,360.3	462.5	351.4	4.164	CC
Nellis Federal 02 - OH - OH	4,600.0	4,499.4	464.3	349.6	4.047	ES
Nellis Federal 02 - OH - OH	5,000.0	4,883.0	487.7	363.3	3.921	SF
Nellis Federal 03 - OH - OH	13,236.1	9,743.7	192.2	-96.0	0.667	Level 1, CC, ES, SF
Emerald Offset Wells						
Gazelle 31 Federal 1 - OH - OH	18,309.3	9,781.3	1,541.4	1,381.4	9.635	CC, ES, SF
Hudson Federal 31 #2 - OH - P & A	19,290.5	9,767.9	1,381.7	1,059.7	4.291	CC
Hudson Federal 31 #2 - OH - P & A	19,300.0	9,767.9	1,381.7	1,059.5	4.287	ES
Hudson Federal 31 #2 - OH - P & A	19,400.0	9,767.9	1,386.0	1,061.4	4.269	SF
Emerald Pad 1						
Emerald Fed Com 301H - OH - Plan 0.1	9,134.2	8,825.0	1,906.2	1,839.7	28.654	CC
Emerald Fed Com 301H - OH - Plan 0.1	20,207.7	19,114.0	2,061.8	1,776.1	7.217	ES, SF
Emerald Fed Com 302H - OH - Plan 0.1	9,047.3	8,740.3	992.5	927.4	15.256	CC, ES
Emerald Fed Com 302H - OH - Plan 0.1	20,207.7	19,070.8	1,299.7	1,049.2	5.189	SF
Emerald Fed Com 303H - OH - Plan 0.1	8,817.5	8,644.9	99.4	34.2	1.523	CC, ES, SF
Emerald Fed Com 501H - OH - Plan 0.1	10,490.9	10,297.0	1,847.7	1,775.0	25.417	CC
Emerald Fed Com 501H - OH - Plan 0.1	20,207.7	20,011.3	1,848.0	1,544.8	6.095	ES, SF
Emerald Fed Com 502H - OH - Plan 0.1	10,200.4	9,911.6	922.7	852.0	13.044	CC
Emerald Fed Com 502H - OH - Plan 0.1	20,207.7	19,968.0	924.0	620.7	3.047	ES, SF
Emerald Fed Com 601H - OH - Plan 0.1	9,079.8	8,654.0	1,779.5	1,714.3	27.284	CC
Emerald Fed Com 601H - OH - Plan 0.1	9,100.0	8,674.2	1,779.6	1,714.2	27.223	ES
Emerald Fed Com 601H - OH - Plan 0.1	20,207.7	20,795.2	2,016.0	1,732.8	7.118	SF
Emerald Fed Com 602H - OH - Plan 0.1	9,804.0	9,533.4	956.6	887.4	13.825	CC, ES
Emerald Fed Com 602H - OH - Plan 0.1	20,207.7	20,749.4	1,226.1	975.4	4.889	SF
Emerald Fed Com 603H - OH - Plan 0.1	9,688.3	9,481.4	75.9	6.5	1.093	Level 2, CC
Emerald Fed Com 603H - OH - Plan 0.1	9,700.0	9,492.1	76.1	6.2	1.089	Level 2, ES, SF

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Emerald Pad 2						
Emerald Fed Com 304H - OH - Plan 0.1	2,750.0	2,771.9	145.3	126.2	7.617	CC
Emerald Fed Com 304H - OH - Plan 0.1	2,800.0	2,821.6	145.6	126.2	7.496	ES
Emerald Fed Com 304H - OH - Plan 0.1	20,207.7	19,120.1	1,368.2	1,125.8	5.644	SF
Emerald Fed Com 305H - OH - Plan 0.1	2,315.7	2,329.7	165.4	149.4	10.316	CC, ES
Emerald Fed Com 305H - OH - Plan 0.1	20,207.7	19,049.6	2,142.6	1,863.9	7.687	SF
Emerald Fed Com 306H - OH - Plan 0.1	2,000.0	2,003.3	178.8	164.9	12.864	CC, ES
Emerald Fed Com 306H - OH - Plan 0.1	2,300.0	2,300.0	190.1	174.1	11.929	SF
Emerald Fed Com 514H - OH - Plan 0.1	2,018.4	2,019.1	40.1	26.1	2.861	CC
Emerald Fed Com 514H - OH - Plan 0.1	2,400.0	2,405.8	41.0	24.5	2.481	ES, SF
Emerald Fed Com 515H - OH - Plan 0.1	1,916.3	1,917.4	60.0	46.7	4.516	CC
Emerald Fed Com 515H - OH - Plan 0.1	2,000.0	2,001.1	60.0	46.1	4.321	ES
Emerald Fed Com 515H - OH - Plan 0.1	2,100.0	2,100.8	62.0	47.4	4.251	SF
Emerald Fed Com 516H - OH - Plan 0.1	1,916.3	1,917.5	80.0	66.7	6.019	CC
Emerald Fed Com 516H - OH - Plan 0.1	2,000.0	2,000.0	80.0	66.1	5.762	ES
Emerald Fed Com 516H - OH - Plan 0.1	2,100.0	2,098.5	83.4	68.8	5.722	SF
Emerald Fed Com 604H - OH - Plan 0.1	2,388.3	2,390.1	165.0	148.4	9.955	CC
Emerald Fed Com 604H - OH - Plan 0.1	2,500.0	2,501.8	165.2	147.8	9.515	ES
Emerald Fed Com 604H - OH - Plan 0.1	20,207.7	20,801.0	1,285.0	1,015.7	4.771	SF
Emerald Fed Com 605H - OH - Plan 0.1	2,000.0	1,999.9	171.1	157.2	12.323	CC, ES
Emerald Fed Com 605H - OH - Plan 0.1	20,207.7	20,751.3	2,090.7	1,798.1	7.145	SF
Emerald Fed Com 606H - OH - Plan 0.1	2,000.0	1,999.3	179.0	165.1	12.892	CC, ES
Emerald Fed Com 606H - OH - Plan 0.1	2,200.0	2,191.5	185.3	170.1	12.172	SF

Offset Design: Emerald - Emerald Federal Com 513H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
4,600.0	4,516.8	4,508.2	4,508.2	18.3	15.9	12.33	-18.5	-2,812.8	2,205.2	2,173.0	32.24	68.411		
4,700.0	4,612.7	4,604.1	4,604.1	18.8	16.3	12.49	-18.5	-2,812.8	2,177.7	2,144.7	32.97	66.058		
4,800.0	4,708.7	4,700.1	4,700.1	19.3	16.6	12.65	-18.5	-2,812.8	2,150.1	2,116.4	33.70	63.804		
4,900.0	4,804.7	4,796.1	4,796.1	19.9	17.0	12.81	-18.5	-2,812.8	2,122.6	2,088.2	34.43	61.645		
5,000.0	4,900.6	4,892.0	4,892.0	20.4	17.3	12.98	-18.5	-2,812.8	2,095.1	2,059.9	35.17	59.573		
5,100.0	4,996.6	4,988.0	4,988.0	20.9	17.7	13.16	-18.5	-2,812.8	2,067.6	2,031.7	35.91	57.585		
5,200.0	5,092.5	5,269.7	5,269.3	21.4	18.6	13.61	-22.3	-2,800.7	2,036.3	1,999.4	36.90	55.182		
5,300.0	5,188.5	5,556.9	5,553.4	21.9	19.6	13.89	-34.8	-2,761.3	1,995.7	1,958.1	37.57	53.118		
5,400.0	5,284.4	5,818.7	5,807.6	22.4	20.5	13.97	-53.6	-2,702.0	1,946.8	1,908.9	37.93	51.320		
5,500.0	5,380.4	5,905.3	5,890.7	23.0	20.9	13.96	-61.0	-2,678.6	1,894.0	1,855.5	38.57	49.103		
5,600.0	5,476.3	5,990.3	5,972.2	23.5	21.2	13.96	-68.2	-2,655.7	1,841.3	1,802.1	39.22	46.950		
5,700.0	5,572.3	6,075.2	6,053.7	24.0	21.5	13.95	-75.5	-2,632.8	1,788.5	1,748.7	39.87	44.863		
5,800.0	5,668.2	6,160.2	6,135.2	24.5	21.8	13.94	-82.7	-2,609.9	1,735.8	1,695.3	40.52	42.840		
5,900.0	5,764.2	6,245.1	6,216.6	25.1	22.2	13.94	-90.0	-2,587.0	1,683.0	1,641.9	41.17	40.878		
6,000.0	5,860.1	6,330.1	6,298.1	25.6	22.5	13.93	-97.2	-2,564.1	1,630.3	1,588.4	41.83	38.975		
6,100.0	5,956.1	6,415.1	6,379.6	26.1	22.9	13.92	-104.4	-2,541.2	1,577.5	1,535.0	42.49	37.129		
6,200.0	6,052.0	6,500.0	6,461.1	26.6	23.2	13.91	-111.7	-2,518.3	1,524.8	1,481.6	43.15	35.337		
6,300.0	6,148.0	6,585.0	6,542.6	27.2	23.6	13.90	-118.9	-2,495.4	1,472.0	1,428.2	43.81	33.597		
6,400.0	6,243.9	6,669.9	6,624.1	27.7	23.9	13.89	-126.2	-2,472.5	1,419.3	1,374.8	44.48	31.907		
6,500.0	6,339.9	6,754.9	6,705.6	28.2	24.3	13.88	-133.4	-2,449.6	1,366.5	1,321.4	45.15	30.266		
6,600.0	6,435.8	6,839.8	6,787.1	28.8	24.6	13.87	-140.7	-2,426.7	1,313.8	1,267.9	45.82	28.672		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Emerald Federal Com 513H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
6,700.0	6,531.8	6,924.8	6,868.5	29.3	25.0	13.85	-147.9	-2,403.8	1,261.0	1,214.5	46.49	27.122	
6,800.0	6,627.7	7,009.7	6,950.0	29.8	25.4	13.84	-155.2	-2,380.9	1,208.2	1,161.1	47.17	25.616	
6,900.0	6,723.7	7,094.7	7,031.5	30.4	25.7	13.83	-162.4	-2,358.0	1,155.5	1,107.6	47.84	24.151	
7,000.0	6,819.6	7,179.6	7,113.0	30.9	26.1	13.81	-169.7	-2,335.1	1,102.7	1,054.2	48.52	22.726	
7,100.0	6,915.6	7,264.6	7,194.5	31.4	26.5	13.79	-176.9	-2,312.2	1,050.0	1,000.8	49.20	21.339	
7,200.0	7,011.5	7,349.5	7,276.0	32.0	26.9	13.77	-184.2	-2,289.3	997.2	947.3	49.89	19.990	
7,300.0	7,107.5	7,434.5	7,357.5	32.5	27.3	13.75	-191.4	-2,266.4	944.5	893.9	50.57	18.677	
7,400.0	7,203.5	7,519.4	7,438.9	33.0	27.7	13.72	-198.7	-2,243.5	891.7	840.5	51.26	17.398	
7,500.0	7,299.4	7,604.4	7,520.4	33.6	28.0	13.69	-205.9	-2,220.6	839.0	787.0	51.94	16.152	
7,600.0	7,395.4	7,689.4	7,601.9	34.1	28.4	13.66	-213.2	-2,197.7	786.2	733.6	52.63	14.938	
7,700.0	7,491.3	7,774.3	7,683.4	34.6	28.8	13.62	-220.4	-2,174.8	733.5	680.2	53.32	13.756	
7,800.0	7,587.3	7,859.3	7,764.9	35.2	29.2	13.58	-227.7	-2,151.9	680.7	626.7	54.01	12.603	
7,900.0	7,683.2	7,944.2	7,846.4	35.7	29.6	13.53	-234.9	-2,129.0	628.0	573.3	54.71	11.479	
8,000.0	7,779.2	8,029.2	7,927.9	36.2	30.0	13.47	-242.1	-2,106.1	575.2	519.8	55.40	10.383	
8,100.0	7,875.1	8,114.1	8,009.4	36.8	30.4	13.40	-249.4	-2,083.2	522.5	466.4	56.10	9.314	
8,200.0	7,971.1	8,199.1	8,090.8	37.3	30.8	13.31	-256.6	-2,060.3	469.7	412.9	56.79	8.271	
8,300.0	8,067.0	8,284.0	8,172.3	37.9	31.2	13.20	-263.9	-2,037.4	417.0	359.5	57.49	7.253	
8,400.0	8,163.0	8,369.0	8,253.8	38.4	31.6	13.05	-271.1	-2,014.5	364.2	306.0	58.19	6.260	
8,500.0	8,258.9	8,453.9	8,335.3	38.9	32.0	12.86	-278.4	-1,991.6	311.5	252.6	58.88	5.290	
8,600.0	8,354.9	8,536.7	8,414.7	39.5	32.4	12.60	-285.4	-1,969.4	258.9	199.2	59.71	4.335	
8,700.0	8,451.4	8,617.4	8,492.6	40.0	32.8	12.02	-291.8	-1,949.3	209.7	148.9	60.79	3.449	
8,800.0	8,548.7	8,700.0	8,573.0	40.5	33.2	11.31	-297.6	-1,931.0	166.0	104.0	62.02	2.677	
8,900.0	8,646.8	8,790.1	8,661.2	40.9	33.6	10.31	-303.1	-1,913.5	128.1	65.2	62.92	2.035	
9,000.0	8,745.5	8,881.5	8,751.2	41.3	34.0	8.92	-307.8	-1,898.5	96.2	32.3	63.94	1.505	
9,100.0	8,844.7	8,975.5	8,844.3	41.7	34.4	6.88	-311.8	-1,885.9	70.7	5.8	64.93	1.089 Level 2	
9,200.0	8,944.2	9,071.8	8,940.0	42.1	34.7	3.96	-314.9	-1,876.0	51.7	-14.2	65.89	0.785 Level 1	
9,300.0	9,044.1	9,169.5	9,037.5	42.4	35.1	0.33	-317.1	-1,869.2	39.4	-27.5	66.87	0.589 Level 1	
9,400.0	9,144.0	9,268.3	9,136.1	42.7	35.4	-2.64	-318.3	-1,865.4	33.7	-34.1	67.83	0.498 Level 1	
9,498.2	9,242.2	9,365.8	9,233.6	42.9	35.7	-102.91	-318.5	-1,864.8	32.9	-35.7	68.58	0.480 Level 1, CC	
9,500.0	9,244.0	9,367.6	9,235.4	42.9	35.7	-102.89	-318.5	-1,864.8	33.1	-35.5	68.59	0.483 Level 1	
9,600.0	9,343.6	9,467.5	9,335.4	43.2	36.0	-111.84	-318.3	-1,864.8	35.2	-35.1	70.36	0.501 Level 1	
9,700.0	9,439.3	9,571.3	9,438.0	43.4	36.4	-131.60	-304.4	-1,864.9	42.8	-29.8	72.63	0.590 Level 1	
9,800.0	9,527.0	9,678.7	9,538.4	43.6	36.6	-144.96	-266.9	-1,865.1	52.2	-18.8	71.04	0.735 Level 1	
9,900.0	9,602.9	9,789.6	9,630.7	43.8	36.9	-154.28	-205.8	-1,865.5	61.4	-3.9	65.30	0.940 Level 1	
10,000.0	9,663.6	9,903.7	9,708.2	43.9	37.0	-161.31	-122.5	-1,866.1	68.8	12.3	56.56	1.217 Level 2	
10,100.0	9,706.6	10,020.3	9,764.8	43.9	37.0	-167.07	-20.9	-1,866.8	73.7	26.8	46.93	1.571	
10,200.0	9,729.9	10,138.4	9,795.4	43.9	37.0	-172.16	92.9	-1,867.5	75.5	35.4	40.04	1.885	
10,300.0	9,734.0	10,248.7	9,800.0	44.0	37.0	-176.50	202.9	-1,868.3	74.8	35.5	39.31	1.902	
10,400.0	9,734.0	10,348.6	9,800.0	44.0	37.0	-178.32	302.9	-1,868.9	74.7	34.7	39.92	1.870	
10,494.8	9,734.0	10,443.4	9,800.0	44.1	37.0	-178.57	397.6	-1,869.6	74.7	34.2	40.48	1.844	
10,500.0	9,734.0	10,448.6	9,800.0	44.1	37.0	-178.37	402.9	-1,869.6	74.7	34.2	40.50	1.844	
10,600.0	9,734.0	10,548.6	9,800.0	44.2	37.1	-178.39	502.9	-1,870.3	74.7	33.5	41.12	1.816	
10,700.0	9,734.0	10,648.6	9,800.0	44.3	37.3	-178.41	602.9	-1,871.0	74.7	32.9	41.80	1.786	
10,800.0	9,734.0	10,748.6	9,800.0	44.5	37.6	-178.43	702.9	-1,871.6	74.7	32.1	42.52	1.756	
10,900.0	9,734.0	10,848.6	9,800.0	44.8	38.0	-178.44	802.9	-1,872.3	74.7	31.4	43.29	1.725	
11,000.0	9,734.0	10,948.6	9,800.0	45.1	38.4	-178.46	902.9	-1,873.0	74.7	30.6	44.10	1.693	
11,100.0	9,734.0	11,048.6	9,800.0	45.4	39.0	-178.48	1,002.9	-1,873.6	74.7	29.7	44.95	1.661	
11,200.0	9,734.0	11,148.6	9,800.0	45.8	39.6	-178.49	1,102.9	-1,874.3	74.7	28.8	45.84	1.629	
11,300.0	9,734.0	11,248.6	9,800.0	46.3	40.2	-178.51	1,202.9	-1,875.0	74.7	27.9	46.76	1.596	
11,400.0	9,734.0	11,348.6	9,800.0	46.8	40.9	-178.53	1,302.8	-1,875.7	74.7	26.9	47.72	1.564	
11,500.0	9,734.0	11,448.6	9,800.0	47.3	41.7	-178.54	1,402.8	-1,876.3	74.7	25.9	48.71	1.533	
11,600.0	9,734.0	11,548.6	9,800.0	47.9	42.4	-178.56	1,502.8	-1,877.0	74.7	24.9	49.74	1.501	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Emerald Federal Com 513H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:			Offset Well Error: 0.0 usft		
Measured Depth (usft)	Reference Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
11,700.0	9,734.0	11,648.6	9,800.0	48.5	43.2	-178.58	1,602.8	-1,877.7	74.7	23.9	50.78	1.470	Level 3	
11,800.0	9,734.0	11,748.6	9,800.0	49.2	44.1	-178.59	1,702.8	-1,878.3	74.7	22.8	51.86	1.439	Level 3	
11,900.0	9,734.0	11,848.6	9,800.0	49.9	45.0	-178.61	1,802.8	-1,879.0	74.7	21.7	52.96	1.410	Level 3	
12,000.0	9,734.0	11,948.6	9,800.0	50.7	45.9	-178.63	1,902.8	-1,879.7	74.7	20.6	54.08	1.380	Level 3	
12,100.0	9,734.0	12,048.6	9,800.0	51.5	46.8	-178.64	2,002.8	-1,880.4	74.6	19.4	55.23	1.352	Level 3	
12,200.0	9,734.0	12,148.6	9,800.0	52.3	47.7	-178.66	2,102.8	-1,881.0	74.6	18.3	56.40	1.324	Level 3	
12,300.0	9,734.0	12,248.6	9,800.0	53.2	48.7	-178.68	2,202.8	-1,881.7	74.6	17.1	57.58	1.296	Level 3	
12,400.0	9,734.0	12,348.6	9,800.0	54.0	49.7	-178.69	2,302.8	-1,882.4	74.6	15.9	58.79	1.270	Level 3	
12,500.0	9,734.0	12,448.6	9,800.0	54.9	50.7	-178.71	2,402.8	-1,883.0	74.6	14.6	60.01	1.244	Level 2	
12,600.0	9,734.0	12,548.6	9,800.0	55.9	51.8	-178.73	2,502.8	-1,883.7	74.6	13.4	61.24	1.219	Level 2	
12,700.0	9,734.0	12,648.6	9,800.0	56.8	52.8	-178.74	2,602.8	-1,884.4	74.6	12.1	62.49	1.194	Level 2	
12,800.0	9,734.0	12,748.6	9,800.0	57.8	53.9	-178.76	2,702.8	-1,885.1	74.6	10.9	63.76	1.171	Level 2	
12,900.0	9,734.0	12,848.6	9,800.0	58.8	55.0	-178.78	2,802.8	-1,885.7	74.6	9.6	65.04	1.148	Level 2	
13,000.0	9,734.0	12,948.6	9,800.0	59.9	56.1	-178.79	2,902.8	-1,886.4	74.6	8.3	66.33	1.125	Level 2	
13,100.0	9,734.0	13,048.6	9,800.0	60.9	57.2	-178.81	3,002.8	-1,887.1	74.6	7.0	67.64	1.104	Level 2	
13,200.0	9,734.0	13,148.6	9,800.0	62.0	58.4	-178.83	3,102.8	-1,887.7	74.6	5.7	68.95	1.083	Level 2	
13,300.0	9,734.0	13,248.6	9,800.0	63.0	59.5	-178.85	3,202.8	-1,888.4	74.6	4.4	70.28	1.062	Level 2	
13,400.0	9,734.0	13,348.6	9,800.0	64.1	60.7	-178.86	3,302.8	-1,889.1	74.6	3.0	71.61	1.042	Level 2	
13,500.0	9,734.0	13,448.6	9,800.0	65.2	61.9	-178.88	3,402.8	-1,889.8	74.6	1.7	72.96	1.023	Level 2	
13,600.0	9,734.0	13,548.6	9,800.0	66.3	63.1	-178.90	3,502.8	-1,890.4	74.6	0.3	74.31	1.004	Level 2	
13,700.0	9,734.0	13,648.6	9,800.0	67.5	64.3	-178.91	3,602.8	-1,891.1	74.6	-1.0	75.67	0.986	Level 1	
13,800.0	9,734.0	13,748.6	9,800.0	68.6	65.5	-178.93	3,702.8	-1,891.8	74.6	-2.4	77.04	0.969	Level 1	
13,900.0	9,734.0	13,848.6	9,800.0	69.8	66.7	-178.95	3,802.8	-1,892.4	74.6	-3.8	78.42	0.952	Level 1	
14,000.0	9,734.0	13,948.6	9,800.0	70.9	67.9	-178.96	3,902.8	-1,893.1	74.6	-5.2	79.80	0.935	Level 1	
14,100.0	9,734.0	14,048.6	9,800.0	72.1	69.2	-178.98	4,002.8	-1,893.8	74.6	-6.6	81.20	0.919	Level 1	
14,200.0	9,734.0	14,148.6	9,800.0	73.3	70.4	-179.00	4,102.8	-1,894.5	74.6	-8.0	82.59	0.904	Level 1	
14,300.0	9,734.0	14,248.6	9,800.0	74.5	71.6	-179.01	4,202.8	-1,895.1	74.6	-9.4	84.00	0.888	Level 1	
14,400.0	9,734.0	14,348.6	9,800.0	75.7	72.9	-179.03	4,302.8	-1,895.8	74.6	-10.8	85.41	0.874	Level 1	
14,500.0	9,734.0	14,448.6	9,800.0	76.9	74.2	-179.05	4,402.8	-1,896.5	74.6	-12.2	86.82	0.860	Level 1	
14,600.0	9,734.0	14,548.6	9,800.0	78.1	75.4	-179.06	4,502.8	-1,897.1	74.6	-13.6	88.24	0.846	Level 1	
14,700.0	9,734.0	14,648.6	9,800.0	79.4	76.7	-179.08	4,602.8	-1,897.8	74.6	-15.0	89.67	0.832	Level 1	
14,800.0	9,734.0	14,748.6	9,800.0	80.6	78.0	-179.10	4,702.8	-1,898.5	74.6	-16.5	91.10	0.819	Level 1	
14,900.0	9,734.0	14,848.6	9,800.0	81.9	79.3	-179.11	4,802.8	-1,899.2	74.6	-17.9	92.54	0.806	Level 1	
15,000.0	9,734.0	14,948.6	9,800.0	83.1	80.6	-179.13	4,902.8	-1,899.8	74.6	-19.3	93.97	0.794	Level 1	
15,100.0	9,734.0	15,048.6	9,800.0	84.4	81.9	-179.15	5,002.8	-1,900.5	74.6	-20.8	95.42	0.782	Level 1	
15,200.0	9,734.0	15,148.6	9,800.0	85.6	83.2	-179.16	5,102.8	-1,901.2	74.6	-22.2	96.87	0.770	Level 1	
15,300.0	9,734.0	15,248.6	9,800.0	86.9	84.5	-179.18	5,202.8	-1,901.8	74.6	-23.7	98.32	0.759	Level 1	
15,400.0	9,734.0	15,348.6	9,800.0	88.2	85.8	-179.20	5,302.8	-1,902.5	74.6	-25.1	99.77	0.748	Level 1	
15,500.0	9,734.0	15,448.6	9,800.0	89.4	87.1	-179.22	5,402.8	-1,903.2	74.6	-26.6	101.23	0.737	Level 1	
15,600.0	9,734.0	15,548.6	9,800.0	90.7	88.5	-179.23	5,502.8	-1,903.9	74.6	-28.1	102.69	0.727	Level 1	
15,700.0	9,734.0	15,648.6	9,800.0	92.0	89.8	-179.25	5,602.8	-1,904.5	74.6	-29.5	104.16	0.716	Level 1	
15,800.0	9,734.0	15,748.6	9,800.0	93.3	91.1	-179.27	5,702.7	-1,905.2	74.6	-31.0	105.62	0.706	Level 1	
15,900.0	9,734.0	15,848.6	9,800.0	94.6	92.4	-179.28	5,802.7	-1,905.9	74.6	-32.5	107.10	0.697	Level 1	
16,000.0	9,734.0	15,948.6	9,800.0	95.9	93.8	-179.30	5,902.7	-1,906.6	74.6	-33.9	108.57	0.687	Level 1	
16,100.0	9,734.0	16,048.6	9,800.0	97.2	95.1	-179.32	6,002.7	-1,907.2	74.6	-35.4	110.05	0.678	Level 1	
16,200.0	9,734.0	16,148.6	9,800.0	98.5	96.5	-179.33	6,102.7	-1,907.9	74.6	-36.9	111.52	0.669	Level 1	
16,300.0	9,734.0	16,248.6	9,800.0	99.9	97.8	-179.35	6,202.7	-1,908.6	74.6	-38.4	113.01	0.660	Level 1	
16,400.0	9,734.0	16,348.6	9,800.0	101.2	99.2	-179.37	6,302.7	-1,909.2	74.6	-39.9	114.49	0.652	Level 1	
16,500.0	9,734.0	16,448.6	9,800.0	102.5	100.5	-179.38	6,402.7	-1,909.9	74.6	-41.4	115.98	0.643	Level 1	
16,600.0	9,734.0	16,548.6	9,800.0	103.8	101.9	-179.40	6,502.7	-1,910.6	74.6	-42.8	117.46	0.635	Level 1	
16,700.0	9,734.0	16,648.6	9,800.0	105.1	103.2	-179.42	6,602.7	-1,911.3	74.6	-44.3	118.95	0.627	Level 1	
16,800.0	9,734.0	16,748.6	9,800.0	106.5	104.6	-179.43	6,702.7	-1,911.9	74.6	-45.8	120.45	0.619	Level 1	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Emerald Federal Com 513H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
16,900.0	9,734.0	16,848.6	9,800.0	107.8	105.9	-179.45	6,802.7	-1,912.6	74.6	-47.3	121.94	0.612	Level 1	
17,000.0	9,734.0	16,948.6	9,800.0	109.1	107.3	-179.47	6,902.7	-1,913.3	74.6	-48.8	123.44	0.604	Level 1	
17,100.0	9,734.0	17,048.6	9,800.0	110.5	108.7	-179.48	7,002.7	-1,913.9	74.6	-50.3	124.94	0.597	Level 1	
17,200.0	9,734.0	17,148.6	9,800.0	111.8	110.0	-179.50	7,102.7	-1,914.6	74.6	-51.8	126.43	0.590	Level 1	
17,300.0	9,734.0	17,248.6	9,800.0	113.2	111.4	-179.52	7,202.7	-1,915.3	74.6	-53.3	127.94	0.583	Level 1	
17,400.0	9,734.0	17,348.6	9,800.0	114.5	112.8	-179.53	7,302.7	-1,916.0	74.6	-54.8	129.44	0.576	Level 1	
17,500.0	9,734.0	17,448.6	9,800.0	115.9	114.2	-179.55	7,402.7	-1,916.6	74.6	-56.3	130.94	0.570	Level 1	
17,600.0	9,734.0	17,548.6	9,800.0	117.2	115.5	-179.57	7,502.7	-1,917.3	74.6	-57.8	132.45	0.563	Level 1	
17,700.0	9,734.0	17,648.6	9,800.0	118.6	116.9	-179.59	7,602.7	-1,918.0	74.6	-59.3	133.96	0.557	Level 1	
17,800.0	9,734.0	17,748.6	9,800.0	119.9	118.3	-179.60	7,702.7	-1,918.6	74.6	-60.9	135.47	0.551	Level 1	
17,900.0	9,734.0	17,848.6	9,800.0	121.3	119.7	-179.62	7,802.7	-1,919.3	74.6	-62.4	136.98	0.545	Level 1	
18,000.0	9,734.0	17,948.6	9,800.0	122.7	121.0	-179.64	7,902.7	-1,920.0	74.6	-63.9	138.49	0.539	Level 1	
18,100.0	9,734.0	18,048.6	9,800.0	124.0	122.4	-179.65	8,002.7	-1,920.7	74.6	-65.4	140.00	0.533	Level 1	
18,200.0	9,734.0	18,148.6	9,800.0	125.4	123.8	-179.67	8,102.7	-1,921.3	74.6	-66.9	141.52	0.527	Level 1	
18,300.0	9,734.0	18,248.6	9,800.0	126.8	125.2	-179.69	8,202.7	-1,922.0	74.6	-68.4	143.04	0.522	Level 1	
18,400.0	9,734.0	18,348.6	9,800.0	128.1	126.6	-179.70	8,302.7	-1,922.7	74.6	-69.9	144.55	0.516	Level 1	
18,500.0	9,734.0	18,448.6	9,800.0	129.5	128.0	-179.72	8,402.7	-1,923.3	74.6	-71.5	146.07	0.511	Level 1	
18,600.0	9,734.0	18,548.6	9,800.0	130.9	129.4	-179.74	8,502.7	-1,924.0	74.6	-73.0	147.59	0.505	Level 1	
18,700.0	9,734.0	18,648.6	9,800.0	132.2	130.8	-179.75	8,602.7	-1,924.7	74.6	-74.5	149.11	0.500	Level 1	
18,800.0	9,734.0	18,748.6	9,800.0	133.6	132.2	-179.77	8,702.7	-1,925.4	74.6	-76.0	150.63	0.495	Level 1	
18,900.0	9,734.0	18,848.6	9,800.0	135.0	133.5	-179.79	8,802.7	-1,926.0	74.6	-77.5	152.15	0.490	Level 1	
19,000.0	9,734.0	18,948.6	9,800.0	136.4	134.9	-179.80	8,902.7	-1,926.7	74.6	-79.1	153.68	0.485	Level 1	
19,100.0	9,734.0	19,048.6	9,800.0	137.7	136.3	-179.82	9,002.7	-1,927.4	74.6	-80.6	155.20	0.481	Level 1	
19,200.0	9,734.0	19,148.6	9,800.0	139.1	137.7	-179.84	9,102.7	-1,928.0	74.6	-82.1	156.73	0.476	Level 1	
19,300.0	9,734.0	19,248.6	9,800.0	140.5	139.1	-179.85	9,202.7	-1,928.7	74.6	-83.7	158.25	0.471	Level 1	
19,400.0	9,734.0	19,348.6	9,800.0	141.9	140.5	-179.87	9,302.7	-1,929.4	74.6	-85.2	159.78	0.467	Level 1	
19,500.0	9,734.0	19,448.6	9,800.0	143.3	141.9	-179.89	9,402.7	-1,930.1	74.6	-86.7	161.31	0.462	Level 1	
19,600.0	9,734.0	19,548.6	9,800.0	144.7	143.3	-179.91	9,502.7	-1,930.7	74.6	-88.2	162.84	0.458	Level 1	
19,700.0	9,734.0	19,648.6	9,800.0	146.1	144.7	-179.92	9,602.7	-1,931.4	74.6	-89.8	164.37	0.454	Level 1	
19,800.0	9,734.0	19,748.6	9,800.0	147.4	146.1	-179.94	9,702.7	-1,932.1	74.6	-91.3	165.90	0.450	Level 1	
19,900.0	9,734.0	19,848.6	9,800.0	148.8	147.5	-179.96	9,802.7	-1,932.7	74.6	-92.8	167.43	0.446	Level 1	
20,000.0	9,734.0	19,948.6	9,800.0	150.2	148.9	-179.97	9,902.7	-1,933.4	74.6	-94.4	168.96	0.442	Level 1	
20,100.0	9,734.0	20,048.6	9,800.0	151.6	150.3	-179.99	10,002.7	-1,934.1	74.6	-95.9	170.49	0.438	Level 1	
20,200.0	9,734.0	20,148.6	9,800.0	152.9	151.8	-179.99	10,102.7	-1,934.8	74.6	-97.0	171.65	0.435	Level 1	
20,207.7	9,734.0	20,156.3	9,800.0	153.0	151.9	-179.99	10,110.3	-1,934.8	74.6	-97.1	171.74	0.434	Level 1, ES, SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Nellis Federal 02 - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 940-INC-ONLY												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	-67.04	282.2	-666.1	723.5				
100.0	100.0	87.4	87.4	0.1	2.6	-67.03	282.3	-666.1	723.4	720.7	2.69	269.092	
200.0	200.0	186.9	186.9	0.5	5.5	-67.02	282.5	-666.1	723.5	717.6	5.96	121.490	
300.0	300.0	286.4	286.4	0.8	8.4	-66.98	283.0	-666.1	723.7	714.5	9.22	78.471	
400.0	400.0	385.9	385.9	1.2	11.3	-66.94	283.6	-666.1	723.9	711.4	12.49	57.965	
500.0	500.0	485.3	485.3	1.6	14.2	-66.88	284.4	-666.1	724.3	708.5	15.76	45.967	
600.0	600.0	584.8	584.8	1.9	17.1	-66.81	285.4	-666.1	724.6	705.6	19.02	38.093	
700.0	700.0	684.3	684.3	2.3	20.0	-66.72	286.5	-666.1	725.1	702.8	22.29	32.532	
800.0	800.0	783.7	783.7	2.6	22.9	-66.62	287.9	-666.1	725.6	700.1	25.56	28.395	
900.0	900.0	883.2	883.2	3.0	25.8	-66.51	289.4	-666.1	726.3	697.4	28.82	25.198	
1,000.0	1,000.0	983.0	982.9	3.4	28.4	-66.39	291.1	-666.1	726.9	695.2	31.72	22.916	
1,100.0	1,100.0	1,083.3	1,083.2	3.7	30.4	-66.27	292.8	-666.1	727.6	693.5	34.14	21.315	
1,200.0	1,200.0	1,183.6	1,183.5	4.1	32.5	-66.16	294.3	-666.1	728.2	691.7	36.55	19.924	
1,300.0	1,300.0	1,283.8	1,283.8	4.4	34.5	-66.05	295.8	-666.1	728.8	689.9	38.96	18.705	
1,400.0	1,400.0	1,384.1	1,384.0	4.8	36.6	-65.96	297.2	-666.1	729.4	688.0	41.35	17.640	
1,500.0	1,500.0	1,483.8	1,483.7	5.2	38.3	-65.86	298.5	-666.1	729.9	686.5	43.42	16.812	
1,600.0	1,600.0	1,583.6	1,583.4	5.5	40.0	-65.76	300.0	-666.1	730.5	685.0	45.49	16.060	
1,700.0	1,700.0	1,683.3	1,683.2	5.9	41.7	-65.65	301.5	-666.1	731.1	683.6	47.55	15.375	
1,800.0	1,800.0	1,783.0	1,782.9	6.2	43.4	-65.53	303.1	-666.1	731.8	682.2	49.62	14.747	
1,900.0	1,900.0	1,882.8	1,882.6	6.6	45.1	-65.41	304.8	-666.1	732.5	680.8	51.69	14.170	
2,000.0	2,000.0	1,982.7	1,982.5	6.9	46.9	-65.29	306.5	-666.1	733.2	679.4	53.80	13.629	
2,100.0	2,100.0	2,082.7	2,082.5	7.3	48.6	34.56	308.3	-666.1	732.5	676.6	55.89	13.106	
2,200.0	2,199.8	2,182.5	2,182.3	7.6	50.4	34.95	310.0	-666.1	729.0	671.0	57.98	12.573	
2,300.0	2,299.5	2,282.1	2,281.9	8.0	52.1	35.55	311.7	-666.1	722.6	662.5	60.06	12.032	
2,400.0	2,398.7	2,381.3	2,381.0	8.3	53.7	36.35	313.5	-666.1	713.5	651.4	62.05	11.499	
2,500.0	2,497.5	2,480.0	2,479.7	8.7	55.4	37.37	315.2	-666.1	701.7	637.7	64.03	10.958	
2,600.0	2,595.6	2,578.1	2,577.8	9.0	57.0	38.63	316.9	-666.1	687.4	621.3	66.04	10.409	
2,700.0	2,693.1	2,675.4	2,675.1	9.4	58.7	40.17	318.6	-666.1	670.6	602.6	68.05	9.855	
2,800.0	2,789.6	2,771.7	2,771.4	9.8	60.3	41.99	320.3	-666.1	651.7	581.6	70.09	9.299	
2,900.0	2,885.6	2,864.8	2,864.5	10.2	62.3	43.82	322.3	-666.1	631.9	559.5	72.44	8.723	
3,000.0	2,981.6	2,957.8	2,957.5	10.6	64.3	45.76	325.1	-666.1	613.2	538.4	74.80	8.198	
3,100.0	3,077.5	3,052.2	3,051.8	11.1	66.4	47.89	328.6	-666.1	595.7	518.4	77.31	7.705	
3,200.0	3,173.5	3,148.9	3,148.5	11.5	68.8	50.19	332.1	-666.1	579.1	499.0	80.10	7.229	
3,300.0	3,269.4	3,245.4	3,244.9	12.0	71.1	52.59	335.4	-666.1	563.3	480.5	82.86	6.799	
3,400.0	3,365.4	3,342.6	3,342.1	12.4	73.3	55.12	338.4	-666.1	548.4	462.9	85.54	6.412	
3,500.0	3,461.3	3,439.5	3,438.8	12.9	75.5	57.74	341.1	-666.1	534.4	446.3	88.15	6.063	
3,600.0	3,557.3	3,536.3	3,535.6	13.4	77.6	60.47	343.6	-666.1	521.4	430.7	90.77	5.745	
3,700.0	3,653.2	3,633.7	3,633.0	13.8	79.7	63.33	345.7	-666.1	509.5	416.2	93.35	5.459	
3,800.0	3,749.2	3,732.4	3,731.7	14.3	81.6	66.31	347.3	-666.1	498.5	402.8	95.72	5.208	
3,900.0	3,845.1	3,828.2	3,827.5	14.8	83.3	69.30	348.6	-666.1	488.6	390.6	97.98	4.987	
4,000.0	3,941.1	3,924.1	3,923.4	15.3	85.1	72.40	349.8	-666.1	480.2	380.0	100.24	4.790	
4,100.0	4,037.0	4,020.0	4,019.3	15.8	86.8	75.59	351.1	-666.1	473.3	370.8	102.52	4.617	
4,200.0	4,133.0	4,115.9	4,115.2	16.3	88.5	78.86	352.3	-666.1	468.1	363.3	104.79	4.467	
4,300.0	4,228.9	4,211.8	4,211.0	16.8	90.4	82.19	353.6	-666.1	464.6	357.4	107.15	4.336	
4,400.0	4,324.9	4,307.7	4,306.9	17.3	92.4	85.55	354.8	-666.1	462.8	353.1	109.69	4.219	
4,454.9	4,377.5	4,360.3	4,359.5	17.6	93.5	87.40	355.5	-666.1	462.5	351.4	111.07	4.164 CC	
4,500.0	4,420.8	4,403.5	4,402.8	17.8	94.4	88.92	356.1	-666.1	462.7	350.5	112.21	4.123	
4,600.0	4,516.8	4,499.4	4,498.7	18.3	96.4	92.28	357.4	-666.1	464.3	349.6	114.73	4.047 ES	
4,700.0	4,612.7	4,595.3	4,594.5	18.8	98.4	95.61	358.6	-666.1	467.7	350.5	117.23	3.990	
4,800.0	4,708.7	4,691.2	4,690.4	19.3	100.5	98.88	359.9	-666.1	472.8	353.1	119.71	3.949	
4,900.0	4,804.7	4,787.1	4,786.3	19.9	102.5	102.08	361.1	-666.1	479.5	357.3	122.18	3.924	
5,000.0	4,900.6	4,883.0	4,882.2	20.4	104.3	105.19	362.4	-666.1	487.7	363.3	124.40	3.921 SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Nellis Federal 02 - OH - OH												Offset Site Error: 0.0 usft	
Survey Program: 940-INC-ONLY				Rule Assigned:								Offset Well Error: 0.0 usft	
Measured Depth (usft)	Reference Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,996.6	4,978.8	4,978.0	20.9	106.0	108.19	363.6	-666.1	497.5	370.9	126.58	3.930	
5,200.0	5,092.5	5,074.7	5,073.9	21.4	107.8	111.08	364.9	-666.1	508.6	379.8	128.79	3.949	
5,300.0	5,188.5	5,170.6	5,169.8	21.9	109.7	113.85	366.1	-666.1	521.1	390.1	131.00	3.977	
5,400.0	5,284.4	5,266.5	5,265.7	22.4	111.5	116.49	367.4	-666.1	534.7	401.5	133.21	4.014	
5,500.0	5,380.4	5,362.4	5,361.5	23.0	113.3	119.00	368.7	-666.1	549.6	414.2	135.40	4.059	
5,600.0	5,476.3	5,458.2	5,457.4	23.5	115.1	121.39	369.9	-666.1	565.4	427.8	137.58	4.110	
5,700.0	5,572.3	5,554.1	5,553.3	24.0	117.0	123.64	371.2	-666.1	582.2	442.4	139.79	4.165	
5,800.0	5,668.2	5,650.0	5,649.1	24.5	118.9	125.78	372.4	-666.1	599.9	457.8	142.05	4.223	
5,900.0	5,764.2	5,745.9	5,745.0	25.1	120.8	127.79	373.7	-666.1	618.3	474.0	144.31	4.285	
6,000.0	5,860.1	5,841.8	5,840.9	25.6	122.7	129.69	374.9	-666.1	637.6	491.0	146.56	4.350	
6,100.0	5,956.1	5,937.7	5,936.8	26.1	124.7	131.48	376.2	-666.1	657.4	508.6	148.81	4.418	
6,200.0	6,052.0	6,033.4	6,032.5	26.6	126.6	133.17	377.4	-666.1	677.9	526.8	151.08	4.487	
6,300.0	6,148.0	6,128.8	6,127.9	27.2	128.6	134.75	378.8	-666.1	699.0	545.6	153.38	4.557	
6,400.0	6,243.9	6,224.2	6,223.3	27.7	130.5	136.24	380.1	-666.1	720.6	565.0	155.68	4.629	
6,500.0	6,339.9	6,319.6	6,318.7	28.2	132.5	137.64	381.6	-666.1	742.8	584.8	157.98	4.702	
6,600.0	6,435.8	6,415.0	6,414.0	28.8	134.5	138.96	383.2	-666.1	765.5	605.2	160.29	4.776	
6,700.0	6,531.8	6,510.4	6,509.4	29.3	136.4	140.20	384.8	-666.1	788.5	625.9	162.60	4.850	
6,800.0	6,627.7	6,606.2	6,605.3	29.8	138.5	141.38	386.5	-666.1	812.0	647.0	165.00	4.921	
6,900.0	6,723.7	6,702.1	6,701.1	30.4	140.5	142.49	388.1	-666.1	835.8	668.4	167.40	4.993	
7,000.0	6,819.6	6,798.0	6,797.0	30.9	142.6	143.54	389.8	-666.1	859.8	690.0	169.81	5.064	
7,100.0	6,915.6	6,893.8	6,892.8	31.4	144.7	144.53	391.5	-666.1	884.1	711.9	172.21	5.134	
7,200.0	7,011.5	6,989.7	6,988.6	32.0	146.7	145.47	393.2	-666.1	908.7	734.1	174.62	5.204	
7,300.0	7,107.5	7,085.5	7,084.5	32.5	148.7	146.37	394.8	-666.1	933.5	756.5	176.93	5.276	
7,400.0	7,203.5	7,181.4	7,180.3	33.0	150.6	147.21	396.5	-666.1	958.5	779.2	179.24	5.347	
7,500.0	7,299.4	7,277.1	7,276.0	33.6	152.6	148.02	398.2	-666.1	983.6	802.1	181.59	5.417	
7,600.0	7,395.4	7,372.4	7,371.3	34.1	154.7	148.78	399.9	-666.1	1,009.0	825.0	184.01	5.484	
7,700.0	7,491.3	7,467.7	7,466.6	34.6	156.8	149.50	401.7	-666.1	1,034.7	848.2	186.44	5.550	
7,800.0	7,587.3	7,563.0	7,561.9	35.2	158.8	150.18	403.6	-666.1	1,060.5	871.6	188.86	5.615	
7,900.0	7,683.2	7,658.3	7,657.2	35.7	160.9	150.82	405.6	-666.1	1,086.4	895.2	191.29	5.680	
8,000.0	7,779.2	7,755.0	7,753.8	36.2	163.0	151.44	407.6	-666.1	1,112.6	918.9	193.76	5.742	
8,100.0	7,875.1	7,849.4	7,848.2	36.8	165.3	152.02	409.7	-666.1	1,138.9	942.5	196.45	5.798	
8,200.0	7,971.1	7,945.2	7,944.0	37.3	167.7	152.58	411.8	-666.1	1,165.3	966.2	199.18	5.851	
8,300.0	8,067.0	8,041.1	8,039.8	37.9	170.1	153.12	413.9	-666.1	1,191.8	989.9	201.91	5.903	
8,400.0	8,163.0	8,136.9	8,135.6	38.4	172.4	153.63	416.0	-666.1	1,218.4	1,013.8	204.64	5.954	
8,500.0	8,258.9	8,232.7	8,231.4	38.9	174.8	154.12	418.1	-666.1	1,245.1	1,037.8	207.37	6.004	
8,600.0	8,354.9	8,328.5	8,327.2	39.5	177.2	154.61	420.1	-666.1	1,271.9	1,061.8	210.11	6.054	
8,700.0	8,451.4	8,424.9	8,423.6	40.0	179.5	155.24	422.2	-666.1	1,297.1	1,084.2	212.86	6.094	
8,800.0	8,548.7	8,519.4	8,518.0	40.5	181.9	155.75	424.4	-666.1	1,319.2	1,103.6	215.57	6.120	
8,900.0	8,646.8	8,616.8	8,609.5	40.9	184.2	156.14	427.1	-666.1	1,338.7	1,120.5	218.22	6.134	
9,000.0	8,745.5	8,705.9	8,704.4	41.3	186.8	156.41	430.7	-666.1	1,355.5	1,134.3	221.13	6.130	
9,100.0	8,844.7	8,804.4	8,802.9	41.7	189.6	156.59	434.6	-666.1	1,369.2	1,144.8	224.32	6.104	
9,200.0	8,944.2	8,901.4	8,899.7	42.1	192.5	156.68	438.7	-666.1	1,379.8	1,152.3	227.53	6.064	
9,300.0	9,044.1	9,003.2	9,001.5	42.4	195.6	156.68	442.9	-666.1	1,387.3	1,156.4	230.92	6.008	
9,400.0	9,144.0	9,109.0	9,107.2	42.7	198.5	156.62	446.9	-666.1	1,391.3	1,157.1	234.20	5.941	
9,500.0	9,244.0	9,213.1	9,211.3	42.9	201.2	156.88	449.8	-666.1	1,392.9	1,155.6	237.27	5.870	
9,600.0	9,343.6	9,310.7	9,308.8	43.2	203.7	160.83	452.6	-666.1	1,390.5	1,150.4	240.07	5.792	
9,700.0	9,439.3	9,405.2	9,403.3	43.4	206.2	163.01	455.6	-666.1	1,378.3	1,135.6	242.74	5.678	
9,800.0	9,527.0	9,493.1	9,491.1	43.6	208.4	166.82	458.6	-666.1	1,357.7	1,112.6	245.18	5.538	
9,900.0	9,602.9	9,573.1	9,571.1	43.8	210.6	172.01	461.2	-666.1	1,330.9	1,083.4	247.46	5.378	
10,000.0	9,663.6	9,636.9	9,634.8	43.9	212.2	177.81	463.2	-666.1	1,300.9	1,051.7	249.23	5.220	
10,100.0	9,706.6	9,682.5	9,680.5	43.9	213.4	183.33	464.6	-666.1	1,271.3	1,020.9	250.49	5.076	
10,200.0	9,729.9	9,708.8	9,706.7	43.9	214.1	187.70	465.4	-666.1	1,245.6	994.4	251.22	4.958	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Nellis Federal 02 - OH - OH													Offset Site Error: 0.0 usft
Survey Program: 940-INC-ONLY													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.0	9,734.0	9,715.9	9,713.8	44.0	214.3	89.62	465.6	-666.1	1,226.1	974.6	251.45	4.876	
10,400.0	9,734.0	9,719.0	9,716.9	44.0	214.4	89.76	465.7	-666.1	1,211.7	960.1	251.60	4.816	
10,500.0	9,734.0	9,722.0	9,719.9	44.1	214.5	89.91	465.8	-666.1	1,203.1	951.3	251.77	4.778	
10,554.6	9,734.0	9,723.7	9,721.6	44.1	214.5	89.99	465.8	-666.1	1,201.8	949.9	251.88	4.771	
10,600.0	9,734.0	9,725.1	9,723.0	44.2	214.5	90.05	465.9	-666.1	1,202.7	950.7	251.96	4.773	
10,700.0	9,734.0	9,728.1	9,726.0	44.3	214.6	90.20	465.9	-666.1	1,210.6	958.4	252.18	4.800	
10,800.0	9,734.0	9,731.2	9,729.1	44.5	214.7	90.35	466.0	-666.1	1,226.6	974.2	252.42	4.859	
10,900.0	9,734.0	9,734.2	9,732.2	44.8	214.8	90.49	466.1	-666.1	1,250.4	997.8	252.67	4.949	
11,000.0	9,734.0	9,737.3	9,735.2	45.1	214.8	90.64	466.2	-666.1	1,281.6	1,028.7	252.91	5.067	
11,100.0	9,734.0	9,740.3	9,738.3	45.4	214.9	90.78	466.3	-666.1	1,319.7	1,066.5	253.16	5.213	
11,200.0	9,734.0	9,743.4	9,741.3	45.8	215.0	90.93	466.4	-666.1	1,364.0	1,110.6	253.39	5.383	
11,300.0	9,734.0	9,746.4	9,744.4	46.3	215.1	91.07	466.5	-666.1	1,414.0	1,160.4	253.62	5.575	
11,400.0	9,734.0	9,749.5	9,747.4	46.8	215.2	91.22	466.6	-666.1	1,469.2	1,215.3	253.83	5.788	
11,500.0	9,734.0	9,752.6	9,750.5	47.3	215.2	91.36	466.7	-666.1	1,528.8	1,274.8	254.03	6.018	
11,600.0	9,734.0	9,755.6	9,753.5	47.9	215.3	91.51	466.8	-666.1	1,592.6	1,338.3	254.22	6.265	
11,700.0	9,734.0	9,758.7	9,756.6	48.5	215.4	91.65	466.9	-666.1	1,659.9	1,405.5	254.39	6.525	
11,800.0	9,734.0	9,761.7	9,759.6	49.2	215.5	91.80	467.0	-666.1	1,730.3	1,475.8	254.56	6.797	
11,900.0	9,734.0	9,764.8	9,762.7	49.9	215.6	91.95	467.1	-666.1	1,803.6	1,548.8	254.71	7.081	
12,000.0	9,734.0	9,767.8	9,765.7	50.7	215.6	92.09	467.2	-666.1	1,879.3	1,624.4	254.86	7.374	
12,100.0	9,734.0	9,770.9	9,768.8	51.5	215.7	92.24	467.3	-666.1	1,957.2	1,702.2	255.00	7.675	
12,200.0	9,734.0	9,773.9	9,771.8	52.3	215.8	92.38	467.3	-666.1	2,037.0	1,781.8	255.13	7.984	
12,300.0	9,734.0	9,777.0	9,774.9	53.2	215.9	92.53	467.4	-666.1	2,118.5	1,863.2	255.26	8.299	
12,400.0	9,734.0	9,780.0	9,777.9	54.0	216.0	92.67	467.5	-666.1	2,201.5	1,946.1	255.39	8.620	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Nellis Federal 03 - OH - OH													Offset Site Error:	0.0 usft
Survey Program: 471-INC-ONLY				Rule Assigned:									Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
11,100.0	9,734.0	9,673.0	9,670.3	45.4	227.1	-69.84	3,135.3	-2,078.6	2,143.6	1,873.1	270.45	7.926		
11,200.0	9,734.0	9,676.3	9,673.6	45.8	227.2	-70.70	3,135.4	-2,078.6	2,044.1	1,773.6	270.46	7.558		
11,300.0	9,734.0	9,679.5	9,676.8	46.3	227.3	-71.56	3,135.5	-2,078.6	1,944.6	1,674.1	270.47	7.190		
11,400.0	9,734.0	9,682.8	9,680.1	46.8	227.4	-72.44	3,135.6	-2,078.6	1,845.1	1,574.7	270.47	6.822		
11,500.0	9,734.0	9,686.0	9,683.3	47.3	227.5	-73.33	3,135.7	-2,078.6	1,745.8	1,475.3	270.46	6.455		
11,600.0	9,734.0	9,689.3	9,686.6	47.9	227.6	-74.23	3,135.8	-2,078.6	1,646.5	1,376.0	270.44	6.088		
11,700.0	9,734.0	9,692.6	9,689.9	48.5	227.7	-75.14	3,135.9	-2,078.6	1,547.3	1,276.9	270.40	5.722		
11,800.0	9,734.0	9,695.9	9,693.2	49.2	227.7	-76.05	3,136.0	-2,078.6	1,448.1	1,177.8	270.35	5.356		
11,900.0	9,734.0	9,699.2	9,696.4	49.9	227.8	-76.98	3,136.1	-2,078.6	1,349.1	1,078.9	270.29	4.992		
12,000.0	9,734.0	9,702.4	9,699.7	50.7	227.9	-77.92	3,136.2	-2,078.6	1,250.3	980.1	270.20	4.627		
12,100.0	9,734.0	9,705.7	9,703.0	51.5	228.0	-78.86	3,136.4	-2,078.6	1,151.6	881.6	270.09	4.264		
12,200.0	9,734.0	9,709.1	9,706.3	52.3	228.1	-79.81	3,136.5	-2,078.6	1,053.2	783.3	269.94	3.902		
12,300.0	9,734.0	9,712.4	9,709.6	53.2	228.2	-80.77	3,136.6	-2,078.6	955.1	685.4	269.76	3.541		
12,400.0	9,734.0	9,715.7	9,713.0	54.0	228.3	-81.74	3,136.7	-2,078.6	857.5	587.9	269.54	3.181		
12,500.0	9,734.0	9,719.0	9,716.3	54.9	228.4	-82.71	3,136.8	-2,078.6	760.4	491.1	269.27	2.824		
12,600.0	9,734.0	9,722.3	9,719.6	55.9	228.5	-83.69	3,136.9	-2,078.6	664.2	395.2	268.95	2.470		
12,700.0	9,734.0	9,725.7	9,722.9	56.8	228.6	-84.67	3,137.0	-2,078.6	569.3	300.6	268.61	2.119		
12,800.0	9,734.0	9,729.0	9,726.3	57.8	228.7	-85.66	3,137.1	-2,078.6	476.4	208.0	268.34	1.775		
12,900.0	9,734.0	9,732.4	9,729.6	58.8	228.8	-86.65	3,137.2	-2,078.6	387.0	118.6	268.44	1.442	Level 3	
13,000.0	9,734.0	9,735.7	9,733.0	59.9	228.9	-87.65	3,137.4	-2,078.6	304.3	34.5	269.83	1.128	Level 2	
13,100.0	9,734.0	9,739.1	9,736.3	60.9	229.0	-88.65	3,137.5	-2,078.6	235.5	-39.3	274.74	0.857	Level 1	
13,200.0	9,734.0	9,742.4	9,739.7	62.0	229.0	-89.65	3,137.6	-2,078.6	195.5	-89.1	284.64	0.687	Level 1	
13,236.1	9,734.0	9,743.7	9,740.9	62.3	229.1	-90.01	3,137.6	-2,078.6	192.2	-96.0	288.19	0.667	Level 1, CC, ES, SF	
13,300.0	9,734.0	9,745.8	9,743.1	63.0	229.1	-90.66	3,137.7	-2,078.6	202.5	-89.4	291.88	0.694	Level 1	
13,400.0	9,734.0	9,749.2	9,746.4	64.1	229.2	-91.66	3,137.8	-2,078.6	252.5	-38.9	291.35	0.867	Level 1	
13,500.0	9,734.0	9,752.6	9,749.8	65.2	229.3	-92.67	3,137.9	-2,078.6	326.3	37.8	288.44	1.131	Level 2	
13,600.0	9,734.0	9,756.0	9,753.2	66.3	229.4	-93.68	3,138.0	-2,078.6	411.3	125.4	285.91	1.439	Level 3	
13,700.0	9,734.0	9,759.4	9,756.6	67.5	229.5	-94.68	3,138.2	-2,078.6	501.8	217.8	284.07	1.767		
13,800.0	9,734.0	9,762.8	9,760.0	68.6	229.6	-95.69	3,138.3	-2,078.6	595.4	312.6	282.75	2.106		
13,900.0	9,734.0	9,766.2	9,763.4	69.8	229.7	-96.69	3,138.4	-2,078.6	690.7	408.9	281.80	2.451		
14,000.0	9,734.0	9,769.6	9,766.8	70.9	229.8	-97.69	3,138.5	-2,078.6	787.2	506.1	281.10	2.801		
14,100.0	9,734.0	9,773.0	9,770.3	72.1	229.9	-98.69	3,138.6	-2,078.6	884.5	603.9	280.58	3.152		
14,200.0	9,734.0	9,776.4	9,773.7	73.3	230.0	-99.69	3,138.7	-2,078.6	982.3	702.1	280.18	3.506		
14,300.0	9,734.0	9,779.9	9,777.1	74.5	230.1	-100.68	3,138.9	-2,078.6	1,080.5	800.6	279.89	3.860		
14,400.0	9,734.0	9,783.3	9,780.5	75.7	230.2	-101.67	3,139.0	-2,078.6	1,179.0	899.3	279.66	4.216		
14,500.0	9,734.0	9,786.8	9,784.0	76.9	230.3	-102.65	3,139.1	-2,078.6	1,277.7	998.2	279.49	4.571		
14,600.0	9,734.0	9,790.2	9,787.4	78.1	230.4	-103.62	3,139.2	-2,078.6	1,376.5	1,097.2	279.36	4.927		
14,700.0	9,734.0	9,793.7	9,790.9	79.4	230.5	-104.59	3,139.3	-2,078.6	1,475.6	1,196.3	279.27	5.284		
14,800.0	9,734.0	9,797.1	9,794.4	80.6	230.6	-105.56	3,139.4	-2,078.6	1,574.7	1,295.5	279.21	5.640		
14,900.0	9,734.0	9,800.6	9,797.8	81.9	230.7	-106.51	3,139.6	-2,078.6	1,674.0	1,394.8	279.18	5.996		
15,000.0	9,734.0	9,804.1	9,801.3	83.1	230.8	-107.46	3,139.7	-2,078.6	1,773.3	1,494.1	279.16	6.352		
15,100.0	9,734.0	9,807.6	9,804.8	84.4	230.9	-108.40	3,139.8	-2,078.6	1,872.7	1,593.5	279.16	6.708		
15,200.0	9,734.0	9,811.1	9,808.3	85.6	231.0	-109.33	3,139.9	-2,078.6	1,972.1	1,692.9	279.18	7.064		
15,300.0	9,734.0	9,814.6	9,811.8	86.9	231.1	-110.26	3,140.0	-2,078.6	2,071.6	1,792.4	279.20	7.420		
15,400.0	9,734.0	9,818.1	9,815.3	88.2	231.2	-111.17	3,140.2	-2,078.6	2,171.1	1,891.9	279.24	7.775		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Offset Wells - Gazelle 31 Federal 1 - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 230-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
16,800.0	9,734.0	9,781.3	9,778.9	106.5	34.7	90.00	8,222.7	-380.3	2,157.3	2,030.3	126.93	16.995	
16,900.0	9,734.0	9,781.3	9,778.9	107.8	34.7	90.00	8,222.7	-380.3	2,088.5	1,959.0	129.51	16.126	
17,000.0	9,734.0	9,781.3	9,778.9	109.1	34.7	90.00	8,222.7	-380.3	2,022.4	1,890.2	132.17	15.301	
17,100.0	9,734.0	9,781.3	9,778.9	110.5	34.7	90.00	8,222.7	-380.3	1,959.1	1,824.2	134.91	14.522	
17,200.0	9,734.0	9,781.3	9,778.9	111.8	34.7	90.00	8,222.7	-380.3	1,899.0	1,761.3	137.69	13.792	
17,300.0	9,734.0	9,781.3	9,778.9	113.2	34.7	90.00	8,222.7	-380.3	1,842.4	1,701.9	140.50	13.113	
17,400.0	9,734.0	9,781.3	9,778.9	114.5	34.7	90.00	8,222.7	-380.3	1,789.6	1,646.3	143.31	12.488	
17,500.0	9,734.0	9,781.3	9,778.9	115.9	34.7	90.00	8,222.7	-380.3	1,740.9	1,594.8	146.06	11.919	
17,600.0	9,734.0	9,781.3	9,778.9	117.2	34.7	90.00	8,222.7	-380.3	1,696.7	1,548.0	148.72	11.409	
17,700.0	9,734.0	9,781.3	9,778.9	118.6	34.7	90.00	8,222.7	-380.3	1,657.4	1,506.2	151.24	10.959	
17,800.0	9,734.0	9,781.3	9,778.9	119.9	34.7	90.00	8,222.7	-380.3	1,623.3	1,469.8	153.54	10.573	
17,900.0	9,734.0	9,781.3	9,778.9	121.3	34.7	90.00	8,222.7	-380.3	1,594.8	1,439.2	155.57	10.251	
18,000.0	9,734.0	9,781.3	9,778.9	122.7	34.7	90.00	8,222.7	-380.3	1,572.1	1,414.8	157.28	9.995	
18,100.0	9,734.0	9,781.3	9,778.9	124.0	34.7	90.00	8,222.7	-380.3	1,555.5	1,396.9	158.61	9.807	
18,200.0	9,734.0	9,781.3	9,778.9	125.4	34.7	90.00	8,222.7	-380.3	1,545.2	1,385.7	159.51	9.687	
18,300.0	9,734.0	9,781.3	9,778.9	126.8	34.7	90.00	8,222.7	-380.3	1,541.4	1,381.4	159.96	9.636	
18,309.3	9,734.0	9,781.3	9,778.9	126.9	34.7	90.00	8,222.7	-380.3	1,541.4	1,381.4	159.97	9.635 CC, ES, SF	
18,400.0	9,734.0	9,781.3	9,778.9	128.1	34.7	90.00	8,222.7	-380.3	1,544.0	1,384.1	159.94	9.654	
18,500.0	9,734.0	9,781.3	9,778.9	129.5	34.7	90.00	8,222.7	-380.3	1,553.1	1,393.7	159.46	9.740	
18,600.0	9,734.0	9,781.3	9,778.9	130.9	34.7	90.00	8,222.7	-380.3	1,568.5	1,410.0	158.54	9.894	
18,700.0	9,734.0	9,781.3	9,778.9	132.2	34.7	90.00	8,222.7	-380.3	1,590.1	1,432.9	157.22	10.114	
18,800.0	9,734.0	9,781.3	9,778.9	133.6	34.7	90.00	8,222.7	-380.3	1,617.6	1,462.0	155.55	10.399	
18,900.0	9,734.0	9,781.3	9,778.9	135.0	34.7	90.00	8,222.7	-380.3	1,650.7	1,497.1	153.59	10.747	
19,000.0	9,734.0	9,781.3	9,778.9	136.4	34.7	90.00	8,222.7	-380.3	1,689.0	1,537.6	151.40	11.156	
19,100.0	9,734.0	9,781.3	9,778.9	137.7	34.7	90.00	8,222.7	-380.3	1,732.3	1,583.3	149.03	11.624	
19,200.0	9,734.0	9,781.3	9,778.9	139.1	34.7	90.00	8,222.7	-380.3	1,780.2	1,633.7	146.53	12.149	
19,300.0	9,734.0	9,781.3	9,778.9	140.5	34.7	90.00	8,222.7	-380.3	1,832.3	1,688.3	143.97	12.727	
19,400.0	9,734.0	9,781.3	9,778.9	141.9	34.7	90.00	8,222.7	-380.3	1,888.2	1,746.9	141.38	13.356	
19,500.0	9,734.0	9,781.3	9,778.9	143.3	34.7	90.00	8,222.7	-380.3	1,947.7	1,808.9	138.80	14.033	
19,600.0	9,734.0	9,781.3	9,778.9	144.7	34.7	90.00	8,222.7	-380.3	2,010.4	1,874.2	136.25	14.756	
19,700.0	9,734.0	9,781.3	9,778.9	146.1	34.7	90.00	8,222.7	-380.3	2,076.0	1,942.3	133.75	15.521	
19,800.0	9,734.0	9,781.3	9,778.9	147.4	34.7	90.00	8,222.7	-380.3	2,144.3	2,013.0	131.34	16.327	
19,900.0	9,734.0	9,781.3	9,778.9	148.8	34.7	90.00	8,222.7	-380.3	2,215.0	2,086.0	129.00	17.170	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Offset Wells - Hudson Federal 31 #2 - OH - P & A													Offset Site Error:	0.0 usft
Survey Program: 1000-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
17,600.0	9,734.0	9,767.9	9,767.9	117.2	183.0	-90.00	9,183.6	-3,310.1	2,183.4	1,933.0	250.37	8.720		
17,700.0	9,734.0	9,767.9	9,767.9	118.6	183.0	-90.00	9,183.6	-3,310.1	2,106.9	1,853.4	253.44	8.313		
17,800.0	9,734.0	9,767.9	9,767.9	119.9	183.0	-90.00	9,183.6	-3,310.1	2,032.4	1,775.7	256.76	7.916		
17,900.0	9,734.0	9,767.9	9,767.9	121.3	183.0	-90.00	9,183.6	-3,310.1	1,960.3	1,699.9	260.34	7.530		
18,000.0	9,734.0	9,767.9	9,767.9	122.7	183.0	-90.00	9,183.6	-3,310.1	1,890.7	1,626.5	264.18	7.157		
18,100.0	9,734.0	9,767.9	9,767.9	124.0	183.0	-90.00	9,183.6	-3,310.1	1,823.9	1,555.6	268.29	6.798		
18,200.0	9,734.0	9,767.9	9,767.9	125.4	183.0	-90.00	9,183.6	-3,310.1	1,760.2	1,487.6	272.66	6.456		
18,300.0	9,734.0	9,767.9	9,767.9	126.8	183.0	-90.00	9,183.6	-3,310.1	1,700.1	1,422.8	277.25	6.132		
18,400.0	9,734.0	9,767.9	9,767.9	128.1	183.0	-90.00	9,183.6	-3,310.1	1,643.8	1,361.8	282.05	5.828		
18,500.0	9,734.0	9,767.9	9,767.9	129.5	183.0	-90.00	9,183.6	-3,310.1	1,591.9	1,304.9	287.01	5.546		
18,600.0	9,734.0	9,767.9	9,767.9	130.9	183.0	-90.00	9,183.6	-3,310.1	1,544.6	1,252.6	292.06	5.289		
18,700.0	9,734.0	9,767.9	9,767.9	132.2	183.0	-90.00	9,183.6	-3,310.1	1,502.6	1,205.5	297.14	5.057		
18,800.0	9,734.0	9,767.9	9,767.9	133.6	183.0	-90.00	9,183.6	-3,310.1	1,466.2	1,164.1	302.14	4.853		
18,900.0	9,734.0	9,767.9	9,767.9	135.0	183.0	-90.00	9,183.6	-3,310.1	1,435.8	1,128.9	306.97	4.677		
19,000.0	9,734.0	9,767.9	9,767.9	136.4	183.0	-90.00	9,183.6	-3,310.1	1,411.9	1,100.4	311.50	4.533		
19,100.0	9,734.0	9,767.9	9,767.9	137.7	183.0	-90.00	9,183.6	-3,310.1	1,394.8	1,079.1	315.63	4.419		
19,200.0	9,734.0	9,767.9	9,767.9	139.1	183.0	-90.00	9,183.6	-3,310.1	1,384.7	1,065.4	319.25	4.337		
19,290.5	9,734.0	9,767.9	9,767.9	140.4	183.0	-90.00	9,183.6	-3,310.1	1,381.7	1,059.7	322.01	4.291 CC		
19,300.0	9,734.0	9,767.9	9,767.9	140.5	183.0	-90.00	9,183.6	-3,310.1	1,381.7	1,059.5	322.27	4.287 ES		
19,400.0	9,734.0	9,767.9	9,767.9	141.9	183.0	-90.00	9,183.6	-3,310.1	1,386.0	1,061.4	324.64	4.269 SF		
19,500.0	9,734.0	9,767.9	9,767.9	143.3	183.0	-90.00	9,183.6	-3,310.1	1,397.5	1,071.2	326.32	4.283		
19,600.0	9,734.0	9,767.9	9,767.9	144.7	183.0	-90.00	9,183.6	-3,310.1	1,415.9	1,088.6	327.33	4.326		
19,700.0	9,734.0	9,767.9	9,767.9	146.1	183.0	-90.00	9,183.6	-3,310.1	1,441.1	1,113.4	327.70	4.398		
19,800.0	9,734.0	9,767.9	9,767.9	147.4	183.0	-90.00	9,183.6	-3,310.1	1,472.6	1,145.1	327.48	4.497		
19,900.0	9,734.0	9,767.9	9,767.9	148.8	183.0	-90.00	9,183.6	-3,310.1	1,510.1	1,183.4	326.76	4.622		
20,000.0	9,734.0	9,767.9	9,767.9	150.2	183.0	-90.00	9,183.6	-3,310.1	1,553.2	1,227.6	325.61	4.770		
20,100.0	9,734.0	9,767.9	9,767.9	151.6	183.0	-90.00	9,183.6	-3,310.1	1,601.3	1,277.2	324.12	4.941		
20,200.0	9,734.0	9,767.9	9,767.9	152.9	183.0	-90.00	9,183.6	-3,310.1	1,654.1	1,331.3	322.85	5.124		
20,207.7	9,734.0	9,767.9	9,767.9	153.0	183.0	-90.00	9,183.6	-3,310.1	1,658.4	1,335.6	322.75	5.138		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 301H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
7,400.0	7,203.5	6,923.9	6,851.9	33.0	26.8	9.22	-249.7	-3,569.4	2,210.0	2,157.2	52.86	41.812	
7,500.0	7,299.4	7,023.0	6,949.5	33.6	27.3	9.12	-258.0	-3,584.8	2,197.6	2,144.0	53.64	40.968	
7,600.0	7,395.4	7,122.2	7,047.1	34.1	27.7	9.02	-266.3	-3,600.2	2,185.2	2,130.7	54.43	40.148	
7,700.0	7,491.3	7,221.3	7,144.7	34.6	28.1	8.93	-274.6	-3,615.6	2,172.7	2,117.5	55.21	39.352	
7,800.0	7,587.3	7,320.5	7,242.3	35.2	28.5	8.83	-282.9	-3,631.0	2,160.3	2,104.3	56.00	38.578	
7,900.0	7,683.2	7,419.6	7,339.9	35.7	29.0	8.72	-291.2	-3,646.4	2,147.9	2,091.1	56.78	37.826	
8,000.0	7,779.2	7,518.8	7,437.5	36.2	29.4	8.62	-299.5	-3,661.8	2,135.5	2,077.9	57.57	37.095	
8,100.0	7,875.1	7,698.4	7,614.7	36.8	30.1	8.47	-313.3	-3,687.5	2,122.3	2,063.7	58.61	36.209	
8,200.0	7,971.1	7,984.4	7,899.5	37.3	31.2	8.49	-324.8	-3,708.9	2,101.8	2,042.1	59.69	35.214	
8,300.0	8,067.0	8,146.1	8,061.2	37.9	31.7	8.66	-325.7	-3,710.4	2,074.4	2,014.0	60.41	34.337	
8,400.0	8,163.0	8,242.0	8,157.2	38.4	32.0	8.78	-325.7	-3,710.4	2,046.6	1,985.4	61.13	33.477	
8,500.0	8,258.9	8,338.0	8,253.1	38.9	32.3	8.90	-325.7	-3,710.4	2,018.7	1,956.9	61.85	32.637	
8,600.0	8,354.9	8,434.5	8,349.6	39.5	32.6	9.03	-325.5	-3,710.4	1,990.9	1,928.3	62.58	31.816	
8,700.0	8,451.4	8,532.1	8,446.2	40.0	32.9	9.44	-312.9	-3,710.5	1,964.8	1,901.5	63.30	31.038	
8,800.0	8,548.7	8,620.6	8,530.0	40.5	33.1	10.31	-284.7	-3,710.7	1,942.5	1,878.4	64.05	30.326	
8,900.0	8,646.8	8,696.5	8,596.6	40.9	33.2	11.40	-248.6	-3,710.9	1,924.7	1,859.9	64.83	29.691	
9,000.0	8,745.5	8,759.3	8,646.9	41.3	33.3	12.53	-211.0	-3,711.2	1,912.5	1,846.9	65.59	29.159	
9,100.0	8,844.7	8,810.6	8,684.1	41.7	33.3	13.60	-175.6	-3,711.5	1,906.6	1,840.3	66.30	28.756	
9,134.2	8,878.7	8,825.0	8,693.8	41.8	33.4	13.92	-165.0	-3,711.5	1,906.2	1,839.7	66.52	28.654 CC	
9,200.0	8,944.2	8,850.0	8,709.8	42.1	33.4	14.51	-145.9	-3,711.7	1,907.7	1,840.8	66.92	28.508	
9,300.0	9,044.1	8,887.0	8,731.8	42.4	33.4	15.46	-116.1	-3,711.9	1,916.2	1,848.8	67.43	28.417	
9,400.0	9,144.0	8,915.6	8,747.1	42.7	33.4	16.27	-92.0	-3,712.0	1,932.3	1,864.5	67.80	28.499	
9,500.0	9,244.0	8,939.5	8,758.8	42.9	33.4	-82.72	-71.1	-3,712.2	1,954.7	1,886.6	68.03	28.734	
9,600.0	9,343.6	8,962.7	8,769.1	43.2	33.4	-75.98	-50.4	-3,712.3	1,979.7	1,911.6	68.11	29.067	
9,700.0	9,439.3	8,989.4	8,779.7	43.4	33.4	-72.51	-25.9	-3,712.5	2,003.8	1,935.8	68.04	29.452	
9,800.0	9,527.0	9,025.0	8,791.7	43.6	33.3	-69.33	7.7	-3,712.7	2,025.7	1,957.8	67.90	29.833	
9,900.0	9,602.9	9,050.0	8,798.6	43.8	33.3	-66.91	31.7	-3,712.9	2,043.8	1,976.1	67.66	30.206	
10,000.0	9,663.6	9,075.0	8,804.3	43.9	33.3	-65.12	56.0	-3,713.1	2,057.3	1,989.8	67.46	30.496	
10,100.0	9,706.6	9,116.3	8,810.8	43.9	33.3	-63.91	96.7	-3,713.3	2,065.2	1,997.8	67.43	30.628	
10,200.0	9,729.9	9,150.0	8,813.5	43.9	33.2	-63.54	130.4	-3,713.6	2,067.3	1,999.8	67.52	30.619	
10,300.0	9,734.0	9,209.7	8,814.0	44.0	33.2	-63.69	190.1	-3,714.0	2,063.8	1,996.0	67.83	30.429	
10,400.0	9,734.0	9,309.7	8,814.0	44.0	33.1	-63.68	290.1	-3,714.7	2,061.7	1,993.4	68.34	30.171	
10,490.8	9,734.0	9,400.5	8,814.0	44.1	33.1	-63.68	380.9	-3,715.3	2,061.5	1,992.6	68.89	29.923	
10,500.0	9,734.0	9,409.7	8,814.0	44.1	33.1	-63.68	390.1	-3,715.4	2,061.7	1,992.7	68.95	29.899	
10,600.0	9,734.0	9,509.7	8,814.0	44.2	33.2	-63.68	490.1	-3,716.1	2,061.7	1,992.0	69.67	29.591	
10,700.0	9,734.0	9,609.7	8,814.0	44.3	33.4	-63.68	590.0	-3,716.8	2,061.7	1,991.2	70.49	29.249	
10,800.0	9,734.0	9,709.7	8,814.0	44.5	33.8	-63.68	690.0	-3,717.5	2,061.7	1,990.3	71.39	28.878	
10,900.0	9,734.0	9,809.7	8,814.0	44.8	34.2	-63.68	790.0	-3,718.2	2,061.7	1,989.3	72.39	28.480	
11,000.0	9,734.0	9,909.7	8,814.0	45.1	34.8	-63.68	890.0	-3,718.9	2,061.7	1,988.2	73.47	28.061	
11,100.0	9,734.0	10,009.7	8,814.0	45.4	35.4	-63.68	990.0	-3,719.5	2,061.7	1,987.1	74.63	27.624	
11,200.0	9,734.0	10,109.7	8,814.0	45.8	36.0	-63.68	1,090.0	-3,720.2	2,061.7	1,985.8	75.88	27.172	
11,300.0	9,734.0	10,209.7	8,814.0	46.3	36.7	-63.68	1,190.0	-3,720.9	2,061.7	1,984.5	77.19	26.709	
11,400.0	9,734.0	10,309.7	8,814.0	46.8	37.4	-63.68	1,290.0	-3,721.6	2,061.7	1,983.1	78.58	26.238	
11,500.0	9,734.0	10,409.7	8,814.0	47.3	38.1	-63.68	1,390.0	-3,722.3	2,061.7	1,981.7	80.03	25.762	
11,600.0	9,734.0	10,509.7	8,814.0	47.9	38.9	-63.68	1,490.0	-3,723.0	2,061.7	1,980.1	81.54	25.284	
11,700.0	9,734.0	10,609.7	8,814.0	48.5	39.8	-63.68	1,590.0	-3,723.7	2,061.7	1,978.6	83.12	24.805	
11,800.0	9,734.0	10,709.7	8,814.0	49.2	40.7	-63.68	1,690.0	-3,724.4	2,061.7	1,976.9	84.75	24.328	
11,900.0	9,734.0	10,809.7	8,814.0	49.9	41.6	-63.68	1,790.0	-3,725.1	2,061.7	1,975.3	86.43	23.854	
12,000.0	9,734.0	10,909.7	8,814.0	50.7	42.5	-63.68	1,890.0	-3,725.8	2,061.7	1,973.5	88.16	23.385	
12,100.0	9,734.0	11,009.7	8,814.0	51.5	43.4	-63.68	1,990.0	-3,726.5	2,061.7	1,971.8	89.94	22.922	
12,200.0	9,734.0	11,109.7	8,814.0	52.3	44.4	-63.68	2,090.0	-3,727.2	2,061.7	1,969.9	91.77	22.466	
12,300.0	9,734.0	11,209.7	8,814.0	53.2	45.4	-63.68	2,190.0	-3,727.9	2,061.7	1,968.1	93.63	22.019	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 301H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,400.0	9,734.0	11,309.7	8,814.0	54.0	46.5	-63.68	2,290.0	-3,728.6	2,061.7	1,966.2	95.54	21.580	
12,500.0	9,734.0	11,409.7	8,814.0	54.9	47.5	-63.68	2,390.0	-3,729.3	2,061.7	1,964.2	97.48	21.150	
12,600.0	9,734.0	11,509.7	8,814.0	55.9	48.6	-63.68	2,490.0	-3,730.0	2,061.7	1,962.2	99.46	20.730	
12,700.0	9,734.0	11,609.7	8,814.0	56.8	49.7	-63.68	2,590.0	-3,730.7	2,061.7	1,960.2	101.46	20.319	
12,800.0	9,734.0	11,709.7	8,814.0	57.8	50.8	-63.68	2,690.0	-3,731.3	2,061.7	1,958.2	103.50	19.919	
12,900.0	9,734.0	11,809.7	8,814.0	58.8	51.9	-63.68	2,790.0	-3,732.0	2,061.7	1,956.1	105.57	19.529	
13,000.0	9,734.0	11,909.7	8,814.0	59.9	53.0	-63.68	2,890.0	-3,732.7	2,061.7	1,954.0	107.67	19.149	
13,100.0	9,734.0	12,009.7	8,814.0	60.9	54.2	-63.68	2,990.0	-3,733.4	2,061.7	1,951.9	109.79	18.779	
13,200.0	9,734.0	12,109.7	8,814.0	62.0	55.4	-63.68	3,090.0	-3,734.1	2,061.7	1,949.8	111.94	18.419	
13,300.0	9,734.0	12,209.7	8,814.0	63.0	56.5	-63.68	3,190.0	-3,734.8	2,061.7	1,947.6	114.10	18.069	
13,400.0	9,734.0	12,309.7	8,814.0	64.1	57.7	-63.68	3,290.0	-3,735.5	2,061.7	1,945.4	116.29	17.728	
13,500.0	9,734.0	12,409.7	8,814.0	65.2	58.9	-63.68	3,390.0	-3,736.2	2,061.7	1,943.2	118.50	17.398	
13,600.0	9,734.0	12,509.7	8,814.0	66.3	60.1	-63.68	3,490.0	-3,736.9	2,061.7	1,941.0	120.73	17.077	
13,700.0	9,734.0	12,609.7	8,814.0	67.5	61.4	-63.68	3,590.0	-3,737.6	2,061.7	1,938.7	122.98	16.764	
13,800.0	9,734.0	12,709.7	8,814.0	68.6	62.6	-63.68	3,690.0	-3,738.3	2,061.7	1,936.5	125.25	16.461	
13,900.0	9,734.0	12,809.7	8,814.0	69.8	63.8	-63.68	3,790.0	-3,739.0	2,061.7	1,934.2	127.53	16.167	
14,000.0	9,734.0	12,909.7	8,814.0	70.9	65.1	-63.68	3,890.0	-3,739.7	2,061.7	1,931.9	129.82	15.881	
14,100.0	9,734.0	13,009.7	8,814.0	72.1	66.4	-63.68	3,990.0	-3,740.4	2,061.7	1,929.6	132.13	15.603	
14,200.0	9,734.0	13,109.7	8,814.0	73.3	67.6	-63.68	4,090.0	-3,741.1	2,061.7	1,927.3	134.46	15.333	
14,300.0	9,734.0	13,209.7	8,814.0	74.5	68.9	-63.68	4,190.0	-3,741.8	2,061.7	1,924.9	136.80	15.071	
14,400.0	9,734.0	13,309.7	8,814.0	75.7	70.2	-63.68	4,290.0	-3,742.5	2,061.7	1,922.6	139.15	14.817	
14,500.0	9,734.0	13,409.7	8,814.0	76.9	71.5	-63.68	4,390.0	-3,743.1	2,061.7	1,920.2	141.51	14.569	
14,600.0	9,734.0	13,509.7	8,814.0	78.1	72.8	-63.68	4,490.0	-3,743.8	2,061.7	1,917.8	143.89	14.329	
14,700.0	9,734.0	13,609.7	8,814.0	79.4	74.1	-63.68	4,590.0	-3,744.5	2,061.7	1,915.4	146.27	14.095	
14,800.0	9,734.0	13,709.7	8,814.0	80.6	75.4	-63.68	4,690.0	-3,745.2	2,061.7	1,913.1	148.66	13.868	
14,900.0	9,734.0	13,809.7	8,814.0	81.9	76.7	-63.68	4,789.9	-3,745.9	2,061.7	1,910.6	151.07	13.647	
15,000.0	9,734.0	13,909.7	8,814.0	83.1	78.0	-63.68	4,889.9	-3,746.6	2,061.7	1,908.2	153.48	13.433	
15,100.0	9,734.0	14,009.7	8,814.0	84.4	79.3	-63.68	4,989.9	-3,747.3	2,061.7	1,905.8	155.91	13.224	
15,200.0	9,734.0	14,109.7	8,814.0	85.6	80.6	-63.68	5,089.9	-3,748.0	2,061.7	1,903.4	158.34	13.021	
15,300.0	9,734.0	14,209.7	8,814.0	86.9	81.9	-63.68	5,189.9	-3,748.7	2,061.7	1,900.9	160.78	12.824	
15,400.0	9,734.0	14,309.7	8,814.0	88.2	83.3	-63.68	5,289.9	-3,749.4	2,061.7	1,898.5	163.22	12.631	
15,500.0	9,734.0	14,409.7	8,814.0	89.4	84.6	-63.68	5,389.9	-3,750.1	2,061.7	1,896.0	165.68	12.444	
15,600.0	9,734.0	14,509.7	8,814.0	90.7	85.9	-63.68	5,489.9	-3,750.8	2,061.7	1,893.6	168.14	12.262	
15,700.0	9,734.0	14,609.7	8,814.0	92.0	87.3	-63.68	5,589.9	-3,751.5	2,061.7	1,891.1	170.61	12.085	
15,800.0	9,734.0	14,709.7	8,814.0	93.3	88.6	-63.68	5,689.9	-3,752.2	2,061.7	1,888.6	173.08	11.912	
15,900.0	9,734.0	14,809.7	8,814.0	94.6	90.0	-63.68	5,789.9	-3,752.9	2,061.7	1,886.2	175.56	11.744	
16,000.0	9,734.0	14,909.7	8,814.0	95.9	91.3	-63.68	5,889.9	-3,753.6	2,061.7	1,883.7	178.05	11.580	
16,100.0	9,734.0	15,009.7	8,814.0	97.2	92.7	-63.68	5,989.9	-3,754.3	2,061.7	1,881.2	180.54	11.420	
16,200.0	9,734.0	15,109.7	8,814.0	98.5	94.0	-63.68	6,089.9	-3,755.0	2,061.7	1,878.7	183.04	11.264	
16,300.0	9,734.0	15,209.7	8,814.0	99.9	95.4	-63.68	6,189.9	-3,755.6	2,061.7	1,876.2	185.54	11.112	
16,400.0	9,734.0	15,309.7	8,814.0	101.2	96.8	-63.68	6,289.9	-3,756.3	2,061.7	1,873.7	188.05	10.964	
16,500.0	9,734.0	15,409.7	8,814.0	102.5	98.1	-63.68	6,389.9	-3,757.0	2,061.7	1,871.2	190.56	10.819	
16,600.0	9,734.0	15,509.7	8,814.0	103.8	99.5	-63.68	6,489.9	-3,757.7	2,061.7	1,868.7	193.08	10.678	
16,700.0	9,734.0	15,609.7	8,814.0	105.1	100.9	-63.68	6,589.9	-3,758.4	2,061.7	1,866.1	195.60	10.540	
16,800.0	9,734.0	15,709.7	8,814.0	106.5	102.2	-63.68	6,689.9	-3,759.1	2,061.7	1,863.6	198.13	10.406	
16,900.0	9,734.0	15,809.7	8,814.0	107.8	103.6	-63.68	6,789.9	-3,759.8	2,061.7	1,861.1	200.66	10.275	
17,000.0	9,734.0	15,909.7	8,814.0	109.1	105.0	-63.68	6,889.9	-3,760.5	2,061.7	1,858.5	203.19	10.147	
17,100.0	9,734.0	16,009.7	8,814.0	110.5	106.4	-63.68	6,989.9	-3,761.2	2,061.7	1,856.0	205.73	10.021	
17,200.0	9,734.0	16,109.7	8,814.0	111.8	107.7	-63.68	7,089.9	-3,761.9	2,061.7	1,853.5	208.27	9.899	
17,300.0	9,734.0	16,209.7	8,814.0	113.2	109.1	-63.68	7,189.9	-3,762.6	2,061.7	1,850.9	210.82	9.780	
17,400.0	9,734.0	16,309.7	8,814.0	114.5	110.5	-63.68	7,289.9	-3,763.3	2,061.7	1,848.4	213.37	9.663	
17,500.0	9,734.0	16,409.7	8,814.0	115.9	111.9	-63.68	7,389.9	-3,764.0	2,061.7	1,845.8	215.92	9.549	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 301H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned:				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
17,600.0	9,734.0	16,509.7	8,814.0	117.2	113.3	-63.68	7,489.9	-3,764.7	2,061.7	1,843.3	218.48	9.437		
17,700.0	9,734.0	16,609.7	8,814.0	118.6	114.7	-63.68	7,589.9	-3,765.4	2,061.7	1,840.7	221.03	9.328		
17,800.0	9,734.0	16,709.7	8,814.0	119.9	116.0	-63.68	7,689.9	-3,766.1	2,061.7	1,838.1	223.60	9.221		
17,900.0	9,734.0	16,809.7	8,814.0	121.3	117.4	-63.68	7,789.9	-3,766.8	2,061.7	1,835.6	226.16	9.116		
18,000.0	9,734.0	16,909.7	8,814.0	122.7	118.8	-63.68	7,889.9	-3,767.4	2,061.7	1,833.0	228.73	9.014		
18,100.0	9,734.0	17,009.7	8,814.0	124.0	120.2	-63.68	7,989.9	-3,768.1	2,061.7	1,830.4	231.30	8.914		
18,200.0	9,734.0	17,109.7	8,814.0	125.4	121.6	-63.68	8,089.9	-3,768.8	2,061.7	1,827.9	233.87	8.816		
18,300.0	9,734.0	17,209.7	8,814.0	126.8	123.0	-63.68	8,189.9	-3,769.5	2,061.7	1,825.3	236.44	8.720		
18,400.0	9,734.0	17,309.7	8,814.0	128.1	124.4	-63.68	8,289.9	-3,770.2	2,061.7	1,822.7	239.02	8.626		
18,500.0	9,734.0	17,409.7	8,814.0	129.5	125.8	-63.68	8,389.9	-3,770.9	2,061.7	1,820.1	241.60	8.534		
18,600.0	9,734.0	17,509.7	8,814.0	130.9	127.2	-63.68	8,489.9	-3,771.6	2,061.7	1,817.6	244.18	8.443		
18,700.0	9,734.0	17,609.7	8,814.0	132.2	128.6	-63.68	8,589.9	-3,772.3	2,061.7	1,815.0	246.77	8.355		
18,800.0	9,734.0	17,709.7	8,814.0	133.6	130.0	-63.68	8,689.9	-3,773.0	2,061.7	1,812.4	249.35	8.268		
18,900.0	9,734.0	17,809.7	8,814.0	135.0	131.4	-63.68	8,789.9	-3,773.7	2,061.8	1,809.8	251.94	8.183		
19,000.0	9,734.0	17,909.7	8,814.0	136.4	132.8	-63.68	8,889.8	-3,774.4	2,061.8	1,807.2	254.53	8.100		
19,100.0	9,734.0	18,009.7	8,814.0	137.7	134.2	-63.68	8,989.8	-3,775.1	2,061.8	1,804.6	257.12	8.019		
19,200.0	9,734.0	18,109.7	8,814.0	139.1	135.6	-63.68	9,089.8	-3,775.8	2,061.8	1,802.0	259.72	7.938		
19,300.0	9,734.0	18,209.7	8,814.0	140.5	137.0	-63.68	9,189.8	-3,776.5	2,061.8	1,799.4	262.31	7.860		
19,400.0	9,734.0	18,309.7	8,814.0	141.9	138.4	-63.68	9,289.8	-3,777.2	2,061.8	1,796.8	264.91	7.783		
19,500.0	9,734.0	18,409.7	8,814.0	143.3	139.8	-63.68	9,389.8	-3,777.9	2,061.8	1,794.2	267.51	7.707		
19,600.0	9,734.0	18,509.7	8,814.0	144.7	141.2	-63.68	9,489.8	-3,778.6	2,061.8	1,791.6	270.11	7.633		
19,700.0	9,734.0	18,609.7	8,814.0	146.1	142.6	-63.68	9,589.8	-3,779.2	2,061.8	1,789.0	272.71	7.560		
19,800.0	9,734.0	18,709.7	8,814.0	147.4	144.1	-63.68	9,689.8	-3,779.9	2,061.8	1,786.4	275.32	7.489		
19,900.0	9,734.0	18,809.7	8,814.0	148.8	145.5	-63.68	9,789.8	-3,780.6	2,061.8	1,783.8	277.92	7.418		
20,000.0	9,734.0	18,909.7	8,814.0	150.2	146.9	-63.68	9,889.8	-3,781.3	2,061.8	1,781.2	280.53	7.349		
20,100.0	9,734.0	19,009.7	8,814.0	151.6	148.3	-63.68	9,989.8	-3,782.0	2,061.8	1,778.6	283.14	7.282		
20,200.0	9,734.0	19,109.7	8,814.0	152.9	149.7	-63.68	10,089.8	-3,782.7	2,061.8	1,776.3	285.51	7.221		
20,200.0	9,734.0	19,109.7	8,814.0	152.9	149.7	-63.68	10,089.8	-3,782.7	2,061.8	1,776.3	285.51	7.221		
20,207.7	9,734.0	19,114.0	8,814.0	153.0	149.8	-63.68	10,094.1	-3,782.7	2,061.8	1,776.1	285.69	7.217 ES, SF		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 302H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
4,700.0	4,612.7	4,606.7	4,606.7	18.8	16.3	16.79	141.4	-2,823.9	2,201.2	2,168.1	33.06	66.576		
4,800.0	4,708.7	4,702.7	4,702.7	19.3	16.6	17.00	141.4	-2,823.9	2,174.1	2,140.3	33.80	64.318		
4,900.0	4,804.7	4,798.7	4,798.7	19.9	17.0	17.22	141.4	-2,823.9	2,147.1	2,112.6	34.54	62.155		
5,000.0	4,900.6	4,894.6	4,894.6	20.4	17.3	17.45	141.4	-2,823.9	2,120.1	2,084.8	35.29	60.080		
5,100.0	4,996.6	4,990.6	4,990.6	20.9	17.7	17.68	141.4	-2,823.9	2,093.2	2,057.1	36.03	58.089		
5,200.0	5,092.5	5,086.5	5,086.5	21.4	18.0	17.91	141.4	-2,823.9	2,066.3	2,029.5	36.78	56.176		
5,300.0	5,188.5	5,182.5	5,182.5	21.9	18.4	18.15	141.4	-2,823.9	2,039.4	2,001.9	37.53	54.339		
5,400.0	5,284.4	5,278.4	5,278.4	22.4	18.7	18.40	141.4	-2,823.9	2,012.5	1,974.3	38.28	52.571		
5,500.0	5,380.4	5,388.0	5,388.0	23.0	19.1	18.66	140.0	-2,823.8	1,985.5	1,946.4	39.05	50.848		
5,600.0	5,476.3	5,501.6	5,501.4	23.5	19.4	18.80	134.3	-2,823.3	1,957.6	1,917.8	39.79	49.199		
5,700.0	5,572.3	5,614.7	5,614.1	24.0	19.8	18.81	124.1	-2,822.5	1,928.9	1,888.3	40.52	47.603		
5,800.0	5,668.2	5,727.1	5,725.5	24.5	20.2	18.68	109.7	-2,821.3	1,899.3	1,858.0	41.24	46.053		
5,900.0	5,764.2	5,838.4	5,835.2	25.1	20.5	18.42	91.1	-2,819.8	1,868.9	1,826.9	41.95	44.546		
6,000.0	5,860.1	5,934.3	5,929.4	25.6	20.8	18.11	73.0	-2,818.3	1,838.0	1,795.4	42.65	43.091		
6,100.0	5,956.1	6,028.9	6,022.3	26.1	21.2	17.80	55.1	-2,816.9	1,807.3	1,763.9	43.36	41.682		
6,200.0	6,052.0	6,123.6	6,115.3	26.6	21.5	17.48	37.2	-2,815.4	1,776.5	1,732.5	44.06	40.317		
6,300.0	6,148.0	6,218.3	6,208.2	27.2	21.8	17.15	19.3	-2,814.0	1,745.9	1,701.1	44.77	38.992		
6,400.0	6,243.9	6,313.0	6,301.2	27.7	22.1	16.81	1.4	-2,812.5	1,715.2	1,669.7	45.49	37.708		
6,500.0	6,339.9	6,407.6	6,394.1	28.2	22.4	16.45	-16.5	-2,811.0	1,684.7	1,638.5	46.20	36.463		
6,600.0	6,435.8	6,502.3	6,487.1	28.8	22.8	16.08	-34.4	-2,809.6	1,654.2	1,607.2	46.92	35.255		
6,700.0	6,531.8	6,597.0	6,580.0	29.3	23.1	15.70	-52.3	-2,808.1	1,623.7	1,576.1	47.64	34.083		
6,800.0	6,627.7	6,691.7	6,673.0	29.8	23.5	15.30	-70.2	-2,806.7	1,593.4	1,545.0	48.36	32.946		
6,900.0	6,723.7	6,786.3	6,766.0	30.4	23.8	14.88	-88.1	-2,805.2	1,563.1	1,514.0	49.09	31.842		
7,000.0	6,819.6	6,881.0	6,858.9	30.9	24.1	14.45	-106.0	-2,803.7	1,532.8	1,483.0	49.82	30.771		
7,100.0	6,915.6	6,975.7	6,951.9	31.4	24.5	14.01	-123.9	-2,802.3	1,502.7	1,452.2	50.54	29.731		
7,200.0	7,011.5	7,070.3	7,044.8	32.0	24.8	13.54	-141.8	-2,800.8	1,472.7	1,421.4	51.28	28.721		
7,300.0	7,107.5	7,165.0	7,137.8	32.5	25.2	13.06	-159.7	-2,799.4	1,442.7	1,390.7	52.01	27.741		
7,400.0	7,203.5	7,259.7	7,230.7	33.0	25.5	12.56	-177.6	-2,797.9	1,412.9	1,360.1	52.74	26.788		
7,500.0	7,299.4	7,354.4	7,323.7	33.6	25.9	12.03	-195.5	-2,796.5	1,383.1	1,329.6	53.48	25.863		
7,600.0	7,395.4	7,449.0	7,416.6	34.1	26.2	11.49	-213.4	-2,795.0	1,353.5	1,299.3	54.22	24.965		
7,700.0	7,491.3	7,543.7	7,509.6	34.6	26.6	10.91	-231.3	-2,793.5	1,324.0	1,269.0	54.95	24.092		
7,800.0	7,587.3	7,638.4	7,602.5	35.2	27.0	10.32	-249.2	-2,792.1	1,294.6	1,238.9	55.69	23.244		
7,900.0	7,683.2	7,733.0	7,695.4	35.7	27.3	9.69	-267.1	-2,790.6	1,265.3	1,208.9	56.44	22.420		
8,000.0	7,779.2	7,825.0	7,786.1	36.2	27.7	9.13	-283.0	-2,789.3	1,236.3	1,179.1	57.18	21.621		
8,100.0	7,875.1	7,917.9	7,878.0	36.8	28.0	8.69	-296.0	-2,788.3	1,207.6	1,149.7	57.92	20.849		
8,200.0	7,971.1	8,011.3	7,970.9	37.3	28.4	8.38	-306.1	-2,787.4	1,179.2	1,120.5	58.66	20.101		
8,300.0	8,067.0	8,105.2	8,064.5	37.9	28.7	8.21	-313.3	-2,786.9	1,150.9	1,091.5	59.40	19.375		
8,400.0	8,163.0	8,200.0	8,159.2	38.4	29.0	8.19	-317.4	-2,786.5	1,122.8	1,062.6	60.13	18.671		
8,500.0	8,258.9	8,293.7	8,252.9	38.9	29.3	8.34	-318.4	-2,786.4	1,094.8	1,034.0	60.87	17.986		
8,600.0	8,354.9	8,390.2	8,349.4	39.5	29.7	8.57	-318.2	-2,786.4	1,066.9	1,005.3	61.61	17.318		
8,700.0	8,451.4	8,487.6	8,445.8	40.0	30.0	9.41	-305.7	-2,786.5	1,040.8	978.5	62.36	16.691		
8,800.0	8,548.7	8,576.1	8,529.6	40.5	30.2	11.12	-277.6	-2,786.7	1,018.8	955.6	63.16	16.131		
8,900.0	8,646.8	8,651.9	8,596.2	40.9	30.4	13.28	-241.6	-2,787.0	1,002.4	938.4	63.99	15.665		
9,000.0	8,745.5	8,714.7	8,646.5	41.3	30.5	15.51	-204.1	-2,787.2	993.5	928.8	64.75	15.343		
9,047.3	8,792.3	8,740.3	8,665.5	41.5	30.6	16.52	-187.0	-2,787.4	992.5	927.4	65.05	15.256 CC, ES		
9,100.0	8,844.7	8,766.1	8,683.7	41.7	30.6	17.61	-168.7	-2,787.5	993.8	928.5	65.32	15.215		
9,200.0	8,944.2	8,808.0	8,711.1	42.1	30.7	19.53	-137.0	-2,787.7	1,004.3	938.8	65.57	15.316		
9,300.0	9,044.1	8,842.5	8,731.5	42.4	30.7	21.28	-109.2	-2,787.9	1,025.4	960.0	65.46	15.665		
9,400.0	9,144.0	8,875.0	8,748.8	42.7	30.8	23.10	-81.7	-2,788.1	1,057.0	992.0	65.04	16.251		
9,500.0	9,244.0	8,900.0	8,760.9	42.9	30.8	-75.27	-59.8	-2,788.2	1,097.4	1,033.1	64.29	17.068		
9,600.0	9,343.6	8,925.0	8,771.8	43.2	30.9	-65.79	-37.3	-2,788.4	1,141.8	1,078.4	63.32	18.030		
9,700.0	9,439.3	8,950.0	8,781.4	43.4	30.9	-59.86	-14.2	-2,788.6	1,184.3	1,122.2	62.15	19.056		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 302H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
9,800.0	9,527.0	8,975.0	8,789.9	43.6	30.9	-54.92	9.3	-2,788.7	1,222.7	1,161.8	60.91	20.073
9,900.0	9,602.9	9,000.0	8,797.1	43.8	31.0	-51.06	33.2	-2,788.9	1,255.1	1,195.4	59.76	21.002
10,000.0	9,663.6	9,038.4	8,805.7	43.9	31.0	-48.07	70.6	-2,789.1	1,279.9	1,221.0	58.95	21.713
10,100.0	9,706.6	9,075.0	8,811.1	43.9	31.1	-46.21	106.8	-2,789.4	1,296.2	1,237.8	58.41	22.190
10,200.0	9,729.9	9,100.0	8,813.2	43.9	31.1	-45.44	131.7	-2,789.6	1,303.2	1,244.9	58.22	22.382
10,300.0	9,734.0	9,164.8	8,814.0	44.0	31.2	-45.36	196.5	-2,790.0	1,301.3	1,242.8	58.51	22.241
10,400.0	9,734.0	9,264.8	8,814.0	44.0	31.4	-45.31	296.5	-2,790.7	1,299.6	1,240.6	59.01	22.025
10,490.8	9,734.0	9,355.6	8,814.0	44.1	31.6	-45.30	387.3	-2,791.3	1,299.4	1,239.9	59.57	21.815
10,500.0	9,734.0	9,364.8	8,814.0	44.1	31.6	-45.31	396.5	-2,791.4	1,299.6	1,240.0	59.63	21.795
10,600.0	9,734.0	9,464.8	8,814.0	44.2	32.0	-45.31	496.5	-2,792.1	1,299.6	1,239.3	60.34	21.539
10,700.0	9,734.0	9,564.8	8,814.0	44.3	32.4	-45.31	596.5	-2,792.8	1,299.6	1,238.5	61.13	21.260
10,800.0	9,734.0	9,664.8	8,814.0	44.5	32.8	-45.31	696.5	-2,793.5	1,299.6	1,237.6	62.00	20.961
10,900.0	9,734.0	9,764.8	8,814.0	44.8	33.3	-45.31	796.5	-2,794.2	1,299.6	1,236.7	62.95	20.646
11,000.0	9,734.0	9,864.8	8,814.0	45.1	33.9	-45.31	896.5	-2,794.9	1,299.6	1,235.6	63.97	20.316
11,100.0	9,734.0	9,964.8	8,814.0	45.4	34.5	-45.31	996.5	-2,795.6	1,299.6	1,234.6	65.06	19.975
11,200.0	9,734.0	10,064.8	8,814.0	45.8	35.1	-45.31	1,096.5	-2,796.3	1,299.6	1,233.4	66.22	19.626
11,300.0	9,734.0	10,164.8	8,814.0	46.3	35.8	-45.31	1,196.5	-2,797.0	1,299.6	1,232.2	67.44	19.271
11,400.0	9,734.0	10,264.8	8,814.0	46.8	36.6	-45.31	1,296.4	-2,797.7	1,299.6	1,230.9	68.72	18.913
11,500.0	9,734.0	10,364.8	8,814.0	47.3	37.4	-45.31	1,396.4	-2,798.3	1,299.6	1,229.6	70.05	18.553
11,600.0	9,734.0	10,464.8	8,814.0	47.9	38.2	-45.31	1,496.4	-2,799.0	1,299.6	1,228.2	71.44	18.192
11,700.0	9,734.0	10,564.8	8,814.0	48.5	39.0	-45.31	1,596.4	-2,799.7	1,299.6	1,226.7	72.87	17.834
11,800.0	9,734.0	10,664.8	8,814.0	49.2	39.9	-45.31	1,696.4	-2,800.4	1,299.6	1,225.3	74.36	17.478
11,900.0	9,734.0	10,764.8	8,814.0	49.9	40.9	-45.31	1,796.4	-2,801.1	1,299.6	1,223.7	75.88	17.127
12,000.0	9,734.0	10,864.8	8,814.0	50.7	41.8	-45.31	1,896.4	-2,801.8	1,299.6	1,222.2	77.45	16.780
12,100.0	9,734.0	10,964.8	8,814.0	51.5	42.8	-45.31	1,996.4	-2,802.5	1,299.6	1,220.6	79.05	16.440
12,200.0	9,734.0	11,064.8	8,814.0	52.3	43.8	-45.31	2,096.4	-2,803.2	1,299.6	1,218.9	80.70	16.105
12,300.0	9,734.0	11,164.8	8,814.0	53.2	44.9	-45.31	2,196.4	-2,803.9	1,299.6	1,217.3	82.37	15.778
12,400.0	9,734.0	11,264.8	8,814.0	54.0	45.9	-45.31	2,296.4	-2,804.6	1,299.6	1,215.5	84.08	15.458
12,500.0	9,734.0	11,364.8	8,814.0	54.9	47.0	-45.31	2,396.4	-2,805.3	1,299.6	1,213.8	85.81	15.145
12,600.0	9,734.0	11,464.8	8,814.0	55.9	48.1	-45.31	2,496.4	-2,806.0	1,299.6	1,212.0	87.58	14.840
12,700.0	9,734.0	11,564.8	8,814.0	56.8	49.2	-45.31	2,596.4	-2,806.7	1,299.6	1,210.3	89.37	14.542
12,800.0	9,734.0	11,664.8	8,814.0	57.8	50.3	-45.31	2,696.4	-2,807.4	1,299.6	1,208.4	91.18	14.253
12,900.0	9,734.0	11,764.8	8,814.0	58.8	51.5	-45.31	2,796.4	-2,808.1	1,299.6	1,206.6	93.02	13.971
13,000.0	9,734.0	11,864.8	8,814.0	59.9	52.6	-45.31	2,896.4	-2,808.8	1,299.6	1,204.7	94.88	13.697
13,100.0	9,734.0	11,964.8	8,814.0	60.9	53.8	-45.31	2,996.4	-2,809.5	1,299.6	1,202.9	96.77	13.431
13,200.0	9,734.0	12,064.8	8,814.0	62.0	55.0	-45.31	3,096.4	-2,810.1	1,299.6	1,201.0	98.67	13.172
13,300.0	9,734.0	12,164.8	8,814.0	63.0	56.2	-45.31	3,196.4	-2,810.8	1,299.6	1,199.0	100.58	12.921
13,400.0	9,734.0	12,264.8	8,814.0	64.1	57.4	-45.31	3,296.4	-2,811.5	1,299.6	1,197.1	102.52	12.677
13,500.0	9,734.0	12,364.8	8,814.0	65.2	58.6	-45.31	3,396.4	-2,812.2	1,299.6	1,195.2	104.47	12.440
13,600.0	9,734.0	12,464.8	8,814.0	66.3	59.9	-45.31	3,496.4	-2,812.9	1,299.6	1,193.2	106.44	12.210
13,700.0	9,734.0	12,564.8	8,814.0	67.5	61.1	-45.31	3,596.4	-2,813.6	1,299.6	1,191.2	108.42	11.987
13,800.0	9,734.0	12,664.8	8,814.0	68.6	62.4	-45.31	3,696.4	-2,814.3	1,299.6	1,189.2	110.42	11.770
13,900.0	9,734.0	12,764.8	8,814.0	69.8	63.6	-45.31	3,796.4	-2,815.0	1,299.6	1,187.2	112.43	11.560
14,000.0	9,734.0	12,864.8	8,814.0	70.9	64.9	-45.31	3,896.4	-2,815.7	1,299.6	1,185.2	114.45	11.356
14,100.0	9,734.0	12,964.8	8,814.0	72.1	66.2	-45.31	3,996.4	-2,816.4	1,299.6	1,183.2	116.48	11.157
14,200.0	9,734.0	13,064.8	8,814.0	73.3	67.5	-45.31	4,096.4	-2,817.1	1,299.6	1,181.1	118.52	10.965
14,300.0	9,734.0	13,164.8	8,814.0	74.5	68.7	-45.31	4,196.4	-2,817.8	1,299.6	1,179.1	120.58	10.778
14,400.0	9,734.0	13,264.8	8,814.0	75.7	70.0	-45.31	4,296.4	-2,818.5	1,299.6	1,177.0	122.64	10.597
14,500.0	9,734.0	13,364.8	8,814.0	76.9	71.3	-45.31	4,396.4	-2,819.2	1,299.6	1,174.9	124.72	10.421
14,600.0	9,734.0	13,464.8	8,814.0	78.1	72.7	-45.31	4,496.4	-2,819.9	1,299.6	1,172.8	126.80	10.250
14,700.0	9,734.0	13,564.8	8,814.0	79.4	74.0	-45.31	4,596.4	-2,820.6	1,299.6	1,170.7	128.89	10.083
14,800.0	9,734.0	13,664.8	8,814.0	80.6	75.3	-45.31	4,696.4	-2,821.3	1,299.6	1,168.6	130.99	9.922

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 302H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Minimum Separation (usft)	Separation Factor
14,900.0	9,734.0	13,764.8	8,814.0	81.9	76.6	-45.31	4,796.4	-2,821.9	1,299.6	1,166.5		133.10	9.765
15,000.0	9,734.0	13,864.8	8,814.0	83.1	77.9	-45.31	4,896.4	-2,822.6	1,299.6	1,164.4		135.21	9.612
15,100.0	9,734.0	13,964.8	8,814.0	84.4	79.3	-45.31	4,996.4	-2,823.3	1,299.6	1,162.3		137.33	9.463
15,200.0	9,734.0	14,064.8	8,814.0	85.6	80.6	-45.31	5,096.4	-2,824.0	1,299.6	1,160.2		139.46	9.319
15,300.0	9,734.0	14,164.8	8,814.0	86.9	81.9	-45.31	5,196.4	-2,824.7	1,299.6	1,158.0		141.60	9.178
15,400.0	9,734.0	14,264.8	8,814.0	88.2	83.3	-45.31	5,296.4	-2,825.4	1,299.6	1,155.9		143.74	9.042
15,500.0	9,734.0	14,364.8	8,814.0	89.4	84.6	-45.31	5,396.3	-2,826.1	1,299.6	1,153.8		145.88	8.909
15,600.0	9,734.0	14,464.8	8,814.0	90.7	86.0	-45.31	5,496.3	-2,826.8	1,299.6	1,151.6		148.04	8.779
15,700.0	9,734.0	14,564.8	8,814.0	92.0	87.3	-45.31	5,596.3	-2,827.5	1,299.6	1,149.4		150.19	8.653
15,800.0	9,734.0	14,664.8	8,814.0	93.3	88.7	-45.31	5,696.3	-2,828.2	1,299.6	1,147.3		152.36	8.530
15,900.0	9,734.0	14,764.8	8,814.0	94.6	90.0	-45.31	5,796.3	-2,828.9	1,299.6	1,145.1		154.53	8.411
16,000.0	9,734.0	14,864.8	8,814.0	95.9	91.4	-45.31	5,896.3	-2,829.6	1,299.6	1,142.9		156.70	8.294
16,100.0	9,734.0	14,964.8	8,814.0	97.2	92.8	-45.31	5,996.3	-2,830.3	1,299.6	1,140.8		158.88	8.180
16,200.0	9,734.0	15,064.8	8,814.0	98.5	94.1	-45.31	6,096.3	-2,831.0	1,299.6	1,138.6		161.06	8.069
16,300.0	9,734.0	15,164.8	8,814.0	99.9	95.5	-45.31	6,196.3	-2,831.7	1,299.6	1,136.4		163.24	7.961
16,400.0	9,734.0	15,264.8	8,814.0	101.2	96.9	-45.31	6,296.3	-2,832.4	1,299.6	1,134.2		165.43	7.856
16,500.0	9,734.0	15,364.8	8,814.0	102.5	98.2	-45.31	6,396.3	-2,833.1	1,299.7	1,132.0		167.63	7.753
16,600.0	9,734.0	15,464.8	8,814.0	103.8	99.6	-45.31	6,496.3	-2,833.7	1,299.7	1,129.8		169.82	7.653
16,700.0	9,734.0	15,564.8	8,814.0	105.1	101.0	-45.31	6,596.3	-2,834.4	1,299.7	1,127.6		172.02	7.555
16,800.0	9,734.0	15,664.8	8,814.0	106.5	102.4	-45.31	6,696.3	-2,835.1	1,299.7	1,125.4		174.23	7.459
16,900.0	9,734.0	15,764.8	8,814.0	107.8	103.7	-45.31	6,796.3	-2,835.8	1,299.7	1,123.2		176.44	7.366
17,000.0	9,734.0	15,864.8	8,814.0	109.1	105.1	-45.31	6,896.3	-2,836.5	1,299.7	1,121.0		178.65	7.275
17,100.0	9,734.0	15,964.8	8,814.0	110.5	106.5	-45.31	6,996.3	-2,837.2	1,299.7	1,118.8		180.86	7.186
17,200.0	9,734.0	16,064.8	8,814.0	111.8	107.9	-45.31	7,096.3	-2,837.9	1,299.7	1,116.6		183.08	7.099
17,300.0	9,734.0	16,164.8	8,814.0	113.2	109.3	-45.31	7,196.3	-2,838.6	1,299.7	1,114.4		185.30	7.014
17,400.0	9,734.0	16,264.8	8,814.0	114.5	110.7	-45.31	7,296.3	-2,839.3	1,299.7	1,112.1		187.52	6.931
17,500.0	9,734.0	16,364.8	8,814.0	115.9	112.1	-45.31	7,396.3	-2,840.0	1,299.7	1,109.9		189.75	6.849
17,600.0	9,734.0	16,464.8	8,814.0	117.2	113.4	-45.31	7,496.3	-2,840.7	1,299.7	1,107.7		191.97	6.770
17,700.0	9,734.0	16,564.8	8,814.0	118.6	114.8	-45.31	7,596.3	-2,841.4	1,299.7	1,105.5		194.20	6.692
17,800.0	9,734.0	16,664.8	8,814.0	119.9	116.2	-45.31	7,696.3	-2,842.1	1,299.7	1,103.2		196.44	6.616
17,900.0	9,734.0	16,764.8	8,814.0	121.3	117.6	-45.31	7,796.3	-2,842.8	1,299.7	1,101.0		198.67	6.542
18,000.0	9,734.0	16,864.8	8,814.0	122.7	119.0	-45.31	7,896.3	-2,843.5	1,299.7	1,098.8		200.91	6.469
18,100.0	9,734.0	16,964.8	8,814.0	124.0	120.4	-45.31	7,996.3	-2,844.2	1,299.7	1,096.5		203.15	6.398
18,200.0	9,734.0	17,064.8	8,814.0	125.4	121.8	-45.31	8,096.3	-2,844.9	1,299.7	1,094.3		205.39	6.328
18,300.0	9,734.0	17,164.8	8,814.0	126.8	123.2	-45.31	8,196.3	-2,845.5	1,299.7	1,092.0		207.63	6.259
18,400.0	9,734.0	17,264.8	8,814.0	128.1	124.6	-45.31	8,296.3	-2,846.2	1,299.7	1,089.8		209.88	6.192
18,500.0	9,734.0	17,364.8	8,814.0	129.5	126.0	-45.31	8,396.3	-2,846.9	1,299.7	1,087.5		212.12	6.127
18,600.0	9,734.0	17,464.8	8,814.0	130.9	127.4	-45.31	8,496.3	-2,847.6	1,299.7	1,085.3		214.37	6.063
18,700.0	9,734.0	17,564.8	8,814.0	132.2	128.8	-45.31	8,596.3	-2,848.3	1,299.7	1,083.0		216.62	6.000
18,800.0	9,734.0	17,664.8	8,814.0	133.6	130.2	-45.31	8,696.3	-2,849.0	1,299.7	1,080.8		218.88	5.938
18,900.0	9,734.0	17,764.8	8,814.0	135.0	131.6	-45.31	8,796.3	-2,849.7	1,299.7	1,078.5		221.13	5.877
19,000.0	9,734.0	17,864.8	8,814.0	136.4	133.1	-45.31	8,896.3	-2,850.4	1,299.7	1,076.3		223.39	5.818
19,100.0	9,734.0	17,964.8	8,814.0	137.7	134.5	-45.31	8,996.3	-2,851.1	1,299.7	1,074.0		225.65	5.760
19,200.0	9,734.0	18,064.8	8,814.0	139.1	135.9	-45.31	9,096.3	-2,851.8	1,299.7	1,071.8		227.90	5.703
19,300.0	9,734.0	18,164.8	8,814.0	140.5	137.3	-45.31	9,196.3	-2,852.5	1,299.7	1,069.5		230.16	5.647
19,400.0	9,734.0	18,264.8	8,814.0	141.9	138.7	-45.31	9,296.3	-2,853.2	1,299.7	1,067.2		232.43	5.592
19,500.0	9,734.0	18,364.8	8,814.0	143.3	140.1	-45.31	9,396.3	-2,853.9	1,299.7	1,065.0		234.69	5.538
19,600.0	9,734.0	18,464.8	8,814.0	144.7	141.5	-45.31	9,496.3	-2,854.6	1,299.7	1,062.7		236.95	5.485
19,700.0	9,734.0	18,564.8	8,814.0	146.1	142.9	-45.31	9,596.2	-2,855.3	1,299.7	1,060.5		239.22	5.433
19,800.0	9,734.0	18,664.8	8,814.0	147.4	144.3	-45.31	9,696.2	-2,856.0	1,299.7	1,058.2		241.49	5.382
19,900.0	9,734.0	18,764.8	8,814.0	148.8	145.8	-45.31	9,796.2	-2,856.7	1,299.7	1,055.9		243.76	5.332
20,000.0	9,734.0	18,864.8	8,814.0	150.2	147.2	-45.31	9,896.2	-2,857.3	1,299.7	1,053.6		246.03	5.283

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 302H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned: Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
20,100.0	9,734.0	18,964.8	8,814.0	151.6	148.6	-45.31	9,996.2	-2,858.0	1,299.7	1,051.4	248.30	5.234		
20,200.0	9,734.0	19,064.8	8,814.0	152.9	150.0	-45.31	10,096.2	-2,858.7	1,299.7	1,049.4	250.29	5.193		
20,200.0	9,734.0	19,064.8	8,814.0	152.9	150.0	-45.31	10,096.3	-2,858.7	1,299.7	1,049.4	250.29	5.193		
20,207.7	9,734.0	19,070.8	8,814.0	153.0	150.1	-45.31	10,102.2	-2,858.8	1,299.7	1,049.2	250.45	5.189 SF		

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
3,600.0	3,557.3	3,961.8	3,933.3	13.4	14.4	12.29	3.6	-2,517.2	2,219.7	2,193.6	26.06	85.191		
3,700.0	3,653.2	4,051.7	4,021.6	13.8	14.8	12.25	-3.7	-2,502.0	2,176.0	2,149.2	26.74	81.371		
3,800.0	3,749.2	4,141.6	4,109.9	14.3	15.2	12.21	-11.0	-2,486.8	2,132.2	2,104.8	27.43	77.734		
3,900.0	3,845.1	4,231.6	4,198.2	14.8	15.5	12.16	-18.3	-2,471.5	2,088.5	2,060.4	28.12	74.268		
4,000.0	3,941.1	4,321.5	4,286.5	15.3	15.9	12.11	-25.7	-2,456.3	2,044.8	2,016.0	28.82	70.962		
4,100.0	4,037.0	4,411.4	4,374.8	15.8	16.3	12.06	-33.0	-2,441.0	2,001.1	1,971.5	29.51	67.806		
4,200.0	4,133.0	4,501.3	4,463.2	16.3	16.7	12.01	-40.3	-2,425.8	1,957.3	1,927.1	30.21	64.791		
4,300.0	4,228.9	4,591.2	4,551.5	16.8	17.1	11.96	-47.6	-2,410.6	1,913.6	1,882.7	30.91	61.908		
4,400.0	4,324.9	4,681.2	4,639.8	17.3	17.5	11.90	-55.0	-2,395.3	1,869.9	1,838.3	31.61	59.149		
4,500.0	4,420.8	4,771.1	4,728.1	17.8	17.8	11.84	-62.3	-2,380.1	1,826.2	1,793.8	32.32	56.507		
4,600.0	4,516.8	4,861.0	4,816.4	18.3	18.2	11.78	-69.6	-2,364.9	1,782.4	1,749.4	33.02	53.975		
4,700.0	4,612.7	4,950.9	4,904.7	18.8	18.6	11.71	-76.9	-2,349.6	1,738.7	1,705.0	33.73	51.546		
4,800.0	4,708.7	5,040.8	4,993.0	19.3	19.0	11.64	-84.3	-2,334.4	1,695.0	1,660.6	34.44	49.215		
4,900.0	4,804.7	5,130.8	5,081.4	19.9	19.4	11.57	-91.6	-2,319.1	1,651.3	1,616.1	35.15	46.977		
5,000.0	4,900.6	5,220.7	5,169.7	20.4	19.8	11.49	-98.9	-2,303.9	1,607.6	1,571.7	35.86	44.825		
5,100.0	4,996.6	5,310.6	5,258.0	20.9	20.2	11.41	-106.2	-2,288.7	1,563.9	1,527.3	36.58	42.756		
5,200.0	5,092.5	5,400.5	5,346.3	21.4	20.5	11.33	-113.6	-2,273.4	1,520.2	1,482.9	37.29	40.764		
5,300.0	5,188.5	5,490.4	5,434.6	21.9	20.9	11.24	-120.9	-2,258.2	1,476.5	1,438.5	38.01	38.847		
5,400.0	5,284.4	5,580.4	5,522.9	22.4	21.3	11.14	-128.2	-2,243.0	1,432.8	1,394.0	38.72	36.999		
5,500.0	5,380.4	5,670.3	5,611.3	23.0	21.7	11.04	-135.5	-2,227.7	1,389.1	1,349.6	39.44	35.217		
5,600.0	5,476.3	5,760.2	5,699.6	23.5	22.1	10.93	-142.9	-2,212.5	1,345.4	1,305.2	40.16	33.499		
5,700.0	5,572.3	5,850.1	5,787.9	24.0	22.5	10.82	-150.2	-2,197.2	1,301.7	1,260.8	40.88	31.840		
5,800.0	5,668.2	5,940.0	5,876.2	24.5	22.9	10.69	-157.5	-2,182.0	1,258.0	1,216.4	41.60	30.238		
5,900.0	5,764.2	6,030.0	5,964.5	25.1	23.3	10.56	-164.8	-2,166.8	1,214.3	1,172.0	42.33	28.690		
6,000.0	5,860.1	6,119.9	6,052.8	25.6	23.7	10.42	-172.2	-2,151.5	1,170.7	1,127.6	43.05	27.194		
6,100.0	5,956.1	6,209.8	6,141.2	26.1	24.1	10.26	-179.5	-2,136.3	1,127.0	1,083.2	43.77	25.746		
6,200.0	6,052.0	6,299.7	6,229.5	26.6	24.4	10.10	-186.8	-2,121.1	1,083.3	1,038.8	44.50	24.346		
6,300.0	6,148.0	6,389.6	6,317.8	27.2	24.8	9.92	-194.1	-2,105.8	1,039.7	994.5	45.22	22.989		
6,400.0	6,243.9	6,479.6	6,406.1	27.7	25.2	9.72	-201.5	-2,090.6	996.0	950.1	45.95	21.676		
6,500.0	6,339.9	6,569.5	6,494.4	28.2	25.6	9.51	-208.8	-2,075.3	952.4	905.7	46.68	20.403		
6,600.0	6,435.8	6,659.4	6,582.7	28.8	26.0	9.27	-216.1	-2,060.1	908.8	861.4	47.41	19.169		
6,700.0	6,531.8	6,749.3	6,671.0	29.3	26.4	9.01	-223.4	-2,044.9	865.2	817.0	48.14	17.973		
6,800.0	6,627.7	6,839.2	6,759.4	29.8	26.8	8.73	-230.8	-2,029.6	821.6	772.7	48.87	16.812		
6,900.0	6,723.7	6,929.2	6,847.7	30.4	27.2	8.41	-238.1	-2,014.4	778.0	728.4	49.60	15.685		
7,000.0	6,819.6	7,019.1	6,936.0	30.9	27.6	8.06	-245.4	-1,999.2	734.5	684.1	50.34	14.591		
7,100.0	6,915.6	7,109.0	7,024.3	31.4	28.0	7.66	-252.7	-1,983.9	690.9	639.9	51.07	13.528		
7,200.0	7,011.5	7,198.9	7,112.6	32.0	28.4	7.21	-260.1	-1,968.7	647.4	595.6	51.81	12.496		
7,300.0	7,107.5	7,288.8	7,200.9	32.5	28.8	6.69	-267.4	-1,953.4	604.0	551.4	52.55	11.492		
7,400.0	7,203.5	7,378.7	7,289.3	33.0	29.2	6.09	-274.7	-1,938.2	560.6	507.3	53.30	10.517		
7,500.0	7,299.4	7,468.7	7,377.6	33.6	29.6	5.39	-282.0	-1,923.0	517.2	463.2	54.05	9.569		
7,600.0	7,395.4	7,558.0	7,465.3	34.1	30.0	4.58	-289.3	-1,907.8	473.9	419.1	54.82	8.646		
7,700.0	7,491.3	7,637.7	7,543.9	34.6	30.3	3.80	-295.3	-1,895.4	431.9	376.2	55.74	7.749		
7,800.0	7,587.3	7,719.4	7,624.6	35.2	30.6	3.06	-300.4	-1,884.7	392.2	335.5	56.65	6.923		
7,900.0	7,683.2	7,800.0	7,704.7	35.7	30.9	2.39	-304.5	-1,876.2	354.8	297.2	57.58	6.161		
8,000.0	7,779.2	7,888.0	7,792.4	36.2	31.3	1.79	-307.9	-1,869.3	319.7	261.3	58.41	5.473		
8,100.0	7,875.1	7,974.9	7,879.1	36.8	31.6	1.37	-310.0	-1,864.8	287.0	227.8	59.24	4.845		
8,200.0	7,971.1	8,063.2	7,967.4	37.3	31.9	1.20	-311.0	-1,862.6	256.7	196.7	60.03	4.276		
8,300.0	8,067.0	8,156.8	8,060.9	37.9	32.2	1.31	-311.1	-1,862.5	228.4	167.6	60.75	3.760		
8,400.0	8,163.0	8,252.7	8,156.9	38.4	32.4	1.50	-311.1	-1,862.5	200.2	138.8	61.44	3.259		
8,500.0	8,258.9	8,348.7	8,252.8	38.9	32.7	1.74	-311.1	-1,862.5	172.1	109.9	62.13	2.769		
8,600.0	8,354.9	8,445.1	8,349.3	39.5	33.0	2.15	-311.0	-1,862.5	143.9	81.1	62.82	2.291		
8,700.0	8,451.4	8,542.4	8,445.6	40.0	33.3	8.87	-298.5	-1,862.6	116.8	53.4	63.42	1.842		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1													Offset Site Error: 0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,800.0	8,548.7	8,630.7	8,529.2	40.5	33.5	26.87	-270.5	-1,862.8	99.9	34.9	64.97	1.538	
8,817.5	8,565.8	8,644.9	8,542.1	40.6	33.5	30.82	-264.6	-1,862.8	99.4	34.2	65.25	1.523	CC, ES, SF
8,900.0	8,646.8	8,706.4	8,595.8	40.9	33.7	49.06	-234.6	-1,863.0	111.6	46.7	64.88	1.720	
9,000.0	8,745.5	8,769.2	8,646.1	41.3	33.7	65.42	-197.1	-1,863.3	155.5	94.5	60.98	2.550	
9,100.0	8,844.7	8,820.6	8,683.4	41.7	33.8	75.55	-161.8	-1,863.5	218.7	162.0	56.65	3.860	
9,200.0	8,944.2	8,862.6	8,710.8	42.1	33.8	82.22	-130.1	-1,863.7	292.4	239.3	53.04	5.513	
9,300.0	9,044.1	8,900.0	8,732.9	42.4	33.8	87.39	-99.9	-1,863.9	372.4	321.9	50.47	7.378	
9,400.0	9,144.0	8,925.0	8,746.3	42.7	33.8	91.49	-78.8	-1,864.1	456.5	408.7	47.78	9.554	
9,500.0	9,244.0	8,950.0	8,758.6	42.9	33.8	-7.12	-57.0	-1,864.2	543.5	497.5	46.05	11.803	
9,600.0	9,343.6	8,975.0	8,769.7	43.2	33.8	-2.32	-34.6	-1,864.4	628.9	584.4	44.48	14.138	
9,700.0	9,439.3	9,000.0	8,779.6	43.4	33.8	-1.59	-11.6	-1,864.5	705.2	662.7	42.52	16.586	
9,800.0	9,527.0	9,025.0	8,788.3	43.6	33.8	-1.16	11.8	-1,864.7	771.1	730.6	40.48	19.050	
9,900.0	9,602.9	9,060.4	8,798.5	43.8	33.8	-0.84	45.7	-1,864.9	825.3	786.3	38.97	21.178	
10,000.0	9,663.6	9,100.0	8,806.9	43.9	33.7	-0.60	84.4	-1,865.2	867.2	829.4	37.79	22.950	
10,100.0	9,706.6	9,125.0	8,810.6	43.9	33.7	-0.47	109.1	-1,865.4	895.9	859.2	36.70	24.412	
10,200.0	9,729.9	9,160.7	8,813.5	43.9	33.7	-0.33	144.6	-1,865.6	911.3	874.8	36.45	25.002	
10,300.0	9,734.0	9,219.0	8,814.0	44.0	33.6	-0.15	202.9	-1,866.0	913.9	877.1	36.79	24.843	
10,379.5	9,734.0	9,298.4	8,814.0	44.0	33.6	-0.01	282.4	-1,866.6	913.9	876.7	37.19	24.572	
10,400.0	9,734.0	9,318.9	8,814.0	44.0	33.5	0.00	302.9	-1,866.7	913.9	876.6	37.30	24.498	
10,500.0	9,734.0	9,418.9	8,814.0	44.1	33.5	0.00	402.9	-1,867.4	913.9	876.0	37.89	24.116	
10,600.0	9,734.0	9,518.9	8,814.0	44.2	33.5	0.00	502.9	-1,868.1	913.9	875.3	38.54	23.711	
10,700.0	9,734.0	9,618.9	8,814.0	44.3	33.7	0.00	602.9	-1,868.8	913.9	874.6	39.24	23.289	
10,800.0	9,734.0	9,718.9	8,814.0	44.5	34.0	0.00	702.9	-1,869.5	913.9	873.9	39.99	22.853	
10,900.0	9,734.0	9,818.9	8,814.0	44.8	34.5	0.00	802.9	-1,870.2	913.9	873.1	40.79	22.406	
11,000.0	9,734.0	9,918.9	8,814.0	45.1	35.0	0.00	902.9	-1,870.9	913.9	872.2	41.63	21.954	
11,100.0	9,734.0	10,018.9	8,814.0	45.4	35.6	0.00	1,002.9	-1,871.6	913.9	871.4	42.51	21.498	
11,200.0	9,734.0	10,118.9	8,814.0	45.8	36.2	0.00	1,102.9	-1,872.3	913.9	870.4	43.43	21.041	
11,300.0	9,734.0	10,218.9	8,814.0	46.3	36.9	0.00	1,202.9	-1,873.0	913.9	869.5	44.39	20.587	
11,400.0	9,734.0	10,318.9	8,814.0	46.8	37.6	0.00	1,302.9	-1,873.7	913.9	868.5	45.38	20.137	
11,500.0	9,734.0	10,418.9	8,814.0	47.3	38.4	0.00	1,402.9	-1,874.4	913.9	867.5	46.41	19.692	
11,600.0	9,734.0	10,518.9	8,814.0	47.9	39.2	0.00	1,502.9	-1,875.1	913.9	866.4	47.46	19.254	
11,700.0	9,734.0	10,618.9	8,814.0	48.5	40.0	0.00	1,602.9	-1,875.8	913.9	865.3	48.55	18.825	
11,800.0	9,734.0	10,718.9	8,814.0	49.2	40.9	0.00	1,702.9	-1,876.5	913.9	864.2	49.66	18.404	
11,900.0	9,734.0	10,818.9	8,814.0	49.9	41.8	0.00	1,802.9	-1,877.1	913.9	863.1	50.79	17.993	
12,000.0	9,734.0	10,918.9	8,814.0	50.7	42.7	0.00	1,902.8	-1,877.8	913.9	861.9	51.95	17.593	
12,100.0	9,734.0	11,018.9	8,814.0	51.5	43.7	0.00	2,002.8	-1,878.5	913.9	860.7	53.12	17.203	
12,200.0	9,734.0	11,118.9	8,814.0	52.3	44.7	0.00	2,102.8	-1,879.2	913.9	859.6	54.32	16.824	
12,300.0	9,734.0	11,218.9	8,814.0	53.2	45.7	0.00	2,202.8	-1,879.9	913.9	858.3	55.54	16.455	
12,400.0	9,734.0	11,318.9	8,814.0	54.0	46.7	0.00	2,302.8	-1,880.6	913.9	857.1	56.77	16.098	
12,500.0	9,734.0	11,418.9	8,814.0	54.9	47.8	0.00	2,402.8	-1,881.3	913.9	855.9	58.02	15.751	
12,600.0	9,734.0	11,518.9	8,814.0	55.9	48.8	0.00	2,502.8	-1,882.0	913.9	854.6	59.28	15.415	
12,700.0	9,734.0	11,618.9	8,814.0	56.8	49.9	0.00	2,602.8	-1,882.7	913.9	853.3	60.56	15.089	
12,800.0	9,734.0	11,718.9	8,814.0	57.8	51.0	0.00	2,702.8	-1,883.4	913.9	852.0	61.86	14.774	
12,900.0	9,734.0	11,818.9	8,814.0	58.8	52.1	0.00	2,802.8	-1,884.1	913.9	850.7	63.16	14.469	
13,000.0	9,734.0	11,918.9	8,814.0	59.9	53.3	0.00	2,902.8	-1,884.8	913.9	849.4	64.48	14.173	
13,100.0	9,734.0	12,018.9	8,814.0	60.9	54.4	0.00	3,002.8	-1,885.5	913.9	848.1	65.81	13.887	
13,200.0	9,734.0	12,118.9	8,814.0	62.0	55.6	0.00	3,102.8	-1,886.2	913.9	846.7	67.14	13.611	
13,300.0	9,734.0	12,218.9	8,814.0	63.0	56.8	0.00	3,202.8	-1,886.9	913.9	845.4	68.49	13.343	
13,400.0	9,734.0	12,318.9	8,814.0	64.1	58.0	0.00	3,302.8	-1,887.6	913.9	844.0	69.85	13.083	
13,500.0	9,734.0	12,418.9	8,814.0	65.2	59.2	0.00	3,402.8	-1,888.3	913.9	842.7	71.22	12.832	
13,600.0	9,734.0	12,518.9	8,814.0	66.3	60.4	0.00	3,502.8	-1,888.9	913.9	841.3	72.59	12.590	
13,700.0	9,734.0	12,618.9	8,814.0	67.5	61.6	0.00	3,602.8	-1,889.6	913.9	839.9	73.97	12.354	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
13,800.0	9,734.0	12,718.9	8,814.0	68.6	62.8	0.00	3,702.8	-1,890.3	913.9	838.5	75.36	12.127	
13,900.0	9,734.0	12,818.9	8,814.0	69.8	64.1	0.00	3,802.8	-1,891.0	913.9	837.1	76.76	11.906	
14,000.0	9,734.0	12,918.9	8,814.0	70.9	65.3	0.00	3,902.8	-1,891.7	913.9	835.7	78.16	11.692	
14,100.0	9,734.0	13,018.9	8,814.0	72.1	66.6	0.00	4,002.8	-1,892.4	913.9	834.3	79.57	11.485	
14,200.0	9,734.0	13,118.9	8,814.0	73.3	67.9	0.00	4,102.8	-1,893.1	913.9	832.9	80.98	11.285	
14,300.0	9,734.0	13,218.9	8,814.0	74.5	69.1	0.00	4,202.8	-1,893.8	913.9	831.5	82.41	11.090	
14,400.0	9,734.0	13,318.9	8,814.0	75.7	70.4	0.00	4,302.8	-1,894.5	913.9	830.0	83.83	10.901	
14,500.0	9,734.0	13,418.9	8,814.0	76.9	71.7	0.00	4,402.8	-1,895.2	913.9	828.6	85.26	10.718	
14,600.0	9,734.0	13,518.9	8,814.0	78.1	73.0	0.00	4,502.8	-1,895.9	913.9	827.2	86.70	10.541	
14,700.0	9,734.0	13,618.9	8,814.0	79.4	74.3	0.00	4,602.8	-1,896.6	913.9	825.7	88.14	10.369	
14,800.0	9,734.0	13,718.9	8,814.0	80.6	75.6	0.00	4,702.8	-1,897.3	913.9	824.3	89.58	10.202	
14,900.0	9,734.0	13,818.9	8,814.0	81.9	76.9	0.00	4,802.8	-1,898.0	913.9	822.9	91.03	10.039	
15,000.0	9,734.0	13,918.9	8,814.0	83.1	78.2	0.00	4,902.8	-1,898.7	913.9	821.4	92.48	9.882	
15,100.0	9,734.0	14,018.9	8,814.0	84.4	79.5	0.00	5,002.8	-1,899.4	913.9	819.9	93.94	9.728	
15,200.0	9,734.0	14,118.9	8,814.0	85.6	80.8	0.00	5,102.8	-1,900.1	913.9	818.5	95.40	9.579	
15,300.0	9,734.0	14,218.9	8,814.0	86.9	82.2	0.00	5,202.8	-1,900.7	913.9	817.0	96.86	9.435	
15,400.0	9,734.0	14,318.9	8,814.0	88.2	83.5	0.00	5,302.8	-1,901.4	913.9	815.6	98.33	9.294	
15,500.0	9,734.0	14,418.9	8,814.0	89.4	84.8	0.00	5,402.8	-1,902.1	913.9	814.1	99.80	9.157	
15,600.0	9,734.0	14,518.9	8,814.0	90.7	86.2	0.00	5,502.8	-1,902.8	913.9	812.6	101.27	9.024	
15,700.0	9,734.0	14,618.9	8,814.0	92.0	87.5	0.00	5,602.8	-1,903.5	913.9	811.1	102.75	8.894	
15,800.0	9,734.0	14,718.9	8,814.0	93.3	88.9	0.00	5,702.8	-1,904.2	913.9	809.7	104.23	8.768	
15,900.0	9,734.0	14,818.9	8,814.0	94.6	90.2	0.00	5,802.8	-1,904.9	913.9	808.2	105.71	8.645	
16,000.0	9,734.0	14,918.9	8,814.0	95.9	91.5	0.00	5,902.8	-1,905.6	913.9	806.7	107.19	8.526	
16,100.0	9,734.0	15,018.9	8,814.0	97.2	92.9	0.00	6,002.7	-1,906.3	913.9	805.2	108.68	8.409	
16,200.0	9,734.0	15,118.9	8,814.0	98.5	94.3	0.00	6,102.7	-1,907.0	913.9	803.7	110.16	8.296	
16,300.0	9,734.0	15,218.9	8,814.0	99.9	95.6	0.00	6,202.7	-1,907.7	913.9	802.2	111.65	8.185	
16,400.0	9,734.0	15,318.9	8,814.0	101.2	97.0	0.00	6,302.7	-1,908.4	913.9	800.7	113.15	8.077	
16,500.0	9,734.0	15,418.9	8,814.0	102.5	98.3	0.00	6,402.7	-1,909.1	913.9	799.2	114.64	7.972	
16,600.0	9,734.0	15,518.9	8,814.0	103.8	99.7	0.00	6,502.7	-1,909.8	913.9	797.7	116.14	7.869	
16,700.0	9,734.0	15,618.9	8,814.0	105.1	101.1	0.00	6,602.7	-1,910.5	913.9	796.3	117.64	7.769	
16,800.0	9,734.0	15,718.9	8,814.0	106.5	102.4	0.00	6,702.7	-1,911.2	913.9	794.8	119.14	7.671	
16,900.0	9,734.0	15,818.9	8,814.0	107.8	103.8	0.00	6,802.7	-1,911.9	913.9	793.2	120.64	7.575	
17,000.0	9,734.0	15,918.9	8,814.0	109.1	105.2	0.00	6,902.7	-1,912.6	913.9	791.7	122.14	7.482	
17,100.0	9,734.0	16,018.9	8,814.0	110.5	106.6	0.00	7,002.7	-1,913.2	913.9	790.2	123.65	7.391	
17,200.0	9,734.0	16,118.9	8,814.0	111.8	107.9	0.00	7,102.7	-1,913.9	913.9	788.7	125.16	7.302	
17,300.0	9,734.0	16,218.9	8,814.0	113.2	109.3	0.00	7,202.7	-1,914.6	913.9	787.2	126.66	7.215	
17,400.0	9,734.0	16,318.9	8,814.0	114.5	110.7	0.00	7,302.7	-1,915.3	913.9	785.7	128.17	7.130	
17,500.0	9,734.0	16,418.9	8,814.0	115.9	112.1	0.00	7,402.7	-1,916.0	913.9	784.2	129.68	7.047	
17,600.0	9,734.0	16,518.9	8,814.0	117.2	113.5	0.00	7,502.7	-1,916.7	913.9	782.7	131.20	6.966	
17,700.0	9,734.0	16,618.9	8,814.0	118.6	114.9	0.00	7,602.7	-1,917.4	913.9	781.2	132.71	6.886	
17,800.0	9,734.0	16,718.9	8,814.0	119.9	116.2	0.00	7,702.7	-1,918.1	913.9	779.7	134.23	6.809	
17,900.0	9,734.0	16,818.9	8,814.0	121.3	117.6	0.00	7,802.7	-1,918.8	913.9	778.1	135.74	6.732	
18,000.0	9,734.0	16,918.9	8,814.0	122.7	119.0	0.00	7,902.7	-1,919.5	913.9	776.6	137.26	6.658	
18,100.0	9,734.0	17,018.9	8,814.0	124.0	120.4	0.00	8,002.7	-1,920.2	913.9	775.1	138.78	6.585	
18,200.0	9,734.0	17,118.9	8,814.0	125.4	121.8	0.00	8,102.7	-1,920.9	913.9	773.6	140.30	6.514	
18,300.0	9,734.0	17,218.9	8,814.0	126.8	123.2	0.00	8,202.7	-1,921.6	913.9	772.1	141.82	6.444	
18,400.0	9,734.0	17,318.9	8,814.0	128.1	124.6	0.00	8,302.7	-1,922.3	913.9	770.6	143.34	6.376	
18,500.0	9,734.0	17,418.9	8,814.0	129.5	126.0	0.00	8,402.7	-1,923.0	913.9	769.0	144.87	6.309	
18,600.0	9,734.0	17,518.9	8,814.0	130.9	127.4	0.00	8,502.7	-1,923.7	913.9	767.5	146.39	6.243	
18,700.0	9,734.0	17,618.9	8,814.0	132.2	128.8	0.00	8,602.7	-1,924.4	913.9	766.0	147.92	6.179	
18,800.0	9,734.0	17,718.9	8,814.0	133.6	130.2	0.00	8,702.7	-1,925.0	913.9	764.5	149.44	6.115	
18,900.0	9,734.0	17,818.9	8,814.0	135.0	131.6	0.00	8,802.7	-1,925.7	913.9	762.9	150.97	6.054	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
19,000.0	9,734.0	17,918.9	8,814.0	136.4	133.0	0.00	8,902.7	-1,926.4	913.9	761.4	152.50	5.993		
19,100.0	9,734.0	18,018.9	8,814.0	137.7	134.4	0.00	9,002.7	-1,927.1	913.9	759.9	154.02	5.933		
19,200.0	9,734.0	18,118.9	8,814.0	139.1	135.8	0.00	9,102.7	-1,927.8	913.9	758.3	155.55	5.875		
19,300.0	9,734.0	18,218.9	8,814.0	140.5	137.2	0.00	9,202.7	-1,928.5	913.9	756.8	157.08	5.818		
19,400.0	9,734.0	18,318.9	8,814.0	141.9	138.6	0.00	9,302.7	-1,929.2	913.9	755.3	158.61	5.762		
19,500.0	9,734.0	18,418.9	8,814.0	143.3	140.0	0.00	9,402.7	-1,929.9	913.9	753.8	160.15	5.707		
19,600.0	9,734.0	18,518.9	8,814.0	144.7	141.4	0.00	9,502.7	-1,930.6	913.9	752.2	161.68	5.653		
19,700.0	9,734.0	18,618.9	8,814.0	146.1	142.8	0.00	9,602.7	-1,931.3	913.9	750.7	163.21	5.599		
19,800.0	9,734.0	18,718.9	8,814.0	147.4	144.2	0.00	9,702.7	-1,932.0	913.9	749.2	164.75	5.547		
19,900.0	9,734.0	18,818.9	8,814.0	148.8	145.7	0.00	9,802.7	-1,932.7	913.9	747.6	166.28	5.496		
20,000.0	9,734.0	18,918.9	8,814.0	150.2	147.1	0.00	9,902.7	-1,933.4	913.9	746.1	167.81	5.446		
20,100.0	9,734.0	19,018.9	8,814.0	151.6	148.5	0.00	10,002.7	-1,934.1	913.9	744.5	169.35	5.396		
20,200.0	9,734.0	19,118.9	8,814.0	152.9	149.9	0.00	10,102.7	-1,934.8	913.9	743.4	170.51	5.360		
20,207.7	9,734.0	19,126.6	8,814.0	153.0	150.0	0.00	10,110.3	-1,934.8	913.9	743.3	170.59	5.357		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 501H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,600.0	6,435.8	6,178.1	6,141.4	28.8	22.9	9.55	-202.1	-3,364.8	2,218.8	2,172.5	46.33	47.886	
6,700.0	6,531.8	6,276.9	6,239.3	29.3	23.3	9.56	-206.6	-3,377.5	2,203.6	2,156.5	47.11	46.780	
6,800.0	6,627.7	6,375.8	6,337.2	29.8	23.7	9.56	-211.2	-3,390.2	2,188.4	2,140.6	47.88	45.709	
6,900.0	6,723.7	6,474.6	6,435.1	30.4	24.1	9.56	-215.7	-3,402.9	2,173.3	2,124.6	48.65	44.672	
7,000.0	6,819.6	6,573.4	6,533.0	30.9	24.5	9.57	-220.3	-3,415.7	2,158.1	2,108.7	49.42	43.667	
7,100.0	6,915.6	6,672.3	6,630.9	31.4	24.9	9.57	-224.8	-3,428.4	2,142.9	2,092.7	50.19	42.692	
7,200.0	7,011.5	6,771.1	6,728.9	32.0	25.3	9.58	-229.4	-3,441.1	2,127.7	2,076.7	50.97	41.746	
7,300.0	7,107.5	6,870.0	6,826.8	32.5	25.7	9.58	-233.9	-3,453.8	2,112.5	2,060.8	51.74	40.828	
7,400.0	7,203.5	6,968.8	6,924.7	33.0	26.1	9.58	-238.5	-3,466.5	2,097.3	2,044.8	52.52	39.938	
7,500.0	7,299.4	7,067.6	7,022.6	33.6	26.5	9.59	-243.0	-3,479.2	2,082.2	2,028.9	53.29	39.072	
7,600.0	7,395.4	7,166.5	7,120.5	34.1	26.9	9.59	-247.5	-3,491.9	2,067.0	2,012.9	54.06	38.232	
7,700.0	7,491.3	7,265.3	7,218.4	34.6	27.3	9.60	-252.1	-3,504.6	2,051.8	1,997.0	54.84	37.414	
7,800.0	7,587.3	7,364.2	7,316.3	35.2	27.7	9.60	-256.6	-3,517.3	2,036.6	1,981.0	55.62	36.620	
7,900.0	7,683.2	7,463.0	7,414.3	35.7	28.0	9.61	-261.2	-3,530.1	2,021.4	1,965.0	56.39	35.847	
8,000.0	7,779.2	7,561.8	7,512.2	36.2	28.4	9.61	-265.7	-3,542.8	2,006.3	1,949.1	57.17	35.094	
8,100.0	7,875.1	7,660.7	7,610.1	36.8	28.8	9.61	-270.3	-3,555.5	1,991.1	1,933.1	57.94	34.362	
8,200.0	7,971.1	7,759.5	7,708.0	37.3	29.2	9.62	-274.8	-3,568.2	1,975.9	1,917.2	58.72	33.649	
8,300.0	8,067.0	7,858.4	7,805.9	37.9	29.6	9.62	-279.4	-3,580.9	1,960.7	1,901.2	59.50	32.954	
8,400.0	8,163.0	7,957.2	7,903.8	38.4	30.0	9.63	-283.9	-3,593.6	1,945.5	1,885.3	60.27	32.278	
8,500.0	8,258.9	8,056.0	8,001.7	38.9	30.4	9.63	-288.5	-3,606.3	1,930.3	1,869.3	61.05	31.618	
8,600.0	8,354.9	8,154.9	8,099.7	39.5	30.8	9.63	-293.0	-3,619.0	1,915.2	1,853.3	61.83	30.975	
8,700.0	8,451.4	8,254.0	8,197.8	40.0	31.2	9.58	-297.6	-3,631.8	1,901.9	1,839.3	62.60	30.380	
8,800.0	8,548.7	8,353.5	8,296.4	40.5	31.6	9.53	-302.1	-3,644.6	1,892.0	1,828.7	63.37	29.858	
8,900.0	8,646.8	8,453.3	8,395.3	40.9	32.0	9.47	-306.7	-3,657.4	1,885.6	1,821.5	64.12	29.406	
9,000.0	8,745.5	8,553.2	8,494.3	41.3	32.4	9.40	-311.3	-3,670.3	1,882.6	1,817.8	64.87	29.022	
9,036.6	8,781.8	8,589.8	8,530.5	41.5	32.6	9.37	-313.0	-3,675.0	1,882.4	1,817.3	65.14	28.899	
9,100.0	8,844.7	8,653.2	8,593.3	41.7	32.8	9.32	-315.9	-3,683.1	1,883.1	1,817.5	65.60	28.705	
9,200.0	8,944.2	8,891.4	8,830.2	42.1	33.8	9.19	-324.0	-3,705.7	1,883.9	1,817.3	66.58	28.296	
9,300.0	9,044.1	9,096.8	9,035.5	42.4	34.5	9.19	-325.7	-3,710.4	1,880.1	1,812.9	67.27	27.950	
9,400.0	9,144.0	9,196.7	9,135.4	42.7	34.8	9.19	-325.7	-3,710.4	1,878.0	1,810.1	67.93	27.646	
9,488.4	9,232.4	9,285.1	9,223.8	42.9	35.1	9.19	-325.7	-3,710.4	1,877.8	1,809.3	68.50	27.414	
9,500.0	9,244.0	9,296.7	9,235.4	42.9	35.1	-90.44	-325.7	-3,710.4	1,878.0	1,809.4	68.57	27.386	
9,600.0	9,343.6	9,397.1	9,335.5	43.2	35.4	-87.04	-319.1	-3,710.5	1,877.5	1,808.3	69.19	27.135	
9,700.0	9,439.3	9,497.9	9,432.4	43.4	35.7	-87.27	-292.1	-3,710.6	1,876.0	1,806.3	69.74	26.899	
9,800.0	9,527.0	9,598.9	9,521.7	43.6	35.9	-87.63	-245.3	-3,711.0	1,873.4	1,803.2	70.22	26.681	
9,900.0	9,602.9	9,700.3	9,599.4	43.8	36.1	-88.08	-180.5	-3,711.4	1,869.9	1,799.3	70.62	26.479	
10,000.0	9,663.6	9,801.8	9,661.8	43.9	36.1	-88.62	-100.7	-3,712.0	1,865.6	1,794.7	70.97	26.290	
10,100.0	9,706.6	9,903.4	9,706.0	43.9	36.2	-89.23	-9.4	-3,712.6	1,860.8	1,789.5	71.28	26.106	
10,200.0	9,729.9	10,005.1	9,729.9	43.9	36.1	-89.86	89.3	-3,713.3	1,855.5	1,783.9	71.57	25.926	
10,300.0	9,734.0	10,106.1	9,734.0	44.0	36.1	-90.27	190.1	-3,714.0	1,850.4	1,778.5	71.86	25.749	
10,400.0	9,734.0	10,206.1	9,734.0	44.0	36.2	-90.27	290.1	-3,714.7	1,848.0	1,775.8	72.25	25.579	
10,490.9	9,734.0	10,297.0	9,734.0	44.1	36.3	-90.27	380.9	-3,715.3	1,847.7	1,775.0	72.69	25.417 CC	
10,500.0	9,734.0	10,306.1	9,734.0	44.1	36.3	-90.27	390.1	-3,715.4	1,847.9	1,775.2	72.74	25.404	
10,600.0	9,734.0	10,406.1	9,734.0	44.2	36.5	-90.27	490.1	-3,716.1	1,847.9	1,774.6	73.35	25.193	
10,700.0	9,734.0	10,506.1	9,734.0	44.3	36.9	-90.27	590.0	-3,716.8	1,848.0	1,773.9	74.07	24.949	
10,800.0	9,734.0	10,606.1	9,734.0	44.5	37.3	-90.27	690.0	-3,717.5	1,848.0	1,773.1	74.89	24.675	
10,900.0	9,734.0	10,706.1	9,734.0	44.8	37.7	-90.27	790.0	-3,718.2	1,848.0	1,772.1	75.82	24.374	
11,000.0	9,734.0	10,806.1	9,734.0	45.1	38.3	-90.27	890.0	-3,718.9	1,848.0	1,771.1	76.84	24.050	
11,100.0	9,734.0	10,906.1	9,734.0	45.4	38.8	-90.27	990.0	-3,719.5	1,848.0	1,770.0	77.95	23.706	
11,200.0	9,734.0	11,006.1	9,734.0	45.8	39.5	-90.27	1,090.0	-3,720.2	1,848.0	1,768.8	79.16	23.345	
11,300.0	9,734.0	11,106.1	9,734.0	46.3	40.1	-90.27	1,190.0	-3,720.9	1,848.0	1,767.5	80.45	22.970	
11,400.0	9,734.0	11,206.1	9,734.0	46.8	40.8	-90.27	1,290.0	-3,721.6	1,848.0	1,766.1	81.83	22.584	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 501H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
11,500.0	9,734.0	11,306.1	9,734.0	47.3	41.6	-90.27	1,390.0	-3,722.3	1,848.0	1,764.7	83.28	22.190	
11,600.0	9,734.0	11,406.1	9,734.0	47.9	42.4	-90.27	1,490.0	-3,723.0	1,848.0	1,763.2	84.80	21.791	
11,700.0	9,734.0	11,506.1	9,734.0	48.5	43.2	-90.27	1,590.0	-3,723.7	1,848.0	1,761.6	86.40	21.388	
11,800.0	9,734.0	11,606.1	9,734.0	49.2	44.0	-90.27	1,690.0	-3,724.4	1,848.0	1,759.9	88.06	20.984	
11,900.0	9,734.0	11,706.1	9,734.0	49.9	44.9	-90.27	1,790.0	-3,725.1	1,848.0	1,758.2	89.79	20.581	
12,000.0	9,734.0	11,806.1	9,734.0	50.7	45.8	-90.27	1,890.0	-3,725.8	1,848.0	1,756.4	91.57	20.180	
12,100.0	9,734.0	11,906.1	9,734.0	51.5	46.7	-90.27	1,990.0	-3,726.5	1,848.0	1,754.5	93.41	19.783	
12,200.0	9,734.0	12,006.1	9,734.0	52.3	47.7	-90.27	2,090.0	-3,727.2	1,848.0	1,752.7	95.30	19.390	
12,300.0	9,734.0	12,106.1	9,734.0	53.2	48.7	-90.27	2,190.0	-3,727.9	1,848.0	1,750.7	97.25	19.003	
12,400.0	9,734.0	12,206.1	9,734.0	54.0	49.7	-90.27	2,290.0	-3,728.6	1,848.0	1,748.7	99.23	18.622	
12,500.0	9,734.0	12,306.1	9,734.0	54.9	50.7	-90.27	2,390.0	-3,729.3	1,848.0	1,746.7	101.27	18.249	
12,600.0	9,734.0	12,406.1	9,734.0	55.9	51.7	-90.27	2,490.0	-3,730.0	1,848.0	1,744.6	103.34	17.883	
12,700.0	9,734.0	12,506.1	9,734.0	56.8	52.8	-90.27	2,590.0	-3,730.7	1,848.0	1,742.5	105.45	17.525	
12,800.0	9,734.0	12,606.1	9,734.0	57.8	53.9	-90.27	2,690.0	-3,731.3	1,848.0	1,740.4	107.60	17.175	
12,900.0	9,734.0	12,706.1	9,734.0	58.8	55.0	-90.27	2,790.0	-3,732.0	1,848.0	1,738.2	109.78	16.833	
13,000.0	9,734.0	12,806.1	9,734.0	59.9	56.1	-90.27	2,890.0	-3,732.7	1,848.0	1,736.0	112.00	16.500	
13,100.0	9,734.0	12,906.1	9,734.0	60.9	57.2	-90.27	2,990.0	-3,733.4	1,848.0	1,733.7	114.24	16.176	
13,200.0	9,734.0	13,006.1	9,734.0	62.0	58.4	-90.27	3,090.0	-3,734.1	1,848.0	1,731.5	116.51	15.860	
13,300.0	9,734.0	13,106.1	9,734.0	63.0	59.5	-90.27	3,190.0	-3,734.8	1,848.0	1,729.2	118.81	15.553	
13,400.0	9,734.0	13,206.1	9,734.0	64.1	60.7	-90.27	3,290.0	-3,735.5	1,848.0	1,726.8	121.14	15.255	
13,500.0	9,734.0	13,306.1	9,734.0	65.2	61.9	-90.27	3,390.0	-3,736.2	1,848.0	1,724.5	123.49	14.964	
13,600.0	9,734.0	13,406.1	9,734.0	66.3	63.1	-90.27	3,490.0	-3,736.9	1,848.0	1,722.1	125.86	14.682	
13,700.0	9,734.0	13,506.1	9,734.0	67.5	64.3	-90.27	3,590.0	-3,737.6	1,848.0	1,719.7	128.26	14.408	
13,800.0	9,734.0	13,606.1	9,734.0	68.6	65.5	-90.27	3,690.0	-3,738.3	1,848.0	1,717.3	130.67	14.142	
13,900.0	9,734.0	13,706.1	9,734.0	69.8	66.7	-90.27	3,790.0	-3,739.0	1,848.0	1,714.9	133.11	13.883	
14,000.0	9,734.0	13,806.1	9,734.0	70.9	67.9	-90.27	3,890.0	-3,739.7	1,848.0	1,712.4	135.56	13.632	
14,100.0	9,734.0	13,906.1	9,734.0	72.1	69.1	-90.27	3,990.0	-3,740.4	1,848.0	1,709.9	138.03	13.388	
14,200.0	9,734.0	14,006.1	9,734.0	73.3	70.4	-90.27	4,090.0	-3,741.1	1,848.0	1,707.5	140.51	13.152	
14,300.0	9,734.0	14,106.1	9,734.0	74.5	71.6	-90.27	4,190.0	-3,741.8	1,848.0	1,705.0	143.01	12.922	
14,400.0	9,734.0	14,206.1	9,734.0	75.7	72.9	-90.27	4,290.0	-3,742.5	1,848.0	1,702.4	145.53	12.698	
14,500.0	9,734.0	14,306.1	9,734.0	76.9	74.2	-90.27	4,390.0	-3,743.1	1,848.0	1,699.9	148.06	12.481	
14,600.0	9,734.0	14,406.1	9,734.0	78.1	75.4	-90.27	4,490.0	-3,743.8	1,848.0	1,697.4	150.60	12.271	
14,700.0	9,734.0	14,506.1	9,734.0	79.4	76.7	-90.27	4,590.0	-3,744.5	1,848.0	1,694.8	153.16	12.066	
14,800.0	9,734.0	14,606.1	9,734.0	80.6	78.0	-90.27	4,690.0	-3,745.2	1,848.0	1,692.3	155.72	11.867	
14,900.0	9,734.0	14,706.1	9,734.0	81.9	79.3	-90.27	4,789.9	-3,745.9	1,848.0	1,689.7	158.30	11.674	
15,000.0	9,734.0	14,806.1	9,734.0	83.1	80.6	-90.27	4,889.9	-3,746.6	1,848.0	1,687.1	160.89	11.486	
15,100.0	9,734.0	14,906.1	9,734.0	84.4	81.9	-90.27	4,989.9	-3,747.3	1,848.0	1,684.5	163.49	11.303	
15,200.0	9,734.0	15,006.1	9,734.0	85.6	83.2	-90.27	5,089.9	-3,748.0	1,848.0	1,681.9	166.10	11.126	
15,300.0	9,734.0	15,106.1	9,734.0	86.9	84.5	-90.27	5,189.9	-3,748.7	1,848.0	1,679.3	168.72	10.953	
15,400.0	9,734.0	15,206.1	9,734.0	88.2	85.8	-90.27	5,289.9	-3,749.4	1,848.0	1,676.6	171.34	10.785	
15,500.0	9,734.0	15,306.1	9,734.0	89.4	87.1	-90.27	5,389.9	-3,750.1	1,848.0	1,674.0	173.98	10.622	
15,600.0	9,734.0	15,406.1	9,734.0	90.7	88.5	-90.27	5,489.9	-3,750.8	1,848.0	1,671.4	176.62	10.463	
15,700.0	9,734.0	15,506.1	9,734.0	92.0	89.8	-90.27	5,589.9	-3,751.5	1,848.0	1,668.7	179.27	10.308	
15,800.0	9,734.0	15,606.1	9,734.0	93.3	91.1	-90.27	5,689.9	-3,752.2	1,848.0	1,666.1	181.93	10.158	
15,900.0	9,734.0	15,706.1	9,734.0	94.6	92.5	-90.27	5,789.9	-3,752.9	1,848.0	1,663.4	184.60	10.011	
16,000.0	9,734.0	15,806.1	9,734.0	95.9	93.8	-90.27	5,889.9	-3,753.6	1,848.0	1,660.7	187.27	9.868	
16,100.0	9,734.0	15,906.1	9,734.0	97.2	95.1	-90.27	5,989.9	-3,754.3	1,848.0	1,658.0	189.95	9.729	
16,200.0	9,734.0	16,006.1	9,734.0	98.5	96.5	-90.27	6,089.9	-3,755.0	1,848.0	1,655.4	192.64	9.593	
16,300.0	9,734.0	16,106.1	9,734.0	99.9	97.8	-90.27	6,189.9	-3,755.6	1,848.0	1,652.7	195.33	9.461	
16,400.0	9,734.0	16,206.1	9,734.0	101.2	99.2	-90.27	6,289.9	-3,756.3	1,848.0	1,650.0	198.03	9.332	
16,500.0	9,734.0	16,306.1	9,734.0	102.5	100.5	-90.27	6,389.9	-3,757.0	1,848.0	1,647.3	200.73	9.206	
16,600.0	9,734.0	16,406.1	9,734.0	103.8	101.9	-90.27	6,489.9	-3,757.7	1,848.0	1,644.6	203.44	9.084	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 501H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
16,700.0	9,734.0	16,506.1	9,734.0	105.1	103.2	-90.27	6,589.9	-3,758.4	1,848.0	1,641.8	206.15	8.964	
16,800.0	9,734.0	16,606.1	9,734.0	106.5	104.6	-90.27	6,689.9	-3,759.1	1,848.0	1,639.1	208.87	8.848	
16,900.0	9,734.0	16,706.1	9,734.0	107.8	106.0	-90.27	6,789.9	-3,759.8	1,848.0	1,636.4	211.59	8.734	
17,000.0	9,734.0	16,806.1	9,734.0	109.1	107.3	-90.27	6,889.9	-3,760.5	1,848.0	1,633.7	214.32	8.623	
17,100.0	9,734.0	16,906.1	9,734.0	110.5	108.7	-90.27	6,989.9	-3,761.2	1,848.0	1,630.9	217.05	8.514	
17,200.0	9,734.0	17,006.1	9,734.0	111.8	110.1	-90.27	7,089.9	-3,761.9	1,848.0	1,628.2	219.78	8.408	
17,300.0	9,734.0	17,106.1	9,734.0	113.2	111.4	-90.27	7,189.9	-3,762.6	1,848.0	1,625.5	222.52	8.305	
17,400.0	9,734.0	17,206.1	9,734.0	114.5	112.8	-90.27	7,289.9	-3,763.3	1,848.0	1,622.7	225.27	8.204	
17,500.0	9,734.0	17,306.1	9,734.0	115.9	114.2	-90.27	7,389.9	-3,764.0	1,848.0	1,620.0	228.02	8.105	
17,600.0	9,734.0	17,406.1	9,734.0	117.2	115.6	-90.27	7,489.9	-3,764.7	1,848.0	1,617.2	230.77	8.008	
17,700.0	9,734.0	17,506.1	9,734.0	118.6	116.9	-90.27	7,589.9	-3,765.4	1,848.0	1,614.5	233.52	7.914	
17,800.0	9,734.0	17,606.1	9,734.0	119.9	118.3	-90.27	7,689.9	-3,766.1	1,848.0	1,611.7	236.28	7.821	
17,900.0	9,734.0	17,706.1	9,734.0	121.3	119.7	-90.27	7,789.9	-3,766.8	1,848.0	1,609.0	239.04	7.731	
18,000.0	9,734.0	17,806.1	9,734.0	122.7	121.1	-90.27	7,889.9	-3,767.4	1,848.0	1,606.2	241.80	7.643	
18,100.0	9,734.0	17,906.1	9,734.0	124.0	122.5	-90.27	7,989.9	-3,768.1	1,848.0	1,603.4	244.57	7.556	
18,200.0	9,734.0	18,006.1	9,734.0	125.4	123.8	-90.27	8,089.9	-3,768.8	1,848.0	1,600.7	247.34	7.471	
18,300.0	9,734.0	18,106.1	9,734.0	126.8	125.2	-90.27	8,189.9	-3,769.5	1,848.0	1,597.9	250.11	7.389	
18,400.0	9,734.0	18,206.1	9,734.0	128.1	126.6	-90.27	8,289.9	-3,770.2	1,848.0	1,595.1	252.89	7.308	
18,500.0	9,734.0	18,306.1	9,734.0	129.5	128.0	-90.27	8,389.9	-3,770.9	1,848.0	1,592.3	255.67	7.228	
18,600.0	9,734.0	18,406.1	9,734.0	130.9	129.4	-90.27	8,489.9	-3,771.6	1,848.0	1,589.6	258.45	7.150	
18,700.0	9,734.0	18,506.1	9,734.0	132.2	130.8	-90.27	8,589.9	-3,772.3	1,848.0	1,586.8	261.23	7.074	
18,800.0	9,734.0	18,606.1	9,734.0	133.6	132.2	-90.27	8,689.9	-3,773.0	1,848.0	1,584.0	264.02	7.000	
18,900.0	9,734.0	18,706.1	9,734.0	135.0	133.6	-90.27	8,789.9	-3,773.7	1,848.0	1,581.2	266.81	6.926	
19,000.0	9,734.0	18,806.1	9,734.0	136.4	135.0	-90.27	8,889.8	-3,774.4	1,848.0	1,578.4	269.60	6.855	
19,100.0	9,734.0	18,906.1	9,734.0	137.7	136.4	-90.27	8,989.8	-3,775.1	1,848.0	1,575.6	272.39	6.784	
19,200.0	9,734.0	19,006.1	9,734.0	139.1	137.8	-90.27	9,089.8	-3,775.8	1,848.0	1,572.8	275.18	6.716	
19,300.0	9,734.0	19,106.1	9,734.0	140.5	139.2	-90.27	9,189.8	-3,776.5	1,848.0	1,570.0	277.98	6.648	
19,400.0	9,734.0	19,206.1	9,734.0	141.9	140.6	-90.27	9,289.8	-3,777.2	1,848.0	1,567.2	280.78	6.582	
19,500.0	9,734.0	19,306.1	9,734.0	143.3	142.0	-90.27	9,389.8	-3,777.9	1,848.0	1,564.4	283.58	6.517	
19,600.0	9,734.0	19,406.1	9,734.0	144.7	143.4	-90.27	9,489.8	-3,778.6	1,848.0	1,561.6	286.38	6.453	
19,700.0	9,734.0	19,506.1	9,734.0	146.1	144.8	-90.27	9,589.8	-3,779.2	1,848.0	1,558.8	289.19	6.390	
19,800.0	9,734.0	19,606.1	9,734.0	147.4	146.2	-90.27	9,689.8	-3,779.9	1,848.0	1,556.0	291.99	6.329	
19,900.0	9,734.0	19,706.1	9,734.0	148.8	147.6	-90.27	9,789.8	-3,780.6	1,848.0	1,553.2	294.80	6.269	
20,000.0	9,734.0	19,806.1	9,734.0	150.2	149.0	-90.27	9,889.8	-3,781.3	1,848.0	1,550.4	297.61	6.210	
20,100.0	9,734.0	19,906.1	9,734.0	151.6	150.4	-90.27	9,989.8	-3,782.0	1,848.0	1,547.6	300.42	6.151	
20,200.0	9,734.0	20,006.1	9,734.0	152.9	151.8	-90.27	10,089.8	-3,782.7	1,848.0	1,545.0	303.02	6.099	
20,200.3	9,734.0	20,006.4	9,734.0	152.9	151.8	-90.27	10,090.2	-3,782.7	1,848.0	1,545.0	303.03	6.099	
20,207.7	9,734.0	20,011.3	9,734.0	153.0	151.9	-90.27	10,095.1	-3,782.8	1,848.0	1,544.8	303.22	6.095 ES, SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 502H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
4,500.0	4,420.8	4,469.7	4,454.8	17.8	15.8	5.25	-275.7	-2,767.3	2,193.5	2,161.9	31.59	69.439
4,600.0	4,516.8	4,564.8	4,549.2	18.3	16.2	5.02	-286.3	-2,764.6	2,163.6	2,131.3	32.32	66.934
4,700.0	4,612.7	4,659.8	4,643.6	18.8	16.5	4.78	-296.9	-2,761.9	2,133.7	2,100.7	33.06	64.539
4,800.0	4,708.7	4,747.8	4,731.1	19.3	16.9	4.57	-306.1	-2,759.6	2,104.0	2,070.2	33.78	62.289
4,900.0	4,804.7	4,833.6	4,816.6	19.9	17.2	4.43	-312.6	-2,757.9	2,074.8	2,040.3	34.48	60.165
5,000.0	4,900.6	4,919.8	4,902.7	20.4	17.5	4.36	-316.7	-2,756.9	2,045.9	2,010.8	35.19	58.147
5,100.0	4,996.6	5,006.2	4,989.1	20.9	17.8	4.37	-318.3	-2,756.5	2,017.6	1,981.7	35.88	56.230
5,200.0	5,092.5	5,101.0	5,083.9	21.4	18.1	4.43	-318.3	-2,756.5	1,989.5	1,952.9	36.58	54.385
5,300.0	5,188.5	5,197.0	5,179.9	21.9	18.4	4.50	-318.3	-2,756.5	1,961.4	1,924.1	37.29	52.604
5,400.0	5,284.4	5,292.9	5,275.8	22.4	18.7	4.56	-318.3	-2,756.5	1,933.3	1,895.3	37.99	50.888
5,500.0	5,380.4	5,388.9	5,371.8	23.0	19.1	4.63	-318.3	-2,756.5	1,905.2	1,866.5	38.70	49.232
5,600.0	5,476.3	5,484.8	5,467.7	23.5	19.4	4.70	-318.3	-2,756.5	1,877.2	1,837.7	39.41	47.634
5,700.0	5,572.3	5,580.8	5,563.7	24.0	19.7	4.77	-318.3	-2,756.5	1,849.1	1,809.0	40.12	46.091
5,800.0	5,668.2	5,676.7	5,659.6	24.5	20.0	4.84	-318.3	-2,756.5	1,821.0	1,780.2	40.83	44.600
5,900.0	5,764.2	5,772.7	5,755.6	25.1	20.4	4.92	-318.3	-2,756.5	1,792.9	1,751.4	41.54	43.159
6,000.0	5,860.1	5,868.6	5,851.5	25.6	20.7	5.00	-318.3	-2,756.5	1,764.9	1,722.6	42.26	41.765
6,100.0	5,956.1	5,964.6	5,947.5	26.1	21.0	5.08	-318.3	-2,756.5	1,736.8	1,693.8	42.97	40.417
6,200.0	6,052.0	6,060.5	6,043.4	26.6	21.3	5.16	-318.3	-2,756.5	1,708.7	1,665.1	43.69	39.112
6,300.0	6,148.0	6,156.5	6,139.4	27.2	21.7	5.25	-318.3	-2,756.5	1,680.7	1,636.3	44.41	37.848
6,400.0	6,243.9	6,252.4	6,235.3	27.7	22.0	5.34	-318.3	-2,756.5	1,652.6	1,607.5	45.13	36.623
6,500.0	6,339.9	6,348.4	6,331.3	28.2	22.3	5.43	-318.3	-2,756.5	1,624.6	1,578.7	45.85	35.436
6,600.0	6,435.8	6,444.3	6,427.2	28.8	22.6	5.53	-318.3	-2,756.5	1,596.5	1,550.0	46.57	34.285
6,700.0	6,531.8	6,540.3	6,523.2	29.3	23.0	5.62	-318.3	-2,756.5	1,568.5	1,521.2	47.29	33.168
6,800.0	6,627.7	6,636.2	6,619.1	29.8	23.3	5.73	-318.3	-2,756.5	1,540.5	1,492.5	48.01	32.085
6,900.0	6,723.7	6,732.2	6,715.1	30.4	23.6	5.83	-318.3	-2,756.5	1,512.4	1,463.7	48.74	31.033
7,000.0	6,819.6	6,828.2	6,811.0	30.9	24.0	5.94	-318.3	-2,756.5	1,484.4	1,434.9	49.46	30.011
7,100.0	6,915.6	6,924.1	6,907.0	31.4	24.3	6.06	-318.3	-2,756.5	1,456.4	1,406.2	50.19	29.019
7,200.0	7,011.5	7,020.1	7,002.9	32.0	24.6	6.18	-318.3	-2,756.5	1,428.4	1,377.5	50.92	28.054
7,300.0	7,107.5	7,116.0	7,098.9	32.5	25.0	6.30	-318.3	-2,756.5	1,400.4	1,348.7	51.64	27.116
7,400.0	7,203.5	7,212.0	7,194.9	33.0	25.3	6.43	-318.3	-2,756.5	1,372.4	1,320.0	52.37	26.204
7,500.0	7,299.4	7,307.9	7,290.8	33.6	25.6	6.57	-318.3	-2,756.5	1,344.4	1,291.3	53.10	25.316
7,600.0	7,395.4	7,403.9	7,388.8	34.1	26.0	6.71	-318.3	-2,756.5	1,316.4	1,262.5	53.83	24.452
7,700.0	7,491.3	7,499.8	7,482.7	34.6	26.3	6.85	-318.3	-2,756.5	1,288.4	1,233.8	54.57	23.611
7,800.0	7,587.3	7,595.8	7,578.7	35.2	26.6	7.00	-318.3	-2,756.5	1,260.4	1,205.1	55.30	22.792
7,900.0	7,683.2	7,691.7	7,674.6	35.7	27.0	7.16	-318.3	-2,756.5	1,232.4	1,176.4	56.03	21.994
8,000.0	7,779.2	7,787.7	7,770.6	36.2	27.3	7.33	-318.3	-2,756.5	1,204.5	1,147.7	56.77	21.217
8,100.0	7,875.1	7,883.6	7,866.5	36.8	27.6	7.51	-318.3	-2,756.5	1,176.5	1,119.0	57.51	20.459
8,200.0	7,971.1	7,979.6	7,962.5	37.3	28.0	7.69	-318.3	-2,756.5	1,148.6	1,090.4	58.25	19.720
8,300.0	8,067.0	8,075.5	8,058.4	37.9	28.3	7.88	-318.3	-2,756.5	1,120.7	1,061.7	58.99	18.999
8,400.0	8,163.0	8,171.5	8,154.4	38.4	28.6	8.08	-318.3	-2,756.5	1,092.8	1,033.0	59.73	18.296
8,500.0	8,258.9	8,267.4	8,250.3	38.9	29.0	8.30	-318.3	-2,756.5	1,064.9	1,004.4	60.47	17.610
8,600.0	8,354.9	8,363.4	8,346.3	39.5	29.3	8.52	-318.3	-2,756.5	1,037.0	975.8	61.21	16.941
8,700.0	8,451.4	8,459.9	8,442.8	40.0	29.6	8.65	-318.3	-2,756.5	1,011.0	949.0	61.95	16.318
8,800.0	8,548.7	8,557.2	8,540.1	40.5	30.0	8.78	-318.3	-2,756.5	988.3	925.6	62.69	15.765
8,900.0	8,646.8	8,655.3	8,638.2	40.9	30.3	8.90	-318.3	-2,756.5	969.1	905.6	63.43	15.279
9,000.0	8,745.5	8,754.0	8,736.9	41.3	30.7	9.00	-318.3	-2,756.5	953.2	889.0	64.15	14.859
9,100.0	8,844.7	8,853.2	8,836.1	41.7	31.0	9.08	-318.3	-2,756.5	940.8	875.9	64.87	14.503
9,200.0	8,944.2	8,952.8	8,935.6	42.1	31.4	9.14	-318.3	-2,756.5	931.7	866.2	65.57	14.209
9,300.0	9,044.1	9,052.6	9,035.5	42.4	31.7	9.17	-318.3	-2,756.5	926.2	859.9	66.27	13.976
9,400.0	9,144.0	9,152.6	9,135.4	42.7	32.1	9.19	-318.3	-2,756.5	924.0	857.1	66.95	13.802
9,488.4	9,232.4	9,240.9	9,223.8	42.9	32.4	9.19	-318.3	-2,756.5	923.8	856.3	67.53	13.679
9,500.0	9,244.0	9,252.6	9,235.4	42.9	32.4	-90.45	-318.3	-2,756.5	924.0	856.4	67.61	13.666

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 502H - OH - Plan 0.1													Offset Site Error:	0.0 usft	
Survey Program:		0-B001Mb_MWD+HRGM				Rule Assigned:								Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
9,600.0	9,343.6	9,345.3	9,327.9	43.2	32.7	-87.08	-313.0	-2,756.8	923.9	855.6	68.26	13.535			
9,700.0	9,439.3	9,436.6	9,416.3	43.4	33.0	-87.34	-290.8	-2,758.2	923.7	854.8	68.83	13.419			
9,800.0	9,527.0	9,528.7	9,499.6	43.6	33.3	-87.72	-251.9	-2,760.5	923.4	854.1	69.32	13.321			
9,900.0	9,602.9	9,621.9	9,574.7	43.8	33.5	-88.18	-197.1	-2,763.9	923.2	853.4	69.74	13.237			
10,000.0	9,663.6	9,716.6	9,638.6	43.9	33.7	-88.73	-127.6	-2,768.1	922.9	852.8	70.10	13.165			
10,100.0	9,706.6	9,812.9	9,688.2	43.9	33.9	-89.33	-45.3	-2,773.2	922.7	852.3	70.43	13.101			
10,200.0	9,729.9	9,911.2	9,720.8	43.9	34.1	-89.97	47.1	-2,778.8	922.7	852.0	70.74	13.044			
10,200.4	9,729.9	9,911.6	9,720.9	43.9	34.1	-89.97	47.5	-2,778.8	922.7	852.0	70.74	13.044 CC			
10,300.0	9,734.0	10,011.7	9,733.8	44.0	34.2	-90.52	146.4	-2,784.9	923.0	851.9	71.03	12.994			
10,400.0	9,734.0	10,154.0	9,734.0	44.0	34.6	-90.53	288.5	-2,790.6	924.0	852.5	71.48	12.927			
10,500.0	9,734.0	10,262.0	9,734.0	44.1	34.9	-90.53	396.5	-2,791.5	924.0	852.0	72.01	12.832			
10,600.0	9,734.0	10,362.0	9,734.0	44.2	35.2	-90.53	496.5	-2,792.2	924.0	851.4	72.64	12.720			
10,700.0	9,734.0	10,462.0	9,734.0	44.3	35.6	-90.53	596.5	-2,792.9	924.0	850.7	73.39	12.591			
10,800.0	9,734.0	10,562.0	9,734.0	44.5	36.1	-90.53	696.5	-2,793.6	924.0	849.8	74.23	12.448			
10,900.0	9,734.0	10,662.0	9,734.0	44.8	36.6	-90.53	796.5	-2,794.2	924.0	848.9	75.18	12.290			
11,000.0	9,734.0	10,762.0	9,734.0	45.1	37.1	-90.53	896.5	-2,794.9	924.0	847.8	76.23	12.121			
11,100.0	9,734.0	10,862.0	9,734.0	45.4	37.7	-90.53	996.5	-2,795.6	924.0	846.7	77.37	11.942			
11,200.0	9,734.0	10,962.0	9,734.0	45.8	38.4	-90.53	1,096.5	-2,796.3	924.0	845.4	78.61	11.755			
11,300.0	9,734.0	11,062.0	9,734.0	46.3	39.0	-90.53	1,196.5	-2,797.0	924.0	844.1	79.92	11.561			
11,400.0	9,734.0	11,162.0	9,734.0	46.8	39.8	-90.53	1,296.5	-2,797.7	924.0	842.7	81.32	11.362			
11,500.0	9,734.0	11,262.0	9,734.0	47.3	40.5	-90.53	1,396.5	-2,798.4	924.0	841.2	82.80	11.160			
11,600.0	9,734.0	11,362.0	9,734.0	47.9	41.3	-90.53	1,496.4	-2,799.1	924.0	839.7	84.35	10.955			
11,700.0	9,734.0	11,462.0	9,734.0	48.5	42.2	-90.53	1,596.4	-2,799.8	924.0	838.1	85.97	10.748			
11,800.0	9,734.0	11,562.0	9,734.0	49.2	43.1	-90.53	1,696.4	-2,800.5	924.0	836.4	87.66	10.542			
11,900.0	9,734.0	11,662.0	9,734.0	49.9	44.0	-90.53	1,796.4	-2,801.2	924.0	834.6	89.40	10.335			
12,000.0	9,734.0	11,762.0	9,734.0	50.7	44.9	-90.53	1,896.4	-2,801.9	924.0	832.8	91.21	10.131			
12,100.0	9,734.0	11,862.0	9,734.0	51.5	45.9	-90.53	1,996.4	-2,802.6	924.0	831.0	93.07	9.928			
12,200.0	9,734.0	11,962.0	9,734.0	52.3	46.8	-90.53	2,096.4	-2,803.3	924.0	829.1	94.98	9.728			
12,300.0	9,734.0	12,062.0	9,734.0	53.2	47.8	-90.53	2,196.4	-2,804.0	924.0	827.1	96.95	9.532			
12,400.0	9,734.0	12,162.0	9,734.0	54.0	48.9	-90.53	2,296.4	-2,804.6	924.0	825.1	98.95	9.338			
12,500.0	9,734.0	12,262.0	9,734.0	54.9	49.9	-90.53	2,396.4	-2,805.3	924.0	823.0	101.00	9.149			
12,600.0	9,734.0	12,362.0	9,734.0	55.9	51.0	-90.53	2,496.4	-2,806.0	924.0	820.9	103.09	8.963			
12,700.0	9,734.0	12,462.0	9,734.0	56.8	52.1	-90.53	2,596.4	-2,806.7	924.0	818.8	105.22	8.782			
12,800.0	9,734.0	12,562.0	9,734.0	57.8	53.2	-90.53	2,696.4	-2,807.4	924.0	816.7	107.39	8.605			
12,900.0	9,734.0	12,662.0	9,734.0	58.8	54.3	-90.53	2,796.4	-2,808.1	924.0	814.5	109.58	8.432			
13,000.0	9,734.0	12,762.0	9,734.0	59.9	55.4	-90.53	2,896.4	-2,808.8	924.0	812.2	111.81	8.264			
13,100.0	9,734.0	12,862.0	9,734.0	60.9	56.6	-90.53	2,996.4	-2,809.5	924.0	810.0	114.07	8.100			
13,200.0	9,734.0	12,962.0	9,734.0	62.0	57.7	-90.53	3,096.4	-2,810.2	924.0	807.7	116.36	7.941			
13,300.0	9,734.0	13,062.0	9,734.0	63.0	58.9	-90.53	3,196.4	-2,810.9	924.0	805.4	118.68	7.786			
13,400.0	9,734.0	13,162.0	9,734.0	64.1	60.1	-90.53	3,296.4	-2,811.6	924.0	803.0	121.02	7.636			
13,500.0	9,734.0	13,262.0	9,734.0	65.2	61.3	-90.53	3,396.4	-2,812.3	924.0	800.7	123.38	7.489			
13,600.0	9,734.0	13,362.0	9,734.0	66.3	62.5	-90.53	3,496.4	-2,813.0	924.0	798.3	125.76	7.347			
13,700.0	9,734.0	13,462.0	9,734.0	67.5	63.7	-90.53	3,596.4	-2,813.7	924.0	795.9	128.17	7.209			
13,800.0	9,734.0	13,562.0	9,734.0	68.6	65.0	-90.53	3,696.4	-2,814.4	924.0	793.4	130.60	7.076			
13,900.0	9,734.0	13,662.0	9,734.0	69.8	66.2	-90.53	3,796.4	-2,815.0	924.0	791.0	133.04	6.946			
14,000.0	9,734.0	13,762.0	9,734.0	70.9	67.5	-90.53	3,896.4	-2,815.7	924.0	788.5	135.50	6.819			
14,100.0	9,734.0	13,862.0	9,734.0	72.1	68.7	-90.53	3,996.4	-2,816.4	924.0	786.1	137.98	6.697			
14,200.0	9,734.0	13,962.0	9,734.0	73.3	70.0	-90.53	4,096.4	-2,817.1	924.0	783.6	140.48	6.578			
14,300.0	9,734.0	14,062.0	9,734.0	74.5	71.2	-90.53	4,196.4	-2,817.8	924.0	781.0	142.99	6.462			
14,400.0	9,734.0	14,162.0	9,734.0	75.7	72.5	-90.53	4,296.4	-2,818.5	924.0	778.5	145.51	6.350			
14,500.0	9,734.0	14,262.0	9,734.0	76.9	73.8	-90.53	4,396.4	-2,819.2	924.0	776.0	148.05	6.241			
14,600.0	9,734.0	14,362.0	9,734.0	78.1	75.1	-90.53	4,496.4	-2,819.9	924.0	773.4	150.60	6.136			

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 502H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,700.0	9,734.0	14,462.0	9,734.0	79.4	76.4	-90.53	4,596.4	-2,820.6	924.0	770.9	153.16	6.033	
14,800.0	9,734.0	14,562.0	9,734.0	80.6	77.7	-90.53	4,696.4	-2,821.3	924.0	768.3	155.74	5.933	
14,900.0	9,734.0	14,662.0	9,734.0	81.9	79.0	-90.53	4,796.4	-2,822.0	924.0	765.7	158.32	5.836	
15,000.0	9,734.0	14,762.0	9,734.0	83.1	80.3	-90.53	4,896.4	-2,822.7	924.0	763.1	160.92	5.742	
15,100.0	9,734.0	14,862.0	9,734.0	84.4	81.6	-90.53	4,996.4	-2,823.4	924.0	760.5	163.53	5.651	
15,200.0	9,734.0	14,962.0	9,734.0	85.6	82.9	-90.53	5,096.4	-2,824.1	924.0	757.9	166.14	5.562	
15,300.0	9,734.0	15,062.0	9,734.0	86.9	84.2	-90.53	5,196.4	-2,824.8	924.0	755.3	168.77	5.475	
15,400.0	9,734.0	15,162.0	9,734.0	88.2	85.6	-90.53	5,296.4	-2,825.5	924.0	752.6	171.40	5.391	
15,500.0	9,734.0	15,262.0	9,734.0	89.4	86.9	-90.53	5,396.4	-2,826.1	924.0	750.0	174.04	5.309	
15,600.0	9,734.0	15,362.0	9,734.0	90.7	88.2	-90.53	5,496.4	-2,826.8	924.0	747.3	176.69	5.230	
15,700.0	9,734.0	15,462.0	9,734.0	92.0	89.6	-90.53	5,596.4	-2,827.5	924.0	744.7	179.35	5.152	
15,800.0	9,734.0	15,562.0	9,734.0	93.3	90.9	-90.53	5,696.3	-2,828.2	924.0	742.0	182.02	5.077	
15,900.0	9,734.0	15,662.0	9,734.0	94.6	92.2	-90.53	5,796.3	-2,828.9	924.0	739.3	184.69	5.003	
16,000.0	9,734.0	15,762.0	9,734.0	95.9	93.6	-90.53	5,896.3	-2,829.6	924.0	736.7	187.37	4.932	
16,100.0	9,734.0	15,862.0	9,734.0	97.2	94.9	-90.53	5,996.3	-2,830.3	924.0	734.0	190.05	4.862	
16,200.0	9,734.0	15,962.0	9,734.0	98.5	96.3	-90.53	6,096.3	-2,831.0	924.0	731.3	192.74	4.794	
16,300.0	9,734.0	16,062.0	9,734.0	99.9	97.7	-90.53	6,196.3	-2,831.7	924.0	728.6	195.44	4.728	
16,400.0	9,734.0	16,162.0	9,734.0	101.2	99.0	-90.53	6,296.3	-2,832.4	924.0	725.9	198.14	4.664	
16,500.0	9,734.0	16,262.0	9,734.0	102.5	100.4	-90.53	6,396.3	-2,833.1	924.0	723.2	200.85	4.601	
16,600.0	9,734.0	16,362.0	9,734.0	103.8	101.7	-90.53	6,496.3	-2,833.8	924.0	720.5	203.56	4.539	
16,700.0	9,734.0	16,462.0	9,734.0	105.1	103.1	-90.53	6,596.3	-2,834.5	924.0	717.8	206.28	4.480	
16,800.0	9,734.0	16,562.0	9,734.0	106.5	104.5	-90.53	6,696.3	-2,835.2	924.0	715.0	209.00	4.421	
16,900.0	9,734.0	16,662.0	9,734.0	107.8	105.8	-90.53	6,796.3	-2,835.9	924.0	712.3	211.73	4.364	
17,000.0	9,734.0	16,762.0	9,734.0	109.1	107.2	-90.53	6,896.3	-2,836.5	924.0	709.6	214.46	4.309	
17,100.0	9,734.0	16,862.0	9,734.0	110.5	108.6	-90.53	6,996.3	-2,837.2	924.0	706.8	217.19	4.254	
17,200.0	9,734.0	16,962.0	9,734.0	111.8	110.0	-90.53	7,096.3	-2,837.9	924.0	704.1	219.93	4.201	
17,300.0	9,734.0	17,062.0	9,734.0	113.2	111.3	-90.53	7,196.3	-2,838.6	924.0	701.4	222.68	4.150	
17,400.0	9,734.0	17,162.0	9,734.0	114.5	112.7	-90.53	7,296.3	-2,839.3	924.0	698.6	225.42	4.099	
17,500.0	9,734.0	17,262.0	9,734.0	115.9	114.1	-90.53	7,396.3	-2,840.0	924.0	695.9	228.17	4.050	
17,600.0	9,734.0	17,362.0	9,734.0	117.2	115.5	-90.53	7,496.3	-2,840.7	924.0	693.1	230.93	4.001	
17,700.0	9,734.0	17,462.0	9,734.0	118.6	116.9	-90.53	7,596.3	-2,841.4	924.0	690.3	233.69	3.954	
17,800.0	9,734.0	17,562.0	9,734.0	119.9	118.2	-90.53	7,696.3	-2,842.1	924.0	687.6	236.45	3.908	
17,900.0	9,734.0	17,662.0	9,734.0	121.3	119.6	-90.53	7,796.3	-2,842.8	924.0	684.8	239.21	3.863	
18,000.0	9,734.0	17,762.0	9,734.0	122.7	121.0	-90.53	7,896.3	-2,843.5	924.0	682.1	241.98	3.819	
18,100.0	9,734.0	17,862.0	9,734.0	124.0	122.4	-90.53	7,996.3	-2,844.2	924.0	679.3	244.75	3.775	
18,200.0	9,734.0	17,962.0	9,734.0	125.4	123.8	-90.53	8,096.3	-2,844.9	924.0	676.5	247.52	3.733	
18,300.0	9,734.0	18,062.0	9,734.0	126.8	125.2	-90.53	8,196.3	-2,845.6	924.0	673.7	250.30	3.692	
18,400.0	9,734.0	18,162.0	9,734.0	128.1	126.6	-90.53	8,296.3	-2,846.3	924.0	671.0	253.08	3.651	
18,500.0	9,734.0	18,262.0	9,734.0	129.5	128.0	-90.53	8,396.3	-2,846.9	924.0	668.2	255.86	3.611	
18,600.0	9,734.0	18,362.0	9,734.0	130.9	129.4	-90.53	8,496.3	-2,847.6	924.0	665.4	258.64	3.573	
18,700.0	9,734.0	18,462.0	9,734.0	132.2	130.8	-90.53	8,596.3	-2,848.3	924.0	662.6	261.43	3.535	
18,800.0	9,734.0	18,562.0	9,734.0	133.6	132.2	-90.53	8,696.3	-2,849.0	924.0	659.8	264.22	3.497	
18,900.0	9,734.0	18,662.0	9,734.0	135.0	133.6	-90.53	8,796.3	-2,849.7	924.0	657.0	267.01	3.461	
19,000.0	9,734.0	18,762.0	9,734.0	136.4	135.0	-90.53	8,896.3	-2,850.4	924.0	654.2	269.80	3.425	
19,100.0	9,734.0	18,862.0	9,734.0	137.7	136.4	-90.53	8,996.3	-2,851.1	924.0	651.4	272.60	3.390	
19,200.0	9,734.0	18,962.0	9,734.0	139.1	137.8	-90.53	9,096.3	-2,851.8	924.0	648.6	275.39	3.355	
19,300.0	9,734.0	19,062.0	9,734.0	140.5	139.2	-90.53	9,196.3	-2,852.5	924.0	645.8	278.19	3.322	
19,400.0	9,734.0	19,162.0	9,734.0	141.9	140.6	-90.53	9,296.3	-2,853.2	924.0	643.0	280.99	3.288	
19,500.0	9,734.0	19,262.0	9,734.0	143.3	142.0	-90.53	9,396.3	-2,853.9	924.0	640.2	283.80	3.256	
19,600.0	9,734.0	19,362.0	9,734.0	144.7	143.4	-90.53	9,496.3	-2,854.6	924.0	637.4	286.60	3.224	
19,700.0	9,734.0	19,462.0	9,734.0	146.1	144.8	-90.53	9,596.3	-2,855.3	924.0	634.6	289.41	3.193	
19,800.0	9,734.0	19,562.0	9,734.0	147.4	146.2	-90.53	9,696.3	-2,856.0	924.0	631.8	292.22	3.162	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 502H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
19,900.0	9,734.0	19,662.0	9,734.0	148.8	147.6	-90.53	9,796.2	-2,856.7	924.0	629.0	295.03	3.132		
20,000.0	9,734.0	19,762.0	9,734.0	150.2	149.0	-90.53	9,896.2	-2,857.4	924.0	626.2	297.84	3.102		
20,100.0	9,734.0	19,862.0	9,734.0	151.6	150.4	-90.53	9,996.2	-2,858.0	924.0	623.4	300.65	3.073		
20,200.0	9,734.0	19,962.0	9,734.0	152.9	151.7	-90.53	10,096.2	-2,858.7	924.0	620.9	303.11	3.049		
20,205.9	9,734.0	19,967.9	9,734.0	152.9	151.8	-90.53	10,102.1	-2,858.8	924.0	620.8	303.25	3.047		
20,207.7	9,734.0	19,968.0	9,734.0	153.0	151.8	-90.53	10,102.2	-2,858.8	924.0	620.7	303.31	3.047 ES, SF		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 601H - OH - Plan 0.1													Offset Site Error: 0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
6,200.0	6,052.0	5,810.9	5,786.8	26.6	21.2	7.87	-249.0	-3,257.2	2,219.5	2,176.3	43.18	51.395	
6,300.0	6,148.0	5,909.5	5,884.7	27.2	21.6	7.93	-250.9	-3,268.4	2,202.8	2,158.8	43.95	50.125	
6,400.0	6,243.9	6,008.0	5,982.6	27.7	21.9	7.99	-252.8	-3,279.7	2,186.1	2,141.4	44.71	48.897	
6,500.0	6,339.9	6,106.6	6,080.5	28.2	22.3	8.06	-254.7	-3,290.9	2,169.3	2,123.9	45.47	47.710	
6,600.0	6,435.8	6,205.2	6,178.4	28.8	22.7	8.12	-256.6	-3,302.1	2,152.6	2,106.4	46.23	46.561	
6,700.0	6,531.8	6,303.7	6,276.3	29.3	23.1	8.18	-258.5	-3,313.4	2,135.9	2,088.9	47.00	45.450	
6,800.0	6,627.7	6,402.3	6,374.2	29.8	23.5	8.25	-260.4	-3,324.6	2,119.2	2,071.5	47.76	44.373	
6,900.0	6,723.7	6,500.9	6,472.1	30.4	23.8	8.31	-262.3	-3,335.9	2,102.5	2,054.0	48.52	43.329	
7,000.0	6,819.6	6,599.4	6,570.0	30.9	24.2	8.38	-264.2	-3,347.1	2,085.8	2,036.5	49.29	42.318	
7,100.0	6,915.6	6,698.0	6,667.9	31.4	24.6	8.45	-266.1	-3,358.4	2,069.1	2,019.1	50.06	41.337	
7,200.0	7,011.5	6,796.6	6,765.8	32.0	25.0	8.52	-268.0	-3,369.6	2,052.4	2,001.6	50.82	40.385	
7,300.0	7,107.5	6,895.1	6,863.7	32.5	25.4	8.59	-269.9	-3,380.8	2,035.7	1,984.1	51.59	39.461	
7,400.0	7,203.5	6,993.7	6,961.7	33.0	25.8	8.66	-271.8	-3,392.1	2,019.0	1,966.7	52.36	38.564	
7,500.0	7,299.4	7,092.3	7,059.6	33.6	26.1	8.73	-273.7	-3,403.3	2,002.4	1,949.2	53.12	37.692	
7,600.0	7,395.4	7,190.8	7,157.5	34.1	26.5	8.81	-275.6	-3,414.6	1,985.7	1,931.8	53.89	36.845	
7,700.0	7,491.3	7,289.4	7,255.4	34.6	26.9	8.88	-277.5	-3,425.8	1,969.0	1,914.3	54.66	36.021	
7,800.0	7,587.3	7,388.0	7,353.3	35.2	27.3	8.96	-279.4	-3,437.1	1,952.3	1,896.9	55.43	35.220	
7,900.0	7,683.2	7,486.5	7,451.2	35.7	27.7	9.04	-281.3	-3,448.3	1,935.7	1,879.5	56.20	34.441	
8,000.0	7,779.2	7,585.1	7,549.1	36.2	28.1	9.12	-283.3	-3,459.5	1,919.0	1,862.0	56.97	33.682	
8,100.0	7,875.1	7,683.7	7,647.0	36.8	28.4	9.20	-285.2	-3,470.8	1,902.3	1,844.6	57.74	32.944	
8,200.0	7,971.1	7,782.2	7,744.9	37.3	28.8	9.28	-287.1	-3,482.0	1,885.7	1,827.1	58.52	32.224	
8,300.0	8,067.0	7,880.8	7,842.8	37.9	29.2	9.36	-289.0	-3,493.3	1,869.0	1,809.7	59.29	31.524	
8,400.0	8,163.0	7,979.3	7,940.7	38.4	29.6	9.45	-290.9	-3,504.5	1,852.3	1,792.3	60.06	30.841	
8,500.0	8,258.9	8,077.9	8,038.6	38.9	30.0	9.54	-292.8	-3,515.8	1,835.7	1,774.9	60.84	30.175	
8,600.0	8,354.9	8,176.5	8,136.5	39.5	30.4	9.62	-294.7	-3,527.0	1,819.1	1,757.5	61.61	29.526	
8,700.0	8,451.4	8,275.4	8,234.7	40.0	30.8	9.65	-296.6	-3,538.3	1,804.3	1,741.9	62.38	28.925	
8,800.0	8,548.7	8,374.7	8,333.4	40.5	31.1	9.67	-298.5	-3,549.6	1,793.0	1,729.9	63.14	28.396	
8,900.0	8,646.8	8,474.4	8,432.4	40.9	31.5	9.69	-300.4	-3,561.0	1,785.1	1,721.2	63.90	27.937	
9,000.0	8,745.5	8,574.3	8,531.6	41.3	31.9	9.70	-302.3	-3,572.4	1,780.6	1,716.0	64.64	27.547	
9,079.8	8,824.6	8,654.0	8,610.8	41.6	32.2	9.70	-303.9	-3,581.5	1,779.5	1,714.3	65.22	27.284 CC	
9,100.0	8,844.7	8,674.2	8,630.9	41.7	32.3	9.70	-304.3	-3,583.8	1,779.6	1,714.2	65.37	27.223 ES	
9,200.0	8,944.2	8,774.2	8,730.2	42.1	32.7	9.70	-306.2	-3,595.2	1,782.0	1,715.9	66.09	26.963	
9,300.0	9,044.1	8,874.0	8,829.4	42.4	33.1	9.69	-308.1	-3,606.6	1,787.9	1,721.1	66.80	26.766	
9,400.0	9,144.0	8,973.6	8,928.2	42.7	33.5	9.67	-310.0	-3,617.9	1,797.2	1,729.7	67.49	26.630	
9,500.0	9,244.0	9,072.9	9,026.9	42.9	33.9	-90.03	-312.0	-3,629.2	1,808.6	1,740.4	68.15	26.536	
9,600.0	9,343.6	9,171.7	9,125.0	43.2	34.3	-85.69	-313.9	-3,640.5	1,819.5	1,750.7	68.80	26.447	
9,700.0	9,439.3	9,266.4	9,219.1	43.4	34.6	-85.44	-315.7	-3,651.3	1,829.1	1,759.7	69.36	26.372	
9,800.0	9,527.0	9,352.9	9,305.0	43.6	35.0	-85.70	-317.4	-3,661.2	1,837.9	1,768.1	69.84	26.315	
9,900.0	9,602.9	9,427.5	9,379.1	43.8	35.3	-86.13	-318.8	-3,669.7	1,847.1	1,776.8	70.28	26.282	
10,000.0	9,663.6	9,486.9	9,438.1	43.9	35.5	-86.33	-319.9	-3,676.5	1,857.7	1,787.0	70.70	26.277	
10,100.0	9,706.6	9,528.4	9,479.4	43.9	35.6	-85.90	-320.7	-3,681.2	1,870.9	1,799.7	71.14	26.299	
10,200.0	9,729.9	9,550.4	9,501.2	43.9	35.7	-84.58	-321.2	-3,683.7	1,887.2	1,815.5	71.62	26.349	
10,300.0	9,734.0	9,553.2	9,504.0	44.0	35.7	-83.22	-321.2	-3,684.0	1,906.9	1,834.8	72.16	26.428	
10,400.0	9,734.0	9,551.6	9,502.4	44.0	35.7	-83.10	-321.2	-3,683.8	1,933.9	1,861.1	72.80	26.564	
10,500.0	9,734.0	9,549.8	9,500.6	44.1	35.7	-83.03	-321.2	-3,683.6	1,967.8	1,894.2	73.54	26.757	
10,600.0	9,734.0	9,547.9	9,498.7	44.2	35.7	-82.97	-321.1	-3,683.4	2,006.1	1,931.7	74.36	26.978	
10,700.0	9,734.0	11,290.2	10,529.0	44.3	40.1	-113.56	590.0	-3,716.8	2,016.0	1,947.5	68.49	29.436	
10,800.0	9,734.0	11,390.2	10,529.0	44.5	40.5	-113.56	690.0	-3,717.5	2,016.0	1,946.8	69.18	29.141	
10,900.0	9,734.0	11,490.2	10,529.0	44.8	41.0	-113.56	790.0	-3,718.2	2,016.0	1,946.0	69.97	28.812	
11,000.0	9,734.0	11,590.2	10,529.0	45.1	41.5	-113.56	890.0	-3,718.9	2,016.0	1,945.1	70.86	28.450	
11,100.0	9,734.0	11,690.2	10,529.0	45.4	42.1	-113.56	990.0	-3,719.5	2,016.0	1,944.2	71.84	28.062	
11,200.0	9,734.0	11,790.2	10,529.0	45.8	42.7	-113.56	1,090.0	-3,720.2	2,016.0	1,943.1	72.91	27.650	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 601H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
11,300.0	9,734.0	11,890.2	10,529.0	46.3	43.4	-113.56	1,190.0	-3,720.9	2,016.0	1,941.9	74.07	27.219	
11,400.0	9,734.0	11,990.2	10,529.0	46.8	44.1	-113.56	1,290.0	-3,721.6	2,016.0	1,940.7	75.30	26.771	
11,500.0	9,734.0	12,090.2	10,529.0	47.3	44.8	-113.56	1,390.0	-3,722.3	2,016.0	1,939.4	76.62	26.312	
11,600.0	9,734.0	12,190.2	10,529.0	47.9	45.6	-113.56	1,490.0	-3,723.0	2,016.0	1,938.0	78.01	25.844	
11,700.0	9,734.0	12,290.2	10,529.0	48.5	46.4	-113.56	1,590.0	-3,723.7	2,016.0	1,936.5	79.46	25.370	
11,800.0	9,734.0	12,390.2	10,529.0	49.2	47.2	-113.56	1,690.0	-3,724.4	2,016.0	1,935.0	80.99	24.893	
11,900.0	9,734.0	12,490.2	10,529.0	49.9	48.1	-113.56	1,790.0	-3,725.1	2,016.0	1,933.4	82.57	24.415	
12,000.0	9,734.0	12,590.2	10,529.0	50.7	49.0	-113.56	1,890.0	-3,725.8	2,016.0	1,931.8	84.22	23.938	
12,100.0	9,734.0	12,690.2	10,529.0	51.5	49.9	-113.56	1,990.0	-3,726.5	2,016.0	1,930.1	85.92	23.465	
12,200.0	9,734.0	12,790.2	10,529.0	52.3	50.8	-113.56	2,090.0	-3,727.2	2,016.0	1,928.3	87.67	22.996	
12,300.0	9,734.0	12,890.2	10,529.0	53.2	51.8	-113.56	2,190.0	-3,727.9	2,016.0	1,926.5	89.47	22.533	
12,400.0	9,734.0	12,990.2	10,529.0	54.0	52.8	-113.56	2,290.0	-3,728.6	2,016.0	1,924.7	91.31	22.078	
12,500.0	9,734.0	13,090.2	10,529.0	54.9	53.8	-113.56	2,390.0	-3,729.3	2,016.0	1,922.8	93.20	21.630	
12,600.0	9,734.0	13,190.2	10,529.0	55.9	54.8	-113.56	2,490.0	-3,730.0	2,016.0	1,920.9	95.14	21.191	
12,700.0	9,734.0	13,290.2	10,529.0	56.8	55.8	-113.56	2,590.0	-3,730.7	2,016.0	1,918.9	97.10	20.761	
12,800.0	9,734.0	13,390.2	10,529.0	57.8	56.9	-113.56	2,690.0	-3,731.3	2,016.0	1,916.9	99.11	20.341	
12,900.0	9,734.0	13,490.2	10,529.0	58.8	58.0	-113.56	2,790.0	-3,732.0	2,016.0	1,914.9	101.15	19.931	
13,000.0	9,734.0	13,590.2	10,529.0	59.9	59.1	-113.56	2,890.0	-3,732.7	2,016.0	1,912.8	103.22	19.531	
13,100.0	9,734.0	13,690.2	10,529.0	60.9	60.2	-113.56	2,990.0	-3,733.4	2,016.0	1,910.7	105.32	19.142	
13,200.0	9,734.0	13,790.2	10,529.0	62.0	61.3	-113.56	3,090.0	-3,734.1	2,016.0	1,908.6	107.45	18.763	
13,300.0	9,734.0	13,890.2	10,529.0	63.0	62.4	-113.56	3,190.0	-3,734.8	2,016.0	1,906.4	109.60	18.394	
13,400.0	9,734.0	13,990.2	10,529.0	64.1	63.6	-113.56	3,290.0	-3,735.5	2,016.0	1,904.2	111.78	18.035	
13,500.0	9,734.0	14,090.2	10,529.0	65.2	64.7	-113.56	3,390.0	-3,736.2	2,016.0	1,902.0	113.99	17.686	
13,600.0	9,734.0	14,190.2	10,529.0	66.3	65.9	-113.56	3,490.0	-3,736.9	2,016.0	1,899.8	116.21	17.347	
13,700.0	9,734.0	14,290.2	10,529.0	67.5	67.1	-113.56	3,590.0	-3,737.6	2,016.0	1,897.5	118.46	17.018	
13,800.0	9,734.0	14,390.2	10,529.0	68.6	68.3	-113.56	3,690.0	-3,738.3	2,016.0	1,895.3	120.73	16.699	
13,900.0	9,734.0	14,490.2	10,529.0	69.8	69.5	-113.56	3,790.0	-3,739.0	2,016.0	1,893.0	123.02	16.388	
14,000.0	9,734.0	14,590.2	10,529.0	70.9	70.7	-113.56	3,890.0	-3,739.7	2,016.0	1,890.7	125.32	16.087	
14,100.0	9,734.0	14,690.2	10,529.0	72.1	71.9	-113.56	3,990.0	-3,740.4	2,016.0	1,888.4	127.64	15.795	
14,200.0	9,734.0	14,790.2	10,529.0	73.3	73.1	-113.56	4,090.0	-3,741.1	2,016.0	1,886.0	129.97	15.511	
14,300.0	9,734.0	14,890.2	10,529.0	74.5	74.4	-113.56	4,190.0	-3,741.8	2,016.0	1,883.7	132.33	15.235	
14,400.0	9,734.0	14,990.2	10,529.0	75.7	75.6	-113.56	4,290.0	-3,742.5	2,016.0	1,881.3	134.69	14.968	
14,500.0	9,734.0	15,090.2	10,529.0	76.9	76.9	-113.56	4,390.0	-3,743.1	2,016.0	1,878.9	137.07	14.708	
14,600.0	9,734.0	15,190.2	10,529.0	78.1	78.1	-113.56	4,490.0	-3,743.8	2,016.0	1,876.5	139.46	14.456	
14,700.0	9,734.0	15,290.2	10,529.0	79.4	79.4	-113.56	4,590.0	-3,744.5	2,016.0	1,874.1	141.87	14.211	
14,800.0	9,734.0	15,390.2	10,529.0	80.6	80.7	-113.56	4,690.0	-3,745.2	2,016.0	1,871.7	144.28	13.973	
14,900.0	9,734.0	15,490.2	10,529.0	81.9	81.9	-113.56	4,789.9	-3,745.9	2,016.0	1,869.3	146.71	13.742	
15,000.0	9,734.0	15,590.2	10,529.0	83.1	83.2	-113.56	4,889.9	-3,746.6	2,016.0	1,866.9	149.14	13.517	
15,100.0	9,734.0	15,690.2	10,529.0	84.4	84.5	-113.56	4,989.9	-3,747.3	2,016.0	1,864.4	151.59	13.299	
15,200.0	9,734.0	15,790.2	10,529.0	85.6	85.8	-113.56	5,089.9	-3,748.0	2,016.0	1,862.0	154.05	13.087	
15,300.0	9,734.0	15,890.2	10,529.0	86.9	87.1	-113.56	5,189.9	-3,748.7	2,016.0	1,859.5	156.51	12.881	
15,400.0	9,734.0	15,990.2	10,529.0	88.2	88.4	-113.56	5,289.9	-3,749.4	2,016.0	1,857.0	158.98	12.681	
15,500.0	9,734.0	16,090.2	10,529.0	89.4	89.7	-113.56	5,389.9	-3,750.1	2,016.0	1,854.5	161.47	12.486	
15,600.0	9,734.0	16,190.2	10,529.0	90.7	91.0	-113.56	5,489.9	-3,750.8	2,016.0	1,852.1	163.96	12.296	
15,700.0	9,734.0	16,290.2	10,529.0	92.0	92.3	-113.56	5,589.9	-3,751.5	2,016.0	1,849.6	166.45	12.112	
15,800.0	9,734.0	16,390.2	10,529.0	93.3	93.6	-113.56	5,689.9	-3,752.2	2,016.0	1,847.1	168.96	11.932	
15,900.0	9,734.0	16,490.2	10,529.0	94.6	95.0	-113.56	5,789.9	-3,752.9	2,016.0	1,844.5	171.47	11.757	
16,000.0	9,734.0	16,590.2	10,529.0	95.9	96.3	-113.56	5,889.9	-3,753.6	2,016.0	1,842.0	173.98	11.587	
16,100.0	9,734.0	16,690.2	10,529.0	97.2	97.6	-113.56	5,989.9	-3,754.3	2,016.0	1,839.5	176.51	11.422	
16,200.0	9,734.0	16,790.2	10,529.0	98.5	98.9	-113.56	6,089.9	-3,755.0	2,016.0	1,837.0	179.04	11.260	
16,300.0	9,734.0	16,890.2	10,529.0	99.9	100.3	-113.56	6,189.9	-3,755.6	2,016.0	1,834.4	181.57	11.103	
16,400.0	9,734.0	16,990.2	10,529.0	101.2	101.6	-113.56	6,289.9	-3,756.3	2,016.0	1,831.9	184.11	10.950	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 601H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance			Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)			
16,500.0	9,734.0	17,090.2	10,529.0	102.5	103.0	-113.56	6,389.9	-3,757.0	2,016.0	1,829.4	186.66	10.800		
16,600.0	9,734.0	17,190.2	10,529.0	103.8	104.3	-113.56	6,489.9	-3,757.7	2,016.0	1,826.8	189.21	10.655		
16,700.0	9,734.0	17,290.2	10,529.0	105.1	105.6	-113.56	6,589.9	-3,758.4	2,016.0	1,824.3	191.77	10.513		
16,800.0	9,734.0	17,390.2	10,529.0	106.5	107.0	-113.56	6,689.9	-3,759.1	2,016.0	1,821.7	194.33	10.374		
16,900.0	9,734.0	17,490.2	10,529.0	107.8	108.3	-113.56	6,789.9	-3,759.8	2,016.0	1,819.1	196.89	10.239		
17,000.0	9,734.0	17,590.2	10,529.0	109.1	109.7	-113.56	6,889.9	-3,760.5	2,016.0	1,816.6	199.46	10.107		
17,100.0	9,734.0	17,690.2	10,529.0	110.5	111.1	-113.56	6,989.9	-3,761.2	2,016.0	1,814.0	202.04	9.978		
17,200.0	9,734.0	17,790.2	10,529.0	111.8	112.4	-113.56	7,089.9	-3,761.9	2,016.0	1,811.4	204.62	9.853		
17,300.0	9,734.0	17,890.2	10,529.0	113.2	113.8	-113.56	7,189.9	-3,762.6	2,016.0	1,808.8	207.20	9.730		
17,400.0	9,734.0	17,990.2	10,529.0	114.5	115.1	-113.56	7,289.9	-3,763.3	2,016.0	1,806.2	209.78	9.610		
17,500.0	9,734.0	18,090.2	10,529.0	115.9	116.5	-113.56	7,389.9	-3,764.0	2,016.0	1,803.7	212.37	9.493		
17,600.0	9,734.0	18,190.2	10,529.0	117.2	117.9	-113.56	7,489.9	-3,764.7	2,016.0	1,801.1	214.96	9.378		
17,700.0	9,734.0	18,290.2	10,529.0	118.6	119.2	-113.56	7,589.9	-3,765.4	2,016.0	1,798.5	217.56	9.267		
17,800.0	9,734.0	18,390.2	10,529.0	119.9	120.6	-113.56	7,689.9	-3,766.1	2,016.0	1,795.9	220.16	9.157		
17,900.0	9,734.0	18,490.2	10,529.0	121.3	122.0	-113.56	7,789.9	-3,766.8	2,016.0	1,793.3	222.76	9.050		
18,000.0	9,734.0	18,590.2	10,529.0	122.7	123.4	-113.56	7,889.9	-3,767.4	2,016.0	1,790.7	225.36	8.946		
18,100.0	9,734.0	18,690.2	10,529.0	124.0	124.7	-113.56	7,989.9	-3,768.1	2,016.0	1,788.1	227.97	8.843		
18,200.0	9,734.0	18,790.2	10,529.0	125.4	126.1	-113.56	8,089.9	-3,768.8	2,016.0	1,785.4	230.58	8.743		
18,300.0	9,734.0	18,890.2	10,529.0	126.8	127.5	-113.56	8,189.9	-3,769.5	2,016.0	1,782.8	233.20	8.645		
18,400.0	9,734.0	18,990.2	10,529.0	128.1	128.9	-113.56	8,289.9	-3,770.2	2,016.0	1,780.2	235.81	8.549		
18,500.0	9,734.0	19,090.2	10,529.0	129.5	130.3	-113.56	8,389.9	-3,770.9	2,016.0	1,777.6	238.43	8.455		
18,600.0	9,734.0	19,190.2	10,529.0	130.9	131.6	-113.56	8,489.9	-3,771.6	2,016.0	1,775.0	241.05	8.364		
18,700.0	9,734.0	19,290.2	10,529.0	132.2	133.0	-113.56	8,589.9	-3,772.3	2,016.0	1,772.4	243.67	8.274		
18,800.0	9,734.0	19,390.2	10,529.0	133.6	134.4	-113.56	8,689.9	-3,773.0	2,016.0	1,769.7	246.30	8.185		
18,900.0	9,734.0	19,490.2	10,529.0	135.0	135.8	-113.56	8,789.9	-3,773.7	2,016.0	1,767.1	248.93	8.099		
19,000.0	9,734.0	19,590.2	10,529.0	136.4	137.2	-113.56	8,889.8	-3,774.4	2,016.0	1,764.5	251.56	8.014		
19,100.0	9,734.0	19,690.2	10,529.0	137.7	138.6	-113.56	8,989.8	-3,775.1	2,016.0	1,761.8	254.19	7.931		
19,200.0	9,734.0	19,790.2	10,529.0	139.1	140.0	-113.56	9,089.8	-3,775.8	2,016.0	1,759.2	256.82	7.850		
19,300.0	9,734.0	19,890.2	10,529.0	140.5	141.4	-113.56	9,189.8	-3,776.5	2,016.0	1,756.6	259.46	7.770		
19,400.0	9,734.0	19,990.2	10,529.0	141.9	142.8	-113.56	9,289.8	-3,777.2	2,016.0	1,753.9	262.09	7.692		
19,500.0	9,734.0	20,090.2	10,529.0	143.3	144.2	-113.56	9,389.8	-3,777.9	2,016.0	1,751.3	264.73	7.615		
19,600.0	9,734.0	20,190.2	10,529.0	144.7	145.5	-113.56	9,489.8	-3,778.6	2,016.0	1,748.7	267.37	7.540		
19,700.0	9,734.0	20,290.2	10,529.0	146.1	146.9	-113.56	9,589.8	-3,779.2	2,016.0	1,746.0	270.02	7.466		
19,800.0	9,734.0	20,390.2	10,529.0	147.4	148.3	-113.56	9,689.8	-3,779.9	2,016.0	1,743.4	272.66	7.394		
19,900.0	9,734.0	20,490.2	10,529.0	148.8	149.7	-113.56	9,789.8	-3,780.6	2,016.0	1,740.7	275.31	7.323		
20,000.0	9,734.0	20,590.2	10,529.0	150.2	151.1	-113.56	9,889.8	-3,781.3	2,016.0	1,738.1	277.96	7.253		
20,100.0	9,734.0	20,690.2	10,529.0	151.6	152.5	-113.56	9,989.8	-3,782.0	2,016.0	1,735.4	280.61	7.185		
20,200.0	9,734.0	20,790.2	10,529.0	152.9	153.9	-113.56	10,089.8	-3,782.7	2,016.0	1,733.0	283.03	7.123		
20,200.1	9,734.0	20,790.4	10,529.0	152.9	153.9	-113.56	10,090.0	-3,782.7	2,016.0	1,733.0	283.04	7.123		
20,207.7	9,734.0	20,795.2	10,529.0	153.0	154.0	-113.56	10,094.8	-3,782.8	2,016.0	1,732.8	283.22	7.118 SF		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 602H - OH - Plan 0.1													Offset Site Error: 0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,600.0	4,516.8	4,505.8	4,505.8	18.3	15.9	8.01	-178.6	-2,821.5	2,213.7	2,181.5	32.17	68.818	
4,700.0	4,612.7	4,601.7	4,601.7	18.8	16.3	8.11	-178.6	-2,821.5	2,185.8	2,152.9	32.89	66.451	
4,800.0	4,708.7	4,697.7	4,697.7	19.3	16.6	8.22	-178.6	-2,821.5	2,157.9	2,124.2	33.62	64.185	
4,900.0	4,804.7	4,793.7	4,793.7	19.9	17.0	8.33	-178.6	-2,821.5	2,130.0	2,095.6	34.35	62.012	
5,000.0	4,900.6	4,889.6	4,889.6	20.4	17.3	8.44	-178.6	-2,821.5	2,102.1	2,067.0	35.08	59.928	
5,100.0	4,996.6	4,985.6	4,985.6	20.9	17.6	8.55	-178.6	-2,821.5	2,074.2	2,038.4	35.81	57.927	
5,200.0	5,092.5	5,081.5	5,081.5	21.4	18.0	8.67	-178.6	-2,821.5	2,046.3	2,009.8	36.54	56.005	
5,300.0	5,188.5	5,177.5	5,177.5	21.9	18.3	8.79	-178.6	-2,821.5	2,018.5	1,981.2	37.27	54.157	
5,400.0	5,284.4	5,273.4	5,273.4	22.4	18.7	8.91	-178.6	-2,821.5	1,990.6	1,952.6	38.00	52.379	
5,500.0	5,380.4	5,369.4	5,369.4	23.0	19.0	9.04	-178.6	-2,821.5	1,962.8	1,924.0	38.74	50.668	
5,600.0	5,476.3	5,465.3	5,465.3	23.5	19.4	9.17	-178.6	-2,821.5	1,934.9	1,895.4	39.47	49.019	
5,700.0	5,572.3	5,561.3	5,561.3	24.0	19.7	9.31	-178.6	-2,821.5	1,907.1	1,866.9	40.21	47.429	
5,800.0	5,668.2	5,657.2	5,657.2	24.5	20.1	9.44	-178.6	-2,821.5	1,879.3	1,838.3	40.95	45.896	
5,900.0	5,764.2	5,753.2	5,753.2	25.1	20.4	9.59	-178.6	-2,821.5	1,851.5	1,809.8	41.68	44.416	
6,000.0	5,860.1	5,849.1	5,849.1	25.6	20.7	9.73	-178.6	-2,821.5	1,823.7	1,781.2	42.42	42.987	
6,100.0	5,956.1	5,945.1	5,945.1	26.1	21.1	9.89	-178.6	-2,821.5	1,795.9	1,752.7	43.16	41.606	
6,200.0	6,052.0	6,041.0	6,041.0	26.6	21.4	10.04	-178.6	-2,821.5	1,768.1	1,724.2	43.90	40.271	
6,300.0	6,148.0	6,137.0	6,137.0	27.2	21.8	10.20	-178.6	-2,821.5	1,740.4	1,695.7	44.65	38.980	
6,400.0	6,243.9	6,232.9	6,232.9	27.7	22.1	10.37	-178.6	-2,821.5	1,712.6	1,667.2	45.39	37.731	
6,500.0	6,339.9	6,328.9	6,328.9	28.2	22.5	10.54	-178.6	-2,821.5	1,684.9	1,638.7	46.13	36.521	
6,600.0	6,435.8	6,424.8	6,424.8	28.8	22.8	10.72	-178.6	-2,821.5	1,657.2	1,610.3	46.88	35.349	
6,700.0	6,531.8	6,520.8	6,520.8	29.3	23.1	10.90	-178.6	-2,821.5	1,629.5	1,581.8	47.63	34.214	
6,800.0	6,627.7	6,616.7	6,616.7	29.8	23.5	11.09	-178.6	-2,821.5	1,601.8	1,553.4	48.37	33.113	
6,900.0	6,723.7	6,712.7	6,712.7	30.4	23.8	11.29	-178.6	-2,821.5	1,574.1	1,525.0	49.12	32.045	
7,000.0	6,819.6	6,808.6	6,808.6	30.9	24.2	11.50	-178.6	-2,821.5	1,546.4	1,496.6	49.87	31.009	
7,100.0	6,915.6	6,904.6	6,904.6	31.4	24.5	11.71	-178.6	-2,821.5	1,518.8	1,468.2	50.62	30.003	
7,200.0	7,011.5	7,000.5	7,000.5	32.0	24.9	11.93	-178.6	-2,821.5	1,491.2	1,439.8	51.37	29.026	
7,300.0	7,107.5	7,096.5	7,096.5	32.5	25.2	12.15	-178.6	-2,821.5	1,463.6	1,411.5	52.13	28.077	
7,400.0	7,203.5	7,192.5	7,192.5	33.0	25.6	12.39	-178.6	-2,821.5	1,436.0	1,383.2	52.88	27.155	
7,500.0	7,299.4	7,288.4	7,288.4	33.6	25.9	12.64	-178.6	-2,821.5	1,408.5	1,354.9	53.64	26.258	
7,600.0	7,395.4	7,384.4	7,384.4	34.1	26.2	12.89	-178.6	-2,821.5	1,381.0	1,326.6	54.40	25.386	
7,700.0	7,491.3	7,480.3	7,480.3	34.6	26.6	13.16	-178.6	-2,821.5	1,353.5	1,298.3	55.16	24.537	
7,800.0	7,587.3	7,588.5	7,588.4	35.2	27.0	13.41	-180.0	-2,821.2	1,325.7	1,269.8	55.90	23.715	
7,900.0	7,683.2	7,696.9	7,696.8	35.7	27.3	13.50	-185.2	-2,819.9	1,296.8	1,240.2	56.60	22.910	
8,000.0	7,779.2	7,792.6	7,792.2	36.2	27.6	13.52	-191.0	-2,818.4	1,267.5	1,210.2	57.31	22.115	
8,100.0	7,875.1	7,888.2	7,887.6	36.8	27.9	13.55	-196.9	-2,816.9	1,238.3	1,180.2	58.03	21.339	
8,200.0	7,971.1	7,983.8	7,983.1	37.3	28.2	13.58	-202.8	-2,815.5	1,209.0	1,150.2	58.74	20.582	
8,300.0	8,067.0	8,079.4	8,078.5	37.9	28.6	13.60	-208.7	-2,814.0	1,179.7	1,120.3	59.45	19.842	
8,400.0	8,163.0	8,175.0	8,173.9	38.4	28.9	13.63	-214.5	-2,812.5	1,150.5	1,090.3	60.17	19.120	
8,500.0	8,258.9	8,270.7	8,269.3	38.9	29.2	13.66	-220.4	-2,811.0	1,121.2	1,060.3	60.89	18.414	
8,600.0	8,354.9	8,366.3	8,364.8	39.5	29.5	13.69	-226.3	-2,809.6	1,091.9	1,030.3	61.61	17.724	
8,700.0	8,451.4	8,462.4	8,460.7	40.0	29.8	13.56	-232.2	-2,808.1	1,064.5	1,002.2	62.32	17.080	
8,800.0	8,548.7	8,559.5	8,557.6	40.5	30.1	13.40	-238.2	-2,806.6	1,040.3	977.3	63.03	16.504	
8,900.0	8,646.8	8,657.2	8,655.2	40.9	30.5	13.22	-244.2	-2,805.1	1,019.5	955.7	63.73	15.996	
9,000.0	8,745.5	8,755.7	8,753.4	41.3	30.8	13.00	-250.2	-2,803.6	1,002.0	937.5	64.42	15.553	
9,100.0	8,844.7	8,854.6	8,852.1	41.7	31.1	12.75	-256.3	-2,802.0	987.8	922.7	65.10	15.173	
9,200.0	8,944.2	8,953.9	8,951.3	42.1	31.4	12.47	-262.4	-2,800.5	977.0	911.3	65.77	14.855	
9,300.0	9,044.1	9,053.5	9,050.7	42.4	31.8	12.15	-268.5	-2,799.0	969.7	903.3	66.43	14.598	
9,400.0	9,144.0	9,153.3	9,150.2	42.7	32.1	11.80	-274.7	-2,797.4	965.8	898.7	67.07	14.400	
9,500.0	9,244.0	9,253.1	9,249.8	42.9	32.4	-88.20	-280.8	-2,795.9	964.0	896.3	67.69	14.241	
9,600.0	9,343.6	9,351.9	9,348.4	43.2	32.8	-85.78	-286.9	-2,794.4	961.6	893.4	68.27	14.085	
9,700.0	9,439.3	9,445.7	9,442.0	43.4	33.1	-88.06	-292.6	-2,792.9	958.5	889.7	68.76	13.940	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 602H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,800.0	9,527.0	9,530.2	9,526.4	43.6	33.4	-90.95	-297.8	-2,791.6	956.6	887.5	69.18	13.828	
9,804.0	9,530.3	9,533.4	9,529.5	43.6	33.4	-91.07	-298.0	-2,791.6	956.6	887.4	69.20	13.825	CC, ES
9,900.0	9,602.9	9,601.9	9,597.9	43.8	33.6	-93.62	-302.3	-2,790.5	959.2	889.5	69.63	13.776	
10,000.0	9,663.6	9,657.6	9,653.5	43.9	33.8	-95.18	-305.7	-2,789.6	969.0	898.8	70.18	13.807	
10,100.0	9,706.6	9,694.9	9,690.7	43.9	33.9	-94.85	-308.0	-2,789.1	988.5	917.6	70.91	13.939	
10,200.0	9,729.9	9,712.1	9,707.9	43.9	34.0	-92.12	-309.0	-2,788.8	1,018.2	946.4	71.80	14.182	
10,300.0	9,734.0	9,709.9	9,705.7	44.0	34.0	-88.96	-308.9	-2,788.8	1,057.4	984.7	72.76	14.532	
10,400.0	9,734.0	9,703.8	9,699.6	44.0	34.0	-88.56	-308.5	-2,788.9	1,106.7	1,032.9	73.77	15.002	
10,500.0	9,734.0	9,697.6	9,693.4	44.1	33.9	-88.17	-308.1	-2,789.0	1,164.3	1,089.6	74.76	15.575	
10,600.0	9,734.0	11,143.4	10,529.0	44.2	38.2	-131.10	496.5	-2,792.1	1,226.1	1,167.3	58.83	20.843	
10,700.0	9,734.0	11,243.4	10,529.0	44.3	38.6	-131.10	596.5	-2,792.8	1,226.1	1,166.7	59.37	20.653	
10,800.0	9,734.0	11,343.4	10,529.0	44.5	39.0	-131.10	696.5	-2,793.5	1,226.1	1,166.1	60.00	20.434	
10,900.0	9,734.0	11,443.4	10,529.0	44.8	39.5	-131.10	796.5	-2,794.2	1,226.1	1,165.4	60.73	20.190	
11,000.0	9,734.0	11,543.4	10,529.0	45.1	40.1	-131.10	896.5	-2,794.9	1,226.1	1,164.6	61.54	19.924	
11,100.0	9,734.0	11,643.4	10,529.0	45.4	40.7	-131.10	996.5	-2,795.6	1,226.1	1,163.7	62.44	19.638	
11,200.0	9,734.0	11,743.4	10,529.0	45.8	41.3	-131.10	1,096.5	-2,796.3	1,226.1	1,162.7	63.41	19.336	
11,300.0	9,734.0	11,843.4	10,529.0	46.3	42.0	-131.10	1,196.5	-2,797.0	1,226.1	1,161.6	64.46	19.020	
11,400.0	9,734.0	11,943.4	10,529.0	46.8	42.7	-131.10	1,296.4	-2,797.7	1,226.1	1,160.5	65.59	18.694	
11,500.0	9,734.0	12,043.4	10,529.0	47.3	43.5	-131.10	1,396.4	-2,798.3	1,226.1	1,159.3	66.78	18.359	
11,600.0	9,734.0	12,143.4	10,529.0	47.9	44.3	-131.10	1,496.4	-2,799.0	1,226.1	1,158.1	68.04	18.019	
11,700.0	9,734.0	12,243.4	10,529.0	48.5	45.1	-131.10	1,596.4	-2,799.7	1,226.1	1,156.7	69.37	17.676	
11,800.0	9,734.0	12,343.4	10,529.0	49.2	45.9	-131.10	1,696.4	-2,800.4	1,226.1	1,155.4	70.75	17.331	
11,900.0	9,734.0	12,443.4	10,529.0	49.9	46.8	-131.10	1,796.4	-2,801.1	1,226.1	1,153.9	72.18	16.987	
12,000.0	9,734.0	12,543.4	10,529.0	50.7	47.7	-131.10	1,896.4	-2,801.8	1,226.1	1,152.4	73.67	16.644	
12,100.0	9,734.0	12,643.4	10,529.0	51.5	48.6	-131.10	1,996.4	-2,802.5	1,226.1	1,150.9	75.20	16.304	
12,200.0	9,734.0	12,743.4	10,529.0	52.3	49.6	-131.10	2,096.4	-2,803.2	1,226.1	1,149.3	76.78	15.968	
12,300.0	9,734.0	12,843.4	10,529.0	53.2	50.6	-131.10	2,196.4	-2,803.9	1,226.1	1,147.7	78.41	15.638	
12,400.0	9,734.0	12,943.4	10,529.0	54.0	51.6	-131.10	2,296.4	-2,804.6	1,226.1	1,146.0	80.07	15.313	
12,500.0	9,734.0	13,043.4	10,529.0	54.9	52.6	-131.10	2,396.4	-2,805.3	1,226.1	1,144.3	81.77	14.994	
12,600.0	9,734.0	13,143.4	10,529.0	55.9	53.7	-131.10	2,496.4	-2,806.0	1,226.1	1,142.6	83.51	14.682	
12,700.0	9,734.0	13,243.4	10,529.0	56.8	54.7	-131.10	2,596.4	-2,806.7	1,226.1	1,140.8	85.28	14.377	
12,800.0	9,734.0	13,343.4	10,529.0	57.8	55.8	-131.10	2,696.4	-2,807.4	1,226.1	1,139.0	87.08	14.080	
12,900.0	9,734.0	13,443.4	10,529.0	58.8	56.9	-131.10	2,796.4	-2,808.1	1,226.1	1,137.2	88.91	13.790	
13,000.0	9,734.0	13,543.4	10,529.0	59.9	58.0	-131.10	2,896.4	-2,808.8	1,226.1	1,135.3	90.77	13.508	
13,100.0	9,734.0	13,643.4	10,529.0	60.9	59.1	-131.10	2,996.4	-2,809.5	1,226.1	1,133.5	92.65	13.233	
13,200.0	9,734.0	13,743.4	10,529.0	62.0	60.3	-131.10	3,096.4	-2,810.1	1,226.1	1,131.6	94.56	12.966	
13,300.0	9,734.0	13,843.4	10,529.0	63.0	61.4	-131.10	3,196.4	-2,810.8	1,226.1	1,129.6	96.49	12.707	
13,400.0	9,734.0	13,943.4	10,529.0	64.1	62.6	-131.10	3,296.4	-2,811.5	1,226.1	1,127.7	98.45	12.455	
13,500.0	9,734.0	14,043.4	10,529.0	65.2	63.8	-131.10	3,396.4	-2,812.2	1,226.1	1,125.7	100.42	12.210	
13,600.0	9,734.0	14,143.4	10,529.0	66.3	64.9	-131.10	3,496.4	-2,812.9	1,226.1	1,123.7	102.41	11.973	
13,700.0	9,734.0	14,243.4	10,529.0	67.5	66.1	-131.10	3,596.4	-2,813.6	1,226.1	1,121.7	104.42	11.742	
13,800.0	9,734.0	14,343.4	10,529.0	68.6	67.4	-131.10	3,696.4	-2,814.3	1,226.1	1,119.7	106.45	11.519	
13,900.0	9,734.0	14,443.4	10,529.0	69.8	68.6	-131.10	3,796.4	-2,815.0	1,226.1	1,117.6	108.49	11.302	
14,000.0	9,734.0	14,543.4	10,529.0	70.9	69.8	-131.10	3,896.4	-2,815.7	1,226.1	1,115.6	110.55	11.092	
14,100.0	9,734.0	14,643.4	10,529.0	72.1	71.0	-131.10	3,996.4	-2,816.4	1,226.1	1,113.5	112.62	10.888	
14,200.0	9,734.0	14,743.4	10,529.0	73.3	72.3	-131.10	4,096.4	-2,817.1	1,226.1	1,111.4	114.70	10.690	
14,300.0	9,734.0	14,843.4	10,529.0	74.5	73.5	-131.10	4,196.4	-2,817.8	1,226.1	1,109.3	116.80	10.498	
14,400.0	9,734.0	14,943.4	10,529.0	75.7	74.8	-131.10	4,296.4	-2,818.5	1,226.1	1,107.2	118.91	10.311	
14,500.0	9,734.0	15,043.4	10,529.0	76.9	76.0	-131.10	4,396.4	-2,819.2	1,226.1	1,105.1	121.03	10.131	
14,600.0	9,734.0	15,143.4	10,529.0	78.1	77.3	-131.10	4,496.4	-2,819.9	1,226.1	1,103.0	123.16	9.955	
14,700.0	9,734.0	15,243.4	10,529.0	79.4	78.6	-131.10	4,596.4	-2,820.6	1,226.1	1,100.8	125.30	9.785	
14,800.0	9,734.0	15,343.4	10,529.0	80.6	79.9	-131.10	4,696.4	-2,821.3	1,226.1	1,098.7	127.46	9.620	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 602H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Minimum Separation (usft)	Separation Factor
14,900.0	9,734.0	15,443.4	10,529.0	81.9	81.2	-131.10	4,796.4	-2,821.9	1,226.1	1,096.5		129.62	9.460
15,000.0	9,734.0	15,543.4	10,529.0	83.1	82.4	-131.10	4,896.4	-2,822.6	1,226.1	1,094.3		131.79	9.304
15,100.0	9,734.0	15,643.4	10,529.0	84.4	83.7	-131.10	4,996.4	-2,823.3	1,226.1	1,092.2		133.97	9.153
15,200.0	9,734.0	15,743.4	10,529.0	85.6	85.0	-131.10	5,096.4	-2,824.0	1,226.1	1,090.0		136.15	9.006
15,300.0	9,734.0	15,843.4	10,529.0	86.9	86.4	-131.10	5,196.4	-2,824.7	1,226.1	1,087.8		138.35	8.863
15,400.0	9,734.0	15,943.4	10,529.0	88.2	87.7	-131.10	5,296.4	-2,825.4	1,226.1	1,085.6		140.55	8.724
15,500.0	9,734.0	16,043.4	10,529.0	89.4	89.0	-131.10	5,396.3	-2,826.1	1,226.1	1,083.4		142.75	8.589
15,600.0	9,734.0	16,143.4	10,529.0	90.7	90.3	-131.10	5,496.3	-2,826.8	1,226.1	1,081.2		144.97	8.458
15,700.0	9,734.0	16,243.4	10,529.0	92.0	91.6	-131.10	5,596.3	-2,827.5	1,226.1	1,078.9		147.19	8.330
15,800.0	9,734.0	16,343.4	10,529.0	93.3	92.9	-131.10	5,696.3	-2,828.2	1,226.1	1,076.7		149.42	8.206
15,900.0	9,734.0	16,443.4	10,529.0	94.6	94.3	-131.10	5,796.3	-2,828.9	1,226.1	1,074.5		151.65	8.085
16,000.0	9,734.0	16,543.4	10,529.0	95.9	95.6	-131.10	5,896.3	-2,829.6	1,226.1	1,072.2		153.89	7.968
16,100.0	9,734.0	16,643.4	10,529.0	97.2	97.0	-131.10	5,996.3	-2,830.3	1,226.1	1,070.0		156.13	7.853
16,200.0	9,734.0	16,743.4	10,529.0	98.5	98.3	-131.10	6,096.3	-2,831.0	1,226.1	1,067.7		158.38	7.742
16,300.0	9,734.0	16,843.4	10,529.0	99.9	99.6	-131.10	6,196.3	-2,831.7	1,226.1	1,065.5		160.63	7.633
16,400.0	9,734.0	16,943.4	10,529.0	101.2	101.0	-131.10	6,296.3	-2,832.4	1,226.1	1,063.2		162.89	7.527
16,500.0	9,734.0	17,043.4	10,529.0	102.5	102.3	-131.10	6,396.3	-2,833.1	1,226.1	1,061.0		165.15	7.424
16,600.0	9,734.0	17,143.4	10,529.0	103.8	103.7	-131.10	6,496.3	-2,833.7	1,226.1	1,058.7		167.42	7.324
16,700.0	9,734.0	17,243.4	10,529.0	105.1	105.0	-131.10	6,596.3	-2,834.4	1,226.1	1,056.4		169.69	7.226
16,800.0	9,734.0	17,343.4	10,529.0	106.5	106.4	-131.10	6,696.3	-2,835.1	1,226.1	1,054.2		171.96	7.130
16,900.0	9,734.0	17,443.4	10,529.0	107.8	107.8	-131.10	6,796.3	-2,835.8	1,226.1	1,051.9		174.24	7.037
17,000.0	9,734.0	17,543.4	10,529.0	109.1	109.1	-131.10	6,896.3	-2,836.5	1,226.1	1,049.6		176.52	6.946
17,100.0	9,734.0	17,643.4	10,529.0	110.5	110.5	-131.10	6,996.3	-2,837.2	1,226.1	1,047.3		178.81	6.857
17,200.0	9,734.0	17,743.4	10,529.0	111.8	111.8	-131.10	7,096.3	-2,837.9	1,226.1	1,045.0		181.10	6.770
17,300.0	9,734.0	17,843.4	10,529.0	113.2	113.2	-131.10	7,196.3	-2,838.6	1,226.1	1,042.7		183.39	6.686
17,400.0	9,734.0	17,943.4	10,529.0	114.5	114.6	-131.10	7,296.3	-2,839.3	1,226.1	1,040.4		185.69	6.603
17,500.0	9,734.0	18,043.4	10,529.0	115.9	116.0	-131.10	7,396.3	-2,840.0	1,226.1	1,038.1		187.98	6.523
17,600.0	9,734.0	18,143.4	10,529.0	117.2	117.3	-131.10	7,496.3	-2,840.7	1,226.1	1,035.8		190.28	6.444
17,700.0	9,734.0	18,243.4	10,529.0	118.6	118.7	-131.10	7,596.3	-2,841.4	1,226.1	1,033.5		192.59	6.367
17,800.0	9,734.0	18,343.4	10,529.0	119.9	120.1	-131.10	7,696.3	-2,842.1	1,226.1	1,031.2		194.89	6.291
17,900.0	9,734.0	18,443.4	10,529.0	121.3	121.5	-131.10	7,796.3	-2,842.8	1,226.1	1,028.9		197.20	6.218
18,000.0	9,734.0	18,543.4	10,529.0	122.7	122.8	-131.10	7,896.3	-2,843.5	1,226.1	1,026.6		199.52	6.146
18,100.0	9,734.0	18,643.4	10,529.0	124.0	124.2	-131.10	7,996.3	-2,844.2	1,226.1	1,024.3		201.83	6.075
18,200.0	9,734.0	18,743.4	10,529.0	125.4	125.6	-131.10	8,096.3	-2,844.9	1,226.1	1,022.0		204.15	6.006
18,300.0	9,734.0	18,843.4	10,529.0	126.8	127.0	-131.10	8,196.3	-2,845.5	1,226.1	1,019.7		206.46	5.939
18,400.0	9,734.0	18,943.4	10,529.0	128.1	128.4	-131.10	8,296.3	-2,846.2	1,226.1	1,017.3		208.78	5.873
18,500.0	9,734.0	19,043.4	10,529.0	129.5	129.8	-131.10	8,396.3	-2,846.9	1,226.1	1,015.0		211.11	5.808
18,600.0	9,734.0	19,143.4	10,529.0	130.9	131.1	-131.10	8,496.3	-2,847.6	1,226.1	1,012.7		213.43	5.745
18,700.0	9,734.0	19,243.4	10,529.0	132.2	132.5	-131.10	8,596.3	-2,848.3	1,226.1	1,010.4		215.76	5.683
18,800.0	9,734.0	19,343.4	10,529.0	133.6	133.9	-131.10	8,696.3	-2,849.0	1,226.1	1,008.0		218.09	5.622
18,900.0	9,734.0	19,443.4	10,529.0	135.0	135.3	-131.10	8,796.3	-2,849.7	1,226.1	1,005.7		220.42	5.563
19,000.0	9,734.0	19,543.4	10,529.0	136.4	136.7	-131.10	8,896.3	-2,850.4	1,226.1	1,003.4		222.75	5.504
19,100.0	9,734.0	19,643.4	10,529.0	137.7	138.1	-131.10	8,996.3	-2,851.1	1,226.1	1,001.0		225.09	5.447
19,200.0	9,734.0	19,743.4	10,529.0	139.1	139.5	-131.10	9,096.3	-2,851.8	1,226.1	998.7		227.42	5.391
19,300.0	9,734.0	19,843.4	10,529.0	140.5	140.9	-131.10	9,196.3	-2,852.5	1,226.1	996.4		229.76	5.337
19,400.0	9,734.0	19,943.4	10,529.0	141.9	142.3	-131.10	9,296.3	-2,853.2	1,226.1	994.0		232.10	5.283
19,500.0	9,734.0	20,043.4	10,529.0	143.3	143.7	-131.10	9,396.3	-2,853.9	1,226.1	991.7		234.44	5.230
19,600.0	9,734.0	20,143.4	10,529.0	144.7	145.1	-131.10	9,496.3	-2,854.6	1,226.1	989.4		236.78	5.178
19,700.0	9,734.0	20,243.4	10,529.0	146.1	146.5	-131.10	9,596.2	-2,855.3	1,226.1	987.0		239.12	5.128
19,800.0	9,734.0	20,343.4	10,529.0	147.4	147.9	-131.10	9,696.2	-2,856.0	1,226.1	984.7		241.47	5.078
19,900.0	9,734.0	20,443.4	10,529.0	148.8	149.3	-131.10	9,796.2	-2,856.7	1,226.1	982.3		243.81	5.029
20,000.0	9,734.0	20,543.4	10,529.0	150.2	150.7	-131.10	9,896.2	-2,857.3	1,226.1	980.0		246.16	4.981

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 602H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
20,100.0	9,734.0	20,643.4	10,529.0	151.6	152.1	-131.10	9,996.2	-2,858.0	1,226.1	977.6	248.51	4.934		
20,200.0	9,734.0	20,743.4	10,529.0	152.9	153.5	-131.10	10,096.2	-2,858.7	1,226.1	975.5	250.61	4.893		
20,200.0	9,734.0	20,743.5	10,529.0	152.9	153.5	-131.10	10,096.3	-2,858.7	1,226.1	975.5	250.61	4.893		
20,207.7	9,734.0	20,749.4	10,529.0	153.0	153.6	-131.10	10,102.2	-2,858.8	1,226.1	975.4	250.78	4.889 SF		

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 603H - OH - Plan 0.1													Offset Site Error: 0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
3,800.0	3,749.2	4,019.9	4,006.1	14.3	14.3	6.32	-210.4	-2,575.4	2,209.4	2,182.4	27.02	81.764	
3,900.0	3,845.1	4,111.8	4,097.3	14.8	14.7	6.34	-212.0	-2,564.1	2,170.0	2,142.3	27.71	78.315	
4,000.0	3,941.1	4,203.6	4,188.5	15.3	15.0	6.36	-213.6	-2,552.8	2,130.5	2,102.1	28.40	75.026	
4,100.0	4,037.0	4,295.5	4,279.7	15.8	15.4	6.37	-215.2	-2,541.5	2,091.1	2,062.0	29.09	71.888	
4,200.0	4,133.0	4,387.4	4,370.8	16.3	15.7	6.39	-216.8	-2,530.3	2,051.6	2,021.9	29.78	68.892	
4,300.0	4,228.9	4,479.3	4,462.0	16.8	16.1	6.41	-218.4	-2,519.0	2,012.2	1,981.7	30.47	66.028	
4,400.0	4,324.9	4,571.2	4,553.2	17.3	16.5	6.43	-220.0	-2,507.7	1,972.7	1,941.6	31.17	63.288	
4,500.0	4,420.8	4,663.1	4,644.4	17.8	16.8	6.45	-221.6	-2,496.4	1,933.3	1,901.4	31.87	60.665	
4,600.0	4,516.8	4,755.0	4,735.6	18.3	17.2	6.47	-223.1	-2,485.2	1,893.8	1,861.3	32.57	58.152	
4,700.0	4,612.7	4,846.9	4,826.7	18.8	17.5	6.49	-224.7	-2,473.9	1,854.4	1,821.1	33.27	55.742	
4,800.0	4,708.7	4,938.7	4,917.9	19.3	17.9	6.51	-226.3	-2,462.6	1,814.9	1,781.0	33.97	53.430	
4,900.0	4,804.7	5,030.6	5,009.1	19.9	18.2	6.53	-227.9	-2,451.4	1,775.5	1,740.8	34.67	51.209	
5,000.0	4,900.6	5,122.5	5,100.3	20.4	18.6	6.56	-229.5	-2,440.1	1,736.0	1,700.7	35.38	49.075	
5,100.0	4,996.6	5,214.4	5,191.5	20.9	18.9	6.58	-231.1	-2,428.8	1,696.6	1,660.5	36.08	47.023	
5,200.0	5,092.5	5,306.3	5,282.6	21.4	19.3	6.61	-232.7	-2,417.5	1,657.1	1,620.4	36.79	45.048	
5,300.0	5,188.5	5,398.2	5,373.8	21.9	19.7	6.64	-234.3	-2,406.3	1,617.7	1,580.2	37.49	43.146	
5,400.0	5,284.4	5,490.1	5,465.0	22.4	20.0	6.67	-235.9	-2,395.0	1,578.2	1,540.0	38.20	41.314	
5,500.0	5,380.4	5,582.0	5,556.2	23.0	20.4	6.70	-237.5	-2,383.7	1,538.8	1,499.9	38.91	39.547	
5,600.0	5,476.3	5,673.8	5,647.4	23.5	20.7	6.73	-239.1	-2,372.4	1,499.4	1,459.7	39.62	37.843	
5,700.0	5,572.3	5,765.7	5,738.5	24.0	21.1	6.76	-240.7	-2,361.2	1,459.9	1,419.6	40.33	36.198	
5,800.0	5,668.2	5,857.6	5,829.7	24.5	21.5	6.80	-242.3	-2,349.9	1,420.5	1,379.4	41.04	34.609	
5,900.0	5,764.2	5,949.5	5,920.9	25.1	21.8	6.84	-243.9	-2,338.6	1,381.0	1,339.3	41.75	33.074	
6,000.0	5,860.1	6,041.4	6,012.1	25.6	22.2	6.88	-245.4	-2,327.3	1,341.6	1,299.1	42.47	31.590	
6,100.0	5,956.1	6,133.3	6,103.3	26.1	22.5	6.92	-247.0	-2,316.1	1,302.1	1,258.9	43.18	30.154	
6,200.0	6,052.0	6,225.2	6,194.4	26.6	22.9	6.96	-248.6	-2,304.8	1,262.7	1,218.8	43.90	28.765	
6,300.0	6,148.0	6,317.1	6,285.6	27.2	23.2	7.01	-250.2	-2,293.5	1,223.2	1,178.6	44.61	27.419	
6,400.0	6,243.9	6,408.9	6,376.8	27.7	23.6	7.06	-251.8	-2,282.2	1,183.8	1,138.5	45.33	26.116	
6,500.0	6,339.9	6,500.8	6,468.0	28.2	24.0	7.12	-253.4	-2,271.0	1,144.4	1,098.3	46.05	24.853	
6,600.0	6,435.8	6,592.7	6,559.1	28.8	24.3	7.18	-255.0	-2,259.7	1,104.9	1,058.1	46.76	23.628	
6,700.0	6,531.8	6,684.6	6,650.3	29.3	24.7	7.24	-256.6	-2,248.4	1,065.5	1,018.0	47.48	22.440	
6,800.0	6,627.7	6,776.5	6,741.5	29.8	25.0	7.31	-258.2	-2,237.2	1,026.0	977.8	48.20	21.287	
6,900.0	6,723.7	6,868.4	6,832.7	30.4	25.4	7.38	-259.8	-2,225.9	986.6	937.7	48.92	20.168	
7,000.0	6,819.6	6,960.3	6,923.9	30.9	25.8	7.46	-261.4	-2,214.6	947.2	897.5	49.64	19.081	
7,100.0	6,915.6	7,052.2	7,015.0	31.4	26.1	7.55	-263.0	-2,203.3	907.7	857.4	50.36	18.024	
7,200.0	7,011.5	7,144.0	7,106.2	32.0	26.5	7.64	-264.6	-2,192.1	868.3	817.2	51.08	16.998	
7,300.0	7,107.5	7,235.9	7,197.4	32.5	26.9	7.74	-266.2	-2,180.8	828.9	777.1	51.81	15.999	
7,400.0	7,203.5	7,327.8	7,288.6	33.0	27.2	7.86	-267.7	-2,169.5	789.4	736.9	52.53	15.028	
7,500.0	7,299.4	7,419.7	7,379.8	33.6	27.6	7.98	-269.3	-2,158.2	750.0	696.8	53.25	14.084	
7,600.0	7,395.4	7,511.6	7,470.9	34.1	27.9	8.12	-270.9	-2,147.0	710.6	656.6	53.98	13.164	
7,700.0	7,491.3	7,603.5	7,562.1	34.6	28.3	8.28	-272.5	-2,135.7	671.2	616.5	54.71	12.269	
7,800.0	7,587.3	7,695.4	7,653.3	35.2	28.7	8.45	-274.1	-2,124.4	631.8	576.3	55.43	11.397	
7,900.0	7,683.2	7,787.3	7,744.5	35.7	29.0	8.65	-275.7	-2,113.1	592.4	536.2	56.16	10.547	
8,000.0	7,779.2	7,879.1	7,835.7	36.2	29.4	8.88	-277.3	-2,101.9	553.0	496.1	56.90	9.719	
8,100.0	7,875.1	7,971.0	7,926.8	36.8	29.7	9.14	-278.9	-2,090.6	513.6	455.9	57.63	8.912	
8,200.0	7,971.1	8,062.9	8,018.0	37.3	30.1	9.44	-280.5	-2,079.3	474.2	415.8	58.36	8.124	
8,300.0	8,067.0	8,154.8	8,109.2	37.9	30.5	9.80	-282.1	-2,068.0	434.8	375.7	59.10	7.357	
8,400.0	8,163.0	8,246.7	8,200.4	38.4	30.8	10.24	-283.7	-2,056.8	395.5	335.6	59.85	6.608	
8,500.0	8,258.9	8,338.6	8,291.6	38.9	31.2	10.76	-285.3	-2,045.5	356.1	295.5	60.60	5.877	
8,600.0	8,354.9	8,430.5	8,382.7	39.5	31.5	11.41	-286.9	-2,034.2	316.9	255.5	61.36	5.164	
8,700.0	8,451.4	8,523.1	8,474.7	40.0	31.9	12.00	-288.5	-2,022.9	279.4	217.2	62.12	4.497	
8,800.0	8,548.7	8,617.0	8,567.8	40.5	32.3	12.63	-290.1	-2,011.3	245.1	182.2	62.90	3.897	
8,900.0	8,646.8	8,712.0	8,662.1	40.9	32.7	13.30	-291.7	-1,999.7	214.1	150.5	63.67	3.363	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 603H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,000.0	8,745.5	8,808.0	8,757.4	41.3	33.0	13.98	-293.4	-1,987.9	186.4	122.0	64.45	2.893	
9,100.0	8,844.7	8,905.0	8,853.6	41.7	33.4	14.62	-295.1	-1,976.0	162.0	96.8	65.22	2.484	
9,200.0	8,944.2	9,002.7	8,950.6	42.1	33.8	15.16	-296.8	-1,964.0	140.9	75.0	65.98	2.136	
9,300.0	9,044.1	9,101.1	9,048.2	42.4	34.2	15.49	-298.5	-1,951.9	123.2	56.4	66.71	1.846	
9,400.0	9,144.0	9,200.1	9,146.4	42.7	34.6	15.45	-300.2	-1,939.8	108.7	41.3	67.41	1.613	
9,500.0	9,244.0	9,299.3	9,244.9	42.9	35.0	-84.47	-301.9	-1,927.6	96.3	28.3	68.06	1.415	Level 3
9,600.0	9,343.6	9,397.8	9,342.7	43.2	35.4	-88.18	-303.6	-1,915.5	83.2	14.8	68.36	1.217	Level 2
9,688.3	9,428.4	9,481.4	9,425.6	43.4	35.7	-107.70	-305.1	-1,905.3	75.9	6.5	69.42	1.093	Level 2, CC
9,700.0	9,439.3	9,492.1	9,436.2	43.4	35.7	-110.99	-305.3	-1,904.0	76.1	6.2	69.85	1.089	Level 2, ES, SF
9,800.0	9,527.0	9,578.0	9,521.4	43.6	36.1	-137.33	-306.8	-1,893.4	97.3	21.8	75.51	1.288	Level 3
9,900.0	9,602.9	9,651.7	9,594.5	43.8	36.4	-152.73	-308.0	-1,884.4	151.7	72.8	78.83	1.924	
10,000.0	9,663.6	9,710.0	9,652.5	43.9	36.6	-158.84	-309.0	-1,877.8	227.6	147.6	79.99	2.846	
10,100.0	9,706.6	9,751.2	9,693.5	43.9	36.7	-158.18	-309.5	-1,873.9	316.7	236.2	80.46	3.936	
10,200.0	9,729.9	9,773.0	9,715.2	43.9	36.8	-141.84	-309.8	-1,872.0	413.3	332.7	80.67	5.124	
10,300.0	9,734.0	9,775.5	9,717.7	44.0	36.8	-80.99	-309.8	-1,871.8	512.8	432.1	80.74	6.352	
10,400.0	9,734.0	9,774.1	9,716.3	44.0	36.8	-63.43	-309.8	-1,871.9	612.7	532.0	80.76	7.587	
10,500.0	9,734.0	9,772.8	9,715.0	44.1	36.8	-50.42	-309.8	-1,872.0	712.7	632.0	80.77	8.825	
10,600.0	9,734.0	11,196.2	10,529.0	44.2	39.9	180.00	502.9	-1,868.1	806.1	763.1	43.06	18.720	
10,700.0	9,734.0	11,296.2	10,529.0	44.3	40.3	180.00	602.9	-1,868.8	806.1	762.5	43.67	18.459	
10,800.0	9,734.0	11,396.2	10,529.0	44.5	40.7	180.00	702.9	-1,869.5	806.1	761.8	44.33	18.185	
10,900.0	9,734.0	11,496.2	10,529.0	44.8	41.2	180.00	802.9	-1,870.2	806.1	761.1	45.03	17.902	
11,000.0	9,734.0	11,596.2	10,529.0	45.1	41.7	180.00	902.9	-1,870.9	806.1	760.4	45.77	17.611	
11,100.0	9,734.0	11,696.2	10,529.0	45.4	42.3	180.00	1,002.9	-1,871.6	806.1	759.6	46.56	17.314	
11,200.0	9,734.0	11,796.2	10,529.0	45.8	42.9	180.00	1,102.9	-1,872.3	806.1	758.7	47.38	17.013	
11,300.0	9,734.0	11,896.2	10,529.0	46.3	43.6	180.00	1,202.9	-1,873.0	806.1	757.9	48.24	16.710	
11,400.0	9,734.0	11,996.2	10,529.0	46.8	44.3	180.00	1,302.9	-1,873.7	806.1	757.0	49.14	16.405	
11,500.0	9,734.0	12,096.2	10,529.0	47.3	45.0	180.00	1,402.9	-1,874.4	806.1	756.1	50.07	16.101	
11,600.0	9,734.0	12,196.2	10,529.0	47.9	45.8	180.00	1,502.9	-1,875.1	806.1	755.1	51.03	15.798	
11,700.0	9,734.0	12,296.2	10,529.0	48.5	46.6	180.00	1,602.9	-1,875.8	806.1	754.1	52.02	15.498	
11,800.0	9,734.0	12,396.2	10,529.0	49.2	47.4	180.00	1,702.9	-1,876.5	806.1	753.1	53.03	15.200	
11,900.0	9,734.0	12,496.2	10,529.0	49.9	48.3	180.00	1,802.9	-1,877.1	806.1	752.1	54.08	14.907	
12,000.0	9,734.0	12,596.2	10,529.0	50.7	49.2	180.00	1,902.8	-1,877.8	806.1	751.0	55.15	14.618	
12,100.0	9,734.0	12,696.2	10,529.0	51.5	50.1	180.00	2,002.8	-1,878.5	806.1	749.9	56.24	14.334	
12,200.0	9,734.0	12,796.2	10,529.0	52.3	51.0	180.00	2,102.8	-1,879.2	806.1	748.8	57.35	14.056	
12,300.0	9,734.0	12,896.2	10,529.0	53.2	52.0	180.00	2,202.8	-1,879.9	806.1	747.6	58.49	13.783	
12,400.0	9,734.0	12,996.2	10,529.0	54.0	53.0	180.00	2,302.8	-1,880.6	806.1	746.5	59.64	13.516	
12,500.0	9,734.0	13,096.2	10,529.0	54.9	54.0	180.00	2,402.8	-1,881.3	806.1	745.3	60.81	13.255	
12,600.0	9,734.0	13,196.2	10,529.0	55.9	55.0	180.00	2,502.8	-1,882.0	806.1	744.1	62.01	13.001	
12,700.0	9,734.0	13,296.2	10,529.0	56.8	56.0	180.00	2,602.8	-1,882.7	806.1	742.9	63.21	12.753	
12,800.0	9,734.0	13,396.2	10,529.0	57.8	57.1	180.00	2,702.8	-1,883.4	806.1	741.7	64.44	12.511	
12,900.0	9,734.0	13,496.2	10,529.0	58.8	58.1	180.00	2,802.8	-1,884.1	806.1	740.5	65.67	12.275	
13,000.0	9,734.0	13,596.2	10,529.0	59.9	59.2	180.00	2,902.8	-1,884.8	806.1	739.2	66.93	12.045	
13,100.0	9,734.0	13,696.2	10,529.0	60.9	60.3	180.00	3,002.8	-1,885.5	806.1	737.9	68.19	11.822	
13,200.0	9,734.0	13,796.2	10,529.0	62.0	61.5	180.00	3,102.8	-1,886.2	806.1	736.7	69.47	11.604	
13,300.0	9,734.0	13,896.2	10,529.0	63.0	62.6	180.00	3,202.8	-1,886.9	806.1	735.4	70.76	11.393	
13,400.0	9,734.0	13,996.2	10,529.0	64.1	63.7	180.00	3,302.8	-1,887.6	806.1	734.1	72.06	11.187	
13,500.0	9,734.0	14,096.2	10,529.0	65.2	64.9	180.00	3,402.8	-1,888.3	806.1	732.8	73.37	10.988	
13,600.0	9,734.0	14,196.2	10,529.0	66.3	66.1	180.00	3,502.8	-1,888.9	806.1	731.4	74.69	10.793	
13,700.0	9,734.0	14,296.2	10,529.0	67.5	67.2	180.00	3,602.8	-1,889.6	806.1	730.1	76.02	10.604	
13,800.0	9,734.0	14,396.2	10,529.0	68.6	68.4	180.00	3,702.8	-1,890.3	806.1	728.8	77.36	10.421	
13,900.0	9,734.0	14,496.2	10,529.0	69.8	69.6	180.00	3,802.8	-1,891.0	806.1	727.4	78.71	10.242	
14,000.0	9,734.0	14,596.2	10,529.0	70.9	70.8	180.00	3,902.8	-1,891.7	806.1	726.1	80.06	10.069	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 603H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis			Offset Wellbore Centre			Distance			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
14,100.0	9,734.0	14,696.2	10,529.0	72.1	72.1	180.00	4,002.8	-1,892.4	806.1	724.7	81.42	9.900
14,200.0	9,734.0	14,796.2	10,529.0	73.3	73.3	180.00	4,102.8	-1,893.1	806.1	723.3	82.80	9.736
14,300.0	9,734.0	14,896.2	10,529.0	74.5	74.5	180.00	4,202.8	-1,893.8	806.1	721.9	84.17	9.577
14,400.0	9,734.0	14,996.2	10,529.0	75.7	75.8	180.00	4,302.8	-1,894.5	806.1	720.6	85.56	9.422
14,500.0	9,734.0	15,096.2	10,529.0	76.9	77.0	180.00	4,402.8	-1,895.2	806.1	719.2	86.95	9.271
14,600.0	9,734.0	15,196.2	10,529.0	78.1	78.3	180.00	4,502.8	-1,895.9	806.1	717.8	88.35	9.125
14,700.0	9,734.0	15,296.2	10,529.0	79.4	79.5	180.00	4,602.8	-1,896.6	806.1	716.4	89.75	8.982
14,800.0	9,734.0	15,396.2	10,529.0	80.6	80.8	180.00	4,702.8	-1,897.3	806.1	715.0	91.16	8.843
14,900.0	9,734.0	15,496.2	10,529.0	81.9	82.1	180.00	4,802.8	-1,898.0	806.1	713.6	92.57	8.708
15,000.0	9,734.0	15,596.2	10,529.0	83.1	83.3	180.00	4,902.8	-1,898.7	806.1	712.1	93.99	8.577
15,100.0	9,734.0	15,696.2	10,529.0	84.4	84.6	180.00	5,002.8	-1,899.4	806.1	710.7	95.41	8.449
15,200.0	9,734.0	15,796.2	10,529.0	85.6	85.9	180.00	5,102.8	-1,900.1	806.1	709.3	96.84	8.324
15,300.0	9,734.0	15,896.2	10,529.0	86.9	87.2	180.00	5,202.8	-1,900.7	806.1	707.8	98.27	8.203
15,400.0	9,734.0	15,996.2	10,529.0	88.2	88.5	180.00	5,302.8	-1,901.4	806.1	706.4	99.70	8.085
15,500.0	9,734.0	16,096.2	10,529.0	89.4	89.8	180.00	5,402.8	-1,902.1	806.1	705.0	101.14	7.970
15,600.0	9,734.0	16,196.2	10,529.0	90.7	91.1	180.00	5,502.8	-1,902.8	806.1	703.5	102.59	7.858
15,700.0	9,734.0	16,296.2	10,529.0	92.0	92.4	180.00	5,602.8	-1,903.5	806.1	702.1	104.04	7.748
15,800.0	9,734.0	16,396.2	10,529.0	93.3	93.8	180.00	5,702.8	-1,904.2	806.1	700.6	105.49	7.642
15,900.0	9,734.0	16,496.2	10,529.0	94.6	95.1	180.00	5,802.8	-1,904.9	806.1	699.2	106.94	7.538
16,000.0	9,734.0	16,596.2	10,529.0	95.9	96.4	180.00	5,902.8	-1,905.6	806.1	697.7	108.40	7.437
16,100.0	9,734.0	16,696.2	10,529.0	97.2	97.7	180.00	6,002.7	-1,906.3	806.1	696.3	109.86	7.338
16,200.0	9,734.0	16,796.2	10,529.0	98.5	99.1	180.00	6,102.7	-1,907.0	806.1	694.8	111.32	7.241
16,300.0	9,734.0	16,896.2	10,529.0	99.9	100.4	180.00	6,202.7	-1,907.7	806.1	693.3	112.79	7.147
16,400.0	9,734.0	16,996.2	10,529.0	101.2	101.7	180.00	6,302.7	-1,908.4	806.1	691.9	114.26	7.055
16,500.0	9,734.0	17,096.2	10,529.0	102.5	103.1	180.00	6,402.7	-1,909.1	806.1	690.4	115.73	6.965
16,600.0	9,734.0	17,196.2	10,529.0	103.8	104.4	180.00	6,502.7	-1,909.8	806.1	688.9	117.20	6.878
16,700.0	9,734.0	17,296.2	10,529.0	105.1	105.8	180.00	6,602.7	-1,910.5	806.1	687.4	118.68	6.792
16,800.0	9,734.0	17,396.2	10,529.0	106.5	107.1	180.00	6,702.7	-1,911.2	806.1	686.0	120.16	6.709
16,900.0	9,734.0	17,496.2	10,529.0	107.8	108.5	180.00	6,802.7	-1,911.9	806.1	684.5	121.64	6.627
17,000.0	9,734.0	17,596.2	10,529.0	109.1	109.8	180.00	6,902.7	-1,912.6	806.1	683.0	123.12	6.547
17,100.0	9,734.0	17,696.2	10,529.0	110.5	111.2	180.00	7,002.7	-1,913.2	806.1	681.5	124.61	6.469
17,200.0	9,734.0	17,796.2	10,529.0	111.8	112.5	180.00	7,102.7	-1,913.9	806.1	680.0	126.10	6.393
17,300.0	9,734.0	17,896.2	10,529.0	113.2	113.9	180.00	7,202.7	-1,914.6	806.1	678.5	127.59	6.318
17,400.0	9,734.0	17,996.2	10,529.0	114.5	115.2	180.00	7,302.7	-1,915.3	806.1	677.0	129.08	6.245
17,500.0	9,734.0	18,096.2	10,529.0	115.9	116.6	180.00	7,402.7	-1,916.0	806.1	675.5	130.57	6.174
17,600.0	9,734.0	18,196.2	10,529.0	117.2	118.0	180.00	7,502.7	-1,916.7	806.1	674.0	132.07	6.104
17,700.0	9,734.0	18,296.2	10,529.0	118.6	119.3	180.00	7,602.7	-1,917.4	806.1	672.5	133.56	6.035
17,800.0	9,734.0	18,396.2	10,529.0	119.9	120.7	180.00	7,702.7	-1,918.1	806.1	671.0	135.06	5.968
17,900.0	9,734.0	18,496.2	10,529.0	121.3	122.1	180.00	7,802.7	-1,918.8	806.1	669.5	136.56	5.903
18,000.0	9,734.0	18,596.2	10,529.0	122.7	123.5	180.00	7,902.7	-1,919.5	806.1	668.0	138.07	5.839
18,100.0	9,734.0	18,696.2	10,529.0	124.0	124.8	180.00	8,002.7	-1,920.2	806.1	666.5	139.57	5.776
18,200.0	9,734.0	18,796.2	10,529.0	125.4	126.2	180.00	8,102.7	-1,920.9	806.1	665.0	141.07	5.714
18,300.0	9,734.0	18,896.2	10,529.0	126.8	127.6	180.00	8,202.7	-1,921.6	806.1	663.5	142.58	5.654
18,400.0	9,734.0	18,996.2	10,529.0	128.1	129.0	180.00	8,302.7	-1,922.3	806.1	662.0	144.09	5.595
18,500.0	9,734.0	19,096.2	10,529.0	129.5	130.4	180.00	8,402.7	-1,923.0	806.1	660.5	145.60	5.537
18,600.0	9,734.0	19,196.2	10,529.0	130.9	131.7	180.00	8,502.7	-1,923.7	806.1	659.0	147.11	5.480
18,700.0	9,734.0	19,296.2	10,529.0	132.2	133.1	180.00	8,602.7	-1,924.4	806.1	657.5	148.62	5.424
18,800.0	9,734.0	19,396.2	10,529.0	133.6	134.5	180.00	8,702.7	-1,925.0	806.1	656.0	150.13	5.369
18,900.0	9,734.0	19,496.2	10,529.0	135.0	135.9	180.00	8,802.7	-1,925.7	806.1	654.5	151.64	5.316
19,000.0	9,734.0	19,596.2	10,529.0	136.4	137.3	180.00	8,902.7	-1,926.4	806.1	652.9	153.16	5.263
19,100.0	9,734.0	19,696.2	10,529.0	137.7	138.7	180.00	9,002.7	-1,927.1	806.1	651.4	154.67	5.212
19,200.0	9,734.0	19,796.2	10,529.0	139.1	140.1	180.00	9,102.7	-1,927.8	806.1	649.9	156.19	5.161

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 603H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,300.0	9,734.0	19,896.2	10,529.0	140.5	141.5	180.00	9,202.7	-1,928.5	806.1	648.4	157.71	5.111	
19,400.0	9,734.0	19,996.2	10,529.0	141.9	142.8	180.00	9,302.7	-1,929.2	806.1	646.9	159.23	5.063	
19,500.0	9,734.0	20,096.2	10,529.0	143.3	144.2	180.00	9,402.7	-1,929.9	806.1	645.4	160.75	5.015	
19,600.0	9,734.0	20,196.2	10,529.0	144.7	145.6	180.00	9,502.7	-1,930.6	806.1	643.8	162.27	4.968	
19,700.0	9,734.0	20,296.2	10,529.0	146.1	147.0	180.00	9,602.7	-1,931.3	806.1	642.3	163.79	4.922	
19,800.0	9,734.0	20,396.2	10,529.0	147.4	148.4	180.00	9,702.7	-1,932.0	806.1	640.8	165.31	4.876	
19,900.0	9,734.0	20,496.2	10,529.0	148.8	149.8	180.00	9,802.7	-1,932.7	806.1	639.3	166.84	4.832	
20,000.0	9,734.0	20,596.2	10,529.0	150.2	151.2	180.00	9,902.7	-1,933.4	806.1	637.7	168.36	4.788	
20,100.0	9,734.0	20,696.2	10,529.0	151.6	152.6	180.00	10,002.7	-1,934.1	806.1	636.2	169.89	4.745	
20,200.0	9,734.0	20,796.2	10,529.0	152.9	154.0	180.00	10,102.7	-1,934.8	806.1	635.1	171.03	4.713	
20,207.7	9,734.0	20,803.9	10,529.0	153.0	154.1	180.00	10,110.3	-1,934.8	806.1	635.0	171.12	4.711	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 304H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	3.4	3.4	0.0	0.0	13.74	160.1	39.1	164.8				
100.0	100.0	103.4	103.4	0.1	0.1	13.74	160.1	39.1	164.8	164.5	0.28	597.784	
200.0	200.0	203.4	203.4	0.5	0.5	13.74	160.1	39.1	164.8	163.8	0.99	166.015	
300.0	300.0	303.4	303.4	0.8	0.9	13.74	160.1	39.1	164.8	163.1	1.71	96.393	
400.0	400.0	403.4	403.4	1.2	1.2	13.74	160.1	39.1	164.8	162.4	2.43	67.912	
500.0	500.0	503.4	503.4	1.6	1.6	13.74	160.1	39.1	164.8	161.6	3.14	52.423	
600.0	600.0	603.4	603.4	1.9	1.9	13.74	160.1	39.1	164.8	160.9	3.86	42.687	
700.0	700.0	703.4	703.4	2.3	2.3	13.74	160.1	39.1	164.8	160.2	4.58	36.001	
800.0	800.0	803.4	803.4	2.6	2.7	13.74	160.1	39.1	164.8	159.5	5.29	31.126	
900.0	900.0	903.4	903.4	3.0	3.0	13.74	160.1	39.1	164.8	158.8	6.01	27.413	
1,000.0	1,000.0	1,003.4	1,003.4	3.4	3.4	13.74	160.1	39.1	164.8	158.1	6.73	24.492	
1,100.0	1,100.0	1,103.4	1,103.4	3.7	3.7	13.74	160.1	39.1	164.8	157.3	7.45	22.134	
1,200.0	1,200.0	1,203.4	1,203.4	4.1	4.1	13.74	160.1	39.1	164.8	156.6	8.16	20.190	
1,300.0	1,300.0	1,303.4	1,303.4	4.4	4.4	13.74	160.1	39.1	164.8	155.9	8.88	18.559	
1,400.0	1,400.0	1,403.4	1,403.4	4.8	4.8	13.74	160.1	39.1	164.8	155.2	9.60	17.173	
1,500.0	1,500.0	1,503.4	1,503.4	5.2	5.2	13.74	160.1	39.1	164.8	154.5	10.31	15.979	
1,600.0	1,600.0	1,603.4	1,603.4	5.5	5.5	13.74	160.1	39.1	164.8	153.8	11.03	14.940	
1,700.0	1,700.0	1,703.4	1,703.4	5.9	5.9	13.74	160.1	39.1	164.8	153.0	11.75	14.028	
1,800.0	1,800.0	1,803.4	1,803.4	6.2	6.2	13.74	160.1	39.1	164.8	152.3	12.46	13.221	
1,900.0	1,900.0	1,903.4	1,903.4	6.6	6.6	13.74	160.1	39.1	164.8	151.6	13.18	12.502	
2,000.0	2,000.0	2,003.5	2,003.5	6.9	7.0	13.74	160.1	39.1	164.8	150.9	13.90	11.857	
2,100.0	2,100.0	2,107.5	2,107.4	7.3	7.3	113.44	159.1	37.4	164.2	149.6	14.60	11.246	
2,200.0	2,199.8	2,211.4	2,211.2	7.6	7.7	113.70	156.5	32.2	162.6	147.3	15.28	10.644	
2,300.0	2,299.5	2,315.2	2,314.6	8.0	8.0	114.15	152.1	23.8	160.0	144.1	15.95	10.032	
2,400.0	2,398.7	2,419.0	2,417.5	8.3	8.4	114.83	146.0	12.0	156.5	139.9	16.63	9.412	
2,500.0	2,497.5	2,522.6	2,519.7	8.7	8.7	115.75	138.2	-3.0	152.0	134.7	17.30	8.786	
2,600.0	2,595.6	2,622.4	2,617.9	9.0	9.1	117.40	129.8	-19.1	147.9	129.9	18.01	8.212	
2,700.0	2,693.1	2,722.1	2,715.9	9.4	9.5	120.29	121.5	-35.1	145.6	126.9	18.71	7.779	
2,750.0	2,741.5	2,771.9	2,764.9	9.6	9.6	122.19	117.4	-43.1	145.3	126.2	19.07	7.617 CC	
2,800.0	2,789.6	2,821.6	2,813.8	9.8	9.8	124.35	113.2	-51.1	145.6	126.2	19.43	7.496 ES	
2,900.0	2,885.6	2,920.8	2,911.3	10.2	10.2	129.08	105.0	-67.1	147.8	127.7	20.13	7.342	
3,000.0	2,981.6	3,020.0	3,008.9	10.6	10.6	133.66	96.7	-83.0	151.1	130.2	20.84	7.247	
3,100.0	3,077.5	3,119.3	3,106.5	11.1	11.0	138.02	88.4	-99.0	155.2	133.7	21.55	7.203	
3,200.0	3,173.5	3,218.5	3,204.1	11.5	11.4	142.13	80.1	-114.9	160.3	138.0	22.26	7.201	
3,300.0	3,269.4	3,317.7	3,301.7	12.0	11.8	145.98	71.8	-130.9	166.1	143.1	22.96	7.233	
3,400.0	3,365.4	3,416.9	3,399.2	12.4	12.2	149.56	63.6	-146.9	172.6	148.9	23.67	7.292	
3,500.0	3,461.3	3,516.2	3,496.8	12.9	12.6	152.86	55.3	-162.8	179.7	155.4	24.38	7.373	
3,600.0	3,557.3	3,615.4	3,594.4	13.4	13.0	155.91	47.0	-178.8	187.4	162.3	25.09	7.471	
3,700.0	3,653.2	3,714.6	3,692.0	13.8	13.4	158.71	38.7	-194.7	195.6	169.8	25.80	7.581	
3,800.0	3,749.2	3,813.8	3,789.6	14.3	13.8	161.28	30.5	-210.7	204.2	177.7	26.52	7.700	
3,900.0	3,845.1	3,913.1	3,887.2	14.8	14.2	163.64	22.2	-226.6	213.2	186.0	27.25	7.825	
4,000.0	3,941.1	4,012.3	3,984.7	15.3	14.6	165.81	13.9	-242.6	222.6	194.6	27.98	7.954	
4,100.0	4,037.0	4,111.5	4,082.3	15.8	15.0	167.81	5.6	-258.5	232.2	203.5	28.72	8.085	
4,200.0	4,133.0	4,210.7	4,179.9	16.3	15.4	169.64	-2.7	-274.5	242.1	212.6	29.46	8.217	
4,300.0	4,228.9	4,309.9	4,277.5	16.8	15.8	171.33	-10.9	-290.4	252.2	222.0	30.21	8.348	
4,400.0	4,324.9	4,409.2	4,375.1	17.3	16.2	172.88	-19.2	-306.4	262.5	231.5	30.96	8.478	
4,500.0	4,420.8	4,508.4	4,472.6	17.8	16.6	174.32	-27.5	-322.4	273.0	241.2	31.72	8.606	
4,600.0	4,516.8	4,607.6	4,570.2	18.3	17.1	175.66	-35.8	-338.3	283.6	251.1	32.48	8.731	
4,700.0	4,612.7	4,706.8	4,667.8	18.8	17.5	176.89	-44.1	-354.3	294.4	261.1	33.25	8.854	
4,800.0	4,708.7	4,806.1	4,765.4	19.3	17.9	178.04	-52.3	-370.2	305.3	271.3	34.02	8.974	
4,900.0	4,804.7	4,905.3	4,863.0	19.9	18.3	179.11	-60.6	-386.2	316.3	281.5	34.80	9.091	
5,000.0	4,900.6	5,004.5	4,960.5	20.4	18.7	-179.89	-68.9	-402.1	327.5	291.9	35.57	9.205	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 304H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	4,996.6	5,103.7	5,058.1	20.9	19.1	-178.96	-77.2	-418.1	338.7	302.3	36.36	9.315	
5,200.0	5,092.5	5,202.9	5,155.7	21.4	19.6	-178.09	-85.4	-434.0	350.0	312.8	37.14	9.422	
5,300.0	5,188.5	5,302.2	5,253.3	21.9	20.0	-177.27	-93.7	-450.0	361.4	323.4	37.93	9.526	
5,400.0	5,284.4	5,401.4	5,350.9	22.4	20.4	-176.51	-102.0	-466.0	372.8	334.1	38.72	9.627	
5,500.0	5,380.4	5,500.6	5,448.4	23.0	20.8	-175.79	-110.3	-481.9	384.3	344.8	39.52	9.725	
5,600.0	5,476.3	5,599.8	5,546.0	23.5	21.3	-175.11	-118.6	-497.9	395.9	355.6	40.32	9.819	
5,700.0	5,572.3	5,699.1	5,643.6	24.0	21.7	-174.46	-126.8	-513.8	407.5	366.4	41.12	9.911	
5,800.0	5,668.2	5,798.3	5,741.2	24.5	22.1	-173.86	-135.1	-529.8	419.1	377.2	41.92	9.999	
5,900.0	5,764.2	5,897.5	5,838.8	25.1	22.5	-173.29	-143.4	-545.7	430.9	388.1	42.72	10.085	
6,000.0	5,860.1	5,996.7	5,936.4	25.6	23.0	-172.74	-151.7	-561.7	442.6	399.1	43.53	10.168	
6,100.0	5,956.1	6,095.9	6,033.9	26.1	23.4	-172.23	-159.9	-577.6	454.4	410.1	44.33	10.249	
6,200.0	6,052.0	6,195.2	6,131.5	26.6	23.8	-171.74	-168.2	-593.6	466.2	421.1	45.14	10.327	
6,300.0	6,148.0	6,294.4	6,229.1	27.2	24.2	-171.28	-176.5	-609.5	478.1	432.1	45.96	10.403	
6,400.0	6,243.9	6,393.6	6,326.7	27.7	24.7	-170.84	-184.8	-625.5	489.9	443.2	46.77	10.476	
6,500.0	6,339.9	6,492.8	6,424.3	28.2	25.1	-170.42	-193.1	-641.5	501.8	454.3	47.58	10.547	
6,600.0	6,435.8	6,592.1	6,521.8	28.8	25.5	-170.01	-201.3	-657.4	513.8	465.4	48.40	10.616	
6,700.0	6,531.8	6,691.3	6,619.4	29.3	26.0	-169.63	-209.6	-673.4	525.7	476.5	49.22	10.682	
6,800.0	6,627.7	6,790.5	6,717.0	29.8	26.4	-169.26	-217.9	-689.3	537.7	487.7	50.03	10.747	
6,900.0	6,723.7	6,889.7	6,814.6	30.4	26.8	-168.91	-226.2	-705.3	549.7	498.9	50.85	10.810	
7,000.0	6,819.6	6,989.0	6,912.2	30.9	27.2	-168.58	-234.5	-721.2	561.7	510.1	51.67	10.871	
7,100.0	6,915.6	7,088.2	7,009.7	31.4	27.7	-168.26	-242.7	-737.2	573.8	521.3	52.50	10.930	
7,200.0	7,011.5	7,187.4	7,107.3	32.0	28.1	-167.95	-251.0	-753.1	585.8	532.5	53.32	10.987	
7,300.0	7,107.5	7,286.6	7,204.9	32.5	28.5	-167.66	-259.3	-769.1	597.9	543.7	54.14	11.043	
7,400.0	7,203.5	7,385.8	7,302.5	33.0	29.0	-167.37	-267.6	-785.1	610.0	555.0	54.97	11.097	
7,500.0	7,299.4	7,485.1	7,400.1	33.6	29.4	-167.10	-275.8	-801.0	622.1	566.3	55.79	11.150	
7,600.0	7,395.4	7,581.6	7,495.0	34.1	29.8	-166.84	-283.9	-816.5	634.2	577.6	56.61	11.204	
7,700.0	7,491.3	7,664.6	7,576.9	34.6	30.2	-166.71	-290.1	-828.4	648.0	590.7	57.33	11.303	
7,800.0	7,587.3	7,747.1	7,658.7	35.2	30.5	-166.68	-295.1	-838.2	664.2	606.2	58.00	11.452	
7,900.0	7,683.2	7,828.8	7,739.9	35.7	30.8	-166.76	-299.1	-845.8	682.9	624.3	58.62	11.649	
8,000.0	7,779.2	7,909.7	7,820.6	36.2	31.1	-166.93	-301.9	-851.3	704.0	644.8	59.20	11.892	
8,100.0	7,875.1	7,989.6	7,900.4	36.8	31.4	-167.19	-303.7	-854.8	727.4	667.7	59.72	12.180	
8,200.0	7,971.1	8,068.5	7,979.2	37.3	31.6	-167.51	-304.5	-856.3	753.2	693.0	60.19	12.513	
8,300.0	8,067.0	8,159.7	8,070.4	37.9	31.9	-167.93	-304.5	-856.3	780.7	719.9	60.80	12.840	
8,400.0	8,163.0	8,255.6	8,166.4	38.4	32.2	-168.35	-304.5	-856.3	808.3	746.8	61.47	13.150	
8,500.0	8,258.9	8,351.6	8,262.3	38.9	32.5	-168.74	-304.5	-856.3	835.9	773.8	62.14	13.452	
8,600.0	8,354.9	8,448.4	8,359.1	39.5	32.8	-169.15	-304.0	-856.3	863.6	800.8	62.82	13.747	
8,700.0	8,451.4	8,545.0	8,454.6	40.0	33.1	-170.51	-289.7	-856.4	889.3	826.0	63.37	14.034	
8,800.0	8,548.7	8,632.2	8,536.6	40.5	33.3	-172.66	-260.6	-856.6	912.7	849.0	63.64	14.341	
8,900.0	8,646.8	8,706.6	8,601.5	40.9	33.4	-175.10	-224.3	-856.9	935.3	871.7	63.65	14.695	
9,000.0	8,745.5	8,768.2	8,650.3	41.3	33.5	-177.48	-186.9	-857.1	958.8	895.4	63.37	15.129	
9,100.0	8,844.7	8,818.5	8,686.5	41.7	33.5	-179.62	-151.9	-857.3	984.5	921.7	62.80	15.676	
9,200.0	8,944.2	8,859.7	8,713.1	42.1	33.5	178.54	-120.6	-857.5	1,013.1	951.2	61.92	16.361	
9,300.0	9,044.1	8,893.5	8,733.0	42.4	33.5	176.99	-93.2	-857.7	1,045.1	984.3	60.76	17.200	
9,400.0	9,144.0	8,925.0	8,749.6	42.7	33.5	175.54	-66.5	-857.9	1,080.7	1,021.3	59.41	18.190	
9,500.0	9,244.0	8,950.0	8,761.6	42.9	33.5	174.70	-44.5	-858.0	1,121.0	1,063.2	57.86	19.375	
9,600.0	9,343.6	8,975.0	8,772.4	43.2	33.5	171.98	-22.0	-858.2	1,165.9	1,109.7	56.26	20.724	
9,700.0	9,439.3	9,000.0	8,782.0	43.4	33.5	165.48	1.1	-858.3	1,210.7	1,156.1	54.65	22.154	
9,800.0	9,527.0	9,025.0	8,790.4	43.6	33.5	159.83	24.6	-858.5	1,252.9	1,199.8	53.12	23.584	
9,900.0	9,602.9	9,050.0	8,797.5	43.8	33.5	155.21	48.6	-858.7	1,290.3	1,238.5	51.78	24.919	
10,000.0	9,663.6	9,087.1	8,805.8	43.9	33.5	151.56	84.8	-858.9	1,321.1	1,270.3	50.81	26.003	
10,100.0	9,706.6	9,125.0	8,811.3	43.9	33.4	149.07	122.2	-859.1	1,344.1	1,294.0	50.14	26.809	
10,200.0	9,729.9	9,150.0	8,813.3	43.9	33.4	147.68	147.1	-859.3	1,358.4	1,308.6	49.82	27.268	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 304H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.0	9,734.0	9,212.4	8,814.0	44.0	33.3	47.37	209.6	-859.7	1,364.0	1,314.1	49.90	27.336	
10,400.0	9,734.0	9,312.4	8,814.0	44.0	33.3	47.46	309.5	-860.4	1,365.8	1,315.8	50.05	27.287	
10,500.0	9,734.0	9,412.4	8,814.0	44.1	33.3	47.47	409.5	-861.0	1,365.9	1,315.6	50.28	27.166	
10,600.0	9,734.0	9,512.4	8,814.0	44.2	33.3	47.47	509.5	-861.7	1,365.9	1,315.3	50.61	26.986	
10,700.0	9,734.0	9,612.4	8,814.0	44.3	33.5	47.47	609.5	-862.4	1,365.9	1,314.9	51.06	26.751	
10,800.0	9,734.0	9,712.4	8,814.0	44.5	33.9	47.47	709.5	-863.0	1,365.9	1,314.3	51.61	26.466	
10,900.0	9,734.0	9,812.4	8,814.0	44.8	34.3	47.47	809.5	-863.7	1,366.0	1,313.7	52.27	26.134	
11,000.0	9,734.0	9,912.4	8,814.0	45.1	34.9	47.47	909.5	-864.3	1,366.0	1,313.0	53.02	25.763	
11,100.0	9,734.0	10,012.4	8,814.0	45.4	35.4	47.47	1,009.5	-865.0	1,366.0	1,312.1	53.87	25.357	
11,200.0	9,734.0	10,112.4	8,814.0	45.8	36.1	47.47	1,109.5	-865.7	1,366.0	1,311.2	54.81	24.923	
11,300.0	9,734.0	10,212.4	8,814.0	46.3	36.7	47.47	1,209.5	-866.3	1,366.1	1,310.2	55.84	24.466	
11,400.0	9,734.0	10,312.4	8,814.0	46.8	37.5	47.47	1,309.5	-867.0	1,366.1	1,309.1	56.94	23.990	
11,500.0	9,734.0	10,412.4	8,814.0	47.3	38.2	47.47	1,409.5	-867.7	1,366.1	1,308.0	58.13	23.502	
11,600.0	9,734.0	10,512.4	8,814.0	47.9	39.0	47.48	1,509.5	-868.3	1,366.1	1,306.7	59.38	23.005	
11,700.0	9,734.0	10,612.4	8,814.0	48.5	39.8	47.48	1,609.5	-869.0	1,366.2	1,305.4	60.71	22.504	
11,800.0	9,734.0	10,712.4	8,814.0	49.2	40.7	47.48	1,709.5	-869.6	1,366.2	1,304.1	62.09	22.002	
11,900.0	9,734.0	10,812.4	8,814.0	49.9	41.6	47.48	1,809.5	-870.3	1,366.2	1,302.7	63.54	21.501	
12,000.0	9,734.0	10,912.4	8,814.0	50.7	42.5	47.48	1,909.5	-871.0	1,366.2	1,301.2	65.04	21.005	
12,100.0	9,734.0	11,012.4	8,814.0	51.5	43.5	47.48	2,009.5	-871.6	1,366.3	1,299.7	66.59	20.516	
12,200.0	9,734.0	11,112.4	8,814.0	52.3	44.5	47.48	2,109.5	-872.3	1,366.3	1,298.1	68.20	20.035	
12,300.0	9,734.0	11,212.4	8,814.0	53.2	45.5	47.48	2,209.5	-872.9	1,366.3	1,296.5	69.84	19.563	
12,400.0	9,734.0	11,312.4	8,814.0	54.0	46.5	47.48	2,309.5	-873.6	1,366.3	1,294.8	71.53	19.102	
12,500.0	9,734.0	11,412.4	8,814.0	54.9	47.5	47.48	2,409.5	-874.3	1,366.3	1,293.1	73.25	18.652	
12,600.0	9,734.0	11,512.4	8,814.0	55.9	48.6	47.48	2,509.5	-874.9	1,366.4	1,291.4	75.02	18.214	
12,700.0	9,734.0	11,612.4	8,814.0	56.8	49.7	47.49	2,609.5	-875.6	1,366.4	1,289.6	76.81	17.789	
12,800.0	9,734.0	11,712.4	8,814.0	57.8	50.8	47.49	2,709.5	-876.3	1,366.4	1,287.8	78.64	17.376	
12,900.0	9,734.0	11,812.4	8,814.0	58.8	51.9	47.49	2,809.5	-876.9	1,366.4	1,285.9	80.50	16.975	
13,000.0	9,734.0	11,912.4	8,814.0	59.9	53.1	47.49	2,909.5	-877.6	1,366.5	1,284.1	82.38	16.588	
13,100.0	9,734.0	12,012.4	8,814.0	60.9	54.2	47.49	3,009.5	-878.2	1,366.5	1,282.2	84.29	16.212	
13,200.0	9,734.0	12,112.4	8,814.0	62.0	55.4	47.49	3,109.5	-878.9	1,366.5	1,280.3	86.22	15.849	
13,300.0	9,734.0	12,212.4	8,814.0	63.0	56.6	47.49	3,209.5	-879.6	1,366.5	1,278.4	88.17	15.498	
13,400.0	9,734.0	12,312.4	8,814.0	64.1	57.8	47.49	3,309.5	-880.2	1,366.6	1,276.4	90.15	15.159	
13,500.0	9,734.0	12,412.4	8,814.0	65.2	59.0	47.49	3,409.5	-880.9	1,366.6	1,274.4	92.15	14.831	
13,600.0	9,734.0	12,512.4	8,814.0	66.3	60.2	47.49	3,509.5	-881.5	1,366.6	1,272.5	94.16	14.514	
13,700.0	9,734.0	12,612.4	8,814.0	67.5	61.4	47.49	3,609.5	-882.2	1,366.6	1,270.4	96.19	14.208	
13,800.0	9,734.0	12,712.4	8,814.0	68.6	62.6	47.50	3,709.5	-882.9	1,366.7	1,268.4	98.23	13.912	
13,900.0	9,734.0	12,812.4	8,814.0	69.8	63.9	47.50	3,809.5	-883.5	1,366.7	1,266.4	100.30	13.627	
14,000.0	9,734.0	12,912.4	8,814.0	70.9	65.1	47.50	3,909.5	-884.2	1,366.7	1,264.3	102.37	13.351	
14,100.0	9,734.0	13,012.4	8,814.0	72.1	66.4	47.50	4,009.5	-884.9	1,366.7	1,262.3	104.46	13.084	
14,200.0	9,734.0	13,112.4	8,814.0	73.3	67.6	47.50	4,109.5	-885.5	1,366.8	1,260.2	106.56	12.826	
14,300.0	9,734.0	13,212.4	8,814.0	74.5	68.9	47.50	4,209.5	-886.2	1,366.8	1,258.1	108.67	12.577	
14,400.0	9,734.0	13,312.4	8,814.0	75.7	70.2	47.50	4,309.5	-886.8	1,366.8	1,256.0	110.80	12.336	
14,500.0	9,734.0	13,412.4	8,814.0	76.9	71.5	47.50	4,409.5	-887.5	1,366.8	1,253.9	112.93	12.103	
14,600.0	9,734.0	13,512.4	8,814.0	78.1	72.8	47.50	4,509.4	-888.2	1,366.8	1,251.8	115.07	11.878	
14,700.0	9,734.0	13,612.4	8,814.0	79.4	74.1	47.50	4,609.4	-888.8	1,366.9	1,249.6	117.23	11.660	
14,800.0	9,734.0	13,712.4	8,814.0	80.6	75.4	47.50	4,709.4	-889.5	1,366.9	1,247.5	119.39	11.449	
14,900.0	9,734.0	13,812.4	8,814.0	81.9	76.7	47.51	4,809.4	-890.1	1,366.9	1,245.4	121.56	11.245	
15,000.0	9,734.0	13,912.4	8,814.0	83.1	78.0	47.51	4,909.4	-890.8	1,366.9	1,243.2	123.74	11.047	
15,100.0	9,734.0	14,012.4	8,814.0	84.4	79.3	47.51	5,009.4	-891.5	1,367.0	1,241.0	125.93	10.855	
15,200.0	9,734.0	14,112.4	8,814.0	85.6	80.6	47.51	5,109.4	-892.1	1,367.0	1,238.9	128.12	10.670	
15,300.0	9,734.0	14,212.4	8,814.0	86.9	81.9	47.51	5,209.4	-892.8	1,367.0	1,236.7	130.32	10.490	
15,400.0	9,734.0	14,312.4	8,814.0	88.2	83.3	47.51	5,309.4	-893.4	1,367.0	1,234.5	132.53	10.315	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 304H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,500.0	9,734.0	14,412.4	8,814.0	89.4	84.6	47.51	5,409.4	-894.1	1,367.1	1,232.3	134.74	10.146	
15,600.0	9,734.0	14,512.4	8,814.0	90.7	85.9	47.51	5,509.4	-894.8	1,367.1	1,230.1	136.96	9.982	
15,700.0	9,734.0	14,612.4	8,814.0	92.0	87.3	47.51	5,609.4	-895.4	1,367.1	1,227.9	139.18	9.822	
15,800.0	9,734.0	14,712.4	8,814.0	93.3	88.6	47.51	5,709.4	-896.1	1,367.1	1,225.7	141.41	9.668	
15,900.0	9,734.0	14,812.4	8,814.0	94.6	90.0	47.51	5,809.4	-896.8	1,367.2	1,223.5	143.65	9.518	
16,000.0	9,734.0	14,912.4	8,814.0	95.9	91.3	47.52	5,909.4	-897.4	1,367.2	1,221.3	145.89	9.372	
16,100.0	9,734.0	15,012.4	8,814.0	97.2	92.7	47.52	6,009.4	-898.1	1,367.2	1,219.1	148.13	9.230	
16,200.0	9,734.0	15,112.4	8,814.0	98.5	94.0	47.52	6,109.4	-898.7	1,367.2	1,216.9	150.38	9.092	
16,300.0	9,734.0	15,212.4	8,814.0	99.9	95.4	47.52	6,209.4	-899.4	1,367.3	1,214.6	152.63	8.958	
16,400.0	9,734.0	15,312.4	8,814.0	101.2	96.8	47.52	6,309.4	-900.1	1,367.3	1,212.4	154.89	8.828	
16,500.0	9,734.0	15,412.4	8,814.0	102.5	98.1	47.52	6,409.4	-900.7	1,367.3	1,210.2	157.15	8.701	
16,600.0	9,734.0	15,512.4	8,814.0	103.8	99.5	47.52	6,509.4	-901.4	1,367.3	1,207.9	159.41	8.577	
16,700.0	9,734.0	15,612.4	8,814.0	105.1	100.9	47.52	6,609.4	-902.0	1,367.4	1,205.7	161.68	8.457	
16,800.0	9,734.0	15,712.4	8,814.0	106.5	102.2	47.52	6,709.4	-902.7	1,367.4	1,203.4	163.95	8.340	
16,900.0	9,734.0	15,812.4	8,814.0	107.8	103.6	47.52	6,809.4	-903.4	1,367.4	1,201.2	166.23	8.226	
17,000.0	9,734.0	15,912.4	8,814.0	109.1	105.0	47.52	6,909.4	-904.0	1,367.4	1,198.9	168.50	8.115	
17,100.0	9,734.0	16,012.4	8,814.0	110.5	106.3	47.53	7,009.4	-904.7	1,367.4	1,196.7	170.78	8.007	
17,200.0	9,734.0	16,112.4	8,814.0	111.8	107.7	47.53	7,109.4	-905.4	1,367.5	1,194.4	173.07	7.901	
17,300.0	9,734.0	16,212.4	8,814.0	113.2	109.1	47.53	7,209.4	-906.0	1,367.5	1,192.1	175.35	7.798	
17,400.0	9,734.0	16,312.4	8,814.0	114.5	110.5	47.53	7,309.4	-906.7	1,367.5	1,189.9	177.64	7.698	
17,500.0	9,734.0	16,412.4	8,814.0	115.9	111.9	47.53	7,409.4	-907.3	1,367.5	1,187.6	179.93	7.600	
17,600.0	9,734.0	16,512.4	8,814.0	117.2	113.3	47.53	7,509.4	-908.0	1,367.6	1,185.3	182.23	7.505	
17,700.0	9,734.0	16,612.4	8,814.0	118.6	114.6	47.53	7,609.4	-908.7	1,367.6	1,183.1	184.53	7.411	
17,800.0	9,734.0	16,712.4	8,814.0	119.9	116.0	47.53	7,709.4	-909.3	1,367.6	1,180.8	186.82	7.320	
17,900.0	9,734.0	16,812.4	8,814.0	121.3	117.4	47.53	7,809.4	-910.0	1,367.6	1,178.5	189.12	7.231	
18,000.0	9,734.0	16,912.4	8,814.0	122.7	118.8	47.53	7,909.4	-910.6	1,367.7	1,176.2	191.43	7.145	
18,100.0	9,734.0	17,012.4	8,814.0	124.0	120.2	47.53	8,009.4	-911.3	1,367.7	1,174.0	193.73	7.060	
18,200.0	9,734.0	17,112.4	8,814.0	125.4	121.6	47.54	8,109.4	-912.0	1,367.7	1,171.7	196.04	6.977	
18,300.0	9,734.0	17,212.4	8,814.0	126.8	123.0	47.54	8,209.4	-912.6	1,367.7	1,169.4	198.35	6.896	
18,400.0	9,734.0	17,312.4	8,814.0	128.1	124.4	47.54	8,309.4	-913.3	1,367.8	1,167.1	200.66	6.816	
18,500.0	9,734.0	17,412.4	8,814.0	129.5	125.8	47.54	8,409.4	-914.0	1,367.8	1,164.8	202.97	6.739	
18,600.0	9,734.0	17,512.4	8,814.0	130.9	127.2	47.54	8,509.4	-914.6	1,367.8	1,162.5	205.29	6.663	
18,700.0	9,734.0	17,612.4	8,814.0	132.2	128.6	47.54	8,609.4	-915.3	1,367.8	1,160.2	207.60	6.589	
18,800.0	9,734.0	17,712.4	8,814.0	133.6	130.0	47.54	8,709.4	-915.9	1,367.9	1,157.9	209.92	6.516	
18,900.0	9,734.0	17,812.4	8,814.0	135.0	131.4	47.54	8,809.4	-916.6	1,367.9	1,155.6	212.24	6.445	
19,000.0	9,734.0	17,912.4	8,814.0	136.4	132.8	47.54	8,909.4	-917.3	1,367.9	1,153.3	214.56	6.375	
19,100.0	9,734.0	18,012.4	8,814.0	137.7	134.2	47.54	9,009.4	-917.9	1,367.9	1,151.0	216.88	6.307	
19,200.0	9,734.0	18,112.4	8,814.0	139.1	135.6	47.54	9,109.3	-918.6	1,368.0	1,148.7	219.21	6.240	
19,300.0	9,734.0	18,212.4	8,814.0	140.5	137.0	47.55	9,209.3	-919.2	1,368.0	1,146.4	221.53	6.175	
19,400.0	9,734.0	18,312.4	8,814.0	141.9	138.4	47.55	9,309.3	-919.9	1,368.0	1,144.1	223.86	6.111	
19,500.0	9,734.0	18,412.4	8,814.0	143.3	139.8	47.55	9,409.3	-920.6	1,368.0	1,141.8	226.19	6.048	
19,600.0	9,734.0	18,512.4	8,814.0	144.7	141.2	47.55	9,509.3	-921.2	1,368.0	1,139.5	228.52	5.987	
19,700.0	9,734.0	18,612.4	8,814.0	146.1	142.6	47.55	9,609.3	-921.9	1,368.1	1,137.2	230.85	5.926	
19,800.0	9,734.0	18,712.4	8,814.0	147.4	144.0	47.55	9,709.3	-922.5	1,368.1	1,134.9	233.18	5.867	
19,900.0	9,734.0	18,812.4	8,814.0	148.8	145.4	47.55	9,809.3	-923.2	1,368.1	1,132.6	235.51	5.809	
20,000.0	9,734.0	18,912.4	8,814.0	150.2	146.9	47.55	9,909.3	-923.9	1,368.1	1,130.3	237.84	5.752	
20,100.0	9,734.0	19,012.4	8,814.0	151.6	148.3	47.55	10,009.3	-924.5	1,368.2	1,128.0	240.18	5.696	
20,200.0	9,734.0	19,112.4	8,814.0	152.9	149.7	47.55	10,109.3	-925.2	1,368.2	1,125.9	242.26	5.648	
20,207.7	9,734.0	19,120.1	8,814.0	153.0	149.8	47.55	10,117.0	-925.2	1,368.2	1,125.8	242.42	5.644 SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 305H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	3.1	3.1	0.0	0.0	20.28	160.1	59.2	170.6				
100.0	100.0	103.1	103.1	0.1	0.1	20.28	160.1	59.2	170.6	170.4	0.27	621.448	
200.0	200.0	203.1	203.1	0.5	0.5	20.28	160.1	59.2	170.6	169.7	0.99	172.100	
300.0	300.0	303.1	303.1	0.8	0.9	20.28	160.1	59.2	170.6	168.9	1.71	99.880	
400.0	400.0	403.1	403.1	1.2	1.2	20.28	160.1	59.2	170.6	168.2	2.43	70.356	
500.0	500.0	503.1	503.1	1.6	1.6	20.28	160.1	59.2	170.6	167.5	3.14	54.304	
600.0	600.0	603.1	603.1	1.9	1.9	20.28	160.1	59.2	170.6	166.8	3.86	44.216	
700.0	700.0	703.1	703.1	2.3	2.3	20.28	160.1	59.2	170.6	166.1	4.58	37.289	
800.0	800.0	803.1	803.1	2.6	2.7	20.28	160.1	59.2	170.6	165.4	5.29	32.238	
900.0	900.0	903.1	903.1	3.0	3.0	20.28	160.1	59.2	170.6	164.6	6.01	28.393	
1,000.0	1,000.0	1,003.1	1,003.1	3.4	3.4	20.28	160.1	59.2	170.6	163.9	6.73	25.367	
1,100.0	1,100.0	1,103.1	1,103.1	3.7	3.7	20.28	160.1	59.2	170.6	163.2	7.44	22.924	
1,200.0	1,200.0	1,203.1	1,203.1	4.1	4.1	20.28	160.1	59.2	170.6	162.5	8.16	20.910	
1,300.0	1,300.0	1,303.1	1,303.1	4.4	4.4	20.28	160.1	59.2	170.6	161.8	8.88	19.221	
1,400.0	1,400.0	1,403.1	1,403.1	4.8	4.8	20.28	160.1	59.2	170.6	161.0	9.59	17.785	
1,500.0	1,500.0	1,503.1	1,503.1	5.2	5.2	20.28	160.1	59.2	170.6	160.3	10.31	16.548	
1,600.0	1,600.0	1,603.1	1,603.1	5.5	5.5	20.28	160.1	59.2	170.6	159.6	11.03	15.473	
1,700.0	1,700.0	1,703.1	1,703.1	5.9	5.9	20.28	160.1	59.2	170.6	158.9	11.75	14.528	
1,800.0	1,800.0	1,803.1	1,803.1	6.2	6.2	20.28	160.1	59.2	170.6	158.2	12.46	13.692	
1,900.0	1,900.0	1,903.1	1,903.1	6.6	6.6	20.28	160.1	59.2	170.6	157.5	13.18	12.948	
2,000.0	2,000.0	2,003.3	2,003.3	6.9	7.0	20.29	160.1	59.2	170.6	156.7	13.90	12.279	
2,100.0	2,100.0	2,109.1	2,109.1	7.3	7.3	120.73	158.0	59.2	169.7	155.1	14.60	11.626	
2,200.0	2,199.8	2,214.5	2,214.3	7.6	7.7	123.17	152.0	59.3	167.3	152.0	15.26	10.964	
2,300.0	2,299.5	2,314.2	2,313.7	8.0	8.0	126.81	144.4	59.4	165.4	149.5	15.93	10.387	
2,315.7	2,315.0	2,329.7	2,329.2	8.0	8.0	127.46	143.3	59.5	165.4	149.4	16.03	10.316 CC, ES	
2,400.0	2,398.7	2,413.3	2,412.5	8.3	8.3	131.34	136.9	59.6	166.5	149.9	16.60	10.031	
2,500.0	2,497.5	2,511.9	2,510.9	8.7	8.6	136.52	129.4	59.7	171.2	153.9	17.28	9.906	
2,600.0	2,595.6	2,610.0	2,608.7	9.0	9.0	142.00	121.9	59.9	180.0	162.0	17.97	10.019	
2,700.0	2,693.1	2,707.4	2,705.8	9.4	9.3	147.42	114.5	60.0	193.3	174.7	18.65	10.364	
2,800.0	2,789.6	2,804.0	2,802.1	9.8	9.6	152.50	107.1	60.1	211.3	191.9	19.34	10.927	
2,900.0	2,885.6	2,900.0	2,897.8	10.2	10.0	157.10	99.8	60.3	232.8	212.8	20.02	11.631	
3,000.0	2,981.6	2,996.0	2,993.6	10.6	10.3	160.97	92.5	60.4	255.6	235.0	20.70	12.353	
3,100.0	3,077.5	3,092.0	3,089.3	11.1	10.6	164.20	85.2	60.5	279.4	258.1	21.38	13.071	
3,200.0	3,173.5	3,188.0	3,185.0	11.5	11.0	166.93	77.9	60.7	303.9	281.9	22.06	13.776	
3,300.0	3,269.4	3,284.0	3,280.7	12.0	11.3	169.25	70.5	60.8	329.0	306.3	22.75	14.460	
3,400.0	3,365.4	3,380.0	3,376.4	12.4	11.7	171.25	63.2	61.0	354.5	331.1	23.45	15.121	
3,500.0	3,461.3	3,476.0	3,472.1	12.9	12.0	172.98	55.9	61.1	380.4	356.2	24.14	15.756	
3,600.0	3,557.3	3,572.0	3,567.8	13.4	12.3	174.49	48.6	61.2	406.5	381.7	24.84	16.364	
3,700.0	3,653.2	3,668.0	3,663.5	13.8	12.7	175.82	41.3	61.4	432.9	407.4	25.55	16.946	
3,800.0	3,749.2	3,764.0	3,759.3	14.3	13.0	177.00	34.0	61.5	459.5	433.3	26.26	17.502	
3,900.0	3,845.1	3,860.0	3,855.0	14.8	13.4	178.05	26.6	61.6	486.3	459.3	26.97	18.032	
4,000.0	3,941.1	3,956.0	3,950.7	15.3	13.7	178.99	19.3	61.8	513.1	485.5	27.68	18.539	
4,100.0	4,037.0	4,051.9	4,046.4	15.8	14.1	179.84	12.0	61.9	540.1	511.7	28.40	19.021	
4,200.0	4,133.0	4,147.9	4,142.1	16.3	14.4	-179.40	4.7	62.0	567.2	538.1	29.11	19.482	
4,300.0	4,228.9	4,243.9	4,237.8	16.8	14.8	-178.70	-2.6	62.2	594.4	564.6	29.84	19.922	
4,400.0	4,324.9	4,339.9	4,333.5	17.3	15.1	-178.06	-9.9	62.3	621.7	591.1	30.56	20.342	
4,500.0	4,420.8	4,435.9	4,429.3	17.8	15.5	-177.48	-17.2	62.4	649.0	617.7	31.29	20.743	
4,600.0	4,516.8	4,531.9	4,525.0	18.3	15.8	-176.94	-24.6	62.6	676.4	644.4	32.01	21.127	
4,700.0	4,612.7	4,627.9	4,620.7	18.8	16.2	-176.45	-31.9	62.7	703.8	671.1	32.74	21.493	
4,800.0	4,708.7	4,723.9	4,716.4	19.3	16.5	-175.99	-39.2	62.8	731.3	697.8	33.48	21.844	
4,900.0	4,804.7	4,819.9	4,812.1	19.9	16.9	-175.57	-46.5	63.0	758.8	724.6	34.21	22.180	
5,000.0	4,900.6	4,915.9	4,907.8	20.4	17.2	-175.17	-53.8	63.1	786.3	751.4	34.95	22.502	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 305H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	4,996.6	5,011.9	5,003.5	20.9	17.6	-174.80	-61.1	63.3	813.9	778.2	35.68	22.810	
5,200.0	5,092.5	5,107.9	5,099.3	21.4	17.9	-174.46	-68.5	63.4	841.5	805.1	36.42	23.106	
5,300.0	5,188.5	5,203.9	5,195.0	21.9	18.3	-174.14	-75.8	63.5	869.2	832.0	37.16	23.390	
5,400.0	5,284.4	5,299.9	5,290.7	22.4	18.6	-173.83	-83.1	63.7	896.8	858.9	37.90	23.662	
5,500.0	5,380.4	5,395.9	5,386.4	23.0	19.0	-173.55	-90.4	63.8	924.5	885.9	38.64	23.924	
5,600.0	5,476.3	5,491.8	5,482.1	23.5	19.3	-173.28	-97.7	63.9	952.2	912.8	39.39	24.176	
5,700.0	5,572.3	5,587.8	5,577.8	24.0	19.7	-173.03	-105.0	64.1	979.9	939.8	40.13	24.418	
5,800.0	5,668.2	5,683.8	5,673.5	24.5	20.0	-172.79	-112.3	64.2	1,007.7	966.8	40.88	24.652	
5,900.0	5,764.2	5,779.8	5,769.3	25.1	20.4	-172.56	-119.7	64.3	1,035.4	993.8	41.62	24.876	
6,000.0	5,860.1	5,875.8	5,865.0	25.6	20.7	-172.35	-127.0	64.5	1,063.2	1,020.8	42.37	25.093	
6,100.0	5,956.1	5,971.8	5,960.7	26.1	21.1	-172.15	-134.3	64.6	1,091.0	1,047.9	43.12	25.302	
6,200.0	6,052.0	6,067.8	6,056.4	26.6	21.4	-171.95	-141.6	64.7	1,118.8	1,074.9	43.87	25.503	
6,300.0	6,148.0	6,163.8	6,152.1	27.2	21.8	-171.77	-148.9	64.9	1,146.6	1,102.0	44.62	25.698	
6,400.0	6,243.9	6,259.8	6,247.8	27.7	22.2	-171.59	-156.2	65.0	1,174.4	1,129.0	45.37	25.886	
6,500.0	6,339.9	6,355.8	6,343.5	28.2	22.5	-171.43	-163.5	65.1	1,202.2	1,156.1	46.12	26.067	
6,600.0	6,435.8	6,451.8	6,439.2	28.8	22.9	-171.27	-170.9	65.3	1,230.1	1,183.2	46.87	26.242	
6,700.0	6,531.8	6,547.8	6,535.0	29.3	23.2	-171.11	-178.2	65.4	1,257.9	1,210.3	47.63	26.412	
6,800.0	6,627.7	6,643.8	6,630.7	29.8	23.6	-170.97	-185.5	65.6	1,285.8	1,237.4	48.38	26.576	
6,900.0	6,723.7	6,739.8	6,726.4	30.4	23.9	-170.83	-192.8	65.7	1,313.6	1,264.5	49.13	26.735	
7,000.0	6,819.6	6,835.7	6,822.1	30.9	24.3	-170.69	-200.1	65.8	1,341.5	1,291.6	49.89	26.889	
7,100.0	6,915.6	6,931.7	6,917.8	31.4	24.6	-170.57	-207.4	66.0	1,369.4	1,318.7	50.64	27.039	
7,200.0	7,011.5	7,027.7	7,013.5	32.0	25.0	-170.44	-214.8	66.1	1,397.2	1,345.8	51.40	27.183	
7,300.0	7,107.5	7,123.7	7,109.2	32.5	25.4	-170.32	-222.1	66.2	1,425.1	1,373.0	52.16	27.323	
7,400.0	7,203.5	7,219.7	7,205.0	33.0	25.7	-170.21	-229.4	66.4	1,453.0	1,400.1	52.91	27.459	
7,500.0	7,299.4	7,315.7	7,300.7	33.6	26.1	-170.10	-236.7	66.5	1,480.9	1,427.2	53.67	27.592	
7,600.0	7,395.4	7,411.7	7,396.4	34.1	26.4	-169.99	-244.0	66.6	1,508.8	1,454.4	54.43	27.720	
7,700.0	7,491.3	7,507.7	7,492.1	34.6	26.8	-169.89	-251.3	66.8	1,536.7	1,481.5	55.19	27.844	
7,800.0	7,587.3	7,603.7	7,587.8	35.2	27.1	-169.79	-258.6	66.9	1,564.6	1,508.7	55.95	27.965	
7,900.0	7,683.2	7,699.7	7,683.5	35.7	27.5	-169.70	-266.0	67.0	1,592.5	1,535.8	56.71	28.083	
8,000.0	7,779.2	7,795.7	7,779.2	36.2	27.8	-169.61	-273.3	67.2	1,620.4	1,563.0	57.47	28.197	
8,100.0	7,875.1	7,891.7	7,875.0	36.8	28.2	-169.52	-280.6	67.3	1,648.4	1,590.1	58.23	28.308	
8,200.0	7,971.1	7,987.7	7,970.7	37.3	28.6	-169.43	-287.9	67.4	1,676.3	1,617.3	58.99	28.417	
8,300.0	8,067.0	8,084.5	8,067.3	37.9	28.9	-169.37	-294.9	67.6	1,704.2	1,644.4	59.75	28.520	
8,400.0	8,163.0	8,182.2	8,164.9	38.4	29.3	-169.40	-298.9	67.7	1,732.0	1,671.5	60.51	28.623	
8,500.0	8,258.9	8,279.4	8,262.0	38.9	29.6	-169.54	-299.8	67.7	1,759.8	1,698.5	61.24	28.736	
8,600.0	8,354.9	8,376.2	8,358.9	39.5	29.9	-169.73	-299.3	67.7	1,787.5	1,725.6	61.95	28.855	
8,700.0	8,451.4	8,473.2	8,454.6	40.0	30.2	-170.44	-285.0	67.6	1,813.3	1,750.7	62.60	28.968	
8,800.0	8,548.7	8,560.6	8,536.9	40.5	30.4	-171.55	-255.8	67.4	1,836.3	1,773.2	63.11	29.096	
8,900.0	8,646.8	8,635.2	8,601.8	40.9	30.6	-172.82	-219.3	67.1	1,857.2	1,793.7	63.49	29.254	
9,000.0	8,745.5	8,696.8	8,650.7	41.3	30.7	-174.06	-181.9	66.9	1,876.9	1,813.2	63.73	29.452	
9,100.0	8,844.7	8,750.0	8,688.8	41.7	30.8	-175.26	-144.7	66.6	1,896.2	1,832.3	63.85	29.696	
9,200.0	8,944.2	8,788.3	8,713.5	42.1	30.9	-176.19	-115.5	66.5	1,915.5	1,851.7	63.83	30.012	
9,300.0	9,044.1	8,825.0	8,734.8	42.4	30.9	-177.11	-85.7	66.3	1,935.3	1,871.6	63.70	30.382	
9,400.0	9,144.0	8,850.0	8,748.1	42.7	31.0	-177.76	-64.5	66.1	1,955.7	1,892.3	63.42	30.839	
9,500.0	9,244.0	8,875.0	8,760.2	42.9	31.0	81.95	-42.6	66.0	1,978.2	1,915.2	63.04	31.382	
9,600.0	9,343.6	8,900.0	8,771.1	43.2	31.1	82.00	-20.1	65.8	2,004.2	1,941.6	62.59	32.022	
9,700.0	9,439.3	8,925.0	8,780.9	43.4	31.1	78.13	2.9	65.7	2,031.3	1,969.2	62.09	32.715	
9,800.0	9,527.0	8,950.0	8,789.4	43.6	31.1	74.46	26.4	65.5	2,057.9	1,996.3	61.58	33.417	
9,900.0	9,602.9	8,983.3	8,798.9	43.8	31.2	71.08	58.3	65.3	2,082.4	2,021.3	61.14	34.058	
10,000.0	9,663.6	9,015.7	8,805.9	43.9	31.2	68.30	89.9	65.1	2,103.6	2,042.8	60.78	34.611	
10,100.0	9,706.6	9,050.0	8,811.0	43.9	31.3	66.19	123.9	64.9	2,120.3	2,059.7	60.54	35.024	
10,200.0	9,729.9	9,075.0	8,813.1	43.9	31.3	64.84	148.8	64.7	2,131.8	2,071.3	60.44	35.272	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 305H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program:		0-B001Mb_MWD+HRGM						Rule Assigned:					Offset Well Error: 0.0 usft	
Measured Depth (usft)	Reference Depth (usft)	Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
10,300.0	9,734.0	9,141.9	8,814.0	44.0	31.5	64.40	215.7	64.3	2,137.6	2,077.0	60.58	35.284		
10,400.0	9,734.0	9,241.9	8,814.0	44.0	31.7	64.44	315.7	63.6	2,139.7	2,078.9	60.88	35.147		
10,500.0	9,734.0	9,341.9	8,814.0	44.1	31.9	64.44	415.7	62.9	2,139.8	2,078.5	61.28	34.920		
10,600.0	9,734.0	9,441.9	8,814.0	44.2	32.3	64.45	515.6	62.3	2,139.8	2,078.0	61.79	34.629		
10,700.0	9,734.0	9,541.9	8,814.0	44.3	32.7	64.45	615.6	61.6	2,139.9	2,077.4	62.42	34.282		
10,800.0	9,734.0	9,641.9	8,814.0	44.5	33.2	64.45	715.6	61.0	2,139.9	2,076.7	63.16	33.883		
10,900.0	9,734.0	9,741.9	8,814.0	44.8	33.7	64.45	815.6	60.3	2,139.9	2,075.9	64.00	33.438		
11,000.0	9,734.0	9,841.9	8,814.0	45.1	34.2	64.45	915.6	59.6	2,140.0	2,075.0	64.94	32.953		
11,100.0	9,734.0	9,941.9	8,814.0	45.4	34.9	64.45	1,015.6	59.0	2,140.0	2,074.0	65.98	32.434		
11,200.0	9,734.0	10,041.9	8,814.0	45.8	35.5	64.45	1,115.6	58.3	2,140.0	2,072.9	67.11	31.888		
11,300.0	9,734.0	10,141.9	8,814.0	46.3	36.2	64.45	1,215.6	57.6	2,140.0	2,071.7	68.33	31.320		
11,400.0	9,734.0	10,241.9	8,814.0	46.8	37.0	64.45	1,315.6	57.0	2,140.1	2,070.4	69.63	30.734		
11,500.0	9,734.0	10,341.9	8,814.0	47.3	37.8	64.45	1,415.6	56.3	2,140.1	2,069.1	71.01	30.137		
11,600.0	9,734.0	10,441.9	8,814.0	47.9	38.6	64.45	1,515.6	55.7	2,140.1	2,067.7	72.47	29.533		
11,700.0	9,734.0	10,541.9	8,814.0	48.5	39.5	64.45	1,615.6	55.0	2,140.2	2,066.2	73.99	28.925		
11,800.0	9,734.0	10,641.9	8,814.0	49.2	40.4	64.45	1,715.6	54.3	2,140.2	2,064.6	75.58	28.317		
11,900.0	9,734.0	10,741.9	8,814.0	49.9	41.3	64.45	1,815.6	53.7	2,140.2	2,063.0	77.23	27.712		
12,000.0	9,734.0	10,841.9	8,814.0	50.7	42.3	64.45	1,915.6	53.0	2,140.2	2,061.3	78.94	27.112		
12,100.0	9,734.0	10,941.9	8,814.0	51.5	43.3	64.45	2,015.6	52.4	2,140.3	2,059.6	80.70	26.520		
12,200.0	9,734.0	11,041.9	8,814.0	52.3	44.3	64.45	2,115.6	51.7	2,140.3	2,057.8	82.52	25.938		
12,300.0	9,734.0	11,141.9	8,814.0	53.2	45.3	64.45	2,215.6	51.0	2,140.3	2,056.0	84.38	25.366		
12,400.0	9,734.0	11,241.9	8,814.0	54.0	46.4	64.45	2,315.6	50.4	2,140.4	2,054.1	86.28	24.806		
12,500.0	9,734.0	11,341.9	8,814.0	54.9	47.5	64.45	2,415.6	49.7	2,140.4	2,052.2	88.23	24.260		
12,600.0	9,734.0	11,441.9	8,814.0	55.9	48.6	64.45	2,515.6	49.0	2,140.4	2,050.2	90.21	23.726		
12,700.0	9,734.0	11,541.9	8,814.0	56.8	49.7	64.45	2,615.6	48.4	2,140.4	2,048.2	92.24	23.206		
12,800.0	9,734.0	11,641.9	8,814.0	57.8	50.8	64.45	2,715.6	47.7	2,140.5	2,046.2	94.29	22.701		
12,900.0	9,734.0	11,741.9	8,814.0	58.8	52.0	64.45	2,815.6	47.1	2,140.5	2,044.1	96.38	22.210		
13,000.0	9,734.0	11,841.9	8,814.0	59.9	53.2	64.45	2,915.6	46.4	2,140.5	2,042.0	98.49	21.733		
13,100.0	9,734.0	11,941.9	8,814.0	60.9	54.3	64.45	3,015.6	45.7	2,140.6	2,039.9	100.64	21.270		
13,200.0	9,734.0	12,041.9	8,814.0	62.0	55.5	64.45	3,115.6	45.1	2,140.6	2,037.8	102.81	20.821		
13,300.0	9,734.0	12,141.9	8,814.0	63.0	56.7	64.46	3,215.6	44.4	2,140.6	2,035.6	105.01	20.386		
13,400.0	9,734.0	12,241.9	8,814.0	64.1	57.9	64.46	3,315.6	43.8	2,140.7	2,033.4	107.22	19.964		
13,500.0	9,734.0	12,341.9	8,814.0	65.2	59.2	64.46	3,415.6	43.1	2,140.7	2,031.2	109.46	19.556		
13,600.0	9,734.0	12,441.9	8,814.0	66.3	60.4	64.46	3,515.6	42.4	2,140.7	2,029.0	111.72	19.161		
13,700.0	9,734.0	12,541.9	8,814.0	67.5	61.6	64.46	3,615.6	41.8	2,140.7	2,026.7	114.00	18.778		
13,800.0	9,734.0	12,641.9	8,814.0	68.6	62.9	64.46	3,715.6	41.1	2,140.8	2,024.5	116.30	18.407		
13,900.0	9,734.0	12,741.9	8,814.0	69.8	64.2	64.46	3,815.6	40.4	2,140.8	2,022.2	118.62	18.048		
14,000.0	9,734.0	12,841.9	8,814.0	70.9	65.4	64.46	3,915.6	39.8	2,140.8	2,019.9	120.95	17.701		
14,100.0	9,734.0	12,941.9	8,814.0	72.1	66.7	64.46	4,015.6	39.1	2,140.9	2,017.6	123.29	17.364		
14,200.0	9,734.0	13,041.9	8,814.0	73.3	68.0	64.46	4,115.6	38.5	2,140.9	2,015.2	125.65	17.038		
14,300.0	9,734.0	13,141.9	8,814.0	74.5	69.3	64.46	4,215.6	37.8	2,140.9	2,012.9	128.02	16.723		
14,400.0	9,734.0	13,241.9	8,814.0	75.7	70.6	64.46	4,315.6	37.1	2,140.9	2,010.5	130.41	16.417		
14,500.0	9,734.0	13,341.9	8,814.0	76.9	71.9	64.46	4,415.6	36.5	2,141.0	2,008.2	132.81	16.121		
14,600.0	9,734.0	13,441.9	8,814.0	78.1	73.2	64.46	4,515.6	35.8	2,141.0	2,005.8	135.22	15.834		
14,700.0	9,734.0	13,541.9	8,814.0	79.4	74.5	64.46	4,615.6	35.2	2,141.0	2,003.4	137.64	15.556		
14,800.0	9,734.0	13,641.9	8,814.0	80.6	75.8	64.46	4,715.6	34.5	2,141.1	2,001.0	140.07	15.286		
14,900.0	9,734.0	13,741.9	8,814.0	81.9	77.1	64.46	4,815.6	33.8	2,141.1	1,998.6	142.51	15.025		
15,000.0	9,734.0	13,841.9	8,814.0	83.1	78.5	64.46	4,915.6	33.2	2,141.1	1,996.2	144.96	14.771		
15,100.0	9,734.0	13,941.9	8,814.0	84.4	79.8	64.46	5,015.6	32.5	2,141.1	1,993.7	147.41	14.525		
15,200.0	9,734.0	14,041.9	8,814.0	85.6	81.1	64.46	5,115.5	31.9	2,141.2	1,991.3	149.88	14.286		
15,300.0	9,734.0	14,141.9	8,814.0	86.9	82.5	64.46	5,215.5	31.2	2,141.2	1,988.9	152.35	14.054		
15,400.0	9,734.0	14,241.9	8,814.0	88.2	83.8	64.46	5,315.5	30.5	2,141.2	1,986.4	154.84	13.829		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 305H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,500.0	9,734.0	14,341.9	8,814.0	89.4	85.1	64.46	5,415.5	29.9	2,141.3	1,983.9	157.32	13.611	
15,600.0	9,734.0	14,441.9	8,814.0	90.7	86.5	64.46	5,515.5	29.2	2,141.3	1,981.5	159.82	13.398	
15,700.0	9,734.0	14,541.9	8,814.0	92.0	87.8	64.46	5,615.5	28.5	2,141.3	1,979.0	162.32	13.192	
15,800.0	9,734.0	14,641.9	8,814.0	93.3	89.2	64.46	5,715.5	27.9	2,141.4	1,976.5	164.83	12.991	
15,900.0	9,734.0	14,741.9	8,814.0	94.6	90.6	64.46	5,815.5	27.2	2,141.4	1,974.0	167.35	12.796	
16,000.0	9,734.0	14,841.9	8,814.0	95.9	91.9	64.46	5,915.5	26.6	2,141.4	1,971.5	169.87	12.607	
16,100.0	9,734.0	14,941.9	8,814.0	97.2	93.3	64.47	6,015.5	25.9	2,141.4	1,969.0	172.39	12.422	
16,200.0	9,734.0	15,041.9	8,814.0	98.5	94.6	64.47	6,115.5	25.2	2,141.5	1,966.5	174.92	12.242	
16,300.0	9,734.0	15,141.9	8,814.0	99.9	96.0	64.47	6,215.5	24.6	2,141.5	1,964.0	177.46	12.068	
16,400.0	9,734.0	15,241.9	8,814.0	101.2	97.4	64.47	6,315.5	23.9	2,141.5	1,961.5	180.00	11.897	
16,500.0	9,734.0	15,341.9	8,814.0	102.5	98.8	64.47	6,415.5	23.3	2,141.6	1,959.0	182.54	11.732	
16,600.0	9,734.0	15,441.9	8,814.0	103.8	100.1	64.47	6,515.5	22.6	2,141.6	1,956.5	185.09	11.570	
16,700.0	9,734.0	15,541.9	8,814.0	105.1	101.5	64.47	6,615.5	21.9	2,141.6	1,954.0	187.65	11.413	
16,800.0	9,734.0	15,641.9	8,814.0	106.5	102.9	64.47	6,715.5	21.3	2,141.6	1,951.4	190.20	11.260	
16,900.0	9,734.0	15,741.9	8,814.0	107.8	104.3	64.47	6,815.5	20.6	2,141.7	1,948.9	192.77	11.110	
17,000.0	9,734.0	15,841.9	8,814.0	109.1	105.6	64.47	6,915.5	19.9	2,141.7	1,946.4	195.33	10.964	
17,100.0	9,734.0	15,941.9	8,814.0	110.5	107.0	64.47	7,015.5	19.3	2,141.7	1,943.8	197.90	10.822	
17,200.0	9,734.0	16,041.9	8,814.0	111.8	108.4	64.47	7,115.5	18.6	2,141.8	1,941.3	200.47	10.684	
17,300.0	9,734.0	16,141.9	8,814.0	113.2	109.8	64.47	7,215.5	18.0	2,141.8	1,938.7	203.05	10.548	
17,400.0	9,734.0	16,241.9	8,814.0	114.5	111.2	64.47	7,315.5	17.3	2,141.8	1,936.2	205.63	10.416	
17,500.0	9,734.0	16,341.9	8,814.0	115.9	112.6	64.47	7,415.5	16.6	2,141.8	1,933.6	208.21	10.287	
17,600.0	9,734.0	16,441.9	8,814.0	117.2	114.0	64.47	7,515.5	16.0	2,141.9	1,931.1	210.80	10.161	
17,700.0	9,734.0	16,541.9	8,814.0	118.6	115.4	64.47	7,615.5	15.3	2,141.9	1,928.5	213.38	10.038	
17,800.0	9,734.0	16,641.9	8,814.0	119.9	116.8	64.47	7,715.5	14.7	2,141.9	1,926.0	215.97	9.918	
17,900.0	9,734.0	16,741.9	8,814.0	121.3	118.1	64.47	7,815.5	14.0	2,142.0	1,923.4	218.57	9.800	
18,000.0	9,734.0	16,841.9	8,814.0	122.7	119.5	64.47	7,915.5	13.3	2,142.0	1,920.8	221.16	9.685	
18,100.0	9,734.0	16,941.9	8,814.0	124.0	120.9	64.47	8,015.5	12.7	2,142.0	1,918.3	223.76	9.573	
18,200.0	9,734.0	17,041.9	8,814.0	125.4	122.3	64.47	8,115.5	12.0	2,142.1	1,915.7	226.36	9.463	
18,300.0	9,734.0	17,141.9	8,814.0	126.8	123.7	64.47	8,215.5	11.3	2,142.1	1,913.1	228.96	9.356	
18,400.0	9,734.0	17,241.9	8,814.0	128.1	125.1	64.47	8,315.5	10.7	2,142.1	1,910.5	231.57	9.250	
18,500.0	9,734.0	17,341.9	8,814.0	129.5	126.5	64.47	8,415.5	10.0	2,142.1	1,908.0	234.18	9.148	
18,600.0	9,734.0	17,441.9	8,814.0	130.9	127.9	64.47	8,515.5	9.4	2,142.2	1,905.4	236.79	9.047	
18,700.0	9,734.0	17,541.9	8,814.0	132.2	129.4	64.47	8,615.5	8.7	2,142.2	1,902.8	239.40	8.948	
18,800.0	9,734.0	17,641.9	8,814.0	133.6	130.8	64.48	8,715.5	8.0	2,142.2	1,900.2	242.01	8.852	
18,900.0	9,734.0	17,741.9	8,814.0	135.0	132.2	64.48	8,815.5	7.4	2,142.3	1,897.6	244.63	8.757	
19,000.0	9,734.0	17,841.9	8,814.0	136.4	133.6	64.48	8,915.5	6.7	2,142.3	1,895.0	247.24	8.665	
19,100.0	9,734.0	17,941.9	8,814.0	137.7	135.0	64.48	9,015.5	6.1	2,142.3	1,892.5	249.86	8.574	
19,200.0	9,734.0	18,041.9	8,814.0	139.1	136.4	64.48	9,115.5	5.4	2,142.3	1,889.9	252.48	8.485	
19,300.0	9,734.0	18,141.9	8,814.0	140.5	137.8	64.48	9,215.5	4.7	2,142.4	1,887.3	255.11	8.398	
19,400.0	9,734.0	18,241.9	8,814.0	141.9	139.2	64.48	9,315.5	4.1	2,142.4	1,884.7	257.73	8.313	
19,500.0	9,734.0	18,341.9	8,814.0	143.3	140.6	64.48	9,415.5	3.4	2,142.4	1,882.1	260.36	8.229	
19,600.0	9,734.0	18,441.9	8,814.0	144.7	142.0	64.48	9,515.5	2.7	2,142.5	1,879.5	262.98	8.147	
19,700.0	9,734.0	18,541.9	8,814.0	146.1	143.4	64.48	9,615.4	2.1	2,142.5	1,876.9	265.61	8.066	
19,800.0	9,734.0	18,641.9	8,814.0	147.4	144.9	64.48	9,715.4	1.4	2,142.5	1,874.3	268.24	7.987	
19,900.0	9,734.0	18,741.9	8,814.0	148.8	146.3	64.48	9,815.4	0.8	2,142.5	1,871.7	270.87	7.910	
20,000.0	9,734.0	18,841.9	8,814.0	150.2	147.7	64.48	9,915.4	0.1	2,142.6	1,869.1	273.50	7.834	
20,100.0	9,734.0	18,941.9	8,814.0	151.6	149.1	64.48	10,015.4	-0.6	2,142.6	1,866.5	276.14	7.759	
20,200.0	9,734.0	19,041.9	8,814.0	152.9	150.5	64.48	10,115.4	-1.2	2,142.6	1,864.1	278.55	7.692	
20,207.7	9,734.0	19,049.6	8,814.0	153.0	150.6	64.48	10,123.1	-1.3	2,142.6	1,863.9	278.74	7.687 SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 306H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	3.3	3.3	0.0	0.0	26.29	160.3	79.2	178.8				
100.0	100.0	103.3	103.3	0.1	0.1	26.29	160.3	79.2	178.8	178.5	0.28	649.370	
200.0	200.0	203.3	203.3	0.5	0.5	26.29	160.3	79.2	178.8	177.8	0.99	180.172	
300.0	300.0	303.3	303.3	0.8	0.9	26.29	160.3	79.2	178.8	177.1	1.71	104.597	
400.0	400.0	403.3	403.3	1.2	1.2	26.29	160.3	79.2	178.8	176.3	2.43	73.687	
500.0	500.0	503.3	503.3	1.6	1.6	26.29	160.3	79.2	178.8	175.6	3.14	56.879	
600.0	600.0	603.3	603.3	1.9	1.9	26.29	160.3	79.2	178.8	174.9	3.86	46.315	
700.0	700.0	703.3	703.3	2.3	2.3	26.29	160.3	79.2	178.8	174.2	4.58	39.060	
800.0	800.0	803.3	803.3	2.6	2.7	26.29	160.3	79.2	178.8	173.5	5.29	33.770	
900.0	900.0	903.3	903.3	3.0	3.0	26.29	160.3	79.2	178.8	172.8	6.01	29.742	
1,000.0	1,000.0	1,003.3	1,003.3	3.4	3.4	26.29	160.3	79.2	178.8	172.0	6.73	26.573	
1,100.0	1,100.0	1,103.3	1,103.3	3.7	3.7	26.29	160.3	79.2	178.8	171.3	7.44	24.014	
1,200.0	1,200.0	1,203.3	1,203.3	4.1	4.1	26.29	160.3	79.2	178.8	170.6	8.16	21.904	
1,300.0	1,300.0	1,303.3	1,303.3	4.4	4.4	26.29	160.3	79.2	178.8	169.9	8.88	20.136	
1,400.0	1,400.0	1,403.3	1,403.3	4.8	4.8	26.29	160.3	79.2	178.8	169.2	9.60	18.631	
1,500.0	1,500.0	1,503.3	1,503.3	5.2	5.2	26.29	160.3	79.2	178.8	168.5	10.31	17.336	
1,600.0	1,600.0	1,603.3	1,603.3	5.5	5.5	26.29	160.3	79.2	178.8	167.7	11.03	16.209	
1,700.0	1,700.0	1,703.3	1,703.3	5.9	5.9	26.29	160.3	79.2	178.8	167.0	11.75	15.220	
1,800.0	1,800.0	1,803.3	1,803.3	6.2	6.2	26.29	160.3	79.2	178.8	166.3	12.46	14.344	
1,900.0	1,900.0	1,903.3	1,903.3	6.6	6.6	26.29	160.3	79.2	178.8	165.6	13.18	13.564	
2,000.0	2,000.0	2,003.3	2,003.3	6.9	7.0	26.29	160.3	79.2	178.8	164.9	13.90	12.865	
2,000.0	2,000.0	2,003.3	2,003.3	6.9	7.0	26.29	160.3	79.2	178.8	164.9	13.90	12.864	CC, ES
2,100.0	2,100.0	2,103.2	2,103.2	7.3	7.3	126.95	159.5	80.8	179.8	165.2	14.59	12.325	
2,200.0	2,199.8	2,202.5	2,202.3	7.6	7.6	129.84	157.1	85.6	183.3	168.0	15.26	12.009	
2,300.0	2,299.5	2,300.0	2,299.5	8.0	8.0	134.28	153.3	93.2	190.1	174.1	15.93	11.929	SF
2,400.0	2,398.7	2,396.4	2,395.2	8.3	8.3	139.84	148.1	103.7	201.4	184.8	16.60	12.132	
2,500.0	2,497.5	2,490.0	2,487.6	8.7	8.6	145.85	141.6	116.6	218.6	201.3	17.26	12.667	
2,600.0	2,595.6	2,582.6	2,578.7	9.0	9.0	151.83	134.2	131.5	242.2	224.3	17.90	13.533	
2,700.0	2,693.1	2,675.1	2,669.6	9.4	9.3	157.07	126.6	146.7	271.5	253.0	18.54	14.641	
2,800.0	2,789.6	2,766.2	2,759.2	9.8	9.6	161.47	119.1	161.6	305.9	286.7	19.18	15.945	
2,900.0	2,885.6	2,856.4	2,847.8	10.2	10.0	165.27	111.7	176.4	343.9	324.0	19.82	17.348	
3,000.0	2,981.6	2,946.6	2,936.5	10.6	10.3	168.37	104.4	191.2	383.0	362.5	20.46	18.720	
3,100.0	3,077.5	3,036.7	3,025.1	11.1	10.7	170.91	97.0	206.0	422.9	401.8	21.10	20.041	
3,200.0	3,173.5	3,126.9	3,113.7	11.5	11.0	173.02	89.6	220.8	463.4	441.7	21.75	21.306	
3,300.0	3,269.4	3,217.0	3,202.4	12.0	11.4	174.80	82.2	235.6	504.4	482.0	22.41	22.512	
3,400.0	3,365.4	3,307.2	3,291.0	12.4	11.7	176.32	74.9	250.4	545.8	522.7	23.07	23.659	
3,500.0	3,461.3	3,397.4	3,379.6	12.9	12.1	177.62	67.5	265.1	587.4	563.6	23.73	24.750	
3,600.0	3,557.3	3,487.5	3,468.3	13.4	12.5	178.76	60.1	279.9	629.2	604.8	24.40	25.785	
3,700.0	3,653.2	3,577.7	3,556.9	13.8	12.8	179.75	52.7	294.7	671.2	646.1	25.08	26.768	
3,800.0	3,749.2	3,667.8	3,645.5	14.3	13.2	-179.37	45.3	309.5	713.4	687.6	25.75	27.701	
3,900.0	3,845.1	3,758.0	3,734.2	14.8	13.6	-178.59	38.0	324.3	755.7	729.2	26.43	28.587	
4,000.0	3,941.1	3,848.2	3,822.8	15.3	13.9	-177.89	30.6	339.1	798.0	770.9	27.12	29.428	
4,100.0	4,037.0	3,938.3	3,911.4	15.8	14.3	-177.26	23.2	353.8	840.5	812.7	27.81	30.228	
4,200.0	4,133.0	4,028.5	4,000.1	16.3	14.7	-176.69	15.8	368.6	883.1	854.6	28.50	30.989	
4,300.0	4,228.9	4,118.6	4,088.7	16.8	15.0	-176.18	8.4	383.4	925.7	896.5	29.19	31.714	
4,400.0	4,324.9	4,208.8	4,177.3	17.3	15.4	-175.70	1.1	398.2	968.4	938.5	29.88	32.404	
4,500.0	4,420.8	4,299.0	4,266.0	17.8	15.8	-175.27	-6.3	413.0	1,011.1	980.5	30.58	33.061	
4,600.0	4,516.8	4,389.1	4,354.6	18.3	16.2	-174.87	-13.7	427.8	1,053.9	1,022.6	31.28	33.689	
4,700.0	4,612.7	4,479.3	4,443.2	18.8	16.5	-174.51	-21.1	442.5	1,096.7	1,064.7	31.98	34.288	
4,800.0	4,708.7	4,569.4	4,531.9	19.3	16.9	-174.17	-28.4	457.3	1,139.5	1,106.8	32.69	34.860	
4,900.0	4,804.7	4,659.6	4,620.5	19.9	17.3	-173.85	-35.8	472.1	1,182.4	1,149.0	33.39	35.407	
5,000.0	4,900.6	4,749.7	4,709.1	20.4	17.7	-173.56	-43.2	486.9	1,225.3	1,191.2	34.10	35.930	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
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Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 306H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	4,996.6	4,839.9	4,797.8	20.9	18.1	-173.29	-50.6	501.7	1,268.2	1,233.4	34.81	36.431	
5,200.0	5,092.5	4,930.1	4,886.4	21.4	18.5	-173.03	-58.0	516.5	1,311.2	1,275.6	35.52	36.911	
5,300.0	5,188.5	5,020.2	4,975.0	21.9	18.8	-172.80	-65.3	531.3	1,354.1	1,317.9	36.23	37.371	
5,400.0	5,284.4	5,110.4	5,063.7	22.4	19.2	-172.57	-72.7	546.0	1,397.1	1,360.2	36.95	37.813	
5,500.0	5,380.4	5,200.5	5,152.3	23.0	19.6	-172.36	-80.1	560.8	1,440.1	1,402.4	37.66	38.237	
5,600.0	5,476.3	5,290.7	5,240.9	23.5	20.0	-172.16	-87.5	575.6	1,483.1	1,444.7	38.38	38.644	
5,700.0	5,572.3	5,380.9	5,329.6	24.0	20.4	-171.97	-94.9	590.4	1,526.1	1,487.1	39.10	39.036	
5,800.0	5,668.2	5,471.0	5,418.2	24.5	20.8	-171.80	-102.2	605.2	1,569.2	1,529.4	39.81	39.412	
5,900.0	5,764.2	5,561.2	5,506.8	25.1	21.1	-171.63	-109.6	620.0	1,612.2	1,571.7	40.53	39.775	
6,000.0	5,860.1	5,651.3	5,595.5	25.6	21.5	-171.47	-117.0	634.7	1,655.3	1,614.0	41.26	40.124	
6,100.0	5,956.1	5,741.5	5,684.1	26.1	21.9	-171.32	-124.4	649.5	1,698.4	1,656.4	41.98	40.460	
6,200.0	6,052.0	5,831.7	5,772.7	26.6	22.3	-171.18	-131.7	664.3	1,741.5	1,698.8	42.70	40.784	
6,300.0	6,148.0	5,921.8	5,861.4	27.2	22.7	-171.04	-139.1	679.1	1,784.6	1,741.1	43.42	41.097	
6,400.0	6,243.9	6,012.0	5,950.0	27.7	23.1	-170.91	-146.5	693.9	1,827.6	1,783.5	44.15	41.399	
6,500.0	6,339.9	6,102.1	6,038.6	28.2	23.5	-170.78	-153.9	708.7	1,870.8	1,825.9	44.87	41.690	
6,600.0	6,435.8	6,192.3	6,127.3	28.8	23.9	-170.67	-161.3	723.4	1,913.9	1,868.3	45.60	41.971	
6,700.0	6,531.8	6,282.5	6,215.9	29.3	24.3	-170.55	-168.6	738.2	1,957.0	1,910.7	46.33	42.243	
6,800.0	6,627.7	6,372.6	6,304.5	29.8	24.6	-170.44	-176.0	753.0	2,000.1	1,953.1	47.05	42.507	
6,900.0	6,723.7	6,462.8	6,393.2	30.4	25.0	-170.34	-183.4	767.8	2,043.2	1,995.5	47.78	42.761	
7,000.0	6,819.6	6,552.9	6,481.8	30.9	25.4	-170.24	-190.8	782.6	2,086.4	2,037.9	48.51	43.007	
7,100.0	6,915.6	6,643.1	6,570.4	31.4	25.8	-170.14	-198.1	797.4	2,129.5	2,080.3	49.24	43.246	
7,200.0	7,011.5	6,733.3	6,659.1	32.0	26.2	-170.05	-205.5	812.1	2,172.7	2,122.7	49.97	43.477	
7,300.0	7,107.5	6,823.4	6,747.7	32.5	26.6	-169.96	-212.9	826.9	2,215.8	2,165.1	50.70	43.700	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 514H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.5	0.5	0.0	0.0	89.91	0.1	40.1	40.1				
100.0	100.0	100.5	100.5	0.1	0.1	89.91	0.1	40.1	40.1	39.8	0.27	151.167	
200.0	200.0	200.5	200.5	0.5	0.5	89.91	0.1	40.1	40.1	39.1	0.98	40.826	
300.0	300.0	300.5	300.5	0.8	0.9	89.91	0.1	40.1	40.1	38.4	1.70	23.600	
400.0	400.0	400.5	400.5	1.2	1.2	89.91	0.1	40.1	40.1	37.7	2.42	16.597	
500.0	500.0	500.5	500.5	1.6	1.6	89.91	0.1	40.1	40.1	37.0	3.13	12.799	
600.0	600.0	600.5	600.5	1.9	1.9	89.91	0.1	40.1	40.1	36.3	3.85	10.416	
700.0	700.0	700.5	700.5	2.3	2.3	89.91	0.1	40.1	40.1	35.5	4.57	8.781	
800.0	800.0	800.5	800.5	2.6	2.6	89.91	0.1	40.1	40.1	34.8	5.28	7.589	
900.0	900.0	900.5	900.5	3.0	3.0	89.91	0.1	40.1	40.1	34.1	6.00	6.682	
1,000.0	1,000.0	1,000.5	1,000.5	3.4	3.4	89.91	0.1	40.1	40.1	33.4	6.72	5.969	
1,100.0	1,100.0	1,100.5	1,100.5	3.7	3.7	89.91	0.1	40.1	40.1	32.7	7.43	5.394	
1,200.0	1,200.0	1,200.5	1,200.5	4.1	4.1	89.91	0.1	40.1	40.1	31.9	8.15	4.919	
1,300.0	1,300.0	1,300.5	1,300.5	4.4	4.4	89.91	0.1	40.1	40.1	31.2	8.87	4.522	
1,400.0	1,400.0	1,400.5	1,400.5	4.8	4.8	89.91	0.1	40.1	40.1	30.5	9.59	4.183	
1,500.0	1,500.0	1,500.5	1,500.5	5.2	5.2	89.91	0.1	40.1	40.1	29.8	10.30	3.892	
1,600.0	1,600.0	1,600.5	1,600.5	5.5	5.5	89.91	0.1	40.1	40.1	29.1	11.02	3.639	
1,700.0	1,700.0	1,700.5	1,700.5	5.9	5.9	89.91	0.1	40.1	40.1	28.4	11.74	3.417	
1,800.0	1,800.0	1,800.5	1,800.5	6.2	6.2	89.91	0.1	40.1	40.1	27.6	12.45	3.220	
1,900.0	1,900.0	1,900.5	1,900.5	6.6	6.6	89.91	0.1	40.1	40.1	26.9	13.17	3.045	
2,000.0	2,000.0	2,000.5	2,000.5	6.9	6.9	89.91	0.1	40.1	40.1	26.2	13.89	2.888	
2,018.4	2,018.4	2,019.1	2,019.1	7.0	7.0	-170.43	0.0	40.0	40.1	26.1	14.02	2.861 CC	
2,100.0	2,100.0	2,101.8	2,101.8	7.3	7.3	-170.04	-0.5	38.4	40.1	25.6	14.58	2.753	
2,200.0	2,199.8	2,203.2	2,203.0	7.6	7.6	-168.84	-2.3	33.3	40.3	25.0	15.24	2.643	
2,300.0	2,299.5	2,304.5	2,303.9	8.0	8.0	-166.85	-5.1	24.8	40.5	24.7	15.89	2.552	
2,400.0	2,398.7	2,405.8	2,404.5	8.3	8.3	-164.14	-9.2	12.9	41.0	24.5	16.53	2.481 ES, SF	
2,500.0	2,497.5	2,505.8	2,503.4	8.7	8.7	-161.83	-13.7	-0.5	43.2	26.0	17.22	2.510	
2,600.0	2,595.6	2,605.6	2,602.3	9.0	9.0	-161.15	-18.3	-14.0	48.8	30.9	17.91	2.723	
2,700.0	2,693.1	2,705.2	2,700.8	9.4	9.4	-161.73	-22.9	-27.4	57.6	39.0	18.61	3.097	
2,800.0	2,789.6	2,804.5	2,799.1	9.8	9.8	-163.01	-27.4	-40.7	69.8	50.5	19.30	3.616	
2,900.0	2,885.6	2,903.4	2,897.0	10.2	10.1	-164.38	-31.9	-54.1	84.2	64.2	20.00	4.210	
3,000.0	2,981.6	3,002.4	2,994.9	10.6	10.5	-165.37	-36.5	-67.4	98.7	78.0	20.71	4.767	
3,100.0	3,077.5	3,101.3	3,092.9	11.1	10.9	-166.11	-41.0	-80.7	113.2	91.8	21.42	5.287	
3,200.0	3,173.5	3,200.2	3,190.8	11.5	11.2	-166.68	-45.5	-94.0	127.8	105.6	22.14	5.772	
3,300.0	3,269.4	3,299.1	3,288.7	12.0	11.6	-167.13	-50.0	-107.3	142.3	119.5	22.86	6.227	
3,400.0	3,365.4	3,398.1	3,386.6	12.4	12.0	-167.50	-54.6	-120.7	156.9	133.3	23.58	6.652	
3,500.0	3,461.3	3,497.0	3,484.6	12.9	12.4	-167.80	-59.1	-134.0	171.4	147.1	24.31	7.052	
3,600.0	3,557.3	3,595.9	3,582.5	13.4	12.8	-168.06	-63.6	-147.3	186.0	160.9	25.04	7.427	
3,700.0	3,653.2	3,694.9	3,680.4	13.8	13.1	-168.28	-68.1	-160.6	200.6	174.8	25.78	7.780	
3,800.0	3,749.2	3,793.8	3,778.3	14.3	13.5	-168.47	-72.7	-173.9	215.1	188.6	26.52	8.112	
3,900.0	3,845.1	3,892.7	3,876.3	14.8	13.9	-168.64	-77.2	-187.3	229.7	202.4	27.26	8.426	
4,000.0	3,941.1	3,991.7	3,974.2	15.3	14.3	-168.79	-81.7	-200.6	244.3	216.3	28.00	8.723	
4,100.0	4,037.0	4,090.6	4,072.1	15.8	14.7	-168.92	-86.2	-213.9	258.8	230.1	28.75	9.003	
4,200.0	4,133.0	4,189.5	4,170.0	16.3	15.1	-169.03	-90.8	-227.2	273.4	243.9	29.50	9.269	
4,300.0	4,228.9	4,288.5	4,268.0	16.8	15.5	-169.14	-95.3	-240.5	288.0	257.7	30.25	9.521	
4,400.0	4,324.9	4,387.4	4,365.9	17.3	15.8	-169.23	-99.8	-253.9	302.6	271.6	31.00	9.761	
4,500.0	4,420.8	4,486.3	4,463.8	17.8	16.2	-169.32	-104.4	-267.2	317.1	285.4	31.75	9.988	
4,600.0	4,516.8	4,585.2	4,561.7	18.3	16.6	-169.40	-108.9	-280.5	331.7	299.2	32.51	10.204	
4,700.0	4,612.7	4,684.2	4,659.7	18.8	17.0	-169.47	-113.4	-293.8	346.3	313.0	33.26	10.411	
4,800.0	4,708.7	4,783.1	4,757.6	19.3	17.4	-169.53	-117.9	-307.1	360.9	326.8	34.02	10.607	
4,900.0	4,804.7	4,882.0	4,855.5	19.9	17.8	-169.59	-122.5	-320.5	375.4	340.7	34.78	10.795	
5,000.0	4,900.6	4,981.0	4,953.4	20.4	18.2	-169.65	-127.0	-333.8	390.0	354.5	35.54	10.974	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 514H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	4,996.6	5,079.9	5,051.4	20.9	18.6	-169.70	-131.5	-347.1	404.6	368.3	36.30	11.146	
5,200.0	5,092.5	5,178.8	5,149.3	21.4	19.0	-169.75	-136.0	-360.4	419.2	382.1	37.06	11.310	
5,300.0	5,188.5	5,277.8	5,247.2	21.9	19.4	-169.80	-140.6	-373.7	433.7	395.9	37.82	11.467	
5,400.0	5,284.4	5,376.7	5,345.2	22.4	19.8	-169.84	-145.1	-387.0	448.3	409.7	38.59	11.618	
5,500.0	5,380.4	5,475.6	5,443.1	23.0	20.2	-169.88	-149.6	-400.4	462.9	423.6	39.35	11.763	
5,600.0	5,476.3	5,574.6	5,541.0	23.5	20.6	-169.92	-154.1	-413.7	477.5	437.4	40.12	11.901	
5,700.0	5,572.3	5,673.5	5,638.9	24.0	21.0	-169.95	-158.7	-427.0	492.1	451.2	40.89	12.035	
5,800.0	5,668.2	5,772.4	5,736.9	24.5	21.4	-169.98	-163.2	-440.3	506.6	465.0	41.65	12.163	
5,900.0	5,764.2	5,871.4	5,834.8	25.1	21.8	-170.01	-167.7	-453.6	521.2	478.8	42.42	12.287	
6,000.0	5,860.1	5,970.3	5,932.7	25.6	22.2	-170.04	-172.2	-467.0	535.8	492.6	43.19	12.406	
6,100.0	5,956.1	6,069.2	6,030.6	26.1	22.6	-170.07	-176.8	-480.3	550.4	506.4	43.96	12.520	
6,200.0	6,052.0	6,168.1	6,128.6	26.6	23.0	-170.10	-181.3	-493.6	565.0	520.2	44.73	12.631	
6,300.0	6,148.0	6,267.1	6,226.5	27.2	23.4	-170.12	-185.8	-506.9	579.5	534.0	45.50	12.737	
6,400.0	6,243.9	6,366.0	6,324.4	27.7	23.8	-170.15	-190.3	-520.2	594.1	547.9	46.27	12.840	
6,500.0	6,339.9	6,464.9	6,422.3	28.2	24.2	-170.17	-194.9	-533.6	608.7	561.7	47.04	12.940	
6,600.0	6,435.8	6,563.9	6,520.3	28.8	24.6	-170.19	-199.4	-546.9	623.3	575.5	47.81	13.036	
6,700.0	6,531.8	6,662.8	6,618.2	29.3	25.0	-170.21	-203.9	-560.2	637.9	589.3	48.59	13.129	
6,800.0	6,627.7	6,761.7	6,716.1	29.8	25.4	-170.23	-208.4	-573.5	652.4	603.1	49.36	13.219	
6,900.0	6,723.7	6,860.7	6,814.0	30.4	25.8	-170.25	-213.0	-586.8	667.0	616.9	50.13	13.306	
7,000.0	6,819.6	6,959.6	6,912.0	30.9	26.2	-170.27	-217.5	-600.2	681.6	630.7	50.91	13.390	
7,100.0	6,915.6	7,058.5	7,009.9	31.4	26.6	-170.29	-222.0	-613.5	696.2	644.5	51.68	13.471	
7,200.0	7,011.5	7,157.5	7,107.8	32.0	27.0	-170.30	-226.5	-626.8	710.8	658.3	52.45	13.550	
7,300.0	7,107.5	7,256.4	7,205.7	32.5	27.4	-170.32	-231.1	-640.1	725.4	672.1	53.23	13.627	
7,400.0	7,203.5	7,355.3	7,303.7	33.0	27.8	-170.33	-235.6	-653.4	739.9	685.9	54.00	13.702	
7,500.0	7,299.4	7,454.2	7,401.6	33.6	28.2	-170.35	-240.1	-666.8	754.5	699.7	54.78	13.774	
7,600.0	7,395.4	7,553.2	7,499.5	34.1	28.6	-170.36	-244.7	-680.1	769.1	713.5	55.55	13.844	
7,700.0	7,491.3	7,652.1	7,597.4	34.6	29.0	-170.38	-249.2	-693.4	783.7	727.4	56.33	13.912	
7,800.0	7,587.3	7,751.0	7,695.4	35.2	29.4	-170.39	-253.7	-706.7	798.3	741.2	57.11	13.978	
7,900.0	7,683.2	7,850.0	7,793.3	35.7	29.8	-170.40	-258.2	-720.0	812.8	755.0	57.88	14.043	
8,000.0	7,779.2	7,948.9	7,891.2	36.2	30.2	-170.42	-262.8	-733.4	827.4	768.8	58.66	14.105	
8,100.0	7,875.1	8,047.8	7,989.1	36.8	30.6	-170.43	-267.3	-746.7	842.0	782.6	59.44	14.166	
8,200.0	7,971.1	8,146.8	8,087.1	37.3	31.0	-170.44	-271.8	-760.0	856.6	796.4	60.21	14.226	
8,300.0	8,067.0	8,245.7	8,185.0	37.9	31.4	-170.45	-276.3	-773.3	871.2	810.2	60.99	14.283	
8,400.0	8,163.0	8,344.6	8,282.9	38.4	31.8	-170.46	-280.9	-786.6	885.8	824.0	61.77	14.339	
8,500.0	8,258.9	8,443.6	8,380.9	38.9	32.2	-170.47	-285.4	-800.0	900.3	837.8	62.55	14.394	
8,600.0	8,354.9	8,542.5	8,478.8	39.5	32.6	-170.48	-289.9	-813.3	914.9	851.6	63.33	14.447	
8,700.0	8,451.4	8,641.7	8,577.0	40.0	33.0	-170.52	-294.4	-826.6	927.6	863.5	64.10	14.470	
8,800.0	8,548.7	8,721.4	8,656.0	40.5	33.3	-170.53	-297.9	-836.7	937.7	873.0	64.76	14.480	
8,900.0	8,646.8	8,800.0	8,734.1	40.9	33.6	-170.55	-300.6	-844.6	946.9	881.5	65.37	14.485	
9,000.0	8,745.5	8,873.1	8,807.0	41.3	33.9	-170.58	-302.4	-850.2	955.2	889.3	65.89	14.495	
9,100.0	8,844.7	8,948.8	8,882.6	41.7	34.2	-170.62	-303.8	-854.0	962.5	896.1	66.39	14.497	
9,200.0	8,944.2	9,024.4	8,958.2	42.1	34.4	-170.67	-304.4	-856.0	968.9	902.0	66.84	14.496	
9,300.0	9,044.1	9,110.8	9,044.6	42.4	34.7	-170.72	-304.5	-856.3	974.0	906.7	67.36	14.461	
9,400.0	9,144.0	9,210.8	9,144.5	42.7	35.0	-170.75	-304.5	-856.3	976.2	908.2	68.02	14.352	
9,500.0	9,244.0	9,310.8	9,244.5	42.9	35.3	89.61	-304.5	-856.3	976.2	907.5	68.66	14.218	
9,600.0	9,343.6	9,410.8	9,344.0	43.2	35.6	93.06	-296.5	-856.4	976.6	907.4	69.28	14.097	
9,700.0	9,439.3	9,510.7	9,439.6	43.4	35.9	92.86	-268.0	-856.6	978.2	908.4	69.83	14.008	
9,800.0	9,527.0	9,610.6	9,527.2	43.6	36.1	92.54	-220.4	-856.9	980.8	910.5	70.30	13.951	
9,900.0	9,602.9	9,710.4	9,603.0	43.8	36.3	92.12	-155.7	-857.3	984.3	913.6	70.70	13.922	
10,000.0	9,663.6	9,810.2	9,663.6	43.9	36.3	91.59	-76.6	-857.8	988.6	917.6	71.05	13.914	
10,100.0	9,706.6	9,909.9	9,706.5	43.9	36.4	91.01	13.2	-858.4	993.5	922.2	71.36	13.922	
10,200.0	9,729.9	10,009.7	9,729.8	43.9	36.3	90.38	110.0	-859.1	998.8	927.2	71.66	13.939	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 514H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.0	9,734.0	10,109.5	9,734.0	44.0	36.3	89.97	209.6	-859.7	1,004.0	932.0	71.95	13.954	
10,400.0	9,734.0	10,209.4	9,734.0	44.0	36.4	89.97	309.5	-860.4	1,006.4	934.1	72.33	13.913	
10,500.0	9,734.0	10,309.4	9,734.0	44.1	36.5	89.97	409.5	-861.0	1,006.5	933.6	72.83	13.820	
10,600.0	9,734.0	10,409.4	9,734.0	44.2	36.7	89.97	509.5	-861.7	1,006.5	933.1	73.44	13.706	
10,700.0	9,734.0	10,509.4	9,734.0	44.3	37.0	89.97	609.5	-862.4	1,006.5	932.4	74.15	13.574	
10,800.0	9,734.0	10,609.4	9,734.0	44.5	37.4	89.97	709.5	-863.0	1,006.6	931.6	74.97	13.425	
10,900.0	9,734.0	10,709.4	9,734.0	44.8	37.9	89.97	809.5	-863.7	1,006.6	930.7	75.90	13.263	
11,000.0	9,734.0	10,809.4	9,734.0	45.1	38.4	89.97	909.5	-864.3	1,006.6	929.7	76.92	13.087	
11,100.0	9,734.0	10,909.4	9,734.0	45.4	39.0	89.97	1,009.5	-865.0	1,006.7	928.6	78.03	12.900	
11,200.0	9,734.0	11,009.4	9,734.0	45.8	39.6	89.97	1,109.5	-865.7	1,006.7	927.5	79.24	12.705	
11,300.0	9,734.0	11,109.4	9,734.0	46.3	40.2	89.97	1,209.5	-866.3	1,006.7	926.2	80.53	12.501	
11,400.0	9,734.0	11,209.4	9,734.0	46.8	40.9	89.97	1,309.5	-867.0	1,006.8	924.9	81.90	12.292	
11,500.0	9,734.0	11,309.4	9,734.0	47.3	41.7	89.97	1,409.5	-867.7	1,006.8	923.4	83.35	12.079	
11,600.0	9,734.0	11,409.4	9,734.0	47.9	42.5	89.97	1,509.5	-868.3	1,006.8	921.9	84.88	11.862	
11,700.0	9,734.0	11,509.4	9,734.0	48.5	43.3	89.97	1,609.5	-869.0	1,006.9	920.4	86.47	11.643	
11,800.0	9,734.0	11,609.4	9,734.0	49.2	44.1	89.97	1,709.5	-869.6	1,006.9	918.8	88.14	11.424	
11,900.0	9,734.0	11,709.4	9,734.0	49.9	45.0	89.97	1,809.5	-870.3	1,006.9	917.1	89.86	11.206	
12,000.0	9,734.0	11,809.4	9,734.0	50.7	45.9	89.97	1,909.5	-871.0	1,007.0	915.3	91.64	10.988	
12,100.0	9,734.0	11,909.4	9,734.0	51.5	46.8	89.97	2,009.5	-871.6	1,007.0	913.5	93.48	10.772	
12,200.0	9,734.0	12,009.4	9,734.0	52.3	47.8	89.97	2,109.5	-872.3	1,007.0	911.6	95.37	10.559	
12,300.0	9,734.0	12,109.4	9,734.0	53.2	48.7	89.97	2,209.5	-872.9	1,007.1	909.7	97.31	10.349	
12,400.0	9,734.0	12,209.4	9,734.0	54.0	49.7	89.97	2,309.5	-873.6	1,007.1	907.8	99.30	10.142	
12,500.0	9,734.0	12,309.4	9,734.0	54.9	50.8	89.97	2,409.5	-874.3	1,007.1	905.8	101.33	9.939	
12,600.0	9,734.0	12,409.4	9,734.0	55.9	51.8	89.97	2,509.5	-874.9	1,007.1	903.7	103.40	9.740	
12,700.0	9,734.0	12,509.4	9,734.0	56.8	52.9	89.97	2,609.5	-875.6	1,007.2	901.7	105.51	9.546	
12,800.0	9,734.0	12,609.4	9,734.0	57.8	53.9	89.97	2,709.5	-876.3	1,007.2	899.6	107.66	9.356	
12,900.0	9,734.0	12,709.4	9,734.0	58.8	55.0	89.97	2,809.5	-876.9	1,007.2	897.4	109.84	9.170	
13,000.0	9,734.0	12,809.4	9,734.0	59.9	56.2	89.97	2,909.5	-877.6	1,007.3	895.2	112.05	8.989	
13,100.0	9,734.0	12,909.4	9,734.0	60.9	57.3	89.97	3,009.5	-878.2	1,007.3	893.0	114.30	8.813	
13,200.0	9,734.0	13,009.4	9,734.0	62.0	58.4	89.97	3,109.5	-878.9	1,007.3	890.8	116.57	8.642	
13,300.0	9,734.0	13,109.4	9,734.0	63.0	59.6	89.97	3,209.5	-879.6	1,007.4	888.5	118.87	8.475	
13,400.0	9,734.0	13,209.4	9,734.0	64.1	60.7	89.97	3,309.5	-880.2	1,007.4	886.2	121.19	8.312	
13,500.0	9,734.0	13,309.4	9,734.0	65.2	61.9	89.97	3,409.5	-880.9	1,007.4	883.9	123.54	8.155	
13,600.0	9,734.0	13,409.4	9,734.0	66.3	63.1	89.97	3,509.5	-881.5	1,007.5	881.6	125.92	8.001	
13,700.0	9,734.0	13,509.4	9,734.0	67.5	64.3	89.97	3,609.5	-882.2	1,007.5	879.2	128.31	7.852	
13,800.0	9,734.0	13,609.4	9,734.0	68.6	65.5	89.97	3,709.5	-882.9	1,007.5	876.8	130.72	7.707	
13,900.0	9,734.0	13,709.4	9,734.0	69.8	66.7	89.97	3,809.5	-883.5	1,007.6	874.4	133.16	7.567	
14,000.0	9,734.0	13,809.4	9,734.0	70.9	68.0	89.97	3,909.5	-884.2	1,007.6	872.0	135.61	7.430	
14,100.0	9,734.0	13,909.4	9,734.0	72.1	69.2	89.97	4,009.5	-884.9	1,007.6	869.6	138.07	7.298	
14,200.0	9,734.0	14,009.4	9,734.0	73.3	70.4	89.97	4,109.5	-885.5	1,007.7	867.1	140.56	7.169	
14,300.0	9,734.0	14,109.4	9,734.0	74.5	71.7	89.97	4,209.5	-886.2	1,007.7	864.6	143.06	7.044	
14,400.0	9,734.0	14,209.4	9,734.0	75.7	72.9	89.97	4,309.5	-886.8	1,007.7	862.2	145.57	6.922	
14,500.0	9,734.0	14,309.4	9,734.0	76.9	74.2	89.97	4,409.5	-887.5	1,007.8	859.7	148.10	6.805	
14,600.0	9,734.0	14,409.4	9,734.0	78.1	75.5	89.97	4,509.4	-888.2	1,007.8	857.2	150.64	6.690	
14,700.0	9,734.0	14,509.4	9,734.0	79.4	76.8	89.97	4,609.4	-888.8	1,007.8	854.6	153.20	6.579	
14,800.0	9,734.0	14,609.4	9,734.0	80.6	78.0	89.97	4,709.4	-889.5	1,007.9	852.1	155.76	6.470	
14,900.0	9,734.0	14,709.4	9,734.0	81.9	79.3	89.97	4,809.4	-890.1	1,007.9	849.5	158.34	6.365	
15,000.0	9,734.0	14,809.4	9,734.0	83.1	80.6	89.97	4,909.4	-890.8	1,007.9	847.0	160.93	6.263	
15,100.0	9,734.0	14,909.4	9,734.0	84.4	81.9	89.97	5,009.4	-891.5	1,008.0	844.4	163.53	6.164	
15,200.0	9,734.0	15,009.4	9,734.0	85.6	83.2	89.97	5,109.4	-892.1	1,008.0	841.9	166.14	6.067	
15,300.0	9,734.0	15,109.4	9,734.0	86.9	84.5	89.97	5,209.4	-892.8	1,008.0	839.3	168.75	5.973	
15,400.0	9,734.0	15,209.4	9,734.0	88.2	85.9	89.97	5,309.4	-893.4	1,008.1	836.7	171.38	5.882	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 514H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,500.0	9,734.0	15,309.4	9,734.0	89.4	87.2	89.97	5,409.4	-894.1	1,008.1	834.1	174.01	5.793	
15,600.0	9,734.0	15,409.4	9,734.0	90.7	88.5	89.97	5,509.4	-894.8	1,008.1	831.5	176.66	5.707	
15,700.0	9,734.0	15,509.4	9,734.0	92.0	89.8	89.97	5,609.4	-895.4	1,008.1	828.8	179.31	5.622	
15,800.0	9,734.0	15,609.4	9,734.0	93.3	91.1	89.97	5,709.4	-896.1	1,008.2	826.2	181.97	5.540	
15,900.0	9,734.0	15,709.4	9,734.0	94.6	92.5	89.97	5,809.4	-896.8	1,008.2	823.6	184.63	5.461	
16,000.0	9,734.0	15,809.4	9,734.0	95.9	93.8	89.97	5,909.4	-897.4	1,008.2	820.9	187.30	5.383	
16,100.0	9,734.0	15,909.4	9,734.0	97.2	95.2	89.97	6,009.4	-898.1	1,008.3	818.3	189.98	5.307	
16,200.0	9,734.0	16,009.4	9,734.0	98.5	96.5	89.97	6,109.4	-898.7	1,008.3	815.6	192.67	5.233	
16,300.0	9,734.0	16,109.4	9,734.0	99.9	97.8	89.97	6,209.4	-899.4	1,008.3	813.0	195.36	5.161	
16,400.0	9,734.0	16,209.4	9,734.0	101.2	99.2	89.97	6,309.4	-900.1	1,008.4	810.3	198.06	5.091	
16,500.0	9,734.0	16,309.4	9,734.0	102.5	100.5	89.97	6,409.4	-900.7	1,008.4	807.6	200.76	5.023	
16,600.0	9,734.0	16,409.4	9,734.0	103.8	101.9	89.97	6,509.4	-901.4	1,008.4	805.0	203.47	4.956	
16,700.0	9,734.0	16,509.4	9,734.0	105.1	103.3	89.97	6,609.4	-902.0	1,008.5	802.3	206.18	4.891	
16,800.0	9,734.0	16,609.4	9,734.0	106.5	104.6	89.97	6,709.4	-902.7	1,008.5	799.6	208.90	4.828	
16,900.0	9,734.0	16,709.4	9,734.0	107.8	106.0	89.97	6,809.4	-903.4	1,008.5	796.9	211.62	4.766	
17,000.0	9,734.0	16,809.4	9,734.0	109.1	107.3	89.97	6,909.4	-904.0	1,008.6	794.2	214.34	4.705	
17,100.0	9,734.0	16,909.4	9,734.0	110.5	108.7	89.97	7,009.4	-904.7	1,008.6	791.5	217.08	4.646	
17,200.0	9,734.0	17,009.4	9,734.0	111.8	110.1	89.97	7,109.4	-905.4	1,008.6	788.8	219.81	4.589	
17,300.0	9,734.0	17,109.4	9,734.0	113.2	111.4	89.97	7,209.4	-906.0	1,008.7	786.1	222.55	4.532	
17,400.0	9,734.0	17,209.4	9,734.0	114.5	112.8	89.97	7,309.4	-906.7	1,008.7	783.4	225.29	4.477	
17,500.0	9,734.0	17,309.4	9,734.0	115.9	114.2	89.97	7,409.4	-907.3	1,008.7	780.7	228.04	4.423	
17,600.0	9,734.0	17,409.4	9,734.0	117.2	115.6	89.97	7,509.4	-908.0	1,008.8	778.0	230.79	4.371	
17,700.0	9,734.0	17,509.4	9,734.0	118.6	116.9	89.97	7,609.4	-908.7	1,008.8	775.2	233.54	4.319	
17,800.0	9,734.0	17,609.4	9,734.0	119.9	118.3	89.97	7,709.4	-909.3	1,008.8	772.5	236.30	4.269	
17,900.0	9,734.0	17,709.4	9,734.0	121.3	119.7	89.97	7,809.4	-910.0	1,008.9	769.8	239.06	4.220	
18,000.0	9,734.0	17,809.4	9,734.0	122.7	121.1	89.97	7,909.4	-910.6	1,008.9	767.1	241.83	4.172	
18,100.0	9,734.0	17,909.4	9,734.0	124.0	122.5	89.97	8,009.4	-911.3	1,008.9	764.3	244.59	4.125	
18,200.0	9,734.0	18,009.4	9,734.0	125.4	123.8	89.97	8,109.4	-912.0	1,009.0	761.6	247.36	4.079	
18,300.0	9,734.0	18,109.4	9,734.0	126.8	125.2	89.97	8,209.4	-912.6	1,009.0	758.8	250.14	4.034	
18,400.0	9,734.0	18,209.4	9,734.0	128.1	126.6	89.97	8,309.4	-913.3	1,009.0	756.1	252.91	3.990	
18,500.0	9,734.0	18,309.4	9,734.0	129.5	128.0	89.97	8,409.4	-914.0	1,009.0	753.4	255.69	3.946	
18,600.0	9,734.0	18,409.4	9,734.0	130.9	129.4	89.97	8,509.4	-914.6	1,009.1	750.6	258.47	3.904	
18,700.0	9,734.0	18,509.4	9,734.0	132.2	130.8	89.97	8,609.4	-915.3	1,009.1	747.9	261.25	3.863	
18,800.0	9,734.0	18,609.4	9,734.0	133.6	132.2	89.97	8,709.4	-915.9	1,009.1	745.1	264.04	3.822	
18,900.0	9,734.0	18,709.4	9,734.0	135.0	133.6	89.97	8,809.4	-916.6	1,009.2	742.4	266.83	3.782	
19,000.0	9,734.0	18,809.4	9,734.0	136.4	135.0	89.97	8,909.4	-917.3	1,009.2	739.6	269.62	3.743	
19,100.0	9,734.0	18,909.4	9,734.0	137.7	136.4	89.97	9,009.4	-917.9	1,009.2	736.8	272.41	3.705	
19,200.0	9,734.0	19,009.4	9,734.0	139.1	137.8	89.97	9,109.3	-918.6	1,009.3	734.1	275.20	3.667	
19,300.0	9,734.0	19,109.4	9,734.0	140.5	139.2	89.97	9,209.3	-919.2	1,009.3	731.3	278.00	3.631	
19,400.0	9,734.0	19,209.4	9,734.0	141.9	140.6	89.97	9,309.3	-919.9	1,009.3	728.5	280.80	3.595	
19,500.0	9,734.0	19,309.4	9,734.0	143.3	142.0	89.97	9,409.3	-920.6	1,009.4	725.8	283.60	3.559	
19,600.0	9,734.0	19,409.4	9,734.0	144.7	143.4	89.97	9,509.3	-921.2	1,009.4	723.0	286.40	3.524	
19,700.0	9,734.0	19,509.4	9,734.0	146.1	144.8	89.97	9,609.3	-921.9	1,009.4	720.2	289.20	3.490	
19,800.0	9,734.0	19,609.4	9,734.0	147.4	146.2	89.97	9,709.3	-922.5	1,009.5	717.5	292.01	3.457	
19,900.0	9,734.0	19,709.4	9,734.0	148.8	147.6	89.97	9,809.3	-923.2	1,009.5	714.7	294.82	3.424	
20,000.0	9,734.0	19,809.4	9,734.0	150.2	149.0	89.97	9,909.3	-923.9	1,009.5	711.9	297.63	3.392	
20,100.0	9,734.0	19,909.4	9,734.0	151.6	150.4	89.97	10,009.3	-924.5	1,009.6	709.1	300.44	3.360	
20,200.0	9,734.0	20,009.4	9,734.0	152.9	151.8	89.97	10,109.3	-925.2	1,009.6	706.6	303.03	3.332	
20,207.7	9,734.0	20,017.1	9,734.0	153.0	151.9	89.97	10,117.0	-925.2	1,009.6	706.4	303.23	3.329	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 515H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
0.0	0.0	1.1	1.1	0.0	0.0	89.90	0.1	60.0	60.0			
100.0	100.0	101.1	101.1	0.1	0.1	89.90	0.1	60.0	60.0	59.7	0.27	224.404
200.0	200.0	201.1	201.1	0.5	0.5	89.90	0.1	60.0	60.0	59.0	0.98	60.963
300.0	300.0	301.1	301.1	0.8	0.9	89.90	0.1	60.0	60.0	58.3	1.70	35.273
400.0	400.0	401.1	401.1	1.2	1.2	89.90	0.1	60.0	60.0	57.6	2.42	24.816
500.0	500.0	501.1	501.1	1.6	1.6	89.90	0.1	60.0	60.0	56.9	3.14	19.141
600.0	600.0	601.1	601.1	1.9	1.9	89.90	0.1	60.0	60.0	56.2	3.85	15.578
700.0	700.0	701.1	701.1	2.3	2.3	89.90	0.1	60.0	60.0	55.4	4.57	13.134
800.0	800.0	801.1	801.1	2.6	2.6	89.90	0.1	60.0	60.0	54.7	5.29	11.353
900.0	900.0	901.1	901.1	3.0	3.0	89.90	0.1	60.0	60.0	54.0	6.00	9.997
1,000.0	1,000.0	1,001.1	1,001.1	3.4	3.4	89.90	0.1	60.0	60.0	53.3	6.72	8.930
1,100.0	1,100.0	1,101.1	1,101.1	3.7	3.7	89.90	0.1	60.0	60.0	52.6	7.44	8.069
1,200.0	1,200.0	1,201.1	1,201.1	4.1	4.1	89.90	0.1	60.0	60.0	51.9	8.15	7.360
1,300.0	1,300.0	1,301.1	1,301.1	4.4	4.4	89.90	0.1	60.0	60.0	51.1	8.87	6.765
1,400.0	1,400.0	1,401.1	1,401.1	4.8	4.8	89.90	0.1	60.0	60.0	50.4	9.59	6.259
1,500.0	1,500.0	1,501.1	1,501.1	5.2	5.2	89.90	0.1	60.0	60.0	49.7	10.30	5.824
1,600.0	1,600.0	1,601.1	1,601.1	5.5	5.5	89.90	0.1	60.0	60.0	49.0	11.02	5.445
1,700.0	1,700.0	1,701.1	1,701.1	5.9	5.9	89.90	0.1	60.0	60.0	48.3	11.74	5.112
1,800.0	1,800.0	1,801.1	1,801.1	6.2	6.2	89.90	0.1	60.0	60.0	47.6	12.46	4.818
1,900.0	1,900.0	1,901.1	1,901.1	6.6	6.6	89.90	0.1	60.0	60.0	46.8	13.17	4.556
1,916.3	1,916.3	1,917.4	1,917.4	6.6	6.6	89.90	0.1	60.0	60.0	46.7	13.29	4.516 CC
2,000.0	2,000.0	2,001.1	2,001.1	6.9	6.9	89.90	0.1	60.0	60.0	46.1	13.89	4.321 ES
2,100.0	2,100.0	2,100.8	2,100.8	7.3	7.3	-169.09	-1.7	60.2	62.0	47.4	14.58	4.251 SF
2,200.0	2,199.8	2,200.0	2,199.8	7.6	7.6	-165.54	-6.8	60.9	68.0	52.8	15.23	4.464
2,300.0	2,299.5	2,298.8	2,298.2	8.0	7.9	-160.88	-15.3	62.0	78.5	62.6	15.89	4.939
2,400.0	2,398.7	2,397.3	2,396.1	8.3	8.3	-156.69	-26.2	63.3	93.4	76.8	16.56	5.641
2,500.0	2,497.5	2,495.5	2,493.7	8.7	8.6	-154.32	-37.1	64.7	111.8	94.5	17.23	6.488
2,600.0	2,595.6	2,593.1	2,590.7	9.0	8.9	-153.25	-48.0	66.1	133.3	115.4	17.90	7.446
2,700.0	2,693.1	2,690.0	2,687.0	9.4	9.3	-152.98	-58.8	67.4	157.9	139.3	18.58	8.497
2,800.0	2,789.6	2,786.1	2,782.5	9.8	9.6	-153.20	-69.5	68.8	185.5	166.2	19.27	9.627
2,900.0	2,885.6	2,881.6	2,877.4	10.2	9.9	-153.79	-80.1	70.1	215.1	195.1	19.95	10.779
3,000.0	2,981.6	2,977.1	2,972.3	10.6	10.3	-154.28	-90.8	71.4	244.7	224.1	20.64	11.856
3,100.0	3,077.5	3,072.6	3,067.2	11.1	10.6	-154.66	-101.4	72.8	274.4	253.1	21.34	12.858
3,200.0	3,173.5	3,168.1	3,162.1	11.5	10.9	-154.97	-112.0	74.1	304.1	282.0	22.04	13.794
3,300.0	3,269.4	3,263.6	3,256.9	12.0	11.3	-155.23	-122.6	75.4	333.8	311.0	22.75	14.669
3,400.0	3,365.4	3,359.0	3,351.8	12.4	11.6	-155.44	-133.3	76.8	363.5	340.0	23.47	15.487
3,500.0	3,461.3	3,454.5	3,446.7	12.9	12.0	-155.62	-143.9	78.1	393.2	369.0	24.19	16.254
3,600.0	3,557.3	3,550.0	3,541.6	13.4	12.3	-155.78	-154.5	79.4	422.9	397.9	24.91	16.974
3,700.0	3,653.2	3,645.5	3,636.5	13.8	12.7	-155.92	-165.2	80.8	452.6	426.9	25.64	17.651
3,800.0	3,749.2	3,741.0	3,731.3	14.3	13.0	-156.03	-175.8	82.1	482.3	455.9	26.37	18.287
3,900.0	3,845.1	3,836.5	3,826.2	14.8	13.4	-156.14	-186.4	83.5	512.0	484.9	27.11	18.887
4,000.0	3,941.1	3,931.9	3,921.1	15.3	13.8	-156.23	-197.0	84.8	541.7	513.8	27.84	19.454
4,100.0	4,037.0	4,027.4	4,016.0	15.8	14.1	-156.32	-207.7	86.1	571.4	542.8	28.58	19.988
4,200.0	4,133.0	4,122.9	4,110.9	16.3	14.5	-156.39	-218.3	87.5	601.1	571.7	29.33	20.495
4,300.0	4,228.9	4,218.4	4,205.7	16.8	14.8	-156.46	-228.9	88.8	630.8	600.7	30.07	20.974
4,400.0	4,324.9	4,313.9	4,300.6	17.3	15.2	-156.52	-239.5	90.1	660.5	629.7	30.82	21.428
4,500.0	4,420.8	4,409.4	4,395.5	17.8	15.5	-156.58	-250.2	91.5	690.2	658.6	31.57	21.860
4,600.0	4,516.8	4,504.8	4,490.4	18.3	15.9	-156.63	-260.8	92.8	719.9	687.6	32.33	22.270
4,700.0	4,612.7	4,600.3	4,585.3	18.8	16.3	-156.68	-271.4	94.1	749.6	716.5	33.08	22.660
4,800.0	4,708.7	4,696.0	4,680.3	19.3	16.6	-156.72	-282.1	95.5	779.3	745.5	33.84	23.031
4,900.0	4,804.7	4,801.5	4,785.4	19.9	17.0	-156.91	-291.8	96.7	808.4	773.8	34.66	23.324
5,000.0	4,900.6	4,907.5	4,891.2	20.4	17.4	-157.34	-297.8	97.5	836.4	800.9	35.46	23.583

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 515H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
5,100.0	4,996.6	5,013.7	4,997.4	20.9	17.8	-158.00	-299.8	97.7	863.2	826.9	36.25	23.814
5,200.0	5,092.5	5,109.9	5,093.6	21.4	18.1	-158.68	-299.8	97.7	889.5	852.5	36.95	24.073
5,300.0	5,188.5	5,205.9	5,189.6	21.9	18.4	-159.32	-299.8	97.7	915.9	878.3	37.65	24.325
5,400.0	5,284.4	5,301.8	5,285.5	22.4	18.7	-159.92	-299.8	97.7	942.5	904.1	38.36	24.570
5,500.0	5,380.4	5,397.8	5,381.5	23.0	19.1	-160.49	-299.8	97.7	969.1	930.0	39.06	24.809
5,600.0	5,476.3	5,493.7	5,477.4	23.5	19.4	-161.03	-299.8	97.7	995.8	956.0	39.77	25.040
5,700.0	5,572.3	5,589.7	5,573.4	24.0	19.7	-161.54	-299.8	97.7	1,022.6	982.1	40.48	25.264
5,800.0	5,668.2	5,685.6	5,669.3	24.5	20.0	-162.02	-299.8	97.7	1,049.4	1,008.2	41.18	25.482
5,900.0	5,764.2	5,781.6	5,765.3	25.1	20.4	-162.48	-299.8	97.7	1,076.3	1,034.5	41.89	25.693
6,000.0	5,860.1	5,877.6	5,861.2	25.6	20.7	-162.92	-299.8	97.7	1,103.3	1,060.7	42.60	25.899
6,100.0	5,956.1	5,973.5	5,957.2	26.1	21.0	-163.34	-299.8	97.7	1,130.4	1,087.1	43.31	26.098
6,200.0	6,052.0	6,069.5	6,053.1	26.6	21.3	-163.74	-299.8	97.7	1,157.5	1,113.4	44.02	26.292
6,300.0	6,148.0	6,165.4	6,149.1	27.2	21.7	-164.12	-299.8	97.7	1,184.6	1,139.9	44.74	26.480
6,400.0	6,243.9	6,261.4	6,245.0	27.7	22.0	-164.48	-299.8	97.7	1,211.8	1,166.4	45.45	26.662
6,500.0	6,339.9	6,357.3	6,341.0	28.2	22.3	-164.83	-299.8	97.7	1,239.0	1,192.9	46.16	26.840
6,600.0	6,435.8	6,453.3	6,436.9	28.8	22.7	-165.16	-299.8	97.7	1,266.3	1,219.4	46.88	27.012
6,700.0	6,531.8	6,549.2	6,532.9	29.3	23.0	-165.48	-299.8	97.7	1,293.6	1,246.0	47.60	27.180
6,800.0	6,627.7	6,645.2	6,628.8	29.8	23.3	-165.79	-299.8	97.7	1,321.0	1,272.7	48.31	27.343
6,900.0	6,723.7	6,741.1	6,724.8	30.4	23.6	-166.08	-299.8	97.7	1,348.4	1,299.3	49.03	27.502
7,000.0	6,819.6	6,837.1	6,820.7	30.9	24.0	-166.36	-299.8	97.7	1,375.8	1,326.0	49.75	27.656
7,100.0	6,915.6	6,933.0	6,916.7	31.4	24.3	-166.63	-299.8	97.7	1,403.2	1,352.8	50.47	27.806
7,200.0	7,011.5	7,029.0	7,012.6	32.0	24.6	-166.89	-299.8	97.7	1,430.7	1,379.5	51.19	27.952
7,300.0	7,107.5	7,124.9	7,108.6	32.5	25.0	-167.14	-299.8	97.7	1,458.2	1,406.3	51.91	28.094
7,400.0	7,203.5	7,220.9	7,204.6	33.0	25.3	-167.38	-299.8	97.7	1,485.7	1,433.1	52.63	28.232
7,500.0	7,299.4	7,316.8	7,300.5	33.6	25.6	-167.62	-299.8	97.7	1,513.3	1,459.9	53.35	28.367
7,600.0	7,395.4	7,412.8	7,396.5	34.1	26.0	-167.84	-299.8	97.7	1,540.8	1,486.8	54.07	28.498
7,700.0	7,491.3	7,508.7	7,492.4	34.6	26.3	-168.06	-299.8	97.7	1,568.4	1,513.6	54.79	28.625
7,800.0	7,587.3	7,604.7	7,588.4	35.2	26.6	-168.27	-299.8	97.7	1,596.1	1,540.5	55.51	28.750
7,900.0	7,683.2	7,700.6	7,684.3	35.7	27.0	-168.47	-299.8	97.7	1,623.7	1,567.4	56.24	28.871
8,000.0	7,779.2	7,796.6	7,780.3	36.2	27.3	-168.66	-299.8	97.7	1,651.3	1,594.4	56.96	28.989
8,100.0	7,875.1	7,892.5	7,876.2	36.8	27.6	-168.85	-299.8	97.7	1,679.0	1,621.3	57.69	29.105
8,200.0	7,971.1	7,988.5	7,972.2	37.3	28.0	-169.03	-299.8	97.7	1,706.7	1,648.3	58.41	29.217
8,300.0	8,067.0	8,084.4	8,068.1	37.9	28.3	-169.21	-299.8	97.7	1,734.4	1,675.2	59.14	29.327
8,400.0	8,163.0	8,180.4	8,164.1	38.4	28.6	-169.38	-299.8	97.7	1,762.1	1,702.2	59.87	29.434
8,500.0	8,258.9	8,276.4	8,260.0	38.9	29.0	-169.55	-299.8	97.7	1,789.8	1,729.2	60.59	29.538
8,600.0	8,354.9	8,372.3	8,356.0	39.5	29.3	-169.71	-299.8	97.7	1,817.5	1,756.2	61.32	29.640
8,700.0	8,451.4	8,468.8	8,452.5	40.0	29.6	-169.95	-299.8	97.7	1,843.4	1,781.4	62.05	29.711
8,800.0	8,548.7	8,566.1	8,549.8	40.5	30.0	-170.16	-299.8	97.7	1,866.0	1,803.2	62.77	29.728
8,900.0	8,646.8	8,664.2	8,647.9	40.9	30.3	-170.32	-299.8	97.7	1,885.2	1,821.7	63.49	29.695
9,000.0	8,745.5	8,762.9	8,746.6	41.3	30.7	-170.46	-299.8	97.7	1,901.1	1,836.9	64.20	29.611
9,100.0	8,844.7	8,862.1	8,845.8	41.7	31.0	-170.56	-299.8	97.7	1,913.5	1,848.6	64.91	29.480
9,200.0	8,944.2	8,961.7	8,945.3	42.1	31.4	-170.64	-299.8	97.7	1,922.5	1,856.9	65.61	29.304
9,300.0	9,044.1	9,061.5	9,045.2	42.4	31.7	-170.68	-299.8	97.7	1,928.1	1,861.8	66.30	29.083
9,400.0	9,144.0	9,161.5	9,145.1	42.7	32.1	-170.70	-299.8	97.7	1,930.2	1,863.2	66.98	28.820
9,500.0	9,244.0	9,261.5	9,245.1	42.9	32.4	89.66	-299.8	97.7	1,930.2	1,862.6	67.64	28.538
9,600.0	9,343.6	9,366.6	9,369.2	43.2	32.8	93.08	-286.4	96.9	1,930.1	1,861.7	68.41	28.212
9,700.0	9,439.3	9,512.8	9,486.5	43.4	33.2	92.83	-240.9	94.1	1,929.7	1,860.6	69.07	27.937
9,800.0	9,527.0	9,634.7	9,584.7	43.6	33.5	92.42	-169.4	89.7	1,929.1	1,859.5	69.60	27.716
9,900.0	9,602.9	9,751.3	9,658.8	43.8	33.7	91.90	-79.9	84.3	1,928.4	1,858.4	70.03	27.537
10,000.0	9,663.6	9,862.1	9,707.2	43.9	34.0	91.31	19.3	78.2	1,927.8	1,857.4	70.39	27.386
10,100.0	9,706.6	9,967.2	9,730.7	43.9	34.2	90.67	121.4	71.9	1,927.4	1,856.7	70.72	27.256
10,157.4	9,722.4	10,022.8	9,734.0	43.9	34.3	90.32	176.7	68.6	1,927.3	1,856.4	70.88	27.190

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 515H - OH - Plan 0.1												Offset Site Error: 0.0 usft		
Survey Program: 0-B001Mb_MWD+HRGM		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Offset Well Error: 0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,200.0	9,729.9	10,049.3	9,734.0	43.9	34.3	90.16	203.2	67.1	1,927.5	1,856.5	70.98	27.155		
10,300.0	9,734.0	10,100.0	9,734.0	44.0	34.4	89.97	253.8	64.9	1,929.3	1,858.0	71.22	27.089		
10,400.0	9,734.0	10,178.9	9,734.0	44.0	34.6	89.97	332.7	63.3	1,930.3	1,858.7	71.60	26.961		
10,405.2	9,734.0	10,178.9	9,734.0	44.0	34.6	89.97	332.7	63.3	1,930.3	1,858.6	71.60	26.957		
10,500.0	9,734.0	10,261.8	9,734.0	44.1	34.9	89.97	415.6	62.7	1,930.3	1,858.2	72.07	26.784		
10,600.0	9,734.0	10,361.8	9,734.0	44.2	35.2	89.97	515.6	62.1	1,930.3	1,857.6	72.71	26.550		
10,700.0	9,734.0	10,461.8	9,734.0	44.3	35.6	89.97	615.6	61.4	1,930.3	1,856.9	73.45	26.281		
10,800.0	9,734.0	10,561.8	9,734.0	44.5	36.1	89.97	715.6	60.8	1,930.4	1,856.1	74.30	25.980		
10,900.0	9,734.0	10,661.8	9,734.0	44.8	36.6	89.97	815.6	60.1	1,930.4	1,855.2	75.25	25.652		
11,000.0	9,734.0	10,761.8	9,734.0	45.1	37.1	89.97	915.6	59.4	1,930.4	1,854.1	76.31	25.299		
11,100.0	9,734.0	10,861.8	9,734.0	45.4	37.7	89.97	1,015.6	58.8	1,930.5	1,853.0	77.45	24.925		
11,200.0	9,734.0	10,961.8	9,734.0	45.8	38.4	89.97	1,115.6	58.1	1,930.5	1,851.8	78.68	24.535		
11,300.0	9,734.0	11,061.8	9,734.0	46.3	39.1	89.97	1,215.6	57.5	1,930.5	1,850.5	80.00	24.130		
11,400.0	9,734.0	11,161.8	9,734.0	46.8	39.8	89.97	1,315.6	56.8	1,930.6	1,849.2	81.41	23.715		
11,500.0	9,734.0	11,261.8	9,734.0	47.3	40.6	89.97	1,415.6	56.1	1,930.6	1,847.7	82.89	23.293		
11,600.0	9,734.0	11,361.8	9,734.0	47.9	41.4	89.97	1,515.6	55.5	1,930.6	1,846.2	84.44	22.865		
11,700.0	9,734.0	11,461.8	9,734.0	48.5	42.2	89.97	1,615.6	54.8	1,930.7	1,844.6	86.06	22.434		
11,800.0	9,734.0	11,561.8	9,734.0	49.2	43.1	89.97	1,715.6	54.2	1,930.7	1,843.0	87.75	22.003		
11,900.0	9,734.0	11,661.8	9,734.0	49.9	44.0	89.97	1,815.6	53.5	1,930.7	1,841.3	89.50	21.574		
12,000.0	9,734.0	11,761.8	9,734.0	50.7	44.9	89.97	1,915.6	52.8	1,930.8	1,839.5	91.30	21.147		
12,100.0	9,734.0	11,861.8	9,734.0	51.5	45.9	89.97	2,015.6	52.2	1,930.8	1,837.7	93.16	20.725		
12,200.0	9,734.0	11,961.8	9,734.0	52.3	46.9	89.97	2,115.6	51.5	1,930.9	1,835.8	95.08	20.308		
12,300.0	9,734.0	12,061.8	9,734.0	53.2	47.9	89.97	2,215.6	50.9	1,930.9	1,833.8	97.04	19.898		
12,400.0	9,734.0	12,161.8	9,734.0	54.0	48.9	89.97	2,315.6	50.2	1,930.9	1,831.9	99.05	19.495		
12,500.0	9,734.0	12,261.8	9,734.0	54.9	49.9	89.97	2,415.6	49.5	1,931.0	1,829.9	101.10	19.100		
12,600.0	9,734.0	12,361.8	9,734.0	55.9	51.0	89.97	2,515.6	48.9	1,931.0	1,827.8	103.19	18.713		
12,700.0	9,734.0	12,461.8	9,734.0	56.8	52.1	89.97	2,615.6	48.2	1,931.0	1,825.7	105.32	18.335		
12,800.0	9,734.0	12,561.8	9,734.0	57.8	53.2	89.97	2,715.6	47.6	1,931.1	1,823.6	107.49	17.966		
12,900.0	9,734.0	12,661.8	9,734.0	58.8	54.3	89.97	2,815.6	46.9	1,931.1	1,821.4	109.68	17.606		
13,000.0	9,734.0	12,761.8	9,734.0	59.9	55.5	89.97	2,915.6	46.3	1,931.1	1,819.2	111.91	17.255		
13,100.0	9,734.0	12,861.8	9,734.0	60.9	56.6	89.97	3,015.6	45.6	1,931.2	1,817.0	114.17	16.914		
13,200.0	9,734.0	12,961.8	9,734.0	62.0	57.8	89.97	3,115.6	44.9	1,931.2	1,814.7	116.46	16.582		
13,300.0	9,734.0	13,061.8	9,734.0	63.0	58.9	89.97	3,215.5	44.3	1,931.2	1,812.5	118.78	16.259		
13,400.0	9,734.0	13,161.8	9,734.0	64.1	60.1	89.97	3,315.5	43.6	1,931.3	1,810.1	121.12	15.945		
13,500.0	9,734.0	13,261.8	9,734.0	65.2	61.3	89.97	3,415.5	43.0	1,931.3	1,807.8	123.48	15.641		
13,600.0	9,734.0	13,361.8	9,734.0	66.3	62.5	89.97	3,515.5	42.3	1,931.3	1,805.5	125.87	15.344		
13,700.0	9,734.0	13,461.8	9,734.0	67.5	63.8	89.97	3,615.5	41.6	1,931.4	1,803.1	128.27	15.057		
13,800.0	9,734.0	13,561.8	9,734.0	68.6	65.0	89.97	3,715.5	41.0	1,931.4	1,800.7	130.70	14.778		
13,900.0	9,734.0	13,661.8	9,734.0	69.8	66.2	89.97	3,815.5	40.3	1,931.4	1,798.3	133.14	14.506		
14,000.0	9,734.0	13,761.8	9,734.0	70.9	67.5	89.97	3,915.5	39.7	1,931.5	1,795.9	135.61	14.243		
14,100.0	9,734.0	13,861.8	9,734.0	72.1	68.7	89.97	4,015.5	39.0	1,931.5	1,793.4	138.09	13.988		
14,200.0	9,734.0	13,961.8	9,734.0	73.3	70.0	89.97	4,115.5	38.3	1,931.5	1,791.0	140.58	13.740		
14,300.0	9,734.0	14,061.8	9,734.0	74.5	71.3	89.97	4,215.5	37.7	1,931.6	1,788.5	143.09	13.499		
14,400.0	9,734.0	14,161.8	9,734.0	75.7	72.5	89.97	4,315.5	37.0	1,931.6	1,786.0	145.61	13.265		
14,500.0	9,734.0	14,261.8	9,734.0	76.9	73.8	89.97	4,415.5	36.4	1,931.6	1,783.5	148.15	13.038		
14,600.0	9,734.0	14,361.8	9,734.0	78.1	75.1	89.97	4,515.5	35.7	1,931.7	1,781.0	150.70	12.818		
14,700.0	9,734.0	14,461.8	9,734.0	79.4	76.4	89.97	4,615.5	35.0	1,931.7	1,778.4	153.27	12.604		
14,800.0	9,734.0	14,561.8	9,734.0	80.6	77.7	89.97	4,715.5	34.4	1,931.7	1,775.9	155.84	12.396		
14,900.0	9,734.0	14,661.8	9,734.0	81.9	79.0	89.97	4,815.5	33.7	1,931.8	1,773.3	158.43	12.193		
15,000.0	9,734.0	14,761.8	9,734.0	83.1	80.3	89.97	4,915.5	33.1	1,931.8	1,770.8	161.02	11.997		
15,100.0	9,734.0	14,861.8	9,734.0	84.4	81.6	89.97	5,015.5	32.4	1,931.8	1,768.2	163.63	11.806		
15,200.0	9,734.0	14,961.8	9,734.0	85.6	82.9	89.97	5,115.5	31.7	1,931.9	1,765.6	166.25	11.621		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 515H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program: Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Offset Well Error: 0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
15,300.0	9,734.0	15,061.8	9,734.0	86.9	84.3	89.97	5,215.5	31.1	1,931.9	1,763.0	168.87	11.440		
15,400.0	9,734.0	15,161.8	9,734.0	88.2	85.6	89.97	5,315.5	30.4	1,931.9	1,760.4	171.50	11.265		
15,500.0	9,734.0	15,261.8	9,734.0	89.4	86.9	89.97	5,415.5	29.8	1,932.0	1,757.8	174.15	11.094		
15,600.0	9,734.0	15,361.8	9,734.0	90.7	88.3	89.97	5,515.5	29.1	1,932.0	1,755.2	176.80	10.928		
15,700.0	9,734.0	15,461.8	9,734.0	92.0	89.6	89.97	5,615.5	28.5	1,932.1	1,752.6	179.45	10.766		
15,800.0	9,734.0	15,561.8	9,734.0	93.3	90.9	89.97	5,715.5	27.8	1,932.1	1,750.0	182.12	10.609		
15,900.0	9,734.0	15,661.8	9,734.0	94.6	92.3	89.97	5,815.5	27.1	1,932.1	1,747.3	184.79	10.456		
16,000.0	9,734.0	15,761.8	9,734.0	95.9	93.6	89.97	5,915.5	26.5	1,932.2	1,744.7	187.47	10.307		
16,100.0	9,734.0	15,861.8	9,734.0	97.2	95.0	89.97	6,015.5	25.8	1,932.2	1,742.0	190.15	10.161		
16,200.0	9,734.0	15,961.8	9,734.0	98.5	96.3	89.97	6,115.5	25.2	1,932.2	1,739.4	192.84	10.020		
16,300.0	9,734.0	16,061.8	9,734.0	99.9	97.7	89.97	6,215.5	24.5	1,932.3	1,736.7	195.54	9.882		
16,400.0	9,734.0	16,161.8	9,734.0	101.2	99.0	89.97	6,315.5	23.8	1,932.3	1,734.0	198.24	9.747		
16,500.0	9,734.0	16,261.8	9,734.0	102.5	100.4	89.97	6,415.5	23.2	1,932.3	1,731.4	200.95	9.616		
16,600.0	9,734.0	16,361.8	9,734.0	103.8	101.8	89.97	6,515.5	22.5	1,932.4	1,728.7	203.66	9.488		
16,700.0	9,734.0	16,461.8	9,734.0	105.1	103.1	89.97	6,615.5	21.9	1,932.4	1,726.0	206.38	9.363		
16,800.0	9,734.0	16,561.8	9,734.0	106.5	104.5	89.97	6,715.5	21.2	1,932.4	1,723.3	209.10	9.242		
16,900.0	9,734.0	16,661.8	9,734.0	107.8	105.9	89.97	6,815.5	20.5	1,932.5	1,720.6	211.83	9.123		
17,000.0	9,734.0	16,761.8	9,734.0	109.1	107.2	89.97	6,915.5	19.9	1,932.5	1,717.9	214.56	9.007		
17,100.0	9,734.0	16,861.8	9,734.0	110.5	108.6	89.97	7,015.5	19.2	1,932.5	1,715.2	217.29	8.894		
17,200.0	9,734.0	16,961.8	9,734.0	111.8	110.0	89.97	7,115.5	18.6	1,932.6	1,712.5	220.03	8.783		
17,300.0	9,734.0	17,061.8	9,734.0	113.2	111.4	89.97	7,215.5	17.9	1,932.6	1,709.8	222.78	8.675		
17,400.0	9,734.0	17,161.8	9,734.0	114.5	112.7	89.97	7,315.5	17.2	1,932.6	1,707.1	225.52	8.570		
17,500.0	9,734.0	17,261.8	9,734.0	115.9	114.1	89.97	7,415.5	16.6	1,932.7	1,704.4	228.28	8.466		
17,600.0	9,734.0	17,361.8	9,734.0	117.2	115.5	89.97	7,515.5	15.9	1,932.7	1,701.7	231.03	8.366		
17,700.0	9,734.0	17,461.8	9,734.0	118.6	116.9	89.97	7,615.5	15.3	1,932.7	1,698.9	233.79	8.267		
17,800.0	9,734.0	17,561.8	9,734.0	119.9	118.3	89.97	7,715.5	14.6	1,932.8	1,696.2	236.55	8.171		
17,900.0	9,734.0	17,661.8	9,734.0	121.3	119.7	89.97	7,815.4	13.9	1,932.8	1,693.5	239.31	8.076		
18,000.0	9,734.0	17,761.8	9,734.0	122.7	121.0	89.97	7,915.4	13.3	1,932.8	1,690.8	242.08	7.984		
18,100.0	9,734.0	17,861.8	9,734.0	124.0	122.4	89.97	8,015.4	12.6	1,932.9	1,688.0	244.85	7.894		
18,200.0	9,734.0	17,961.8	9,734.0	125.4	123.8	89.97	8,115.4	12.0	1,932.9	1,685.3	247.62	7.806		
18,300.0	9,734.0	18,061.8	9,734.0	126.8	125.2	89.97	8,215.4	11.3	1,932.9	1,682.5	250.40	7.719		
18,400.0	9,734.0	18,161.8	9,734.0	128.1	126.6	89.97	8,315.4	10.6	1,933.0	1,679.8	253.18	7.635		
18,500.0	9,734.0	18,261.8	9,734.0	129.5	128.0	89.97	8,415.4	10.0	1,933.0	1,677.0	255.96	7.552		
18,600.0	9,734.0	18,361.8	9,734.0	130.9	129.4	89.97	8,515.4	9.3	1,933.0	1,674.3	258.74	7.471		
18,700.0	9,734.0	18,461.8	9,734.0	132.2	130.8	89.97	8,615.4	8.7	1,933.1	1,671.5	261.53	7.391		
18,800.0	9,734.0	18,561.8	9,734.0	133.6	132.2	89.97	8,715.4	8.0	1,933.1	1,668.8	264.32	7.314		
18,900.0	9,734.0	18,661.8	9,734.0	135.0	133.6	89.97	8,815.4	7.4	1,933.1	1,666.0	267.11	7.237		
19,000.0	9,734.0	18,761.8	9,734.0	136.4	135.0	89.97	8,915.4	6.7	1,933.2	1,663.3	269.90	7.163		
19,100.0	9,734.0	18,861.8	9,734.0	137.7	136.4	89.97	9,015.4	6.0	1,933.2	1,660.5	272.69	7.089		
19,200.0	9,734.0	18,961.8	9,734.0	139.1	137.8	89.97	9,115.4	5.4	1,933.2	1,657.8	275.49	7.017		
19,300.0	9,734.0	19,061.8	9,734.0	140.5	139.2	89.97	9,215.4	4.7	1,933.3	1,655.0	278.29	6.947		
19,400.0	9,734.0	19,161.8	9,734.0	141.9	140.6	89.97	9,315.4	4.1	1,933.3	1,652.2	281.09	6.878		
19,500.0	9,734.0	19,261.8	9,734.0	143.3	142.0	89.97	9,415.4	3.4	1,933.4	1,649.5	283.89	6.810		
19,600.0	9,734.0	19,361.8	9,734.0	144.7	143.4	89.97	9,515.4	2.7	1,933.4	1,646.7	286.70	6.744		
19,700.0	9,734.0	19,461.8	9,734.0	146.1	144.8	89.97	9,615.4	2.1	1,933.4	1,643.9	289.51	6.678		
19,800.0	9,734.0	19,561.8	9,734.0	147.4	146.2	89.97	9,715.4	1.4	1,933.5	1,641.1	292.31	6.614		
19,900.0	9,734.0	19,661.8	9,734.0	148.8	147.6	89.97	9,815.4	0.8	1,933.5	1,638.4	295.12	6.551		
20,000.0	9,734.0	19,761.8	9,734.0	150.2	149.1	89.97	9,915.4	0.1	1,933.5	1,635.6	297.93	6.490		
20,100.0	9,734.0	19,861.8	9,734.0	151.6	150.5	89.97	10,015.4	-0.6	1,933.6	1,632.8	300.75	6.429		
20,200.0	9,734.0	19,961.8	9,734.0	152.9	151.7	89.97	10,115.4	-1.2	1,933.6	1,630.4	303.21	6.377		
20,207.7	9,734.0	19,969.5	9,734.0	153.0	151.8	89.97	10,123.1	-1.3	1,933.6	1,630.2	303.39	6.373		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 516H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	1.2	1.2	0.0	0.0	89.89	0.1	80.0	80.0				
100.0	100.0	101.2	101.2	0.1	0.1	89.89	0.1	80.0	80.0	79.7	0.27	298.717	
200.0	200.0	201.2	201.2	0.5	0.5	89.89	0.1	80.0	80.0	79.0	0.98	81.231	
300.0	300.0	301.2	301.2	0.8	0.9	89.89	0.1	80.0	80.0	78.3	1.70	47.007	
400.0	400.0	401.2	401.2	1.2	1.2	89.89	0.1	80.0	80.0	77.6	2.42	33.073	
500.0	500.0	501.2	501.2	1.6	1.6	89.89	0.1	80.0	80.0	76.9	3.14	25.511	
600.0	600.0	601.2	601.2	1.9	1.9	89.89	0.1	80.0	80.0	76.1	3.85	20.763	
700.0	700.0	701.2	701.2	2.3	2.3	89.89	0.1	80.0	80.0	75.4	4.57	17.505	
800.0	800.0	801.2	801.2	2.6	2.6	89.89	0.1	80.0	80.0	74.7	5.29	15.131	
900.0	900.0	901.2	901.2	3.0	3.0	89.89	0.1	80.0	80.0	74.0	6.00	13.324	
1,000.0	1,000.0	1,001.2	1,001.2	3.4	3.4	89.89	0.1	80.0	80.0	73.3	6.72	11.903	
1,100.0	1,100.0	1,101.2	1,101.2	3.7	3.7	89.89	0.1	80.0	80.0	72.6	7.44	10.755	
1,200.0	1,200.0	1,201.2	1,201.2	4.1	4.1	89.89	0.1	80.0	80.0	71.8	8.15	9.810	
1,300.0	1,300.0	1,301.2	1,301.2	4.4	4.4	89.89	0.1	80.0	80.0	71.1	8.87	9.017	
1,400.0	1,400.0	1,401.2	1,401.2	4.8	4.8	89.89	0.1	80.0	80.0	70.4	9.59	8.343	
1,500.0	1,500.0	1,501.2	1,501.2	5.2	5.2	89.89	0.1	80.0	80.0	69.7	10.30	7.762	
1,600.0	1,600.0	1,601.2	1,601.2	5.5	5.5	89.89	0.1	80.0	80.0	69.0	11.02	7.257	
1,700.0	1,700.0	1,701.2	1,701.2	5.9	5.9	89.89	0.1	80.0	80.0	68.3	11.74	6.814	
1,800.0	1,800.0	1,801.2	1,801.2	6.2	6.2	89.89	0.1	80.0	80.0	67.5	12.46	6.422	
1,900.0	1,900.0	1,901.2	1,901.2	6.6	6.6	89.89	0.1	80.0	80.0	66.8	13.17	6.072	
1,916.3	1,916.3	1,917.5	1,917.5	6.6	6.6	89.89	0.1	80.0	80.0	66.7	13.29	6.019 CC	
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	89.89	0.1	80.0	80.0	66.1	13.88	5.762 ES	
2,100.0	2,100.0	2,098.5	2,098.5	7.3	7.3	-170.29	-0.4	81.6	83.4	68.8	14.57	5.722 SF	
2,200.0	2,199.8	2,195.1	2,195.0	7.6	7.6	-169.85	-1.9	86.3	93.4	78.2	15.21	6.138	
2,300.0	2,299.5	2,290.5	2,290.0	8.0	7.9	-169.28	-4.4	94.0	110.0	94.2	15.84	6.943	
2,400.0	2,398.7	2,384.0	2,382.8	8.3	8.3	-168.71	-7.8	104.4	133.1	116.6	16.45	8.088	
2,500.0	2,497.5	2,478.4	2,476.3	8.7	8.6	-168.25	-11.9	117.2	161.8	144.7	17.09	9.465	
2,600.0	2,595.6	2,573.1	2,570.0	9.0	8.9	-168.09	-16.1	130.2	193.9	176.1	17.75	10.922	
2,700.0	2,693.1	2,666.6	2,662.6	9.4	9.3	-168.10	-20.3	143.0	229.2	210.8	18.41	12.451	
2,800.0	2,789.6	2,758.9	2,753.9	9.8	9.6	-168.22	-24.4	155.7	267.7	248.6	19.06	14.043	
2,900.0	2,885.6	2,850.3	2,844.3	10.2	9.9	-168.50	-28.4	168.2	308.3	288.6	19.71	15.638	
3,000.0	2,981.6	2,941.7	2,934.7	10.6	10.3	-168.74	-32.5	180.7	348.9	328.6	20.37	17.133	
3,100.0	3,077.5	3,033.0	3,025.1	11.1	10.6	-168.93	-36.5	193.2	389.6	368.6	21.02	18.531	
3,200.0	3,173.5	3,124.4	3,115.5	11.5	11.0	-169.08	-40.6	205.7	430.2	408.6	21.69	19.839	
3,300.0	3,269.4	3,215.7	3,205.9	12.0	11.3	-169.21	-44.6	218.2	470.9	448.5	22.35	21.067	
3,400.0	3,365.4	3,307.1	3,296.3	12.4	11.7	-169.32	-48.7	230.7	511.6	488.5	23.02	22.219	
3,500.0	3,461.3	3,398.4	3,386.7	12.9	12.0	-169.41	-52.7	243.3	552.2	528.5	23.70	23.303	
3,600.0	3,557.3	3,489.8	3,477.1	13.4	12.4	-169.49	-56.8	255.8	592.9	568.5	24.38	24.323	
3,700.0	3,653.2	3,581.2	3,567.6	13.8	12.7	-169.56	-60.8	268.3	633.5	608.5	25.06	25.285	
3,800.0	3,749.2	3,672.5	3,658.0	14.3	13.1	-169.62	-64.9	280.8	674.2	648.5	25.74	26.193	
3,900.0	3,845.1	3,763.9	3,748.4	14.8	13.4	-169.67	-68.9	293.3	714.9	688.4	26.43	27.052	
4,000.0	3,941.1	3,855.2	3,838.8	15.3	13.8	-169.72	-73.0	305.8	755.5	728.4	27.11	27.865	
4,100.0	4,037.0	3,946.6	3,929.2	15.8	14.1	-169.76	-77.1	318.4	796.2	768.4	27.81	28.635	
4,200.0	4,133.0	4,037.9	4,019.6	16.3	14.5	-169.80	-81.1	330.9	836.9	808.4	28.50	29.365	
4,300.0	4,228.9	4,129.3	4,110.0	16.8	14.8	-169.84	-85.2	343.4	877.5	848.3	29.19	30.059	
4,400.0	4,324.9	4,220.7	4,200.4	17.3	15.2	-169.87	-89.2	355.9	918.2	888.3	29.89	30.719	
4,500.0	4,420.8	4,312.0	4,290.8	17.8	15.6	-169.90	-93.3	368.4	958.9	928.3	30.59	31.347	
4,600.0	4,516.8	4,403.4	4,381.2	18.3	15.9	-169.93	-97.3	380.9	999.5	968.2	31.29	31.945	
4,700.0	4,612.7	4,494.7	4,471.6	18.8	16.3	-169.95	-101.4	393.5	1,040.2	1,008.2	31.99	32.515	
4,800.0	4,708.7	4,586.1	4,562.0	19.3	16.6	-169.97	-105.4	406.0	1,080.9	1,048.2	32.69	33.060	
4,900.0	4,804.7	4,677.4	4,652.4	19.9	17.0	-170.00	-109.5	418.5	1,121.5	1,088.1	33.40	33.580	
5,000.0	4,900.6	4,768.8	4,742.8	20.4	17.4	-170.02	-113.5	431.0	1,162.2	1,128.1	34.10	34.077	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 516H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	4,996.6	4,860.2	4,833.2	20.9	17.7	-170.03	-117.6	443.5	1,202.9	1,168.0	34.81	34.553	
5,200.0	5,092.5	4,951.5	4,923.6	21.4	18.1	-170.05	-121.6	456.0	1,243.5	1,208.0	35.52	35.009	
5,300.0	5,188.5	5,042.9	5,014.0	21.9	18.5	-170.07	-125.7	468.5	1,284.2	1,248.0	36.23	35.446	
5,400.0	5,284.4	5,134.2	5,104.4	22.4	18.8	-170.08	-129.7	481.1	1,324.8	1,287.9	36.94	35.865	
5,500.0	5,380.4	5,225.6	5,194.8	23.0	19.2	-170.10	-133.8	493.6	1,365.5	1,327.9	37.65	36.268	
5,600.0	5,476.3	5,316.9	5,285.2	23.5	19.6	-170.11	-137.9	506.1	1,406.2	1,367.8	38.36	36.654	
5,700.0	5,572.3	5,408.3	5,375.7	24.0	19.9	-170.12	-141.9	518.6	1,446.9	1,407.8	39.08	37.026	
5,800.0	5,668.2	5,499.7	5,466.1	24.5	20.3	-170.14	-146.0	531.1	1,487.5	1,447.7	39.79	37.383	
5,900.0	5,764.2	5,591.0	5,556.5	25.1	20.7	-170.15	-150.0	543.6	1,528.2	1,487.7	40.51	37.727	
6,000.0	5,860.1	5,682.4	5,646.9	25.6	21.0	-170.16	-154.1	556.2	1,568.9	1,527.6	41.22	38.059	
6,100.0	5,956.1	5,773.7	5,737.3	26.1	21.4	-170.17	-158.1	568.7	1,609.5	1,567.6	41.94	38.378	
6,200.0	6,052.0	5,865.1	5,827.7	26.6	21.8	-170.18	-162.2	581.2	1,650.2	1,607.5	42.66	38.686	
6,300.0	6,148.0	5,956.4	5,918.1	27.2	22.1	-170.19	-166.2	593.7	1,690.9	1,647.5	43.37	38.983	
6,400.0	6,243.9	6,047.8	6,008.5	27.7	22.5	-170.20	-170.3	606.2	1,731.5	1,687.4	44.09	39.270	
6,500.0	6,339.9	6,139.2	6,098.9	28.2	22.9	-170.20	-174.3	618.7	1,772.2	1,727.4	44.81	39.547	
6,600.0	6,435.8	6,230.5	6,189.3	28.8	23.2	-170.21	-178.4	631.3	1,812.9	1,767.3	45.53	39.815	
6,700.0	6,531.8	6,321.9	6,279.7	29.3	23.6	-170.22	-182.4	643.8	1,853.5	1,807.3	46.25	40.073	
6,800.0	6,627.7	6,413.2	6,370.1	29.8	24.0	-170.23	-186.5	656.3	1,894.2	1,847.2	46.97	40.324	
6,900.0	6,723.7	6,504.6	6,460.5	30.4	24.3	-170.23	-190.6	668.8	1,934.9	1,887.2	47.70	40.566	
7,000.0	6,819.6	6,595.9	6,550.9	30.9	24.7	-170.24	-194.6	681.3	1,975.5	1,927.1	48.42	40.800	
7,100.0	6,915.6	6,687.3	6,641.3	31.4	25.1	-170.25	-198.7	693.8	2,016.2	1,967.0	49.14	41.027	
7,200.0	7,011.5	6,778.7	6,731.7	32.0	25.5	-170.25	-202.7	706.3	2,056.9	2,007.0	49.87	41.247	
7,300.0	7,107.5	6,870.0	6,822.1	32.5	25.8	-170.26	-206.8	718.9	2,097.5	2,046.9	50.59	41.461	
7,400.0	7,203.5	6,961.4	6,912.5	33.0	26.2	-170.27	-210.8	731.4	2,138.2	2,086.9	51.32	41.667	
7,500.0	7,299.4	7,052.7	7,002.9	33.6	26.6	-170.27	-214.9	743.9	2,178.9	2,126.8	52.04	41.868	
7,600.0	7,395.4	7,144.1	7,093.3	34.1	26.9	-170.28	-218.9	756.4	2,219.5	2,166.8	52.77	42.063	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 604H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	165.64	-160.0	41.0	165.2				
100.0	100.0	100.0	100.0	0.1	0.1	165.64	-160.0	41.0	165.2	164.9	0.26	626.976	
200.0	200.0	200.0	200.0	0.5	0.5	165.64	-160.0	41.0	165.2	164.2	0.98	168.493	
300.0	300.0	300.0	300.0	0.8	0.8	165.64	-160.0	41.0	165.2	163.5	1.70	97.324	
400.0	400.0	400.0	400.0	1.2	1.2	165.64	-160.0	41.0	165.2	162.8	2.41	68.423	
500.0	500.0	500.0	500.0	1.6	1.6	165.64	-160.0	41.0	165.2	162.1	3.13	52.756	
600.0	600.0	600.0	600.0	1.9	1.9	165.64	-160.0	41.0	165.2	161.3	3.85	42.928	
700.0	700.0	700.0	700.0	2.3	2.3	165.64	-160.0	41.0	165.2	160.6	4.57	36.186	
800.0	800.0	800.0	800.0	2.6	2.6	165.64	-160.0	41.0	165.2	159.9	5.28	31.274	
900.0	900.0	900.0	900.0	3.0	3.0	165.64	-160.0	41.0	165.2	159.2	6.00	27.537	
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	165.64	-160.0	41.0	165.2	158.5	6.72	24.597	
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	165.64	-160.0	41.0	165.2	157.8	7.43	22.225	
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	165.64	-160.0	41.0	165.2	157.0	8.15	20.270	
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	165.64	-160.0	41.0	165.2	156.3	8.87	18.631	
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	165.64	-160.0	41.0	165.2	155.6	9.58	17.237	
1,500.0	1,500.0	1,500.0	1,500.0	5.2	5.2	165.64	-160.0	41.0	165.2	154.9	10.30	16.037	
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	165.64	-160.0	41.0	165.2	154.2	11.02	14.994	
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	165.64	-160.0	41.0	165.2	153.5	11.73	14.078	
1,800.0	1,800.0	1,800.0	1,800.0	6.2	6.2	165.64	-160.0	41.0	165.2	152.7	12.45	13.267	
1,900.0	1,900.0	1,900.0	1,900.0	6.6	6.6	165.64	-160.0	41.0	165.2	152.0	13.17	12.545	
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	165.64	-160.0	41.0	165.2	151.3	13.89	11.897	
2,100.0	2,100.0	2,100.5	2,100.5	7.3	7.3	-94.73	-160.3	39.2	165.2	150.6	14.58	11.326	
2,200.0	2,199.8	2,201.1	2,200.9	7.6	7.6	-94.72	-161.2	34.0	165.1	149.9	15.27	10.817	
2,300.0	2,299.5	2,301.6	2,301.0	8.0	8.0	-94.71	-162.6	25.3	165.1	149.1	15.96	10.344	
2,388.3	2,387.1	2,390.1	2,389.0	8.3	8.3	-94.78	-164.2	15.0	165.0	148.4	16.57	9.955 CC	
2,400.0	2,398.7	2,401.8	2,400.6	8.3	8.3	-94.83	-164.4	13.6	165.0	148.3	16.65	9.906	
2,500.0	2,497.5	2,501.8	2,499.8	8.7	8.7	-96.01	-166.4	1.5	165.2	147.8	17.36	9.515 ES	
2,600.0	2,595.6	2,601.5	2,598.8	9.0	9.0	-98.36	-168.3	-10.6	166.0	147.9	18.08	9.179	
2,700.0	2,693.1	2,701.0	2,697.5	9.4	9.4	-101.81	-170.3	-22.6	167.7	148.9	18.81	8.914	
2,800.0	2,789.6	2,800.0	2,795.8	9.8	9.8	-106.26	-172.2	-34.6	171.0	151.4	19.55	8.745	
2,900.0	2,885.6	2,898.7	2,893.7	10.2	10.1	-111.23	-174.1	-46.6	176.1	155.8	20.30	8.677	
3,000.0	2,981.6	2,997.4	2,991.6	10.6	10.5	-115.93	-176.1	-58.6	182.6	161.5	21.05	8.675	
3,100.0	3,077.5	3,096.1	3,089.6	11.1	10.8	-120.29	-178.0	-70.5	190.2	168.4	21.79	8.726	
3,200.0	3,173.5	3,194.8	3,187.5	11.5	11.2	-124.29	-179.9	-82.5	198.8	176.3	22.54	8.821	
3,300.0	3,269.4	3,293.5	3,285.4	12.0	11.6	-127.96	-181.8	-94.5	208.3	185.1	23.28	8.949	
3,400.0	3,365.4	3,392.1	3,383.4	12.4	12.0	-131.29	-183.8	-106.4	218.7	194.6	24.02	9.102	
3,500.0	3,461.3	3,490.8	3,481.3	12.9	12.3	-134.32	-185.7	-118.4	229.7	204.9	24.76	9.275	
3,600.0	3,557.3	3,589.5	3,579.3	13.4	12.7	-137.07	-187.6	-130.3	241.2	215.7	25.50	9.461	
3,700.0	3,653.2	3,688.2	3,677.2	13.8	13.1	-139.56	-189.5	-142.3	253.3	227.1	26.23	9.657	
3,800.0	3,749.2	3,786.9	3,775.1	14.3	13.4	-141.83	-191.5	-154.3	265.8	238.9	26.97	9.858	
3,900.0	3,845.1	3,885.6	3,873.1	14.8	13.8	-143.89	-193.4	-166.2	278.7	251.0	27.70	10.062	
4,000.0	3,941.1	3,984.2	3,971.0	15.3	14.2	-145.77	-195.3	-178.2	291.9	263.5	28.43	10.268	
4,100.0	4,037.0	4,082.9	4,068.9	15.8	14.6	-147.49	-197.3	-190.1	305.5	276.3	29.17	10.473	
4,200.0	4,133.0	4,181.6	4,166.9	16.3	15.0	-149.06	-199.2	-202.1	319.2	289.3	29.90	10.675	
4,300.0	4,228.9	4,280.3	4,264.8	16.8	15.3	-150.50	-201.1	-214.1	333.2	302.5	30.64	10.875	
4,400.0	4,324.9	4,379.0	4,362.8	17.3	15.7	-151.82	-203.0	-226.0	347.3	316.0	31.37	11.072	
4,500.0	4,420.8	4,477.7	4,460.7	17.8	16.1	-153.04	-205.0	-238.0	361.7	329.6	32.11	11.264	
4,600.0	4,516.8	4,576.3	4,558.6	18.3	16.5	-154.17	-206.9	-250.0	376.1	343.3	32.84	11.452	
4,700.0	4,612.7	4,675.0	4,656.6	18.8	16.9	-155.22	-208.8	-261.9	390.8	357.2	33.58	11.636	
4,800.0	4,708.7	4,773.7	4,754.5	19.3	17.2	-156.19	-210.7	-273.9	405.5	371.2	34.32	11.814	
4,900.0	4,804.7	4,872.4	4,852.4	19.9	17.6	-157.09	-212.7	-285.8	420.3	385.3	35.06	11.988	
5,000.0	4,900.6	4,971.1	4,950.4	20.4	18.0	-157.93	-214.6	-297.8	435.3	399.4	35.80	12.157	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 604H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	4,996.6	5,069.8	5,048.3	20.9	18.4	-158.71	-216.5	-309.8	450.3	413.7	36.54	12.321	
5,200.0	5,092.5	5,168.4	5,146.3	21.4	18.8	-159.45	-218.4	-321.7	465.4	428.1	37.29	12.480	
5,300.0	5,188.5	5,267.1	5,244.2	21.9	19.2	-160.13	-220.4	-333.7	480.5	442.5	38.03	12.635	
5,400.0	5,284.4	5,365.8	5,342.1	22.4	19.5	-160.78	-222.3	-345.6	495.8	457.0	38.78	12.785	
5,500.0	5,380.4	5,464.5	5,440.1	23.0	19.9	-161.39	-224.2	-357.6	511.0	471.5	39.52	12.931	
5,600.0	5,476.3	5,563.2	5,538.0	23.5	20.3	-161.96	-226.1	-369.6	526.4	486.1	40.27	13.072	
5,700.0	5,572.3	5,661.9	5,635.9	24.0	20.7	-162.50	-228.1	-381.5	541.8	500.8	41.01	13.209	
5,800.0	5,668.2	5,760.5	5,733.9	24.5	21.1	-163.01	-230.0	-393.5	557.2	515.4	41.76	13.342	
5,900.0	5,764.2	5,859.2	5,831.8	25.1	21.5	-163.49	-231.9	-405.4	572.7	530.2	42.51	13.471	
6,000.0	5,860.1	5,957.9	5,929.8	25.6	21.8	-163.95	-233.9	-417.4	588.2	544.9	43.26	13.596	
6,100.0	5,956.1	6,056.6	6,027.7	26.1	22.2	-164.38	-235.8	-429.4	603.7	559.7	44.01	13.718	
6,200.0	6,052.0	6,155.3	6,125.6	26.6	22.6	-164.79	-237.7	-441.3	619.3	574.5	44.76	13.836	
6,300.0	6,148.0	6,254.0	6,223.6	27.2	23.0	-165.18	-239.6	-453.3	634.9	589.4	45.51	13.950	
6,400.0	6,243.9	6,352.6	6,321.5	27.7	23.4	-165.56	-241.6	-465.3	650.5	604.3	46.27	14.061	
6,500.0	6,339.9	6,451.3	6,419.4	28.2	23.8	-165.91	-243.5	-477.2	666.2	619.2	47.02	14.169	
6,600.0	6,435.8	6,550.0	6,517.4	28.8	24.2	-166.25	-245.4	-489.2	681.9	634.1	47.77	14.274	
6,700.0	6,531.8	6,648.7	6,615.3	29.3	24.5	-166.57	-247.3	-501.1	697.6	649.1	48.52	14.376	
6,800.0	6,627.7	6,747.4	6,713.2	29.8	24.9	-166.88	-249.3	-513.1	713.3	664.0	49.28	14.475	
6,900.0	6,723.7	6,846.1	6,811.2	30.4	25.3	-167.18	-251.2	-525.1	729.1	679.0	50.03	14.572	
7,000.0	6,819.6	6,944.8	6,909.1	30.9	25.7	-167.46	-253.1	-537.0	744.8	694.0	50.79	14.665	
7,100.0	6,915.6	7,043.4	7,007.1	31.4	26.1	-167.74	-255.0	-549.0	760.6	709.1	51.54	14.757	
7,200.0	7,011.5	7,142.1	7,105.0	32.0	26.5	-168.00	-257.0	-560.9	776.4	724.1	52.30	14.845	
7,300.0	7,107.5	7,240.8	7,202.9	32.5	26.9	-168.25	-258.9	-572.9	792.2	739.2	53.06	14.932	
7,400.0	7,203.5	7,339.5	7,300.9	33.0	27.3	-168.49	-260.8	-584.9	808.1	754.2	53.81	15.016	
7,500.0	7,299.4	7,438.2	7,398.8	33.6	27.7	-168.72	-262.7	-596.8	823.9	769.3	54.57	15.098	
7,600.0	7,395.4	7,536.9	7,496.7	34.1	28.0	-168.94	-264.7	-608.8	839.7	784.4	55.33	15.177	
7,700.0	7,491.3	7,635.5	7,594.7	34.6	28.4	-169.16	-266.6	-620.8	855.6	799.5	56.09	15.255	
7,800.0	7,587.3	7,734.2	7,692.6	35.2	28.8	-169.36	-268.5	-632.7	871.5	814.6	56.85	15.331	
7,900.0	7,683.2	7,832.9	7,790.6	35.7	29.2	-169.56	-270.5	-644.7	887.4	829.8	57.60	15.405	
8,000.0	7,779.2	7,931.6	7,888.5	36.2	29.6	-169.75	-272.4	-656.6	903.3	844.9	58.36	15.477	
8,100.0	7,875.1	8,030.3	7,986.4	36.8	30.0	-169.94	-274.3	-668.6	919.2	860.1	59.12	15.547	
8,200.0	7,971.1	8,129.0	8,084.4	37.3	30.4	-170.12	-276.2	-680.6	935.1	875.2	59.88	15.615	
8,300.0	8,067.0	8,227.6	8,182.3	37.9	30.8	-170.29	-278.2	-692.5	951.0	890.4	60.64	15.682	
8,400.0	8,163.0	8,326.3	8,280.2	38.4	31.1	-170.46	-280.1	-704.5	967.0	905.5	61.40	15.747	
8,500.0	8,258.9	8,425.0	8,378.2	38.9	31.5	-170.62	-282.0	-716.4	982.9	920.7	62.16	15.811	
8,600.0	8,354.9	8,523.7	8,476.1	39.5	31.9	-170.78	-283.9	-728.4	998.8	935.9	62.93	15.873	
8,700.0	8,451.4	8,622.7	8,574.3	40.0	32.3	-170.96	-285.9	-740.4	1,012.9	949.2	63.68	15.905	
8,800.0	8,548.7	8,722.1	8,673.0	40.5	32.7	-171.10	-287.8	-752.5	1,023.5	959.1	64.44	15.884	
8,900.0	8,646.8	8,821.8	8,772.0	40.9	33.1	-171.19	-289.8	-764.5	1,030.7	965.5	65.19	15.812	
9,000.0	8,745.5	8,921.7	8,871.1	41.3	33.5	-171.24	-291.7	-776.6	1,034.5	968.5	65.93	15.691	
9,100.0	8,844.7	9,021.7	8,970.4	41.7	33.9	-171.25	-293.7	-788.8	1,034.8	968.1	66.66	15.524	
9,200.0	8,944.2	9,121.7	9,069.6	42.1	34.3	-171.21	-295.6	-800.9	1,031.6	964.2	67.38	15.311	
9,300.0	9,044.1	9,221.4	9,168.6	42.4	34.7	-171.14	-297.6	-813.0	1,025.0	957.0	68.09	15.054	
9,400.0	9,144.0	9,320.9	9,267.3	42.7	35.1	-171.03	-299.5	-825.0	1,015.0	946.2	68.79	14.755	
9,500.0	9,244.0	9,415.6	9,361.3	42.9	35.4	-89.44	-301.3	-836.5	1,002.9	933.5	69.45	14.442	
9,600.0	9,343.6	9,500.0	9,445.2	43.2	35.8	94.49	-302.7	-845.1	993.1	923.0	70.06	14.175	
9,700.0	9,439.3	9,560.2	9,505.2	43.4	36.0	96.24	-303.5	-849.8	987.6	917.0	70.54	14.000	
9,736.7	9,472.6	9,585.0	9,530.0	43.5	36.1	96.92	-303.7	-851.3	987.0	916.2	70.74	13.952	
9,800.0	9,527.0	9,625.5	9,570.4	43.6	36.2	97.99	-304.1	-853.4	988.1	917.0	71.11	13.896	
9,900.0	9,602.9	9,682.2	9,627.1	43.8	36.4	99.11	-304.4	-855.4	996.6	924.9	71.70	13.900	
10,000.0	9,663.6	9,727.7	9,672.6	43.9	36.6	99.00	-304.5	-856.2	1,014.6	942.3	72.30	14.033	
10,100.0	9,706.6	9,761.7	9,706.6	43.9	36.7	97.24	-304.5	-856.3	1,043.0	970.1	72.90	14.307	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 604H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,200.0	9,729.9	9,785.0	9,729.9	43.9	36.8	93.58	-304.5	-856.3	1,081.4	1,007.9	73.49	14.714	
10,300.0	9,734.0	9,789.1	9,734.0	44.0	36.8	90.00	-304.5	-856.3	1,128.0	1,054.0	73.94	15.256	
10,400.0	9,734.0	9,789.1	9,734.0	44.0	36.8	90.00	-304.5	-856.3	1,179.0	1,104.6	74.33	15.861	
10,500.0	9,734.0	9,789.1	9,734.0	44.1	36.8	90.00	-304.5	-856.3	1,234.1	1,159.4	74.69	16.522	
10,600.0	9,734.0	11,193.3	10,529.0	44.2	39.8	128.31	509.5	-861.7	1,282.6	1,211.2	71.44	17.955	
10,700.0	9,734.0	11,293.3	10,529.0	44.3	40.2	128.30	609.5	-862.4	1,282.7	1,210.4	72.29	17.743	
10,800.0	9,734.0	11,393.3	10,529.0	44.5	40.6	128.30	709.5	-863.0	1,282.7	1,209.5	73.21	17.519	
10,900.0	9,734.0	11,493.3	10,529.0	44.8	41.1	128.30	809.5	-863.7	1,282.7	1,208.5	74.21	17.285	
11,000.0	9,734.0	11,593.3	10,529.0	45.1	41.6	128.30	909.5	-864.3	1,282.7	1,207.5	75.28	17.040	
11,100.0	9,734.0	11,693.3	10,529.0	45.4	42.2	128.30	1,009.5	-865.0	1,282.8	1,206.3	76.40	16.789	
11,200.0	9,734.0	11,793.3	10,529.0	45.8	42.8	128.30	1,109.5	-865.7	1,282.8	1,205.2	77.60	16.531	
11,300.0	9,734.0	11,893.3	10,529.0	46.3	43.5	128.30	1,209.5	-866.3	1,282.8	1,204.0	78.85	16.269	
11,400.0	9,734.0	11,993.3	10,529.0	46.8	44.2	128.30	1,309.5	-867.0	1,282.8	1,202.7	80.16	16.004	
11,500.0	9,734.0	12,093.3	10,529.0	47.3	44.9	128.30	1,409.5	-867.7	1,282.9	1,201.3	81.52	15.737	
11,600.0	9,734.0	12,193.3	10,529.0	47.9	45.6	128.30	1,509.5	-868.3	1,282.9	1,199.9	82.93	15.469	
11,700.0	9,734.0	12,293.3	10,529.0	48.5	46.4	128.30	1,609.5	-869.0	1,282.9	1,198.5	84.39	15.202	
11,800.0	9,734.0	12,393.3	10,529.0	49.2	47.3	128.29	1,709.5	-869.6	1,282.9	1,197.0	85.90	14.935	
11,900.0	9,734.0	12,493.3	10,529.0	49.9	48.1	128.29	1,809.5	-870.3	1,283.0	1,195.5	87.45	14.671	
12,000.0	9,734.0	12,593.3	10,529.0	50.7	49.0	128.29	1,909.5	-871.0	1,283.0	1,193.9	89.04	14.408	
12,100.0	9,734.0	12,693.3	10,529.0	51.5	49.9	128.29	2,009.5	-871.6	1,283.0	1,192.3	90.68	14.149	
12,200.0	9,734.0	12,793.3	10,529.0	52.3	50.9	128.29	2,109.5	-872.3	1,283.0	1,190.7	92.35	13.894	
12,300.0	9,734.0	12,893.3	10,529.0	53.2	51.8	128.29	2,209.5	-872.9	1,283.1	1,189.0	94.05	13.642	
12,400.0	9,734.0	12,993.3	10,529.0	54.0	52.8	128.29	2,309.5	-873.6	1,283.1	1,187.3	95.79	13.395	
12,500.0	9,734.0	13,093.3	10,529.0	54.9	53.8	128.29	2,409.5	-874.3	1,283.1	1,185.5	97.56	13.152	
12,600.0	9,734.0	13,193.3	10,529.0	55.9	54.8	128.29	2,509.5	-874.9	1,283.1	1,183.8	99.36	12.914	
12,700.0	9,734.0	13,293.3	10,529.0	56.8	55.9	128.29	2,609.5	-875.6	1,283.2	1,182.0	101.19	12.681	
12,800.0	9,734.0	13,393.3	10,529.0	57.8	56.9	128.29	2,709.5	-876.3	1,283.2	1,180.1	103.04	12.453	
12,900.0	9,734.0	13,493.3	10,529.0	58.8	58.0	128.28	2,809.5	-876.9	1,283.2	1,178.3	104.92	12.230	
13,000.0	9,734.0	13,593.3	10,529.0	59.9	59.1	128.28	2,909.5	-877.6	1,283.2	1,176.4	106.83	12.012	
13,100.0	9,734.0	13,693.3	10,529.0	60.9	60.2	128.28	3,009.5	-878.2	1,283.3	1,174.5	108.76	11.799	
13,200.0	9,734.0	13,793.3	10,529.0	62.0	61.3	128.28	3,109.5	-878.9	1,283.3	1,172.6	110.71	11.592	
13,300.0	9,734.0	13,893.3	10,529.0	63.0	62.5	128.28	3,209.5	-879.6	1,283.3	1,170.6	112.67	11.389	
13,400.0	9,734.0	13,993.3	10,529.0	64.1	63.6	128.28	3,309.5	-880.2	1,283.3	1,168.7	114.66	11.192	
13,500.0	9,734.0	14,093.3	10,529.0	65.2	64.8	128.28	3,409.5	-880.9	1,283.4	1,166.7	116.67	11.000	
13,600.0	9,734.0	14,193.3	10,529.0	66.3	65.9	128.28	3,509.5	-881.5	1,283.4	1,164.7	118.70	10.812	
13,700.0	9,734.0	14,293.3	10,529.0	67.5	67.1	128.28	3,609.5	-882.2	1,283.4	1,162.7	120.74	10.630	
13,800.0	9,734.0	14,393.3	10,529.0	68.6	68.3	128.28	3,709.5	-882.9	1,283.4	1,160.6	122.80	10.452	
13,900.0	9,734.0	14,493.3	10,529.0	69.8	69.5	128.28	3,809.5	-883.5	1,283.5	1,158.6	124.87	10.278	
14,000.0	9,734.0	14,593.3	10,529.0	70.9	70.7	128.27	3,909.5	-884.2	1,283.5	1,156.5	126.95	10.110	
14,100.0	9,734.0	14,693.3	10,529.0	72.1	71.9	128.27	4,009.5	-884.9	1,283.5	1,154.4	129.06	9.945	
14,200.0	9,734.0	14,793.3	10,529.0	73.3	73.2	128.27	4,109.5	-885.5	1,283.5	1,152.4	131.17	9.785	
14,300.0	9,734.0	14,893.3	10,529.0	74.5	74.4	128.27	4,209.5	-886.2	1,283.6	1,150.3	133.29	9.629	
14,400.0	9,734.0	14,993.3	10,529.0	75.7	75.6	128.27	4,309.5	-886.8	1,283.6	1,148.1	135.43	9.478	
14,500.0	9,734.0	15,093.3	10,529.0	76.9	76.9	128.27	4,409.5	-887.5	1,283.6	1,146.0	137.58	9.330	
14,600.0	9,734.0	15,193.3	10,529.0	78.1	78.1	128.27	4,509.4	-888.2	1,283.6	1,143.9	139.74	9.186	
14,700.0	9,734.0	15,293.3	10,529.0	79.4	79.4	128.27	4,609.4	-888.8	1,283.7	1,141.7	141.91	9.046	
14,800.0	9,734.0	15,393.3	10,529.0	80.6	80.7	128.27	4,709.4	-889.5	1,283.7	1,139.6	144.09	8.909	
14,900.0	9,734.0	15,493.3	10,529.0	81.9	81.9	128.27	4,809.4	-890.1	1,283.7	1,137.4	146.28	8.776	
15,000.0	9,734.0	15,593.3	10,529.0	83.1	83.2	128.27	4,909.4	-890.8	1,283.7	1,135.3	148.47	8.646	
15,100.0	9,734.0	15,693.3	10,529.0	84.4	84.5	128.26	5,009.4	-891.5	1,283.8	1,133.1	150.68	8.520	
15,200.0	9,734.0	15,793.3	10,529.0	85.6	85.8	128.26	5,109.4	-892.1	1,283.8	1,130.9	152.89	8.397	
15,300.0	9,734.0	15,893.3	10,529.0	86.9	87.1	128.26	5,209.4	-892.8	1,283.8	1,128.7	155.12	8.276	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 604H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,400.0	9,734.0	15,993.3	10,529.0	88.2	88.4	128.26	5,309.4	-893.4	1,283.8	1,126.5	157.35	8.159	
15,500.0	9,734.0	16,093.3	10,529.0	89.4	89.7	128.26	5,409.4	-894.1	1,283.9	1,124.3	159.58	8.045	
15,600.0	9,734.0	16,193.3	10,529.0	90.7	91.0	128.26	5,509.4	-894.8	1,283.9	1,122.1	161.83	7.934	
15,700.0	9,734.0	16,293.3	10,529.0	92.0	92.3	128.26	5,609.4	-895.4	1,283.9	1,119.8	164.08	7.825	
15,800.0	9,734.0	16,393.3	10,529.0	93.3	93.6	128.26	5,709.4	-896.1	1,283.9	1,117.6	166.33	7.719	
15,900.0	9,734.0	16,493.3	10,529.0	94.6	95.0	128.26	5,809.4	-896.8	1,284.0	1,115.4	168.59	7.616	
16,000.0	9,734.0	16,593.3	10,529.0	95.9	96.3	128.26	5,909.4	-897.4	1,284.0	1,113.1	170.86	7.515	
16,100.0	9,734.0	16,693.3	10,529.0	97.2	97.6	128.26	6,009.4	-898.1	1,284.0	1,110.9	173.14	7.416	
16,200.0	9,734.0	16,793.3	10,529.0	98.5	98.9	128.25	6,109.4	-898.7	1,284.0	1,108.6	175.42	7.320	
16,300.0	9,734.0	16,893.3	10,529.0	99.9	100.3	128.25	6,209.4	-899.4	1,284.1	1,106.4	177.70	7.226	
16,400.0	9,734.0	16,993.3	10,529.0	101.2	101.6	128.25	6,309.4	-900.1	1,284.1	1,104.1	179.99	7.134	
16,500.0	9,734.0	17,093.3	10,529.0	102.5	103.0	128.25	6,409.4	-900.7	1,284.1	1,101.8	182.28	7.045	
16,600.0	9,734.0	17,193.3	10,529.0	103.8	104.3	128.25	6,509.4	-901.4	1,284.1	1,099.5	184.58	6.957	
16,700.0	9,734.0	17,293.3	10,529.0	105.1	105.6	128.25	6,609.4	-902.0	1,284.2	1,097.3	186.89	6.871	
16,800.0	9,734.0	17,393.3	10,529.0	106.5	107.0	128.25	6,709.4	-902.7	1,284.2	1,095.0	189.19	6.788	
16,900.0	9,734.0	17,493.3	10,529.0	107.8	108.3	128.25	6,809.4	-903.4	1,284.2	1,092.7	191.51	6.706	
17,000.0	9,734.0	17,593.3	10,529.0	109.1	109.7	128.25	6,909.4	-904.0	1,284.2	1,090.4	193.82	6.626	
17,100.0	9,734.0	17,693.3	10,529.0	110.5	111.1	128.25	7,009.4	-904.7	1,284.3	1,088.1	196.14	6.548	
17,200.0	9,734.0	17,793.3	10,529.0	111.8	112.4	128.25	7,109.4	-905.4	1,284.3	1,085.8	198.46	6.471	
17,300.0	9,734.0	17,893.3	10,529.0	113.2	113.8	128.24	7,209.4	-906.0	1,284.3	1,083.5	200.79	6.396	
17,400.0	9,734.0	17,993.3	10,529.0	114.5	115.1	128.24	7,309.4	-906.7	1,284.3	1,081.2	203.12	6.323	
17,500.0	9,734.0	18,093.3	10,529.0	115.9	116.5	128.24	7,409.4	-907.3	1,284.4	1,078.9	205.46	6.251	
17,600.0	9,734.0	18,193.3	10,529.0	117.2	117.9	128.24	7,509.4	-908.0	1,284.4	1,076.6	207.79	6.181	
17,700.0	9,734.0	18,293.3	10,529.0	118.6	119.2	128.24	7,609.4	-908.7	1,284.4	1,074.3	210.13	6.112	
17,800.0	9,734.0	18,393.3	10,529.0	119.9	120.6	128.24	7,709.4	-909.3	1,284.4	1,072.0	212.48	6.045	
17,900.0	9,734.0	18,493.3	10,529.0	121.3	122.0	128.24	7,809.4	-910.0	1,284.5	1,069.6	214.82	5.979	
18,000.0	9,734.0	18,593.3	10,529.0	122.7	123.4	128.24	7,909.4	-910.6	1,284.5	1,067.3	217.17	5.915	
18,100.0	9,734.0	18,693.3	10,529.0	124.0	124.7	128.24	8,009.4	-911.3	1,284.5	1,065.0	219.52	5.851	
18,200.0	9,734.0	18,793.3	10,529.0	125.4	126.1	128.24	8,109.4	-912.0	1,284.5	1,062.7	221.88	5.789	
18,300.0	9,734.0	18,893.3	10,529.0	126.8	127.5	128.24	8,209.4	-912.6	1,284.6	1,060.3	224.23	5.729	
18,400.0	9,734.0	18,993.3	10,529.0	128.1	128.9	128.23	8,309.4	-913.3	1,284.6	1,058.0	226.59	5.669	
18,500.0	9,734.0	19,093.3	10,529.0	129.5	130.2	128.23	8,409.4	-914.0	1,284.6	1,055.7	228.95	5.611	
18,600.0	9,734.0	19,193.3	10,529.0	130.9	131.6	128.23	8,509.4	-914.6	1,284.6	1,053.3	231.32	5.554	
18,700.0	9,734.0	19,293.3	10,529.0	132.2	133.0	128.23	8,609.4	-915.3	1,284.7	1,051.0	233.68	5.497	
18,800.0	9,734.0	19,393.3	10,529.0	133.6	134.4	128.23	8,709.4	-915.9	1,284.7	1,048.6	236.05	5.442	
18,900.0	9,734.0	19,493.3	10,529.0	135.0	135.8	128.23	8,809.4	-916.6	1,284.7	1,046.3	238.42	5.388	
19,000.0	9,734.0	19,593.3	10,529.0	136.4	137.2	128.23	8,909.4	-917.3	1,284.7	1,043.9	240.80	5.335	
19,100.0	9,734.0	19,693.3	10,529.0	137.7	138.6	128.23	9,009.4	-917.9	1,284.8	1,041.6	243.17	5.283	
19,200.0	9,734.0	19,793.3	10,529.0	139.1	140.0	128.23	9,109.3	-918.6	1,284.8	1,039.2	245.55	5.232	
19,300.0	9,734.0	19,893.3	10,529.0	140.5	141.3	128.23	9,209.3	-919.2	1,284.8	1,036.9	247.93	5.182	
19,400.0	9,734.0	19,993.3	10,529.0	141.9	142.7	128.23	9,309.3	-919.9	1,284.8	1,034.5	250.31	5.133	
19,500.0	9,734.0	20,093.3	10,529.0	143.3	144.1	128.22	9,409.3	-920.6	1,284.9	1,032.2	252.69	5.085	
19,600.0	9,734.0	20,193.3	10,529.0	144.7	145.5	128.22	9,509.3	-921.2	1,284.9	1,029.8	255.07	5.037	
19,700.0	9,734.0	20,293.3	10,529.0	146.1	146.9	128.22	9,609.3	-921.9	1,284.9	1,027.4	257.46	4.991	
19,800.0	9,734.0	20,393.3	10,529.0	147.4	148.3	128.22	9,709.3	-922.5	1,284.9	1,025.1	259.85	4.945	
19,900.0	9,734.0	20,493.3	10,529.0	148.8	149.7	128.22	9,809.3	-923.2	1,285.0	1,022.7	262.24	4.900	
20,000.0	9,734.0	20,593.3	10,529.0	150.2	151.1	128.22	9,909.3	-923.9	1,285.0	1,020.4	264.63	4.856	
20,100.0	9,734.0	20,693.3	10,529.0	151.6	152.5	128.22	10,009.3	-924.5	1,285.0	1,018.0	267.02	4.812	
20,200.0	9,734.0	20,793.3	10,529.0	152.9	153.9	128.22	10,109.3	-925.2	1,285.0	1,015.9	269.15	4.774	
20,207.7	9,734.0	20,801.0	10,529.0	153.0	154.0	128.22	10,117.0	-925.2	1,285.0	1,015.7	269.32	4.771 SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 605H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	159.17	-159.9	60.8	171.1				
100.0	100.0	99.9	99.9	0.1	0.1	159.17	-159.9	60.8	171.1	170.8	0.26	649.712	
200.0	200.0	199.9	199.9	0.5	0.5	159.17	-159.9	60.8	171.1	170.1	0.98	174.579	
300.0	300.0	299.9	299.9	0.8	0.8	159.17	-159.9	60.8	171.1	169.4	1.70	100.824	
400.0	400.0	399.9	399.9	1.2	1.2	159.17	-159.9	60.8	171.1	168.7	2.41	70.879	
500.0	500.0	499.9	499.9	1.6	1.6	159.17	-159.9	60.8	171.1	168.0	3.13	54.649	
600.0	600.0	599.9	599.9	1.9	1.9	159.17	-159.9	60.8	171.1	167.3	3.85	44.466	
700.0	700.0	699.9	699.9	2.3	2.3	159.17	-159.9	60.8	171.1	166.5	4.56	37.482	
800.0	800.0	799.9	799.9	2.6	2.6	159.17	-159.9	60.8	171.1	165.8	5.28	32.394	
900.0	900.0	899.9	899.9	3.0	3.0	159.17	-159.9	60.8	171.1	165.1	6.00	28.523	
1,000.0	1,000.0	999.9	999.9	3.4	3.4	159.17	-159.9	60.8	171.1	164.4	6.72	25.478	
1,100.0	1,100.0	1,099.9	1,099.9	3.7	3.7	159.17	-159.9	60.8	171.1	163.7	7.43	23.020	
1,200.0	1,200.0	1,199.9	1,199.9	4.1	4.1	159.17	-159.9	60.8	171.1	162.9	8.15	20.995	
1,300.0	1,300.0	1,299.9	1,299.9	4.4	4.4	159.17	-159.9	60.8	171.1	162.2	8.87	19.297	
1,400.0	1,400.0	1,399.9	1,399.9	4.8	4.8	159.17	-159.9	60.8	171.1	161.5	9.58	17.854	
1,500.0	1,500.0	1,499.9	1,499.9	5.2	5.1	159.17	-159.9	60.8	171.1	160.8	10.30	16.611	
1,600.0	1,600.0	1,599.9	1,599.9	5.5	5.5	159.17	-159.9	60.8	171.1	160.1	11.02	15.530	
1,700.0	1,700.0	1,699.9	1,699.9	5.9	5.9	159.17	-159.9	60.8	171.1	159.4	11.73	14.581	
1,800.0	1,800.0	1,799.9	1,799.9	6.2	6.2	159.17	-159.9	60.8	171.1	158.6	12.45	13.742	
1,900.0	1,900.0	1,899.9	1,899.9	6.6	6.6	159.17	-159.9	60.8	171.1	157.9	13.17	12.993	
2,000.0	2,000.0	1,999.9	1,999.9	6.9	6.9	159.17	-159.9	60.8	171.1	157.2	13.89	12.323 CC, ES	
2,100.0	2,100.0	2,095.0	2,094.9	7.3	7.3	-101.43	-161.5	60.6	172.9	158.3	14.55	11.879	
2,200.0	2,199.8	2,192.3	2,192.2	7.6	7.6	-102.23	-165.9	59.8	177.8	162.6	15.20	11.698	
2,300.0	2,299.5	2,292.0	2,291.7	8.0	7.9	-103.95	-170.7	59.0	184.0	168.2	15.87	11.594	
2,400.0	2,398.7	2,391.3	2,390.9	8.3	8.2	-106.54	-175.6	58.2	191.4	174.8	16.55	11.563	
2,500.0	2,497.5	2,490.2	2,489.7	8.7	8.6	-109.81	-180.4	57.4	200.3	183.0	17.23	11.621	
2,600.0	2,595.6	2,588.5	2,587.9	9.0	8.9	-113.61	-185.2	56.6	211.2	193.3	17.92	11.784	
2,700.0	2,693.1	2,686.2	2,685.5	9.4	9.2	-117.72	-190.0	55.8	224.7	206.0	18.62	12.067	
2,800.0	2,789.6	2,783.1	2,782.3	9.8	9.6	-121.96	-194.7	55.1	241.1	221.8	19.32	12.481	
2,900.0	2,885.6	2,879.4	2,878.4	10.2	9.9	-126.24	-199.4	54.3	260.2	240.2	20.02	12.997	
3,000.0	2,981.6	2,975.7	2,974.6	10.6	10.2	-129.99	-204.2	53.5	280.7	259.9	20.73	13.540	
3,100.0	3,077.5	3,072.0	3,070.8	11.1	10.5	-133.24	-208.9	52.7	302.1	280.7	21.44	14.094	
3,200.0	3,173.5	3,168.3	3,167.0	11.5	10.9	-136.06	-213.6	51.9	324.4	302.3	22.15	14.649	
3,300.0	3,269.4	3,264.6	3,263.1	12.0	11.2	-138.53	-218.3	51.2	347.4	324.5	22.86	15.197	
3,400.0	3,365.4	3,360.9	3,359.3	12.4	11.6	-140.68	-223.0	50.4	370.9	347.3	23.57	15.735	
3,500.0	3,461.3	3,457.1	3,455.5	12.9	11.9	-142.59	-227.7	49.6	394.8	370.5	24.29	16.258	
3,600.0	3,557.3	3,553.4	3,551.6	13.4	12.2	-144.27	-232.4	48.8	419.1	394.1	25.00	16.765	
3,700.0	3,653.2	3,649.7	3,647.8	13.8	12.6	-145.78	-237.1	48.0	443.8	418.0	25.72	17.254	
3,800.0	3,749.2	3,746.0	3,744.0	14.3	12.9	-147.12	-241.8	47.2	468.7	442.2	26.44	17.726	
3,900.0	3,845.1	3,842.3	3,840.2	14.8	13.2	-148.34	-246.5	46.5	493.8	466.6	27.16	18.180	
4,000.0	3,941.1	3,938.6	3,936.3	15.3	13.6	-149.43	-251.2	45.7	519.1	491.2	27.88	18.617	
4,100.0	4,037.0	4,034.9	4,032.5	15.8	13.9	-150.42	-255.9	44.9	544.5	515.9	28.60	19.036	
4,200.0	4,133.0	4,131.2	4,128.7	16.3	14.3	-151.33	-260.7	44.1	570.1	540.8	29.33	19.438	
4,300.0	4,228.9	4,227.5	4,224.8	16.8	14.6	-152.16	-265.4	43.3	595.8	565.8	30.06	19.824	
4,400.0	4,324.9	4,323.8	4,321.0	17.3	15.0	-152.92	-270.1	42.6	621.7	590.9	30.78	20.194	
4,500.0	4,420.8	4,420.0	4,417.2	17.8	15.3	-153.62	-274.8	41.8	647.6	616.1	31.51	20.550	
4,600.0	4,516.8	4,516.3	4,513.4	18.3	15.6	-154.26	-279.5	41.0	673.6	641.3	32.24	20.891	
4,700.0	4,612.7	4,612.6	4,609.5	18.8	16.0	-154.86	-284.2	40.2	699.7	666.7	32.97	21.219	
4,800.0	4,708.7	4,708.9	4,705.7	19.3	16.3	-155.42	-288.9	39.4	725.8	692.1	33.71	21.534	
4,900.0	4,804.7	4,805.2	4,801.9	19.9	16.7	-155.93	-293.6	38.7	752.0	717.6	34.44	21.837	
5,000.0	4,900.6	4,902.2	4,898.8	20.4	17.0	-156.44	-298.1	37.9	778.3	743.1	35.18	22.125	
5,100.0	4,996.6	4,999.9	4,996.4	20.9	17.4	-157.12	-299.8	37.6	804.4	768.5	35.90	22.405	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 605H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,200.0	5,092.5	5,095.9	5,092.4	21.4	17.7	-157.87	-299.8	37.6	830.6	794.0	36.61	22.688	
5,300.0	5,188.5	5,191.8	5,188.4	21.9	18.0	-158.58	-299.8	37.6	856.9	819.6	37.31	22.963	
5,400.0	5,284.4	5,287.8	5,284.3	22.4	18.3	-159.24	-299.8	37.6	883.3	845.3	38.02	23.231	
5,500.0	5,380.4	5,383.7	5,380.3	23.0	18.7	-159.87	-299.8	37.6	909.8	871.1	38.73	23.490	
5,600.0	5,476.3	5,479.7	5,476.2	23.5	19.0	-160.46	-299.8	37.6	936.4	897.0	39.44	23.742	
5,700.0	5,572.3	5,575.6	5,572.2	24.0	19.3	-161.02	-299.8	37.6	963.1	923.0	40.15	23.987	
5,800.0	5,668.2	5,671.6	5,668.1	24.5	19.7	-161.54	-299.8	37.6	989.9	949.0	40.86	24.225	
5,900.0	5,764.2	5,767.5	5,764.1	25.1	20.0	-162.04	-299.8	37.6	1,016.8	975.2	41.58	24.455	
6,000.0	5,860.1	5,863.5	5,860.0	25.6	20.3	-162.52	-299.8	37.6	1,043.7	1,001.4	42.29	24.679	
6,100.0	5,956.1	5,959.4	5,956.0	26.1	20.7	-162.97	-299.8	37.6	1,070.7	1,027.7	43.01	24.897	
6,200.0	6,052.0	6,055.4	6,051.9	26.6	21.0	-163.40	-299.8	37.6	1,097.7	1,054.0	43.72	25.108	
6,300.0	6,148.0	6,151.3	6,147.9	27.2	21.3	-163.81	-299.8	37.6	1,124.8	1,080.4	44.44	25.313	
6,400.0	6,243.9	6,247.3	6,243.8	27.7	21.7	-164.20	-299.8	37.6	1,152.0	1,106.8	45.15	25.513	
6,500.0	6,339.9	6,343.2	6,339.8	28.2	22.0	-164.57	-299.8	37.6	1,179.2	1,133.3	45.87	25.706	
6,600.0	6,435.8	6,439.2	6,435.7	28.8	22.3	-164.92	-299.8	37.6	1,206.5	1,159.9	46.59	25.895	
6,700.0	6,531.8	6,535.1	6,531.7	29.3	22.7	-165.26	-299.8	37.6	1,233.7	1,186.4	47.31	26.078	
6,800.0	6,627.7	6,631.1	6,627.6	29.8	23.0	-165.59	-299.8	37.6	1,261.1	1,213.0	48.03	26.255	
6,900.0	6,723.7	6,727.0	6,723.6	30.4	23.3	-165.90	-299.8	37.6	1,288.4	1,239.7	48.75	26.428	
7,000.0	6,819.6	6,823.0	6,819.5	30.9	23.7	-166.20	-299.8	37.6	1,315.8	1,266.4	49.47	26.597	
7,100.0	6,915.6	6,919.0	6,915.5	31.4	24.0	-166.48	-299.8	37.6	1,343.3	1,293.1	50.20	26.760	
7,200.0	7,011.5	7,014.9	7,011.4	32.0	24.4	-166.76	-299.8	37.6	1,370.7	1,319.8	50.92	26.920	
7,300.0	7,107.5	7,110.9	7,107.4	32.5	24.7	-167.02	-299.8	37.6	1,398.2	1,346.6	51.64	27.075	
7,400.0	7,203.5	7,206.8	7,203.4	33.0	25.0	-167.28	-299.8	37.6	1,425.7	1,373.3	52.37	27.226	
7,500.0	7,299.4	7,302.8	7,299.3	33.6	25.4	-167.52	-299.8	37.6	1,453.2	1,400.2	53.09	27.373	
7,600.0	7,395.4	7,398.7	7,395.3	34.1	25.7	-167.75	-299.8	37.6	1,480.8	1,427.0	53.82	27.516	
7,700.0	7,491.3	7,494.7	7,491.2	34.6	26.0	-167.98	-299.8	37.6	1,508.4	1,453.8	54.54	27.656	
7,800.0	7,587.3	7,590.6	7,587.2	35.2	26.4	-168.20	-299.8	37.6	1,536.0	1,480.7	55.27	27.792	
7,900.0	7,683.2	7,686.6	7,683.1	35.7	26.7	-168.41	-299.8	37.6	1,563.6	1,507.6	56.00	27.924	
8,000.0	7,779.2	7,782.5	7,779.1	36.2	27.0	-168.61	-299.8	37.6	1,591.3	1,534.5	56.72	28.053	
8,100.0	7,875.1	7,878.5	7,875.0	36.8	27.4	-168.81	-299.8	37.6	1,618.9	1,561.5	57.45	28.179	
8,200.0	7,971.1	7,974.4	7,971.0	37.3	27.7	-169.00	-299.8	37.6	1,646.6	1,588.4	58.18	28.302	
8,300.0	8,067.0	8,070.4	8,066.9	37.9	28.1	-169.18	-299.8	37.6	1,674.3	1,615.4	58.91	28.422	
8,400.0	8,163.0	8,166.3	8,162.9	38.4	28.4	-169.36	-299.8	37.6	1,702.0	1,642.4	59.64	28.539	
8,500.0	8,258.9	8,262.3	8,258.8	38.9	28.7	-169.53	-299.8	37.6	1,729.7	1,669.4	60.37	28.654	
8,600.0	8,354.9	8,358.2	8,354.8	39.5	29.1	-169.71	-299.8	37.6	1,757.5	1,696.4	61.10	28.765	
8,700.0	8,451.4	8,454.7	8,451.3	40.0	29.4	-169.95	-299.8	37.6	1,783.4	1,721.5	61.83	28.845	
8,800.0	8,548.7	8,552.1	8,548.6	40.5	29.8	-170.16	-299.8	37.6	1,805.9	1,743.4	62.55	28.871	
8,900.0	8,646.8	8,650.1	8,646.7	40.9	30.1	-170.33	-299.8	37.6	1,825.2	1,761.9	63.27	28.846	
9,000.0	8,745.5	8,748.8	8,745.4	41.3	30.5	-170.46	-299.8	37.6	1,841.0	1,777.0	63.99	28.770	
9,100.0	8,844.7	8,848.0	8,844.6	41.7	30.8	-170.57	-299.8	37.6	1,853.4	1,788.7	64.70	28.647	
9,200.0	8,944.2	8,947.6	8,944.1	42.1	31.2	-170.65	-299.8	37.6	1,862.4	1,797.0	65.40	28.477	
9,300.0	9,044.1	9,047.4	9,044.0	42.4	31.5	-170.69	-299.8	37.6	1,868.0	1,801.9	66.09	28.263	
9,400.0	9,144.0	9,147.4	9,143.9	42.7	31.9	-170.71	-299.8	37.6	1,870.1	1,803.4	66.78	28.006	
9,500.0	9,244.0	9,247.4	9,243.9	42.9	32.2	-89.65	-299.8	37.6	1,870.2	1,802.7	67.44	27.730	
9,600.0	9,343.6	9,346.9	9,343.5	43.2	32.6	-93.34	-299.8	37.6	1,870.6	1,802.5	68.11	27.466	
9,700.0	9,439.3	9,442.6	9,439.2	43.4	32.9	-93.94	-299.8	37.6	1,872.5	1,803.8	68.76	27.232	
9,800.0	9,527.0	9,530.3	9,526.9	43.6	33.2	-94.71	-299.8	37.6	1,876.7	1,807.3	69.38	27.049	
9,900.0	9,602.9	9,606.2	9,602.8	43.8	33.5	-95.30	-299.8	37.6	1,884.2	1,814.3	69.94	26.940	
10,000.0	9,663.6	9,667.0	9,663.5	43.9	33.7	-95.29	-299.8	37.6	1,896.4	1,826.0	70.42	26.929	
10,100.0	9,706.6	9,710.0	9,706.5	43.9	33.9	-94.30	-299.8	37.6	1,914.2	1,843.4	70.81	27.035	
10,200.0	9,729.9	9,733.2	9,729.8	43.9	33.9	-92.07	-299.8	37.6	1,937.9	1,866.8	71.07	27.268	
10,300.0	9,734.0	9,737.3	9,733.9	44.0	33.9	-90.00	-299.8	37.6	1,966.7	1,895.5	71.21	27.620	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 605H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM									Rule Assigned:				Offset Well Error: 0.0 usft	
Measured Depth (usft)	Reference Depth (usft)	Measured Depth (usft)	Offset Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,400.0	9,734.0	9,737.3	9,733.9	44.0	33.9	90.00	-299.8	37.6	1,997.5	1,926.2	71.33	28.004		
10,500.0	9,734.0	9,737.3	9,733.9	44.1	33.9	90.00	-299.8	37.6	2,030.6	1,959.1	71.46	28.418		
10,600.0	9,734.0	9,737.3	9,733.9	44.2	33.9	90.00	-299.8	37.6	2,068.0	1,996.4	71.59	28.887		
10,700.0	9,734.0	11,243.6	10,529.0	44.3	38.5	112.38	615.7	61.9	2,088.1	2,012.8	75.27	27.740		
10,800.0	9,734.0	11,343.6	10,529.0	44.5	39.0	112.38	715.7	61.2	2,088.2	2,012.0	76.17	27.414		
10,900.0	9,734.0	11,443.6	10,529.0	44.8	39.5	112.38	815.7	60.6	2,088.2	2,011.0	77.15	27.065		
11,000.0	9,734.0	11,543.6	10,529.0	45.1	40.0	112.38	915.7	59.9	2,088.2	2,010.0	78.22	26.696		
11,100.0	9,734.0	11,643.6	10,529.0	45.4	40.6	112.38	1,015.7	59.2	2,088.2	2,008.9	79.37	26.310		
11,200.0	9,734.0	11,743.6	10,529.0	45.8	41.3	112.38	1,115.7	58.6	2,088.3	2,007.7	80.59	25.911		
11,300.0	9,734.0	11,843.6	10,529.0	46.3	41.9	112.38	1,215.7	57.9	2,088.3	2,006.4	81.89	25.501		
11,400.0	9,734.0	11,943.6	10,529.0	46.8	42.6	112.38	1,315.7	57.2	2,088.3	2,005.1	83.26	25.082		
11,500.0	9,734.0	12,043.6	10,529.0	47.3	43.4	112.38	1,415.7	56.6	2,088.3	2,003.6	84.70	24.657		
11,600.0	9,734.0	12,143.6	10,529.0	47.9	44.2	112.38	1,515.7	55.9	2,088.4	2,002.2	86.19	24.229		
11,700.0	9,734.0	12,243.6	10,529.0	48.5	45.0	112.38	1,615.7	55.3	2,088.4	2,000.6	87.75	23.799		
11,800.0	9,734.0	12,343.6	10,529.0	49.2	45.9	112.38	1,715.7	54.6	2,088.4	1,999.1	89.37	23.369		
11,900.0	9,734.0	12,443.6	10,529.0	49.9	46.7	112.38	1,815.7	53.9	2,088.4	1,997.4	91.04	22.940		
12,000.0	9,734.0	12,543.6	10,529.0	50.7	47.7	112.38	1,915.7	53.3	2,088.5	1,995.7	92.76	22.515		
12,100.0	9,734.0	12,643.6	10,529.0	51.5	48.6	112.38	2,015.7	52.6	2,088.5	1,994.0	94.53	22.094		
12,200.0	9,734.0	12,743.6	10,529.0	52.3	49.5	112.38	2,115.7	51.9	2,088.5	1,992.2	96.34	21.678		
12,300.0	9,734.0	12,843.6	10,529.0	53.2	50.5	112.38	2,215.7	51.3	2,088.6	1,990.4	98.20	21.268		
12,400.0	9,734.0	12,943.6	10,529.0	54.0	51.5	112.38	2,315.7	50.6	2,088.6	1,988.5	100.10	20.865		
12,500.0	9,734.0	13,043.6	10,529.0	54.9	52.6	112.38	2,415.7	49.9	2,088.6	1,986.6	102.03	20.470		
12,600.0	9,734.0	13,143.6	10,529.0	55.9	53.6	112.38	2,515.7	49.3	2,088.6	1,984.6	104.01	20.082		
12,700.0	9,734.0	13,243.6	10,529.0	56.8	54.7	112.38	2,615.7	48.6	2,088.7	1,982.6	106.01	19.702		
12,800.0	9,734.0	13,343.6	10,529.0	57.8	55.8	112.38	2,715.7	47.9	2,088.7	1,980.6	108.05	19.330		
12,900.0	9,734.0	13,443.6	10,529.0	58.8	56.8	112.37	2,815.7	47.3	2,088.7	1,978.6	110.12	18.967		
13,000.0	9,734.0	13,543.6	10,529.0	59.9	58.0	112.37	2,915.7	46.6	2,088.7	1,976.5	112.22	18.612		
13,100.0	9,734.0	13,643.6	10,529.0	60.9	59.1	112.37	3,015.7	46.0	2,088.8	1,974.4	114.35	18.267		
13,200.0	9,734.0	13,743.6	10,529.0	62.0	60.2	112.37	3,115.6	45.3	2,088.8	1,972.3	116.50	17.930		
13,300.0	9,734.0	13,843.6	10,529.0	63.0	61.4	112.37	3,215.6	44.6	2,088.8	1,970.1	118.68	17.601		
13,400.0	9,734.0	13,943.6	10,529.0	64.1	62.5	112.37	3,315.6	44.0	2,088.9	1,968.0	120.88	17.281		
13,500.0	9,734.0	14,043.6	10,529.0	65.2	63.7	112.37	3,415.6	43.3	2,088.9	1,965.8	123.10	16.969		
13,600.0	9,734.0	14,143.6	10,529.0	66.3	64.9	112.37	3,515.6	42.6	2,088.9	1,963.6	125.34	16.666		
13,700.0	9,734.0	14,243.6	10,529.0	67.5	66.1	112.37	3,615.6	42.0	2,088.9	1,961.3	127.60	16.371		
13,800.0	9,734.0	14,343.6	10,529.0	68.6	67.3	112.37	3,715.6	41.3	2,089.0	1,959.1	129.88	16.084		
13,900.0	9,734.0	14,443.6	10,529.0	69.8	68.5	112.37	3,815.6	40.6	2,089.0	1,956.8	132.18	15.805		
14,000.0	9,734.0	14,543.6	10,529.0	70.9	69.8	112.37	3,915.6	40.0	2,089.0	1,954.5	134.49	15.533		
14,100.0	9,734.0	14,643.6	10,529.0	72.1	71.0	112.37	4,015.6	39.3	2,089.0	1,952.2	136.82	15.269		
14,200.0	9,734.0	14,743.6	10,529.0	73.3	72.2	112.37	4,115.6	38.6	2,089.1	1,949.9	139.16	15.011		
14,300.0	9,734.0	14,843.6	10,529.0	74.5	73.5	112.37	4,215.6	38.0	2,089.1	1,947.6	141.52	14.761		
14,400.0	9,734.0	14,943.6	10,529.0	75.7	74.7	112.37	4,315.6	37.3	2,089.1	1,945.2	143.90	14.518		
14,500.0	9,734.0	15,043.6	10,529.0	76.9	76.0	112.37	4,415.6	36.7	2,089.1	1,942.9	146.28	14.282		
14,600.0	9,734.0	15,143.6	10,529.0	78.1	77.3	112.37	4,515.6	36.0	2,089.2	1,940.5	148.68	14.052		
14,700.0	9,734.0	15,243.6	10,529.0	79.4	78.6	112.37	4,615.6	35.3	2,089.2	1,938.1	151.09	13.828		
14,800.0	9,734.0	15,343.6	10,529.0	80.6	79.8	112.37	4,715.6	34.7	2,089.2	1,935.7	153.51	13.610		
14,900.0	9,734.0	15,443.6	10,529.0	81.9	81.1	112.37	4,815.6	34.0	2,089.3	1,933.3	155.94	13.398		
15,000.0	9,734.0	15,543.6	10,529.0	83.1	82.4	112.37	4,915.6	33.3	2,089.3	1,930.9	158.38	13.191		
15,100.0	9,734.0	15,643.6	10,529.0	84.4	83.7	112.37	5,015.6	32.7	2,089.3	1,928.5	160.83	12.990		
15,200.0	9,734.0	15,743.6	10,529.0	85.6	85.0	112.37	5,115.6	32.0	2,089.3	1,926.0	163.29	12.795		
15,300.0	9,734.0	15,843.6	10,529.0	86.9	86.3	112.37	5,215.6	31.3	2,089.4	1,923.6	165.76	12.604		
15,400.0	9,734.0	15,943.6	10,529.0	88.2	87.6	112.37	5,315.6	30.7	2,089.4	1,921.1	168.24	12.419		
15,500.0	9,734.0	16,043.6	10,529.0	89.4	89.0	112.37	5,415.6	30.0	2,089.4	1,918.7	170.73	12.238		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 605H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,600.0	9,734.0	16,143.6	10,529.0	90.7	90.3	112.37	5,515.6	29.3	2,089.4	1,916.2	173.22	12.062	
15,700.0	9,734.0	16,243.6	10,529.0	92.0	91.6	112.37	5,615.6	28.7	2,089.5	1,913.7	175.72	11.891	
15,800.0	9,734.0	16,343.6	10,529.0	93.3	92.9	112.37	5,715.6	28.0	2,089.5	1,911.3	178.23	11.724	
15,900.0	9,734.0	16,443.6	10,529.0	94.6	94.3	112.37	5,815.6	27.4	2,089.5	1,908.8	180.74	11.561	
16,000.0	9,734.0	16,543.6	10,529.0	95.9	95.6	112.37	5,915.6	26.7	2,089.6	1,906.3	183.27	11.402	
16,100.0	9,734.0	16,643.6	10,529.0	97.2	96.9	112.37	6,015.6	26.0	2,089.6	1,903.8	185.79	11.247	
16,200.0	9,734.0	16,743.6	10,529.0	98.5	98.3	112.36	6,115.6	25.4	2,089.6	1,901.3	188.33	11.096	
16,300.0	9,734.0	16,843.6	10,529.0	99.9	99.6	112.36	6,215.6	24.7	2,089.6	1,898.8	190.87	10.948	
16,400.0	9,734.0	16,943.6	10,529.0	101.2	101.0	112.36	6,315.6	24.0	2,089.7	1,896.2	193.41	10.804	
16,500.0	9,734.0	17,043.6	10,529.0	102.5	102.3	112.36	6,415.6	23.4	2,089.7	1,893.7	195.96	10.664	
16,600.0	9,734.0	17,143.6	10,529.0	103.8	103.7	112.36	6,515.6	22.7	2,089.7	1,891.2	198.52	10.527	
16,700.0	9,734.0	17,243.6	10,529.0	105.1	105.0	112.36	6,615.6	22.0	2,089.7	1,888.7	201.08	10.393	
16,800.0	9,734.0	17,343.6	10,529.0	106.5	106.4	112.36	6,715.6	21.4	2,089.8	1,886.1	203.64	10.262	
16,900.0	9,734.0	17,443.6	10,529.0	107.8	107.7	112.36	6,815.6	20.7	2,089.8	1,883.6	206.21	10.134	
17,000.0	9,734.0	17,543.6	10,529.0	109.1	109.1	112.36	6,915.6	20.0	2,089.8	1,881.0	208.79	10.009	
17,100.0	9,734.0	17,643.6	10,529.0	110.5	110.5	112.36	7,015.6	19.4	2,089.8	1,878.5	211.37	9.887	
17,200.0	9,734.0	17,743.6	10,529.0	111.8	111.8	112.36	7,115.6	18.7	2,089.9	1,875.9	213.95	9.768	
17,300.0	9,734.0	17,843.6	10,529.0	113.2	113.2	112.36	7,215.6	18.0	2,089.9	1,873.4	216.53	9.652	
17,400.0	9,734.0	17,943.6	10,529.0	114.5	114.6	112.36	7,315.6	17.4	2,089.9	1,870.8	219.12	9.538	
17,500.0	9,734.0	18,043.6	10,529.0	115.9	115.9	112.36	7,415.6	16.7	2,090.0	1,868.2	221.72	9.426	
17,600.0	9,734.0	18,143.6	10,529.0	117.2	117.3	112.36	7,515.6	16.1	2,090.0	1,865.7	224.32	9.317	
17,700.0	9,734.0	18,243.6	10,529.0	118.6	118.7	112.36	7,615.5	15.4	2,090.0	1,863.1	226.92	9.211	
17,800.0	9,734.0	18,343.6	10,529.0	119.9	120.1	112.36	7,715.5	14.7	2,090.0	1,860.5	229.52	9.106	
17,900.0	9,734.0	18,443.6	10,529.0	121.3	121.4	112.36	7,815.5	14.1	2,090.1	1,857.9	232.13	9.004	
18,000.0	9,734.0	18,543.6	10,529.0	122.7	122.8	112.36	7,915.5	13.4	2,090.1	1,855.4	234.74	8.904	
18,100.0	9,734.0	18,643.6	10,529.0	124.0	124.2	112.36	8,015.5	12.7	2,090.1	1,852.8	237.35	8.806	
18,200.0	9,734.0	18,743.6	10,529.0	125.4	125.6	112.36	8,115.5	12.1	2,090.1	1,850.2	239.97	8.710	
18,300.0	9,734.0	18,843.6	10,529.0	126.8	127.0	112.36	8,215.5	11.4	2,090.2	1,847.6	242.59	8.616	
18,400.0	9,734.0	18,943.6	10,529.0	128.1	128.4	112.36	8,315.5	10.7	2,090.2	1,845.0	245.21	8.524	
18,500.0	9,734.0	19,043.6	10,529.0	129.5	129.8	112.36	8,415.5	10.1	2,090.2	1,842.4	247.83	8.434	
18,600.0	9,734.0	19,143.6	10,529.0	130.9	131.1	112.36	8,515.5	9.4	2,090.3	1,839.8	250.46	8.346	
18,700.0	9,734.0	19,243.6	10,529.0	132.2	132.5	112.36	8,615.5	8.7	2,090.3	1,837.2	253.09	8.259	
18,800.0	9,734.0	19,343.6	10,529.0	133.6	133.9	112.36	8,715.5	8.1	2,090.3	1,834.6	255.72	8.174	
18,900.0	9,734.0	19,443.6	10,529.0	135.0	135.3	112.36	8,815.5	7.4	2,090.3	1,832.0	258.35	8.091	
19,000.0	9,734.0	19,543.6	10,529.0	136.4	136.7	112.36	8,915.5	6.8	2,090.4	1,829.4	260.99	8.009	
19,100.0	9,734.0	19,643.6	10,529.0	137.7	138.1	112.36	9,015.5	6.1	2,090.4	1,826.8	263.63	7.929	
19,200.0	9,734.0	19,743.6	10,529.0	139.1	139.5	112.36	9,115.5	5.4	2,090.4	1,824.1	266.27	7.851	
19,300.0	9,734.0	19,843.6	10,529.0	140.5	140.9	112.36	9,215.5	4.8	2,090.4	1,821.5	268.91	7.774	
19,400.0	9,734.0	19,943.6	10,529.0	141.9	142.3	112.36	9,315.5	4.1	2,090.5	1,818.9	271.56	7.698	
19,500.0	9,734.0	20,043.6	10,529.0	143.3	143.7	112.35	9,415.5	3.4	2,090.5	1,816.3	274.20	7.624	
19,600.0	9,734.0	20,143.6	10,529.0	144.7	145.1	112.35	9,515.5	2.8	2,090.5	1,813.7	276.85	7.551	
19,700.0	9,734.0	20,243.6	10,529.0	146.1	146.5	112.35	9,615.5	2.1	2,090.5	1,811.0	279.50	7.480	
19,800.0	9,734.0	20,343.6	10,529.0	147.4	147.9	112.35	9,715.5	1.4	2,090.6	1,808.4	282.15	7.409	
19,900.0	9,734.0	20,443.6	10,529.0	148.8	149.3	112.35	9,815.5	0.8	2,090.6	1,805.8	284.81	7.340	
20,000.0	9,734.0	20,543.6	10,529.0	150.2	150.7	112.35	9,915.5	0.1	2,090.6	1,803.2	287.46	7.273	
20,100.0	9,734.0	20,643.6	10,529.0	151.6	152.1	112.35	10,015.5	-0.6	2,090.7	1,800.5	290.12	7.206	
20,200.0	9,734.0	20,743.6	10,529.0	152.9	153.4	112.35	10,115.5	-1.2	2,090.7	1,798.2	292.44	7.149	
20,207.7	9,734.0	20,751.3	10,529.0	153.0	153.5	112.35	10,123.2	-1.3	2,090.7	1,798.1	292.61	7.145 SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 606H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	153.16	-159.7	80.8	179.0				
100.0	100.0	99.3	99.3	0.1	0.1	153.16	-159.7	80.8	179.0	178.7	0.26	681.675	
200.0	200.0	199.3	199.3	0.5	0.5	153.16	-159.7	80.8	179.0	178.0	0.98	183.020	
300.0	300.0	299.3	299.3	0.8	0.8	153.16	-159.7	80.8	179.0	177.3	1.69	105.600	
400.0	400.0	399.3	399.3	1.2	1.2	153.16	-159.7	80.8	179.0	176.6	2.41	74.209	
500.0	500.0	499.3	499.3	1.6	1.6	153.16	-159.7	80.8	179.0	175.8	3.13	57.204	
600.0	600.0	599.3	599.3	1.9	1.9	153.16	-159.7	80.8	179.0	175.1	3.85	46.540	
700.0	700.0	699.3	699.3	2.3	2.3	153.16	-159.7	80.8	179.0	174.4	4.56	39.227	
800.0	800.0	799.3	799.3	2.6	2.6	153.16	-159.7	80.8	179.0	173.7	5.28	33.900	
900.0	900.0	899.3	899.3	3.0	3.0	153.16	-159.7	80.8	179.0	173.0	6.00	29.847	
1,000.0	1,000.0	999.3	999.3	3.4	3.4	153.16	-159.7	80.8	179.0	172.3	6.71	26.659	
1,100.0	1,100.0	1,099.3	1,099.3	3.7	3.7	153.16	-159.7	80.8	179.0	171.5	7.43	24.087	
1,200.0	1,200.0	1,199.3	1,199.3	4.1	4.1	153.16	-159.7	80.8	179.0	170.8	8.15	21.968	
1,300.0	1,300.0	1,299.3	1,299.3	4.4	4.4	153.16	-159.7	80.8	179.0	170.1	8.86	20.191	
1,400.0	1,400.0	1,399.3	1,399.3	4.8	4.8	153.16	-159.7	80.8	179.0	169.4	9.58	18.680	
1,500.0	1,500.0	1,499.3	1,499.3	5.2	5.1	153.16	-159.7	80.8	179.0	168.7	10.30	17.379	
1,600.0	1,600.0	1,599.3	1,599.3	5.5	5.5	153.16	-159.7	80.8	179.0	168.0	11.02	16.248	
1,700.0	1,700.0	1,699.3	1,699.3	5.9	5.9	153.16	-159.7	80.8	179.0	167.2	11.73	15.255	
1,800.0	1,800.0	1,799.3	1,799.3	6.2	6.2	153.16	-159.7	80.8	179.0	166.5	12.45	14.377	
1,900.0	1,900.0	1,899.3	1,899.3	6.6	6.6	153.16	-159.7	80.8	179.0	165.8	13.17	13.594	
2,000.0	2,000.0	1,999.3	1,999.3	6.9	6.9	153.16	-159.7	80.8	179.0	165.1	13.88	12.892 CC, ES	
2,100.0	2,100.0	2,095.7	2,095.7	7.3	7.3	-108.10	-159.9	82.4	180.5	165.9	14.56	12.391	
2,200.0	2,199.8	2,191.5	2,191.3	7.6	7.6	-110.69	-160.6	87.1	185.3	170.1	15.22	12.172 SF	
2,300.0	2,299.5	2,285.9	2,285.5	8.0	7.9	-114.62	-161.8	94.9	194.2	178.3	15.87	12.234	
2,400.0	2,398.7	2,380.2	2,379.1	8.3	8.3	-119.46	-163.4	105.6	208.0	191.4	16.51	12.592	
2,500.0	2,497.5	2,476.4	2,474.6	8.7	8.6	-124.53	-165.1	117.1	225.8	208.6	17.18	13.141	
2,600.0	2,595.6	2,571.7	2,569.2	9.0	8.9	-129.35	-166.8	128.5	247.5	229.7	17.85	13.866	
2,700.0	2,693.1	2,665.8	2,662.6	9.4	9.3	-133.80	-168.5	139.7	273.3	254.8	18.52	14.757	
2,800.0	2,789.6	2,758.7	2,754.8	9.8	9.6	-137.81	-170.1	150.9	303.1	283.9	19.18	15.800	
2,900.0	2,885.6	2,850.7	2,846.2	10.2	9.9	-141.63	-171.7	161.9	336.1	316.2	19.85	16.934	
3,000.0	2,981.6	2,942.7	2,937.5	10.6	10.3	-144.86	-173.4	172.9	370.3	349.8	20.51	18.056	
3,100.0	3,077.5	3,034.7	3,028.8	11.1	10.6	-147.56	-175.0	183.9	405.4	384.2	21.17	19.146	
3,200.0	3,173.5	3,126.8	3,120.2	11.5	11.0	-149.83	-176.7	194.9	441.2	419.4	21.84	20.199	
3,300.0	3,269.4	3,218.8	3,211.5	12.0	11.3	-151.77	-178.3	206.0	477.6	455.0	22.52	21.210	
3,400.0	3,365.4	3,310.8	3,302.8	12.4	11.6	-153.44	-179.9	217.0	514.3	491.1	23.19	22.178	
3,500.0	3,461.3	3,402.8	3,394.2	12.9	12.0	-154.89	-181.6	228.0	551.4	527.5	23.87	23.103	
3,600.0	3,557.3	3,494.8	3,485.5	13.4	12.3	-156.16	-183.2	239.0	588.7	564.2	24.55	23.985	
3,700.0	3,653.2	3,586.8	3,576.8	13.8	12.7	-157.28	-184.8	250.0	626.3	601.1	25.23	24.826	
3,800.0	3,749.2	3,678.8	3,668.2	14.3	13.0	-158.27	-186.5	261.0	664.1	638.2	25.91	25.627	
3,900.0	3,845.1	3,770.8	3,759.5	14.8	13.4	-159.16	-188.1	272.0	702.0	675.4	26.60	26.391	
4,000.0	3,941.1	3,862.8	3,850.8	15.3	13.7	-159.96	-189.8	283.1	740.1	712.8	27.29	27.120	
4,100.0	4,037.0	3,954.8	3,942.1	15.8	14.1	-160.68	-191.4	294.1	778.2	750.2	27.98	27.815	
4,200.0	4,133.0	4,046.8	4,033.5	16.3	14.4	-161.33	-193.0	305.1	816.5	787.8	28.67	28.478	
4,300.0	4,228.9	4,138.8	4,124.8	16.8	14.8	-161.93	-194.7	316.1	854.8	825.4	29.36	29.110	
4,400.0	4,324.9	4,230.8	4,216.1	17.3	15.1	-162.47	-196.3	327.1	893.2	863.2	30.06	29.715	
4,500.0	4,420.8	4,322.8	4,307.5	17.8	15.5	-162.98	-197.9	338.1	931.7	900.9	30.76	30.293	
4,600.0	4,516.8	4,414.8	4,398.8	18.3	15.8	-163.44	-199.6	349.1	970.2	938.8	31.46	30.845	
4,700.0	4,612.7	4,506.8	4,490.1	18.8	16.2	-163.86	-201.2	360.2	1,008.8	976.7	32.15	31.374	
4,800.0	4,708.7	4,598.9	4,581.4	19.3	16.5	-164.26	-202.9	371.2	1,047.4	1,014.6	32.86	31.880	
4,900.0	4,804.7	4,690.9	4,672.8	19.9	16.9	-164.62	-204.5	382.2	1,086.1	1,052.6	33.56	32.366	
5,000.0	4,900.6	4,782.9	4,764.1	20.4	17.2	-164.96	-206.1	393.2	1,124.8	1,090.6	34.26	32.831	
5,100.0	4,996.6	4,874.9	4,855.4	20.9	17.6	-165.28	-207.8	404.2	1,163.5	1,128.6	34.97	33.277	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 606H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,200.0	5,092.5	4,966.9	4,946.8	21.4	18.0	-165.58	-209.4	415.2	1,202.3	1,166.6	35.67	33.706	
5,300.0	5,188.5	5,058.9	5,038.1	21.9	18.3	-165.86	-211.1	426.3	1,241.1	1,204.7	36.38	34.118	
5,400.0	5,284.4	5,150.9	5,129.4	22.4	18.7	-166.12	-212.7	437.3	1,279.9	1,242.8	37.08	34.514	
5,500.0	5,380.4	5,242.9	5,220.8	23.0	19.0	-166.37	-214.3	448.3	1,318.7	1,281.0	37.79	34.895	
5,600.0	5,476.3	5,334.9	5,312.1	23.5	19.4	-166.60	-216.0	459.3	1,357.6	1,319.1	38.50	35.261	
5,700.0	5,572.3	5,426.9	5,403.4	24.0	19.7	-166.82	-217.6	470.3	1,396.5	1,357.3	39.21	35.614	
5,800.0	5,668.2	5,518.9	5,494.7	24.5	20.1	-167.03	-219.2	481.3	1,435.4	1,395.4	39.92	35.954	
5,900.0	5,764.2	5,610.9	5,586.1	25.1	20.5	-167.23	-220.9	492.3	1,474.3	1,433.6	40.63	36.282	
6,000.0	5,860.1	5,702.9	5,677.4	25.6	20.8	-167.42	-222.5	503.4	1,513.2	1,471.8	41.35	36.599	
6,100.0	5,956.1	5,794.9	5,768.7	26.1	21.2	-167.60	-224.2	514.4	1,552.1	1,510.1	42.06	36.904	
6,200.0	6,052.0	5,886.9	5,860.1	26.6	21.5	-167.77	-225.8	525.4	1,591.1	1,548.3	42.77	37.199	
6,300.0	6,148.0	5,978.9	5,951.4	27.2	21.9	-167.93	-227.4	536.4	1,630.0	1,586.5	43.49	37.484	
6,400.0	6,243.9	6,071.0	6,042.7	27.7	22.2	-168.08	-229.1	547.4	1,669.0	1,624.8	44.20	37.759	
6,500.0	6,339.9	6,163.0	6,134.1	28.2	22.6	-168.23	-230.7	558.4	1,707.9	1,663.0	44.92	38.026	
6,600.0	6,435.8	6,255.0	6,225.4	28.8	23.0	-168.37	-232.3	569.5	1,746.9	1,701.3	45.63	38.283	
6,700.0	6,531.8	6,347.0	6,316.7	29.3	23.3	-168.50	-234.0	580.5	1,785.9	1,739.6	46.35	38.533	
6,800.0	6,627.7	6,439.0	6,408.0	29.8	23.7	-168.63	-235.6	591.5	1,824.9	1,777.9	47.07	38.774	
6,900.0	6,723.7	6,531.0	6,499.4	30.4	24.0	-168.75	-237.3	602.5	1,863.9	1,816.1	47.78	39.008	
7,000.0	6,819.6	6,623.0	6,590.7	30.9	24.4	-168.87	-238.9	613.5	1,902.9	1,854.4	48.50	39.235	
7,100.0	6,915.6	6,715.0	6,682.0	31.4	24.8	-168.98	-240.5	624.5	1,942.0	1,892.7	49.22	39.455	
7,200.0	7,011.5	6,807.0	6,773.4	32.0	25.1	-169.09	-242.2	635.5	1,981.0	1,931.0	49.94	39.668	
7,300.0	7,107.5	6,899.0	6,864.7	32.5	25.5	-169.20	-243.8	646.6	2,020.0	1,969.4	50.66	39.875	
7,400.0	7,203.5	6,991.0	6,956.0	33.0	25.8	-169.30	-245.4	657.6	2,059.1	2,007.7	51.38	40.076	
7,500.0	7,299.4	7,083.0	7,047.4	33.6	26.2	-169.39	-247.1	668.6	2,098.1	2,046.0	52.10	40.271	
7,600.0	7,395.4	7,175.0	7,138.7	34.1	26.5	-169.49	-248.7	679.6	2,137.2	2,084.3	52.82	40.460	
7,700.0	7,491.3	7,267.0	7,230.0	34.6	26.9	-169.58	-250.4	690.6	2,176.2	2,122.7	53.54	40.644	
7,800.0	7,587.3	7,359.0	7,321.3	35.2	27.3	-169.66	-252.0	701.6	2,215.3	2,161.0	54.26	40.823	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 3709.1usft (Original Well Ele

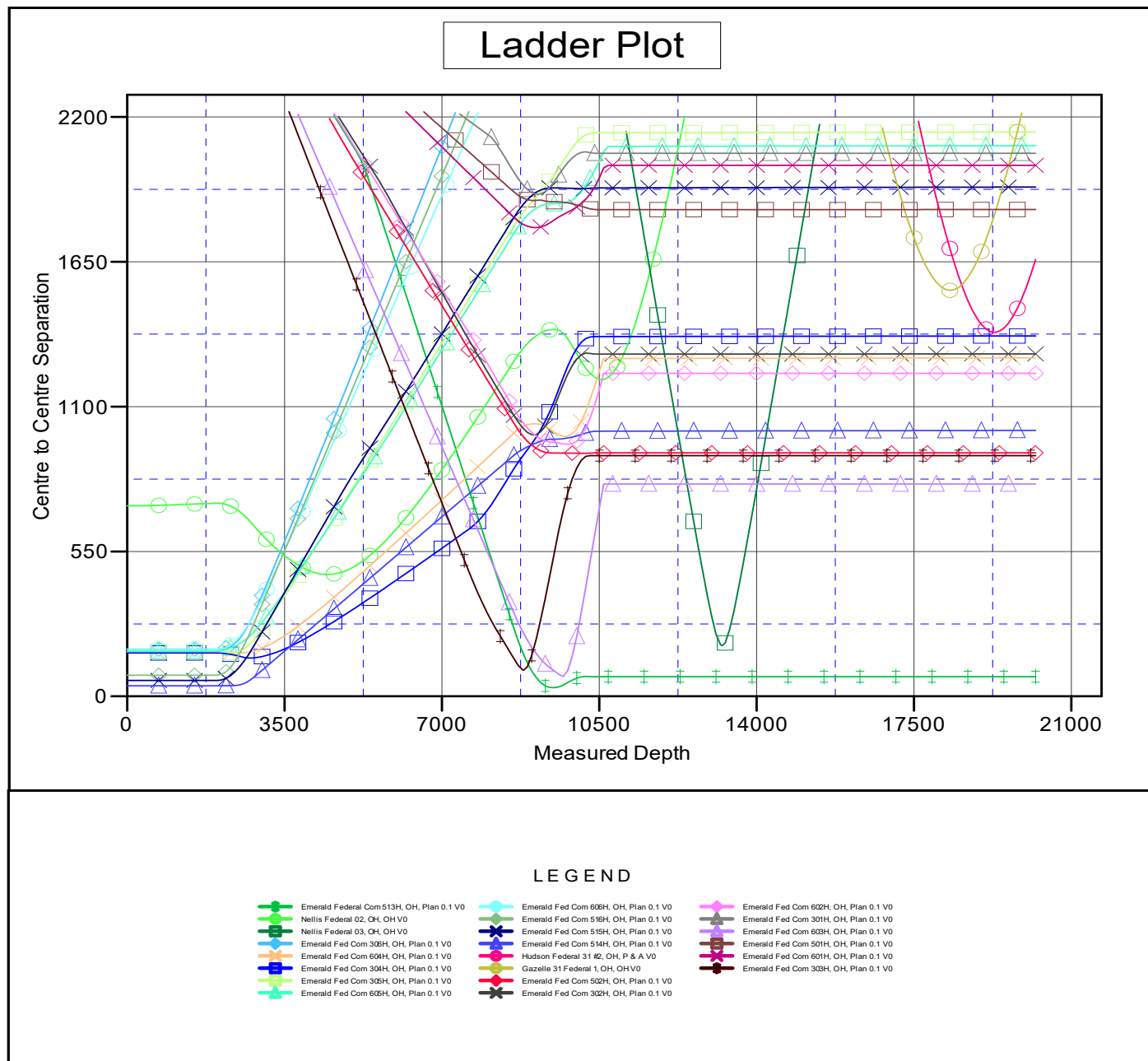
Coordinates are relative to: Emerald Fed Com 503H

Offset Depths are relative to Offset Datum

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

Central Meridian is -104.333334

Grid Convergence at Surface is: 0.34°



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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 3709.1usft (Original Well Ele

Offset Depths are relative to Offset Datum

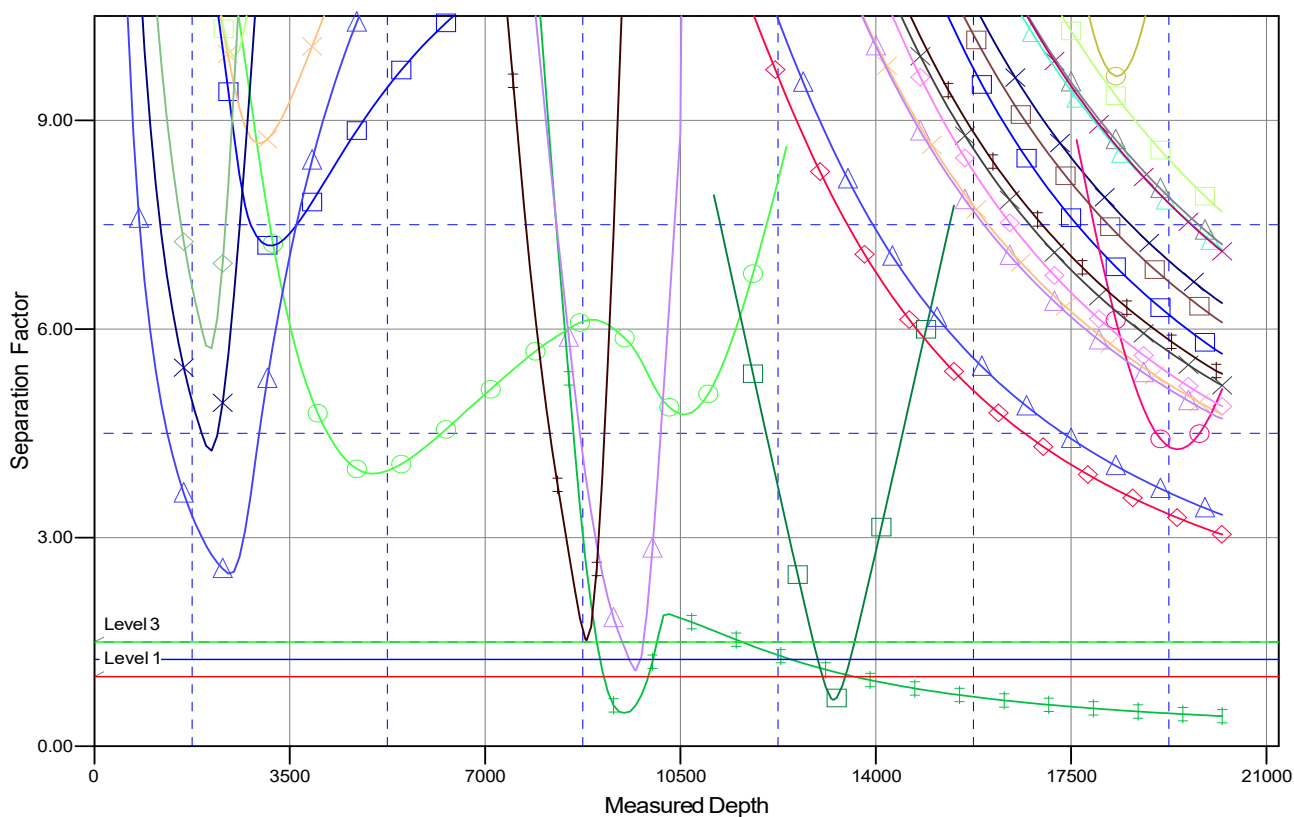
Central Meridian is -104.333334

Coordinates are relative to: Emerald Fed Com 503H

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

Grid Convergence at Surface is: 0.34°

Separation Factor Plot



LEGEND

Emerald Federal Com 513H, OH, Plan 0.1 V0	Emerald Fed Com 506H, OH, Plan 0.1 V0	Emerald Fed Com 602H, OH, Plan 0.1 V0
Nellis Federal 02, OH, OHV0	Emerald Fed Com 516H, OH, Plan 0.1 V0	Emerald Fed Com 301H, OH, Plan 0.1 V0
Nellis Federal 03, OH, OHV0	Emerald Fed Com 515H, OH, Plan 0.1 V0	Emerald Fed Com 603H, OH, Plan 0.1 V0
Emerald Fed Com 306H, OH, Plan 0.1 V0	Emerald Fed Com 514H, OH, Plan 0.1 V0	Emerald Fed Com 501H, OH, Plan 0.1 V0
Emerald Fed Com 604H, OH, Plan 0.1 V0	Hudson Federal 31 42, OH, P & A V0	Emerald Fed Com 601H, OH, Plan 0.1 V0
Emerald Fed Com 304H, OH, Plan 0.1 V0	Gazelle 31 Federal 1, OH, OHV0	Emerald Fed Com 303H, OH, Plan 0.1 V0
Emerald Fed Com 305H, OH, Plan 0.1 V0	Emerald Fed Com 502H, OH, Plan 0.1 V0	
Emerald Fed Com 605H, OH, Plan 0.1 V0	Emerald Fed Com 302H, OH, Plan 0.1 V0	

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

WELL DETAILS: Emerald Fed Com 503H

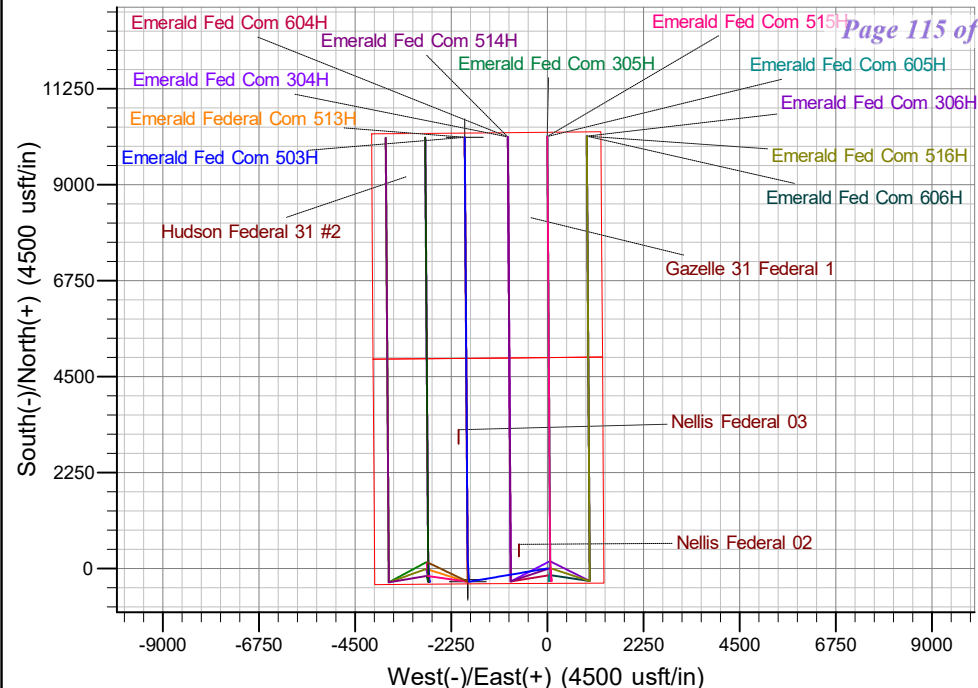
Ground Elev: 3682.6 KB: Original Well Elev

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	612810.41	736792.86	32.683051	-103.698059

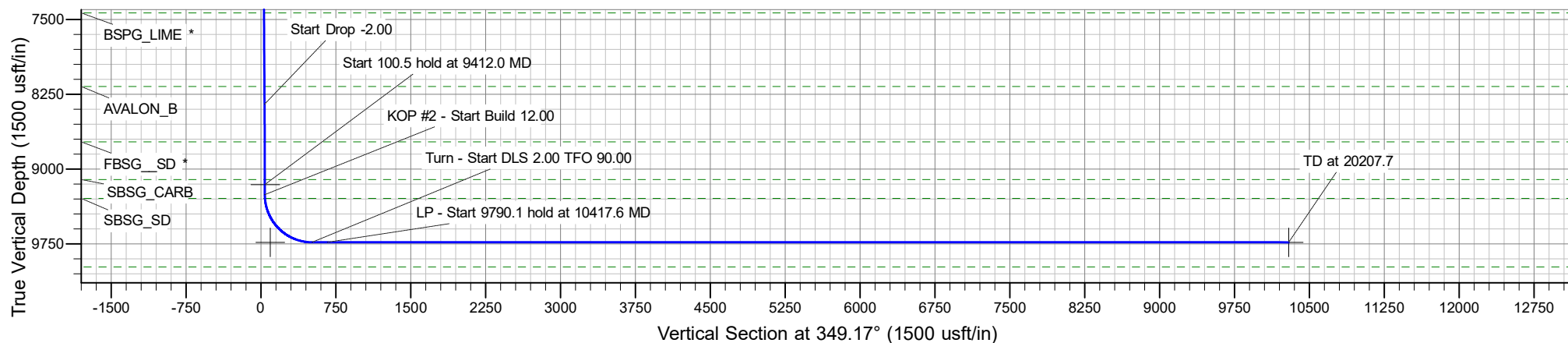
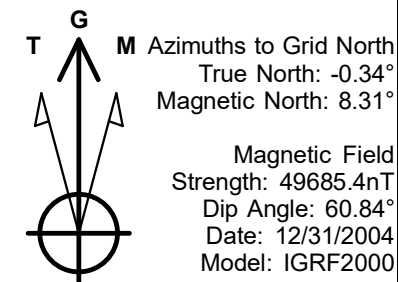
PROJECT DETAILS: Lea Co., NM (NAD 83)

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	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	KOP - Start Build 2.00
3	2817.9	16.36	260.36	2806.8	-19.4	-114.3	2.00	260.36	2.4	Start 5776.1 hold at 2817.9 MD
4	8594.0	16.36	260.36	8349.2	-291.7	-1718.2	0.00	0.00	36.4	Start Drop -2.00
5	9412.0	0.00	0.00	9156.0	-311.1	-1832.5	2.00	180.00	38.9	Start 100.5 hold at 9412.0 MD
6	9512.5	0.00	0.00	9256.5	-311.1	-1832.5	0.00	0.00	38.9	KOP #2 - Start Build 12.00
7	10262.5	90.00	356.50	9734.0	165.4	-1861.6	12.00	356.50	512.4	Turn - Start DLS 2.00 TFO 90.00
8	10417.6	90.00	359.60	9734.0	320.5	-1866.9	2.00	90.00	665.7	LP - Start 9790.1 hold at 10417.6 MD
9	20207.7	90.00	359.60	9734.0	10110.3	-1934.8	0.00	0.00	10293.8	TD at 20207.7



Avant Operating, LLC

Lea Co., NM (NAD 83)

Emerald Pad 2

Emerald Fed Com 503H

OH

Plan: Plan 0.1

Standard Planning Report

24 June, 2024

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Project	Lea Co., NM (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Emerald Pad 2				
Site Position:		Northing:	612,970.48 usft	Latitude:	32.683491
From:	Lat/Long	Easting:	736,832.01 usft	Longitude:	-103.697929
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "		

Well	Emerald Fed Com 503H					
Well Position	+N/-S	0.0 usft	Northing:	612,810.41 usft	Latitude:	32.683052
	+E/-W	0.0 usft	Easting:	736,792.86 usft	Longitude:	-103.698059
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,682.6 usft
Grid Convergence:		0.34 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2000	12/31/2004	8.66	60.84	49,685.43656772

Design	Plan 0.1			
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	349.17

Plan Survey Tool Program	Date	6/24/2024		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	20,207.3	Plan 0.1 (OH)	B001Mb_MWD+HRGM
				OWSG MWD + HRGM

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

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	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,817.9	16.36	260.36	2,806.8	-19.4	-114.3	2.00	2.00	0.00	260.36	
8,594.0	16.36	260.36	8,349.2	-291.7	-1,718.2	0.00	0.00	0.00	0.00	
9,411.9	0.00	0.00	9,156.0	-311.1	-1,832.5	2.00	-2.00	0.00	180.00	
9,512.4	0.00	0.00	9,256.5	-311.1	-1,832.5	0.00	0.00	0.00	0.00	
10,262.4	90.00	356.50	9,734.0	165.4	-1,861.6	12.00	12.00	0.00	356.50	
10,417.6	90.00	359.60	9,734.0	320.5	-1,866.9	2.00	0.00	2.00	90.00	
20,207.7	90.00	359.60	9,734.0	10,110.3	-1,934.8	0.00	0.00	0.00	0.00	LTP/BHL - Emerald F

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	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
1,460.0	0.00	0.00	1,460.0	0.0	0.0	0.0	0.00	0.00	0.00
RUSTLER									
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
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,754.0	0.00	0.00	1,754.0	0.0	0.0	0.0	0.00	0.00	0.00
SOLADO									
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
KOP - Start Build 2.00									
2,100.0	2.00	260.36	2,100.0	-0.3	-1.7	0.0	2.00	2.00	0.00
2,200.0	4.00	260.36	2,199.8	-1.2	-6.9	0.1	2.00	2.00	0.00
2,300.0	6.00	260.36	2,299.5	-2.6	-15.5	0.3	2.00	2.00	0.00
2,400.0	8.00	260.36	2,398.7	-4.7	-27.5	0.6	2.00	2.00	0.00
2,500.0	10.00	260.36	2,497.5	-7.3	-42.9	0.9	2.00	2.00	0.00
2,600.0	12.00	260.36	2,595.6	-10.5	-61.7	1.3	2.00	2.00	0.00
2,700.0	14.00	260.36	2,693.1	-14.2	-83.9	1.8	2.00	2.00	0.00
2,800.0	16.00	260.36	2,789.6	-18.6	-109.4	2.3	2.00	2.00	0.00
2,817.9	16.36	260.36	2,806.8	-19.4	-114.3	2.4	2.00	2.00	0.00
Start 5776.1 hold at 2817.9 MD									
2,900.0	16.36	260.36	2,885.6	-23.3	-137.1	2.9	0.00	0.00	0.00
3,000.0	16.36	260.36	2,981.6	-28.0	-164.9	3.5	0.00	0.00	0.00
3,100.0	16.36	260.36	3,077.5	-32.7	-192.7	4.1	0.00	0.00	0.00
3,200.0	16.36	260.36	3,173.5	-37.4	-220.4	4.7	0.00	0.00	0.00
3,300.0	16.36	260.36	3,269.4	-42.1	-248.2	5.3	0.00	0.00	0.00
3,400.0	16.36	260.36	3,365.4	-46.9	-276.0	5.9	0.00	0.00	0.00
3,491.3	16.36	260.36	3,453.0	-51.2	-301.3	6.4	0.00	0.00	0.00
YATES									
3,500.0	16.36	260.36	3,461.3	-51.6	-303.7	6.4	0.00	0.00	0.00
3,600.0	16.36	260.36	3,557.3	-56.3	-331.5	7.0	0.00	0.00	0.00
3,700.0	16.36	260.36	3,653.2	-61.0	-359.3	7.6	0.00	0.00	0.00
3,800.0	16.36	260.36	3,749.2	-65.7	-387.0	8.2	0.00	0.00	0.00
3,900.0	16.36	260.36	3,845.1	-70.4	-414.8	8.8	0.00	0.00	0.00
4,000.0	16.36	260.36	3,941.1	-75.1	-442.6	9.4	0.00	0.00	0.00
4,100.0	16.36	260.36	4,037.0	-79.9	-470.3	10.0	0.00	0.00	0.00
4,200.0	16.36	260.36	4,133.0	-84.6	-498.1	10.6	0.00	0.00	0.00
4,300.0	16.36	260.36	4,228.9	-89.3	-525.9	11.1	0.00	0.00	0.00
4,400.0	16.36	260.36	4,324.9	-94.0	-553.6	11.7	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.0	16.36	260.36	4,420.8	-98.7	-581.4	12.3	0.00	0.00	0.00
4,600.0	16.36	260.36	4,516.8	-103.4	-609.2	12.9	0.00	0.00	0.00
4,700.0	16.36	260.36	4,612.7	-108.1	-636.9	13.5	0.00	0.00	0.00
4,800.0	16.36	260.36	4,708.7	-112.9	-664.7	14.1	0.00	0.00	0.00
4,822.2	16.36	260.36	4,730.0	-113.9	-670.9	14.2	0.00	0.00	0.00
CAPITAN_REEF									
4,900.0	16.36	260.36	4,804.7	-117.6	-692.5	14.7	0.00	0.00	0.00
5,000.0	16.36	260.36	4,900.6	-122.3	-720.2	15.3	0.00	0.00	0.00
5,100.0	16.36	260.36	4,996.6	-127.0	-748.0	15.9	0.00	0.00	0.00
5,200.0	16.36	260.36	5,092.5	-131.7	-775.8	16.4	0.00	0.00	0.00
5,261.0	16.36	260.36	5,151.0	-134.6	-792.7	16.8	0.00	0.00	0.00
CHERRY_CNYN									
5,300.0	16.36	260.36	5,188.5	-136.4	-803.5	17.0	0.00	0.00	0.00
5,400.0	16.36	260.36	5,284.4	-141.1	-831.3	17.6	0.00	0.00	0.00
5,500.0	16.36	260.36	5,380.4	-145.9	-859.1	18.2	0.00	0.00	0.00
5,600.0	16.36	260.36	5,476.3	-150.6	-886.8	18.8	0.00	0.00	0.00
5,700.0	16.36	260.36	5,572.3	-155.3	-914.6	19.4	0.00	0.00	0.00
5,800.0	16.36	260.36	5,668.2	-160.0	-942.4	20.0	0.00	0.00	0.00
5,900.0	16.36	260.36	5,764.2	-164.7	-970.1	20.6	0.00	0.00	0.00
5,904.0	16.36	260.36	5,768.0	-164.9	-971.2	20.6	0.00	0.00	0.00
BRUSHY_CANYON									
6,000.0	16.36	260.36	5,860.1	-169.4	-997.9	21.2	0.00	0.00	0.00
6,100.0	16.36	260.36	5,956.1	-174.1	-1,025.7	21.7	0.00	0.00	0.00
6,200.0	16.36	260.36	6,052.0	-178.9	-1,053.4	22.3	0.00	0.00	0.00
6,300.0	16.36	260.36	6,148.0	-183.6	-1,081.2	22.9	0.00	0.00	0.00
6,400.0	16.36	260.36	6,243.9	-188.3	-1,109.0	23.5	0.00	0.00	0.00
6,500.0	16.36	260.36	6,339.9	-193.0	-1,136.7	24.1	0.00	0.00	0.00
6,600.0	16.36	260.36	6,435.8	-197.7	-1,164.5	24.7	0.00	0.00	0.00
6,700.0	16.36	260.36	6,531.8	-202.4	-1,192.3	25.3	0.00	0.00	0.00
6,800.0	16.36	260.36	6,627.7	-207.1	-1,220.0	25.9	0.00	0.00	0.00
6,900.0	16.36	260.36	6,723.7	-211.9	-1,247.8	26.5	0.00	0.00	0.00
7,000.0	16.36	260.36	6,819.6	-216.6	-1,275.6	27.0	0.00	0.00	0.00
7,100.0	16.36	260.36	6,915.6	-221.3	-1,303.3	27.6	0.00	0.00	0.00
7,200.0	16.36	260.36	7,011.5	-226.0	-1,331.1	28.2	0.00	0.00	0.00
7,300.0	16.36	260.36	7,107.5	-230.7	-1,358.9	28.8	0.00	0.00	0.00
7,400.0	16.36	260.36	7,203.5	-235.4	-1,386.6	29.4	0.00	0.00	0.00
7,500.0	16.36	260.36	7,299.4	-240.1	-1,414.4	30.0	0.00	0.00	0.00
7,600.0	16.36	260.36	7,395.4	-244.9	-1,442.2	30.6	0.00	0.00	0.00
7,640.3	16.36	260.36	7,434.0	-246.8	-1,453.3	30.8	0.00	0.00	0.00
BSPG_LIME *									
7,700.0	16.36	260.36	7,491.3	-249.6	-1,469.9	31.2	0.00	0.00	0.00
7,800.0	16.36	260.36	7,587.3	-254.3	-1,497.7	31.8	0.00	0.00	0.00
7,900.0	16.36	260.36	7,683.2	-259.0	-1,525.5	32.3	0.00	0.00	0.00
8,000.0	16.36	260.36	7,779.2	-263.7	-1,553.2	32.9	0.00	0.00	0.00
8,100.0	16.36	260.36	7,875.1	-268.4	-1,581.0	33.5	0.00	0.00	0.00
8,200.0	16.36	260.36	7,971.1	-273.1	-1,608.8	34.1	0.00	0.00	0.00
8,300.0	16.36	260.36	8,067.0	-277.9	-1,636.5	34.7	0.00	0.00	0.00
8,400.0	16.36	260.36	8,163.0	-282.6	-1,664.3	35.3	0.00	0.00	0.00
8,409.4	16.36	260.36	8,172.0	-283.0	-1,666.9	35.3	0.00	0.00	0.00
AVALON_B									
8,500.0	16.36	260.36	8,258.9	-287.3	-1,692.1	35.9	0.00	0.00	0.00
8,594.0	16.36	260.36	8,349.2	-291.7	-1,718.2	36.4	0.00	0.00	0.00
Start Drop -2.00									

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,600.0	16.24	260.36	8,354.9	-292.0	-1,719.8	36.5	2.00	-2.00	0.00	
8,700.0	14.24	260.36	8,451.4	-296.4	-1,745.7	37.0	2.00	-2.00	0.00	
8,800.0	12.24	260.36	8,548.7	-300.2	-1,768.3	37.5	2.00	-2.00	0.00	
8,900.0	10.24	260.36	8,646.8	-303.5	-1,787.5	37.9	2.00	-2.00	0.00	
8,981.3	8.61	260.36	8,727.0	-305.7	-1,800.7	38.2	2.00	-2.00	0.00	
FBSG_SD *										
9,000.0	8.24	260.36	8,745.5	-306.2	-1,803.3	38.2	2.00	-2.00	0.00	
9,100.0	6.24	260.36	8,844.7	-308.3	-1,815.8	38.5	2.00	-2.00	0.00	
9,200.0	4.24	260.36	8,944.2	-309.8	-1,824.8	38.7	2.00	-2.00	0.00	
9,300.0	2.24	260.36	9,044.1	-310.8	-1,830.3	38.8	2.00	-2.00	0.00	
9,359.9	1.04	260.36	9,104.0	-311.1	-1,832.0	38.8	2.00	-2.00	0.00	
SBSG_CARB										
9,400.0	0.24	260.36	9,144.0	-311.1	-1,832.5	38.9	2.00	-2.00	0.00	
9,411.9	0.00	0.00	9,156.0	-311.1	-1,832.5	38.9	2.00	-2.00	0.00	
Start 100.5 hold at 9412.0 MD - KOP - Emerald Fed Com 503H										
9,500.0	0.00	0.00	9,244.0	-311.1	-1,832.5	38.9	0.00	0.00	0.00	
9,512.4	0.00	0.00	9,256.5	-311.1	-1,832.5	38.9	0.00	0.00	0.00	
KOP #2 - Start Build 12.00										
9,525.0	1.51	356.50	9,269.0	-311.0	-1,832.5	39.0	12.00	12.00	0.00	
9,550.0	4.50	356.50	9,294.0	-309.7	-1,832.6	40.3	12.00	12.00	0.00	
SBSG_SD										
9,575.0	7.51	356.50	9,318.9	-307.0	-1,832.7	42.9	12.00	12.00	0.00	
9,600.0	10.51	356.50	9,343.6	-303.1	-1,833.0	46.8	12.00	12.00	0.00	
9,625.0	13.51	356.50	9,368.0	-298.0	-1,833.3	51.9	12.00	12.00	0.00	
9,650.0	16.51	356.50	9,392.2	-291.5	-1,833.7	58.4	12.00	12.00	0.00	
9,675.0	19.51	356.50	9,415.9	-283.8	-1,834.2	66.0	12.00	12.00	0.00	
9,700.0	22.51	356.50	9,439.3	-274.8	-1,834.7	74.9	12.00	12.00	0.00	
9,725.0	25.51	356.50	9,462.1	-264.7	-1,835.3	85.0	12.00	12.00	0.00	
9,750.0	28.51	356.50	9,484.4	-253.4	-1,836.0	96.3	12.00	12.00	0.00	
9,775.0	31.51	356.50	9,506.0	-240.9	-1,836.8	108.7	12.00	12.00	0.00	
9,800.0	34.51	356.50	9,527.0	-227.3	-1,837.6	122.2	12.00	12.00	0.00	
9,825.0	37.51	356.50	9,547.2	-212.6	-1,838.5	136.7	12.00	12.00	0.00	
9,850.0	40.51	356.50	9,566.6	-196.9	-1,839.5	152.3	12.00	12.00	0.00	
9,875.0	43.51	356.50	9,585.2	-180.2	-1,840.5	168.9	12.00	12.00	0.00	
9,900.0	46.51	356.50	9,602.9	-162.6	-1,841.6	186.5	12.00	12.00	0.00	
9,915.6	48.38	356.50	9,613.4	-151.1	-1,842.3	197.9	12.00	12.00	0.00	
FTP - Emerald Fed Com 503H										
9,925.0	49.51	356.50	9,619.6	-144.0	-1,842.7	204.9	12.00	12.00	0.00	
9,950.0	52.51	356.50	9,635.3	-124.6	-1,843.9	224.2	12.00	12.00	0.00	
9,975.0	55.51	356.50	9,650.0	-104.4	-1,845.1	244.2	12.00	12.00	0.00	
10,000.0	58.51	356.50	9,663.6	-83.5	-1,846.4	265.0	12.00	12.00	0.00	
10,025.0	61.51	356.50	9,676.1	-61.9	-1,847.7	286.5	12.00	12.00	0.00	
10,050.0	64.51	356.50	9,687.5	-39.7	-1,849.1	308.6	12.00	12.00	0.00	
10,075.0	67.51	356.50	9,697.6	-16.9	-1,850.5	331.2	12.00	12.00	0.00	
10,100.0	70.51	356.50	9,706.6	6.4	-1,851.9	354.4	12.00	12.00	0.00	
10,125.0	73.51	356.50	9,714.3	30.1	-1,853.4	378.0	12.00	12.00	0.00	
10,150.0	76.51	356.50	9,720.8	54.2	-1,854.8	401.9	12.00	12.00	0.00	
10,175.0	79.51	356.50	9,726.0	78.6	-1,856.3	426.2	12.00	12.00	0.00	
10,200.0	82.51	356.50	9,729.9	103.3	-1,857.8	450.6	12.00	12.00	0.00	
10,225.0	85.51	356.50	9,732.5	128.1	-1,859.4	475.3	12.00	12.00	0.00	
10,250.0	88.51	356.50	9,733.8	153.0	-1,860.9	500.1	12.00	12.00	0.00	
10,262.4	90.00	356.50	9,734.0	165.4	-1,861.6	512.4	12.00	12.00	0.00	
Turn - Start DLS 2.00 TFO 90.00										

Planning Report

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Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,300.0	90.00	357.25	9,734.0	202.9	-1,863.7	549.6	2.00	0.00	2.00
10,400.0	90.00	359.25	9,734.0	302.9	-1,866.7	648.4	2.00	0.00	2.00
10,417.6	90.00	359.60	9,734.0	320.5	-1,866.9	665.7	2.00	0.00	2.00
LP - Start 9790.1 hold at 10417.6 MD									
10,500.0	90.00	359.60	9,734.0	402.9	-1,867.5	746.7	0.00	0.00	0.00
10,600.0	90.00	359.60	9,734.0	502.9	-1,868.2	845.1	0.00	0.00	0.00
10,700.0	90.00	359.60	9,734.0	602.9	-1,868.9	943.4	0.00	0.00	0.00
10,800.0	90.00	359.60	9,734.0	702.9	-1,869.6	1,041.8	0.00	0.00	0.00
10,900.0	90.00	359.60	9,734.0	802.9	-1,870.3	1,140.1	0.00	0.00	0.00
11,000.0	90.00	359.60	9,734.0	902.9	-1,871.0	1,238.4	0.00	0.00	0.00
11,100.0	90.00	359.60	9,734.0	1,002.9	-1,871.7	1,336.8	0.00	0.00	0.00
11,200.0	90.00	359.60	9,734.0	1,102.9	-1,872.3	1,435.1	0.00	0.00	0.00
11,300.0	90.00	359.60	9,734.0	1,202.9	-1,873.0	1,533.5	0.00	0.00	0.00
11,400.0	90.00	359.60	9,734.0	1,302.9	-1,873.7	1,631.8	0.00	0.00	0.00
11,500.0	90.00	359.60	9,734.0	1,402.9	-1,874.4	1,730.2	0.00	0.00	0.00
11,600.0	90.00	359.60	9,734.0	1,502.9	-1,875.1	1,828.5	0.00	0.00	0.00
11,700.0	90.00	359.60	9,734.0	1,602.9	-1,875.8	1,926.9	0.00	0.00	0.00
11,800.0	90.00	359.60	9,734.0	1,702.9	-1,876.5	2,025.2	0.00	0.00	0.00
11,900.0	90.00	359.60	9,734.0	1,802.8	-1,877.2	2,123.6	0.00	0.00	0.00
12,000.0	90.00	359.60	9,734.0	1,902.8	-1,877.9	2,221.9	0.00	0.00	0.00
12,100.0	90.00	359.60	9,734.0	2,002.8	-1,878.6	2,320.2	0.00	0.00	0.00
12,200.0	90.00	359.60	9,734.0	2,102.8	-1,879.3	2,418.6	0.00	0.00	0.00
12,300.0	90.00	359.60	9,734.0	2,202.8	-1,880.0	2,516.9	0.00	0.00	0.00
12,400.0	90.00	359.60	9,734.0	2,302.8	-1,880.7	2,615.3	0.00	0.00	0.00
12,500.0	90.00	359.60	9,734.0	2,402.8	-1,881.4	2,713.6	0.00	0.00	0.00
12,600.0	90.00	359.60	9,734.0	2,502.8	-1,882.1	2,812.0	0.00	0.00	0.00
12,700.0	90.00	359.60	9,734.0	2,602.8	-1,882.8	2,910.3	0.00	0.00	0.00
12,800.0	90.00	359.60	9,734.0	2,702.8	-1,883.4	3,008.7	0.00	0.00	0.00
12,900.0	90.00	359.60	9,734.0	2,802.8	-1,884.1	3,107.0	0.00	0.00	0.00
13,000.0	90.00	359.60	9,734.0	2,902.8	-1,884.8	3,205.4	0.00	0.00	0.00
13,100.0	90.00	359.60	9,734.0	3,002.8	-1,885.5	3,303.7	0.00	0.00	0.00
13,200.0	90.00	359.60	9,734.0	3,102.8	-1,886.2	3,402.0	0.00	0.00	0.00
13,300.0	90.00	359.60	9,734.0	3,202.8	-1,886.9	3,500.4	0.00	0.00	0.00
13,400.0	90.00	359.60	9,734.0	3,302.8	-1,887.6	3,598.7	0.00	0.00	0.00
13,500.0	90.00	359.60	9,734.0	3,402.8	-1,888.3	3,697.1	0.00	0.00	0.00
13,600.0	90.00	359.60	9,734.0	3,502.8	-1,889.0	3,795.4	0.00	0.00	0.00
13,700.0	90.00	359.60	9,734.0	3,602.8	-1,889.7	3,893.8	0.00	0.00	0.00
13,800.0	90.00	359.60	9,734.0	3,702.8	-1,890.4	3,992.1	0.00	0.00	0.00
13,900.0	90.00	359.60	9,734.0	3,802.8	-1,891.1	4,090.5	0.00	0.00	0.00
14,000.0	90.00	359.60	9,734.0	3,902.8	-1,891.8	4,188.8	0.00	0.00	0.00
14,100.0	90.00	359.60	9,734.0	4,002.8	-1,892.5	4,287.2	0.00	0.00	0.00
14,200.0	90.00	359.60	9,734.0	4,102.8	-1,893.2	4,385.5	0.00	0.00	0.00
14,300.0	90.00	359.60	9,734.0	4,202.8	-1,893.8	4,483.9	0.00	0.00	0.00
14,400.0	90.00	359.60	9,734.0	4,302.8	-1,894.5	4,582.2	0.00	0.00	0.00
14,500.0	90.00	359.60	9,734.0	4,402.8	-1,895.2	4,680.5	0.00	0.00	0.00
14,600.0	90.00	359.60	9,734.0	4,502.8	-1,895.9	4,778.9	0.00	0.00	0.00
14,700.0	90.00	359.60	9,734.0	4,602.8	-1,896.6	4,877.2	0.00	0.00	0.00
14,800.0	90.00	359.60	9,734.0	4,702.8	-1,897.3	4,975.6	0.00	0.00	0.00
14,900.0	90.00	359.60	9,734.0	4,802.8	-1,898.0	5,073.9	0.00	0.00	0.00
15,000.0	90.00	359.60	9,734.0	4,902.8	-1,898.7	5,172.3	0.00	0.00	0.00
15,100.0	90.00	359.60	9,734.0	5,002.8	-1,899.4	5,270.6	0.00	0.00	0.00
15,200.0	90.00	359.60	9,734.0	5,102.8	-1,900.1	5,369.0	0.00	0.00	0.00
15,300.0	90.00	359.60	9,734.0	5,202.8	-1,900.8	5,467.3	0.00	0.00	0.00
15,400.0	90.00	359.60	9,734.0	5,302.8	-1,901.5	5,565.7	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,500.0	90.00	359.60	9,734.0	5,402.8	-1,902.2	5,664.0	0.00	0.00	0.00
15,600.0	90.00	359.60	9,734.0	5,502.8	-1,902.9	5,762.3	0.00	0.00	0.00
15,700.0	90.00	359.60	9,734.0	5,602.8	-1,903.6	5,860.7	0.00	0.00	0.00
15,800.0	90.00	359.60	9,734.0	5,702.8	-1,904.3	5,959.0	0.00	0.00	0.00
15,900.0	90.00	359.60	9,734.0	5,802.8	-1,904.9	6,057.4	0.00	0.00	0.00
16,000.0	90.00	359.60	9,734.0	5,902.8	-1,905.6	6,155.7	0.00	0.00	0.00
16,100.0	90.00	359.60	9,734.0	6,002.7	-1,906.3	6,254.1	0.00	0.00	0.00
16,200.0	90.00	359.60	9,734.0	6,102.7	-1,907.0	6,352.4	0.00	0.00	0.00
16,300.0	90.00	359.60	9,734.0	6,202.7	-1,907.7	6,450.8	0.00	0.00	0.00
16,400.0	90.00	359.60	9,734.0	6,302.7	-1,908.4	6,549.1	0.00	0.00	0.00
16,500.0	90.00	359.60	9,734.0	6,402.7	-1,909.1	6,647.5	0.00	0.00	0.00
16,600.0	90.00	359.60	9,734.0	6,502.7	-1,909.8	6,745.8	0.00	0.00	0.00
16,700.0	90.00	359.60	9,734.0	6,602.7	-1,910.5	6,844.1	0.00	0.00	0.00
16,800.0	90.00	359.60	9,734.0	6,702.7	-1,911.2	6,942.5	0.00	0.00	0.00
16,900.0	90.00	359.60	9,734.0	6,802.7	-1,911.9	7,040.8	0.00	0.00	0.00
17,000.0	90.00	359.60	9,734.0	6,902.7	-1,912.6	7,139.2	0.00	0.00	0.00
17,100.0	90.00	359.60	9,734.0	7,002.7	-1,913.3	7,237.5	0.00	0.00	0.00
17,200.0	90.00	359.60	9,734.0	7,102.7	-1,914.0	7,335.9	0.00	0.00	0.00
17,300.0	90.00	359.60	9,734.0	7,202.7	-1,914.7	7,434.2	0.00	0.00	0.00
17,400.0	90.00	359.60	9,734.0	7,302.7	-1,915.3	7,532.6	0.00	0.00	0.00
17,500.0	90.00	359.60	9,734.0	7,402.7	-1,916.0	7,630.9	0.00	0.00	0.00
17,600.0	90.00	359.60	9,734.0	7,502.7	-1,916.7	7,729.3	0.00	0.00	0.00
17,700.0	90.00	359.60	9,734.0	7,602.7	-1,917.4	7,827.6	0.00	0.00	0.00
17,800.0	90.00	359.60	9,734.0	7,702.7	-1,918.1	7,926.0	0.00	0.00	0.00
17,900.0	90.00	359.60	9,734.0	7,802.7	-1,918.8	8,024.3	0.00	0.00	0.00
18,000.0	90.00	359.60	9,734.0	7,902.7	-1,919.5	8,122.6	0.00	0.00	0.00
18,100.0	90.00	359.60	9,734.0	8,002.7	-1,920.2	8,221.0	0.00	0.00	0.00
18,200.0	90.00	359.60	9,734.0	8,102.7	-1,920.9	8,319.3	0.00	0.00	0.00
18,300.0	90.00	359.60	9,734.0	8,202.7	-1,921.6	8,417.7	0.00	0.00	0.00
18,400.0	90.00	359.60	9,734.0	8,302.7	-1,922.3	8,516.0	0.00	0.00	0.00
18,500.0	90.00	359.60	9,734.0	8,402.7	-1,923.0	8,614.4	0.00	0.00	0.00
18,600.0	90.00	359.60	9,734.0	8,502.7	-1,923.7	8,712.7	0.00	0.00	0.00
18,700.0	90.00	359.60	9,734.0	8,602.7	-1,924.4	8,811.1	0.00	0.00	0.00
18,800.0	90.00	359.60	9,734.0	8,702.7	-1,925.1	8,909.4	0.00	0.00	0.00
18,900.0	90.00	359.60	9,734.0	8,802.7	-1,925.8	9,007.8	0.00	0.00	0.00
19,000.0	90.00	359.60	9,734.0	8,902.7	-1,926.4	9,106.1	0.00	0.00	0.00
19,100.0	90.00	359.60	9,734.0	9,002.7	-1,927.1	9,204.4	0.00	0.00	0.00
19,200.0	90.00	359.60	9,734.0	9,102.7	-1,927.8	9,302.8	0.00	0.00	0.00
19,300.0	90.00	359.60	9,734.0	9,202.7	-1,928.5	9,401.1	0.00	0.00	0.00
19,400.0	90.00	359.60	9,734.0	9,302.7	-1,929.2	9,499.5	0.00	0.00	0.00
19,500.0	90.00	359.60	9,734.0	9,402.7	-1,929.9	9,597.8	0.00	0.00	0.00
19,600.0	90.00	359.60	9,734.0	9,502.7	-1,930.6	9,696.2	0.00	0.00	0.00
19,700.0	90.00	359.60	9,734.0	9,602.7	-1,931.3	9,794.5	0.00	0.00	0.00
19,800.0	90.00	359.60	9,734.0	9,702.7	-1,932.0	9,892.9	0.00	0.00	0.00
19,900.0	90.00	359.60	9,734.0	9,802.7	-1,932.7	9,991.2	0.00	0.00	0.00
20,000.0	90.00	359.60	9,734.0	9,902.7	-1,933.4	10,089.6	0.00	0.00	0.00
20,100.0	90.00	359.60	9,734.0	10,002.7	-1,934.1	10,187.9	0.00	0.00	0.00
20,207.7	90.00	359.60	9,734.0	10,110.3	-1,934.8	10,293.8	0.00	0.00	0.00
TD at 20207.7 - LTP/BHL - Emerald Fed Com 503H									

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
KOP - Emerald Fed Con	0.00	0.00	9,156.0	-311.1	-1,862.5	612,499.28	734,930.39	32.682227	-103.704118
- plan misses target center by 30.0usft at 9412.0usft MD (9156.0 TVD, -311.1 N, -1832.5 E)									
- Point									
LTP/BHL - Emerald Fed	0.00	0.00	9,734.0	10,110.3	-1,934.8	622,920.76	734,858.04	32.710872	-103.704152
- plan hits target center									
- Point									
FTP - Emerald Fed Com	0.00	0.00	9,734.0	-261.1	-1,862.8	612,549.28	734,930.02	32.682364	-103.704118
- plan misses target center by 164.5usft at 9915.6usft MD (9613.4 TVD, -151.1 N, -1842.3 E)									
- Point									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
20,210.0		20" Casing	20	24

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,460.0	1,460.0	RUSTLER			
1,754.0	1,754.0	SOLADO			
3,491.3	3,453.0	YATES			
4,822.2	4,730.0	CAPITAN_REEF			
5,261.0	5,151.0	CHERRY_CNYN			
5,904.0	5,768.0	BRUSHY_CANYON			
7,640.3	7,434.0	BSPG_LIME *			
8,409.4	8,172.0	AVALON_B			
8,981.3	8,727.0	FBSG_SD *			
9,359.9	9,104.0	SBSG_CARB			
9,550.0	9,294.0	SBSG_SD			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.0	2,000.0	0.0	0.0	KOP - Start Build 2.00
2,817.9	2,806.8	-19.4	-114.3	Start 5776.1 hold at 2817.9 MD
8,594.0	8,349.2	-291.7	-1,718.2	Start Drop -2.00
9,411.9	9,156.0	-311.1	-1,832.5	Start 100.5 hold at 9412.0 MD
9,512.4	9,256.5	-311.1	-1,832.5	KOP #2 - Start Build 12.00
10,262.4	9,734.0	165.4	-1,861.6	Turn - Start DLS 2.00 TFO 90.00
10,417.6	9,734.0	320.5	-1,866.9	LP - Start 9790.1 hold at 10417.6 MD
20,207.7	9,734.0	10,110.3	-1,934.8	TD at 20207.7

Avant Operating, LLC

Lea Co., NM (NAD 83)

Emerald Pad 2

Emerald Fed Com 503H

OH

Plan 0.1

Anticollision Report

24 June, 2024

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Reference	Plan 0.1		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 2,220.8usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	6/24/2024		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,207.3	Plan 0.1 (OH)	B001Mb_MWD+HRGM	OWSG MWD + HRGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Emerald						
Emerald Federal Com 513H - OH - Plan 0.1	9,498.2	9,365.8	32.9	-35.7	0.480	Level 1, CC
Emerald Federal Com 513H - OH - Plan 0.1	20,207.7	20,156.3	74.6	-97.1	0.434	Level 1, ES, SF
Nellis Federal 02 - OH - OH	4,454.9	4,360.3	462.5	351.4	4.164	CC
Nellis Federal 02 - OH - OH	4,600.0	4,499.4	464.3	349.6	4.047	ES
Nellis Federal 02 - OH - OH	5,000.0	4,883.0	487.7	363.3	3.921	SF
Nellis Federal 03 - OH - OH	13,236.1	9,743.7	192.2	-96.0	0.667	Level 1, CC, ES, SF
Emerald Offset Wells						
Gazelle 31 Federal 1 - OH - OH	18,309.3	9,781.3	1,541.4	1,381.4	9.635	CC, ES, SF
Hudson Federal 31 #2 - OH - P & A	19,290.5	9,767.9	1,381.7	1,059.7	4.291	CC
Hudson Federal 31 #2 - OH - P & A	19,300.0	9,767.9	1,381.7	1,059.5	4.287	ES
Hudson Federal 31 #2 - OH - P & A	19,400.0	9,767.9	1,386.0	1,061.4	4.269	SF
Emerald Pad 1						
Emerald Fed Com 301H - OH - Plan 0.1	9,134.2	8,825.0	1,906.2	1,839.7	28.654	CC
Emerald Fed Com 301H - OH - Plan 0.1	20,207.7	19,114.0	2,061.8	1,776.1	7.217	ES, SF
Emerald Fed Com 302H - OH - Plan 0.1	9,047.3	8,740.3	992.5	927.4	15.256	CC, ES
Emerald Fed Com 302H - OH - Plan 0.1	20,207.7	19,070.8	1,299.7	1,049.2	5.189	SF
Emerald Fed Com 303H - OH - Plan 0.1	8,817.5	8,644.9	99.4	34.2	1.523	CC, ES, SF
Emerald Fed Com 501H - OH - Plan 0.1	10,490.9	10,297.0	1,847.7	1,775.0	25.417	CC
Emerald Fed Com 501H - OH - Plan 0.1	20,207.7	20,011.3	1,848.0	1,544.8	6.095	ES, SF
Emerald Fed Com 502H - OH - Plan 0.1	10,200.4	9,911.6	922.7	852.0	13.044	CC
Emerald Fed Com 502H - OH - Plan 0.1	20,207.7	19,968.0	924.0	620.7	3.047	ES, SF
Emerald Fed Com 601H - OH - Plan 0.1	9,079.8	8,654.0	1,779.5	1,714.3	27.284	CC
Emerald Fed Com 601H - OH - Plan 0.1	9,100.0	8,674.2	1,779.6	1,714.2	27.223	ES
Emerald Fed Com 601H - OH - Plan 0.1	20,207.7	20,795.2	2,016.0	1,732.8	7.118	SF
Emerald Fed Com 602H - OH - Plan 0.1	9,804.0	9,533.4	956.6	887.4	13.825	CC, ES
Emerald Fed Com 602H - OH - Plan 0.1	20,207.7	20,749.4	1,226.1	975.4	4.889	SF
Emerald Fed Com 603H - OH - Plan 0.1	9,688.3	9,481.4	75.9	6.5	1.093	Level 2, CC
Emerald Fed Com 603H - OH - Plan 0.1	9,700.0	9,492.1	76.1	6.2	1.089	Level 2, ES, SF

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Emerald Pad 2						
Emerald Fed Com 304H - OH - Plan 0.1	2,750.0	2,771.9	145.3	126.2	7.617	CC
Emerald Fed Com 304H - OH - Plan 0.1	2,800.0	2,821.6	145.6	126.2	7.496	ES
Emerald Fed Com 304H - OH - Plan 0.1	20,207.7	19,120.1	1,368.2	1,125.8	5.644	SF
Emerald Fed Com 305H - OH - Plan 0.1	2,315.7	2,329.7	165.4	149.4	10.316	CC, ES
Emerald Fed Com 305H - OH - Plan 0.1	20,207.7	19,049.6	2,142.6	1,863.9	7.687	SF
Emerald Fed Com 306H - OH - Plan 0.1	2,000.0	2,003.3	178.8	164.9	12.864	CC, ES
Emerald Fed Com 306H - OH - Plan 0.1	2,300.0	2,300.0	190.1	174.1	11.929	SF
Emerald Fed Com 514H - OH - Plan 0.1	2,018.4	2,019.1	40.1	26.1	2.861	CC
Emerald Fed Com 514H - OH - Plan 0.1	2,400.0	2,405.8	41.0	24.5	2.481	ES, SF
Emerald Fed Com 515H - OH - Plan 0.1	1,916.3	1,917.4	60.0	46.7	4.516	CC
Emerald Fed Com 515H - OH - Plan 0.1	2,000.0	2,001.1	60.0	46.1	4.321	ES
Emerald Fed Com 515H - OH - Plan 0.1	2,100.0	2,100.8	62.0	47.4	4.251	SF
Emerald Fed Com 516H - OH - Plan 0.1	1,916.3	1,917.5	80.0	66.7	6.019	CC
Emerald Fed Com 516H - OH - Plan 0.1	2,000.0	2,000.0	80.0	66.1	5.762	ES
Emerald Fed Com 516H - OH - Plan 0.1	2,100.0	2,098.5	83.4	68.8	5.722	SF
Emerald Fed Com 604H - OH - Plan 0.1	2,388.3	2,390.1	165.0	148.4	9.955	CC
Emerald Fed Com 604H - OH - Plan 0.1	2,500.0	2,501.8	165.2	147.8	9.515	ES
Emerald Fed Com 604H - OH - Plan 0.1	20,207.7	20,801.0	1,285.0	1,015.7	4.771	SF
Emerald Fed Com 605H - OH - Plan 0.1	2,000.0	1,999.9	171.1	157.2	12.323	CC, ES
Emerald Fed Com 605H - OH - Plan 0.1	20,207.7	20,751.3	2,090.7	1,798.1	7.145	SF
Emerald Fed Com 606H - OH - Plan 0.1	2,000.0	1,999.3	179.0	165.1	12.892	CC, ES
Emerald Fed Com 606H - OH - Plan 0.1	2,200.0	2,191.5	185.3	170.1	12.172	SF

Offset Design: Emerald - Emerald Federal Com 513H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program: Reference		0-B001Mb_MWD+HRGM Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Offset Well Error: 0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
4,600.0	4,516.8	4,508.2	4,508.2	18.3	15.9	12.33	-18.5	-2,812.8	2,205.2	2,173.0	32.24	68.411		
4,700.0	4,612.7	4,604.1	4,604.1	18.8	16.3	12.49	-18.5	-2,812.8	2,177.7	2,144.7	32.97	66.058		
4,800.0	4,708.7	4,700.1	4,700.1	19.3	16.6	12.65	-18.5	-2,812.8	2,150.1	2,116.4	33.70	63.804		
4,900.0	4,804.7	4,796.1	4,796.1	19.9	17.0	12.81	-18.5	-2,812.8	2,122.6	2,088.2	34.43	61.645		
5,000.0	4,900.6	4,892.0	4,892.0	20.4	17.3	12.98	-18.5	-2,812.8	2,095.1	2,059.9	35.17	59.573		
5,100.0	4,996.6	4,988.0	4,988.0	20.9	17.7	13.16	-18.5	-2,812.8	2,067.6	2,031.7	35.91	57.585		
5,200.0	5,092.5	5,269.7	5,269.3	21.4	18.6	13.61	-22.3	-2,800.7	2,036.3	1,999.4	36.90	55.182		
5,300.0	5,188.5	5,556.9	5,553.4	21.9	19.6	13.89	-34.8	-2,761.3	1,995.7	1,958.1	37.57	53.118		
5,400.0	5,284.4	5,818.7	5,807.6	22.4	20.5	13.97	-53.6	-2,702.0	1,946.8	1,908.9	37.93	51.320		
5,500.0	5,380.4	5,905.3	5,890.7	23.0	20.9	13.96	-61.0	-2,678.6	1,894.0	1,855.5	38.57	49.103		
5,600.0	5,476.3	5,990.3	5,972.2	23.5	21.2	13.96	-68.2	-2,655.7	1,841.3	1,802.1	39.22	46.950		
5,700.0	5,572.3	6,075.2	6,053.7	24.0	21.5	13.95	-75.5	-2,632.8	1,788.5	1,748.7	39.87	44.863		
5,800.0	5,668.2	6,160.2	6,135.2	24.5	21.8	13.94	-82.7	-2,609.9	1,735.8	1,695.3	40.52	42.840		
5,900.0	5,764.2	6,245.1	6,216.6	25.1	22.2	13.94	-90.0	-2,587.0	1,683.0	1,641.9	41.17	40.878		
6,000.0	5,860.1	6,330.1	6,298.1	25.6	22.5	13.93	-97.2	-2,564.1	1,630.3	1,588.4	41.83	38.975		
6,100.0	5,956.1	6,415.1	6,379.6	26.1	22.9	13.92	-104.4	-2,541.2	1,577.5	1,535.0	42.49	37.129		
6,200.0	6,052.0	6,500.0	6,461.1	26.6	23.2	13.91	-111.7	-2,518.3	1,524.8	1,481.6	43.15	35.337		
6,300.0	6,148.0	6,585.0	6,542.6	27.2	23.6	13.90	-118.9	-2,495.4	1,472.0	1,428.2	43.81	33.597		
6,400.0	6,243.9	6,669.9	6,624.1	27.7	23.9	13.89	-126.2	-2,472.5	1,419.3	1,374.8	44.48	31.907		
6,500.0	6,339.9	6,754.9	6,705.6	28.2	24.3	13.88	-133.4	-2,449.6	1,366.5	1,321.4	45.15	30.266		
6,600.0	6,435.8	6,839.8	6,787.1	28.8	24.6	13.87	-140.7	-2,426.7	1,313.8	1,267.9	45.82	28.672		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Emerald Federal Com 513H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
6,700.0	6,531.8	6,924.8	6,868.5	29.3	25.0	13.85	-147.9	-2,403.8	1,261.0	1,214.5	46.49	27.122	
6,800.0	6,627.7	7,009.7	6,950.0	29.8	25.4	13.84	-155.2	-2,380.9	1,208.2	1,161.1	47.17	25.616	
6,900.0	6,723.7	7,094.7	7,031.5	30.4	25.7	13.83	-162.4	-2,358.0	1,155.5	1,107.6	47.84	24.151	
7,000.0	6,819.6	7,179.6	7,113.0	30.9	26.1	13.81	-169.7	-2,335.1	1,102.7	1,054.2	48.52	22.726	
7,100.0	6,915.6	7,264.6	7,194.5	31.4	26.5	13.79	-176.9	-2,312.2	1,050.0	1,000.8	49.20	21.339	
7,200.0	7,011.5	7,349.5	7,276.0	32.0	26.9	13.77	-184.2	-2,289.3	997.2	947.3	49.89	19.990	
7,300.0	7,107.5	7,434.5	7,357.5	32.5	27.3	13.75	-191.4	-2,266.4	944.5	893.9	50.57	18.677	
7,400.0	7,203.5	7,519.4	7,438.9	33.0	27.7	13.72	-198.7	-2,243.5	891.7	840.5	51.26	17.398	
7,500.0	7,299.4	7,604.4	7,520.4	33.6	28.0	13.69	-205.9	-2,220.6	839.0	787.0	51.94	16.152	
7,600.0	7,395.4	7,689.4	7,601.9	34.1	28.4	13.66	-213.2	-2,197.7	786.2	733.6	52.63	14.938	
7,700.0	7,491.3	7,774.3	7,683.4	34.6	28.8	13.62	-220.4	-2,174.8	733.5	680.2	53.32	13.756	
7,800.0	7,587.3	7,859.3	7,764.9	35.2	29.2	13.58	-227.7	-2,151.9	680.7	626.7	54.01	12.603	
7,900.0	7,683.2	7,944.2	7,846.4	35.7	29.6	13.53	-234.9	-2,129.0	628.0	573.3	54.71	11.479	
8,000.0	7,779.2	8,029.2	7,927.9	36.2	30.0	13.47	-242.1	-2,106.1	575.2	519.8	55.40	10.383	
8,100.0	7,875.1	8,114.1	8,009.4	36.8	30.4	13.40	-249.4	-2,083.2	522.5	466.4	56.10	9.314	
8,200.0	7,971.1	8,199.1	8,090.8	37.3	30.8	13.31	-256.6	-2,060.3	469.7	412.9	56.79	8.271	
8,300.0	8,067.0	8,284.0	8,172.3	37.9	31.2	13.20	-263.9	-2,037.4	417.0	359.5	57.49	7.253	
8,400.0	8,163.0	8,369.0	8,253.8	38.4	31.6	13.05	-271.1	-2,014.5	364.2	306.0	58.19	6.260	
8,500.0	8,258.9	8,453.9	8,335.3	38.9	32.0	12.86	-278.4	-1,991.6	311.5	252.6	58.88	5.290	
8,600.0	8,354.9	8,536.7	8,414.7	39.5	32.4	12.60	-285.4	-1,969.4	258.9	199.2	59.71	4.335	
8,700.0	8,451.4	8,617.4	8,492.6	40.0	32.8	12.02	-291.8	-1,949.3	209.7	148.9	60.79	3.449	
8,800.0	8,548.7	8,700.0	8,573.0	40.5	33.2	11.31	-297.6	-1,931.0	166.0	104.0	62.02	2.677	
8,900.0	8,646.8	8,790.1	8,661.2	40.9	33.6	10.31	-303.1	-1,913.5	128.1	65.2	62.92	2.035	
9,000.0	8,745.5	8,881.5	8,751.2	41.3	34.0	8.92	-307.8	-1,898.5	96.2	32.3	63.94	1.505	
9,100.0	8,844.7	8,975.5	8,844.3	41.7	34.4	6.88	-311.8	-1,885.9	70.7	5.8	64.93	1.089 Level 2	
9,200.0	8,944.2	9,071.8	8,940.0	42.1	34.7	3.96	-314.9	-1,876.0	51.7	-14.2	65.89	0.785 Level 1	
9,300.0	9,044.1	9,169.5	9,037.5	42.4	35.1	0.33	-317.1	-1,869.2	39.4	-27.5	66.87	0.589 Level 1	
9,400.0	9,144.0	9,268.3	9,136.1	42.7	35.4	-2.64	-318.3	-1,865.4	33.7	-34.1	67.83	0.498 Level 1	
9,498.2	9,242.2	9,365.8	9,233.6	42.9	35.7	-102.91	-318.5	-1,864.8	32.9	-35.7	68.58	0.480 Level 1, CC	
9,500.0	9,244.0	9,367.6	9,235.4	42.9	35.7	-102.89	-318.5	-1,864.8	33.1	-35.5	68.59	0.483 Level 1	
9,600.0	9,343.6	9,467.5	9,335.4	43.2	36.0	-111.84	-318.3	-1,864.8	35.2	-35.1	70.36	0.501 Level 1	
9,700.0	9,439.3	9,571.3	9,438.0	43.4	36.4	-131.60	-304.4	-1,864.9	42.8	-29.8	72.63	0.590 Level 1	
9,800.0	9,527.0	9,678.7	9,538.4	43.6	36.6	-144.96	-266.9	-1,865.1	52.2	-18.8	71.04	0.735 Level 1	
9,900.0	9,602.9	9,789.6	9,630.7	43.8	36.9	-154.28	-205.8	-1,865.5	61.4	-3.9	65.30	0.940 Level 1	
10,000.0	9,663.6	9,903.7	9,708.2	43.9	37.0	-161.31	-122.5	-1,866.1	68.8	12.3	56.56	1.217 Level 2	
10,100.0	9,706.6	10,020.3	9,764.8	43.9	37.0	-167.07	-20.9	-1,866.8	73.7	26.8	46.93	1.571	
10,200.0	9,729.9	10,138.4	9,795.4	43.9	37.0	-172.16	92.9	-1,867.5	75.5	35.4	40.04	1.885	
10,300.0	9,734.0	10,248.7	9,800.0	44.0	37.0	-176.50	202.9	-1,868.3	74.8	35.5	39.31	1.902	
10,400.0	9,734.0	10,348.6	9,800.0	44.0	37.0	-178.32	302.9	-1,868.9	74.7	34.7	39.92	1.870	
10,494.8	9,734.0	10,443.4	9,800.0	44.1	37.0	-178.57	397.6	-1,869.6	74.7	34.2	40.48	1.844	
10,500.0	9,734.0	10,448.6	9,800.0	44.1	37.0	-178.37	402.9	-1,869.6	74.7	34.2	40.50	1.844	
10,600.0	9,734.0	10,548.6	9,800.0	44.2	37.1	-178.39	502.9	-1,870.3	74.7	33.5	41.12	1.816	
10,700.0	9,734.0	10,648.6	9,800.0	44.3	37.3	-178.41	602.9	-1,871.0	74.7	32.9	41.80	1.786	
10,800.0	9,734.0	10,748.6	9,800.0	44.5	37.6	-178.43	702.9	-1,871.6	74.7	32.1	42.52	1.756	
10,900.0	9,734.0	10,848.6	9,800.0	44.8	38.0	-178.44	802.9	-1,872.3	74.7	31.4	43.29	1.725	
11,000.0	9,734.0	10,948.6	9,800.0	45.1	38.4	-178.46	902.9	-1,873.0	74.7	30.6	44.10	1.693	
11,100.0	9,734.0	11,048.6	9,800.0	45.4	39.0	-178.48	1,002.9	-1,873.6	74.7	29.7	44.95	1.661	
11,200.0	9,734.0	11,148.6	9,800.0	45.8	39.6	-178.49	1,102.9	-1,874.3	74.7	28.8	45.84	1.629	
11,300.0	9,734.0	11,248.6	9,800.0	46.3	40.2	-178.51	1,202.9	-1,875.0	74.7	27.9	46.76	1.596	
11,400.0	9,734.0	11,348.6	9,800.0	46.8	40.9	-178.53	1,302.8	-1,875.7	74.7	26.9	47.72	1.564	
11,500.0	9,734.0	11,448.6	9,800.0	47.3	41.7	-178.54	1,402.8	-1,876.3	74.7	25.9	48.71	1.533	
11,600.0	9,734.0	11,548.6	9,800.0	47.9	42.4	-178.56	1,502.8	-1,877.0	74.7	24.9	49.74	1.501	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Emerald Federal Com 513H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
11,700.0	9,734.0	11,648.6	9,800.0	48.5	43.2	-178.58	1,602.8	-1,877.7	74.7	23.9	50.78	1.470	Level 3	
11,800.0	9,734.0	11,748.6	9,800.0	49.2	44.1	-178.59	1,702.8	-1,878.3	74.7	22.8	51.86	1.439	Level 3	
11,900.0	9,734.0	11,848.6	9,800.0	49.9	45.0	-178.61	1,802.8	-1,879.0	74.7	21.7	52.96	1.410	Level 3	
12,000.0	9,734.0	11,948.6	9,800.0	50.7	45.9	-178.63	1,902.8	-1,879.7	74.7	20.6	54.08	1.380	Level 3	
12,100.0	9,734.0	12,048.6	9,800.0	51.5	46.8	-178.64	2,002.8	-1,880.4	74.6	19.4	55.23	1.352	Level 3	
12,200.0	9,734.0	12,148.6	9,800.0	52.3	47.7	-178.66	2,102.8	-1,881.0	74.6	18.3	56.40	1.324	Level 3	
12,300.0	9,734.0	12,248.6	9,800.0	53.2	48.7	-178.68	2,202.8	-1,881.7	74.6	17.1	57.58	1.296	Level 3	
12,400.0	9,734.0	12,348.6	9,800.0	54.0	49.7	-178.69	2,302.8	-1,882.4	74.6	15.9	58.79	1.270	Level 3	
12,500.0	9,734.0	12,448.6	9,800.0	54.9	50.7	-178.71	2,402.8	-1,883.0	74.6	14.6	60.01	1.244	Level 2	
12,600.0	9,734.0	12,548.6	9,800.0	55.9	51.8	-178.73	2,502.8	-1,883.7	74.6	13.4	61.24	1.219	Level 2	
12,700.0	9,734.0	12,648.6	9,800.0	56.8	52.8	-178.74	2,602.8	-1,884.4	74.6	12.1	62.49	1.194	Level 2	
12,800.0	9,734.0	12,748.6	9,800.0	57.8	53.9	-178.76	2,702.8	-1,885.1	74.6	10.9	63.76	1.171	Level 2	
12,900.0	9,734.0	12,848.6	9,800.0	58.8	55.0	-178.78	2,802.8	-1,885.7	74.6	9.6	65.04	1.148	Level 2	
13,000.0	9,734.0	12,948.6	9,800.0	59.9	56.1	-178.79	2,902.8	-1,886.4	74.6	8.3	66.33	1.125	Level 2	
13,100.0	9,734.0	13,048.6	9,800.0	60.9	57.2	-178.81	3,002.8	-1,887.1	74.6	7.0	67.64	1.104	Level 2	
13,200.0	9,734.0	13,148.6	9,800.0	62.0	58.4	-178.83	3,102.8	-1,887.7	74.6	5.7	68.95	1.083	Level 2	
13,300.0	9,734.0	13,248.6	9,800.0	63.0	59.5	-178.85	3,202.8	-1,888.4	74.6	4.4	70.28	1.062	Level 2	
13,400.0	9,734.0	13,348.6	9,800.0	64.1	60.7	-178.86	3,302.8	-1,889.1	74.6	3.0	71.61	1.042	Level 2	
13,500.0	9,734.0	13,448.6	9,800.0	65.2	61.9	-178.88	3,402.8	-1,889.8	74.6	1.7	72.96	1.023	Level 2	
13,600.0	9,734.0	13,548.6	9,800.0	66.3	63.1	-178.90	3,502.8	-1,890.4	74.6	0.3	74.31	1.004	Level 2	
13,700.0	9,734.0	13,648.6	9,800.0	67.5	64.3	-178.91	3,602.8	-1,891.1	74.6	-1.0	75.67	0.986	Level 1	
13,800.0	9,734.0	13,748.6	9,800.0	68.6	65.5	-178.93	3,702.8	-1,891.8	74.6	-2.4	77.04	0.969	Level 1	
13,900.0	9,734.0	13,848.6	9,800.0	69.8	66.7	-178.95	3,802.8	-1,892.4	74.6	-3.8	78.42	0.952	Level 1	
14,000.0	9,734.0	13,948.6	9,800.0	70.9	67.9	-178.96	3,902.8	-1,893.1	74.6	-5.2	79.80	0.935	Level 1	
14,100.0	9,734.0	14,048.6	9,800.0	72.1	69.2	-178.98	4,002.8	-1,893.8	74.6	-6.6	81.20	0.919	Level 1	
14,200.0	9,734.0	14,148.6	9,800.0	73.3	70.4	-179.00	4,102.8	-1,894.5	74.6	-8.0	82.59	0.904	Level 1	
14,300.0	9,734.0	14,248.6	9,800.0	74.5	71.6	-179.01	4,202.8	-1,895.1	74.6	-9.4	84.00	0.888	Level 1	
14,400.0	9,734.0	14,348.6	9,800.0	75.7	72.9	-179.03	4,302.8	-1,895.8	74.6	-10.8	85.41	0.874	Level 1	
14,500.0	9,734.0	14,448.6	9,800.0	76.9	74.2	-179.05	4,402.8	-1,896.5	74.6	-12.2	86.82	0.860	Level 1	
14,600.0	9,734.0	14,548.6	9,800.0	78.1	75.4	-179.06	4,502.8	-1,897.1	74.6	-13.6	88.24	0.846	Level 1	
14,700.0	9,734.0	14,648.6	9,800.0	79.4	76.7	-179.08	4,602.8	-1,897.8	74.6	-15.0	89.67	0.832	Level 1	
14,800.0	9,734.0	14,748.6	9,800.0	80.6	78.0	-179.10	4,702.8	-1,898.5	74.6	-16.5	91.10	0.819	Level 1	
14,900.0	9,734.0	14,848.6	9,800.0	81.9	79.3	-179.11	4,802.8	-1,899.2	74.6	-17.9	92.54	0.806	Level 1	
15,000.0	9,734.0	14,948.6	9,800.0	83.1	80.6	-179.13	4,902.8	-1,899.8	74.6	-19.3	93.97	0.794	Level 1	
15,100.0	9,734.0	15,048.6	9,800.0	84.4	81.9	-179.15	5,002.8	-1,900.5	74.6	-20.8	95.42	0.782	Level 1	
15,200.0	9,734.0	15,148.6	9,800.0	85.6	83.2	-179.16	5,102.8	-1,901.2	74.6	-22.2	96.87	0.770	Level 1	
15,300.0	9,734.0	15,248.6	9,800.0	86.9	84.5	-179.18	5,202.8	-1,901.8	74.6	-23.7	98.32	0.759	Level 1	
15,400.0	9,734.0	15,348.6	9,800.0	88.2	85.8	-179.20	5,302.8	-1,902.5	74.6	-25.1	99.77	0.748	Level 1	
15,500.0	9,734.0	15,448.6	9,800.0	89.4	87.1	-179.22	5,402.8	-1,903.2	74.6	-26.6	101.23	0.737	Level 1	
15,600.0	9,734.0	15,548.6	9,800.0	90.7	88.5	-179.23	5,502.8	-1,903.9	74.6	-28.1	102.69	0.727	Level 1	
15,700.0	9,734.0	15,648.6	9,800.0	92.0	89.8	-179.25	5,602.8	-1,904.5	74.6	-29.5	104.16	0.716	Level 1	
15,800.0	9,734.0	15,748.6	9,800.0	93.3	91.1	-179.27	5,702.7	-1,905.2	74.6	-31.0	105.62	0.706	Level 1	
15,900.0	9,734.0	15,848.6	9,800.0	94.6	92.4	-179.28	5,802.7	-1,905.9	74.6	-32.5	107.10	0.697	Level 1	
16,000.0	9,734.0	15,948.6	9,800.0	95.9	93.8	-179.30	5,902.7	-1,906.6	74.6	-33.9	108.57	0.687	Level 1	
16,100.0	9,734.0	16,048.6	9,800.0	97.2	95.1	-179.32	6,002.7	-1,907.2	74.6	-35.4	110.05	0.678	Level 1	
16,200.0	9,734.0	16,148.6	9,800.0	98.5	96.5	-179.33	6,102.7	-1,907.9	74.6	-36.9	111.52	0.669	Level 1	
16,300.0	9,734.0	16,248.6	9,800.0	99.9	97.8	-179.35	6,202.7	-1,908.6	74.6	-38.4	113.01	0.660	Level 1	
16,400.0	9,734.0	16,348.6	9,800.0	101.2	99.2	-179.37	6,302.7	-1,909.2	74.6	-39.9	114.49	0.652	Level 1	
16,500.0	9,734.0	16,448.6	9,800.0	102.5	100.5	-179.38	6,402.7	-1,909.9	74.6	-41.4	115.98	0.643	Level 1	
16,600.0	9,734.0	16,548.6	9,800.0	103.8	101.9	-179.40	6,502.7	-1,910.6	74.6	-42.8	117.46	0.635	Level 1	
16,700.0	9,734.0	16,648.6	9,800.0	105.1	103.2	-179.42	6,602.7	-1,911.3	74.6	-44.3	118.95	0.627	Level 1	
16,800.0	9,734.0	16,748.6	9,800.0	106.5	104.6	-179.43	6,702.7	-1,911.9	74.6	-45.8	120.45	0.619	Level 1	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Emerald Federal Com 513H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error: 0.0 usft		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
16,900.0	9,734.0	16,848.6	9,800.0	107.8	105.9	-179.45	6,802.7	-1,912.6	74.6	-47.3	121.94	0.612	Level 1	
17,000.0	9,734.0	16,948.6	9,800.0	109.1	107.3	-179.47	6,902.7	-1,913.3	74.6	-48.8	123.44	0.604	Level 1	
17,100.0	9,734.0	17,048.6	9,800.0	110.5	108.7	-179.48	7,002.7	-1,913.9	74.6	-50.3	124.94	0.597	Level 1	
17,200.0	9,734.0	17,148.6	9,800.0	111.8	110.0	-179.50	7,102.7	-1,914.6	74.6	-51.8	126.43	0.590	Level 1	
17,300.0	9,734.0	17,248.6	9,800.0	113.2	111.4	-179.52	7,202.7	-1,915.3	74.6	-53.3	127.94	0.583	Level 1	
17,400.0	9,734.0	17,348.6	9,800.0	114.5	112.8	-179.53	7,302.7	-1,916.0	74.6	-54.8	129.44	0.576	Level 1	
17,500.0	9,734.0	17,448.6	9,800.0	115.9	114.2	-179.55	7,402.7	-1,916.6	74.6	-56.3	130.94	0.570	Level 1	
17,600.0	9,734.0	17,548.6	9,800.0	117.2	115.5	-179.57	7,502.7	-1,917.3	74.6	-57.8	132.45	0.563	Level 1	
17,700.0	9,734.0	17,648.6	9,800.0	118.6	116.9	-179.59	7,602.7	-1,918.0	74.6	-59.3	133.96	0.557	Level 1	
17,800.0	9,734.0	17,748.6	9,800.0	119.9	118.3	-179.60	7,702.7	-1,918.6	74.6	-60.9	135.47	0.551	Level 1	
17,900.0	9,734.0	17,848.6	9,800.0	121.3	119.7	-179.62	7,802.7	-1,919.3	74.6	-62.4	136.98	0.545	Level 1	
18,000.0	9,734.0	17,948.6	9,800.0	122.7	121.0	-179.64	7,902.7	-1,920.0	74.6	-63.9	138.49	0.539	Level 1	
18,100.0	9,734.0	18,048.6	9,800.0	124.0	122.4	-179.65	8,002.7	-1,920.7	74.6	-65.4	140.00	0.533	Level 1	
18,200.0	9,734.0	18,148.6	9,800.0	125.4	123.8	-179.67	8,102.7	-1,921.3	74.6	-66.9	141.52	0.527	Level 1	
18,300.0	9,734.0	18,248.6	9,800.0	126.8	125.2	-179.69	8,202.7	-1,922.0	74.6	-68.4	143.04	0.522	Level 1	
18,400.0	9,734.0	18,348.6	9,800.0	128.1	126.6	-179.70	8,302.7	-1,922.7	74.6	-69.9	144.55	0.516	Level 1	
18,500.0	9,734.0	18,448.6	9,800.0	129.5	128.0	-179.72	8,402.7	-1,923.3	74.6	-71.5	146.07	0.511	Level 1	
18,600.0	9,734.0	18,548.6	9,800.0	130.9	129.4	-179.74	8,502.7	-1,924.0	74.6	-73.0	147.59	0.505	Level 1	
18,700.0	9,734.0	18,648.6	9,800.0	132.2	130.8	-179.75	8,602.7	-1,924.7	74.6	-74.5	149.11	0.500	Level 1	
18,800.0	9,734.0	18,748.6	9,800.0	133.6	132.2	-179.77	8,702.7	-1,925.4	74.6	-76.0	150.63	0.495	Level 1	
18,900.0	9,734.0	18,848.6	9,800.0	135.0	133.5	-179.79	8,802.7	-1,926.0	74.6	-77.5	152.15	0.490	Level 1	
19,000.0	9,734.0	18,948.6	9,800.0	136.4	134.9	-179.80	8,902.7	-1,926.7	74.6	-79.1	153.68	0.485	Level 1	
19,100.0	9,734.0	19,048.6	9,800.0	137.7	136.3	-179.82	9,002.7	-1,927.4	74.6	-80.6	155.20	0.481	Level 1	
19,200.0	9,734.0	19,148.6	9,800.0	139.1	137.7	-179.84	9,102.7	-1,928.0	74.6	-82.1	156.73	0.476	Level 1	
19,300.0	9,734.0	19,248.6	9,800.0	140.5	139.1	-179.85	9,202.7	-1,928.7	74.6	-83.7	158.25	0.471	Level 1	
19,400.0	9,734.0	19,348.6	9,800.0	141.9	140.5	-179.87	9,302.7	-1,929.4	74.6	-85.2	159.78	0.467	Level 1	
19,500.0	9,734.0	19,448.6	9,800.0	143.3	141.9	-179.89	9,402.7	-1,930.1	74.6	-86.7	161.31	0.462	Level 1	
19,600.0	9,734.0	19,548.6	9,800.0	144.7	143.3	-179.91	9,502.7	-1,930.7	74.6	-88.2	162.84	0.458	Level 1	
19,700.0	9,734.0	19,648.6	9,800.0	146.1	144.7	-179.92	9,602.7	-1,931.4	74.6	-89.8	164.37	0.454	Level 1	
19,800.0	9,734.0	19,748.6	9,800.0	147.4	146.1	-179.94	9,702.7	-1,932.1	74.6	-91.3	165.90	0.450	Level 1	
19,900.0	9,734.0	19,848.6	9,800.0	148.8	147.5	-179.96	9,802.7	-1,932.7	74.6	-92.8	167.43	0.446	Level 1	
20,000.0	9,734.0	19,948.6	9,800.0	150.2	148.9	-179.97	9,902.7	-1,933.4	74.6	-94.4	168.96	0.442	Level 1	
20,100.0	9,734.0	20,048.6	9,800.0	151.6	150.3	-179.99	10,002.7	-1,934.1	74.6	-95.9	170.49	0.438	Level 1	
20,200.0	9,734.0	20,148.6	9,800.0	152.9	151.8	-179.99	10,102.7	-1,934.8	74.6	-97.0	171.65	0.435	Level 1	
20,207.7	9,734.0	20,156.3	9,800.0	153.0	151.9	-179.99	10,110.3	-1,934.8	74.6	-97.1	171.74	0.434	Level 1, ES, SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Nellis Federal 02 - OH - OH													Offset Site Error: 0.0 usft
Survey Program: 940-INC-ONLY													Offset Well Error: 0.0 usft
Reference	Offset	Rule Assigned:											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance			Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		
0.0	0.0	0.0	0.0	0.0	0.0	-67.04	282.2	-666.1	723.5				
100.0	100.0	87.4	87.4	0.1	2.6	-67.03	282.3	-666.1	723.4	720.7	2.69	269.092	
200.0	200.0	186.9	186.9	0.5	5.5	-67.02	282.5	-666.1	723.5	717.6	5.96	121.490	
300.0	300.0	286.4	286.4	0.8	8.4	-66.98	283.0	-666.1	723.7	714.5	9.22	78.471	
400.0	400.0	385.9	385.9	1.2	11.3	-66.94	283.6	-666.1	723.9	711.4	12.49	57.965	
500.0	500.0	485.3	485.3	1.6	14.2	-66.88	284.4	-666.1	724.3	708.5	15.76	45.967	
600.0	600.0	584.8	584.8	1.9	17.1	-66.81	285.4	-666.1	724.6	705.6	19.02	38.093	
700.0	700.0	684.3	684.3	2.3	20.0	-66.72	286.5	-666.1	725.1	702.8	22.29	32.532	
800.0	800.0	783.7	783.7	2.6	22.9	-66.62	287.9	-666.1	725.6	700.1	25.56	28.395	
900.0	900.0	883.2	883.2	3.0	25.8	-66.51	289.4	-666.1	726.3	697.4	28.82	25.198	
1,000.0	1,000.0	983.0	982.9	3.4	28.4	-66.39	291.1	-666.1	726.9	695.2	31.72	22.916	
1,100.0	1,100.0	1,083.3	1,083.2	3.7	30.4	-66.27	292.8	-666.1	727.6	693.5	34.14	21.315	
1,200.0	1,200.0	1,183.6	1,183.5	4.1	32.5	-66.16	294.3	-666.1	728.2	691.7	36.55	19.924	
1,300.0	1,300.0	1,283.8	1,283.8	4.4	34.5	-66.05	295.8	-666.1	728.8	689.9	38.96	18.705	
1,400.0	1,400.0	1,384.1	1,384.0	4.8	36.6	-65.96	297.2	-666.1	729.4	688.0	41.35	17.640	
1,500.0	1,500.0	1,483.8	1,483.7	5.2	38.3	-65.86	298.5	-666.1	729.9	686.5	43.42	16.812	
1,600.0	1,600.0	1,583.6	1,583.4	5.5	40.0	-65.76	300.0	-666.1	730.5	685.0	45.49	16.060	
1,700.0	1,700.0	1,683.3	1,683.2	5.9	41.7	-65.65	301.5	-666.1	731.1	683.6	47.55	15.375	
1,800.0	1,800.0	1,783.0	1,782.9	6.2	43.4	-65.53	303.1	-666.1	731.8	682.2	49.62	14.747	
1,900.0	1,900.0	1,882.8	1,882.6	6.6	45.1	-65.41	304.8	-666.1	732.5	680.8	51.69	14.170	
2,000.0	2,000.0	1,982.7	1,982.5	6.9	46.9	-65.29	306.5	-666.1	733.2	679.4	53.80	13.629	
2,100.0	2,100.0	2,082.7	2,082.5	7.3	48.6	34.56	308.3	-666.1	732.5	676.6	55.89	13.106	
2,200.0	2,199.8	2,182.5	2,182.3	7.6	50.4	34.95	310.0	-666.1	729.0	671.0	57.98	12.573	
2,300.0	2,299.5	2,282.1	2,281.9	8.0	52.1	35.55	311.7	-666.1	722.6	662.5	60.06	12.032	
2,400.0	2,398.7	2,381.3	2,381.0	8.3	53.7	36.35	313.5	-666.1	713.5	651.4	62.05	11.499	
2,500.0	2,497.5	2,480.0	2,479.7	8.7	55.4	37.37	315.2	-666.1	701.7	637.7	64.03	10.958	
2,600.0	2,595.6	2,578.1	2,577.8	9.0	57.0	38.63	316.9	-666.1	687.4	621.3	66.04	10.409	
2,700.0	2,693.1	2,675.4	2,675.1	9.4	58.7	40.17	318.6	-666.1	670.6	602.6	68.05	9.855	
2,800.0	2,789.6	2,771.7	2,771.4	9.8	60.3	41.99	320.3	-666.1	651.7	581.6	70.09	9.299	
2,900.0	2,885.6	2,864.8	2,864.5	10.2	62.3	43.82	322.3	-666.1	631.9	559.5	72.44	8.723	
3,000.0	2,981.6	2,957.8	2,957.5	10.6	64.3	45.76	325.1	-666.1	613.2	538.4	74.80	8.198	
3,100.0	3,077.5	3,052.2	3,051.8	11.1	66.4	47.89	328.6	-666.1	595.7	518.4	77.31	7.705	
3,200.0	3,173.5	3,148.9	3,148.5	11.5	68.8	50.19	332.1	-666.1	579.1	499.0	80.10	7.229	
3,300.0	3,269.4	3,245.4	3,244.9	12.0	71.1	52.59	335.4	-666.1	563.3	480.5	82.86	6.799	
3,400.0	3,365.4	3,342.6	3,342.1	12.4	73.3	55.12	338.4	-666.1	548.4	462.9	85.54	6.412	
3,500.0	3,461.3	3,439.5	3,438.8	12.9	75.5	57.74	341.1	-666.1	534.4	446.3	88.15	6.063	
3,600.0	3,557.3	3,536.3	3,535.6	13.4	77.6	60.47	343.6	-666.1	521.4	430.7	90.77	5.745	
3,700.0	3,653.2	3,633.7	3,633.0	13.8	79.7	63.33	345.7	-666.1	509.5	416.2	93.35	5.459	
3,800.0	3,749.2	3,732.4	3,731.7	14.3	81.6	66.31	347.3	-666.1	498.5	402.8	95.72	5.208	
3,900.0	3,845.1	3,828.2	3,827.5	14.8	83.3	69.30	348.6	-666.1	488.6	390.6	97.98	4.987	
4,000.0	3,941.1	3,924.1	3,923.4	15.3	85.1	72.40	349.8	-666.1	480.2	380.0	100.24	4.790	
4,100.0	4,037.0	4,020.0	4,019.3	15.8	86.8	75.59	351.1	-666.1	473.3	370.8	102.52	4.617	
4,200.0	4,133.0	4,115.9	4,115.2	16.3	88.5	78.86	352.3	-666.1	468.1	363.3	104.79	4.467	
4,300.0	4,228.9	4,211.8	4,211.0	16.8	90.4	82.19	353.6	-666.1	464.6	357.4	107.15	4.336	
4,400.0	4,324.9	4,307.7	4,306.9	17.3	92.4	85.55	354.8	-666.1	462.8	353.1	109.69	4.219	
4,454.9	4,377.5	4,360.3	4,359.5	17.6	93.5	87.40	355.5	-666.1	462.5	351.4	111.07	4.164 CC	
4,500.0	4,420.8	4,403.5	4,402.8	17.8	94.4	88.92	356.1	-666.1	462.7	350.5	112.21	4.123	
4,600.0	4,516.8	4,499.4	4,498.7	18.3	96.4	92.28	357.4	-666.1	464.3	349.6	114.73	4.047 ES	
4,700.0	4,612.7	4,595.3	4,594.5	18.8	98.4	95.61	358.6	-666.1	467.7	350.5	117.23	3.990	
4,800.0	4,708.7	4,691.2	4,690.4	19.3	100.5	98.88	359.9	-666.1	472.8	353.1	119.71	3.949	
4,900.0	4,804.7	4,787.1	4,786.3	19.9	102.5	102.08	361.1	-666.1	479.5	357.3	122.18	3.924	
5,000.0	4,900.6	4,883.0	4,882.2	20.4	104.3	105.19	362.4	-666.1	487.7	363.3	124.40	3.921 SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Nellis Federal 02 - OH - OH												Offset Site Error: 0.0 usft	
Survey Program: 940-INC-ONLY				Rule Assigned:								Offset Well Error: 0.0 usft	
Measured Depth (usft)	Reference Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,996.6	4,978.8	4,978.0	20.9	106.0	108.19	363.6	-666.1	497.5	370.9	126.58	3.930	
5,200.0	5,092.5	5,074.7	5,073.9	21.4	107.8	111.08	364.9	-666.1	508.6	379.8	128.79	3.949	
5,300.0	5,188.5	5,170.6	5,169.8	21.9	109.7	113.85	366.1	-666.1	521.1	390.1	131.00	3.977	
5,400.0	5,284.4	5,266.5	5,265.7	22.4	111.5	116.49	367.4	-666.1	534.7	401.5	133.21	4.014	
5,500.0	5,380.4	5,362.4	5,361.5	23.0	113.3	119.00	368.7	-666.1	549.6	414.2	135.40	4.059	
5,600.0	5,476.3	5,458.2	5,457.4	23.5	115.1	121.39	369.9	-666.1	565.4	427.8	137.58	4.110	
5,700.0	5,572.3	5,554.1	5,553.3	24.0	117.0	123.64	371.2	-666.1	582.2	442.4	139.79	4.165	
5,800.0	5,668.2	5,650.0	5,649.1	24.5	118.9	125.78	372.4	-666.1	599.9	457.8	142.05	4.223	
5,900.0	5,764.2	5,745.9	5,745.0	25.1	120.8	127.79	373.7	-666.1	618.3	474.0	144.31	4.285	
6,000.0	5,860.1	5,841.8	5,840.9	25.6	122.7	129.69	374.9	-666.1	637.6	491.0	146.56	4.350	
6,100.0	5,956.1	5,937.7	5,936.8	26.1	124.7	131.48	376.2	-666.1	657.4	508.6	148.81	4.418	
6,200.0	6,052.0	6,033.4	6,032.5	26.6	126.6	133.17	377.4	-666.1	677.9	526.8	151.08	4.487	
6,300.0	6,148.0	6,128.8	6,127.9	27.2	128.6	134.75	378.8	-666.1	699.0	545.6	153.38	4.557	
6,400.0	6,243.9	6,224.2	6,223.3	27.7	130.5	136.24	380.1	-666.1	720.6	565.0	155.68	4.629	
6,500.0	6,339.9	6,319.6	6,318.7	28.2	132.5	137.64	381.6	-666.1	742.8	584.8	157.98	4.702	
6,600.0	6,435.8	6,415.0	6,414.0	28.8	134.5	138.96	383.2	-666.1	765.5	605.2	160.29	4.776	
6,700.0	6,531.8	6,510.4	6,509.4	29.3	136.4	140.20	384.8	-666.1	788.5	625.9	162.60	4.850	
6,800.0	6,627.7	6,606.2	6,605.3	29.8	138.5	141.38	386.5	-666.1	812.0	647.0	165.00	4.921	
6,900.0	6,723.7	6,702.1	6,701.1	30.4	140.5	142.49	388.1	-666.1	835.8	668.4	167.40	4.993	
7,000.0	6,819.6	6,798.0	6,797.0	30.9	142.6	143.54	389.8	-666.1	859.8	690.0	169.81	5.064	
7,100.0	6,915.6	6,893.8	6,892.8	31.4	144.7	144.53	391.5	-666.1	884.1	711.9	172.21	5.134	
7,200.0	7,011.5	6,989.7	6,988.6	32.0	146.7	145.47	393.2	-666.1	908.7	734.1	174.62	5.204	
7,300.0	7,107.5	7,085.5	7,084.5	32.5	148.7	146.37	394.8	-666.1	933.5	756.5	176.93	5.276	
7,400.0	7,203.5	7,181.4	7,180.3	33.0	150.6	147.21	396.5	-666.1	958.5	779.2	179.24	5.347	
7,500.0	7,299.4	7,277.1	7,276.0	33.6	152.6	148.02	398.2	-666.1	983.6	802.1	181.59	5.417	
7,600.0	7,395.4	7,372.4	7,371.3	34.1	154.7	148.78	399.9	-666.1	1,009.0	825.0	184.01	5.484	
7,700.0	7,491.3	7,467.7	7,466.6	34.6	156.8	149.50	401.7	-666.1	1,034.7	848.2	186.44	5.550	
7,800.0	7,587.3	7,563.0	7,561.9	35.2	158.8	150.18	403.6	-666.1	1,060.5	871.6	188.86	5.615	
7,900.0	7,683.2	7,658.3	7,657.2	35.7	160.9	150.82	405.6	-666.1	1,086.4	895.2	191.29	5.680	
8,000.0	7,779.2	7,755.0	7,753.8	36.2	163.0	151.44	407.6	-666.1	1,112.6	918.9	193.76	5.742	
8,100.0	7,875.1	7,849.4	7,848.2	36.8	165.3	152.02	409.7	-666.1	1,138.9	942.5	196.45	5.798	
8,200.0	7,971.1	7,945.2	7,944.0	37.3	167.7	152.58	411.8	-666.1	1,165.3	966.2	199.18	5.851	
8,300.0	8,067.0	8,041.1	8,039.8	37.9	170.1	153.12	413.9	-666.1	1,191.8	989.9	201.91	5.903	
8,400.0	8,163.0	8,136.9	8,135.6	38.4	172.4	153.63	416.0	-666.1	1,218.4	1,013.8	204.64	5.954	
8,500.0	8,258.9	8,232.7	8,231.4	38.9	174.8	154.12	418.1	-666.1	1,245.1	1,037.8	207.37	6.004	
8,600.0	8,354.9	8,328.5	8,327.2	39.5	177.2	154.61	420.1	-666.1	1,271.9	1,061.8	210.11	6.054	
8,700.0	8,451.4	8,424.9	8,423.6	40.0	179.5	155.24	422.2	-666.1	1,297.1	1,084.2	212.86	6.094	
8,800.0	8,548.7	8,519.4	8,518.0	40.5	181.9	155.75	424.4	-666.1	1,319.2	1,103.6	215.57	6.120	
8,900.0	8,646.8	8,616.8	8,609.5	40.9	184.2	156.14	427.1	-666.1	1,338.7	1,120.5	218.22	6.134	
9,000.0	8,745.5	8,705.9	8,704.4	41.3	186.8	156.41	430.7	-666.1	1,355.5	1,134.3	221.13	6.130	
9,100.0	8,844.7	8,804.4	8,802.9	41.7	189.6	156.59	434.6	-666.1	1,369.2	1,144.8	224.32	6.104	
9,200.0	8,944.2	8,901.4	8,899.7	42.1	192.5	156.68	438.7	-666.1	1,379.8	1,152.3	227.53	6.064	
9,300.0	9,044.1	9,003.2	9,001.5	42.4	195.6	156.68	442.9	-666.1	1,387.3	1,156.4	230.92	6.008	
9,400.0	9,144.0	9,109.0	9,107.2	42.7	198.5	156.62	446.9	-666.1	1,391.3	1,157.1	234.20	5.941	
9,500.0	9,244.0	9,213.1	9,211.3	42.9	201.2	156.88	449.8	-666.1	1,392.9	1,155.6	237.27	5.870	
9,600.0	9,343.6	9,310.7	9,308.8	43.2	203.7	160.83	452.6	-666.1	1,390.5	1,150.4	240.07	5.792	
9,700.0	9,439.3	9,405.2	9,403.3	43.4	206.2	163.01	455.6	-666.1	1,378.3	1,135.6	242.74	5.678	
9,800.0	9,527.0	9,493.1	9,491.1	43.6	208.4	166.82	458.6	-666.1	1,357.7	1,112.6	245.18	5.538	
9,900.0	9,602.9	9,573.1	9,571.1	43.8	210.6	172.01	461.2	-666.1	1,330.9	1,083.4	247.46	5.378	
10,000.0	9,663.6	9,636.9	9,634.8	43.9	212.2	177.81	463.2	-666.1	1,300.9	1,051.7	249.23	5.220	
10,100.0	9,706.6	9,682.5	9,680.5	43.9	213.4	183.33	464.6	-666.1	1,271.3	1,020.9	250.49	5.076	
10,200.0	9,729.9	9,708.8	9,706.7	43.9	214.1	187.70	465.4	-666.1	1,245.6	994.4	251.22	4.958	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Nellis Federal 02 - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 940-INC-ONLY												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.0	9,734.0	9,715.9	9,713.8	44.0	214.3	89.62	465.6	-666.1	1,226.1	974.6	251.45	4.876	
10,400.0	9,734.0	9,719.0	9,716.9	44.0	214.4	89.76	465.7	-666.1	1,211.7	960.1	251.60	4.816	
10,500.0	9,734.0	9,722.0	9,719.9	44.1	214.5	89.91	465.8	-666.1	1,203.1	951.3	251.77	4.778	
10,554.6	9,734.0	9,723.7	9,721.6	44.1	214.5	89.99	465.8	-666.1	1,201.8	949.9	251.88	4.771	
10,600.0	9,734.0	9,725.1	9,723.0	44.2	214.5	90.05	465.9	-666.1	1,202.7	950.7	251.96	4.773	
10,700.0	9,734.0	9,728.1	9,726.0	44.3	214.6	90.20	465.9	-666.1	1,210.6	958.4	252.18	4.800	
10,800.0	9,734.0	9,731.2	9,729.1	44.5	214.7	90.35	466.0	-666.1	1,226.6	974.2	252.42	4.859	
10,900.0	9,734.0	9,734.2	9,732.2	44.8	214.8	90.49	466.1	-666.1	1,250.4	997.8	252.67	4.949	
11,000.0	9,734.0	9,737.3	9,735.2	45.1	214.8	90.64	466.2	-666.1	1,281.6	1,028.7	252.91	5.067	
11,100.0	9,734.0	9,740.3	9,738.3	45.4	214.9	90.78	466.3	-666.1	1,319.7	1,066.5	253.16	5.213	
11,200.0	9,734.0	9,743.4	9,741.3	45.8	215.0	90.93	466.4	-666.1	1,364.0	1,110.6	253.39	5.383	
11,300.0	9,734.0	9,746.4	9,744.4	46.3	215.1	91.07	466.5	-666.1	1,414.0	1,160.4	253.62	5.575	
11,400.0	9,734.0	9,749.5	9,747.4	46.8	215.2	91.22	466.6	-666.1	1,469.2	1,215.3	253.83	5.788	
11,500.0	9,734.0	9,752.6	9,750.5	47.3	215.2	91.36	466.7	-666.1	1,528.8	1,274.8	254.03	6.018	
11,600.0	9,734.0	9,755.6	9,753.5	47.9	215.3	91.51	466.8	-666.1	1,592.6	1,338.3	254.22	6.265	
11,700.0	9,734.0	9,758.7	9,756.6	48.5	215.4	91.65	466.9	-666.1	1,659.9	1,405.5	254.39	6.525	
11,800.0	9,734.0	9,761.7	9,759.6	49.2	215.5	91.80	467.0	-666.1	1,730.3	1,475.8	254.56	6.797	
11,900.0	9,734.0	9,764.8	9,762.7	49.9	215.6	91.95	467.1	-666.1	1,803.6	1,548.8	254.71	7.081	
12,000.0	9,734.0	9,767.8	9,765.7	50.7	215.6	92.09	467.2	-666.1	1,879.3	1,624.4	254.86	7.374	
12,100.0	9,734.0	9,770.9	9,768.8	51.5	215.7	92.24	467.3	-666.1	1,957.2	1,702.2	255.00	7.675	
12,200.0	9,734.0	9,773.9	9,771.8	52.3	215.8	92.38	467.3	-666.1	2,037.0	1,781.8	255.13	7.984	
12,300.0	9,734.0	9,777.0	9,774.9	53.2	215.9	92.53	467.4	-666.1	2,118.5	1,863.2	255.26	8.299	
12,400.0	9,734.0	9,780.0	9,777.9	54.0	216.0	92.67	467.5	-666.1	2,201.5	1,946.1	255.39	8.620	

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald - Nellis Federal 03 - OH - OH												Offset Site Error: 0.0 usft	
Survey Program: 471-INC-ONLY				Rule Assigned:								Offset Well Error: 0.0 usft	
Measured Depth (usft)	Reference Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,100.0	9,734.0	9,673.0	9,670.3	45.4	227.1	-69.84	3,135.3	-2,078.6	2,143.6	1,873.1	270.45	7.926	
11,200.0	9,734.0	9,676.3	9,673.6	45.8	227.2	-70.70	3,135.4	-2,078.6	2,044.1	1,773.6	270.46	7.558	
11,300.0	9,734.0	9,679.5	9,676.8	46.3	227.3	-71.56	3,135.5	-2,078.6	1,944.6	1,674.1	270.47	7.190	
11,400.0	9,734.0	9,682.8	9,680.1	46.8	227.4	-72.44	3,135.6	-2,078.6	1,845.1	1,574.7	270.47	6.822	
11,500.0	9,734.0	9,686.0	9,683.3	47.3	227.5	-73.33	3,135.7	-2,078.6	1,745.8	1,475.3	270.46	6.455	
11,600.0	9,734.0	9,689.3	9,686.6	47.9	227.6	-74.23	3,135.8	-2,078.6	1,646.5	1,376.0	270.44	6.088	
11,700.0	9,734.0	9,692.6	9,689.9	48.5	227.7	-75.14	3,135.9	-2,078.6	1,547.3	1,276.9	270.40	5.722	
11,800.0	9,734.0	9,695.9	9,693.2	49.2	227.7	-76.05	3,136.0	-2,078.6	1,448.1	1,177.8	270.35	5.356	
11,900.0	9,734.0	9,699.2	9,696.4	49.9	227.8	-76.98	3,136.1	-2,078.6	1,349.1	1,078.9	270.29	4.992	
12,000.0	9,734.0	9,702.4	9,699.7	50.7	227.9	-77.92	3,136.2	-2,078.6	1,250.3	980.1	270.20	4.627	
12,100.0	9,734.0	9,705.7	9,703.0	51.5	228.0	-78.86	3,136.4	-2,078.6	1,151.6	881.6	270.09	4.264	
12,200.0	9,734.0	9,709.1	9,706.3	52.3	228.1	-79.81	3,136.5	-2,078.6	1,053.2	783.3	269.94	3.902	
12,300.0	9,734.0	9,712.4	9,709.6	53.2	228.2	-80.77	3,136.6	-2,078.6	955.1	685.4	269.76	3.541	
12,400.0	9,734.0	9,715.7	9,713.0	54.0	228.3	-81.74	3,136.7	-2,078.6	857.5	587.9	269.54	3.181	
12,500.0	9,734.0	9,719.0	9,716.3	54.9	228.4	-82.71	3,136.8	-2,078.6	760.4	491.1	269.27	2.824	
12,600.0	9,734.0	9,722.3	9,719.6	55.9	228.5	-83.69	3,136.9	-2,078.6	664.2	395.2	268.95	2.470	
12,700.0	9,734.0	9,725.7	9,722.9	56.8	228.6	-84.67	3,137.0	-2,078.6	569.3	300.6	268.61	2.119	
12,800.0	9,734.0	9,729.0	9,726.3	57.8	228.7	-85.66	3,137.1	-2,078.6	476.4	208.0	268.34	1.775	
12,900.0	9,734.0	9,732.4	9,729.6	58.8	228.8	-86.65	3,137.2	-2,078.6	387.0	118.6	268.44	1.442	Level 3
13,000.0	9,734.0	9,735.7	9,733.0	59.9	228.9	-87.65	3,137.4	-2,078.6	304.3	34.5	269.83	1.128	Level 2
13,100.0	9,734.0	9,739.1	9,736.3	60.9	229.0	-88.65	3,137.5	-2,078.6	235.5	-39.3	274.74	0.857	Level 1
13,200.0	9,734.0	9,742.4	9,739.7	62.0	229.0	-89.65	3,137.6	-2,078.6	195.5	-89.1	284.64	0.687	Level 1
13,236.1	9,734.0	9,743.7	9,740.9	62.3	229.1	-90.01	3,137.6	-2,078.6	192.2	-96.0	288.19	0.667	Level 1, CC, ES, SF
13,300.0	9,734.0	9,745.8	9,743.1	63.0	229.1	-90.66	3,137.7	-2,078.6	202.5	-89.4	291.88	0.694	Level 1
13,400.0	9,734.0	9,749.2	9,746.4	64.1	229.2	-91.66	3,137.8	-2,078.6	252.5	-38.9	291.35	0.867	Level 1
13,500.0	9,734.0	9,752.6	9,749.8	65.2	229.3	-92.67	3,137.9	-2,078.6	326.3	37.8	288.44	1.131	Level 2
13,600.0	9,734.0	9,756.0	9,753.2	66.3	229.4	-93.68	3,138.0	-2,078.6	411.3	125.4	285.91	1.439	Level 3
13,700.0	9,734.0	9,759.4	9,756.6	67.5	229.5	-94.68	3,138.2	-2,078.6	501.8	217.8	284.07	1.767	
13,800.0	9,734.0	9,762.8	9,760.0	68.6	229.6	-95.69	3,138.3	-2,078.6	595.4	312.6	282.75	2.106	
13,900.0	9,734.0	9,766.2	9,763.4	69.8	229.7	-96.69	3,138.4	-2,078.6	690.7	408.9	281.80	2.451	
14,000.0	9,734.0	9,769.6	9,766.8	70.9	229.8	-97.69	3,138.5	-2,078.6	787.2	506.1	281.10	2.801	
14,100.0	9,734.0	9,773.0	9,770.3	72.1	229.9	-98.69	3,138.6	-2,078.6	884.5	603.9	280.58	3.152	
14,200.0	9,734.0	9,776.4	9,773.7	73.3	230.0	-99.69	3,138.7	-2,078.6	982.3	702.1	280.18	3.506	
14,300.0	9,734.0	9,779.9	9,777.1	74.5	230.1	-100.68	3,138.9	-2,078.6	1,080.5	800.6	279.89	3.860	
14,400.0	9,734.0	9,783.3	9,780.5	75.7	230.2	-101.67	3,139.0	-2,078.6	1,179.0	899.3	279.66	4.216	
14,500.0	9,734.0	9,786.8	9,784.0	76.9	230.3	-102.65	3,139.1	-2,078.6	1,277.7	998.2	279.49	4.571	
14,600.0	9,734.0	9,790.2	9,787.4	78.1	230.4	-103.62	3,139.2	-2,078.6	1,376.5	1,097.2	279.36	4.927	
14,700.0	9,734.0	9,793.7	9,790.9	79.4	230.5	-104.59	3,139.3	-2,078.6	1,475.6	1,196.3	279.27	5.284	
14,800.0	9,734.0	9,797.1	9,794.4	80.6	230.6	-105.56	3,139.4	-2,078.6	1,574.7	1,295.5	279.21	5.640	
14,900.0	9,734.0	9,800.6	9,797.8	81.9	230.7	-106.51	3,139.6	-2,078.6	1,674.0	1,394.8	279.18	5.996	
15,000.0	9,734.0	9,804.1	9,801.3	83.1	230.8	-107.46	3,139.7	-2,078.6	1,773.3	1,494.1	279.16	6.352	
15,100.0	9,734.0	9,807.6	9,804.8	84.4	230.9	-108.40	3,139.8	-2,078.6	1,872.7	1,593.5	279.16	6.708	
15,200.0	9,734.0	9,811.1	9,808.3	85.6	231.0	-109.33	3,139.9	-2,078.6	1,972.1	1,692.9	279.18	7.064	
15,300.0	9,734.0	9,814.6	9,811.8	86.9	231.1	-110.26	3,140.0	-2,078.6	2,071.6	1,792.4	279.20	7.420	
15,400.0	9,734.0	9,818.1	9,815.3	88.2	231.2	-111.17	3,140.2	-2,078.6	2,171.1	1,891.9	279.24	7.775	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Offset Wells - Gazelle 31 Federal 1 - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 230-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
16,800.0	9,734.0	9,781.3	9,778.9	106.5	34.7	90.00	8,222.7	-380.3	2,157.3	2,030.3	126.93	16.995	
16,900.0	9,734.0	9,781.3	9,778.9	107.8	34.7	90.00	8,222.7	-380.3	2,088.5	1,959.0	129.51	16.126	
17,000.0	9,734.0	9,781.3	9,778.9	109.1	34.7	90.00	8,222.7	-380.3	2,022.4	1,890.2	132.17	15.301	
17,100.0	9,734.0	9,781.3	9,778.9	110.5	34.7	90.00	8,222.7	-380.3	1,959.1	1,824.2	134.91	14.522	
17,200.0	9,734.0	9,781.3	9,778.9	111.8	34.7	90.00	8,222.7	-380.3	1,899.0	1,761.3	137.69	13.792	
17,300.0	9,734.0	9,781.3	9,778.9	113.2	34.7	90.00	8,222.7	-380.3	1,842.4	1,701.9	140.50	13.113	
17,400.0	9,734.0	9,781.3	9,778.9	114.5	34.7	90.00	8,222.7	-380.3	1,789.6	1,646.3	143.31	12.488	
17,500.0	9,734.0	9,781.3	9,778.9	115.9	34.7	90.00	8,222.7	-380.3	1,740.9	1,594.8	146.06	11.919	
17,600.0	9,734.0	9,781.3	9,778.9	117.2	34.7	90.00	8,222.7	-380.3	1,696.7	1,548.0	148.72	11.409	
17,700.0	9,734.0	9,781.3	9,778.9	118.6	34.7	90.00	8,222.7	-380.3	1,657.4	1,506.2	151.24	10.959	
17,800.0	9,734.0	9,781.3	9,778.9	119.9	34.7	90.00	8,222.7	-380.3	1,623.3	1,469.8	153.54	10.573	
17,900.0	9,734.0	9,781.3	9,778.9	121.3	34.7	90.00	8,222.7	-380.3	1,594.8	1,439.2	155.57	10.251	
18,000.0	9,734.0	9,781.3	9,778.9	122.7	34.7	90.00	8,222.7	-380.3	1,572.1	1,414.8	157.28	9.995	
18,100.0	9,734.0	9,781.3	9,778.9	124.0	34.7	90.00	8,222.7	-380.3	1,555.5	1,396.9	158.61	9.807	
18,200.0	9,734.0	9,781.3	9,778.9	125.4	34.7	90.00	8,222.7	-380.3	1,545.2	1,385.7	159.51	9.687	
18,300.0	9,734.0	9,781.3	9,778.9	126.8	34.7	90.00	8,222.7	-380.3	1,541.4	1,381.4	159.96	9.636	
18,309.3	9,734.0	9,781.3	9,778.9	126.9	34.7	90.00	8,222.7	-380.3	1,541.4	1,381.4	159.97	9.635 CC, ES, SF	
18,400.0	9,734.0	9,781.3	9,778.9	128.1	34.7	90.00	8,222.7	-380.3	1,544.0	1,384.1	159.94	9.654	
18,500.0	9,734.0	9,781.3	9,778.9	129.5	34.7	90.00	8,222.7	-380.3	1,553.1	1,393.7	159.46	9.740	
18,600.0	9,734.0	9,781.3	9,778.9	130.9	34.7	90.00	8,222.7	-380.3	1,568.5	1,410.0	158.54	9.894	
18,700.0	9,734.0	9,781.3	9,778.9	132.2	34.7	90.00	8,222.7	-380.3	1,590.1	1,432.9	157.22	10.114	
18,800.0	9,734.0	9,781.3	9,778.9	133.6	34.7	90.00	8,222.7	-380.3	1,617.6	1,462.0	155.55	10.399	
18,900.0	9,734.0	9,781.3	9,778.9	135.0	34.7	90.00	8,222.7	-380.3	1,650.7	1,497.1	153.59	10.747	
19,000.0	9,734.0	9,781.3	9,778.9	136.4	34.7	90.00	8,222.7	-380.3	1,689.0	1,537.6	151.40	11.156	
19,100.0	9,734.0	9,781.3	9,778.9	137.7	34.7	90.00	8,222.7	-380.3	1,732.3	1,583.3	149.03	11.624	
19,200.0	9,734.0	9,781.3	9,778.9	139.1	34.7	90.00	8,222.7	-380.3	1,780.2	1,633.7	146.53	12.149	
19,300.0	9,734.0	9,781.3	9,778.9	140.5	34.7	90.00	8,222.7	-380.3	1,832.3	1,688.3	143.97	12.727	
19,400.0	9,734.0	9,781.3	9,778.9	141.9	34.7	90.00	8,222.7	-380.3	1,888.2	1,746.9	141.38	13.356	
19,500.0	9,734.0	9,781.3	9,778.9	143.3	34.7	90.00	8,222.7	-380.3	1,947.7	1,808.9	138.80	14.033	
19,600.0	9,734.0	9,781.3	9,778.9	144.7	34.7	90.00	8,222.7	-380.3	2,010.4	1,874.2	136.25	14.756	
19,700.0	9,734.0	9,781.3	9,778.9	146.1	34.7	90.00	8,222.7	-380.3	2,076.0	1,942.3	133.75	15.521	
19,800.0	9,734.0	9,781.3	9,778.9	147.4	34.7	90.00	8,222.7	-380.3	2,144.3	2,013.0	131.34	16.327	
19,900.0	9,734.0	9,781.3	9,778.9	148.8	34.7	90.00	8,222.7	-380.3	2,215.0	2,086.0	129.00	17.170	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Offset Wells - Hudson Federal 31 #2 - OH - P & A													Offset Site Error:	0.0 usft
Survey Program: 1000-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned:					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
17,600.0	9,734.0	9,767.9	9,767.9	117.2	183.0	-90.00	9,183.6	-3,310.1	2,183.4	1,933.0	250.37	8.720		
17,700.0	9,734.0	9,767.9	9,767.9	118.6	183.0	-90.00	9,183.6	-3,310.1	2,106.9	1,853.4	253.44	8.313		
17,800.0	9,734.0	9,767.9	9,767.9	119.9	183.0	-90.00	9,183.6	-3,310.1	2,032.4	1,775.7	256.76	7.916		
17,900.0	9,734.0	9,767.9	9,767.9	121.3	183.0	-90.00	9,183.6	-3,310.1	1,960.3	1,699.9	260.34	7.530		
18,000.0	9,734.0	9,767.9	9,767.9	122.7	183.0	-90.00	9,183.6	-3,310.1	1,890.7	1,626.5	264.18	7.157		
18,100.0	9,734.0	9,767.9	9,767.9	124.0	183.0	-90.00	9,183.6	-3,310.1	1,823.9	1,555.6	268.29	6.798		
18,200.0	9,734.0	9,767.9	9,767.9	125.4	183.0	-90.00	9,183.6	-3,310.1	1,760.2	1,487.6	272.66	6.456		
18,300.0	9,734.0	9,767.9	9,767.9	126.8	183.0	-90.00	9,183.6	-3,310.1	1,700.1	1,422.8	277.25	6.132		
18,400.0	9,734.0	9,767.9	9,767.9	128.1	183.0	-90.00	9,183.6	-3,310.1	1,643.8	1,361.8	282.05	5.828		
18,500.0	9,734.0	9,767.9	9,767.9	129.5	183.0	-90.00	9,183.6	-3,310.1	1,591.9	1,304.9	287.01	5.546		
18,600.0	9,734.0	9,767.9	9,767.9	130.9	183.0	-90.00	9,183.6	-3,310.1	1,544.6	1,252.6	292.06	5.289		
18,700.0	9,734.0	9,767.9	9,767.9	132.2	183.0	-90.00	9,183.6	-3,310.1	1,502.6	1,205.5	297.14	5.057		
18,800.0	9,734.0	9,767.9	9,767.9	133.6	183.0	-90.00	9,183.6	-3,310.1	1,466.2	1,164.1	302.14	4.853		
18,900.0	9,734.0	9,767.9	9,767.9	135.0	183.0	-90.00	9,183.6	-3,310.1	1,435.8	1,128.9	306.97	4.677		
19,000.0	9,734.0	9,767.9	9,767.9	136.4	183.0	-90.00	9,183.6	-3,310.1	1,411.9	1,100.4	311.50	4.533		
19,100.0	9,734.0	9,767.9	9,767.9	137.7	183.0	-90.00	9,183.6	-3,310.1	1,394.8	1,079.1	315.63	4.419		
19,200.0	9,734.0	9,767.9	9,767.9	139.1	183.0	-90.00	9,183.6	-3,310.1	1,384.7	1,065.4	319.25	4.337		
19,290.5	9,734.0	9,767.9	9,767.9	140.4	183.0	-90.00	9,183.6	-3,310.1	1,381.7	1,059.7	322.01	4.291 CC		
19,300.0	9,734.0	9,767.9	9,767.9	140.5	183.0	-90.00	9,183.6	-3,310.1	1,381.7	1,059.5	322.27	4.287 ES		
19,400.0	9,734.0	9,767.9	9,767.9	141.9	183.0	-90.00	9,183.6	-3,310.1	1,386.0	1,061.4	324.64	4.269 SF		
19,500.0	9,734.0	9,767.9	9,767.9	143.3	183.0	-90.00	9,183.6	-3,310.1	1,397.5	1,071.2	326.32	4.283		
19,600.0	9,734.0	9,767.9	9,767.9	144.7	183.0	-90.00	9,183.6	-3,310.1	1,415.9	1,088.6	327.33	4.326		
19,700.0	9,734.0	9,767.9	9,767.9	146.1	183.0	-90.00	9,183.6	-3,310.1	1,441.1	1,113.4	327.70	4.398		
19,800.0	9,734.0	9,767.9	9,767.9	147.4	183.0	-90.00	9,183.6	-3,310.1	1,472.6	1,145.1	327.48	4.497		
19,900.0	9,734.0	9,767.9	9,767.9	148.8	183.0	-90.00	9,183.6	-3,310.1	1,510.1	1,183.4	326.76	4.622		
20,000.0	9,734.0	9,767.9	9,767.9	150.2	183.0	-90.00	9,183.6	-3,310.1	1,553.2	1,227.6	325.61	4.770		
20,100.0	9,734.0	9,767.9	9,767.9	151.6	183.0	-90.00	9,183.6	-3,310.1	1,601.3	1,277.2	324.12	4.941		
20,200.0	9,734.0	9,767.9	9,767.9	152.9	183.0	-90.00	9,183.6	-3,310.1	1,654.1	1,331.3	322.85	5.124		
20,207.7	9,734.0	9,767.9	9,767.9	153.0	183.0	-90.00	9,183.6	-3,310.1	1,658.4	1,335.6	322.75	5.138		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 301H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
7,400.0	7,203.5	6,923.9	6,851.9	33.0	26.8	9.22	-249.7	-3,569.4	2,210.0	2,157.2	52.86	41.812	
7,500.0	7,299.4	7,023.0	6,949.5	33.6	27.3	9.12	-258.0	-3,584.8	2,197.6	2,144.0	53.64	40.968	
7,600.0	7,395.4	7,122.2	7,047.1	34.1	27.7	9.02	-266.3	-3,600.2	2,185.2	2,130.7	54.43	40.148	
7,700.0	7,491.3	7,221.3	7,144.7	34.6	28.1	8.93	-274.6	-3,615.6	2,172.7	2,117.5	55.21	39.352	
7,800.0	7,587.3	7,320.5	7,242.3	35.2	28.5	8.83	-282.9	-3,631.0	2,160.3	2,104.3	56.00	38.578	
7,900.0	7,683.2	7,419.6	7,339.9	35.7	29.0	8.72	-291.2	-3,646.4	2,147.9	2,091.1	56.78	37.826	
8,000.0	7,779.2	7,518.8	7,437.5	36.2	29.4	8.62	-299.5	-3,661.8	2,135.5	2,077.9	57.57	37.095	
8,100.0	7,875.1	7,698.4	7,614.7	36.8	30.1	8.47	-313.3	-3,687.5	2,122.3	2,063.7	58.61	36.209	
8,200.0	7,971.1	7,984.4	7,899.5	37.3	31.2	8.49	-324.8	-3,708.9	2,101.8	2,042.1	59.69	35.214	
8,300.0	8,067.0	8,146.1	8,061.2	37.9	31.7	8.66	-325.7	-3,710.4	2,074.4	2,014.0	60.41	34.337	
8,400.0	8,163.0	8,242.0	8,157.2	38.4	32.0	8.78	-325.7	-3,710.4	2,046.6	1,985.4	61.13	33.477	
8,500.0	8,258.9	8,338.0	8,253.1	38.9	32.3	8.90	-325.7	-3,710.4	2,018.7	1,956.9	61.85	32.637	
8,600.0	8,354.9	8,434.5	8,349.6	39.5	32.6	9.03	-325.5	-3,710.4	1,990.9	1,928.3	62.58	31.816	
8,700.0	8,451.4	8,532.1	8,446.2	40.0	32.9	9.44	-312.9	-3,710.5	1,964.8	1,901.5	63.30	31.038	
8,800.0	8,548.7	8,620.6	8,530.0	40.5	33.1	10.31	-284.7	-3,710.7	1,942.5	1,878.4	64.05	30.326	
8,900.0	8,646.8	8,696.5	8,596.6	40.9	33.2	11.40	-248.6	-3,710.9	1,924.7	1,859.9	64.83	29.691	
9,000.0	8,745.5	8,759.3	8,646.9	41.3	33.3	12.53	-211.0	-3,711.2	1,912.5	1,846.9	65.59	29.159	
9,100.0	8,844.7	8,810.6	8,684.1	41.7	33.3	13.60	-175.6	-3,711.5	1,906.6	1,840.3	66.30	28.756	
9,134.2	8,878.7	8,825.0	8,693.8	41.8	33.4	13.92	-165.0	-3,711.5	1,906.2	1,839.7	66.52	28.654 CC	
9,200.0	8,944.2	8,850.0	8,709.8	42.1	33.4	14.51	-145.9	-3,711.7	1,907.7	1,840.8	66.92	28.508	
9,300.0	9,044.1	8,887.0	8,731.8	42.4	33.4	15.46	-116.1	-3,711.9	1,916.2	1,848.8	67.43	28.417	
9,400.0	9,144.0	8,915.6	8,747.1	42.7	33.4	16.27	-92.0	-3,712.0	1,932.3	1,864.5	67.80	28.499	
9,500.0	9,244.0	8,939.5	8,758.8	42.9	33.4	-82.72	-71.1	-3,712.2	1,954.7	1,886.6	68.03	28.734	
9,600.0	9,343.6	8,962.7	8,769.1	43.2	33.4	-75.98	-50.4	-3,712.3	1,979.7	1,911.6	68.11	29.067	
9,700.0	9,439.3	8,989.4	8,779.7	43.4	33.4	-72.51	-25.9	-3,712.5	2,003.8	1,935.8	68.04	29.452	
9,800.0	9,527.0	9,025.0	8,791.7	43.6	33.3	-69.33	7.7	-3,712.7	2,025.7	1,957.8	67.90	29.833	
9,900.0	9,602.9	9,050.0	8,798.6	43.8	33.3	-66.91	31.7	-3,712.9	2,043.8	1,976.1	67.66	30.206	
10,000.0	9,663.6	9,075.0	8,804.3	43.9	33.3	-65.12	56.0	-3,713.1	2,057.3	1,989.8	67.46	30.496	
10,100.0	9,706.6	9,116.3	8,810.8	43.9	33.3	-63.91	96.7	-3,713.3	2,065.2	1,997.8	67.43	30.628	
10,200.0	9,729.9	9,150.0	8,813.5	43.9	33.2	-63.54	130.4	-3,713.6	2,067.3	1,999.8	67.52	30.619	
10,300.0	9,734.0	9,209.7	8,814.0	44.0	33.2	-63.69	190.1	-3,714.0	2,063.8	1,996.0	67.83	30.429	
10,400.0	9,734.0	9,309.7	8,814.0	44.0	33.1	-63.68	290.1	-3,714.7	2,061.7	1,993.4	68.34	30.171	
10,490.8	9,734.0	9,400.5	8,814.0	44.1	33.1	-63.68	380.9	-3,715.3	2,061.5	1,992.6	68.89	29.923	
10,500.0	9,734.0	9,409.7	8,814.0	44.1	33.1	-63.68	390.1	-3,715.4	2,061.7	1,992.7	68.95	29.899	
10,600.0	9,734.0	9,509.7	8,814.0	44.2	33.2	-63.68	490.1	-3,716.1	2,061.7	1,992.0	69.67	29.591	
10,700.0	9,734.0	9,609.7	8,814.0	44.3	33.4	-63.68	590.0	-3,716.8	2,061.7	1,991.2	70.49	29.249	
10,800.0	9,734.0	9,709.7	8,814.0	44.5	33.8	-63.68	690.0	-3,717.5	2,061.7	1,990.3	71.39	28.878	
10,900.0	9,734.0	9,809.7	8,814.0	44.8	34.2	-63.68	790.0	-3,718.2	2,061.7	1,989.3	72.39	28.480	
11,000.0	9,734.0	9,909.7	8,814.0	45.1	34.8	-63.68	890.0	-3,718.9	2,061.7	1,988.2	73.47	28.061	
11,100.0	9,734.0	10,009.7	8,814.0	45.4	35.4	-63.68	990.0	-3,719.5	2,061.7	1,987.1	74.63	27.624	
11,200.0	9,734.0	10,109.7	8,814.0	45.8	36.0	-63.68	1,090.0	-3,720.2	2,061.7	1,985.8	75.88	27.172	
11,300.0	9,734.0	10,209.7	8,814.0	46.3	36.7	-63.68	1,190.0	-3,720.9	2,061.7	1,984.5	77.19	26.709	
11,400.0	9,734.0	10,309.7	8,814.0	46.8	37.4	-63.68	1,290.0	-3,721.6	2,061.7	1,983.1	78.58	26.238	
11,500.0	9,734.0	10,409.7	8,814.0	47.3	38.1	-63.68	1,390.0	-3,722.3	2,061.7	1,981.7	80.03	25.762	
11,600.0	9,734.0	10,509.7	8,814.0	47.9	38.9	-63.68	1,490.0	-3,723.0	2,061.7	1,980.1	81.54	25.284	
11,700.0	9,734.0	10,609.7	8,814.0	48.5	39.8	-63.68	1,590.0	-3,723.7	2,061.7	1,978.6	83.12	24.805	
11,800.0	9,734.0	10,709.7	8,814.0	49.2	40.7	-63.68	1,690.0	-3,724.4	2,061.7	1,976.9	84.75	24.328	
11,900.0	9,734.0	10,809.7	8,814.0	49.9	41.6	-63.68	1,790.0	-3,725.1	2,061.7	1,975.3	86.43	23.854	
12,000.0	9,734.0	10,909.7	8,814.0	50.7	42.5	-63.68	1,890.0	-3,725.8	2,061.7	1,973.5	88.16	23.385	
12,100.0	9,734.0	11,009.7	8,814.0	51.5	43.4	-63.68	1,990.0	-3,726.5	2,061.7	1,971.8	89.94	22.922	
12,200.0	9,734.0	11,109.7	8,814.0	52.3	44.4	-63.68	2,090.0	-3,727.2	2,061.7	1,969.9	91.77	22.466	
12,300.0	9,734.0	11,209.7	8,814.0	53.2	45.4	-63.68	2,190.0	-3,727.9	2,061.7	1,968.1	93.63	22.019	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 301H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
12,400.0	9,734.0	11,309.7	8,814.0	54.0	46.5	-63.68	2,290.0	-3,728.6	2,061.7	1,966.2	95.54	21.580		
12,500.0	9,734.0	11,409.7	8,814.0	54.9	47.5	-63.68	2,390.0	-3,729.3	2,061.7	1,964.2	97.48	21.150		
12,600.0	9,734.0	11,509.7	8,814.0	55.9	48.6	-63.68	2,490.0	-3,730.0	2,061.7	1,962.2	99.46	20.730		
12,700.0	9,734.0	11,609.7	8,814.0	56.8	49.7	-63.68	2,590.0	-3,730.7	2,061.7	1,960.2	101.46	20.319		
12,800.0	9,734.0	11,709.7	8,814.0	57.8	50.8	-63.68	2,690.0	-3,731.3	2,061.7	1,958.2	103.50	19.919		
12,900.0	9,734.0	11,809.7	8,814.0	58.8	51.9	-63.68	2,790.0	-3,732.0	2,061.7	1,956.1	105.57	19.529		
13,000.0	9,734.0	11,909.7	8,814.0	59.9	53.0	-63.68	2,890.0	-3,732.7	2,061.7	1,954.0	107.67	19.149		
13,100.0	9,734.0	12,009.7	8,814.0	60.9	54.2	-63.68	2,990.0	-3,733.4	2,061.7	1,951.9	109.79	18.779		
13,200.0	9,734.0	12,109.7	8,814.0	62.0	55.4	-63.68	3,090.0	-3,734.1	2,061.7	1,949.8	111.94	18.419		
13,300.0	9,734.0	12,209.7	8,814.0	63.0	56.5	-63.68	3,190.0	-3,734.8	2,061.7	1,947.6	114.10	18.069		
13,400.0	9,734.0	12,309.7	8,814.0	64.1	57.7	-63.68	3,290.0	-3,735.5	2,061.7	1,945.4	116.29	17.728		
13,500.0	9,734.0	12,409.7	8,814.0	65.2	58.9	-63.68	3,390.0	-3,736.2	2,061.7	1,943.2	118.50	17.398		
13,600.0	9,734.0	12,509.7	8,814.0	66.3	60.1	-63.68	3,490.0	-3,736.9	2,061.7	1,941.0	120.73	17.077		
13,700.0	9,734.0	12,609.7	8,814.0	67.5	61.4	-63.68	3,590.0	-3,737.6	2,061.7	1,938.7	122.98	16.764		
13,800.0	9,734.0	12,709.7	8,814.0	68.6	62.6	-63.68	3,690.0	-3,738.3	2,061.7	1,936.5	125.25	16.461		
13,900.0	9,734.0	12,809.7	8,814.0	69.8	63.8	-63.68	3,790.0	-3,739.0	2,061.7	1,934.2	127.53	16.167		
14,000.0	9,734.0	12,909.7	8,814.0	70.9	65.1	-63.68	3,890.0	-3,739.7	2,061.7	1,931.9	129.82	15.881		
14,100.0	9,734.0	13,009.7	8,814.0	72.1	66.4	-63.68	3,990.0	-3,740.4	2,061.7	1,929.6	132.13	15.603		
14,200.0	9,734.0	13,109.7	8,814.0	73.3	67.6	-63.68	4,090.0	-3,741.1	2,061.7	1,927.3	134.46	15.333		
14,300.0	9,734.0	13,209.7	8,814.0	74.5	68.9	-63.68	4,190.0	-3,741.8	2,061.7	1,924.9	136.80	15.071		
14,400.0	9,734.0	13,309.7	8,814.0	75.7	70.2	-63.68	4,290.0	-3,742.5	2,061.7	1,922.6	139.15	14.817		
14,500.0	9,734.0	13,409.7	8,814.0	76.9	71.5	-63.68	4,390.0	-3,743.1	2,061.7	1,920.2	141.51	14.569		
14,600.0	9,734.0	13,509.7	8,814.0	78.1	72.8	-63.68	4,490.0	-3,743.8	2,061.7	1,917.8	143.89	14.329		
14,700.0	9,734.0	13,609.7	8,814.0	79.4	74.1	-63.68	4,590.0	-3,744.5	2,061.7	1,915.4	146.27	14.095		
14,800.0	9,734.0	13,709.7	8,814.0	80.6	75.4	-63.68	4,690.0	-3,745.2	2,061.7	1,913.1	148.66	13.868		
14,900.0	9,734.0	13,809.7	8,814.0	81.9	76.7	-63.68	4,789.9	-3,745.9	2,061.7	1,910.6	151.07	13.647		
15,000.0	9,734.0	13,909.7	8,814.0	83.1	78.0	-63.68	4,889.9	-3,746.6	2,061.7	1,908.2	153.48	13.433		
15,100.0	9,734.0	14,009.7	8,814.0	84.4	79.3	-63.68	4,989.9	-3,747.3	2,061.7	1,905.8	155.91	13.224		
15,200.0	9,734.0	14,109.7	8,814.0	85.6	80.6	-63.68	5,089.9	-3,748.0	2,061.7	1,903.4	158.34	13.021		
15,300.0	9,734.0	14,209.7	8,814.0	86.9	81.9	-63.68	5,189.9	-3,748.7	2,061.7	1,900.9	160.78	12.824		
15,400.0	9,734.0	14,309.7	8,814.0	88.2	83.3	-63.68	5,289.9	-3,749.4	2,061.7	1,898.5	163.22	12.631		
15,500.0	9,734.0	14,409.7	8,814.0	89.4	84.6	-63.68	5,389.9	-3,750.1	2,061.7	1,896.0	165.68	12.444		
15,600.0	9,734.0	14,509.7	8,814.0	90.7	85.9	-63.68	5,489.9	-3,750.8	2,061.7	1,893.6	168.14	12.262		
15,700.0	9,734.0	14,609.7	8,814.0	92.0	87.3	-63.68	5,589.9	-3,751.5	2,061.7	1,891.1	170.61	12.085		
15,800.0	9,734.0	14,709.7	8,814.0	93.3	88.6	-63.68	5,689.9	-3,752.2	2,061.7	1,888.6	173.08	11.912		
15,900.0	9,734.0	14,809.7	8,814.0	94.6	90.0	-63.68	5,789.9	-3,752.9	2,061.7	1,886.2	175.56	11.744		
16,000.0	9,734.0	14,909.7	8,814.0	95.9	91.3	-63.68	5,889.9	-3,753.6	2,061.7	1,883.7	178.05	11.580		
16,100.0	9,734.0	15,009.7	8,814.0	97.2	92.7	-63.68	5,989.9	-3,754.3	2,061.7	1,881.2	180.54	11.420		
16,200.0	9,734.0	15,109.7	8,814.0	98.5	94.0	-63.68	6,089.9	-3,755.0	2,061.7	1,878.7	183.04	11.264		
16,300.0	9,734.0	15,209.7	8,814.0	99.9	95.4	-63.68	6,189.9	-3,755.6	2,061.7	1,876.2	185.54	11.112		
16,400.0	9,734.0	15,309.7	8,814.0	101.2	96.8	-63.68	6,289.9	-3,756.3	2,061.7	1,873.7	188.05	10.964		
16,500.0	9,734.0	15,409.7	8,814.0	102.5	98.1	-63.68	6,389.9	-3,757.0	2,061.7	1,871.2	190.56	10.819		
16,600.0	9,734.0	15,509.7	8,814.0	103.8	99.5	-63.68	6,489.9	-3,757.7	2,061.7	1,868.7	193.08	10.678		
16,700.0	9,734.0	15,609.7	8,814.0	105.1	100.9	-63.68	6,589.9	-3,758.4	2,061.7	1,866.1	195.60	10.540		
16,800.0	9,734.0	15,709.7	8,814.0	106.5	102.2	-63.68	6,689.9	-3,759.1	2,061.7	1,863.6	198.13	10.406		
16,900.0	9,734.0	15,809.7	8,814.0	107.8	103.6	-63.68	6,789.9	-3,759.8	2,061.7	1,861.1	200.66	10.275		
17,000.0	9,734.0	15,909.7	8,814.0	109.1	105.0	-63.68	6,889.9	-3,760.5	2,061.7	1,858.5	203.19	10.147		
17,100.0	9,734.0	16,009.7	8,814.0	110.5	106.4	-63.68	6,989.9	-3,761.2	2,061.7	1,856.0	205.73	10.021		
17,200.0	9,734.0	16,109.7	8,814.0	111.8	107.7	-63.68	7,089.9	-3,761.9	2,061.7	1,853.5	208.27	9.899		
17,300.0	9,734.0	16,209.7	8,814.0	113.2	109.1	-63.68	7,189.9	-3,762.6	2,061.7	1,850.9	210.82	9.780		
17,400.0	9,734.0	16,309.7	8,814.0	114.5	110.5	-63.68	7,289.9	-3,763.3	2,061.7	1,848.4	213.37	9.663		
17,500.0	9,734.0	16,409.7	8,814.0	115.9	111.9	-63.68	7,389.9	-3,764.0	2,061.7	1,845.8	215.92	9.549		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 301H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Minimum Separation (usft)	Separation Factor
17,600.0	9,734.0	16,509.7	8,814.0	117.2	113.3	-63.68	7,489.9	-3,764.7	2,061.7	1,843.3		218.48	9.437
17,700.0	9,734.0	16,609.7	8,814.0	118.6	114.7	-63.68	7,589.9	-3,765.4	2,061.7	1,840.7		221.03	9.328
17,800.0	9,734.0	16,709.7	8,814.0	119.9	116.0	-63.68	7,689.9	-3,766.1	2,061.7	1,838.1		223.60	9.221
17,900.0	9,734.0	16,809.7	8,814.0	121.3	117.4	-63.68	7,789.9	-3,766.8	2,061.7	1,835.6		226.16	9.116
18,000.0	9,734.0	16,909.7	8,814.0	122.7	118.8	-63.68	7,889.9	-3,767.4	2,061.7	1,833.0		228.73	9.014
18,100.0	9,734.0	17,009.7	8,814.0	124.0	120.2	-63.68	7,989.9	-3,768.1	2,061.7	1,830.4		231.30	8.914
18,200.0	9,734.0	17,109.7	8,814.0	125.4	121.6	-63.68	8,089.9	-3,768.8	2,061.7	1,827.9		233.87	8.816
18,300.0	9,734.0	17,209.7	8,814.0	126.8	123.0	-63.68	8,189.9	-3,769.5	2,061.7	1,825.3		236.44	8.720
18,400.0	9,734.0	17,309.7	8,814.0	128.1	124.4	-63.68	8,289.9	-3,770.2	2,061.7	1,822.7		239.02	8.626
18,500.0	9,734.0	17,409.7	8,814.0	129.5	125.8	-63.68	8,389.9	-3,770.9	2,061.7	1,820.1		241.60	8.534
18,600.0	9,734.0	17,509.7	8,814.0	130.9	127.2	-63.68	8,489.9	-3,771.6	2,061.7	1,817.6		244.18	8.443
18,700.0	9,734.0	17,609.7	8,814.0	132.2	128.6	-63.68	8,589.9	-3,772.3	2,061.7	1,815.0		246.77	8.355
18,800.0	9,734.0	17,709.7	8,814.0	133.6	130.0	-63.68	8,689.9	-3,773.0	2,061.7	1,812.4		249.35	8.268
18,900.0	9,734.0	17,809.7	8,814.0	135.0	131.4	-63.68	8,789.9	-3,773.7	2,061.8	1,809.8		251.94	8.183
19,000.0	9,734.0	17,909.7	8,814.0	136.4	132.8	-63.68	8,889.8	-3,774.4	2,061.8	1,807.2		254.53	8.100
19,100.0	9,734.0	18,009.7	8,814.0	137.7	134.2	-63.68	8,989.8	-3,775.1	2,061.8	1,804.6		257.12	8.019
19,200.0	9,734.0	18,109.7	8,814.0	139.1	135.6	-63.68	9,089.8	-3,775.8	2,061.8	1,802.0		259.72	7.938
19,300.0	9,734.0	18,209.7	8,814.0	140.5	137.0	-63.68	9,189.8	-3,776.5	2,061.8	1,799.4		262.31	7.860
19,400.0	9,734.0	18,309.7	8,814.0	141.9	138.4	-63.68	9,289.8	-3,777.2	2,061.8	1,796.8		264.91	7.783
19,500.0	9,734.0	18,409.7	8,814.0	143.3	139.8	-63.68	9,389.8	-3,777.9	2,061.8	1,794.2		267.51	7.707
19,600.0	9,734.0	18,509.7	8,814.0	144.7	141.2	-63.68	9,489.8	-3,778.6	2,061.8	1,791.6		270.11	7.633
19,700.0	9,734.0	18,609.7	8,814.0	146.1	142.6	-63.68	9,589.8	-3,779.2	2,061.8	1,789.0		272.71	7.560
19,800.0	9,734.0	18,709.7	8,814.0	147.4	144.1	-63.68	9,689.8	-3,779.9	2,061.8	1,786.4		275.32	7.489
19,900.0	9,734.0	18,809.7	8,814.0	148.8	145.5	-63.68	9,789.8	-3,780.6	2,061.8	1,783.8		277.92	7.418
20,000.0	9,734.0	18,909.7	8,814.0	150.2	146.9	-63.68	9,889.8	-3,781.3	2,061.8	1,781.2		280.53	7.349
20,100.0	9,734.0	19,009.7	8,814.0	151.6	148.3	-63.68	9,989.8	-3,782.0	2,061.8	1,778.6		283.14	7.282
20,200.0	9,734.0	19,109.7	8,814.0	152.9	149.7	-63.68	10,089.8	-3,782.7	2,061.8	1,776.3		285.51	7.221
20,200.0	9,734.0	19,109.7	8,814.0	152.9	149.7	-63.68	10,089.8	-3,782.7	2,061.8	1,776.3		285.51	7.221
20,207.7	9,734.0	19,114.0	8,814.0	153.0	149.8	-63.68	10,094.1	-3,782.7	2,061.8	1,776.1		285.69	7.217 ES, SF

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Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 302H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
4,700.0	4,612.7	4,606.7	4,606.7	18.8	16.3	16.79	141.4	-2,823.9	2,201.2	2,168.1	33.06	66.576	
4,800.0	4,708.7	4,702.7	4,702.7	19.3	16.6	17.00	141.4	-2,823.9	2,174.1	2,140.3	33.80	64.318	
4,900.0	4,804.7	4,798.7	4,798.7	19.9	17.0	17.22	141.4	-2,823.9	2,147.1	2,112.6	34.54	62.155	
5,000.0	4,900.6	4,894.6	4,894.6	20.4	17.3	17.45	141.4	-2,823.9	2,120.1	2,084.8	35.29	60.080	
5,100.0	4,996.6	4,990.6	4,990.6	20.9	17.7	17.68	141.4	-2,823.9	2,093.2	2,057.1	36.03	58.089	
5,200.0	5,092.5	5,086.5	5,086.5	21.4	18.0	17.91	141.4	-2,823.9	2,066.3	2,029.5	36.78	56.176	
5,300.0	5,188.5	5,182.5	5,182.5	21.9	18.4	18.15	141.4	-2,823.9	2,039.4	2,001.9	37.53	54.339	
5,400.0	5,284.4	5,278.4	5,278.4	22.4	18.7	18.40	141.4	-2,823.9	2,012.5	1,974.3	38.28	52.571	
5,500.0	5,380.4	5,388.0	5,388.0	23.0	19.1	18.66	140.0	-2,823.8	1,985.5	1,946.4	39.05	50.848	
5,600.0	5,476.3	5,501.6	5,501.4	23.5	19.4	18.80	134.3	-2,823.3	1,957.6	1,917.8	39.79	49.199	
5,700.0	5,572.3	5,614.7	5,614.1	24.0	19.8	18.81	124.1	-2,822.5	1,928.9	1,888.3	40.52	47.603	
5,800.0	5,668.2	5,727.1	5,725.5	24.5	20.2	18.68	109.7	-2,821.3	1,899.3	1,858.0	41.24	46.053	
5,900.0	5,764.2	5,838.4	5,835.2	25.1	20.5	18.42	91.1	-2,819.8	1,868.9	1,826.9	41.95	44.546	
6,000.0	5,860.1	5,934.3	5,929.4	25.6	20.8	18.11	73.0	-2,818.3	1,838.0	1,795.4	42.65	43.091	
6,100.0	5,956.1	6,028.9	6,022.3	26.1	21.2	17.80	55.1	-2,816.9	1,807.3	1,763.9	43.36	41.682	
6,200.0	6,052.0	6,123.6	6,115.3	26.6	21.5	17.48	37.2	-2,815.4	1,776.5	1,732.5	44.06	40.317	
6,300.0	6,148.0	6,218.3	6,208.2	27.2	21.8	17.15	19.3	-2,814.0	1,745.9	1,701.1	44.77	38.992	
6,400.0	6,243.9	6,313.0	6,301.2	27.7	22.1	16.81	1.4	-2,812.5	1,715.2	1,669.7	45.49	37.708	
6,500.0	6,339.9	6,407.6	6,394.1	28.2	22.4	16.45	-16.5	-2,811.0	1,684.7	1,638.5	46.20	36.463	
6,600.0	6,435.8	6,502.3	6,487.1	28.8	22.8	16.08	-34.4	-2,809.6	1,654.2	1,607.2	46.92	35.255	
6,700.0	6,531.8	6,597.0	6,580.0	29.3	23.1	15.70	-52.3	-2,808.1	1,623.7	1,576.1	47.64	34.083	
6,800.0	6,627.7	6,691.7	6,673.0	29.8	23.5	15.30	-70.2	-2,806.7	1,593.4	1,545.0	48.36	32.946	
6,900.0	6,723.7	6,786.3	6,766.0	30.4	23.8	14.88	-88.1	-2,805.2	1,563.1	1,514.0	49.09	31.842	
7,000.0	6,819.6	6,881.0	6,858.9	30.9	24.1	14.45	-106.0	-2,803.7	1,532.8	1,483.0	49.82	30.771	
7,100.0	6,915.6	6,975.7	6,951.9	31.4	24.5	14.01	-123.9	-2,802.3	1,502.7	1,452.2	50.54	29.731	
7,200.0	7,011.5	7,070.3	7,044.8	32.0	24.8	13.54	-141.8	-2,800.8	1,472.7	1,421.4	51.28	28.721	
7,300.0	7,107.5	7,165.0	7,137.8	32.5	25.2	13.06	-159.7	-2,799.4	1,442.7	1,390.7	52.01	27.741	
7,400.0	7,203.5	7,259.7	7,230.7	33.0	25.5	12.56	-177.6	-2,797.9	1,412.9	1,360.1	52.74	26.788	
7,500.0	7,299.4	7,354.4	7,323.7	33.6	25.9	12.03	-195.5	-2,796.5	1,383.1	1,329.6	53.48	25.863	
7,600.0	7,395.4	7,449.0	7,416.6	34.1	26.2	11.49	-213.4	-2,795.0	1,353.5	1,299.3	54.22	24.965	
7,700.0	7,491.3	7,543.7	7,509.6	34.6	26.6	10.91	-231.3	-2,793.5	1,324.0	1,269.0	54.95	24.092	
7,800.0	7,587.3	7,638.4	7,602.5	35.2	27.0	10.32	-249.2	-2,792.1	1,294.6	1,238.9	55.69	23.244	
7,900.0	7,683.2	7,733.0	7,695.4	35.7	27.3	9.69	-267.1	-2,790.6	1,265.3	1,208.9	56.44	22.420	
8,000.0	7,779.2	7,825.0	7,786.1	36.2	27.7	9.13	-283.0	-2,789.3	1,236.3	1,179.1	57.18	21.621	
8,100.0	7,875.1	7,917.9	7,878.0	36.8	28.0	8.69	-296.0	-2,788.3	1,207.6	1,149.7	57.92	20.849	
8,200.0	7,971.1	8,011.3	7,970.9	37.3	28.4	8.38	-306.1	-2,787.4	1,179.2	1,120.5	58.66	20.101	
8,300.0	8,067.0	8,105.2	8,064.5	37.9	28.7	8.21	-313.3	-2,786.9	1,150.9	1,091.5	59.40	19.375	
8,400.0	8,163.0	8,200.0	8,159.2	38.4	29.0	8.19	-317.4	-2,786.5	1,122.8	1,062.6	60.13	18.671	
8,500.0	8,258.9	8,293.7	8,252.9	38.9	29.3	8.34	-318.4	-2,786.4	1,094.8	1,034.0	60.87	17.986	
8,600.0	8,354.9	8,390.2	8,349.4	39.5	29.7	8.57	-318.2	-2,786.4	1,066.9	1,005.3	61.61	17.318	
8,700.0	8,451.4	8,487.6	8,445.8	40.0	30.0	9.41	-305.7	-2,786.5	1,040.8	978.5	62.36	16.691	
8,800.0	8,548.7	8,576.1	8,529.6	40.5	30.2	11.12	-277.6	-2,786.7	1,018.8	955.6	63.16	16.131	
8,900.0	8,646.8	8,651.9	8,596.2	40.9	30.4	13.28	-241.6	-2,787.0	1,002.4	938.4	63.99	15.665	
9,000.0	8,745.5	8,714.7	8,646.5	41.3	30.5	15.51	-204.1	-2,787.2	993.5	928.8	64.75	15.343	
9,047.3	8,792.3	8,740.3	8,665.5	41.5	30.6	16.52	-187.0	-2,787.4	992.5	927.4	65.05	15.256 CC, ES	
9,100.0	8,844.7	8,766.1	8,683.7	41.7	30.6	17.61	-168.7	-2,787.5	993.8	928.5	65.32	15.215	
9,200.0	8,944.2	8,808.0	8,711.1	42.1	30.7	19.53	-137.0	-2,787.7	1,004.3	938.8	65.57	15.316	
9,300.0	9,044.1	8,842.5	8,731.5	42.4	30.7	21.28	-109.2	-2,787.9	1,025.4	960.0	65.46	15.665	
9,400.0	9,144.0	8,875.0	8,748.8	42.7	30.8	23.10	-81.7	-2,788.1	1,057.0	992.0	65.04	16.251	
9,500.0	9,244.0	8,900.0	8,760.9	42.9	30.8	-75.27	-59.8	-2,788.2	1,097.4	1,033.1	64.29	17.068	
9,600.0	9,343.6	8,925.0	8,771.8	43.2	30.9	-65.79	-37.3	-2,788.4	1,141.8	1,078.4	63.32	18.030	
9,700.0	9,439.3	8,950.0	8,781.4	43.4	30.9	-59.86	-14.2	-2,788.6	1,184.3	1,122.2	62.15	19.056	

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Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 302H - OH - Plan 0.1												Offset Site Error: 0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error: 0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,800.0	9,527.0	8,975.0	8,789.9	43.6	30.9	-54.92	9.3	-2,788.7	1,222.7	1,161.8	60.91	20.073	
9,900.0	9,602.9	9,000.0	8,797.1	43.8	31.0	-51.06	33.2	-2,788.9	1,255.1	1,195.4	59.76	21.002	
10,000.0	9,663.6	9,038.4	8,805.7	43.9	31.0	-48.07	70.6	-2,789.1	1,279.9	1,221.0	58.95	21.713	
10,100.0	9,706.6	9,075.0	8,811.1	43.9	31.1	-46.21	106.8	-2,789.4	1,296.2	1,237.8	58.41	22.190	
10,200.0	9,729.9	9,100.0	8,813.2	43.9	31.1	-45.44	131.7	-2,789.6	1,303.2	1,244.9	58.22	22.382	
10,300.0	9,734.0	9,164.8	8,814.0	44.0	31.2	-45.36	196.5	-2,790.0	1,301.3	1,242.8	58.51	22.241	
10,400.0	9,734.0	9,264.8	8,814.0	44.0	31.4	-45.31	296.5	-2,790.7	1,299.6	1,240.6	59.01	22.025	
10,490.8	9,734.0	9,355.6	8,814.0	44.1	31.6	-45.30	387.3	-2,791.3	1,299.4	1,239.9	59.57	21.815	
10,500.0	9,734.0	9,364.8	8,814.0	44.1	31.6	-45.31	396.5	-2,791.4	1,299.6	1,240.0	59.63	21.795	
10,600.0	9,734.0	9,464.8	8,814.0	44.2	32.0	-45.31	496.5	-2,792.1	1,299.6	1,239.3	60.34	21.539	
10,700.0	9,734.0	9,564.8	8,814.0	44.3	32.4	-45.31	596.5	-2,792.8	1,299.6	1,238.5	61.13	21.260	
10,800.0	9,734.0	9,664.8	8,814.0	44.5	32.8	-45.31	696.5	-2,793.5	1,299.6	1,237.6	62.00	20.961	
10,900.0	9,734.0	9,764.8	8,814.0	44.8	33.3	-45.31	796.5	-2,794.2	1,299.6	1,236.7	62.95	20.646	
11,000.0	9,734.0	9,864.8	8,814.0	45.1	33.9	-45.31	896.5	-2,794.9	1,299.6	1,235.6	63.97	20.316	
11,100.0	9,734.0	9,964.8	8,814.0	45.4	34.5	-45.31	996.5	-2,795.6	1,299.6	1,234.6	65.06	19.975	
11,200.0	9,734.0	10,064.8	8,814.0	45.8	35.1	-45.31	1,096.5	-2,796.3	1,299.6	1,233.4	66.22	19.626	
11,300.0	9,734.0	10,164.8	8,814.0	46.3	35.8	-45.31	1,196.5	-2,797.0	1,299.6	1,232.2	67.44	19.271	
11,400.0	9,734.0	10,264.8	8,814.0	46.8	36.6	-45.31	1,296.4	-2,797.7	1,299.6	1,230.9	68.72	18.913	
11,500.0	9,734.0	10,364.8	8,814.0	47.3	37.4	-45.31	1,396.4	-2,798.3	1,299.6	1,229.6	70.05	18.553	
11,600.0	9,734.0	10,464.8	8,814.0	47.9	38.2	-45.31	1,496.4	-2,799.0	1,299.6	1,228.2	71.44	18.192	
11,700.0	9,734.0	10,564.8	8,814.0	48.5	39.0	-45.31	1,596.4	-2,799.7	1,299.6	1,226.7	72.87	17.834	
11,800.0	9,734.0	10,664.8	8,814.0	49.2	39.9	-45.31	1,696.4	-2,800.4	1,299.6	1,225.3	74.36	17.478	
11,900.0	9,734.0	10,764.8	8,814.0	49.9	40.9	-45.31	1,796.4	-2,801.1	1,299.6	1,223.7	75.88	17.127	
12,000.0	9,734.0	10,864.8	8,814.0	50.7	41.8	-45.31	1,896.4	-2,801.8	1,299.6	1,222.2	77.45	16.780	
12,100.0	9,734.0	10,964.8	8,814.0	51.5	42.8	-45.31	1,996.4	-2,802.5	1,299.6	1,220.6	79.05	16.440	
12,200.0	9,734.0	11,064.8	8,814.0	52.3	43.8	-45.31	2,096.4	-2,803.2	1,299.6	1,218.9	80.70	16.105	
12,300.0	9,734.0	11,164.8	8,814.0	53.2	44.9	-45.31	2,196.4	-2,803.9	1,299.6	1,217.3	82.37	15.778	
12,400.0	9,734.0	11,264.8	8,814.0	54.0	45.9	-45.31	2,296.4	-2,804.6	1,299.6	1,215.5	84.08	15.458	
12,500.0	9,734.0	11,364.8	8,814.0	54.9	47.0	-45.31	2,396.4	-2,805.3	1,299.6	1,213.8	85.81	15.145	
12,600.0	9,734.0	11,464.8	8,814.0	55.9	48.1	-45.31	2,496.4	-2,806.0	1,299.6	1,212.0	87.58	14.840	
12,700.0	9,734.0	11,564.8	8,814.0	56.8	49.2	-45.31	2,596.4	-2,806.7	1,299.6	1,210.3	89.37	14.542	
12,800.0	9,734.0	11,664.8	8,814.0	57.8	50.3	-45.31	2,696.4	-2,807.4	1,299.6	1,208.4	91.18	14.253	
12,900.0	9,734.0	11,764.8	8,814.0	58.8	51.5	-45.31	2,796.4	-2,808.1	1,299.6	1,206.6	93.02	13.971	
13,000.0	9,734.0	11,864.8	8,814.0	59.9	52.6	-45.31	2,896.4	-2,808.8	1,299.6	1,204.7	94.88	13.697	
13,100.0	9,734.0	11,964.8	8,814.0	60.9	53.8	-45.31	2,996.4	-2,809.5	1,299.6	1,202.9	96.77	13.431	
13,200.0	9,734.0	12,064.8	8,814.0	62.0	55.0	-45.31	3,096.4	-2,810.1	1,299.6	1,201.0	98.67	13.172	
13,300.0	9,734.0	12,164.8	8,814.0	63.0	56.2	-45.31	3,196.4	-2,810.8	1,299.6	1,199.0	100.58	12.921	
13,400.0	9,734.0	12,264.8	8,814.0	64.1	57.4	-45.31	3,296.4	-2,811.5	1,299.6	1,197.1	102.52	12.677	
13,500.0	9,734.0	12,364.8	8,814.0	65.2	58.6	-45.31	3,396.4	-2,812.2	1,299.6	1,195.2	104.47	12.440	
13,600.0	9,734.0	12,464.8	8,814.0	66.3	59.9	-45.31	3,496.4	-2,812.9	1,299.6	1,193.2	106.44	12.210	
13,700.0	9,734.0	12,564.8	8,814.0	67.5	61.1	-45.31	3,596.4	-2,813.6	1,299.6	1,191.2	108.42	11.987	
13,800.0	9,734.0	12,664.8	8,814.0	68.6	62.4	-45.31	3,696.4	-2,814.3	1,299.6	1,189.2	110.42	11.770	
13,900.0	9,734.0	12,764.8	8,814.0	69.8	63.6	-45.31	3,796.4	-2,815.0	1,299.6	1,187.2	112.43	11.560	
14,000.0	9,734.0	12,864.8	8,814.0	70.9	64.9	-45.31	3,896.4	-2,815.7	1,299.6	1,185.2	114.45	11.356	
14,100.0	9,734.0	12,964.8	8,814.0	72.1	66.2	-45.31	3,996.4	-2,816.4	1,299.6	1,183.2	116.48	11.157	
14,200.0	9,734.0	13,064.8	8,814.0	73.3	67.5	-45.31	4,096.4	-2,817.1	1,299.6	1,181.1	118.52	10.965	
14,300.0	9,734.0	13,164.8	8,814.0	74.5	68.7	-45.31	4,196.4	-2,817.8	1,299.6	1,179.1	120.58	10.778	
14,400.0	9,734.0	13,264.8	8,814.0	75.7	70.0	-45.31	4,296.4	-2,818.5	1,299.6	1,177.0	122.64	10.597	
14,500.0	9,734.0	13,364.8	8,814.0	76.9	71.3	-45.31	4,396.4	-2,819.2	1,299.6	1,174.9	124.72	10.421	
14,600.0	9,734.0	13,464.8	8,814.0	78.1	72.7	-45.31	4,496.4	-2,819.9	1,299.6	1,172.8	126.80	10.250	
14,700.0	9,734.0	13,564.8	8,814.0	79.4	74.0	-45.31	4,596.4	-2,820.6	1,299.6	1,170.7	128.89	10.083	
14,800.0	9,734.0	13,664.8	8,814.0	80.6	75.3	-45.31	4,696.4	-2,821.3	1,299.6	1,168.6	130.99	9.922	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 302H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance			Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	
14,900.0	9,734.0	13,764.8	8,814.0	81.9	76.6	-45.31	4,796.4	-2,821.9	1,299.6	1,166.5	133.10	9.765
15,000.0	9,734.0	13,864.8	8,814.0	83.1	77.9	-45.31	4,896.4	-2,822.6	1,299.6	1,164.4	135.21	9.612
15,100.0	9,734.0	13,964.8	8,814.0	84.4	79.3	-45.31	4,996.4	-2,823.3	1,299.6	1,162.3	137.33	9.463
15,200.0	9,734.0	14,064.8	8,814.0	85.6	80.6	-45.31	5,096.4	-2,824.0	1,299.6	1,160.2	139.46	9.319
15,300.0	9,734.0	14,164.8	8,814.0	86.9	81.9	-45.31	5,196.4	-2,824.7	1,299.6	1,158.0	141.60	9.178
15,400.0	9,734.0	14,264.8	8,814.0	88.2	83.3	-45.31	5,296.4	-2,825.4	1,299.6	1,155.9	143.74	9.042
15,500.0	9,734.0	14,364.8	8,814.0	89.4	84.6	-45.31	5,396.3	-2,826.1	1,299.6	1,153.8	145.88	8.909
15,600.0	9,734.0	14,464.8	8,814.0	90.7	86.0	-45.31	5,496.3	-2,826.8	1,299.6	1,151.6	148.04	8.779
15,700.0	9,734.0	14,564.8	8,814.0	92.0	87.3	-45.31	5,596.3	-2,827.5	1,299.6	1,149.4	150.19	8.653
15,800.0	9,734.0	14,664.8	8,814.0	93.3	88.7	-45.31	5,696.3	-2,828.2	1,299.6	1,147.3	152.36	8.530
15,900.0	9,734.0	14,764.8	8,814.0	94.6	90.0	-45.31	5,796.3	-2,828.9	1,299.6	1,145.1	154.53	8.411
16,000.0	9,734.0	14,864.8	8,814.0	95.9	91.4	-45.31	5,896.3	-2,829.6	1,299.6	1,142.9	156.70	8.294
16,100.0	9,734.0	14,964.8	8,814.0	97.2	92.8	-45.31	5,996.3	-2,830.3	1,299.6	1,140.8	158.88	8.180
16,200.0	9,734.0	15,064.8	8,814.0	98.5	94.1	-45.31	6,096.3	-2,831.0	1,299.6	1,138.6	161.06	8.069
16,300.0	9,734.0	15,164.8	8,814.0	99.9	95.5	-45.31	6,196.3	-2,831.7	1,299.6	1,136.4	163.24	7.961
16,400.0	9,734.0	15,264.8	8,814.0	101.2	96.9	-45.31	6,296.3	-2,832.4	1,299.6	1,134.2	165.43	7.856
16,500.0	9,734.0	15,364.8	8,814.0	102.5	98.2	-45.31	6,396.3	-2,833.1	1,299.7	1,132.0	167.63	7.753
16,600.0	9,734.0	15,464.8	8,814.0	103.8	99.6	-45.31	6,496.3	-2,833.7	1,299.7	1,129.8	169.82	7.653
16,700.0	9,734.0	15,564.8	8,814.0	105.1	101.0	-45.31	6,596.3	-2,834.4	1,299.7	1,127.6	172.02	7.555
16,800.0	9,734.0	15,664.8	8,814.0	106.5	102.4	-45.31	6,696.3	-2,835.1	1,299.7	1,125.4	174.23	7.459
16,900.0	9,734.0	15,764.8	8,814.0	107.8	103.7	-45.31	6,796.3	-2,835.8	1,299.7	1,123.2	176.44	7.366
17,000.0	9,734.0	15,864.8	8,814.0	109.1	105.1	-45.31	6,896.3	-2,836.5	1,299.7	1,121.0	178.65	7.275
17,100.0	9,734.0	15,964.8	8,814.0	110.5	106.5	-45.31	6,996.3	-2,837.2	1,299.7	1,118.8	180.86	7.186
17,200.0	9,734.0	16,064.8	8,814.0	111.8	107.9	-45.31	7,096.3	-2,837.9	1,299.7	1,116.6	183.08	7.099
17,300.0	9,734.0	16,164.8	8,814.0	113.2	109.3	-45.31	7,196.3	-2,838.6	1,299.7	1,114.4	185.30	7.014
17,400.0	9,734.0	16,264.8	8,814.0	114.5	110.7	-45.31	7,296.3	-2,839.3	1,299.7	1,112.1	187.52	6.931
17,500.0	9,734.0	16,364.8	8,814.0	115.9	112.1	-45.31	7,396.3	-2,840.0	1,299.7	1,109.9	189.75	6.849
17,600.0	9,734.0	16,464.8	8,814.0	117.2	113.4	-45.31	7,496.3	-2,840.7	1,299.7	1,107.7	191.97	6.770
17,700.0	9,734.0	16,564.8	8,814.0	118.6	114.8	-45.31	7,596.3	-2,841.4	1,299.7	1,105.5	194.20	6.692
17,800.0	9,734.0	16,664.8	8,814.0	119.9	116.2	-45.31	7,696.3	-2,842.1	1,299.7	1,103.2	196.44	6.616
17,900.0	9,734.0	16,764.8	8,814.0	121.3	117.6	-45.31	7,796.3	-2,842.8	1,299.7	1,101.0	198.67	6.542
18,000.0	9,734.0	16,864.8	8,814.0	122.7	119.0	-45.31	7,896.3	-2,843.5	1,299.7	1,098.8	200.91	6.469
18,100.0	9,734.0	16,964.8	8,814.0	124.0	120.4	-45.31	7,996.3	-2,844.2	1,299.7	1,096.5	203.15	6.398
18,200.0	9,734.0	17,064.8	8,814.0	125.4	121.8	-45.31	8,096.3	-2,844.9	1,299.7	1,094.3	205.39	6.328
18,300.0	9,734.0	17,164.8	8,814.0	126.8	123.2	-45.31	8,196.3	-2,845.5	1,299.7	1,092.0	207.63	6.259
18,400.0	9,734.0	17,264.8	8,814.0	128.1	124.6	-45.31	8,296.3	-2,846.2	1,299.7	1,089.8	209.88	6.192
18,500.0	9,734.0	17,364.8	8,814.0	129.5	126.0	-45.31	8,396.3	-2,846.9	1,299.7	1,087.5	212.12	6.127
18,600.0	9,734.0	17,464.8	8,814.0	130.9	127.4	-45.31	8,496.3	-2,847.6	1,299.7	1,085.3	214.37	6.063
18,700.0	9,734.0	17,564.8	8,814.0	132.2	128.8	-45.31	8,596.3	-2,848.3	1,299.7	1,083.0	216.62	6.000
18,800.0	9,734.0	17,664.8	8,814.0	133.6	130.2	-45.31	8,696.3	-2,849.0	1,299.7	1,080.8	218.88	5.938
18,900.0	9,734.0	17,764.8	8,814.0	135.0	131.6	-45.31	8,796.3	-2,849.7	1,299.7	1,078.5	221.13	5.877
19,000.0	9,734.0	17,864.8	8,814.0	136.4	133.1	-45.31	8,896.3	-2,850.4	1,299.7	1,076.3	223.39	5.818
19,100.0	9,734.0	17,964.8	8,814.0	137.7	134.5	-45.31	8,996.3	-2,851.1	1,299.7	1,074.0	225.65	5.760
19,200.0	9,734.0	18,064.8	8,814.0	139.1	135.9	-45.31	9,096.3	-2,851.8	1,299.7	1,071.8	227.90	5.703
19,300.0	9,734.0	18,164.8	8,814.0	140.5	137.3	-45.31	9,196.3	-2,852.5	1,299.7	1,069.5	230.16	5.647
19,400.0	9,734.0	18,264.8	8,814.0	141.9	138.7	-45.31	9,296.3	-2,853.2	1,299.7	1,067.2	232.43	5.592
19,500.0	9,734.0	18,364.8	8,814.0	143.3	140.1	-45.31	9,396.3	-2,853.9	1,299.7	1,065.0	234.69	5.538
19,600.0	9,734.0	18,464.8	8,814.0	144.7	141.5	-45.31	9,496.3	-2,854.6	1,299.7	1,062.7	236.95	5.485
19,700.0	9,734.0	18,564.8	8,814.0	146.1	142.9	-45.31	9,596.2	-2,855.3	1,299.7	1,060.5	239.22	5.433
19,800.0	9,734.0	18,664.8	8,814.0	147.4	144.3	-45.31	9,696.2	-2,856.0	1,299.7	1,058.2	241.49	5.382
19,900.0	9,734.0	18,764.8	8,814.0	148.8	145.8	-45.31	9,796.2	-2,856.7	1,299.7	1,055.9	243.76	5.332
20,000.0	9,734.0	18,864.8	8,814.0	150.2	147.2	-45.31	9,896.2	-2,857.3	1,299.7	1,053.6	246.03	5.283

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 302H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
20,100.0	9,734.0	18,964.8	8,814.0	151.6	148.6	-45.31	9,996.2	-2,858.0	1,299.7	1,051.4	248.30	5.234		
20,200.0	9,734.0	19,064.8	8,814.0	152.9	150.0	-45.31	10,096.2	-2,858.7	1,299.7	1,049.4	250.29	5.193		
20,200.0	9,734.0	19,064.8	8,814.0	152.9	150.0	-45.31	10,096.3	-2,858.7	1,299.7	1,049.4	250.29	5.193		
20,207.7	9,734.0	19,070.8	8,814.0	153.0	150.1	-45.31	10,102.2	-2,858.8	1,299.7	1,049.2	250.45	5.189 SF		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
3,600.0	3,557.3	3,961.8	3,933.3	13.4	14.4	12.29	3.6	-2,517.2	2,219.7	2,193.6	26.06	85.191		
3,700.0	3,653.2	4,051.7	4,021.6	13.8	14.8	12.25	-3.7	-2,502.0	2,176.0	2,149.2	26.74	81.371		
3,800.0	3,749.2	4,141.6	4,109.9	14.3	15.2	12.21	-11.0	-2,486.8	2,132.2	2,104.8	27.43	77.734		
3,900.0	3,845.1	4,231.6	4,198.2	14.8	15.5	12.16	-18.3	-2,471.5	2,088.5	2,060.4	28.12	74.268		
4,000.0	3,941.1	4,321.5	4,286.5	15.3	15.9	12.11	-25.7	-2,456.3	2,044.8	2,016.0	28.82	70.962		
4,100.0	4,037.0	4,411.4	4,374.8	15.8	16.3	12.06	-33.0	-2,441.0	2,001.1	1,971.5	29.51	67.806		
4,200.0	4,133.0	4,501.3	4,463.2	16.3	16.7	12.01	-40.3	-2,425.8	1,957.3	1,927.1	30.21	64.791		
4,300.0	4,228.9	4,591.2	4,551.5	16.8	17.1	11.96	-47.6	-2,410.6	1,913.6	1,882.7	30.91	61.908		
4,400.0	4,324.9	4,681.2	4,639.8	17.3	17.5	11.90	-55.0	-2,395.3	1,869.9	1,838.3	31.61	59.149		
4,500.0	4,420.8	4,771.1	4,728.1	17.8	17.8	11.84	-62.3	-2,380.1	1,826.2	1,793.8	32.32	56.507		
4,600.0	4,516.8	4,861.0	4,816.4	18.3	18.2	11.78	-69.6	-2,364.9	1,782.4	1,749.4	33.02	53.975		
4,700.0	4,612.7	4,950.9	4,904.7	18.8	18.6	11.71	-76.9	-2,349.6	1,738.7	1,705.0	33.73	51.546		
4,800.0	4,708.7	5,040.8	4,993.0	19.3	19.0	11.64	-84.3	-2,334.4	1,695.0	1,660.6	34.44	49.215		
4,900.0	4,804.7	5,130.8	5,081.4	19.9	19.4	11.57	-91.6	-2,319.1	1,651.3	1,616.1	35.15	46.977		
5,000.0	4,900.6	5,220.7	5,169.7	20.4	19.8	11.49	-98.9	-2,303.9	1,607.6	1,571.7	35.86	44.825		
5,100.0	4,996.6	5,310.6	5,258.0	20.9	20.2	11.41	-106.2	-2,288.7	1,563.9	1,527.3	36.58	42.756		
5,200.0	5,092.5	5,400.5	5,346.3	21.4	20.5	11.33	-113.6	-2,273.4	1,520.2	1,482.9	37.29	40.764		
5,300.0	5,188.5	5,490.4	5,434.6	21.9	20.9	11.24	-120.9	-2,258.2	1,476.5	1,438.5	38.01	38.847		
5,400.0	5,284.4	5,580.4	5,522.9	22.4	21.3	11.14	-128.2	-2,243.0	1,432.8	1,394.0	38.72	36.999		
5,500.0	5,380.4	5,670.3	5,611.3	23.0	21.7	11.04	-135.5	-2,227.7	1,389.1	1,349.6	39.44	35.217		
5,600.0	5,476.3	5,760.2	5,699.6	23.5	22.1	10.93	-142.9	-2,212.5	1,345.4	1,305.2	40.16	33.499		
5,700.0	5,572.3	5,850.1	5,787.9	24.0	22.5	10.82	-150.2	-2,197.2	1,301.7	1,260.8	40.88	31.840		
5,800.0	5,668.2	5,940.0	5,876.2	24.5	22.9	10.69	-157.5	-2,182.0	1,258.0	1,216.4	41.60	30.238		
5,900.0	5,764.2	6,030.0	5,964.5	25.1	23.3	10.56	-164.8	-2,166.8	1,214.3	1,172.0	42.33	28.690		
6,000.0	5,860.1	6,119.9	6,052.8	25.6	23.7	10.42	-172.2	-2,151.5	1,170.7	1,127.6	43.05	27.194		
6,100.0	5,956.1	6,209.8	6,141.2	26.1	24.1	10.26	-179.5	-2,136.3	1,127.0	1,083.2	43.77	25.746		
6,200.0	6,052.0	6,299.7	6,229.5	26.6	24.4	10.10	-186.8	-2,121.1	1,083.3	1,038.8	44.50	24.346		
6,300.0	6,148.0	6,389.6	6,317.8	27.2	24.8	9.92	-194.1	-2,105.8	1,039.7	994.5	45.22	22.989		
6,400.0	6,243.9	6,479.6	6,406.1	27.7	25.2	9.72	-201.5	-2,090.6	996.0	950.1	45.95	21.676		
6,500.0	6,339.9	6,569.5	6,494.4	28.2	25.6	9.51	-208.8	-2,075.3	952.4	905.7	46.68	20.403		
6,600.0	6,435.8	6,659.4	6,582.7	28.8	26.0	9.27	-216.1	-2,060.1	908.8	861.4	47.41	19.169		
6,700.0	6,531.8	6,749.3	6,671.0	29.3	26.4	9.01	-223.4	-2,044.9	865.2	817.0	48.14	17.973		
6,800.0	6,627.7	6,839.2	6,759.4	29.8	26.8	8.73	-230.8	-2,029.6	821.6	772.7	48.87	16.812		
6,900.0	6,723.7	6,929.2	6,847.7	30.4	27.2	8.41	-238.1	-2,014.4	778.0	728.4	49.60	15.685		
7,000.0	6,819.6	7,019.1	6,936.0	30.9	27.6	8.06	-245.4	-1,999.2	734.5	684.1	50.34	14.591		
7,100.0	6,915.6	7,109.0	7,024.3	31.4	28.0	7.66	-252.7	-1,983.9	690.9	639.9	51.07	13.528		
7,200.0	7,011.5	7,198.9	7,112.6	32.0	28.4	7.21	-260.1	-1,968.7	647.4	595.6	51.81	12.496		
7,300.0	7,107.5	7,288.8	7,200.9	32.5	28.8	6.69	-267.4	-1,953.4	604.0	551.4	52.55	11.492		
7,400.0	7,203.5	7,378.7	7,289.3	33.0	29.2	6.09	-274.7	-1,938.2	560.6	507.3	53.30	10.517		
7,500.0	7,299.4	7,468.7	7,377.6	33.6	29.6	5.39	-282.0	-1,923.0	517.2	463.2	54.05	9.569		
7,600.0	7,395.4	7,558.0	7,465.3	34.1	30.0	4.58	-289.3	-1,907.8	473.9	419.1	54.82	8.646		
7,700.0	7,491.3	7,637.7	7,543.9	34.6	30.3	3.80	-295.3	-1,895.4	431.9	376.2	55.74	7.749		
7,800.0	7,587.3	7,719.4	7,624.6	35.2	30.6	3.06	-300.4	-1,884.7	392.2	335.5	56.65	6.923		
7,900.0	7,683.2	7,800.0	7,704.7	35.7	30.9	2.39	-304.5	-1,876.2	354.8	297.2	57.58	6.161		
8,000.0	7,779.2	7,888.0	7,792.4	36.2	31.3	1.79	-307.9	-1,869.3	319.7	261.3	58.41	5.473		
8,100.0	7,875.1	7,974.9	7,879.1	36.8	31.6	1.37	-310.0	-1,864.8	287.0	227.8	59.24	4.845		
8,200.0	7,971.1	8,063.2	7,967.4	37.3	31.9	1.20	-311.0	-1,862.6	256.7	196.7	60.03	4.276		
8,300.0	8,067.0	8,156.8	8,060.9	37.9	32.2	1.31	-311.1	-1,862.5	228.4	167.6	60.75	3.760		
8,400.0	8,163.0	8,252.7	8,156.9	38.4	32.4	1.50	-311.1	-1,862.5	200.2	138.8	61.44	3.259		
8,500.0	8,258.9	8,348.7	8,252.8	38.9	32.7	1.74	-311.1	-1,862.5	172.1	109.9	62.13	2.769		
8,600.0	8,354.9	8,445.1	8,349.3	39.5	33.0	2.15	-311.0	-1,862.5	143.9	81.1	62.82	2.291		
8,700.0	8,451.4	8,542.4	8,445.6	40.0	33.3	8.87	-298.5	-1,862.6	116.8	53.4	63.42	1.842		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1													Offset Site Error: 0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,800.0	8,548.7	8,630.7	8,529.2	40.5	33.5	26.87	-270.5	-1,862.8	99.9	34.9	64.97	1.538	
8,817.5	8,565.8	8,644.9	8,542.1	40.6	33.5	30.82	-264.6	-1,862.8	99.4	34.2	65.25	1.523	CC, ES, SF
8,900.0	8,646.8	8,706.4	8,595.8	40.9	33.7	49.06	-234.6	-1,863.0	111.6	46.7	64.88	1.720	
9,000.0	8,745.5	8,769.2	8,646.1	41.3	33.7	65.42	-197.1	-1,863.3	155.5	94.5	60.98	2.550	
9,100.0	8,844.7	8,820.6	8,683.4	41.7	33.8	75.55	-161.8	-1,863.5	218.7	162.0	56.65	3.860	
9,200.0	8,944.2	8,862.6	8,710.8	42.1	33.8	82.22	-130.1	-1,863.7	292.4	239.3	53.04	5.513	
9,300.0	9,044.1	8,900.0	8,732.9	42.4	33.8	87.39	-99.9	-1,863.9	372.4	321.9	50.47	7.378	
9,400.0	9,144.0	8,925.0	8,746.3	42.7	33.8	91.49	-78.8	-1,864.1	456.5	408.7	47.78	9.554	
9,500.0	9,244.0	8,950.0	8,758.6	42.9	33.8	-7.12	-57.0	-1,864.2	543.5	497.5	46.05	11.803	
9,600.0	9,343.6	8,975.0	8,769.7	43.2	33.8	-2.32	-34.6	-1,864.4	628.9	584.4	44.48	14.138	
9,700.0	9,439.3	9,000.0	8,779.6	43.4	33.8	-1.59	-11.6	-1,864.5	705.2	662.7	42.52	16.586	
9,800.0	9,527.0	9,025.0	8,788.3	43.6	33.8	-1.16	11.8	-1,864.7	771.1	730.6	40.48	19.050	
9,900.0	9,602.9	9,060.4	8,798.5	43.8	33.8	-0.84	45.7	-1,864.9	825.3	786.3	38.97	21.178	
10,000.0	9,663.6	9,100.0	8,806.9	43.9	33.7	-0.60	84.4	-1,865.2	867.2	829.4	37.79	22.950	
10,100.0	9,706.6	9,125.0	8,810.6	43.9	33.7	-0.47	109.1	-1,865.4	895.9	859.2	36.70	24.412	
10,200.0	9,729.9	9,160.7	8,813.5	43.9	33.7	-0.33	144.6	-1,865.6	911.3	874.8	36.45	25.002	
10,300.0	9,734.0	9,219.0	8,814.0	44.0	33.6	-0.15	202.9	-1,866.0	913.9	877.1	36.79	24.843	
10,379.5	9,734.0	9,298.4	8,814.0	44.0	33.6	-0.01	282.4	-1,866.6	913.9	876.7	37.19	24.572	
10,400.0	9,734.0	9,318.9	8,814.0	44.0	33.5	0.00	302.9	-1,866.7	913.9	876.6	37.30	24.498	
10,500.0	9,734.0	9,418.9	8,814.0	44.1	33.5	0.00	402.9	-1,867.4	913.9	876.0	37.89	24.116	
10,600.0	9,734.0	9,518.9	8,814.0	44.2	33.5	0.00	502.9	-1,868.1	913.9	875.3	38.54	23.711	
10,700.0	9,734.0	9,618.9	8,814.0	44.3	33.7	0.00	602.9	-1,868.8	913.9	874.6	39.24	23.289	
10,800.0	9,734.0	9,718.9	8,814.0	44.5	34.0	0.00	702.9	-1,869.5	913.9	873.9	39.99	22.853	
10,900.0	9,734.0	9,818.9	8,814.0	44.8	34.5	0.00	802.9	-1,870.2	913.9	873.1	40.79	22.406	
11,000.0	9,734.0	9,918.9	8,814.0	45.1	35.0	0.00	902.9	-1,870.9	913.9	872.2	41.63	21.954	
11,100.0	9,734.0	10,018.9	8,814.0	45.4	35.6	0.00	1,002.9	-1,871.6	913.9	871.4	42.51	21.498	
11,200.0	9,734.0	10,118.9	8,814.0	45.8	36.2	0.00	1,102.9	-1,872.3	913.9	870.4	43.43	21.041	
11,300.0	9,734.0	10,218.9	8,814.0	46.3	36.9	0.00	1,202.9	-1,873.0	913.9	869.5	44.39	20.587	
11,400.0	9,734.0	10,318.9	8,814.0	46.8	37.6	0.00	1,302.9	-1,873.7	913.9	868.5	45.38	20.137	
11,500.0	9,734.0	10,418.9	8,814.0	47.3	38.4	0.00	1,402.9	-1,874.4	913.9	867.5	46.41	19.692	
11,600.0	9,734.0	10,518.9	8,814.0	47.9	39.2	0.00	1,502.9	-1,875.1	913.9	866.4	47.46	19.254	
11,700.0	9,734.0	10,618.9	8,814.0	48.5	40.0	0.00	1,602.9	-1,875.8	913.9	865.3	48.55	18.825	
11,800.0	9,734.0	10,718.9	8,814.0	49.2	40.9	0.00	1,702.9	-1,876.5	913.9	864.2	49.66	18.404	
11,900.0	9,734.0	10,818.9	8,814.0	49.9	41.8	0.00	1,802.9	-1,877.1	913.9	863.1	50.79	17.993	
12,000.0	9,734.0	10,918.9	8,814.0	50.7	42.7	0.00	1,902.8	-1,877.8	913.9	861.9	51.95	17.593	
12,100.0	9,734.0	11,018.9	8,814.0	51.5	43.7	0.00	2,002.8	-1,878.5	913.9	860.7	53.12	17.203	
12,200.0	9,734.0	11,118.9	8,814.0	52.3	44.7	0.00	2,102.8	-1,879.2	913.9	859.6	54.32	16.824	
12,300.0	9,734.0	11,218.9	8,814.0	53.2	45.7	0.00	2,202.8	-1,879.9	913.9	858.3	55.54	16.455	
12,400.0	9,734.0	11,318.9	8,814.0	54.0	46.7	0.00	2,302.8	-1,880.6	913.9	857.1	56.77	16.098	
12,500.0	9,734.0	11,418.9	8,814.0	54.9	47.8	0.00	2,402.8	-1,881.3	913.9	855.9	58.02	15.751	
12,600.0	9,734.0	11,518.9	8,814.0	55.9	48.8	0.00	2,502.8	-1,882.0	913.9	854.6	59.28	15.415	
12,700.0	9,734.0	11,618.9	8,814.0	56.8	49.9	0.00	2,602.8	-1,882.7	913.9	853.3	60.56	15.089	
12,800.0	9,734.0	11,718.9	8,814.0	57.8	51.0	0.00	2,702.8	-1,883.4	913.9	852.0	61.86	14.774	
12,900.0	9,734.0	11,818.9	8,814.0	58.8	52.1	0.00	2,802.8	-1,884.1	913.9	850.7	63.16	14.469	
13,000.0	9,734.0	11,918.9	8,814.0	59.9	53.3	0.00	2,902.8	-1,884.8	913.9	849.4	64.48	14.173	
13,100.0	9,734.0	12,018.9	8,814.0	60.9	54.4	0.00	3,002.8	-1,885.5	913.9	848.1	65.81	13.887	
13,200.0	9,734.0	12,118.9	8,814.0	62.0	55.6	0.00	3,102.8	-1,886.2	913.9	846.7	67.14	13.611	
13,300.0	9,734.0	12,218.9	8,814.0	63.0	56.8	0.00	3,202.8	-1,886.9	913.9	845.4	68.49	13.343	
13,400.0	9,734.0	12,318.9	8,814.0	64.1	58.0	0.00	3,302.8	-1,887.6	913.9	844.0	69.85	13.083	
13,500.0	9,734.0	12,418.9	8,814.0	65.2	59.2	0.00	3,402.8	-1,888.3	913.9	842.7	71.22	12.832	
13,600.0	9,734.0	12,518.9	8,814.0	66.3	60.4	0.00	3,502.8	-1,888.9	913.9	841.3	72.59	12.590	
13,700.0	9,734.0	12,618.9	8,814.0	67.5	61.6	0.00	3,602.8	-1,889.6	913.9	839.9	73.97	12.354	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
13,800.0	9,734.0	12,718.9	8,814.0	68.6	62.8	0.00	3,702.8	-1,890.3	913.9	838.5	75.36	12.127	
13,900.0	9,734.0	12,818.9	8,814.0	69.8	64.1	0.00	3,802.8	-1,891.0	913.9	837.1	76.76	11.906	
14,000.0	9,734.0	12,918.9	8,814.0	70.9	65.3	0.00	3,902.8	-1,891.7	913.9	835.7	78.16	11.692	
14,100.0	9,734.0	13,018.9	8,814.0	72.1	66.6	0.00	4,002.8	-1,892.4	913.9	834.3	79.57	11.485	
14,200.0	9,734.0	13,118.9	8,814.0	73.3	67.9	0.00	4,102.8	-1,893.1	913.9	832.9	80.98	11.285	
14,300.0	9,734.0	13,218.9	8,814.0	74.5	69.1	0.00	4,202.8	-1,893.8	913.9	831.5	82.41	11.090	
14,400.0	9,734.0	13,318.9	8,814.0	75.7	70.4	0.00	4,302.8	-1,894.5	913.9	830.0	83.83	10.901	
14,500.0	9,734.0	13,418.9	8,814.0	76.9	71.7	0.00	4,402.8	-1,895.2	913.9	828.6	85.26	10.718	
14,600.0	9,734.0	13,518.9	8,814.0	78.1	73.0	0.00	4,502.8	-1,895.9	913.9	827.2	86.70	10.541	
14,700.0	9,734.0	13,618.9	8,814.0	79.4	74.3	0.00	4,602.8	-1,896.6	913.9	825.7	88.14	10.369	
14,800.0	9,734.0	13,718.9	8,814.0	80.6	75.6	0.00	4,702.8	-1,897.3	913.9	824.3	89.58	10.202	
14,900.0	9,734.0	13,818.9	8,814.0	81.9	76.9	0.00	4,802.8	-1,898.0	913.9	822.9	91.03	10.039	
15,000.0	9,734.0	13,918.9	8,814.0	83.1	78.2	0.00	4,902.8	-1,898.7	913.9	821.4	92.48	9.882	
15,100.0	9,734.0	14,018.9	8,814.0	84.4	79.5	0.00	5,002.8	-1,899.4	913.9	819.9	93.94	9.728	
15,200.0	9,734.0	14,118.9	8,814.0	85.6	80.8	0.00	5,102.8	-1,900.1	913.9	818.5	95.40	9.579	
15,300.0	9,734.0	14,218.9	8,814.0	86.9	82.2	0.00	5,202.8	-1,900.7	913.9	817.0	96.86	9.435	
15,400.0	9,734.0	14,318.9	8,814.0	88.2	83.5	0.00	5,302.8	-1,901.4	913.9	815.6	98.33	9.294	
15,500.0	9,734.0	14,418.9	8,814.0	89.4	84.8	0.00	5,402.8	-1,902.1	913.9	814.1	99.80	9.157	
15,600.0	9,734.0	14,518.9	8,814.0	90.7	86.2	0.00	5,502.8	-1,902.8	913.9	812.6	101.27	9.024	
15,700.0	9,734.0	14,618.9	8,814.0	92.0	87.5	0.00	5,602.8	-1,903.5	913.9	811.1	102.75	8.894	
15,800.0	9,734.0	14,718.9	8,814.0	93.3	88.9	0.00	5,702.8	-1,904.2	913.9	809.7	104.23	8.768	
15,900.0	9,734.0	14,818.9	8,814.0	94.6	90.2	0.00	5,802.8	-1,904.9	913.9	808.2	105.71	8.645	
16,000.0	9,734.0	14,918.9	8,814.0	95.9	91.5	0.00	5,902.8	-1,905.6	913.9	806.7	107.19	8.526	
16,100.0	9,734.0	15,018.9	8,814.0	97.2	92.9	0.00	6,002.7	-1,906.3	913.9	805.2	108.68	8.409	
16,200.0	9,734.0	15,118.9	8,814.0	98.5	94.3	0.00	6,102.7	-1,907.0	913.9	803.7	110.16	8.296	
16,300.0	9,734.0	15,218.9	8,814.0	99.9	95.6	0.00	6,202.7	-1,907.7	913.9	802.2	111.65	8.185	
16,400.0	9,734.0	15,318.9	8,814.0	101.2	97.0	0.00	6,302.7	-1,908.4	913.9	800.7	113.15	8.077	
16,500.0	9,734.0	15,418.9	8,814.0	102.5	98.3	0.00	6,402.7	-1,909.1	913.9	799.2	114.64	7.972	
16,600.0	9,734.0	15,518.9	8,814.0	103.8	99.7	0.00	6,502.7	-1,909.8	913.9	797.7	116.14	7.869	
16,700.0	9,734.0	15,618.9	8,814.0	105.1	101.1	0.00	6,602.7	-1,910.5	913.9	796.3	117.64	7.769	
16,800.0	9,734.0	15,718.9	8,814.0	106.5	102.4	0.00	6,702.7	-1,911.2	913.9	794.8	119.14	7.671	
16,900.0	9,734.0	15,818.9	8,814.0	107.8	103.8	0.00	6,802.7	-1,911.9	913.9	793.2	120.64	7.575	
17,000.0	9,734.0	15,918.9	8,814.0	109.1	105.2	0.00	6,902.7	-1,912.6	913.9	791.7	122.14	7.482	
17,100.0	9,734.0	16,018.9	8,814.0	110.5	106.6	0.00	7,002.7	-1,913.2	913.9	790.2	123.65	7.391	
17,200.0	9,734.0	16,118.9	8,814.0	111.8	107.9	0.00	7,102.7	-1,913.9	913.9	788.7	125.16	7.302	
17,300.0	9,734.0	16,218.9	8,814.0	113.2	109.3	0.00	7,202.7	-1,914.6	913.9	787.2	126.66	7.215	
17,400.0	9,734.0	16,318.9	8,814.0	114.5	110.7	0.00	7,302.7	-1,915.3	913.9	785.7	128.17	7.130	
17,500.0	9,734.0	16,418.9	8,814.0	115.9	112.1	0.00	7,402.7	-1,916.0	913.9	784.2	129.68	7.047	
17,600.0	9,734.0	16,518.9	8,814.0	117.2	113.5	0.00	7,502.7	-1,916.7	913.9	782.7	131.20	6.966	
17,700.0	9,734.0	16,618.9	8,814.0	118.6	114.9	0.00	7,602.7	-1,917.4	913.9	781.2	132.71	6.886	
17,800.0	9,734.0	16,718.9	8,814.0	119.9	116.2	0.00	7,702.7	-1,918.1	913.9	779.7	134.23	6.809	
17,900.0	9,734.0	16,818.9	8,814.0	121.3	117.6	0.00	7,802.7	-1,918.8	913.9	778.1	135.74	6.732	
18,000.0	9,734.0	16,918.9	8,814.0	122.7	119.0	0.00	7,902.7	-1,919.5	913.9	776.6	137.26	6.658	
18,100.0	9,734.0	17,018.9	8,814.0	124.0	120.4	0.00	8,002.7	-1,920.2	913.9	775.1	138.78	6.585	
18,200.0	9,734.0	17,118.9	8,814.0	125.4	121.8	0.00	8,102.7	-1,920.9	913.9	773.6	140.30	6.514	
18,300.0	9,734.0	17,218.9	8,814.0	126.8	123.2	0.00	8,202.7	-1,921.6	913.9	772.1	141.82	6.444	
18,400.0	9,734.0	17,318.9	8,814.0	128.1	124.6	0.00	8,302.7	-1,922.3	913.9	770.6	143.34	6.376	
18,500.0	9,734.0	17,418.9	8,814.0	129.5	126.0	0.00	8,402.7	-1,923.0	913.9	769.0	144.87	6.309	
18,600.0	9,734.0	17,518.9	8,814.0	130.9	127.4	0.00	8,502.7	-1,923.7	913.9	767.5	146.39	6.243	
18,700.0	9,734.0	17,618.9	8,814.0	132.2	128.8	0.00	8,602.7	-1,924.4	913.9	766.0	147.92	6.179	
18,800.0	9,734.0	17,718.9	8,814.0	133.6	130.2	0.00	8,702.7	-1,925.0	913.9	764.5	149.44	6.115	
18,900.0	9,734.0	17,818.9	8,814.0	135.0	131.6	0.00	8,802.7	-1,925.7	913.9	762.9	150.97	6.054	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,000.0	9,734.0	17,918.9	8,814.0	136.4	133.0	0.00	8,902.7	-1,926.4	913.9	761.4	152.50	5.993		
19,100.0	9,734.0	18,018.9	8,814.0	137.7	134.4	0.00	9,002.7	-1,927.1	913.9	759.9	154.02	5.933		
19,200.0	9,734.0	18,118.9	8,814.0	139.1	135.8	0.00	9,102.7	-1,927.8	913.9	758.3	155.55	5.875		
19,300.0	9,734.0	18,218.9	8,814.0	140.5	137.2	0.00	9,202.7	-1,928.5	913.9	756.8	157.08	5.818		
19,400.0	9,734.0	18,318.9	8,814.0	141.9	138.6	0.00	9,302.7	-1,929.2	913.9	755.3	158.61	5.762		
19,500.0	9,734.0	18,418.9	8,814.0	143.3	140.0	0.00	9,402.7	-1,929.9	913.9	753.8	160.15	5.707		
19,600.0	9,734.0	18,518.9	8,814.0	144.7	141.4	0.00	9,502.7	-1,930.6	913.9	752.2	161.68	5.653		
19,700.0	9,734.0	18,618.9	8,814.0	146.1	142.8	0.00	9,602.7	-1,931.3	913.9	750.7	163.21	5.599		
19,800.0	9,734.0	18,718.9	8,814.0	147.4	144.2	0.00	9,702.7	-1,932.0	913.9	749.2	164.75	5.547		
19,900.0	9,734.0	18,818.9	8,814.0	148.8	145.7	0.00	9,802.7	-1,932.7	913.9	747.6	166.28	5.496		
20,000.0	9,734.0	18,918.9	8,814.0	150.2	147.1	0.00	9,902.7	-1,933.4	913.9	746.1	167.81	5.446		
20,100.0	9,734.0	19,018.9	8,814.0	151.6	148.5	0.00	10,002.7	-1,934.1	913.9	744.5	169.35	5.396		
20,200.0	9,734.0	19,118.9	8,814.0	152.9	149.9	0.00	10,102.7	-1,934.8	913.9	743.4	170.51	5.360		
20,207.7	9,734.0	19,126.6	8,814.0	153.0	150.0	0.00	10,110.3	-1,934.8	913.9	743.3	170.59	5.357		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 501H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
6,600.0	6,435.8	6,178.1	6,141.4	28.8	22.9	9.55	-202.1	-3,364.8	2,218.8	2,172.5	46.33	47.886
6,700.0	6,531.8	6,276.9	6,239.3	29.3	23.3	9.56	-206.6	-3,377.5	2,203.6	2,156.5	47.11	46.780
6,800.0	6,627.7	6,375.8	6,337.2	29.8	23.7	9.56	-211.2	-3,390.2	2,188.4	2,140.6	47.88	45.709
6,900.0	6,723.7	6,474.6	6,435.1	30.4	24.1	9.56	-215.7	-3,402.9	2,173.3	2,124.6	48.65	44.672
7,000.0	6,819.6	6,573.4	6,533.0	30.9	24.5	9.57	-220.3	-3,415.7	2,158.1	2,108.7	49.42	43.667
7,100.0	6,915.6	6,672.3	6,630.9	31.4	24.9	9.57	-224.8	-3,428.4	2,142.9	2,092.7	50.19	42.692
7,200.0	7,011.5	6,771.1	6,728.9	32.0	25.3	9.58	-229.4	-3,441.1	2,127.7	2,076.7	50.97	41.746
7,300.0	7,107.5	6,870.0	6,826.8	32.5	25.7	9.58	-233.9	-3,453.8	2,112.5	2,060.8	51.74	40.828
7,400.0	7,203.5	6,968.8	6,924.7	33.0	26.1	9.58	-238.5	-3,466.5	2,097.3	2,044.8	52.52	39.938
7,500.0	7,299.4	7,067.6	7,022.6	33.6	26.5	9.59	-243.0	-3,479.2	2,082.2	2,028.9	53.29	39.072
7,600.0	7,395.4	7,166.5	7,120.5	34.1	26.9	9.59	-247.5	-3,491.9	2,067.0	2,012.9	54.06	38.232
7,700.0	7,491.3	7,265.3	7,218.4	34.6	27.3	9.60	-252.1	-3,504.6	2,051.8	1,997.0	54.84	37.414
7,800.0	7,587.3	7,364.2	7,316.3	35.2	27.7	9.60	-256.6	-3,517.3	2,036.6	1,981.0	55.62	36.620
7,900.0	7,683.2	7,463.0	7,414.3	35.7	28.0	9.61	-261.2	-3,530.1	2,021.4	1,965.0	56.39	35.847
8,000.0	7,779.2	7,561.8	7,512.2	36.2	28.4	9.61	-265.7	-3,542.8	2,006.3	1,949.1	57.17	35.094
8,100.0	7,875.1	7,660.7	7,610.1	36.8	28.8	9.61	-270.3	-3,555.5	1,991.1	1,933.1	57.94	34.362
8,200.0	7,971.1	7,759.5	7,708.0	37.3	29.2	9.62	-274.8	-3,568.2	1,975.9	1,917.2	58.72	33.649
8,300.0	8,067.0	7,858.4	7,805.9	37.9	29.6	9.62	-279.4	-3,580.9	1,960.7	1,901.2	59.50	32.954
8,400.0	8,163.0	7,957.2	7,903.8	38.4	30.0	9.63	-283.9	-3,593.6	1,945.5	1,885.3	60.27	32.278
8,500.0	8,258.9	8,056.0	8,001.7	38.9	30.4	9.63	-288.5	-3,606.3	1,930.3	1,869.3	61.05	31.618
8,600.0	8,354.9	8,154.9	8,099.7	39.5	30.8	9.63	-293.0	-3,619.0	1,915.2	1,853.3	61.83	30.975
8,700.0	8,451.4	8,254.0	8,197.8	40.0	31.2	9.58	-297.6	-3,631.8	1,901.9	1,839.3	62.60	30.380
8,800.0	8,548.7	8,353.5	8,296.4	40.5	31.6	9.53	-302.1	-3,644.6	1,892.0	1,828.7	63.37	29.858
8,900.0	8,646.8	8,453.3	8,395.3	40.9	32.0	9.47	-306.7	-3,657.4	1,885.6	1,821.5	64.12	29.406
9,000.0	8,745.5	8,553.2	8,494.3	41.3	32.4	9.40	-311.3	-3,670.3	1,882.6	1,817.8	64.87	29.022
9,036.6	8,781.8	8,589.8	8,530.5	41.5	32.6	9.37	-313.0	-3,675.0	1,882.4	1,817.3	65.14	28.899
9,100.0	8,844.7	8,653.2	8,593.3	41.7	32.8	9.32	-315.9	-3,683.1	1,883.1	1,817.5	65.60	28.705
9,200.0	8,944.2	8,891.4	8,830.2	42.1	33.8	9.19	-324.0	-3,705.7	1,883.9	1,817.3	66.58	28.296
9,300.0	9,044.1	9,096.8	9,035.5	42.4	34.5	9.19	-325.7	-3,710.4	1,880.1	1,812.9	67.27	27.950
9,400.0	9,144.0	9,196.7	9,135.4	42.7	34.8	9.19	-325.7	-3,710.4	1,878.0	1,810.1	67.93	27.646
9,488.4	9,232.4	9,285.1	9,223.8	42.9	35.1	9.19	-325.7	-3,710.4	1,877.8	1,809.3	68.50	27.414
9,500.0	9,244.0	9,296.7	9,235.4	42.9	35.1	-90.44	-325.7	-3,710.4	1,878.0	1,809.4	68.57	27.386
9,600.0	9,343.6	9,397.1	9,335.5	43.2	35.4	-87.04	-319.1	-3,710.5	1,877.5	1,808.3	69.19	27.135
9,700.0	9,439.3	9,497.9	9,432.4	43.4	35.7	-87.27	-292.1	-3,710.6	1,876.0	1,806.3	69.74	26.899
9,800.0	9,527.0	9,598.9	9,521.7	43.6	35.9	-87.63	-245.3	-3,711.0	1,873.4	1,803.2	70.22	26.681
9,900.0	9,602.9	9,700.3	9,599.4	43.8	36.1	-88.08	-180.5	-3,711.4	1,869.9	1,799.3	70.62	26.479
10,000.0	9,663.6	9,801.8	9,661.8	43.9	36.1	-88.62	-100.7	-3,712.0	1,865.6	1,794.7	70.97	26.290
10,100.0	9,706.6	9,903.4	9,706.0	43.9	36.2	-89.23	-9.4	-3,712.6	1,860.8	1,789.5	71.28	26.106
10,200.0	9,729.9	10,005.1	9,729.9	43.9	36.1	-89.86	89.3	-3,713.3	1,855.5	1,783.9	71.57	25.926
10,300.0	9,734.0	10,106.1	9,734.0	44.0	36.1	-90.27	190.1	-3,714.0	1,850.4	1,778.5	71.86	25.749
10,400.0	9,734.0	10,206.1	9,734.0	44.0	36.2	-90.27	290.1	-3,714.7	1,848.0	1,775.8	72.25	25.579
10,490.9	9,734.0	10,297.0	9,734.0	44.1	36.3	-90.27	380.9	-3,715.3	1,847.7	1,775.0	72.69	25.417 CC
10,500.0	9,734.0	10,306.1	9,734.0	44.1	36.3	-90.27	390.1	-3,715.4	1,847.9	1,775.2	72.74	25.404
10,600.0	9,734.0	10,406.1	9,734.0	44.2	36.5	-90.27	490.1	-3,716.1	1,847.9	1,774.6	73.35	25.193
10,700.0	9,734.0	10,506.1	9,734.0	44.3	36.9	-90.27	590.0	-3,716.8	1,848.0	1,773.9	74.07	24.949
10,800.0	9,734.0	10,606.1	9,734.0	44.5	37.3	-90.27	690.0	-3,717.5	1,848.0	1,773.1	74.89	24.675
10,900.0	9,734.0	10,706.1	9,734.0	44.8	37.7	-90.27	790.0	-3,718.2	1,848.0	1,772.1	75.82	24.374
11,000.0	9,734.0	10,806.1	9,734.0	45.1	38.3	-90.27	890.0	-3,718.9	1,848.0	1,771.1	76.84	24.050
11,100.0	9,734.0	10,906.1	9,734.0	45.4	38.8	-90.27	990.0	-3,719.5	1,848.0	1,770.0	77.95	23.706
11,200.0	9,734.0	11,006.1	9,734.0	45.8	39.5	-90.27	1,090.0	-3,720.2	1,848.0	1,768.8	79.16	23.345
11,300.0	9,734.0	11,106.1	9,734.0	46.3	40.1	-90.27	1,190.0	-3,720.9	1,848.0	1,767.5	80.45	22.970
11,400.0	9,734.0	11,206.1	9,734.0	46.8	40.8	-90.27	1,290.0	-3,721.6	1,848.0	1,766.1	81.83	22.584

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 501H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
11,500.0	9,734.0	11,306.1	9,734.0	47.3	41.6	-90.27	1,390.0	-3,722.3	1,848.0	1,764.7	83.28	22.190	
11,600.0	9,734.0	11,406.1	9,734.0	47.9	42.4	-90.27	1,490.0	-3,723.0	1,848.0	1,763.2	84.80	21.791	
11,700.0	9,734.0	11,506.1	9,734.0	48.5	43.2	-90.27	1,590.0	-3,723.7	1,848.0	1,761.6	86.40	21.388	
11,800.0	9,734.0	11,606.1	9,734.0	49.2	44.0	-90.27	1,690.0	-3,724.4	1,848.0	1,759.9	88.06	20.984	
11,900.0	9,734.0	11,706.1	9,734.0	49.9	44.9	-90.27	1,790.0	-3,725.1	1,848.0	1,758.2	89.79	20.581	
12,000.0	9,734.0	11,806.1	9,734.0	50.7	45.8	-90.27	1,890.0	-3,725.8	1,848.0	1,756.4	91.57	20.180	
12,100.0	9,734.0	11,906.1	9,734.0	51.5	46.7	-90.27	1,990.0	-3,726.5	1,848.0	1,754.5	93.41	19.783	
12,200.0	9,734.0	12,006.1	9,734.0	52.3	47.7	-90.27	2,090.0	-3,727.2	1,848.0	1,752.7	95.30	19.390	
12,300.0	9,734.0	12,106.1	9,734.0	53.2	48.7	-90.27	2,190.0	-3,727.9	1,848.0	1,750.7	97.25	19.003	
12,400.0	9,734.0	12,206.1	9,734.0	54.0	49.7	-90.27	2,290.0	-3,728.6	1,848.0	1,748.7	99.23	18.622	
12,500.0	9,734.0	12,306.1	9,734.0	54.9	50.7	-90.27	2,390.0	-3,729.3	1,848.0	1,746.7	101.27	18.249	
12,600.0	9,734.0	12,406.1	9,734.0	55.9	51.7	-90.27	2,490.0	-3,730.0	1,848.0	1,744.6	103.34	17.883	
12,700.0	9,734.0	12,506.1	9,734.0	56.8	52.8	-90.27	2,590.0	-3,730.7	1,848.0	1,742.5	105.45	17.525	
12,800.0	9,734.0	12,606.1	9,734.0	57.8	53.9	-90.27	2,690.0	-3,731.3	1,848.0	1,740.4	107.60	17.175	
12,900.0	9,734.0	12,706.1	9,734.0	58.8	55.0	-90.27	2,790.0	-3,732.0	1,848.0	1,738.2	109.78	16.833	
13,000.0	9,734.0	12,806.1	9,734.0	59.9	56.1	-90.27	2,890.0	-3,732.7	1,848.0	1,736.0	112.00	16.500	
13,100.0	9,734.0	12,906.1	9,734.0	60.9	57.2	-90.27	2,990.0	-3,733.4	1,848.0	1,733.7	114.24	16.176	
13,200.0	9,734.0	13,006.1	9,734.0	62.0	58.4	-90.27	3,090.0	-3,734.1	1,848.0	1,731.5	116.51	15.860	
13,300.0	9,734.0	13,106.1	9,734.0	63.0	59.5	-90.27	3,190.0	-3,734.8	1,848.0	1,729.2	118.81	15.553	
13,400.0	9,734.0	13,206.1	9,734.0	64.1	60.7	-90.27	3,290.0	-3,735.5	1,848.0	1,726.8	121.14	15.255	
13,500.0	9,734.0	13,306.1	9,734.0	65.2	61.9	-90.27	3,390.0	-3,736.2	1,848.0	1,724.5	123.49	14.964	
13,600.0	9,734.0	13,406.1	9,734.0	66.3	63.1	-90.27	3,490.0	-3,736.9	1,848.0	1,722.1	125.86	14.682	
13,700.0	9,734.0	13,506.1	9,734.0	67.5	64.3	-90.27	3,590.0	-3,737.6	1,848.0	1,719.7	128.26	14.408	
13,800.0	9,734.0	13,606.1	9,734.0	68.6	65.5	-90.27	3,690.0	-3,738.3	1,848.0	1,717.3	130.67	14.142	
13,900.0	9,734.0	13,706.1	9,734.0	69.8	66.7	-90.27	3,790.0	-3,739.0	1,848.0	1,714.9	133.11	13.883	
14,000.0	9,734.0	13,806.1	9,734.0	70.9	67.9	-90.27	3,890.0	-3,739.7	1,848.0	1,712.4	135.56	13.632	
14,100.0	9,734.0	13,906.1	9,734.0	72.1	69.1	-90.27	3,990.0	-3,740.4	1,848.0	1,709.9	138.03	13.388	
14,200.0	9,734.0	14,006.1	9,734.0	73.3	70.4	-90.27	4,090.0	-3,741.1	1,848.0	1,707.5	140.51	13.152	
14,300.0	9,734.0	14,106.1	9,734.0	74.5	71.6	-90.27	4,190.0	-3,741.8	1,848.0	1,705.0	143.01	12.922	
14,400.0	9,734.0	14,206.1	9,734.0	75.7	72.9	-90.27	4,290.0	-3,742.5	1,848.0	1,702.4	145.53	12.698	
14,500.0	9,734.0	14,306.1	9,734.0	76.9	74.2	-90.27	4,390.0	-3,743.1	1,848.0	1,699.9	148.06	12.481	
14,600.0	9,734.0	14,406.1	9,734.0	78.1	75.4	-90.27	4,490.0	-3,743.8	1,848.0	1,697.4	150.60	12.271	
14,700.0	9,734.0	14,506.1	9,734.0	79.4	76.7	-90.27	4,590.0	-3,744.5	1,848.0	1,694.8	153.16	12.066	
14,800.0	9,734.0	14,606.1	9,734.0	80.6	78.0	-90.27	4,690.0	-3,745.2	1,848.0	1,692.3	155.72	11.867	
14,900.0	9,734.0	14,706.1	9,734.0	81.9	79.3	-90.27	4,789.9	-3,745.9	1,848.0	1,689.7	158.30	11.674	
15,000.0	9,734.0	14,806.1	9,734.0	83.1	80.6	-90.27	4,889.9	-3,746.6	1,848.0	1,687.1	160.89	11.486	
15,100.0	9,734.0	14,906.1	9,734.0	84.4	81.9	-90.27	4,989.9	-3,747.3	1,848.0	1,684.5	163.49	11.303	
15,200.0	9,734.0	15,006.1	9,734.0	85.6	83.2	-90.27	5,089.9	-3,748.0	1,848.0	1,681.9	166.10	11.126	
15,300.0	9,734.0	15,106.1	9,734.0	86.9	84.5	-90.27	5,189.9	-3,748.7	1,848.0	1,679.3	168.72	10.953	
15,400.0	9,734.0	15,206.1	9,734.0	88.2	85.8	-90.27	5,289.9	-3,749.4	1,848.0	1,676.6	171.34	10.785	
15,500.0	9,734.0	15,306.1	9,734.0	89.4	87.1	-90.27	5,389.9	-3,750.1	1,848.0	1,674.0	173.98	10.622	
15,600.0	9,734.0	15,406.1	9,734.0	90.7	88.5	-90.27	5,489.9	-3,750.8	1,848.0	1,671.4	176.62	10.463	
15,700.0	9,734.0	15,506.1	9,734.0	92.0	89.8	-90.27	5,589.9	-3,751.5	1,848.0	1,668.7	179.27	10.308	
15,800.0	9,734.0	15,606.1	9,734.0	93.3	91.1	-90.27	5,689.9	-3,752.2	1,848.0	1,666.1	181.93	10.158	
15,900.0	9,734.0	15,706.1	9,734.0	94.6	92.5	-90.27	5,789.9	-3,752.9	1,848.0	1,663.4	184.60	10.011	
16,000.0	9,734.0	15,806.1	9,734.0	95.9	93.8	-90.27	5,889.9	-3,753.6	1,848.0	1,660.7	187.27	9.868	
16,100.0	9,734.0	15,906.1	9,734.0	97.2	95.1	-90.27	5,989.9	-3,754.3	1,848.0	1,658.0	189.95	9.729	
16,200.0	9,734.0	16,006.1	9,734.0	98.5	96.5	-90.27	6,089.9	-3,755.0	1,848.0	1,655.4	192.64	9.593	
16,300.0	9,734.0	16,106.1	9,734.0	99.9	97.8	-90.27	6,189.9	-3,755.6	1,848.0	1,652.7	195.33	9.461	
16,400.0	9,734.0	16,206.1	9,734.0	101.2	99.2	-90.27	6,289.9	-3,756.3	1,848.0	1,650.0	198.03	9.332	
16,500.0	9,734.0	16,306.1	9,734.0	102.5	100.5	-90.27	6,389.9	-3,757.0	1,848.0	1,647.3	200.73	9.206	
16,600.0	9,734.0	16,406.1	9,734.0	103.8	101.9	-90.27	6,489.9	-3,757.7	1,848.0	1,644.6	203.44	9.084	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 501H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
16,700.0	9,734.0	16,506.1	9,734.0	105.1	103.2	-90.27	6,589.9	-3,758.4	1,848.0	1,641.8	206.15	8.964	
16,800.0	9,734.0	16,606.1	9,734.0	106.5	104.6	-90.27	6,689.9	-3,759.1	1,848.0	1,639.1	208.87	8.848	
16,900.0	9,734.0	16,706.1	9,734.0	107.8	106.0	-90.27	6,789.9	-3,759.8	1,848.0	1,636.4	211.59	8.734	
17,000.0	9,734.0	16,806.1	9,734.0	109.1	107.3	-90.27	6,889.9	-3,760.5	1,848.0	1,633.7	214.32	8.623	
17,100.0	9,734.0	16,906.1	9,734.0	110.5	108.7	-90.27	6,989.9	-3,761.2	1,848.0	1,630.9	217.05	8.514	
17,200.0	9,734.0	17,006.1	9,734.0	111.8	110.1	-90.27	7,089.9	-3,761.9	1,848.0	1,628.2	219.78	8.408	
17,300.0	9,734.0	17,106.1	9,734.0	113.2	111.4	-90.27	7,189.9	-3,762.6	1,848.0	1,625.5	222.52	8.305	
17,400.0	9,734.0	17,206.1	9,734.0	114.5	112.8	-90.27	7,289.9	-3,763.3	1,848.0	1,622.7	225.27	8.204	
17,500.0	9,734.0	17,306.1	9,734.0	115.9	114.2	-90.27	7,389.9	-3,764.0	1,848.0	1,620.0	228.02	8.105	
17,600.0	9,734.0	17,406.1	9,734.0	117.2	115.6	-90.27	7,489.9	-3,764.7	1,848.0	1,617.2	230.77	8.008	
17,700.0	9,734.0	17,506.1	9,734.0	118.6	116.9	-90.27	7,589.9	-3,765.4	1,848.0	1,614.5	233.52	7.914	
17,800.0	9,734.0	17,606.1	9,734.0	119.9	118.3	-90.27	7,689.9	-3,766.1	1,848.0	1,611.7	236.28	7.821	
17,900.0	9,734.0	17,706.1	9,734.0	121.3	119.7	-90.27	7,789.9	-3,766.8	1,848.0	1,609.0	239.04	7.731	
18,000.0	9,734.0	17,806.1	9,734.0	122.7	121.1	-90.27	7,889.9	-3,767.4	1,848.0	1,606.2	241.80	7.643	
18,100.0	9,734.0	17,906.1	9,734.0	124.0	122.5	-90.27	7,989.9	-3,768.1	1,848.0	1,603.4	244.57	7.556	
18,200.0	9,734.0	18,006.1	9,734.0	125.4	123.8	-90.27	8,089.9	-3,768.8	1,848.0	1,600.7	247.34	7.471	
18,300.0	9,734.0	18,106.1	9,734.0	126.8	125.2	-90.27	8,189.9	-3,769.5	1,848.0	1,597.9	250.11	7.389	
18,400.0	9,734.0	18,206.1	9,734.0	128.1	126.6	-90.27	8,289.9	-3,770.2	1,848.0	1,595.1	252.89	7.308	
18,500.0	9,734.0	18,306.1	9,734.0	129.5	128.0	-90.27	8,389.9	-3,770.9	1,848.0	1,592.3	255.67	7.228	
18,600.0	9,734.0	18,406.1	9,734.0	130.9	129.4	-90.27	8,489.9	-3,771.6	1,848.0	1,589.6	258.45	7.150	
18,700.0	9,734.0	18,506.1	9,734.0	132.2	130.8	-90.27	8,589.9	-3,772.3	1,848.0	1,586.8	261.23	7.074	
18,800.0	9,734.0	18,606.1	9,734.0	133.6	132.2	-90.27	8,689.9	-3,773.0	1,848.0	1,584.0	264.02	7.000	
18,900.0	9,734.0	18,706.1	9,734.0	135.0	133.6	-90.27	8,789.9	-3,773.7	1,848.0	1,581.2	266.81	6.926	
19,000.0	9,734.0	18,806.1	9,734.0	136.4	135.0	-90.27	8,889.8	-3,774.4	1,848.0	1,578.4	269.60	6.855	
19,100.0	9,734.0	18,906.1	9,734.0	137.7	136.4	-90.27	8,989.8	-3,775.1	1,848.0	1,575.6	272.39	6.784	
19,200.0	9,734.0	19,006.1	9,734.0	139.1	137.8	-90.27	9,089.8	-3,775.8	1,848.0	1,572.8	275.18	6.716	
19,300.0	9,734.0	19,106.1	9,734.0	140.5	139.2	-90.27	9,189.8	-3,776.5	1,848.0	1,570.0	277.98	6.648	
19,400.0	9,734.0	19,206.1	9,734.0	141.9	140.6	-90.27	9,289.8	-3,777.2	1,848.0	1,567.2	280.78	6.582	
19,500.0	9,734.0	19,306.1	9,734.0	143.3	142.0	-90.27	9,389.8	-3,777.9	1,848.0	1,564.4	283.58	6.517	
19,600.0	9,734.0	19,406.1	9,734.0	144.7	143.4	-90.27	9,489.8	-3,778.6	1,848.0	1,561.6	286.38	6.453	
19,700.0	9,734.0	19,506.1	9,734.0	146.1	144.8	-90.27	9,589.8	-3,779.2	1,848.0	1,558.8	289.19	6.390	
19,800.0	9,734.0	19,606.1	9,734.0	147.4	146.2	-90.27	9,689.8	-3,779.9	1,848.0	1,556.0	291.99	6.329	
19,900.0	9,734.0	19,706.1	9,734.0	148.8	147.6	-90.27	9,789.8	-3,780.6	1,848.0	1,553.2	294.80	6.269	
20,000.0	9,734.0	19,806.1	9,734.0	150.2	149.0	-90.27	9,889.8	-3,781.3	1,848.0	1,550.4	297.61	6.210	
20,100.0	9,734.0	19,906.1	9,734.0	151.6	150.4	-90.27	9,989.8	-3,782.0	1,848.0	1,547.6	300.42	6.151	
20,200.0	9,734.0	20,006.1	9,734.0	152.9	151.8	-90.27	10,089.8	-3,782.7	1,848.0	1,545.0	303.02	6.099	
20,200.3	9,734.0	20,006.4	9,734.0	152.9	151.8	-90.27	10,090.2	-3,782.7	1,848.0	1,545.0	303.03	6.099	
20,207.7	9,734.0	20,011.3	9,734.0	153.0	151.9	-90.27	10,095.1	-3,782.8	1,848.0	1,544.8	303.22	6.095 ES, SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 502H - OH - Plan 0.1													Offset Site Error: 0.0 usft		
Survey Program: 0-B001Mb_MWD+HRGM				Reference Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned: Distance				Offset Well Error: 0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
4,500.0	4,420.8	4,469.7	4,454.8	17.8	15.8	5.25	-275.7	-2,767.3	2,193.5	2,161.9	31.59	69.439			
4,600.0	4,516.8	4,564.8	4,549.2	18.3	16.2	5.02	-286.3	-2,764.6	2,163.6	2,131.3	32.32	66.934			
4,700.0	4,612.7	4,659.8	4,643.6	18.8	16.5	4.78	-296.9	-2,761.9	2,133.7	2,100.7	33.06	64.539			
4,800.0	4,708.7	4,747.8	4,731.1	19.3	16.9	4.57	-306.1	-2,759.6	2,104.0	2,070.2	33.78	62.289			
4,900.0	4,804.7	4,833.6	4,816.6	19.9	17.2	4.43	-312.6	-2,757.9	2,074.8	2,040.3	34.48	60.165			
5,000.0	4,900.6	4,919.8	4,902.7	20.4	17.5	4.36	-316.7	-2,756.9	2,045.9	2,010.8	35.19	58.147			
5,100.0	4,996.6	5,006.2	4,989.1	20.9	17.8	4.37	-318.3	-2,756.5	2,017.6	1,981.7	35.88	56.230			
5,200.0	5,092.5	5,101.0	5,083.9	21.4	18.1	4.43	-318.3	-2,756.5	1,989.5	1,952.9	36.58	54.385			
5,300.0	5,188.5	5,197.0	5,179.9	21.9	18.4	4.50	-318.3	-2,756.5	1,961.4	1,924.1	37.29	52.604			
5,400.0	5,284.4	5,292.9	5,275.8	22.4	18.7	4.56	-318.3	-2,756.5	1,933.3	1,895.3	37.99	50.888			
5,500.0	5,380.4	5,388.9	5,371.8	23.0	19.1	4.63	-318.3	-2,756.5	1,905.2	1,866.5	38.70	49.232			
5,600.0	5,476.3	5,484.8	5,467.7	23.5	19.4	4.70	-318.3	-2,756.5	1,877.2	1,837.7	39.41	47.634			
5,700.0	5,572.3	5,580.8	5,563.7	24.0	19.7	4.77	-318.3	-2,756.5	1,849.1	1,809.0	40.12	46.091			
5,800.0	5,668.2	5,676.7	5,659.6	24.5	20.0	4.84	-318.3	-2,756.5	1,821.0	1,780.2	40.83	44.600			
5,900.0	5,764.2	5,772.7	5,755.6	25.1	20.4	4.92	-318.3	-2,756.5	1,792.9	1,751.4	41.54	43.159			
6,000.0	5,860.1	5,868.6	5,851.5	25.6	20.7	5.00	-318.3	-2,756.5	1,764.9	1,722.6	42.26	41.765			
6,100.0	5,956.1	5,964.6	5,947.5	26.1	21.0	5.08	-318.3	-2,756.5	1,736.8	1,693.8	42.97	40.417			
6,200.0	6,052.0	6,060.5	6,043.4	26.6	21.3	5.16	-318.3	-2,756.5	1,708.7	1,665.1	43.69	39.112			
6,300.0	6,148.0	6,156.5	6,139.4	27.2	21.7	5.25	-318.3	-2,756.5	1,680.7	1,636.3	44.41	37.848			
6,400.0	6,243.9	6,252.4	6,235.3	27.7	22.0	5.34	-318.3	-2,756.5	1,652.6	1,607.5	45.13	36.623			
6,500.0	6,339.9	6,348.4	6,331.3	28.2	22.3	5.43	-318.3	-2,756.5	1,624.6	1,578.7	45.85	35.436			
6,600.0	6,435.8	6,444.3	6,427.2	28.8	22.6	5.53	-318.3	-2,756.5	1,596.5	1,550.0	46.57	34.285			
6,700.0	6,531.8	6,540.3	6,523.2	29.3	23.0	5.62	-318.3	-2,756.5	1,568.5	1,521.2	47.29	33.168			
6,800.0	6,627.7	6,636.2	6,619.1	29.8	23.3	5.73	-318.3	-2,756.5	1,540.5	1,492.5	48.01	32.085			
6,900.0	6,723.7	6,732.2	6,715.1	30.4	23.6	5.83	-318.3	-2,756.5	1,512.4	1,463.7	48.74	31.033			
7,000.0	6,819.6	6,828.2	6,811.0	30.9	24.0	5.94	-318.3	-2,756.5	1,484.4	1,434.9	49.46	30.011			
7,100.0	6,915.6	6,924.1	6,907.0	31.4	24.3	6.06	-318.3	-2,756.5	1,456.4	1,406.2	50.19	29.019			
7,200.0	7,011.5	7,020.1	7,002.9	32.0	24.6	6.18	-318.3	-2,756.5	1,428.4	1,377.5	50.92	28.054			
7,300.0	7,107.5	7,116.0	7,098.9	32.5	25.0	6.30	-318.3	-2,756.5	1,400.4	1,348.7	51.64	27.116			
7,400.0	7,203.5	7,212.0	7,194.9	33.0	25.3	6.43	-318.3	-2,756.5	1,372.4	1,320.0	52.37	26.204			
7,500.0	7,299.4	7,307.9	7,290.8	33.6	25.6	6.57	-318.3	-2,756.5	1,344.4	1,291.3	53.10	25.316			
7,600.0	7,395.4	7,403.9	7,386.8	34.1	26.0	6.71	-318.3	-2,756.5	1,316.4	1,262.5	53.83	24.452			
7,700.0	7,491.3	7,499.8	7,482.7	34.6	26.3	6.85	-318.3	-2,756.5	1,288.4	1,233.8	54.57	23.611			
7,800.0	7,587.3	7,595.8	7,578.7	35.2	26.6	7.00	-318.3	-2,756.5	1,260.4	1,205.1	55.30	22.792			
7,900.0	7,683.2	7,691.7	7,674.6	35.7	27.0	7.16	-318.3	-2,756.5	1,232.4	1,176.4	56.03	21.994			
8,000.0	7,779.2	7,787.7	7,770.6	36.2	27.3	7.33	-318.3	-2,756.5	1,204.5	1,147.7	56.77	21.217			
8,100.0	7,875.1	7,883.6	7,866.5	36.8	27.6	7.51	-318.3	-2,756.5	1,176.5	1,119.0	57.51	20.459			
8,200.0	7,971.1	7,979.6	7,962.5	37.3	28.0	7.69	-318.3	-2,756.5	1,148.6	1,090.4	58.25	19.720			
8,300.0	8,067.0	8,075.5	8,058.4	37.9	28.3	7.88	-318.3	-2,756.5	1,120.7	1,061.7	58.99	18.999			
8,400.0	8,163.0	8,171.5	8,154.4	38.4	28.6	8.08	-318.3	-2,756.5	1,092.8	1,033.0	59.73	18.296			
8,500.0	8,258.9	8,267.4	8,250.3	38.9	29.0	8.30	-318.3	-2,756.5	1,064.9	1,004.4	60.47	17.610			
8,600.0	8,354.9	8,363.4	8,346.3	39.5	29.3	8.52	-318.3	-2,756.5	1,037.0	975.8	61.21	16.941			
8,700.0	8,451.4	8,459.9	8,442.8	40.0	29.6	8.65	-318.3	-2,756.5	1,011.0	949.0	61.95	16.318			
8,800.0	8,548.7	8,557.2	8,540.1	40.5	30.0	8.78	-318.3	-2,756.5	988.3	925.6	62.69	15.765			
8,900.0	8,646.8	8,655.3	8,638.2	40.9	30.3	8.90	-318.3	-2,756.5	969.1	905.6	63.43	15.279			
9,000.0	8,745.5	8,754.0	8,736.9	41.3	30.7	9.00	-318.3	-2,756.5	953.2	889.0	64.15	14.859			
9,100.0	8,844.7	8,853.2	8,836.1	41.7	31.0	9.08	-318.3	-2,756.5	940.8	875.9	64.87	14.503			
9,200.0	8,944.2	8,952.8	8,935.6	42.1	31.4	9.14	-318.3	-2,756.5	931.7	866.2	65.57	14.209			
9,300.0	9,044.1	9,052.6	9,035.5	42.4	31.7	9.17	-318.3	-2,756.5	926.2	859.9	66.27	13.976			
9,400.0	9,144.0	9,152.6	9,135.4	42.7	32.1	9.19	-318.3	-2,756.5	924.0	857.1	66.95	13.802			
9,488.4	9,232.4	9,240.9	9,223.8	42.9	32.4	9.19	-318.3	-2,756.5	923.8	856.3	67.53	13.679			
9,500.0	9,244.0	9,252.6	9,235.4	42.9	32.4	-90.45	-318.3	-2,756.5	924.0	856.4	67.61	13.666			

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 502H - OH - Plan 0.1												Offset Site Error: 0.0 usft		
Survey Program: 0-B001Mb_MWD+HRGM		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Offset Well Error: 0.0 usft	
Measured Depth (usft)	Reference Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
9,600.0	9,343.6	9,345.3	9,327.9	43.2	32.7	-87.08	-313.0	-2,756.8	923.9	855.6	68.26	13.535		
9,700.0	9,439.3	9,436.6	9,416.3	43.4	33.0	-87.34	-290.8	-2,758.2	923.7	854.8	68.83	13.419		
9,800.0	9,527.0	9,528.7	9,499.6	43.6	33.3	-87.72	-251.9	-2,760.5	923.4	854.1	69.32	13.321		
9,900.0	9,602.9	9,621.9	9,574.7	43.8	33.5	-88.18	-197.1	-2,763.9	923.2	853.4	69.74	13.237		
10,000.0	9,663.6	9,716.6	9,638.6	43.9	33.7	-88.73	-127.6	-2,768.1	922.9	852.8	70.10	13.165		
10,100.0	9,706.6	9,812.9	9,688.2	43.9	33.9	-89.33	-45.3	-2,773.2	922.7	852.3	70.43	13.101		
10,200.0	9,729.9	9,911.2	9,720.8	43.9	34.1	-89.97	47.1	-2,778.8	922.7	852.0	70.74	13.044		
10,200.4	9,729.9	9,911.6	9,720.9	43.9	34.1	-89.97	47.5	-2,778.8	922.7	852.0	70.74	13.044	CC	
10,300.0	9,734.0	10,011.7	9,733.8	44.0	34.2	-90.52	146.4	-2,784.9	923.0	851.9	71.03	12.994		
10,400.0	9,734.0	10,154.0	9,734.0	44.0	34.6	-90.53	288.5	-2,790.6	924.0	852.5	71.48	12.927		
10,500.0	9,734.0	10,262.0	9,734.0	44.1	34.9	-90.53	396.5	-2,791.5	924.0	852.0	72.01	12.832		
10,600.0	9,734.0	10,362.0	9,734.0	44.2	35.2	-90.53	496.5	-2,792.2	924.0	851.4	72.64	12.720		
10,700.0	9,734.0	10,462.0	9,734.0	44.3	35.6	-90.53	596.5	-2,792.9	924.0	850.7	73.39	12.591		
10,800.0	9,734.0	10,562.0	9,734.0	44.5	36.1	-90.53	696.5	-2,793.6	924.0	849.8	74.23	12.448		
10,900.0	9,734.0	10,662.0	9,734.0	44.8	36.6	-90.53	796.5	-2,794.2	924.0	848.9	75.18	12.290		
11,000.0	9,734.0	10,762.0	9,734.0	45.1	37.1	-90.53	896.5	-2,794.9	924.0	847.8	76.23	12.121		
11,100.0	9,734.0	10,862.0	9,734.0	45.4	37.7	-90.53	996.5	-2,795.6	924.0	846.7	77.37	11.942		
11,200.0	9,734.0	10,962.0	9,734.0	45.8	38.4	-90.53	1,096.5	-2,796.3	924.0	845.4	78.61	11.755		
11,300.0	9,734.0	11,062.0	9,734.0	46.3	39.0	-90.53	1,196.5	-2,797.0	924.0	844.1	79.92	11.561		
11,400.0	9,734.0	11,162.0	9,734.0	46.8	39.8	-90.53	1,296.5	-2,797.7	924.0	842.7	81.32	11.362		
11,500.0	9,734.0	11,262.0	9,734.0	47.3	40.5	-90.53	1,396.5	-2,798.4	924.0	841.2	82.80	11.160		
11,600.0	9,734.0	11,362.0	9,734.0	47.9	41.3	-90.53	1,496.4	-2,799.1	924.0	839.7	84.35	10.955		
11,700.0	9,734.0	11,462.0	9,734.0	48.5	42.2	-90.53	1,596.4	-2,799.8	924.0	838.1	85.97	10.748		
11,800.0	9,734.0	11,562.0	9,734.0	49.2	43.1	-90.53	1,696.4	-2,800.5	924.0	836.4	87.66	10.542		
11,900.0	9,734.0	11,662.0	9,734.0	49.9	44.0	-90.53	1,796.4	-2,801.2	924.0	834.6	89.40	10.335		
12,000.0	9,734.0	11,762.0	9,734.0	50.7	44.9	-90.53	1,896.4	-2,801.9	924.0	832.8	91.21	10.131		
12,100.0	9,734.0	11,862.0	9,734.0	51.5	45.9	-90.53	1,996.4	-2,802.6	924.0	831.0	93.07	9.928		
12,200.0	9,734.0	11,962.0	9,734.0	52.3	46.8	-90.53	2,096.4	-2,803.3	924.0	829.1	94.98	9.728		
12,300.0	9,734.0	12,062.0	9,734.0	53.2	47.8	-90.53	2,196.4	-2,804.0	924.0	827.1	96.95	9.532		
12,400.0	9,734.0	12,162.0	9,734.0	54.0	48.9	-90.53	2,296.4	-2,804.6	924.0	825.1	98.95	9.338		
12,500.0	9,734.0	12,262.0	9,734.0	54.9	49.9	-90.53	2,396.4	-2,805.3	924.0	823.0	101.00	9.149		
12,600.0	9,734.0	12,362.0	9,734.0	55.9	51.0	-90.53	2,496.4	-2,806.0	924.0	820.9	103.09	8.963		
12,700.0	9,734.0	12,462.0	9,734.0	56.8	52.1	-90.53	2,596.4	-2,806.7	924.0	818.8	105.22	8.782		
12,800.0	9,734.0	12,562.0	9,734.0	57.8	53.2	-90.53	2,696.4	-2,807.4	924.0	816.7	107.39	8.605		
12,900.0	9,734.0	12,662.0	9,734.0	58.8	54.3	-90.53	2,796.4	-2,808.1	924.0	814.5	109.58	8.432		
13,000.0	9,734.0	12,762.0	9,734.0	59.9	55.4	-90.53	2,896.4	-2,808.8	924.0	812.2	111.81	8.264		
13,100.0	9,734.0	12,862.0	9,734.0	60.9	56.6	-90.53	2,996.4	-2,809.5	924.0	810.0	114.07	8.100		
13,200.0	9,734.0	12,962.0	9,734.0	62.0	57.7	-90.53	3,096.4	-2,810.2	924.0	807.7	116.36	7.941		
13,300.0	9,734.0	13,062.0	9,734.0	63.0	58.9	-90.53	3,196.4	-2,810.9	924.0	805.4	118.68	7.786		
13,400.0	9,734.0	13,162.0	9,734.0	64.1	60.1	-90.53	3,296.4	-2,811.6	924.0	803.0	121.02	7.636		
13,500.0	9,734.0	13,262.0	9,734.0	65.2	61.3	-90.53	3,396.4	-2,812.3	924.0	800.7	123.38	7.489		
13,600.0	9,734.0	13,362.0	9,734.0	66.3	62.5	-90.53	3,496.4	-2,813.0	924.0	798.3	125.76	7.347		
13,700.0	9,734.0	13,462.0	9,734.0	67.5	63.7	-90.53	3,596.4	-2,813.7	924.0	795.9	128.17	7.209		
13,800.0	9,734.0	13,562.0	9,734.0	68.6	65.0	-90.53	3,696.4	-2,814.4	924.0	793.4	130.60	7.076		
13,900.0	9,734.0	13,662.0	9,734.0	69.8	66.2	-90.53	3,796.4	-2,815.0	924.0	791.0	133.04	6.946		
14,000.0	9,734.0	13,762.0	9,734.0	70.9	67.5	-90.53	3,896.4	-2,815.7	924.0	788.5	135.50	6.819		
14,100.0	9,734.0	13,862.0	9,734.0	72.1	68.7	-90.53	3,996.4	-2,816.4	924.0	786.1	137.98	6.697		
14,200.0	9,734.0	13,962.0	9,734.0	73.3	70.0	-90.53	4,096.4	-2,817.1	924.0	783.6	140.48	6.578		
14,300.0	9,734.0	14,062.0	9,734.0	74.5	71.2	-90.53	4,196.4	-2,817.8	924.0	781.0	142.99	6.462		
14,400.0	9,734.0	14,162.0	9,734.0	75.7	72.5	-90.53	4,296.4	-2,818.5	924.0	778.5	145.51	6.350		
14,500.0	9,734.0	14,262.0	9,734.0	76.9	73.8	-90.53	4,396.4	-2,819.2	924.0	776.0	148.05	6.241		
14,600.0	9,734.0	14,362.0	9,734.0	78.1	75.1	-90.53	4,496.4	-2,819.9	924.0	773.4	150.60	6.136		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 502H - OH - Plan 0.1												Offset Site Error: 0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM				Rule Assigned:								Offset Well Error: 0.0 usft	
Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,700.0	9,734.0	14,462.0	9,734.0	79.4	76.4	-90.53	4,596.4	-2,820.6	924.0	770.9	153.16	6.033	
14,800.0	9,734.0	14,562.0	9,734.0	80.6	77.7	-90.53	4,696.4	-2,821.3	924.0	768.3	155.74	5.933	
14,900.0	9,734.0	14,662.0	9,734.0	81.9	79.0	-90.53	4,796.4	-2,822.0	924.0	765.7	158.32	5.836	
15,000.0	9,734.0	14,762.0	9,734.0	83.1	80.3	-90.53	4,896.4	-2,822.7	924.0	763.1	160.92	5.742	
15,100.0	9,734.0	14,862.0	9,734.0	84.4	81.6	-90.53	4,996.4	-2,823.4	924.0	760.5	163.53	5.651	
15,200.0	9,734.0	14,962.0	9,734.0	85.6	82.9	-90.53	5,096.4	-2,824.1	924.0	757.9	166.14	5.562	
15,300.0	9,734.0	15,062.0	9,734.0	86.9	84.2	-90.53	5,196.4	-2,824.8	924.0	755.3	168.77	5.475	
15,400.0	9,734.0	15,162.0	9,734.0	88.2	85.6	-90.53	5,296.4	-2,825.5	924.0	752.6	171.40	5.391	
15,500.0	9,734.0	15,262.0	9,734.0	89.4	86.9	-90.53	5,396.4	-2,826.1	924.0	750.0	174.04	5.309	
15,600.0	9,734.0	15,362.0	9,734.0	90.7	88.2	-90.53	5,496.4	-2,826.8	924.0	747.3	176.69	5.230	
15,700.0	9,734.0	15,462.0	9,734.0	92.0	89.6	-90.53	5,596.4	-2,827.5	924.0	744.7	179.35	5.152	
15,800.0	9,734.0	15,562.0	9,734.0	93.3	90.9	-90.53	5,696.3	-2,828.2	924.0	742.0	182.02	5.077	
15,900.0	9,734.0	15,662.0	9,734.0	94.6	92.2	-90.53	5,796.3	-2,828.9	924.0	739.3	184.69	5.003	
16,000.0	9,734.0	15,762.0	9,734.0	95.9	93.6	-90.53	5,896.3	-2,829.6	924.0	736.7	187.37	4.932	
16,100.0	9,734.0	15,862.0	9,734.0	97.2	94.9	-90.53	5,996.3	-2,830.3	924.0	734.0	190.05	4.862	
16,200.0	9,734.0	15,962.0	9,734.0	98.5	96.3	-90.53	6,096.3	-2,831.0	924.0	731.3	192.74	4.794	
16,300.0	9,734.0	16,062.0	9,734.0	99.9	97.7	-90.53	6,196.3	-2,831.7	924.0	728.6	195.44	4.728	
16,400.0	9,734.0	16,162.0	9,734.0	101.2	99.0	-90.53	6,296.3	-2,832.4	924.0	725.9	198.14	4.664	
16,500.0	9,734.0	16,262.0	9,734.0	102.5	100.4	-90.53	6,396.3	-2,833.1	924.0	723.2	200.85	4.601	
16,600.0	9,734.0	16,362.0	9,734.0	103.8	101.7	-90.53	6,496.3	-2,833.8	924.0	720.5	203.56	4.539	
16,700.0	9,734.0	16,462.0	9,734.0	105.1	103.1	-90.53	6,596.3	-2,834.5	924.0	717.8	206.28	4.480	
16,800.0	9,734.0	16,562.0	9,734.0	106.5	104.5	-90.53	6,696.3	-2,835.2	924.0	715.0	209.00	4.421	
16,900.0	9,734.0	16,662.0	9,734.0	107.8	105.8	-90.53	6,796.3	-2,835.9	924.0	712.3	211.73	4.364	
17,000.0	9,734.0	16,762.0	9,734.0	109.1	107.2	-90.53	6,896.3	-2,836.5	924.0	709.6	214.46	4.309	
17,100.0	9,734.0	16,862.0	9,734.0	110.5	108.6	-90.53	6,996.3	-2,837.2	924.0	706.8	217.19	4.254	
17,200.0	9,734.0	16,962.0	9,734.0	111.8	110.0	-90.53	7,096.3	-2,837.9	924.0	704.1	219.93	4.201	
17,300.0	9,734.0	17,062.0	9,734.0	113.2	111.3	-90.53	7,196.3	-2,838.6	924.0	701.4	222.68	4.150	
17,400.0	9,734.0	17,162.0	9,734.0	114.5	112.7	-90.53	7,296.3	-2,839.3	924.0	698.6	225.42	4.099	
17,500.0	9,734.0	17,262.0	9,734.0	115.9	114.1	-90.53	7,396.3	-2,840.0	924.0	695.9	228.17	4.050	
17,600.0	9,734.0	17,362.0	9,734.0	117.2	115.5	-90.53	7,496.3	-2,840.7	924.0	693.1	230.93	4.001	
17,700.0	9,734.0	17,462.0	9,734.0	118.6	116.9	-90.53	7,596.3	-2,841.4	924.0	690.3	233.69	3.954	
17,800.0	9,734.0	17,562.0	9,734.0	119.9	118.2	-90.53	7,696.3	-2,842.1	924.0	687.6	236.45	3.908	
17,900.0	9,734.0	17,662.0	9,734.0	121.3	119.6	-90.53	7,796.3	-2,842.8	924.0	684.8	239.21	3.863	
18,000.0	9,734.0	17,762.0	9,734.0	122.7	121.0	-90.53	7,896.3	-2,843.5	924.0	682.1	241.98	3.819	
18,100.0	9,734.0	17,862.0	9,734.0	124.0	122.4	-90.53	7,996.3	-2,844.2	924.0	679.3	244.75	3.775	
18,200.0	9,734.0	17,962.0	9,734.0	125.4	123.8	-90.53	8,096.3	-2,844.9	924.0	676.5	247.52	3.733	
18,300.0	9,734.0	18,062.0	9,734.0	126.8	125.2	-90.53	8,196.3	-2,845.6	924.0	673.7	250.30	3.692	
18,400.0	9,734.0	18,162.0	9,734.0	128.1	126.6	-90.53	8,296.3	-2,846.3	924.0	671.0	253.08	3.651	
18,500.0	9,734.0	18,262.0	9,734.0	129.5	128.0	-90.53	8,396.3	-2,846.9	924.0	668.2	255.86	3.611	
18,600.0	9,734.0	18,362.0	9,734.0	130.9	129.4	-90.53	8,496.3	-2,847.6	924.0	665.4	258.64	3.573	
18,700.0	9,734.0	18,462.0	9,734.0	132.2	130.8	-90.53	8,596.3	-2,848.3	924.0	662.6	261.43	3.535	
18,800.0	9,734.0	18,562.0	9,734.0	133.6	132.2	-90.53	8,696.3	-2,849.0	924.0	659.8	264.22	3.497	
18,900.0	9,734.0	18,662.0	9,734.0	135.0	133.6	-90.53	8,796.3	-2,849.7	924.0	657.0	267.01	3.461	
19,000.0	9,734.0	18,762.0	9,734.0	136.4	135.0	-90.53	8,896.3	-2,850.4	924.0	654.2	269.80	3.425	
19,100.0	9,734.0	18,862.0	9,734.0	137.7	136.4	-90.53	8,996.3	-2,851.1	924.0	651.4	272.60	3.390	
19,200.0	9,734.0	18,962.0	9,734.0	139.1	137.8	-90.53	9,096.3	-2,851.8	924.0	648.6	275.39	3.355	
19,300.0	9,734.0	19,062.0	9,734.0	140.5	139.2	-90.53	9,196.3	-2,852.5	924.0	645.8	278.19	3.322	
19,400.0	9,734.0	19,162.0	9,734.0	141.9	140.6	-90.53	9,296.3	-2,853.2	924.0	643.0	280.99	3.288	
19,500.0	9,734.0	19,262.0	9,734.0	143.3	142.0	-90.53	9,396.3	-2,853.9	924.0	640.2	283.80	3.256	
19,600.0	9,734.0	19,362.0	9,734.0	144.7	143.4	-90.53	9,496.3	-2,854.6	924.0	637.4	286.60	3.224	
19,700.0	9,734.0	19,462.0	9,734.0	146.1	144.8	-90.53	9,596.3	-2,855.3	924.0	634.6	289.41	3.193	
19,800.0	9,734.0	19,562.0	9,734.0	147.4	146.2	-90.53	9,696.3	-2,856.0	924.0	631.8	292.22	3.162	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 502H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
19,900.0	9,734.0	19,662.0	9,734.0	148.8	147.6	-90.53	9,796.2	-2,856.7	924.0	629.0	295.03	3.132		
20,000.0	9,734.0	19,762.0	9,734.0	150.2	149.0	-90.53	9,896.2	-2,857.4	924.0	626.2	297.84	3.102		
20,100.0	9,734.0	19,862.0	9,734.0	151.6	150.4	-90.53	9,996.2	-2,858.0	924.0	623.4	300.65	3.073		
20,200.0	9,734.0	19,962.0	9,734.0	152.9	151.7	-90.53	10,096.2	-2,858.7	924.0	620.9	303.11	3.049		
20,205.9	9,734.0	19,967.9	9,734.0	152.9	151.8	-90.53	10,102.1	-2,858.8	924.0	620.8	303.25	3.047		
20,207.7	9,734.0	19,968.0	9,734.0	153.0	151.8	-90.53	10,102.2	-2,858.8	924.0	620.7	303.31	3.047 ES, SF		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 601H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
6,200.0	6,052.0	5,810.9	5,786.8	26.6	21.2	7.87	-249.0	-3,257.2	2,219.5	2,176.3	43.18	51.395	
6,300.0	6,148.0	5,909.5	5,884.7	27.2	21.6	7.93	-250.9	-3,268.4	2,202.8	2,158.8	43.95	50.125	
6,400.0	6,243.9	6,008.0	5,982.6	27.7	21.9	7.99	-252.8	-3,279.7	2,186.1	2,141.4	44.71	48.897	
6,500.0	6,339.9	6,106.6	6,080.5	28.2	22.3	8.06	-254.7	-3,290.9	2,169.3	2,123.9	45.47	47.710	
6,600.0	6,435.8	6,205.2	6,178.4	28.8	22.7	8.12	-256.6	-3,302.1	2,152.6	2,106.4	46.23	46.561	
6,700.0	6,531.8	6,303.7	6,276.3	29.3	23.1	8.18	-258.5	-3,313.4	2,135.9	2,088.9	47.00	45.450	
6,800.0	6,627.7	6,402.3	6,374.2	29.8	23.5	8.25	-260.4	-3,324.6	2,119.2	2,071.5	47.76	44.373	
6,900.0	6,723.7	6,500.9	6,472.1	30.4	23.8	8.31	-262.3	-3,335.9	2,102.5	2,054.0	48.52	43.329	
7,000.0	6,819.6	6,599.4	6,570.0	30.9	24.2	8.38	-264.2	-3,347.1	2,085.8	2,036.5	49.29	42.318	
7,100.0	6,915.6	6,698.0	6,667.9	31.4	24.6	8.45	-266.1	-3,358.4	2,069.1	2,019.1	50.06	41.337	
7,200.0	7,011.5	6,796.6	6,765.8	32.0	25.0	8.52	-268.0	-3,369.6	2,052.4	2,001.6	50.82	40.385	
7,300.0	7,107.5	6,895.1	6,863.7	32.5	25.4	8.59	-269.9	-3,380.8	2,035.7	1,984.1	51.59	39.461	
7,400.0	7,203.5	6,993.7	6,961.7	33.0	25.8	8.66	-271.8	-3,392.1	2,019.0	1,966.7	52.36	38.564	
7,500.0	7,299.4	7,092.3	7,059.6	33.6	26.1	8.73	-273.7	-3,403.3	2,002.4	1,949.2	53.12	37.692	
7,600.0	7,395.4	7,190.8	7,157.5	34.1	26.5	8.81	-275.6	-3,414.6	1,985.7	1,931.8	53.89	36.845	
7,700.0	7,491.3	7,289.4	7,255.4	34.6	26.9	8.88	-277.5	-3,425.8	1,969.0	1,914.3	54.66	36.021	
7,800.0	7,587.3	7,388.0	7,353.3	35.2	27.3	8.96	-279.4	-3,437.1	1,952.3	1,896.9	55.43	35.220	
7,900.0	7,683.2	7,486.5	7,451.2	35.7	27.7	9.04	-281.3	-3,448.3	1,935.7	1,879.5	56.20	34.441	
8,000.0	7,779.2	7,585.1	7,549.1	36.2	28.1	9.12	-283.3	-3,459.5	1,919.0	1,862.0	56.97	33.682	
8,100.0	7,875.1	7,683.7	7,647.0	36.8	28.4	9.20	-285.2	-3,470.8	1,902.3	1,844.6	57.74	32.944	
8,200.0	7,971.1	7,782.2	7,744.9	37.3	28.8	9.28	-287.1	-3,482.0	1,885.7	1,827.1	58.52	32.224	
8,300.0	8,067.0	7,880.8	7,842.8	37.9	29.2	9.36	-289.0	-3,493.3	1,869.0	1,809.7	59.29	31.524	
8,400.0	8,163.0	7,979.3	7,940.7	38.4	29.6	9.45	-290.9	-3,504.5	1,852.3	1,792.3	60.06	30.841	
8,500.0	8,258.9	8,077.9	8,038.6	38.9	30.0	9.54	-292.8	-3,515.8	1,835.7	1,774.9	60.84	30.175	
8,600.0	8,354.9	8,176.5	8,136.5	39.5	30.4	9.62	-294.7	-3,527.0	1,819.1	1,757.5	61.61	29.526	
8,700.0	8,451.4	8,275.4	8,234.7	40.0	30.8	9.65	-296.6	-3,538.3	1,804.3	1,741.9	62.38	28.925	
8,800.0	8,548.7	8,374.7	8,333.4	40.5	31.1	9.67	-298.5	-3,549.6	1,793.0	1,729.9	63.14	28.396	
8,900.0	8,646.8	8,474.4	8,432.4	40.9	31.5	9.69	-300.4	-3,561.0	1,785.1	1,721.2	63.90	27.937	
9,000.0	8,745.5	8,574.3	8,531.6	41.3	31.9	9.70	-302.3	-3,572.4	1,780.6	1,716.0	64.64	27.547	
9,079.8	8,824.6	8,654.0	8,610.8	41.6	32.2	9.70	-303.9	-3,581.5	1,779.5	1,714.3	65.22	27.284 CC	
9,100.0	8,844.7	8,674.2	8,630.9	41.7	32.3	9.70	-304.3	-3,583.8	1,779.6	1,714.2	65.37	27.223 ES	
9,200.0	8,944.2	8,774.2	8,730.2	42.1	32.7	9.70	-306.2	-3,595.2	1,782.0	1,715.9	66.09	26.963	
9,300.0	9,044.1	8,874.0	8,829.4	42.4	33.1	9.69	-308.1	-3,606.6	1,787.9	1,721.1	66.80	26.766	
9,400.0	9,144.0	8,973.6	8,928.2	42.7	33.5	9.67	-310.0	-3,617.9	1,797.2	1,729.7	67.49	26.630	
9,500.0	9,244.0	9,072.9	9,026.9	42.9	33.9	-90.03	-312.0	-3,629.2	1,808.6	1,740.4	68.15	26.536	
9,600.0	9,343.6	9,171.7	9,125.0	43.2	34.3	-85.69	-313.9	-3,640.5	1,819.5	1,750.7	68.80	26.447	
9,700.0	9,439.3	9,266.4	9,219.1	43.4	34.6	-85.44	-315.7	-3,651.3	1,829.1	1,759.7	69.36	26.372	
9,800.0	9,527.0	9,352.9	9,305.0	43.6	35.0	-85.70	-317.4	-3,661.2	1,837.9	1,768.1	69.84	26.315	
9,900.0	9,602.9	9,427.5	9,379.1	43.8	35.3	-86.13	-318.8	-3,669.7	1,847.1	1,776.8	70.28	26.282	
10,000.0	9,663.6	9,486.9	9,438.1	43.9	35.5	-86.33	-319.9	-3,676.5	1,857.7	1,787.0	70.70	26.277	
10,100.0	9,706.6	9,528.4	9,479.4	43.9	35.6	-85.90	-320.7	-3,681.2	1,870.9	1,799.7	71.14	26.299	
10,200.0	9,729.9	9,550.4	9,501.2	43.9	35.7	-84.58	-321.2	-3,683.7	1,887.2	1,815.5	71.62	26.349	
10,300.0	9,734.0	9,553.2	9,504.0	44.0	35.7	-83.22	-321.2	-3,684.0	1,906.9	1,834.8	72.16	26.428	
10,400.0	9,734.0	9,551.6	9,502.4	44.0	35.7	-83.10	-321.2	-3,683.8	1,933.9	1,861.1	72.80	26.564	
10,500.0	9,734.0	9,549.8	9,500.6	44.1	35.7	-83.03	-321.2	-3,683.6	1,967.8	1,894.2	73.54	26.757	
10,600.0	9,734.0	9,547.9	9,498.7	44.2	35.7	-82.97	-321.1	-3,683.4	2,006.1	1,931.7	74.36	26.978	
10,700.0	9,734.0	11,290.2	10,529.0	44.3	40.1	-113.56	590.0	-3,716.8	2,016.0	1,947.5	68.49	29.436	
10,800.0	9,734.0	11,390.2	10,529.0	44.5	40.5	-113.56	690.0	-3,717.5	2,016.0	1,946.8	69.18	29.141	
10,900.0	9,734.0	11,490.2	10,529.0	44.8	41.0	-113.56	790.0	-3,718.2	2,016.0	1,946.0	69.97	28.812	
11,000.0	9,734.0	11,590.2	10,529.0	45.1	41.5	-113.56	890.0	-3,718.9	2,016.0	1,945.1	70.86	28.450	
11,100.0	9,734.0	11,690.2	10,529.0	45.4	42.1	-113.56	990.0	-3,719.5	2,016.0	1,944.2	71.84	28.062	
11,200.0	9,734.0	11,790.2	10,529.0	45.8	42.7	-113.56	1,090.0	-3,720.2	2,016.0	1,943.1	72.91	27.650	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 601H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
11,300.0	9,734.0	11,890.2	10,529.0	46.3	43.4	-113.56	1,190.0	-3,720.9	2,016.0	1,941.9	74.07	27.219	
11,400.0	9,734.0	11,990.2	10,529.0	46.8	44.1	-113.56	1,290.0	-3,721.6	2,016.0	1,940.7	75.30	26.771	
11,500.0	9,734.0	12,090.2	10,529.0	47.3	44.8	-113.56	1,390.0	-3,722.3	2,016.0	1,939.4	76.62	26.312	
11,600.0	9,734.0	12,190.2	10,529.0	47.9	45.6	-113.56	1,490.0	-3,723.0	2,016.0	1,938.0	78.01	25.844	
11,700.0	9,734.0	12,290.2	10,529.0	48.5	46.4	-113.56	1,590.0	-3,723.7	2,016.0	1,936.5	79.46	25.370	
11,800.0	9,734.0	12,390.2	10,529.0	49.2	47.2	-113.56	1,690.0	-3,724.4	2,016.0	1,935.0	80.99	24.893	
11,900.0	9,734.0	12,490.2	10,529.0	49.9	48.1	-113.56	1,790.0	-3,725.1	2,016.0	1,933.4	82.57	24.415	
12,000.0	9,734.0	12,590.2	10,529.0	50.7	49.0	-113.56	1,890.0	-3,725.8	2,016.0	1,931.8	84.22	23.938	
12,100.0	9,734.0	12,690.2	10,529.0	51.5	49.9	-113.56	1,990.0	-3,726.5	2,016.0	1,930.1	85.92	23.465	
12,200.0	9,734.0	12,790.2	10,529.0	52.3	50.8	-113.56	2,090.0	-3,727.2	2,016.0	1,928.3	87.67	22.996	
12,300.0	9,734.0	12,890.2	10,529.0	53.2	51.8	-113.56	2,190.0	-3,727.9	2,016.0	1,926.5	89.47	22.533	
12,400.0	9,734.0	12,990.2	10,529.0	54.0	52.8	-113.56	2,290.0	-3,728.6	2,016.0	1,924.7	91.31	22.078	
12,500.0	9,734.0	13,090.2	10,529.0	54.9	53.8	-113.56	2,390.0	-3,729.3	2,016.0	1,922.8	93.20	21.630	
12,600.0	9,734.0	13,190.2	10,529.0	55.9	54.8	-113.56	2,490.0	-3,730.0	2,016.0	1,920.9	95.14	21.191	
12,700.0	9,734.0	13,290.2	10,529.0	56.8	55.8	-113.56	2,590.0	-3,730.7	2,016.0	1,918.9	97.10	20.761	
12,800.0	9,734.0	13,390.2	10,529.0	57.8	56.9	-113.56	2,690.0	-3,731.3	2,016.0	1,916.9	99.11	20.341	
12,900.0	9,734.0	13,490.2	10,529.0	58.8	58.0	-113.56	2,790.0	-3,732.0	2,016.0	1,914.9	101.15	19.931	
13,000.0	9,734.0	13,590.2	10,529.0	59.9	59.1	-113.56	2,890.0	-3,732.7	2,016.0	1,912.8	103.22	19.531	
13,100.0	9,734.0	13,690.2	10,529.0	60.9	60.2	-113.56	2,990.0	-3,733.4	2,016.0	1,910.7	105.32	19.142	
13,200.0	9,734.0	13,790.2	10,529.0	62.0	61.3	-113.56	3,090.0	-3,734.1	2,016.0	1,908.6	107.45	18.763	
13,300.0	9,734.0	13,890.2	10,529.0	63.0	62.4	-113.56	3,190.0	-3,734.8	2,016.0	1,906.4	109.60	18.394	
13,400.0	9,734.0	13,990.2	10,529.0	64.1	63.6	-113.56	3,290.0	-3,735.5	2,016.0	1,904.2	111.78	18.035	
13,500.0	9,734.0	14,090.2	10,529.0	65.2	64.7	-113.56	3,390.0	-3,736.2	2,016.0	1,902.0	113.99	17.686	
13,600.0	9,734.0	14,190.2	10,529.0	66.3	65.9	-113.56	3,490.0	-3,736.9	2,016.0	1,899.8	116.21	17.347	
13,700.0	9,734.0	14,290.2	10,529.0	67.5	67.1	-113.56	3,590.0	-3,737.6	2,016.0	1,897.5	118.46	17.018	
13,800.0	9,734.0	14,390.2	10,529.0	68.6	68.3	-113.56	3,690.0	-3,738.3	2,016.0	1,895.3	120.73	16.699	
13,900.0	9,734.0	14,490.2	10,529.0	69.8	69.5	-113.56	3,790.0	-3,739.0	2,016.0	1,893.0	123.02	16.388	
14,000.0	9,734.0	14,590.2	10,529.0	70.9	70.7	-113.56	3,890.0	-3,739.7	2,016.0	1,890.7	125.32	16.087	
14,100.0	9,734.0	14,690.2	10,529.0	72.1	71.9	-113.56	3,990.0	-3,740.4	2,016.0	1,888.4	127.64	15.795	
14,200.0	9,734.0	14,790.2	10,529.0	73.3	73.1	-113.56	4,090.0	-3,741.1	2,016.0	1,886.0	129.97	15.511	
14,300.0	9,734.0	14,890.2	10,529.0	74.5	74.4	-113.56	4,190.0	-3,741.8	2,016.0	1,883.7	132.33	15.235	
14,400.0	9,734.0	14,990.2	10,529.0	75.7	75.6	-113.56	4,290.0	-3,742.5	2,016.0	1,881.3	134.69	14.968	
14,500.0	9,734.0	15,090.2	10,529.0	76.9	76.9	-113.56	4,390.0	-3,743.1	2,016.0	1,878.9	137.07	14.708	
14,600.0	9,734.0	15,190.2	10,529.0	78.1	78.1	-113.56	4,490.0	-3,743.8	2,016.0	1,876.5	139.46	14.456	
14,700.0	9,734.0	15,290.2	10,529.0	79.4	79.4	-113.56	4,590.0	-3,744.5	2,016.0	1,874.1	141.87	14.211	
14,800.0	9,734.0	15,390.2	10,529.0	80.6	80.7	-113.56	4,690.0	-3,745.2	2,016.0	1,871.7	144.28	13.973	
14,900.0	9,734.0	15,490.2	10,529.0	81.9	81.9	-113.56	4,789.9	-3,745.9	2,016.0	1,869.3	146.71	13.742	
15,000.0	9,734.0	15,590.2	10,529.0	83.1	83.2	-113.56	4,889.9	-3,746.6	2,016.0	1,866.9	149.14	13.517	
15,100.0	9,734.0	15,690.2	10,529.0	84.4	84.5	-113.56	4,989.9	-3,747.3	2,016.0	1,864.4	151.59	13.299	
15,200.0	9,734.0	15,790.2	10,529.0	85.6	85.8	-113.56	5,089.9	-3,748.0	2,016.0	1,862.0	154.05	13.087	
15,300.0	9,734.0	15,890.2	10,529.0	86.9	87.1	-113.56	5,189.9	-3,748.7	2,016.0	1,859.5	156.51	12.881	
15,400.0	9,734.0	15,990.2	10,529.0	88.2	88.4	-113.56	5,289.9	-3,749.4	2,016.0	1,857.0	158.98	12.681	
15,500.0	9,734.0	16,090.2	10,529.0	89.4	89.7	-113.56	5,389.9	-3,750.1	2,016.0	1,854.5	161.47	12.486	
15,600.0	9,734.0	16,190.2	10,529.0	90.7	91.0	-113.56	5,489.9	-3,750.8	2,016.0	1,852.1	163.96	12.296	
15,700.0	9,734.0	16,290.2	10,529.0	92.0	92.3	-113.56	5,589.9	-3,751.5	2,016.0	1,849.6	166.45	12.112	
15,800.0	9,734.0	16,390.2	10,529.0	93.3	93.6	-113.56	5,689.9	-3,752.2	2,016.0	1,847.1	168.96	11.932	
15,900.0	9,734.0	16,490.2	10,529.0	94.6	95.0	-113.56	5,789.9	-3,752.9	2,016.0	1,844.5	171.47	11.757	
16,000.0	9,734.0	16,590.2	10,529.0	95.9	96.3	-113.56	5,889.9	-3,753.6	2,016.0	1,842.0	173.98	11.587	
16,100.0	9,734.0	16,690.2	10,529.0	97.2	97.6	-113.56	5,989.9	-3,754.3	2,016.0	1,839.5	176.51	11.422	
16,200.0	9,734.0	16,790.2	10,529.0	98.5	98.9	-113.56	6,089.9	-3,755.0	2,016.0	1,837.0	179.04	11.260	
16,300.0	9,734.0	16,890.2	10,529.0	99.9	100.3	-113.56	6,189.9	-3,755.6	2,016.0	1,834.4	181.57	11.103	
16,400.0	9,734.0	16,990.2	10,529.0	101.2	101.6	-113.56	6,289.9	-3,756.3	2,016.0	1,831.9	184.11	10.950	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 601H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
16,500.0	9,734.0	17,090.2	10,529.0	102.5	103.0	-113.56	6,389.9	-3,757.0	2,016.0	1,829.4	186.66	10.800	
16,600.0	9,734.0	17,190.2	10,529.0	103.8	104.3	-113.56	6,489.9	-3,757.7	2,016.0	1,826.8	189.21	10.655	
16,700.0	9,734.0	17,290.2	10,529.0	105.1	105.6	-113.56	6,589.9	-3,758.4	2,016.0	1,824.3	191.77	10.513	
16,800.0	9,734.0	17,390.2	10,529.0	106.5	107.0	-113.56	6,689.9	-3,759.1	2,016.0	1,821.7	194.33	10.374	
16,900.0	9,734.0	17,490.2	10,529.0	107.8	108.3	-113.56	6,789.9	-3,759.8	2,016.0	1,819.1	196.89	10.239	
17,000.0	9,734.0	17,590.2	10,529.0	109.1	109.7	-113.56	6,889.9	-3,760.5	2,016.0	1,816.6	199.46	10.107	
17,100.0	9,734.0	17,690.2	10,529.0	110.5	111.1	-113.56	6,989.9	-3,761.2	2,016.0	1,814.0	202.04	9.978	
17,200.0	9,734.0	17,790.2	10,529.0	111.8	112.4	-113.56	7,089.9	-3,761.9	2,016.0	1,811.4	204.62	9.853	
17,300.0	9,734.0	17,890.2	10,529.0	113.2	113.8	-113.56	7,189.9	-3,762.6	2,016.0	1,808.8	207.20	9.730	
17,400.0	9,734.0	17,990.2	10,529.0	114.5	115.1	-113.56	7,289.9	-3,763.3	2,016.0	1,806.2	209.78	9.610	
17,500.0	9,734.0	18,090.2	10,529.0	115.9	116.5	-113.56	7,389.9	-3,764.0	2,016.0	1,803.7	212.37	9.493	
17,600.0	9,734.0	18,190.2	10,529.0	117.2	117.9	-113.56	7,489.9	-3,764.7	2,016.0	1,801.1	214.96	9.378	
17,700.0	9,734.0	18,290.2	10,529.0	118.6	119.2	-113.56	7,589.9	-3,765.4	2,016.0	1,798.5	217.56	9.267	
17,800.0	9,734.0	18,390.2	10,529.0	119.9	120.6	-113.56	7,689.9	-3,766.1	2,016.0	1,795.9	220.16	9.157	
17,900.0	9,734.0	18,490.2	10,529.0	121.3	122.0	-113.56	7,789.9	-3,766.8	2,016.0	1,793.3	222.76	9.050	
18,000.0	9,734.0	18,590.2	10,529.0	122.7	123.4	-113.56	7,889.9	-3,767.4	2,016.0	1,790.7	225.36	8.946	
18,100.0	9,734.0	18,690.2	10,529.0	124.0	124.7	-113.56	7,989.9	-3,768.1	2,016.0	1,788.1	227.97	8.843	
18,200.0	9,734.0	18,790.2	10,529.0	125.4	126.1	-113.56	8,089.9	-3,768.8	2,016.0	1,785.4	230.58	8.743	
18,300.0	9,734.0	18,890.2	10,529.0	126.8	127.5	-113.56	8,189.9	-3,769.5	2,016.0	1,782.8	233.20	8.645	
18,400.0	9,734.0	18,990.2	10,529.0	128.1	128.9	-113.56	8,289.9	-3,770.2	2,016.0	1,780.2	235.81	8.549	
18,500.0	9,734.0	19,090.2	10,529.0	129.5	130.3	-113.56	8,389.9	-3,770.9	2,016.0	1,777.6	238.43	8.455	
18,600.0	9,734.0	19,190.2	10,529.0	130.9	131.6	-113.56	8,489.9	-3,771.6	2,016.0	1,775.0	241.05	8.364	
18,700.0	9,734.0	19,290.2	10,529.0	132.2	133.0	-113.56	8,589.9	-3,772.3	2,016.0	1,772.4	243.67	8.274	
18,800.0	9,734.0	19,390.2	10,529.0	133.6	134.4	-113.56	8,689.9	-3,773.0	2,016.0	1,769.7	246.30	8.185	
18,900.0	9,734.0	19,490.2	10,529.0	135.0	135.8	-113.56	8,789.9	-3,773.7	2,016.0	1,767.1	248.93	8.099	
19,000.0	9,734.0	19,590.2	10,529.0	136.4	137.2	-113.56	8,889.8	-3,774.4	2,016.0	1,764.5	251.56	8.014	
19,100.0	9,734.0	19,690.2	10,529.0	137.7	138.6	-113.56	8,989.8	-3,775.1	2,016.0	1,761.8	254.19	7.931	
19,200.0	9,734.0	19,790.2	10,529.0	139.1	140.0	-113.56	9,089.8	-3,775.8	2,016.0	1,759.2	256.82	7.850	
19,300.0	9,734.0	19,890.2	10,529.0	140.5	141.4	-113.56	9,189.8	-3,776.5	2,016.0	1,756.6	259.46	7.770	
19,400.0	9,734.0	19,990.2	10,529.0	141.9	142.8	-113.56	9,289.8	-3,777.2	2,016.0	1,753.9	262.09	7.692	
19,500.0	9,734.0	20,090.2	10,529.0	143.3	144.2	-113.56	9,389.8	-3,777.9	2,016.0	1,751.3	264.73	7.615	
19,600.0	9,734.0	20,190.2	10,529.0	144.7	145.5	-113.56	9,489.8	-3,778.6	2,016.0	1,748.7	267.37	7.540	
19,700.0	9,734.0	20,290.2	10,529.0	146.1	146.9	-113.56	9,589.8	-3,779.2	2,016.0	1,746.0	270.02	7.466	
19,800.0	9,734.0	20,390.2	10,529.0	147.4	148.3	-113.56	9,689.8	-3,779.9	2,016.0	1,743.4	272.66	7.394	
19,900.0	9,734.0	20,490.2	10,529.0	148.8	149.7	-113.56	9,789.8	-3,780.6	2,016.0	1,740.7	275.31	7.323	
20,000.0	9,734.0	20,590.2	10,529.0	150.2	151.1	-113.56	9,889.8	-3,781.3	2,016.0	1,738.1	277.96	7.253	
20,100.0	9,734.0	20,690.2	10,529.0	151.6	152.5	-113.56	9,989.8	-3,782.0	2,016.0	1,735.4	280.61	7.185	
20,200.0	9,734.0	20,790.2	10,529.0	152.9	153.9	-113.56	10,089.8	-3,782.7	2,016.0	1,733.0	283.03	7.123	
20,200.1	9,734.0	20,790.4	10,529.0	152.9	153.9	-113.56	10,090.0	-3,782.7	2,016.0	1,733.0	283.04	7.123	
20,207.7	9,734.0	20,795.2	10,529.0	153.0	154.0	-113.56	10,094.8	-3,782.8	2,016.0	1,732.8	283.22	7.118 SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 602H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,600.0	4,516.8	4,505.8	4,505.8	18.3	15.9	8.01	-178.6	-2,821.5	2,213.7	2,181.5	32.17	68.818	
4,700.0	4,612.7	4,601.7	4,601.7	18.8	16.3	8.11	-178.6	-2,821.5	2,185.8	2,152.9	32.89	66.451	
4,800.0	4,708.7	4,697.7	4,697.7	19.3	16.6	8.22	-178.6	-2,821.5	2,157.9	2,124.2	33.62	64.185	
4,900.0	4,804.7	4,793.7	4,793.7	19.9	17.0	8.33	-178.6	-2,821.5	2,130.0	2,095.6	34.35	62.012	
5,000.0	4,900.6	4,889.6	4,889.6	20.4	17.3	8.44	-178.6	-2,821.5	2,102.1	2,067.0	35.08	59.928	
5,100.0	4,996.6	4,985.6	4,985.6	20.9	17.6	8.55	-178.6	-2,821.5	2,074.2	2,038.4	35.81	57.927	
5,200.0	5,092.5	5,081.5	5,081.5	21.4	18.0	8.67	-178.6	-2,821.5	2,046.3	2,009.8	36.54	56.005	
5,300.0	5,188.5	5,177.5	5,177.5	21.9	18.3	8.79	-178.6	-2,821.5	2,018.5	1,981.2	37.27	54.157	
5,400.0	5,284.4	5,273.4	5,273.4	22.4	18.7	8.91	-178.6	-2,821.5	1,990.6	1,952.6	38.00	52.379	
5,500.0	5,380.4	5,369.4	5,369.4	23.0	19.0	9.04	-178.6	-2,821.5	1,962.8	1,924.0	38.74	50.668	
5,600.0	5,476.3	5,465.3	5,465.3	23.5	19.4	9.17	-178.6	-2,821.5	1,934.9	1,895.4	39.47	49.019	
5,700.0	5,572.3	5,561.3	5,561.3	24.0	19.7	9.31	-178.6	-2,821.5	1,907.1	1,866.9	40.21	47.429	
5,800.0	5,668.2	5,657.2	5,657.2	24.5	20.1	9.44	-178.6	-2,821.5	1,879.3	1,838.3	40.95	45.896	
5,900.0	5,764.2	5,753.2	5,753.2	25.1	20.4	9.59	-178.6	-2,821.5	1,851.5	1,809.8	41.68	44.416	
6,000.0	5,860.1	5,849.1	5,849.1	25.6	20.7	9.73	-178.6	-2,821.5	1,823.7	1,781.2	42.42	42.987	
6,100.0	5,956.1	5,945.1	5,945.1	26.1	21.1	9.89	-178.6	-2,821.5	1,795.9	1,752.7	43.16	41.606	
6,200.0	6,052.0	6,041.0	6,041.0	26.6	21.4	10.04	-178.6	-2,821.5	1,768.1	1,724.2	43.90	40.271	
6,300.0	6,148.0	6,137.0	6,137.0	27.2	21.8	10.20	-178.6	-2,821.5	1,740.4	1,695.7	44.65	38.980	
6,400.0	6,243.9	6,232.9	6,232.9	27.7	22.1	10.37	-178.6	-2,821.5	1,712.6	1,667.2	45.39	37.731	
6,500.0	6,339.9	6,328.9	6,328.9	28.2	22.5	10.54	-178.6	-2,821.5	1,684.9	1,638.7	46.13	36.521	
6,600.0	6,435.8	6,424.8	6,424.8	28.8	22.8	10.72	-178.6	-2,821.5	1,657.2	1,610.3	46.88	35.349	
6,700.0	6,531.8	6,520.8	6,520.8	29.3	23.1	10.90	-178.6	-2,821.5	1,629.5	1,581.8	47.63	34.214	
6,800.0	6,627.7	6,616.7	6,616.7	29.8	23.5	11.09	-178.6	-2,821.5	1,601.8	1,553.4	48.37	33.113	
6,900.0	6,723.7	6,712.7	6,712.7	30.4	23.8	11.29	-178.6	-2,821.5	1,574.1	1,525.0	49.12	32.045	
7,000.0	6,819.6	6,808.6	6,808.6	30.9	24.2	11.50	-178.6	-2,821.5	1,546.4	1,496.6	49.87	31.009	
7,100.0	6,915.6	6,904.6	6,904.6	31.4	24.5	11.71	-178.6	-2,821.5	1,518.8	1,468.2	50.62	30.003	
7,200.0	7,011.5	7,000.5	7,000.5	32.0	24.9	11.93	-178.6	-2,821.5	1,491.2	1,439.8	51.37	29.026	
7,300.0	7,107.5	7,096.5	7,096.5	32.5	25.2	12.15	-178.6	-2,821.5	1,463.6	1,411.5	52.13	28.077	
7,400.0	7,203.5	7,192.5	7,192.5	33.0	25.6	12.39	-178.6	-2,821.5	1,436.0	1,383.2	52.88	27.155	
7,500.0	7,299.4	7,288.4	7,288.4	33.6	25.9	12.64	-178.6	-2,821.5	1,408.5	1,354.9	53.64	26.258	
7,600.0	7,395.4	7,384.4	7,384.4	34.1	26.2	12.89	-178.6	-2,821.5	1,381.0	1,326.6	54.40	25.386	
7,700.0	7,491.3	7,480.3	7,480.3	34.6	26.6	13.16	-178.6	-2,821.5	1,353.5	1,298.3	55.16	24.537	
7,800.0	7,587.3	7,588.5	7,588.4	35.2	27.0	13.41	-180.0	-2,821.2	1,325.7	1,269.8	55.90	23.715	
7,900.0	7,683.2	7,696.9	7,696.8	35.7	27.3	13.50	-185.2	-2,819.9	1,296.8	1,240.2	56.60	22.910	
8,000.0	7,779.2	7,792.6	7,792.2	36.2	27.6	13.52	-191.0	-2,818.4	1,267.5	1,210.2	57.31	22.115	
8,100.0	7,875.1	7,888.2	7,887.6	36.8	27.9	13.55	-196.9	-2,816.9	1,238.3	1,180.2	58.03	21.339	
8,200.0	7,971.1	7,983.8	7,983.1	37.3	28.2	13.58	-202.8	-2,815.5	1,209.0	1,150.2	58.74	20.582	
8,300.0	8,067.0	8,079.4	8,078.5	37.9	28.6	13.60	-208.7	-2,814.0	1,179.7	1,120.3	59.45	19.842	
8,400.0	8,163.0	8,175.0	8,173.9	38.4	28.9	13.63	-214.5	-2,812.5	1,150.5	1,090.3	60.17	19.120	
8,500.0	8,258.9	8,270.7	8,269.3	38.9	29.2	13.66	-220.4	-2,811.0	1,121.2	1,060.3	60.89	18.414	
8,600.0	8,354.9	8,366.3	8,364.8	39.5	29.5	13.69	-226.3	-2,809.6	1,091.9	1,030.3	61.61	17.724	
8,700.0	8,451.4	8,462.4	8,460.7	40.0	29.8	13.56	-232.2	-2,808.1	1,064.5	1,002.2	62.32	17.080	
8,800.0	8,548.7	8,559.5	8,557.6	40.5	30.1	13.40	-238.2	-2,806.6	1,040.3	977.3	63.03	16.504	
8,900.0	8,646.8	8,657.2	8,655.2	40.9	30.5	13.22	-244.2	-2,805.1	1,019.5	955.7	63.73	15.996	
9,000.0	8,745.5	8,755.7	8,753.4	41.3	30.8	13.00	-250.2	-2,803.6	1,002.0	937.5	64.42	15.553	
9,100.0	8,844.7	8,854.6	8,852.1	41.7	31.1	12.75	-256.3	-2,802.0	987.8	922.7	65.10	15.173	
9,200.0	8,944.2	8,953.9	8,951.3	42.1	31.4	12.47	-262.4	-2,800.5	977.0	911.3	65.77	14.855	
9,300.0	9,044.1	9,053.5	9,050.7	42.4	31.8	12.15	-268.5	-2,799.0	969.7	903.3	66.43	14.598	
9,400.0	9,144.0	9,153.3	9,150.2	42.7	32.1	11.80	-274.7	-2,797.4	965.8	898.7	67.07	14.400	
9,500.0	9,244.0	9,253.1	9,249.8	42.9	32.4	-88.20	-280.8	-2,795.9	964.0	896.3	67.69	14.241	
9,600.0	9,343.6	9,351.9	9,348.4	43.2	32.8	-85.78	-286.9	-2,794.4	961.6	893.4	68.27	14.085	
9,700.0	9,439.3	9,445.7	9,442.0	43.4	33.1	-88.06	-292.6	-2,792.9	958.5	889.7	68.76	13.940	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 602H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,800.0	9,527.0	9,530.2	9,526.4	43.6	33.4	-90.95	-297.8	-2,791.6	956.6	887.5	69.18	13.828	
9,804.0	9,530.3	9,533.4	9,529.5	43.6	33.4	-91.07	-298.0	-2,791.6	956.6	887.4	69.20	13.825	CC, ES
9,900.0	9,602.9	9,601.9	9,597.9	43.8	33.6	-93.62	-302.3	-2,790.5	959.2	889.5	69.63	13.776	
10,000.0	9,663.6	9,657.6	9,653.5	43.9	33.8	-95.18	-305.7	-2,789.6	969.0	898.8	70.18	13.807	
10,100.0	9,706.6	9,694.9	9,690.7	43.9	33.9	-94.85	-308.0	-2,789.1	988.5	917.6	70.91	13.939	
10,200.0	9,729.9	9,712.1	9,707.9	43.9	34.0	-92.12	-309.0	-2,788.8	1,018.2	946.4	71.80	14.182	
10,300.0	9,734.0	9,709.9	9,705.7	44.0	34.0	-88.96	-308.9	-2,788.8	1,057.4	984.7	72.76	14.532	
10,400.0	9,734.0	9,703.8	9,699.6	44.0	34.0	-88.56	-308.5	-2,788.9	1,106.7	1,032.9	73.77	15.002	
10,500.0	9,734.0	9,697.6	9,693.4	44.1	33.9	-88.17	-308.1	-2,789.0	1,164.3	1,089.6	74.76	15.575	
10,600.0	9,734.0	11,143.4	10,529.0	44.2	38.2	-131.10	496.5	-2,792.1	1,226.1	1,167.3	58.83	20.843	
10,700.0	9,734.0	11,243.4	10,529.0	44.3	38.6	-131.10	596.5	-2,792.8	1,226.1	1,166.7	59.37	20.653	
10,800.0	9,734.0	11,343.4	10,529.0	44.5	39.0	-131.10	696.5	-2,793.5	1,226.1	1,166.1	60.00	20.434	
10,900.0	9,734.0	11,443.4	10,529.0	44.8	39.5	-131.10	796.5	-2,794.2	1,226.1	1,165.4	60.73	20.190	
11,000.0	9,734.0	11,543.4	10,529.0	45.1	40.1	-131.10	896.5	-2,794.9	1,226.1	1,164.6	61.54	19.924	
11,100.0	9,734.0	11,643.4	10,529.0	45.4	40.7	-131.10	996.5	-2,795.6	1,226.1	1,163.7	62.44	19.638	
11,200.0	9,734.0	11,743.4	10,529.0	45.8	41.3	-131.10	1,096.5	-2,796.3	1,226.1	1,162.7	63.41	19.336	
11,300.0	9,734.0	11,843.4	10,529.0	46.3	42.0	-131.10	1,196.5	-2,797.0	1,226.1	1,161.6	64.46	19.020	
11,400.0	9,734.0	11,943.4	10,529.0	46.8	42.7	-131.10	1,296.4	-2,797.7	1,226.1	1,160.5	65.59	18.694	
11,500.0	9,734.0	12,043.4	10,529.0	47.3	43.5	-131.10	1,396.4	-2,798.3	1,226.1	1,159.3	66.78	18.359	
11,600.0	9,734.0	12,143.4	10,529.0	47.9	44.3	-131.10	1,496.4	-2,799.0	1,226.1	1,158.1	68.04	18.019	
11,700.0	9,734.0	12,243.4	10,529.0	48.5	45.1	-131.10	1,596.4	-2,799.7	1,226.1	1,156.7	69.37	17.676	
11,800.0	9,734.0	12,343.4	10,529.0	49.2	45.9	-131.10	1,696.4	-2,800.4	1,226.1	1,155.4	70.75	17.331	
11,900.0	9,734.0	12,443.4	10,529.0	49.9	46.8	-131.10	1,796.4	-2,801.1	1,226.1	1,153.9	72.18	16.987	
12,000.0	9,734.0	12,543.4	10,529.0	50.7	47.7	-131.10	1,896.4	-2,801.8	1,226.1	1,152.4	73.67	16.644	
12,100.0	9,734.0	12,643.4	10,529.0	51.5	48.6	-131.10	1,996.4	-2,802.5	1,226.1	1,150.9	75.20	16.304	
12,200.0	9,734.0	12,743.4	10,529.0	52.3	49.6	-131.10	2,096.4	-2,803.2	1,226.1	1,149.3	76.78	15.968	
12,300.0	9,734.0	12,843.4	10,529.0	53.2	50.6	-131.10	2,196.4	-2,803.9	1,226.1	1,147.7	78.41	15.638	
12,400.0	9,734.0	12,943.4	10,529.0	54.0	51.6	-131.10	2,296.4	-2,804.6	1,226.1	1,146.0	80.07	15.313	
12,500.0	9,734.0	13,043.4	10,529.0	54.9	52.6	-131.10	2,396.4	-2,805.3	1,226.1	1,144.3	81.77	14.994	
12,600.0	9,734.0	13,143.4	10,529.0	55.9	53.7	-131.10	2,496.4	-2,806.0	1,226.1	1,142.6	83.51	14.682	
12,700.0	9,734.0	13,243.4	10,529.0	56.8	54.7	-131.10	2,596.4	-2,806.7	1,226.1	1,140.8	85.28	14.377	
12,800.0	9,734.0	13,343.4	10,529.0	57.8	55.8	-131.10	2,696.4	-2,807.4	1,226.1	1,139.0	87.08	14.080	
12,900.0	9,734.0	13,443.4	10,529.0	58.8	56.9	-131.10	2,796.4	-2,808.1	1,226.1	1,137.2	88.91	13.790	
13,000.0	9,734.0	13,543.4	10,529.0	59.9	58.0	-131.10	2,896.4	-2,808.8	1,226.1	1,135.3	90.77	13.508	
13,100.0	9,734.0	13,643.4	10,529.0	60.9	59.1	-131.10	2,996.4	-2,809.5	1,226.1	1,133.5	92.65	13.233	
13,200.0	9,734.0	13,743.4	10,529.0	62.0	60.3	-131.10	3,096.4	-2,810.1	1,226.1	1,131.6	94.56	12.966	
13,300.0	9,734.0	13,843.4	10,529.0	63.0	61.4	-131.10	3,196.4	-2,810.8	1,226.1	1,129.6	96.49	12.707	
13,400.0	9,734.0	13,943.4	10,529.0	64.1	62.6	-131.10	3,296.4	-2,811.5	1,226.1	1,127.7	98.45	12.455	
13,500.0	9,734.0	14,043.4	10,529.0	65.2	63.8	-131.10	3,396.4	-2,812.2	1,226.1	1,125.7	100.42	12.210	
13,600.0	9,734.0	14,143.4	10,529.0	66.3	64.9	-131.10	3,496.4	-2,812.9	1,226.1	1,123.7	102.41	11.973	
13,700.0	9,734.0	14,243.4	10,529.0	67.5	66.1	-131.10	3,596.4	-2,813.6	1,226.1	1,121.7	104.42	11.742	
13,800.0	9,734.0	14,343.4	10,529.0	68.6	67.4	-131.10	3,696.4	-2,814.3	1,226.1	1,119.7	106.45	11.519	
13,900.0	9,734.0	14,443.4	10,529.0	69.8	68.6	-131.10	3,796.4	-2,815.0	1,226.1	1,117.6	108.49	11.302	
14,000.0	9,734.0	14,543.4	10,529.0	70.9	69.8	-131.10	3,896.4	-2,815.7	1,226.1	1,115.6	110.55	11.092	
14,100.0	9,734.0	14,643.4	10,529.0	72.1	71.0	-131.10	3,996.4	-2,816.4	1,226.1	1,113.5	112.62	10.888	
14,200.0	9,734.0	14,743.4	10,529.0	73.3	72.3	-131.10	4,096.4	-2,817.1	1,226.1	1,111.4	114.70	10.690	
14,300.0	9,734.0	14,843.4	10,529.0	74.5	73.5	-131.10	4,196.4	-2,817.8	1,226.1	1,109.3	116.80	10.498	
14,400.0	9,734.0	14,943.4	10,529.0	75.7	74.8	-131.10	4,296.4	-2,818.5	1,226.1	1,107.2	118.91	10.311	
14,500.0	9,734.0	15,043.4	10,529.0	76.9	76.0	-131.10	4,396.4	-2,819.2	1,226.1	1,105.1	121.03	10.131	
14,600.0	9,734.0	15,143.4	10,529.0	78.1	77.3	-131.10	4,496.4	-2,819.9	1,226.1	1,103.0	123.16	9.955	
14,700.0	9,734.0	15,243.4	10,529.0	79.4	78.6	-131.10	4,596.4	-2,820.6	1,226.1	1,100.8	125.30	9.785	
14,800.0	9,734.0	15,343.4	10,529.0	80.6	79.9	-131.10	4,696.4	-2,821.3	1,226.1	1,098.7	127.46	9.620	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 602H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,900.0	9,734.0	15,443.4	10,529.0	81.9	81.2	-131.10	4,796.4	-2,821.9	1,226.1	1,096.5	129.62	9.460	
15,000.0	9,734.0	15,543.4	10,529.0	83.1	82.4	-131.10	4,896.4	-2,822.6	1,226.1	1,094.3	131.79	9.304	
15,100.0	9,734.0	15,643.4	10,529.0	84.4	83.7	-131.10	4,996.4	-2,823.3	1,226.1	1,092.2	133.97	9.153	
15,200.0	9,734.0	15,743.4	10,529.0	85.6	85.0	-131.10	5,096.4	-2,824.0	1,226.1	1,090.0	136.15	9.006	
15,300.0	9,734.0	15,843.4	10,529.0	86.9	86.4	-131.10	5,196.4	-2,824.7	1,226.1	1,087.8	138.35	8.863	
15,400.0	9,734.0	15,943.4	10,529.0	88.2	87.7	-131.10	5,296.4	-2,825.4	1,226.1	1,085.6	140.55	8.724	
15,500.0	9,734.0	16,043.4	10,529.0	89.4	89.0	-131.10	5,396.3	-2,826.1	1,226.1	1,083.4	142.75	8.589	
15,600.0	9,734.0	16,143.4	10,529.0	90.7	90.3	-131.10	5,496.3	-2,826.8	1,226.1	1,081.2	144.97	8.458	
15,700.0	9,734.0	16,243.4	10,529.0	92.0	91.6	-131.10	5,596.3	-2,827.5	1,226.1	1,078.9	147.19	8.330	
15,800.0	9,734.0	16,343.4	10,529.0	93.3	92.9	-131.10	5,696.3	-2,828.2	1,226.1	1,076.7	149.42	8.206	
15,900.0	9,734.0	16,443.4	10,529.0	94.6	94.3	-131.10	5,796.3	-2,828.9	1,226.1	1,074.5	151.65	8.085	
16,000.0	9,734.0	16,543.4	10,529.0	95.9	95.6	-131.10	5,896.3	-2,829.6	1,226.1	1,072.2	153.89	7.968	
16,100.0	9,734.0	16,643.4	10,529.0	97.2	97.0	-131.10	5,996.3	-2,830.3	1,226.1	1,070.0	156.13	7.853	
16,200.0	9,734.0	16,743.4	10,529.0	98.5	98.3	-131.10	6,096.3	-2,831.0	1,226.1	1,067.7	158.38	7.742	
16,300.0	9,734.0	16,843.4	10,529.0	99.9	99.6	-131.10	6,196.3	-2,831.7	1,226.1	1,065.5	160.63	7.633	
16,400.0	9,734.0	16,943.4	10,529.0	101.2	101.0	-131.10	6,296.3	-2,832.4	1,226.1	1,063.2	162.89	7.527	
16,500.0	9,734.0	17,043.4	10,529.0	102.5	102.3	-131.10	6,396.3	-2,833.1	1,226.1	1,061.0	165.15	7.424	
16,600.0	9,734.0	17,143.4	10,529.0	103.8	103.7	-131.10	6,496.3	-2,833.7	1,226.1	1,058.7	167.42	7.324	
16,700.0	9,734.0	17,243.4	10,529.0	105.1	105.0	-131.10	6,596.3	-2,834.4	1,226.1	1,056.4	169.69	7.226	
16,800.0	9,734.0	17,343.4	10,529.0	106.5	106.4	-131.10	6,696.3	-2,835.1	1,226.1	1,054.2	171.96	7.130	
16,900.0	9,734.0	17,443.4	10,529.0	107.8	107.8	-131.10	6,796.3	-2,835.8	1,226.1	1,051.9	174.24	7.037	
17,000.0	9,734.0	17,543.4	10,529.0	109.1	109.1	-131.10	6,896.3	-2,836.5	1,226.1	1,049.6	176.52	6.946	
17,100.0	9,734.0	17,643.4	10,529.0	110.5	110.5	-131.10	6,996.3	-2,837.2	1,226.1	1,047.3	178.81	6.857	
17,200.0	9,734.0	17,743.4	10,529.0	111.8	111.8	-131.10	7,096.3	-2,837.9	1,226.1	1,045.0	181.10	6.770	
17,300.0	9,734.0	17,843.4	10,529.0	113.2	113.2	-131.10	7,196.3	-2,838.6	1,226.1	1,042.7	183.39	6.686	
17,400.0	9,734.0	17,943.4	10,529.0	114.5	114.6	-131.10	7,296.3	-2,839.3	1,226.1	1,040.4	185.69	6.603	
17,500.0	9,734.0	18,043.4	10,529.0	115.9	116.0	-131.10	7,396.3	-2,840.0	1,226.1	1,038.1	187.98	6.523	
17,600.0	9,734.0	18,143.4	10,529.0	117.2	117.3	-131.10	7,496.3	-2,840.7	1,226.1	1,035.8	190.28	6.444	
17,700.0	9,734.0	18,243.4	10,529.0	118.6	118.7	-131.10	7,596.3	-2,841.4	1,226.1	1,033.5	192.59	6.367	
17,800.0	9,734.0	18,343.4	10,529.0	119.9	120.1	-131.10	7,696.3	-2,842.1	1,226.1	1,031.2	194.89	6.291	
17,900.0	9,734.0	18,443.4	10,529.0	121.3	121.5	-131.10	7,796.3	-2,842.8	1,226.1	1,028.9	197.20	6.218	
18,000.0	9,734.0	18,543.4	10,529.0	122.7	122.8	-131.10	7,896.3	-2,843.5	1,226.1	1,026.6	199.52	6.146	
18,100.0	9,734.0	18,643.4	10,529.0	124.0	124.2	-131.10	7,996.3	-2,844.2	1,226.1	1,024.3	201.83	6.075	
18,200.0	9,734.0	18,743.4	10,529.0	125.4	125.6	-131.10	8,096.3	-2,844.9	1,226.1	1,022.0	204.15	6.006	
18,300.0	9,734.0	18,843.4	10,529.0	126.8	127.0	-131.10	8,196.3	-2,845.5	1,226.1	1,019.7	206.46	5.939	
18,400.0	9,734.0	18,943.4	10,529.0	128.1	128.4	-131.10	8,296.3	-2,846.2	1,226.1	1,017.3	208.78	5.873	
18,500.0	9,734.0	19,043.4	10,529.0	129.5	129.8	-131.10	8,396.3	-2,846.9	1,226.1	1,015.0	211.11	5.808	
18,600.0	9,734.0	19,143.4	10,529.0	130.9	131.1	-131.10	8,496.3	-2,847.6	1,226.1	1,012.7	213.43	5.745	
18,700.0	9,734.0	19,243.4	10,529.0	132.2	132.5	-131.10	8,596.3	-2,848.3	1,226.1	1,010.4	215.76	5.683	
18,800.0	9,734.0	19,343.4	10,529.0	133.6	133.9	-131.10	8,696.3	-2,849.0	1,226.1	1,008.0	218.09	5.622	
18,900.0	9,734.0	19,443.4	10,529.0	135.0	135.3	-131.10	8,796.3	-2,849.7	1,226.1	1,005.7	220.42	5.563	
19,000.0	9,734.0	19,543.4	10,529.0	136.4	136.7	-131.10	8,896.3	-2,850.4	1,226.1	1,003.4	222.75	5.504	
19,100.0	9,734.0	19,643.4	10,529.0	137.7	138.1	-131.10	8,996.3	-2,851.1	1,226.1	1,001.0	225.09	5.447	
19,200.0	9,734.0	19,743.4	10,529.0	139.1	139.5	-131.10	9,096.3	-2,851.8	1,226.1	998.7	227.42	5.391	
19,300.0	9,734.0	19,843.4	10,529.0	140.5	140.9	-131.10	9,196.3	-2,852.5	1,226.1	996.4	229.76	5.337	
19,400.0	9,734.0	19,943.4	10,529.0	141.9	142.3	-131.10	9,296.3	-2,853.2	1,226.1	994.0	232.10	5.283	
19,500.0	9,734.0	20,043.4	10,529.0	143.3	143.7	-131.10	9,396.3	-2,853.9	1,226.1	991.7	234.44	5.230	
19,600.0	9,734.0	20,143.4	10,529.0	144.7	145.1	-131.10	9,496.3	-2,854.6	1,226.1	989.4	236.78	5.178	
19,700.0	9,734.0	20,243.4	10,529.0	146.1	146.5	-131.10	9,596.2	-2,855.3	1,226.1	987.0	239.12	5.128	
19,800.0	9,734.0	20,343.4	10,529.0	147.4	147.9	-131.10	9,696.2	-2,856.0	1,226.1	984.7	241.47	5.078	
19,900.0	9,734.0	20,443.4	10,529.0	148.8	149.3	-131.10	9,796.2	-2,856.7	1,226.1	982.3	243.81	5.029	
20,000.0	9,734.0	20,543.4	10,529.0	150.2	150.7	-131.10	9,896.2	-2,857.3	1,226.1	980.0	246.16	4.981	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 602H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
20,100.0	9,734.0	20,643.4	10,529.0	151.6	152.1	-131.10	9,996.2	-2,858.0	1,226.1	977.6	248.51	4.934		
20,200.0	9,734.0	20,743.4	10,529.0	152.9	153.5	-131.10	10,096.2	-2,858.7	1,226.1	975.5	250.61	4.893		
20,200.0	9,734.0	20,743.5	10,529.0	152.9	153.5	-131.10	10,096.3	-2,858.7	1,226.1	975.5	250.61	4.893		
20,207.7	9,734.0	20,749.4	10,529.0	153.0	153.6	-131.10	10,102.2	-2,858.8	1,226.1	975.4	250.78	4.889 SF		

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 603H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,800.0	3,749.2	4,019.9	4,006.1	14.3	14.3	6.32	-210.4	-2,575.4	2,209.4	2,182.4	27.02	81.764	
3,900.0	3,845.1	4,111.8	4,097.3	14.8	14.7	6.34	-212.0	-2,564.1	2,170.0	2,142.3	27.71	78.315	
4,000.0	3,941.1	4,203.6	4,188.5	15.3	15.0	6.36	-213.6	-2,552.8	2,130.5	2,102.1	28.40	75.026	
4,100.0	4,037.0	4,295.5	4,279.7	15.8	15.4	6.37	-215.2	-2,541.5	2,091.1	2,062.0	29.09	71.888	
4,200.0	4,133.0	4,387.4	4,370.8	16.3	15.7	6.39	-216.8	-2,530.3	2,051.6	2,021.9	29.78	68.892	
4,300.0	4,228.9	4,479.3	4,462.0	16.8	16.1	6.41	-218.4	-2,519.0	2,012.2	1,981.7	30.47	66.028	
4,400.0	4,324.9	4,571.2	4,553.2	17.3	16.5	6.43	-220.0	-2,507.7	1,972.7	1,941.6	31.17	63.288	
4,500.0	4,420.8	4,663.1	4,644.4	17.8	16.8	6.45	-221.6	-2,496.4	1,933.3	1,901.4	31.87	60.665	
4,600.0	4,516.8	4,755.0	4,735.6	18.3	17.2	6.47	-223.1	-2,485.2	1,893.8	1,861.3	32.57	58.152	
4,700.0	4,612.7	4,846.9	4,826.7	18.8	17.5	6.49	-224.7	-2,473.9	1,854.4	1,821.1	33.27	55.742	
4,800.0	4,708.7	4,938.7	4,917.9	19.3	17.9	6.51	-226.3	-2,462.6	1,814.9	1,781.0	33.97	53.430	
4,900.0	4,804.7	5,030.6	5,009.1	19.9	18.2	6.53	-227.9	-2,451.4	1,775.5	1,740.8	34.67	51.209	
5,000.0	4,900.6	5,122.5	5,100.3	20.4	18.6	6.56	-229.5	-2,440.1	1,736.0	1,700.7	35.38	49.075	
5,100.0	4,996.6	5,214.4	5,191.5	20.9	18.9	6.58	-231.1	-2,428.8	1,696.6	1,660.5	36.08	47.023	
5,200.0	5,092.5	5,306.3	5,282.6	21.4	19.3	6.61	-232.7	-2,417.5	1,657.1	1,620.4	36.79	45.048	
5,300.0	5,188.5	5,398.2	5,373.8	21.9	19.7	6.64	-234.3	-2,406.3	1,617.7	1,580.2	37.49	43.146	
5,400.0	5,284.4	5,490.1	5,465.0	22.4	20.0	6.67	-235.9	-2,395.0	1,578.2	1,540.0	38.20	41.314	
5,500.0	5,380.4	5,582.0	5,556.2	23.0	20.4	6.70	-237.5	-2,383.7	1,538.8	1,499.9	38.91	39.547	
5,600.0	5,476.3	5,673.8	5,647.4	23.5	20.7	6.73	-239.1	-2,372.4	1,499.4	1,459.7	39.62	37.843	
5,700.0	5,572.3	5,765.7	5,738.5	24.0	21.1	6.76	-240.7	-2,361.2	1,459.9	1,419.6	40.33	36.198	
5,800.0	5,668.2	5,857.6	5,829.7	24.5	21.5	6.80	-242.3	-2,349.9	1,420.5	1,379.4	41.04	34.609	
5,900.0	5,764.2	5,949.5	5,920.9	25.1	21.8	6.84	-243.9	-2,338.6	1,381.0	1,339.3	41.75	33.074	
6,000.0	5,860.1	6,041.4	6,012.1	25.6	22.2	6.88	-245.4	-2,327.3	1,341.6	1,299.1	42.47	31.590	
6,100.0	5,956.1	6,133.3	6,103.3	26.1	22.5	6.92	-247.0	-2,316.1	1,302.1	1,258.9	43.18	30.154	
6,200.0	6,052.0	6,225.2	6,194.4	26.6	22.9	6.96	-248.6	-2,304.8	1,262.7	1,218.8	43.90	28.765	
6,300.0	6,148.0	6,317.1	6,285.6	27.2	23.2	7.01	-250.2	-2,293.5	1,223.2	1,178.6	44.61	27.419	
6,400.0	6,243.9	6,408.9	6,376.8	27.7	23.6	7.06	-251.8	-2,282.2	1,183.8	1,138.5	45.33	26.116	
6,500.0	6,339.9	6,500.8	6,468.0	28.2	24.0	7.12	-253.4	-2,271.0	1,144.4	1,098.3	46.05	24.853	
6,600.0	6,435.8	6,592.7	6,559.1	28.8	24.3	7.18	-255.0	-2,259.7	1,104.9	1,058.1	46.76	23.628	
6,700.0	6,531.8	6,684.6	6,650.3	29.3	24.7	7.24	-256.6	-2,248.4	1,065.5	1,018.0	47.48	22.440	
6,800.0	6,627.7	6,776.5	6,741.5	29.8	25.0	7.31	-258.2	-2,237.2	1,026.0	977.8	48.20	21.287	
6,900.0	6,723.7	6,868.4	6,832.7	30.4	25.4	7.38	-259.8	-2,225.9	986.6	937.7	48.92	20.168	
7,000.0	6,819.6	6,960.3	6,923.9	30.9	25.8	7.46	-261.4	-2,214.6	947.2	897.5	49.64	19.081	
7,100.0	6,915.6	7,052.2	7,015.0	31.4	26.1	7.55	-263.0	-2,203.3	907.7	857.4	50.36	18.024	
7,200.0	7,011.5	7,144.0	7,106.2	32.0	26.5	7.64	-264.6	-2,192.1	868.3	817.2	51.08	16.998	
7,300.0	7,107.5	7,235.9	7,197.4	32.5	26.9	7.74	-266.2	-2,180.8	828.9	777.1	51.81	15.999	
7,400.0	7,203.5	7,327.8	7,288.6	33.0	27.2	7.86	-267.7	-2,169.5	789.4	736.9	52.53	15.028	
7,500.0	7,299.4	7,419.7	7,379.8	33.6	27.6	7.98	-269.3	-2,158.2	750.0	696.8	53.25	14.084	
7,600.0	7,395.4	7,511.6	7,470.9	34.1	27.9	8.12	-270.9	-2,147.0	710.6	656.6	53.98	13.164	
7,700.0	7,491.3	7,603.5	7,562.1	34.6	28.3	8.28	-272.5	-2,135.7	671.2	616.5	54.71	12.269	
7,800.0	7,587.3	7,695.4	7,653.3	35.2	28.7	8.45	-274.1	-2,124.4	631.8	576.3	55.43	11.397	
7,900.0	7,683.2	7,787.3	7,744.5	35.7	29.0	8.65	-275.7	-2,113.1	592.4	536.2	56.16	10.547	
8,000.0	7,779.2	7,879.1	7,835.7	36.2	29.4	8.88	-277.3	-2,101.9	553.0	496.1	56.90	9.719	
8,100.0	7,875.1	7,971.0	7,926.8	36.8	29.7	9.14	-278.9	-2,090.6	513.6	455.9	57.63	8.912	
8,200.0	7,971.1	8,062.9	8,018.0	37.3	30.1	9.44	-280.5	-2,079.3	474.2	415.8	58.36	8.124	
8,300.0	8,067.0	8,154.8	8,109.2	37.9	30.5	9.80	-282.1	-2,068.0	434.8	375.7	59.10	7.357	
8,400.0	8,163.0	8,246.7	8,200.4	38.4	30.8	10.24	-283.7	-2,056.8	395.5	335.6	59.85	6.608	
8,500.0	8,258.9	8,338.6	8,291.6	38.9	31.2	10.76	-285.3	-2,045.5	356.1	295.5	60.60	5.877	
8,600.0	8,354.9	8,430.5	8,382.7	39.5	31.5	11.41	-286.9	-2,034.2	316.9	255.5	61.36	5.164	
8,700.0	8,451.4	8,523.1	8,474.7	40.0	31.9	12.00	-288.5	-2,022.9	279.4	217.2	62.12	4.497	
8,800.0	8,548.7	8,617.0	8,567.8	40.5	32.3	12.63	-290.1	-2,011.3	245.1	182.2	62.90	3.897	
8,900.0	8,646.8	8,712.0	8,662.1	40.9	32.7	13.30	-291.7	-1,999.7	214.1	150.5	63.67	3.363	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 603H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis			Offset Wellbore Centre		Distance			Rule Assigned:			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,000.0	8,745.5	8,808.0	8,757.4	41.3	33.0	13.98	-293.4	-1,987.9	186.4	122.0	64.45	2.893	
9,100.0	8,844.7	8,905.0	8,853.6	41.7	33.4	14.62	-295.1	-1,976.0	162.0	96.8	65.22	2.484	
9,200.0	8,944.2	9,002.7	8,950.6	42.1	33.8	15.16	-296.8	-1,964.0	140.9	75.0	65.98	2.136	
9,300.0	9,044.1	9,101.1	9,048.2	42.4	34.2	15.49	-298.5	-1,951.9	123.2	56.4	66.71	1.846	
9,400.0	9,144.0	9,200.1	9,146.4	42.7	34.6	15.45	-300.2	-1,939.8	108.7	41.3	67.41	1.613	
9,500.0	9,244.0	9,299.3	9,244.9	42.9	35.0	-84.47	-301.9	-1,927.6	96.3	28.3	68.06	1.415	Level 3
9,600.0	9,343.6	9,397.8	9,342.7	43.2	35.4	-88.18	-303.6	-1,915.5	83.2	14.8	68.36	1.217	Level 2
9,688.3	9,428.4	9,481.4	9,425.6	43.4	35.7	-107.70	-305.1	-1,905.3	75.9	6.5	69.42	1.093	Level 2, CC
9,700.0	9,439.3	9,492.1	9,436.2	43.4	35.7	-110.99	-305.3	-1,904.0	76.1	6.2	69.85	1.089	Level 2, ES, SF
9,800.0	9,527.0	9,578.0	9,521.4	43.6	36.1	-137.33	-306.8	-1,893.4	97.3	21.8	75.51	1.288	Level 3
9,900.0	9,602.9	9,651.7	9,594.5	43.8	36.4	-152.73	-308.0	-1,884.4	151.7	72.8	78.83	1.924	
10,000.0	9,663.6	9,710.0	9,652.5	43.9	36.6	-158.84	-309.0	-1,877.8	227.6	147.6	79.99	2.846	
10,100.0	9,706.6	9,751.2	9,693.5	43.9	36.7	-158.18	-309.5	-1,873.9	316.7	236.2	80.46	3.936	
10,200.0	9,729.9	9,773.0	9,715.2	43.9	36.8	-141.84	-309.8	-1,872.0	413.3	332.7	80.67	5.124	
10,300.0	9,734.0	9,775.5	9,717.7	44.0	36.8	-80.99	-309.8	-1,871.8	512.8	432.1	80.74	6.352	
10,400.0	9,734.0	9,774.1	9,716.3	44.0	36.8	-63.43	-309.8	-1,871.9	612.7	532.0	80.76	7.587	
10,500.0	9,734.0	9,772.8	9,715.0	44.1	36.8	-50.42	-309.8	-1,872.0	712.7	632.0	80.77	8.825	
10,600.0	9,734.0	11,196.2	10,529.0	44.2	39.9	180.00	502.9	-1,868.1	806.1	763.1	43.06	18.720	
10,700.0	9,734.0	11,296.2	10,529.0	44.3	40.3	180.00	602.9	-1,868.8	806.1	762.5	43.67	18.459	
10,800.0	9,734.0	11,396.2	10,529.0	44.5	40.7	180.00	702.9	-1,869.5	806.1	761.8	44.33	18.185	
10,900.0	9,734.0	11,496.2	10,529.0	44.8	41.2	180.00	802.9	-1,870.2	806.1	761.1	45.03	17.902	
11,000.0	9,734.0	11,596.2	10,529.0	45.1	41.7	180.00	902.9	-1,870.9	806.1	760.4	45.77	17.611	
11,100.0	9,734.0	11,696.2	10,529.0	45.4	42.3	180.00	1,002.9	-1,871.6	806.1	759.6	46.56	17.314	
11,200.0	9,734.0	11,796.2	10,529.0	45.8	42.9	180.00	1,102.9	-1,872.3	806.1	758.7	47.38	17.013	
11,300.0	9,734.0	11,896.2	10,529.0	46.3	43.6	180.00	1,202.9	-1,873.0	806.1	757.9	48.24	16.710	
11,400.0	9,734.0	11,996.2	10,529.0	46.8	44.3	180.00	1,302.9	-1,873.7	806.1	757.0	49.14	16.405	
11,500.0	9,734.0	12,096.2	10,529.0	47.3	45.0	180.00	1,402.9	-1,874.4	806.1	756.1	50.07	16.101	
11,600.0	9,734.0	12,196.2	10,529.0	47.9	45.8	180.00	1,502.9	-1,875.1	806.1	755.1	51.03	15.798	
11,700.0	9,734.0	12,296.2	10,529.0	48.5	46.6	180.00	1,602.9	-1,875.8	806.1	754.1	52.02	15.498	
11,800.0	9,734.0	12,396.2	10,529.0	49.2	47.4	180.00	1,702.9	-1,876.5	806.1	753.1	53.03	15.200	
11,900.0	9,734.0	12,496.2	10,529.0	49.9	48.3	180.00	1,802.9	-1,877.1	806.1	752.1	54.08	14.907	
12,000.0	9,734.0	12,596.2	10,529.0	50.7	49.2	180.00	1,902.8	-1,877.8	806.1	751.0	55.15	14.618	
12,100.0	9,734.0	12,696.2	10,529.0	51.5	50.1	180.00	2,002.8	-1,878.5	806.1	749.9	56.24	14.334	
12,200.0	9,734.0	12,796.2	10,529.0	52.3	51.0	180.00	2,102.8	-1,879.2	806.1	748.8	57.35	14.056	
12,300.0	9,734.0	12,896.2	10,529.0	53.2	52.0	180.00	2,202.8	-1,879.9	806.1	747.6	58.49	13.783	
12,400.0	9,734.0	12,996.2	10,529.0	54.0	53.0	180.00	2,302.8	-1,880.6	806.1	746.5	59.64	13.516	
12,500.0	9,734.0	13,096.2	10,529.0	54.9	54.0	180.00	2,402.8	-1,881.3	806.1	745.3	60.81	13.255	
12,600.0	9,734.0	13,196.2	10,529.0	55.9	55.0	180.00	2,502.8	-1,882.0	806.1	744.1	62.01	13.001	
12,700.0	9,734.0	13,296.2	10,529.0	56.8	56.0	180.00	2,602.8	-1,882.7	806.1	742.9	63.21	12.753	
12,800.0	9,734.0	13,396.2	10,529.0	57.8	57.1	180.00	2,702.8	-1,883.4	806.1	741.7	64.44	12.511	
12,900.0	9,734.0	13,496.2	10,529.0	58.8	58.1	180.00	2,802.8	-1,884.1	806.1	740.5	65.67	12.275	
13,000.0	9,734.0	13,596.2	10,529.0	59.9	59.2	180.00	2,902.8	-1,884.8	806.1	739.2	66.93	12.045	
13,100.0	9,734.0	13,696.2	10,529.0	60.9	60.3	180.00	3,002.8	-1,885.5	806.1	737.9	68.19	11.822	
13,200.0	9,734.0	13,796.2	10,529.0	62.0	61.5	180.00	3,102.8	-1,886.2	806.1	736.7	69.47	11.604	
13,300.0	9,734.0	13,896.2	10,529.0	63.0	62.6	180.00	3,202.8	-1,886.9	806.1	735.4	70.76	11.393	
13,400.0	9,734.0	13,996.2	10,529.0	64.1	63.7	180.00	3,302.8	-1,887.6	806.1	734.1	72.06	11.187	
13,500.0	9,734.0	14,096.2	10,529.0	65.2	64.9	180.00	3,402.8	-1,888.3	806.1	732.8	73.37	10.988	
13,600.0	9,734.0	14,196.2	10,529.0	66.3	66.1	180.00	3,502.8	-1,888.9	806.1	731.4	74.69	10.793	
13,700.0	9,734.0	14,296.2	10,529.0	67.5	67.2	180.00	3,602.8	-1,889.6	806.1	730.1	76.02	10.604	
13,800.0	9,734.0	14,396.2	10,529.0	68.6	68.4	180.00	3,702.8	-1,890.3	806.1	728.8	77.36	10.421	
13,900.0	9,734.0	14,496.2	10,529.0	69.8	69.6	180.00	3,802.8	-1,891.0	806.1	727.4	78.71	10.242	
14,000.0	9,734.0	14,596.2	10,529.0	70.9	70.8	180.00	3,902.8	-1,891.7	806.1	726.1	80.06	10.069	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 1 - Emerald Fed Com 603H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,100.0	9,734.0	14,696.2	10,529.0	72.1	72.1	180.00	4,002.8	-1,892.4	806.1	724.7	81.42	9.900	
14,200.0	9,734.0	14,796.2	10,529.0	73.3	73.3	180.00	4,102.8	-1,893.1	806.1	723.3	82.80	9.736	
14,300.0	9,734.0	14,896.2	10,529.0	74.5	74.5	180.00	4,202.8	-1,893.8	806.1	721.9	84.17	9.577	
14,400.0	9,734.0	14,996.2	10,529.0	75.7	75.8	180.00	4,302.8	-1,894.5	806.1	720.6	85.56	9.422	
14,500.0	9,734.0	15,096.2	10,529.0	76.9	77.0	180.00	4,402.8	-1,895.2	806.1	719.2	86.95	9.271	
14,600.0	9,734.0	15,196.2	10,529.0	78.1	78.3	180.00	4,502.8	-1,895.9	806.1	717.8	88.35	9.125	
14,700.0	9,734.0	15,296.2	10,529.0	79.4	79.5	180.00	4,602.8	-1,896.6	806.1	716.4	89.75	8.982	
14,800.0	9,734.0	15,396.2	10,529.0	80.6	80.8	180.00	4,702.8	-1,897.3	806.1	715.0	91.16	8.843	
14,900.0	9,734.0	15,496.2	10,529.0	81.9	82.1	180.00	4,802.8	-1,898.0	806.1	713.6	92.57	8.708	
15,000.0	9,734.0	15,596.2	10,529.0	83.1	83.3	180.00	4,902.8	-1,898.7	806.1	712.1	93.99	8.577	
15,100.0	9,734.0	15,696.2	10,529.0	84.4	84.6	180.00	5,002.8	-1,899.4	806.1	710.7	95.41	8.449	
15,200.0	9,734.0	15,796.2	10,529.0	85.6	85.9	180.00	5,102.8	-1,900.1	806.1	709.3	96.84	8.324	
15,300.0	9,734.0	15,896.2	10,529.0	86.9	87.2	180.00	5,202.8	-1,900.7	806.1	707.8	98.27	8.203	
15,400.0	9,734.0	15,996.2	10,529.0	88.2	88.5	180.00	5,302.8	-1,901.4	806.1	706.4	99.70	8.085	
15,500.0	9,734.0	16,096.2	10,529.0	89.4	89.8	180.00	5,402.8	-1,902.1	806.1	705.0	101.14	7.970	
15,600.0	9,734.0	16,196.2	10,529.0	90.7	91.1	180.00	5,502.8	-1,902.8	806.1	703.5	102.59	7.858	
15,700.0	9,734.0	16,296.2	10,529.0	92.0	92.4	180.00	5,602.8	-1,903.5	806.1	702.1	104.04	7.748	
15,800.0	9,734.0	16,396.2	10,529.0	93.3	93.8	180.00	5,702.8	-1,904.2	806.1	700.6	105.49	7.642	
15,900.0	9,734.0	16,496.2	10,529.0	94.6	95.1	180.00	5,802.8	-1,904.9	806.1	699.2	106.94	7.538	
16,000.0	9,734.0	16,596.2	10,529.0	95.9	96.4	180.00	5,902.8	-1,905.6	806.1	697.7	108.40	7.437	
16,100.0	9,734.0	16,696.2	10,529.0	97.2	97.7	180.00	6,002.7	-1,906.3	806.1	696.3	109.86	7.338	
16,200.0	9,734.0	16,796.2	10,529.0	98.5	99.1	180.00	6,102.7	-1,907.0	806.1	694.8	111.32	7.241	
16,300.0	9,734.0	16,896.2	10,529.0	99.9	100.4	180.00	6,202.7	-1,907.7	806.1	693.3	112.79	7.147	
16,400.0	9,734.0	16,996.2	10,529.0	101.2	101.7	180.00	6,302.7	-1,908.4	806.1	691.9	114.26	7.055	
16,500.0	9,734.0	17,096.2	10,529.0	102.5	103.1	180.00	6,402.7	-1,909.1	806.1	690.4	115.73	6.965	
16,600.0	9,734.0	17,196.2	10,529.0	103.8	104.4	180.00	6,502.7	-1,909.8	806.1	688.9	117.20	6.878	
16,700.0	9,734.0	17,296.2	10,529.0	105.1	105.8	180.00	6,602.7	-1,910.5	806.1	687.4	118.68	6.792	
16,800.0	9,734.0	17,396.2	10,529.0	106.5	107.1	180.00	6,702.7	-1,911.2	806.1	686.0	120.16	6.709	
16,900.0	9,734.0	17,496.2	10,529.0	107.8	108.5	180.00	6,802.7	-1,911.9	806.1	684.5	121.64	6.627	
17,000.0	9,734.0	17,596.2	10,529.0	109.1	109.8	180.00	6,902.7	-1,912.6	806.1	683.0	123.12	6.547	
17,100.0	9,734.0	17,696.2	10,529.0	110.5	111.2	180.00	7,002.7	-1,913.2	806.1	681.5	124.61	6.469	
17,200.0	9,734.0	17,796.2	10,529.0	111.8	112.5	180.00	7,102.7	-1,913.9	806.1	680.0	126.10	6.393	
17,300.0	9,734.0	17,896.2	10,529.0	113.2	113.9	180.00	7,202.7	-1,914.6	806.1	678.5	127.59	6.318	
17,400.0	9,734.0	17,996.2	10,529.0	114.5	115.2	180.00	7,302.7	-1,915.3	806.1	677.0	129.08	6.245	
17,500.0	9,734.0	18,096.2	10,529.0	115.9	116.6	180.00	7,402.7	-1,916.0	806.1	675.5	130.57	6.174	
17,600.0	9,734.0	18,196.2	10,529.0	117.2	118.0	180.00	7,502.7	-1,916.7	806.1	674.0	132.07	6.104	
17,700.0	9,734.0	18,296.2	10,529.0	118.6	119.3	180.00	7,602.7	-1,917.4	806.1	672.5	133.56	6.035	
17,800.0	9,734.0	18,396.2	10,529.0	119.9	120.7	180.00	7,702.7	-1,918.1	806.1	671.0	135.06	5.968	
17,900.0	9,734.0	18,496.2	10,529.0	121.3	122.1	180.00	7,802.7	-1,918.8	806.1	669.5	136.56	5.903	
18,000.0	9,734.0	18,596.2	10,529.0	122.7	123.5	180.00	7,902.7	-1,919.5	806.1	668.0	138.07	5.839	
18,100.0	9,734.0	18,696.2	10,529.0	124.0	124.8	180.00	8,002.7	-1,920.2	806.1	666.5	139.57	5.776	
18,200.0	9,734.0	18,796.2	10,529.0	125.4	126.2	180.00	8,102.7	-1,920.9	806.1	665.0	141.07	5.714	
18,300.0	9,734.0	18,896.2	10,529.0	126.8	127.6	180.00	8,202.7	-1,921.6	806.1	663.5	142.58	5.654	
18,400.0	9,734.0	18,996.2	10,529.0	128.1	129.0	180.00	8,302.7	-1,922.3	806.1	662.0	144.09	5.595	
18,500.0	9,734.0	19,096.2	10,529.0	129.5	130.4	180.00	8,402.7	-1,923.0	806.1	660.5	145.60	5.537	
18,600.0	9,734.0	19,196.2	10,529.0	130.9	131.7	180.00	8,502.7	-1,923.7	806.1	659.0	147.11	5.480	
18,700.0	9,734.0	19,296.2	10,529.0	132.2	133.1	180.00	8,602.7	-1,924.4	806.1	657.5	148.62	5.424	
18,800.0	9,734.0	19,396.2	10,529.0	133.6	134.5	180.00	8,702.7	-1,925.0	806.1	656.0	150.13	5.369	
18,900.0	9,734.0	19,496.2	10,529.0	135.0	135.9	180.00	8,802.7	-1,925.7	806.1	654.5	151.64	5.316	
19,000.0	9,734.0	19,596.2	10,529.0	136.4	137.3	180.00	8,902.7	-1,926.4	806.1	652.9	153.16	5.263	
19,100.0	9,734.0	19,696.2	10,529.0	137.7	138.7	180.00	9,002.7	-1,927.1	806.1	651.4	154.67	5.212	
19,200.0	9,734.0	19,796.2	10,529.0	139.1	140.1	180.00	9,102.7	-1,927.8	806.1	649.9	156.19	5.161	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design:		Emerald Pad 1 - Emerald Fed Com 603H - OH - Plan 0.1											Offset Site Error:		0.0 usft		
Survey Program:		0-B001Mb_MWD+HRGM						Rule Assigned:						Offset Well Error:		0.0 usft	
Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Distance						Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor					
19,300.0	9,734.0	19,896.2	10,529.0	140.5	141.5	180.00	9,202.7	-1,928.5	806.1	648.4	157.71	5.111					
19,400.0	9,734.0	19,996.2	10,529.0	141.9	142.8	180.00	9,302.7	-1,929.2	806.1	646.9	159.23	5.063					
19,500.0	9,734.0	20,096.2	10,529.0	143.3	144.2	180.00	9,402.7	-1,929.9	806.1	645.4	160.75	5.015					
19,600.0	9,734.0	20,196.2	10,529.0	144.7	145.6	180.00	9,502.7	-1,930.6	806.1	643.8	162.27	4.968					
19,700.0	9,734.0	20,296.2	10,529.0	146.1	147.0	180.00	9,602.7	-1,931.3	806.1	642.3	163.79	4.922					
19,800.0	9,734.0	20,396.2	10,529.0	147.4	148.4	180.00	9,702.7	-1,932.0	806.1	640.8	165.31	4.876					
19,900.0	9,734.0	20,496.2	10,529.0	148.8	149.8	180.00	9,802.7	-1,932.7	806.1	639.3	166.84	4.832					
20,000.0	9,734.0	20,596.2	10,529.0	150.2	151.2	180.00	9,902.7	-1,933.4	806.1	637.7	168.36	4.788					
20,100.0	9,734.0	20,696.2	10,529.0	151.6	152.6	180.00	10,002.7	-1,934.1	806.1	636.2	169.89	4.745					
20,200.0	9,734.0	20,796.2	10,529.0	152.9	154.0	180.00	10,102.7	-1,934.8	806.1	635.1	171.03	4.713					
20,207.7	9,734.0	20,803.9	10,529.0	153.0	154.1	180.00	10,110.3	-1,934.8	806.1	635.0	171.12	4.711					

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 304H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	3.4	3.4	0.0	0.0	13.74	160.1	39.1	164.8				
100.0	100.0	103.4	103.4	0.1	0.1	13.74	160.1	39.1	164.8	164.5	0.28	597.784	
200.0	200.0	203.4	203.4	0.5	0.5	13.74	160.1	39.1	164.8	163.8	0.99	166.015	
300.0	300.0	303.4	303.4	0.8	0.9	13.74	160.1	39.1	164.8	163.1	1.71	96.393	
400.0	400.0	403.4	403.4	1.2	1.2	13.74	160.1	39.1	164.8	162.4	2.43	67.912	
500.0	500.0	503.4	503.4	1.6	1.6	13.74	160.1	39.1	164.8	161.6	3.14	52.423	
600.0	600.0	603.4	603.4	1.9	1.9	13.74	160.1	39.1	164.8	160.9	3.86	42.687	
700.0	700.0	703.4	703.4	2.3	2.3	13.74	160.1	39.1	164.8	160.2	4.58	36.001	
800.0	800.0	803.4	803.4	2.6	2.7	13.74	160.1	39.1	164.8	159.5	5.29	31.126	
900.0	900.0	903.4	903.4	3.0	3.0	13.74	160.1	39.1	164.8	158.8	6.01	27.413	
1,000.0	1,000.0	1,003.4	1,003.4	3.4	3.4	13.74	160.1	39.1	164.8	158.1	6.73	24.492	
1,100.0	1,100.0	1,103.4	1,103.4	3.7	3.7	13.74	160.1	39.1	164.8	157.3	7.45	22.134	
1,200.0	1,200.0	1,203.4	1,203.4	4.1	4.1	13.74	160.1	39.1	164.8	156.6	8.16	20.190	
1,300.0	1,300.0	1,303.4	1,303.4	4.4	4.4	13.74	160.1	39.1	164.8	155.9	8.88	18.559	
1,400.0	1,400.0	1,403.4	1,403.4	4.8	4.8	13.74	160.1	39.1	164.8	155.2	9.60	17.173	
1,500.0	1,500.0	1,503.4	1,503.4	5.2	5.2	13.74	160.1	39.1	164.8	154.5	10.31	15.979	
1,600.0	1,600.0	1,603.4	1,603.4	5.5	5.5	13.74	160.1	39.1	164.8	153.8	11.03	14.940	
1,700.0	1,700.0	1,703.4	1,703.4	5.9	5.9	13.74	160.1	39.1	164.8	153.0	11.75	14.028	
1,800.0	1,800.0	1,803.4	1,803.4	6.2	6.2	13.74	160.1	39.1	164.8	152.3	12.46	13.221	
1,900.0	1,900.0	1,903.4	1,903.4	6.6	6.6	13.74	160.1	39.1	164.8	151.6	13.18	12.502	
2,000.0	2,000.0	2,003.5	2,003.5	6.9	7.0	13.74	160.1	39.1	164.8	150.9	13.90	11.857	
2,100.0	2,100.0	2,107.5	2,107.4	7.3	7.3	113.44	159.1	37.4	164.2	149.6	14.60	11.246	
2,200.0	2,199.8	2,211.4	2,211.2	7.6	7.7	113.70	156.5	32.2	162.6	147.3	15.28	10.644	
2,300.0	2,299.5	2,315.2	2,314.6	8.0	8.0	114.15	152.1	23.8	160.0	144.1	15.95	10.032	
2,400.0	2,398.7	2,419.0	2,417.5	8.3	8.4	114.83	146.0	12.0	156.5	139.9	16.63	9.412	
2,500.0	2,497.5	2,522.6	2,519.7	8.7	8.7	115.75	138.2	-3.0	152.0	134.7	17.30	8.786	
2,600.0	2,595.6	2,622.4	2,617.9	9.0	9.1	117.40	129.8	-19.1	147.9	129.9	18.01	8.212	
2,700.0	2,693.1	2,722.1	2,715.9	9.4	9.5	120.29	121.5	-35.1	145.6	126.9	18.71	7.779	
2,750.0	2,741.5	2,771.9	2,764.9	9.6	9.6	122.19	117.4	-43.1	145.3	126.2	19.07	7.617 CC	
2,800.0	2,789.6	2,821.6	2,813.8	9.8	9.8	124.35	113.2	-51.1	145.6	126.2	19.43	7.496 ES	
2,900.0	2,885.6	2,920.8	2,911.3	10.2	10.2	129.08	105.0	-67.1	147.8	127.7	20.13	7.342	
3,000.0	2,981.6	3,020.0	3,008.9	10.6	10.6	133.66	96.7	-83.0	151.1	130.2	20.84	7.247	
3,100.0	3,077.5	3,119.3	3,106.5	11.1	11.0	138.02	88.4	-99.0	155.2	133.7	21.55	7.203	
3,200.0	3,173.5	3,218.5	3,204.1	11.5	11.4	142.13	80.1	-114.9	160.3	138.0	22.26	7.201	
3,300.0	3,269.4	3,317.7	3,301.7	12.0	11.8	145.98	71.8	-130.9	166.1	143.1	22.96	7.233	
3,400.0	3,365.4	3,416.9	3,399.2	12.4	12.2	149.56	63.6	-146.9	172.6	148.9	23.67	7.292	
3,500.0	3,461.3	3,516.2	3,496.8	12.9	12.6	152.86	55.3	-162.8	179.7	155.4	24.38	7.373	
3,600.0	3,557.3	3,615.4	3,594.4	13.4	13.0	155.91	47.0	-178.8	187.4	162.3	25.09	7.471	
3,700.0	3,653.2	3,714.6	3,692.0	13.8	13.4	158.71	38.7	-194.7	195.6	169.8	25.80	7.581	
3,800.0	3,749.2	3,813.8	3,789.6	14.3	13.8	161.28	30.5	-210.7	204.2	177.7	26.52	7.700	
3,900.0	3,845.1	3,913.1	3,887.2	14.8	14.2	163.64	22.2	-226.6	213.2	186.0	27.25	7.825	
4,000.0	3,941.1	4,012.3	3,984.7	15.3	14.6	165.81	13.9	-242.6	222.6	194.6	27.98	7.954	
4,100.0	4,037.0	4,111.5	4,082.3	15.8	15.0	167.81	5.6	-258.5	232.2	203.5	28.72	8.085	
4,200.0	4,133.0	4,210.7	4,179.9	16.3	15.4	169.64	-2.7	-274.5	242.1	212.6	29.46	8.217	
4,300.0	4,228.9	4,309.9	4,277.5	16.8	15.8	171.33	-10.9	-290.4	252.2	222.0	30.21	8.348	
4,400.0	4,324.9	4,409.2	4,375.1	17.3	16.2	172.88	-19.2	-306.4	262.5	231.5	30.96	8.478	
4,500.0	4,420.8	4,508.4	4,472.6	17.8	16.6	174.32	-27.5	-322.4	273.0	241.2	31.72	8.606	
4,600.0	4,516.8	4,607.6	4,570.2	18.3	17.1	175.66	-35.8	-338.3	283.6	251.1	32.48	8.731	
4,700.0	4,612.7	4,706.8	4,667.8	18.8	17.5	176.89	-44.1	-354.3	294.4	261.1	33.25	8.854	
4,800.0	4,708.7	4,806.1	4,765.4	19.3	17.9	178.04	-52.3	-370.2	305.3	271.3	34.02	8.974	
4,900.0	4,804.7	4,905.3	4,863.0	19.9	18.3	179.11	-60.6	-386.2	316.3	281.5	34.80	9.091	
5,000.0	4,900.6	5,004.5	4,960.5	20.4	18.7	-179.89	-68.9	-402.1	327.5	291.9	35.57	9.205	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 304H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	4,996.6	5,103.7	5,058.1	20.9	19.1	-178.96	-77.2	-418.1	338.7	302.3	36.36	9.315	
5,200.0	5,092.5	5,202.9	5,155.7	21.4	19.6	-178.09	-85.4	-434.0	350.0	312.8	37.14	9.422	
5,300.0	5,188.5	5,302.2	5,253.3	21.9	20.0	-177.27	-93.7	-450.0	361.4	323.4	37.93	9.526	
5,400.0	5,284.4	5,401.4	5,350.9	22.4	20.4	-176.51	-102.0	-466.0	372.8	334.1	38.72	9.627	
5,500.0	5,380.4	5,500.6	5,448.4	23.0	20.8	-175.79	-110.3	-481.9	384.3	344.8	39.52	9.725	
5,600.0	5,476.3	5,599.8	5,546.0	23.5	21.3	-175.11	-118.6	-497.9	395.9	355.6	40.32	9.819	
5,700.0	5,572.3	5,699.1	5,643.6	24.0	21.7	-174.46	-126.8	-513.8	407.5	366.4	41.12	9.911	
5,800.0	5,668.2	5,798.3	5,741.2	24.5	22.1	-173.86	-135.1	-529.8	419.1	377.2	41.92	9.999	
5,900.0	5,764.2	5,897.5	5,838.8	25.1	22.5	-173.29	-143.4	-545.7	430.9	388.1	42.72	10.085	
6,000.0	5,860.1	5,996.7	5,936.4	25.6	23.0	-172.74	-151.7	-561.7	442.6	399.1	43.53	10.168	
6,100.0	5,956.1	6,095.9	6,033.9	26.1	23.4	-172.23	-159.9	-577.6	454.4	410.1	44.33	10.249	
6,200.0	6,052.0	6,195.2	6,131.5	26.6	23.8	-171.74	-168.2	-593.6	466.2	421.1	45.14	10.327	
6,300.0	6,148.0	6,294.4	6,229.1	27.2	24.2	-171.28	-176.5	-609.5	478.1	432.1	45.96	10.403	
6,400.0	6,243.9	6,393.6	6,326.7	27.7	24.7	-170.84	-184.8	-625.5	489.9	443.2	46.77	10.476	
6,500.0	6,339.9	6,492.8	6,424.3	28.2	25.1	-170.42	-193.1	-641.5	501.8	454.3	47.58	10.547	
6,600.0	6,435.8	6,592.1	6,521.8	28.8	25.5	-170.01	-201.3	-657.4	513.8	465.4	48.40	10.616	
6,700.0	6,531.8	6,691.3	6,619.4	29.3	26.0	-169.63	-209.6	-673.4	525.7	476.5	49.22	10.682	
6,800.0	6,627.7	6,790.5	6,717.0	29.8	26.4	-169.26	-217.9	-689.3	537.7	487.7	50.03	10.747	
6,900.0	6,723.7	6,889.7	6,814.6	30.4	26.8	-168.91	-226.2	-705.3	549.7	498.9	50.85	10.810	
7,000.0	6,819.6	6,989.0	6,912.2	30.9	27.2	-168.58	-234.5	-721.2	561.7	510.1	51.67	10.871	
7,100.0	6,915.6	7,088.2	7,009.7	31.4	27.7	-168.26	-242.7	-737.2	573.8	521.3	52.50	10.930	
7,200.0	7,011.5	7,187.4	7,107.3	32.0	28.1	-167.95	-251.0	-753.1	585.8	532.5	53.32	10.987	
7,300.0	7,107.5	7,286.6	7,204.9	32.5	28.5	-167.66	-259.3	-769.1	597.9	543.7	54.14	11.043	
7,400.0	7,203.5	7,385.8	7,302.5	33.0	29.0	-167.37	-267.6	-785.1	610.0	555.0	54.97	11.097	
7,500.0	7,299.4	7,485.1	7,400.1	33.6	29.4	-167.10	-275.8	-801.0	622.1	566.3	55.79	11.150	
7,600.0	7,395.4	7,581.6	7,495.0	34.1	29.8	-166.84	-283.9	-816.5	634.2	577.6	56.61	11.204	
7,700.0	7,491.3	7,664.6	7,576.9	34.6	30.2	-166.71	-290.1	-828.4	648.0	590.7	57.33	11.303	
7,800.0	7,587.3	7,747.1	7,658.7	35.2	30.5	-166.68	-295.1	-838.2	664.2	606.2	58.00	11.452	
7,900.0	7,683.2	7,828.8	7,739.9	35.7	30.8	-166.76	-299.1	-845.8	682.9	624.3	58.62	11.649	
8,000.0	7,779.2	7,909.7	7,820.6	36.2	31.1	-166.93	-301.9	-851.3	704.0	644.8	59.20	11.892	
8,100.0	7,875.1	7,989.6	7,900.4	36.8	31.4	-167.19	-303.7	-854.8	727.4	667.7	59.72	12.180	
8,200.0	7,971.1	8,068.5	7,979.2	37.3	31.6	-167.51	-304.5	-856.3	753.2	693.0	60.19	12.513	
8,300.0	8,067.0	8,159.7	8,070.4	37.9	31.9	-167.93	-304.5	-856.3	780.7	719.9	60.80	12.840	
8,400.0	8,163.0	8,255.6	8,166.4	38.4	32.2	-168.35	-304.5	-856.3	808.3	746.8	61.47	13.150	
8,500.0	8,258.9	8,351.6	8,262.3	38.9	32.5	-168.74	-304.5	-856.3	835.9	773.8	62.14	13.452	
8,600.0	8,354.9	8,448.4	8,359.1	39.5	32.8	-169.15	-304.0	-856.3	863.6	800.8	62.82	13.747	
8,700.0	8,451.4	8,545.0	8,454.6	40.0	33.1	-170.51	-289.7	-856.4	889.3	826.0	63.37	14.034	
8,800.0	8,548.7	8,632.2	8,536.6	40.5	33.3	-172.66	-260.6	-856.6	912.7	849.0	63.64	14.341	
8,900.0	8,646.8	8,706.6	8,601.5	40.9	33.4	-175.10	-224.3	-856.9	935.3	871.7	63.65	14.695	
9,000.0	8,745.5	8,768.2	8,650.3	41.3	33.5	-177.48	-186.9	-857.1	958.8	895.4	63.37	15.129	
9,100.0	8,844.7	8,818.5	8,686.5	41.7	33.5	-179.62	-151.9	-857.3	984.5	921.7	62.80	15.676	
9,200.0	8,944.2	8,859.7	8,713.1	42.1	33.5	178.54	-120.6	-857.5	1,013.1	951.2	61.92	16.361	
9,300.0	9,044.1	8,893.5	8,733.0	42.4	33.5	176.99	-93.2	-857.7	1,045.1	984.3	60.76	17.200	
9,400.0	9,144.0	8,925.0	8,749.6	42.7	33.5	175.54	-66.5	-857.9	1,080.7	1,021.3	59.41	18.190	
9,500.0	9,244.0	8,950.0	8,761.6	42.9	33.5	174.70	-44.5	-858.0	1,121.0	1,063.2	57.86	19.375	
9,600.0	9,343.6	8,975.0	8,772.4	43.2	33.5	171.98	-22.0	-858.2	1,165.9	1,109.7	56.26	20.724	
9,700.0	9,439.3	9,000.0	8,782.0	43.4	33.5	65.48	1.1	-858.3	1,210.7	1,156.1	54.65	22.154	
9,800.0	9,527.0	9,025.0	8,790.4	43.6	33.5	59.83	24.6	-858.5	1,252.9	1,199.8	53.12	23.584	
9,900.0	9,602.9	9,050.0	8,797.5	43.8	33.5	55.21	48.6	-858.7	1,290.3	1,238.5	51.78	24.919	
10,000.0	9,663.6	9,087.1	8,805.8	43.9	33.5	51.56	84.8	-858.9	1,321.1	1,270.3	50.81	26.003	
10,100.0	9,706.6	9,125.0	8,811.3	43.9	33.4	49.07	122.2	-859.1	1,344.1	1,294.0	50.14	26.809	
10,200.0	9,729.9	9,150.0	8,813.3	43.9	33.4	47.68	147.1	-859.3	1,358.4	1,308.6	49.82	27.268	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 304H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.0	9,734.0	9,212.4	8,814.0	44.0	33.3	47.37	209.6	-859.7	1,364.0	1,314.1	49.90	27.336	
10,400.0	9,734.0	9,312.4	8,814.0	44.0	33.3	47.46	309.5	-860.4	1,365.8	1,315.8	50.05	27.287	
10,500.0	9,734.0	9,412.4	8,814.0	44.1	33.3	47.47	409.5	-861.0	1,365.9	1,315.6	50.28	27.166	
10,600.0	9,734.0	9,512.4	8,814.0	44.2	33.3	47.47	509.5	-861.7	1,365.9	1,315.3	50.61	26.986	
10,700.0	9,734.0	9,612.4	8,814.0	44.3	33.5	47.47	609.5	-862.4	1,365.9	1,314.9	51.06	26.751	
10,800.0	9,734.0	9,712.4	8,814.0	44.5	33.9	47.47	709.5	-863.0	1,365.9	1,314.3	51.61	26.466	
10,900.0	9,734.0	9,812.4	8,814.0	44.8	34.3	47.47	809.5	-863.7	1,366.0	1,313.7	52.27	26.134	
11,000.0	9,734.0	9,912.4	8,814.0	45.1	34.9	47.47	909.5	-864.3	1,366.0	1,313.0	53.02	25.763	
11,100.0	9,734.0	10,012.4	8,814.0	45.4	35.4	47.47	1,009.5	-865.0	1,366.0	1,312.1	53.87	25.357	
11,200.0	9,734.0	10,112.4	8,814.0	45.8	36.1	47.47	1,109.5	-865.7	1,366.0	1,311.2	54.81	24.923	
11,300.0	9,734.0	10,212.4	8,814.0	46.3	36.7	47.47	1,209.5	-866.3	1,366.1	1,310.2	55.84	24.466	
11,400.0	9,734.0	10,312.4	8,814.0	46.8	37.5	47.47	1,309.5	-867.0	1,366.1	1,309.1	56.94	23.990	
11,500.0	9,734.0	10,412.4	8,814.0	47.3	38.2	47.47	1,409.5	-867.7	1,366.1	1,308.0	58.13	23.502	
11,600.0	9,734.0	10,512.4	8,814.0	47.9	39.0	47.48	1,509.5	-868.3	1,366.1	1,306.7	59.38	23.005	
11,700.0	9,734.0	10,612.4	8,814.0	48.5	39.8	47.48	1,609.5	-869.0	1,366.2	1,305.4	60.71	22.504	
11,800.0	9,734.0	10,712.4	8,814.0	49.2	40.7	47.48	1,709.5	-869.6	1,366.2	1,304.1	62.09	22.002	
11,900.0	9,734.0	10,812.4	8,814.0	49.9	41.6	47.48	1,809.5	-870.3	1,366.2	1,302.7	63.54	21.501	
12,000.0	9,734.0	10,912.4	8,814.0	50.7	42.5	47.48	1,909.5	-871.0	1,366.2	1,301.2	65.04	21.005	
12,100.0	9,734.0	11,012.4	8,814.0	51.5	43.5	47.48	2,009.5	-871.6	1,366.3	1,299.7	66.59	20.516	
12,200.0	9,734.0	11,112.4	8,814.0	52.3	44.5	47.48	2,109.5	-872.3	1,366.3	1,298.1	68.20	20.035	
12,300.0	9,734.0	11,212.4	8,814.0	53.2	45.5	47.48	2,209.5	-872.9	1,366.3	1,296.5	69.84	19.563	
12,400.0	9,734.0	11,312.4	8,814.0	54.0	46.5	47.48	2,309.5	-873.6	1,366.3	1,294.8	71.53	19.102	
12,500.0	9,734.0	11,412.4	8,814.0	54.9	47.5	47.48	2,409.5	-874.3	1,366.3	1,293.1	73.25	18.652	
12,600.0	9,734.0	11,512.4	8,814.0	55.9	48.6	47.48	2,509.5	-874.9	1,366.4	1,291.4	75.02	18.214	
12,700.0	9,734.0	11,612.4	8,814.0	56.8	49.7	47.49	2,609.5	-875.6	1,366.4	1,289.6	76.81	17.789	
12,800.0	9,734.0	11,712.4	8,814.0	57.8	50.8	47.49	2,709.5	-876.3	1,366.4	1,287.8	78.64	17.376	
12,900.0	9,734.0	11,812.4	8,814.0	58.8	51.9	47.49	2,809.5	-876.9	1,366.4	1,285.9	80.50	16.975	
13,000.0	9,734.0	11,912.4	8,814.0	59.9	53.1	47.49	2,909.5	-877.6	1,366.5	1,284.1	82.38	16.588	
13,100.0	9,734.0	12,012.4	8,814.0	60.9	54.2	47.49	3,009.5	-878.2	1,366.5	1,282.2	84.29	16.212	
13,200.0	9,734.0	12,112.4	8,814.0	62.0	55.4	47.49	3,109.5	-878.9	1,366.5	1,280.3	86.22	15.849	
13,300.0	9,734.0	12,212.4	8,814.0	63.0	56.6	47.49	3,209.5	-879.6	1,366.5	1,278.4	88.17	15.498	
13,400.0	9,734.0	12,312.4	8,814.0	64.1	57.8	47.49	3,309.5	-880.2	1,366.6	1,276.4	90.15	15.159	
13,500.0	9,734.0	12,412.4	8,814.0	65.2	59.0	47.49	3,409.5	-880.9	1,366.6	1,274.4	92.15	14.831	
13,600.0	9,734.0	12,512.4	8,814.0	66.3	60.2	47.49	3,509.5	-881.5	1,366.6	1,272.5	94.16	14.514	
13,700.0	9,734.0	12,612.4	8,814.0	67.5	61.4	47.49	3,609.5	-882.2	1,366.6	1,270.4	96.19	14.208	
13,800.0	9,734.0	12,712.4	8,814.0	68.6	62.6	47.50	3,709.5	-882.9	1,366.7	1,268.4	98.23	13.912	
13,900.0	9,734.0	12,812.4	8,814.0	69.8	63.9	47.50	3,809.5	-883.5	1,366.7	1,266.4	100.30	13.627	
14,000.0	9,734.0	12,912.4	8,814.0	70.9	65.1	47.50	3,909.5	-884.2	1,366.7	1,264.3	102.37	13.351	
14,100.0	9,734.0	13,012.4	8,814.0	72.1	66.4	47.50	4,009.5	-884.9	1,366.7	1,262.3	104.46	13.084	
14,200.0	9,734.0	13,112.4	8,814.0	73.3	67.6	47.50	4,109.5	-885.5	1,366.8	1,260.2	106.56	12.826	
14,300.0	9,734.0	13,212.4	8,814.0	74.5	68.9	47.50	4,209.5	-886.2	1,366.8	1,258.1	108.67	12.577	
14,400.0	9,734.0	13,312.4	8,814.0	75.7	70.2	47.50	4,309.5	-886.8	1,366.8	1,256.0	110.80	12.336	
14,500.0	9,734.0	13,412.4	8,814.0	76.9	71.5	47.50	4,409.5	-887.5	1,366.8	1,253.9	112.93	12.103	
14,600.0	9,734.0	13,512.4	8,814.0	78.1	72.8	47.50	4,509.4	-888.2	1,366.8	1,251.8	115.07	11.878	
14,700.0	9,734.0	13,612.4	8,814.0	79.4	74.1	47.50	4,609.4	-888.8	1,366.9	1,249.6	117.23	11.660	
14,800.0	9,734.0	13,712.4	8,814.0	80.6	75.4	47.50	4,709.4	-889.5	1,366.9	1,247.5	119.39	11.449	
14,900.0	9,734.0	13,812.4	8,814.0	81.9	76.7	47.51	4,809.4	-890.1	1,366.9	1,245.4	121.56	11.245	
15,000.0	9,734.0	13,912.4	8,814.0	83.1	78.0	47.51	4,909.4	-890.8	1,366.9	1,243.2	123.74	11.047	
15,100.0	9,734.0	14,012.4	8,814.0	84.4	79.3	47.51	5,009.4	-891.5	1,367.0	1,241.0	125.93	10.855	
15,200.0	9,734.0	14,112.4	8,814.0	85.6	80.6	47.51	5,109.4	-892.1	1,367.0	1,238.9	128.12	10.670	
15,300.0	9,734.0	14,212.4	8,814.0	86.9	81.9	47.51	5,209.4	-892.8	1,367.0	1,236.7	130.32	10.490	
15,400.0	9,734.0	14,312.4	8,814.0	88.2	83.3	47.51	5,309.4	-893.4	1,367.0	1,234.5	132.53	10.315	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 304H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Minimum	Separation	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	
15,500.0	9,734.0	14,412.4	8,814.0	89.4	84.6	47.51	5,409.4	-894.1	1,367.1	1,232.3	134.74	10.146
15,600.0	9,734.0	14,512.4	8,814.0	90.7	85.9	47.51	5,509.4	-894.8	1,367.1	1,230.1	136.96	9.982
15,700.0	9,734.0	14,612.4	8,814.0	92.0	87.3	47.51	5,609.4	-895.4	1,367.1	1,227.9	139.18	9.822
15,800.0	9,734.0	14,712.4	8,814.0	93.3	88.6	47.51	5,709.4	-896.1	1,367.1	1,225.7	141.41	9.668
15,900.0	9,734.0	14,812.4	8,814.0	94.6	90.0	47.51	5,809.4	-896.8	1,367.2	1,223.5	143.65	9.518
16,000.0	9,734.0	14,912.4	8,814.0	95.9	91.3	47.52	5,909.4	-897.4	1,367.2	1,221.3	145.89	9.372
16,100.0	9,734.0	15,012.4	8,814.0	97.2	92.7	47.52	6,009.4	-898.1	1,367.2	1,219.1	148.13	9.230
16,200.0	9,734.0	15,112.4	8,814.0	98.5	94.0	47.52	6,109.4	-898.7	1,367.2	1,216.9	150.38	9.092
16,300.0	9,734.0	15,212.4	8,814.0	99.9	95.4	47.52	6,209.4	-899.4	1,367.3	1,214.6	152.63	8.958
16,400.0	9,734.0	15,312.4	8,814.0	101.2	96.8	47.52	6,309.4	-900.1	1,367.3	1,212.4	154.89	8.828
16,500.0	9,734.0	15,412.4	8,814.0	102.5	98.1	47.52	6,409.4	-900.7	1,367.3	1,210.2	157.15	8.701
16,600.0	9,734.0	15,512.4	8,814.0	103.8	99.5	47.52	6,509.4	-901.4	1,367.3	1,207.9	159.41	8.577
16,700.0	9,734.0	15,612.4	8,814.0	105.1	100.9	47.52	6,609.4	-902.0	1,367.4	1,205.7	161.68	8.457
16,800.0	9,734.0	15,712.4	8,814.0	106.5	102.2	47.52	6,709.4	-902.7	1,367.4	1,203.4	163.95	8.340
16,900.0	9,734.0	15,812.4	8,814.0	107.8	103.6	47.52	6,809.4	-903.4	1,367.4	1,201.2	166.23	8.226
17,000.0	9,734.0	15,912.4	8,814.0	109.1	105.0	47.52	6,909.4	-904.0	1,367.4	1,198.9	168.50	8.115
17,100.0	9,734.0	16,012.4	8,814.0	110.5	106.3	47.53	7,009.4	-904.7	1,367.4	1,196.7	170.78	8.007
17,200.0	9,734.0	16,112.4	8,814.0	111.8	107.7	47.53	7,109.4	-905.4	1,367.5	1,194.4	173.07	7.901
17,300.0	9,734.0	16,212.4	8,814.0	113.2	109.1	47.53	7,209.4	-906.0	1,367.5	1,192.1	175.35	7.798
17,400.0	9,734.0	16,312.4	8,814.0	114.5	110.5	47.53	7,309.4	-906.7	1,367.5	1,189.9	177.64	7.698
17,500.0	9,734.0	16,412.4	8,814.0	115.9	111.9	47.53	7,409.4	-907.3	1,367.5	1,187.6	179.93	7.600
17,600.0	9,734.0	16,512.4	8,814.0	117.2	113.3	47.53	7,509.4	-908.0	1,367.6	1,185.3	182.23	7.505
17,700.0	9,734.0	16,612.4	8,814.0	118.6	114.6	47.53	7,609.4	-908.7	1,367.6	1,183.1	184.53	7.411
17,800.0	9,734.0	16,712.4	8,814.0	119.9	116.0	47.53	7,709.4	-909.3	1,367.6	1,180.8	186.82	7.320
17,900.0	9,734.0	16,812.4	8,814.0	121.3	117.4	47.53	7,809.4	-910.0	1,367.6	1,178.5	189.12	7.231
18,000.0	9,734.0	16,912.4	8,814.0	122.7	118.8	47.53	7,909.4	-910.6	1,367.7	1,176.2	191.43	7.145
18,100.0	9,734.0	17,012.4	8,814.0	124.0	120.2	47.53	8,009.4	-911.3	1,367.7	1,174.0	193.73	7.060
18,200.0	9,734.0	17,112.4	8,814.0	125.4	121.6	47.54	8,109.4	-912.0	1,367.7	1,171.7	196.04	6.977
18,300.0	9,734.0	17,212.4	8,814.0	126.8	123.0	47.54	8,209.4	-912.6	1,367.7	1,169.4	198.35	6.896
18,400.0	9,734.0	17,312.4	8,814.0	128.1	124.4	47.54	8,309.4	-913.3	1,367.8	1,167.1	200.66	6.816
18,500.0	9,734.0	17,412.4	8,814.0	129.5	125.8	47.54	8,409.4	-914.0	1,367.8	1,164.8	202.97	6.739
18,600.0	9,734.0	17,512.4	8,814.0	130.9	127.2	47.54	8,509.4	-914.6	1,367.8	1,162.5	205.29	6.663
18,700.0	9,734.0	17,612.4	8,814.0	132.2	128.6	47.54	8,609.4	-915.3	1,367.8	1,160.2	207.60	6.589
18,800.0	9,734.0	17,712.4	8,814.0	133.6	130.0	47.54	8,709.4	-915.9	1,367.9	1,157.9	209.92	6.516
18,900.0	9,734.0	17,812.4	8,814.0	135.0	131.4	47.54	8,809.4	-916.6	1,367.9	1,155.6	212.24	6.445
19,000.0	9,734.0	17,912.4	8,814.0	136.4	132.8	47.54	8,909.4	-917.3	1,367.9	1,153.3	214.56	6.375
19,100.0	9,734.0	18,012.4	8,814.0	137.7	134.2	47.54	9,009.4	-917.9	1,367.9	1,151.0	216.88	6.307
19,200.0	9,734.0	18,112.4	8,814.0	139.1	135.6	47.54	9,109.3	-918.6	1,368.0	1,148.7	219.21	6.240
19,300.0	9,734.0	18,212.4	8,814.0	140.5	137.0	47.55	9,209.3	-919.2	1,368.0	1,146.4	221.53	6.175
19,400.0	9,734.0	18,312.4	8,814.0	141.9	138.4	47.55	9,309.3	-919.9	1,368.0	1,144.1	223.86	6.111
19,500.0	9,734.0	18,412.4	8,814.0	143.3	139.8	47.55	9,409.3	-920.6	1,368.0	1,141.8	226.19	6.048
19,600.0	9,734.0	18,512.4	8,814.0	144.7	141.2	47.55	9,509.3	-921.2	1,368.0	1,139.5	228.52	5.987
19,700.0	9,734.0	18,612.4	8,814.0	146.1	142.6	47.55	9,609.3	-921.9	1,368.1	1,137.2	230.85	5.926
19,800.0	9,734.0	18,712.4	8,814.0	147.4	144.0	47.55	9,709.3	-922.5	1,368.1	1,134.9	233.18	5.867
19,900.0	9,734.0	18,812.4	8,814.0	148.8	145.4	47.55	9,809.3	-923.2	1,368.1	1,132.6	235.51	5.809
20,000.0	9,734.0	18,912.4	8,814.0	150.2	146.9	47.55	9,909.3	-923.9	1,368.1	1,130.3	237.84	5.752
20,100.0	9,734.0	19,012.4	8,814.0	151.6	148.3	47.55	10,009.3	-924.5	1,368.2	1,128.0	240.18	5.696
20,200.0	9,734.0	19,112.4	8,814.0	152.9	149.7	47.55	10,109.3	-925.2	1,368.2	1,125.9	242.26	5.648
20,207.7	9,734.0	19,120.1	8,814.0	153.0	149.8	47.55	10,117.0	-925.2	1,368.2	1,125.8	242.42	5.644 SF

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 305H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	3.1	3.1	0.0	0.0	20.28	160.1	59.2	170.6				
100.0	100.0	103.1	103.1	0.1	0.1	20.28	160.1	59.2	170.6	170.4	0.27	621.448	
200.0	200.0	203.1	203.1	0.5	0.5	20.28	160.1	59.2	170.6	169.7	0.99	172.100	
300.0	300.0	303.1	303.1	0.8	0.9	20.28	160.1	59.2	170.6	168.9	1.71	99.880	
400.0	400.0	403.1	403.1	1.2	1.2	20.28	160.1	59.2	170.6	168.2	2.43	70.356	
500.0	500.0	503.1	503.1	1.6	1.6	20.28	160.1	59.2	170.6	167.5	3.14	54.304	
600.0	600.0	603.1	603.1	1.9	1.9	20.28	160.1	59.2	170.6	166.8	3.86	44.216	
700.0	700.0	703.1	703.1	2.3	2.3	20.28	160.1	59.2	170.6	166.1	4.58	37.289	
800.0	800.0	803.1	803.1	2.6	2.7	20.28	160.1	59.2	170.6	165.4	5.29	32.238	
900.0	900.0	903.1	903.1	3.0	3.0	20.28	160.1	59.2	170.6	164.6	6.01	28.393	
1,000.0	1,000.0	1,003.1	1,003.1	3.4	3.4	20.28	160.1	59.2	170.6	163.9	6.73	25.367	
1,100.0	1,100.0	1,103.1	1,103.1	3.7	3.7	20.28	160.1	59.2	170.6	163.2	7.44	22.924	
1,200.0	1,200.0	1,203.1	1,203.1	4.1	4.1	20.28	160.1	59.2	170.6	162.5	8.16	20.910	
1,300.0	1,300.0	1,303.1	1,303.1	4.4	4.4	20.28	160.1	59.2	170.6	161.8	8.88	19.221	
1,400.0	1,400.0	1,403.1	1,403.1	4.8	4.8	20.28	160.1	59.2	170.6	161.0	9.59	17.785	
1,500.0	1,500.0	1,503.1	1,503.1	5.2	5.2	20.28	160.1	59.2	170.6	160.3	10.31	16.548	
1,600.0	1,600.0	1,603.1	1,603.1	5.5	5.5	20.28	160.1	59.2	170.6	159.6	11.03	15.473	
1,700.0	1,700.0	1,703.1	1,703.1	5.9	5.9	20.28	160.1	59.2	170.6	158.9	11.75	14.528	
1,800.0	1,800.0	1,803.1	1,803.1	6.2	6.2	20.28	160.1	59.2	170.6	158.2	12.46	13.692	
1,900.0	1,900.0	1,903.1	1,903.1	6.6	6.6	20.28	160.1	59.2	170.6	157.5	13.18	12.948	
2,000.0	2,000.0	2,003.3	2,003.3	6.9	7.0	20.29	160.1	59.2	170.6	156.7	13.90	12.279	
2,100.0	2,100.0	2,109.1	2,109.1	7.3	7.3	120.73	158.0	59.2	169.7	155.1	14.60	11.626	
2,200.0	2,199.8	2,214.5	2,214.3	7.6	7.7	123.17	152.0	59.3	167.3	152.0	15.26	10.964	
2,300.0	2,299.5	2,314.2	2,313.7	8.0	8.0	126.81	144.4	59.4	165.4	149.5	15.93	10.387	
2,315.7	2,315.0	2,329.7	2,329.2	8.0	8.0	127.46	143.3	59.5	165.4	149.4	16.03	10.316 CC, ES	
2,400.0	2,398.7	2,413.3	2,412.5	8.3	8.3	131.34	136.9	59.6	166.5	149.9	16.60	10.031	
2,500.0	2,497.5	2,511.9	2,510.9	8.7	8.6	136.52	129.4	59.7	171.2	153.9	17.28	9.906	
2,600.0	2,595.6	2,610.0	2,608.7	9.0	9.0	142.00	121.9	59.9	180.0	162.0	17.97	10.019	
2,700.0	2,693.1	2,707.4	2,705.8	9.4	9.3	147.42	114.5	60.0	193.3	174.7	18.65	10.364	
2,800.0	2,789.6	2,804.0	2,802.1	9.8	9.6	152.50	107.1	60.1	211.3	191.9	19.34	10.927	
2,900.0	2,885.6	2,900.0	2,897.8	10.2	10.0	157.10	99.8	60.3	232.8	212.8	20.02	11.631	
3,000.0	2,981.6	2,996.0	2,993.6	10.6	10.3	160.97	92.5	60.4	255.6	235.0	20.70	12.353	
3,100.0	3,077.5	3,092.0	3,089.3	11.1	10.6	164.20	85.2	60.5	279.4	258.1	21.38	13.071	
3,200.0	3,173.5	3,188.0	3,185.0	11.5	11.0	166.93	77.9	60.7	303.9	281.9	22.06	13.776	
3,300.0	3,269.4	3,284.0	3,280.7	12.0	11.3	169.25	70.5	60.8	329.0	306.3	22.75	14.460	
3,400.0	3,365.4	3,380.0	3,376.4	12.4	11.7	171.25	63.2	61.0	354.5	331.1	23.45	15.121	
3,500.0	3,461.3	3,476.0	3,472.1	12.9	12.0	172.98	55.9	61.1	380.4	356.2	24.14	15.756	
3,600.0	3,557.3	3,572.0	3,567.8	13.4	12.3	174.49	48.6	61.2	406.5	381.7	24.84	16.364	
3,700.0	3,653.2	3,668.0	3,663.5	13.8	12.7	175.82	41.3	61.4	432.9	407.4	25.55	16.946	
3,800.0	3,749.2	3,764.0	3,759.3	14.3	13.0	177.00	34.0	61.5	459.5	433.3	26.26	17.502	
3,900.0	3,845.1	3,860.0	3,855.0	14.8	13.4	178.05	26.6	61.6	486.3	459.3	26.97	18.032	
4,000.0	3,941.1	3,956.0	3,950.7	15.3	13.7	178.99	19.3	61.8	513.1	485.5	27.68	18.539	
4,100.0	4,037.0	4,051.9	4,046.4	15.8	14.1	179.84	12.0	61.9	540.1	511.7	28.40	19.021	
4,200.0	4,133.0	4,147.9	4,142.1	16.3	14.4	-179.40	4.7	62.0	567.2	538.1	29.11	19.482	
4,300.0	4,228.9	4,243.9	4,237.8	16.8	14.8	-178.70	-2.6	62.2	594.4	564.6	29.84	19.922	
4,400.0	4,324.9	4,339.9	4,333.5	17.3	15.1	-178.06	-9.9	62.3	621.7	591.1	30.56	20.342	
4,500.0	4,420.8	4,435.9	4,429.3	17.8	15.5	-177.48	-17.2	62.4	649.0	617.7	31.29	20.743	
4,600.0	4,516.8	4,531.9	4,525.0	18.3	15.8	-176.94	-24.6	62.6	676.4	644.4	32.01	21.127	
4,700.0	4,612.7	4,627.9	4,620.7	18.8	16.2	-176.45	-31.9	62.7	703.8	671.1	32.74	21.493	
4,800.0	4,708.7	4,723.9	4,716.4	19.3	16.5	-175.99	-39.2	62.8	731.3	697.8	33.48	21.844	
4,900.0	4,804.7	4,819.9	4,812.1	19.9	16.9	-175.57	-46.5	63.0	758.8	724.6	34.21	22.180	
5,000.0	4,900.6	4,915.9	4,907.8	20.4	17.2	-175.17	-53.8	63.1	786.3	751.4	34.95	22.502	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 305H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	4,996.6	5,011.9	5,003.5	20.9	17.6	-174.80	-61.1	63.3	813.9	778.2	35.68	22.810	
5,200.0	5,092.5	5,107.9	5,099.3	21.4	17.9	-174.46	-68.5	63.4	841.5	805.1	36.42	23.106	
5,300.0	5,188.5	5,203.9	5,195.0	21.9	18.3	-174.14	-75.8	63.5	869.2	832.0	37.16	23.390	
5,400.0	5,284.4	5,299.9	5,290.7	22.4	18.6	-173.83	-83.1	63.7	896.8	858.9	37.90	23.662	
5,500.0	5,380.4	5,395.9	5,386.4	23.0	19.0	-173.55	-90.4	63.8	924.5	885.9	38.64	23.924	
5,600.0	5,476.3	5,491.8	5,482.1	23.5	19.3	-173.28	-97.7	63.9	952.2	912.8	39.39	24.176	
5,700.0	5,572.3	5,587.8	5,577.8	24.0	19.7	-173.03	-105.0	64.1	979.9	939.8	40.13	24.418	
5,800.0	5,668.2	5,683.8	5,673.5	24.5	20.0	-172.79	-112.3	64.2	1,007.7	966.8	40.88	24.652	
5,900.0	5,764.2	5,779.8	5,769.3	25.1	20.4	-172.56	-119.7	64.3	1,035.4	993.8	41.62	24.876	
6,000.0	5,860.1	5,875.8	5,865.0	25.6	20.7	-172.35	-127.0	64.5	1,063.2	1,020.8	42.37	25.093	
6,100.0	5,956.1	5,971.8	5,960.7	26.1	21.1	-172.15	-134.3	64.6	1,091.0	1,047.9	43.12	25.302	
6,200.0	6,052.0	6,067.8	6,056.4	26.6	21.4	-171.95	-141.6	64.7	1,118.8	1,074.9	43.87	25.503	
6,300.0	6,148.0	6,163.8	6,152.1	27.2	21.8	-171.77	-148.9	64.9	1,146.6	1,102.0	44.62	25.698	
6,400.0	6,243.9	6,259.8	6,247.8	27.7	22.2	-171.59	-156.2	65.0	1,174.4	1,129.0	45.37	25.886	
6,500.0	6,339.9	6,355.8	6,343.5	28.2	22.5	-171.43	-163.5	65.1	1,202.2	1,156.1	46.12	26.067	
6,600.0	6,435.8	6,451.8	6,439.2	28.8	22.9	-171.27	-170.9	65.3	1,230.1	1,183.2	46.87	26.242	
6,700.0	6,531.8	6,547.8	6,535.0	29.3	23.2	-171.11	-178.2	65.4	1,257.9	1,210.3	47.63	26.412	
6,800.0	6,627.7	6,643.8	6,630.7	29.8	23.6	-170.97	-185.5	65.6	1,285.8	1,237.4	48.38	26.576	
6,900.0	6,723.7	6,739.8	6,726.4	30.4	23.9	-170.83	-192.8	65.7	1,313.6	1,264.5	49.13	26.735	
7,000.0	6,819.6	6,835.7	6,822.1	30.9	24.3	-170.69	-200.1	65.8	1,341.5	1,291.6	49.89	26.889	
7,100.0	6,915.6	6,931.7	6,917.8	31.4	24.6	-170.57	-207.4	66.0	1,369.4	1,318.7	50.64	27.039	
7,200.0	7,011.5	7,027.7	7,013.5	32.0	25.0	-170.44	-214.8	66.1	1,397.2	1,345.8	51.40	27.183	
7,300.0	7,107.5	7,123.7	7,109.2	32.5	25.4	-170.32	-222.1	66.2	1,425.1	1,373.0	52.16	27.323	
7,400.0	7,203.5	7,219.7	7,205.0	33.0	25.7	-170.21	-229.4	66.4	1,453.0	1,400.1	52.91	27.459	
7,500.0	7,299.4	7,315.7	7,300.7	33.6	26.1	-170.10	-236.7	66.5	1,480.9	1,427.2	53.67	27.592	
7,600.0	7,395.4	7,411.7	7,396.4	34.1	26.4	-169.99	-244.0	66.6	1,508.8	1,454.4	54.43	27.720	
7,700.0	7,491.3	7,507.7	7,492.1	34.6	26.8	-169.89	-251.3	66.8	1,536.7	1,481.5	55.19	27.844	
7,800.0	7,587.3	7,603.7	7,587.8	35.2	27.1	-169.79	-258.6	66.9	1,564.6	1,508.7	55.95	27.965	
7,900.0	7,683.2	7,699.7	7,683.5	35.7	27.5	-169.70	-266.0	67.0	1,592.5	1,535.8	56.71	28.083	
8,000.0	7,779.2	7,795.7	7,779.2	36.2	27.8	-169.61	-273.3	67.2	1,620.4	1,563.0	57.47	28.197	
8,100.0	7,875.1	7,891.7	7,875.0	36.8	28.2	-169.52	-280.6	67.3	1,648.4	1,590.1	58.23	28.308	
8,200.0	7,971.1	7,987.7	7,970.7	37.3	28.6	-169.43	-287.9	67.4	1,676.3	1,617.3	58.99	28.417	
8,300.0	8,067.0	8,084.5	8,067.3	37.9	28.9	-169.37	-294.9	67.6	1,704.2	1,644.4	59.75	28.520	
8,400.0	8,163.0	8,182.2	8,164.9	38.4	29.3	-169.40	-298.9	67.7	1,732.0	1,671.5	60.51	28.623	
8,500.0	8,258.9	8,279.4	8,262.0	38.9	29.6	-169.54	-299.8	67.7	1,759.8	1,698.5	61.24	28.736	
8,600.0	8,354.9	8,376.2	8,358.9	39.5	29.9	-169.73	-299.3	67.7	1,787.5	1,725.6	61.95	28.855	
8,700.0	8,451.4	8,473.2	8,454.6	40.0	30.2	-170.44	-285.0	67.6	1,813.3	1,750.7	62.60	28.968	
8,800.0	8,548.7	8,560.6	8,536.9	40.5	30.4	-171.55	-255.8	67.4	1,836.3	1,773.2	63.11	29.096	
8,900.0	8,646.8	8,635.2	8,601.8	40.9	30.6	-172.82	-219.3	67.1	1,857.2	1,793.7	63.49	29.254	
9,000.0	8,745.5	8,696.8	8,650.7	41.3	30.7	-174.06	-181.9	66.9	1,876.9	1,813.2	63.73	29.452	
9,100.0	8,844.7	8,750.0	8,688.8	41.7	30.8	-175.26	-144.7	66.6	1,896.2	1,832.3	63.85	29.696	
9,200.0	8,944.2	8,788.3	8,713.5	42.1	30.9	-176.19	-115.5	66.5	1,915.5	1,851.7	63.83	30.012	
9,300.0	9,044.1	8,825.0	8,734.8	42.4	30.9	-177.11	-85.7	66.3	1,935.3	1,871.6	63.70	30.382	
9,400.0	9,144.0	8,850.0	8,748.1	42.7	31.0	-177.76	-64.5	66.1	1,955.7	1,892.3	63.42	30.839	
9,500.0	9,244.0	8,875.0	8,760.2	42.9	31.0	81.95	-42.6	66.0	1,978.2	1,915.2	63.04	31.382	
9,600.0	9,343.6	8,900.0	8,771.1	43.2	31.1	82.00	-20.1	65.8	2,004.2	1,941.6	62.59	32.022	
9,700.0	9,439.3	8,925.0	8,780.9	43.4	31.1	78.13	2.9	65.7	2,031.3	1,969.2	62.09	32.715	
9,800.0	9,527.0	8,950.0	8,789.4	43.6	31.1	74.46	26.4	65.5	2,057.9	1,996.3	61.58	33.417	
9,900.0	9,602.9	8,983.3	8,798.9	43.8	31.2	71.08	58.3	65.3	2,082.4	2,021.3	61.14	34.058	
10,000.0	9,663.6	9,015.7	8,805.9	43.9	31.2	68.30	89.9	65.1	2,103.6	2,042.8	60.78	34.611	
10,100.0	9,706.6	9,050.0	8,811.0	43.9	31.3	66.19	123.9	64.9	2,120.3	2,059.7	60.54	35.024	
10,200.0	9,729.9	9,075.0	8,813.1	43.9	31.3	64.84	148.8	64.7	2,131.8	2,071.3	60.44	35.272	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 305H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program:		0-B001Mb_MWD+HRGM						Rule Assigned:					Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance			Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor	
10,300.0	9,734.0	9,141.9	8,814.0	44.0	31.5	64.40	215.7	64.3	2,137.6	2,077.0	60.58	35.284		
10,400.0	9,734.0	9,241.9	8,814.0	44.0	31.7	64.44	315.7	63.6	2,139.7	2,078.9	60.88	35.147		
10,500.0	9,734.0	9,341.9	8,814.0	44.1	31.9	64.44	415.7	62.9	2,139.8	2,078.5	61.28	34.920		
10,600.0	9,734.0	9,441.9	8,814.0	44.2	32.3	64.45	515.6	62.3	2,139.8	2,078.0	61.79	34.629		
10,700.0	9,734.0	9,541.9	8,814.0	44.3	32.7	64.45	615.6	61.6	2,139.9	2,077.4	62.42	34.282		
10,800.0	9,734.0	9,641.9	8,814.0	44.5	33.2	64.45	715.6	61.0	2,139.9	2,076.7	63.16	33.883		
10,900.0	9,734.0	9,741.9	8,814.0	44.8	33.7	64.45	815.6	60.3	2,139.9	2,075.9	64.00	33.438		
11,000.0	9,734.0	9,841.9	8,814.0	45.1	34.2	64.45	915.6	59.6	2,140.0	2,075.0	64.94	32.953		
11,100.0	9,734.0	9,941.9	8,814.0	45.4	34.9	64.45	1,015.6	59.0	2,140.0	2,074.0	65.98	32.434		
11,200.0	9,734.0	10,041.9	8,814.0	45.8	35.5	64.45	1,115.6	58.3	2,140.0	2,072.9	67.11	31.888		
11,300.0	9,734.0	10,141.9	8,814.0	46.3	36.2	64.45	1,215.6	57.6	2,140.0	2,071.7	68.33	31.320		
11,400.0	9,734.0	10,241.9	8,814.0	46.8	37.0	64.45	1,315.6	57.0	2,140.1	2,070.4	69.63	30.734		
11,500.0	9,734.0	10,341.9	8,814.0	47.3	37.8	64.45	1,415.6	56.3	2,140.1	2,069.1	71.01	30.137		
11,600.0	9,734.0	10,441.9	8,814.0	47.9	38.6	64.45	1,515.6	55.7	2,140.1	2,067.7	72.47	29.533		
11,700.0	9,734.0	10,541.9	8,814.0	48.5	39.5	64.45	1,615.6	55.0	2,140.2	2,066.2	73.99	28.925		
11,800.0	9,734.0	10,641.9	8,814.0	49.2	40.4	64.45	1,715.6	54.3	2,140.2	2,064.6	75.58	28.317		
11,900.0	9,734.0	10,741.9	8,814.0	49.9	41.3	64.45	1,815.6	53.7	2,140.2	2,063.0	77.23	27.712		
12,000.0	9,734.0	10,841.9	8,814.0	50.7	42.3	64.45	1,915.6	53.0	2,140.2	2,061.3	78.94	27.112		
12,100.0	9,734.0	10,941.9	8,814.0	51.5	43.3	64.45	2,015.6	52.4	2,140.3	2,059.6	80.70	26.520		
12,200.0	9,734.0	11,041.9	8,814.0	52.3	44.3	64.45	2,115.6	51.7	2,140.3	2,057.8	82.52	25.938		
12,300.0	9,734.0	11,141.9	8,814.0	53.2	45.3	64.45	2,215.6	51.0	2,140.3	2,056.0	84.38	25.366		
12,400.0	9,734.0	11,241.9	8,814.0	54.0	46.4	64.45	2,315.6	50.4	2,140.4	2,054.1	86.28	24.806		
12,500.0	9,734.0	11,341.9	8,814.0	54.9	47.5	64.45	2,415.6	49.7	2,140.4	2,052.2	88.23	24.260		
12,600.0	9,734.0	11,441.9	8,814.0	55.9	48.6	64.45	2,515.6	49.0	2,140.4	2,050.2	90.21	23.726		
12,700.0	9,734.0	11,541.9	8,814.0	56.8	49.7	64.45	2,615.6	48.4	2,140.4	2,048.2	92.24	23.206		
12,800.0	9,734.0	11,641.9	8,814.0	57.8	50.8	64.45	2,715.6	47.7	2,140.5	2,046.2	94.29	22.701		
12,900.0	9,734.0	11,741.9	8,814.0	58.8	52.0	64.45	2,815.6	47.1	2,140.5	2,044.1	96.38	22.210		
13,000.0	9,734.0	11,841.9	8,814.0	59.9	53.2	64.45	2,915.6	46.4	2,140.5	2,042.0	98.49	21.733		
13,100.0	9,734.0	11,941.9	8,814.0	60.9	54.3	64.45	3,015.6	45.7	2,140.6	2,039.9	100.64	21.270		
13,200.0	9,734.0	12,041.9	8,814.0	62.0	55.5	64.45	3,115.6	45.1	2,140.6	2,037.8	102.81	20.821		
13,300.0	9,734.0	12,141.9	8,814.0	63.0	56.7	64.46	3,215.6	44.4	2,140.6	2,035.6	105.01	20.386		
13,400.0	9,734.0	12,241.9	8,814.0	64.1	57.9	64.46	3,315.6	43.8	2,140.7	2,033.4	107.22	19.964		
13,500.0	9,734.0	12,341.9	8,814.0	65.2	59.2	64.46	3,415.6	43.1	2,140.7	2,031.2	109.46	19.556		
13,600.0	9,734.0	12,441.9	8,814.0	66.3	60.4	64.46	3,515.6	42.4	2,140.7	2,029.0	111.72	19.161		
13,700.0	9,734.0	12,541.9	8,814.0	67.5	61.6	64.46	3,615.6	41.8	2,140.7	2,026.7	114.00	18.778		
13,800.0	9,734.0	12,641.9	8,814.0	68.6	62.9	64.46	3,715.6	41.1	2,140.8	2,024.5	116.30	18.407		
13,900.0	9,734.0	12,741.9	8,814.0	69.8	64.2	64.46	3,815.6	40.4	2,140.8	2,022.2	118.62	18.048		
14,000.0	9,734.0	12,841.9	8,814.0	70.9	65.4	64.46	3,915.6	39.8	2,140.8	2,019.9	120.95	17.701		
14,100.0	9,734.0	12,941.9	8,814.0	72.1	66.7	64.46	4,015.6	39.1	2,140.9	2,017.6	123.29	17.364		
14,200.0	9,734.0	13,041.9	8,814.0	73.3	68.0	64.46	4,115.6	38.5	2,140.9	2,015.2	125.65	17.038		
14,300.0	9,734.0	13,141.9	8,814.0	74.5	69.3	64.46	4,215.6	37.8	2,140.9	2,012.9	128.02	16.723		
14,400.0	9,734.0	13,241.9	8,814.0	75.7	70.6	64.46	4,315.6	37.1	2,140.9	2,010.5	130.41	16.417		
14,500.0	9,734.0	13,341.9	8,814.0	76.9	71.9	64.46	4,415.6	36.5	2,141.0	2,008.2	132.81	16.121		
14,600.0	9,734.0	13,441.9	8,814.0	78.1	73.2	64.46	4,515.6	35.8	2,141.0	2,005.8	135.22	15.834		
14,700.0	9,734.0	13,541.9	8,814.0	79.4	74.5	64.46	4,615.6	35.2	2,141.0	2,003.4	137.64	15.556		
14,800.0	9,734.0	13,641.9	8,814.0	80.6	75.8	64.46	4,715.6	34.5	2,141.1	2,001.0	140.07	15.286		
14,900.0	9,734.0	13,741.9	8,814.0	81.9	77.1	64.46	4,815.6	33.8	2,141.1	1,998.6	142.51	15.025		
15,000.0	9,734.0	13,841.9	8,814.0	83.1	78.5	64.46	4,915.6	33.2	2,141.1	1,996.2	144.96	14.771		
15,100.0	9,734.0	13,941.9	8,814.0	84.4	79.8	64.46	5,015.6	32.5	2,141.1	1,993.7	147.41	14.525		
15,200.0	9,734.0	14,041.9	8,814.0	85.6	81.1	64.46	5,115.5	31.9	2,141.2	1,991.3	149.88	14.286		
15,300.0	9,734.0	14,141.9	8,814.0	86.9	82.5	64.46	5,215.5	31.2	2,141.2	1,988.9	152.35	14.054		
15,400.0	9,734.0	14,241.9	8,814.0	88.2	83.8	64.46	5,315.5	30.5	2,141.2	1,986.4	154.84	13.829		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 305H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance				Offset Well Error: 0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
15,500.0	9,734.0	14,341.9	8,814.0	89.4	85.1	64.46	5,415.5	29.9	2,141.3	1,983.9	157.32	13.611		
15,600.0	9,734.0	14,441.9	8,814.0	90.7	86.5	64.46	5,515.5	29.2	2,141.3	1,981.5	159.82	13.398		
15,700.0	9,734.0	14,541.9	8,814.0	92.0	87.8	64.46	5,615.5	28.5	2,141.3	1,979.0	162.32	13.192		
15,800.0	9,734.0	14,641.9	8,814.0	93.3	89.2	64.46	5,715.5	27.9	2,141.4	1,976.5	164.83	12.991		
15,900.0	9,734.0	14,741.9	8,814.0	94.6	90.6	64.46	5,815.5	27.2	2,141.4	1,974.0	167.35	12.796		
16,000.0	9,734.0	14,841.9	8,814.0	95.9	91.9	64.46	5,915.5	26.6	2,141.4	1,971.5	169.87	12.607		
16,100.0	9,734.0	14,941.9	8,814.0	97.2	93.3	64.47	6,015.5	25.9	2,141.4	1,969.0	172.39	12.422		
16,200.0	9,734.0	15,041.9	8,814.0	98.5	94.6	64.47	6,115.5	25.2	2,141.5	1,966.5	174.92	12.242		
16,300.0	9,734.0	15,141.9	8,814.0	99.9	96.0	64.47	6,215.5	24.6	2,141.5	1,964.0	177.46	12.068		
16,400.0	9,734.0	15,241.9	8,814.0	101.2	97.4	64.47	6,315.5	23.9	2,141.5	1,961.5	180.00	11.897		
16,500.0	9,734.0	15,341.9	8,814.0	102.5	98.8	64.47	6,415.5	23.3	2,141.6	1,959.0	182.54	11.732		
16,600.0	9,734.0	15,441.9	8,814.0	103.8	100.1	64.47	6,515.5	22.6	2,141.6	1,956.5	185.09	11.570		
16,700.0	9,734.0	15,541.9	8,814.0	105.1	101.5	64.47	6,615.5	21.9	2,141.6	1,954.0	187.65	11.413		
16,800.0	9,734.0	15,641.9	8,814.0	106.5	102.9	64.47	6,715.5	21.3	2,141.6	1,951.4	190.20	11.260		
16,900.0	9,734.0	15,741.9	8,814.0	107.8	104.3	64.47	6,815.5	20.6	2,141.7	1,948.9	192.77	11.110		
17,000.0	9,734.0	15,841.9	8,814.0	109.1	105.6	64.47	6,915.5	19.9	2,141.7	1,946.4	195.33	10.964		
17,100.0	9,734.0	15,941.9	8,814.0	110.5	107.0	64.47	7,015.5	19.3	2,141.7	1,943.8	197.90	10.822		
17,200.0	9,734.0	16,041.9	8,814.0	111.8	108.4	64.47	7,115.5	18.6	2,141.8	1,941.3	200.47	10.684		
17,300.0	9,734.0	16,141.9	8,814.0	113.2	109.8	64.47	7,215.5	18.0	2,141.8	1,938.7	203.05	10.548		
17,400.0	9,734.0	16,241.9	8,814.0	114.5	111.2	64.47	7,315.5	17.3	2,141.8	1,936.2	205.63	10.416		
17,500.0	9,734.0	16,341.9	8,814.0	115.9	112.6	64.47	7,415.5	16.6	2,141.8	1,933.6	208.21	10.287		
17,600.0	9,734.0	16,441.9	8,814.0	117.2	114.0	64.47	7,515.5	16.0	2,141.9	1,931.1	210.80	10.161		
17,700.0	9,734.0	16,541.9	8,814.0	118.6	115.4	64.47	7,615.5	15.3	2,141.9	1,928.5	213.38	10.038		
17,800.0	9,734.0	16,641.9	8,814.0	119.9	116.8	64.47	7,715.5	14.7	2,141.9	1,926.0	215.97	9.918		
17,900.0	9,734.0	16,741.9	8,814.0	121.3	118.1	64.47	7,815.5	14.0	2,142.0	1,923.4	218.57	9.800		
18,000.0	9,734.0	16,841.9	8,814.0	122.7	119.5	64.47	7,915.5	13.3	2,142.0	1,920.8	221.16	9.685		
18,100.0	9,734.0	16,941.9	8,814.0	124.0	120.9	64.47	8,015.5	12.7	2,142.0	1,918.3	223.76	9.573		
18,200.0	9,734.0	17,041.9	8,814.0	125.4	122.3	64.47	8,115.5	12.0	2,142.1	1,915.7	226.36	9.463		
18,300.0	9,734.0	17,141.9	8,814.0	126.8	123.7	64.47	8,215.5	11.3	2,142.1	1,913.1	228.96	9.356		
18,400.0	9,734.0	17,241.9	8,814.0	128.1	125.1	64.47	8,315.5	10.7	2,142.1	1,910.5	231.57	9.250		
18,500.0	9,734.0	17,341.9	8,814.0	129.5	126.5	64.47	8,415.5	10.0	2,142.1	1,908.0	234.18	9.148		
18,600.0	9,734.0	17,441.9	8,814.0	130.9	127.9	64.47	8,515.5	9.4	2,142.2	1,905.4	236.79	9.047		
18,700.0	9,734.0	17,541.9	8,814.0	132.2	129.4	64.47	8,615.5	8.7	2,142.2	1,902.8	239.40	8.948		
18,800.0	9,734.0	17,641.9	8,814.0	133.6	130.8	64.48	8,715.5	8.0	2,142.2	1,900.2	242.01	8.852		
18,900.0	9,734.0	17,741.9	8,814.0	135.0	132.2	64.48	8,815.5	7.4	2,142.3	1,897.6	244.63	8.757		
19,000.0	9,734.0	17,841.9	8,814.0	136.4	133.6	64.48	8,915.5	6.7	2,142.3	1,895.0	247.24	8.665		
19,100.0	9,734.0	17,941.9	8,814.0	137.7	135.0	64.48	9,015.5	6.1	2,142.3	1,892.5	249.86	8.574		
19,200.0	9,734.0	18,041.9	8,814.0	139.1	136.4	64.48	9,115.5	5.4	2,142.3	1,889.9	252.48	8.485		
19,300.0	9,734.0	18,141.9	8,814.0	140.5	137.8	64.48	9,215.5	4.7	2,142.4	1,887.3	255.11	8.398		
19,400.0	9,734.0	18,241.9	8,814.0	141.9	139.2	64.48	9,315.5	4.1	2,142.4	1,884.7	257.73	8.313		
19,500.0	9,734.0	18,341.9	8,814.0	143.3	140.6	64.48	9,415.5	3.4	2,142.4	1,882.1	260.36	8.229		
19,600.0	9,734.0	18,441.9	8,814.0	144.7	142.0	64.48	9,515.5	2.7	2,142.5	1,879.5	262.98	8.147		
19,700.0	9,734.0	18,541.9	8,814.0	146.1	143.4	64.48	9,615.4	2.1	2,142.5	1,876.9	265.61	8.066		
19,800.0	9,734.0	18,641.9	8,814.0	147.4	144.9	64.48	9,715.4	1.4	2,142.5	1,874.3	268.24	7.987		
19,900.0	9,734.0	18,741.9	8,814.0	148.8	146.3	64.48	9,815.4	0.8	2,142.5	1,871.7	270.87	7.910		
20,000.0	9,734.0	18,841.9	8,814.0	150.2	147.7	64.48	9,915.4	0.1	2,142.6	1,869.1	273.50	7.834		
20,100.0	9,734.0	18,941.9	8,814.0	151.6	149.1	64.48	10,015.4	-0.6	2,142.6	1,866.5	276.14	7.759		
20,200.0	9,734.0	19,041.9	8,814.0	152.9	150.5	64.48	10,115.4	-1.2	2,142.6	1,864.1	278.55	7.692		
20,207.7	9,734.0	19,049.6	8,814.0	153.0	150.6	64.48	10,123.1	-1.3	2,142.6	1,863.9	278.74	7.687 SF		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 306H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	3.3	3.3	0.0	0.0	26.29	160.3	79.2	178.8				
100.0	100.0	103.3	103.3	0.1	0.1	26.29	160.3	79.2	178.8	178.5	0.28	649.370	
200.0	200.0	203.3	203.3	0.5	0.5	26.29	160.3	79.2	178.8	177.8	0.99	180.172	
300.0	300.0	303.3	303.3	0.8	0.9	26.29	160.3	79.2	178.8	177.1	1.71	104.597	
400.0	400.0	403.3	403.3	1.2	1.2	26.29	160.3	79.2	178.8	176.3	2.43	73.687	
500.0	500.0	503.3	503.3	1.6	1.6	26.29	160.3	79.2	178.8	175.6	3.14	56.879	
600.0	600.0	603.3	603.3	1.9	1.9	26.29	160.3	79.2	178.8	174.9	3.86	46.315	
700.0	700.0	703.3	703.3	2.3	2.3	26.29	160.3	79.2	178.8	174.2	4.58	39.060	
800.0	800.0	803.3	803.3	2.6	2.7	26.29	160.3	79.2	178.8	173.5	5.29	33.770	
900.0	900.0	903.3	903.3	3.0	3.0	26.29	160.3	79.2	178.8	172.8	6.01	29.742	
1,000.0	1,000.0	1,003.3	1,003.3	3.4	3.4	26.29	160.3	79.2	178.8	172.0	6.73	26.573	
1,100.0	1,100.0	1,103.3	1,103.3	3.7	3.7	26.29	160.3	79.2	178.8	171.3	7.44	24.014	
1,200.0	1,200.0	1,203.3	1,203.3	4.1	4.1	26.29	160.3	79.2	178.8	170.6	8.16	21.904	
1,300.0	1,300.0	1,303.3	1,303.3	4.4	4.4	26.29	160.3	79.2	178.8	169.9	8.88	20.136	
1,400.0	1,400.0	1,403.3	1,403.3	4.8	4.8	26.29	160.3	79.2	178.8	169.2	9.60	18.631	
1,500.0	1,500.0	1,503.3	1,503.3	5.2	5.2	26.29	160.3	79.2	178.8	168.5	10.31	17.336	
1,600.0	1,600.0	1,603.3	1,603.3	5.5	5.5	26.29	160.3	79.2	178.8	167.7	11.03	16.209	
1,700.0	1,700.0	1,703.3	1,703.3	5.9	5.9	26.29	160.3	79.2	178.8	167.0	11.75	15.220	
1,800.0	1,800.0	1,803.3	1,803.3	6.2	6.2	26.29	160.3	79.2	178.8	166.3	12.46	14.344	
1,900.0	1,900.0	1,903.3	1,903.3	6.6	6.6	26.29	160.3	79.2	178.8	165.6	13.18	13.564	
2,000.0	2,000.0	2,003.3	2,003.3	6.9	7.0	26.29	160.3	79.2	178.8	164.9	13.90	12.865	
2,000.0	2,000.0	2,003.3	2,003.3	6.9	7.0	26.29	160.3	79.2	178.8	164.9	13.90	12.864	CC, ES
2,100.0	2,100.0	2,103.2	2,103.2	7.3	7.3	126.95	159.5	80.8	179.8	165.2	14.59	12.325	
2,200.0	2,199.8	2,202.5	2,202.3	7.6	7.6	129.84	157.1	85.6	183.3	168.0	15.26	12.009	
2,300.0	2,299.5	2,300.0	2,299.5	8.0	8.0	134.28	153.3	93.2	190.1	174.1	15.93	11.929	SF
2,400.0	2,398.7	2,396.4	2,395.2	8.3	8.3	139.84	148.1	103.7	201.4	184.8	16.60	12.132	
2,500.0	2,497.5	2,490.0	2,487.6	8.7	8.6	145.85	141.6	116.6	218.6	201.3	17.26	12.667	
2,600.0	2,595.6	2,582.6	2,578.7	9.0	9.0	151.83	134.2	131.5	242.2	224.3	17.90	13.533	
2,700.0	2,693.1	2,675.1	2,669.6	9.4	9.3	157.07	126.6	146.7	271.5	253.0	18.54	14.641	
2,800.0	2,789.6	2,766.2	2,759.2	9.8	9.6	161.47	119.1	161.6	305.9	286.7	19.18	15.945	
2,900.0	2,885.6	2,856.4	2,847.8	10.2	10.0	165.27	111.7	176.4	343.9	324.0	19.82	17.348	
3,000.0	2,981.6	2,946.6	2,936.5	10.6	10.3	168.37	104.4	191.2	383.0	362.5	20.46	18.720	
3,100.0	3,077.5	3,036.7	3,025.1	11.1	10.7	170.91	97.0	206.0	422.9	401.8	21.10	20.041	
3,200.0	3,173.5	3,126.9	3,113.7	11.5	11.0	173.02	89.6	220.8	463.4	441.7	21.75	21.306	
3,300.0	3,269.4	3,217.0	3,202.4	12.0	11.4	174.80	82.2	235.6	504.4	482.0	22.41	22.512	
3,400.0	3,365.4	3,307.2	3,291.0	12.4	11.7	176.32	74.9	250.4	545.8	522.7	23.07	23.659	
3,500.0	3,461.3	3,397.4	3,379.6	12.9	12.1	177.62	67.5	265.1	587.4	563.6	23.73	24.750	
3,600.0	3,557.3	3,487.5	3,468.3	13.4	12.5	178.76	60.1	279.9	629.2	604.8	24.40	25.785	
3,700.0	3,653.2	3,577.7	3,556.9	13.8	12.8	179.75	52.7	294.7	671.2	646.1	25.08	26.768	
3,800.0	3,749.2	3,667.8	3,645.5	14.3	13.2	-179.37	45.3	309.5	713.4	687.6	25.75	27.701	
3,900.0	3,845.1	3,758.0	3,734.2	14.8	13.6	-178.59	38.0	324.3	755.7	729.2	26.43	28.587	
4,000.0	3,941.1	3,848.2	3,822.8	15.3	13.9	-177.89	30.6	339.1	798.0	770.9	27.12	29.428	
4,100.0	4,037.0	3,938.3	3,911.4	15.8	14.3	-177.26	23.2	353.8	840.5	812.7	27.81	30.228	
4,200.0	4,133.0	4,028.5	4,000.1	16.3	14.7	-176.69	15.8	368.6	883.1	854.6	28.50	30.989	
4,300.0	4,228.9	4,118.6	4,088.7	16.8	15.0	-176.18	8.4	383.4	925.7	896.5	29.19	31.714	
4,400.0	4,324.9	4,208.8	4,177.3	17.3	15.4	-175.70	1.1	398.2	968.4	938.5	29.88	32.404	
4,500.0	4,420.8	4,299.0	4,266.0	17.8	15.8	-175.27	-6.3	413.0	1,011.1	980.5	30.58	33.061	
4,600.0	4,516.8	4,389.1	4,354.6	18.3	16.2	-174.87	-13.7	427.8	1,053.9	1,022.6	31.28	33.689	
4,700.0	4,612.7	4,479.3	4,443.2	18.8	16.5	-174.51	-21.1	442.5	1,096.7	1,064.7	31.98	34.288	
4,800.0	4,708.7	4,569.4	4,531.9	19.3	16.9	-174.17	-28.4	457.3	1,139.5	1,106.8	32.69	34.860	
4,900.0	4,804.7	4,659.6	4,620.5	19.9	17.3	-173.85	-35.8	472.1	1,182.4	1,149.0	33.39	35.407	
5,000.0	4,900.6	4,749.7	4,709.1	20.4	17.7	-173.56	-43.2	486.9	1,225.3	1,191.2	34.10	35.930	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 306H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	4,996.6	4,839.9	4,797.8	20.9	18.1	-173.29	-50.6	501.7	1,268.2	1,233.4	34.81	36.431	
5,200.0	5,092.5	4,930.1	4,886.4	21.4	18.5	-173.03	-58.0	516.5	1,311.2	1,275.6	35.52	36.911	
5,300.0	5,188.5	5,020.2	4,975.0	21.9	18.8	-172.80	-65.3	531.3	1,354.1	1,317.9	36.23	37.371	
5,400.0	5,284.4	5,110.4	5,063.7	22.4	19.2	-172.57	-72.7	546.0	1,397.1	1,360.2	36.95	37.813	
5,500.0	5,380.4	5,200.5	5,152.3	23.0	19.6	-172.36	-80.1	560.8	1,440.1	1,402.4	37.66	38.237	
5,600.0	5,476.3	5,290.7	5,240.9	23.5	20.0	-172.16	-87.5	575.6	1,483.1	1,444.7	38.38	38.644	
5,700.0	5,572.3	5,380.9	5,329.6	24.0	20.4	-171.97	-94.9	590.4	1,526.1	1,487.1	39.10	39.036	
5,800.0	5,668.2	5,471.0	5,418.2	24.5	20.8	-171.80	-102.2	605.2	1,569.2	1,529.4	39.81	39.412	
5,900.0	5,764.2	5,561.2	5,506.8	25.1	21.1	-171.63	-109.6	620.0	1,612.2	1,571.7	40.53	39.775	
6,000.0	5,860.1	5,651.3	5,595.5	25.6	21.5	-171.47	-117.0	634.7	1,655.3	1,614.0	41.26	40.124	
6,100.0	5,956.1	5,741.5	5,684.1	26.1	21.9	-171.32	-124.4	649.5	1,698.4	1,656.4	41.98	40.460	
6,200.0	6,052.0	5,831.7	5,772.7	26.6	22.3	-171.18	-131.7	664.3	1,741.5	1,698.8	42.70	40.784	
6,300.0	6,148.0	5,921.8	5,861.4	27.2	22.7	-171.04	-139.1	679.1	1,784.6	1,741.1	43.42	41.097	
6,400.0	6,243.9	6,012.0	5,950.0	27.7	23.1	-170.91	-146.5	693.9	1,827.6	1,783.5	44.15	41.399	
6,500.0	6,339.9	6,102.1	6,038.6	28.2	23.5	-170.78	-153.9	708.7	1,870.8	1,825.9	44.87	41.690	
6,600.0	6,435.8	6,192.3	6,127.3	28.8	23.9	-170.67	-161.3	723.4	1,913.9	1,868.3	45.60	41.971	
6,700.0	6,531.8	6,282.5	6,215.9	29.3	24.3	-170.55	-168.6	738.2	1,957.0	1,910.7	46.33	42.243	
6,800.0	6,627.7	6,372.6	6,304.5	29.8	24.6	-170.44	-176.0	753.0	2,000.1	1,953.1	47.05	42.507	
6,900.0	6,723.7	6,462.8	6,393.2	30.4	25.0	-170.34	-183.4	767.8	2,043.2	1,995.5	47.78	42.761	
7,000.0	6,819.6	6,552.9	6,481.8	30.9	25.4	-170.24	-190.8	782.6	2,086.4	2,037.9	48.51	43.007	
7,100.0	6,915.6	6,643.1	6,570.4	31.4	25.8	-170.14	-198.1	797.4	2,129.5	2,080.3	49.24	43.246	
7,200.0	7,011.5	6,733.3	6,659.1	32.0	26.2	-170.05	-205.5	812.1	2,172.7	2,122.7	49.97	43.477	
7,300.0	7,107.5	6,823.4	6,747.7	32.5	26.6	-169.96	-212.9	826.9	2,215.8	2,165.1	50.70	43.700	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 514H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.5	0.5	0.0	0.0	89.91	0.1	40.1	40.1				
100.0	100.0	100.5	100.5	0.1	0.1	89.91	0.1	40.1	40.1	39.8	0.27	151.167	
200.0	200.0	200.5	200.5	0.5	0.5	89.91	0.1	40.1	40.1	39.1	0.98	40.826	
300.0	300.0	300.5	300.5	0.8	0.9	89.91	0.1	40.1	40.1	38.4	1.70	23.600	
400.0	400.0	400.5	400.5	1.2	1.2	89.91	0.1	40.1	40.1	37.7	2.42	16.597	
500.0	500.0	500.5	500.5	1.6	1.6	89.91	0.1	40.1	40.1	37.0	3.13	12.799	
600.0	600.0	600.5	600.5	1.9	1.9	89.91	0.1	40.1	40.1	36.3	3.85	10.416	
700.0	700.0	700.5	700.5	2.3	2.3	89.91	0.1	40.1	40.1	35.5	4.57	8.781	
800.0	800.0	800.5	800.5	2.6	2.6	89.91	0.1	40.1	40.1	34.8	5.28	7.589	
900.0	900.0	900.5	900.5	3.0	3.0	89.91	0.1	40.1	40.1	34.1	6.00	6.682	
1,000.0	1,000.0	1,000.5	1,000.5	3.4	3.4	89.91	0.1	40.1	40.1	33.4	6.72	5.969	
1,100.0	1,100.0	1,100.5	1,100.5	3.7	3.7	89.91	0.1	40.1	40.1	32.7	7.43	5.394	
1,200.0	1,200.0	1,200.5	1,200.5	4.1	4.1	89.91	0.1	40.1	40.1	31.9	8.15	4.919	
1,300.0	1,300.0	1,300.5	1,300.5	4.4	4.4	89.91	0.1	40.1	40.1	31.2	8.87	4.522	
1,400.0	1,400.0	1,400.5	1,400.5	4.8	4.8	89.91	0.1	40.1	40.1	30.5	9.59	4.183	
1,500.0	1,500.0	1,500.5	1,500.5	5.2	5.2	89.91	0.1	40.1	40.1	29.8	10.30	3.892	
1,600.0	1,600.0	1,600.5	1,600.5	5.5	5.5	89.91	0.1	40.1	40.1	29.1	11.02	3.639	
1,700.0	1,700.0	1,700.5	1,700.5	5.9	5.9	89.91	0.1	40.1	40.1	28.4	11.74	3.417	
1,800.0	1,800.0	1,800.5	1,800.5	6.2	6.2	89.91	0.1	40.1	40.1	27.6	12.45	3.220	
1,900.0	1,900.0	1,900.5	1,900.5	6.6	6.6	89.91	0.1	40.1	40.1	26.9	13.17	3.045	
2,000.0	2,000.0	2,000.5	2,000.5	6.9	6.9	89.91	0.1	40.1	40.1	26.2	13.89	2.888	
2,018.4	2,018.4	2,019.1	2,019.1	7.0	7.0	-170.43	0.0	40.0	40.1	26.1	14.02	2.861 CC	
2,100.0	2,100.0	2,101.8	2,101.8	7.3	7.3	-170.04	-0.5	38.4	40.1	25.6	14.58	2.753	
2,200.0	2,199.8	2,203.2	2,203.0	7.6	7.6	-168.84	-2.3	33.3	40.3	25.0	15.24	2.643	
2,300.0	2,299.5	2,304.5	2,303.9	8.0	8.0	-166.85	-5.1	24.8	40.5	24.7	15.89	2.552	
2,400.0	2,398.7	2,405.8	2,404.5	8.3	8.3	-164.14	-9.2	12.9	41.0	24.5	16.53	2.481 ES, SF	
2,500.0	2,497.5	2,505.8	2,503.4	8.7	8.7	-161.83	-13.7	-0.5	43.2	26.0	17.22	2.510	
2,600.0	2,595.6	2,605.6	2,602.3	9.0	9.0	-161.15	-18.3	-14.0	48.8	30.9	17.91	2.723	
2,700.0	2,693.1	2,705.2	2,700.8	9.4	9.4	-161.73	-22.9	-27.4	57.6	39.0	18.61	3.097	
2,800.0	2,789.6	2,804.5	2,799.1	9.8	9.8	-163.01	-27.4	-40.7	69.8	50.5	19.30	3.616	
2,900.0	2,885.6	2,903.4	2,897.0	10.2	10.1	-164.38	-31.9	-54.1	84.2	64.2	20.00	4.210	
3,000.0	2,981.6	3,002.4	2,994.9	10.6	10.5	-165.37	-36.5	-67.4	98.7	78.0	20.71	4.767	
3,100.0	3,077.5	3,101.3	3,092.9	11.1	10.9	-166.11	-41.0	-80.7	113.2	91.8	21.42	5.287	
3,200.0	3,173.5	3,200.2	3,190.8	11.5	11.2	-166.68	-45.5	-94.0	127.8	105.6	22.14	5.772	
3,300.0	3,269.4	3,299.1	3,288.7	12.0	11.6	-167.13	-50.0	-107.3	142.3	119.5	22.86	6.227	
3,400.0	3,365.4	3,398.1	3,386.6	12.4	12.0	-167.50	-54.6	-120.7	156.9	133.3	23.58	6.652	
3,500.0	3,461.3	3,497.0	3,484.6	12.9	12.4	-167.80	-59.1	-134.0	171.4	147.1	24.31	7.052	
3,600.0	3,557.3	3,595.9	3,582.5	13.4	12.8	-168.06	-63.6	-147.3	186.0	160.9	25.04	7.427	
3,700.0	3,653.2	3,694.9	3,680.4	13.8	13.1	-168.28	-68.1	-160.6	200.6	174.8	25.78	7.780	
3,800.0	3,749.2	3,793.8	3,778.3	14.3	13.5	-168.47	-72.7	-173.9	215.1	188.6	26.52	8.112	
3,900.0	3,845.1	3,892.7	3,876.3	14.8	13.9	-168.64	-77.2	-187.3	229.7	202.4	27.26	8.426	
4,000.0	3,941.1	3,991.7	3,974.2	15.3	14.3	-168.79	-81.7	-200.6	244.3	216.3	28.00	8.723	
4,100.0	4,037.0	4,090.6	4,072.1	15.8	14.7	-168.92	-86.2	-213.9	258.8	230.1	28.75	9.003	
4,200.0	4,133.0	4,189.5	4,170.0	16.3	15.1	-169.03	-90.8	-227.2	273.4	243.9	29.50	9.269	
4,300.0	4,228.9	4,288.5	4,268.0	16.8	15.5	-169.14	-95.3	-240.5	288.0	257.7	30.25	9.521	
4,400.0	4,324.9	4,387.4	4,365.9	17.3	15.8	-169.23	-99.8	-253.9	302.6	271.6	31.00	9.761	
4,500.0	4,420.8	4,486.3	4,463.8	17.8	16.2	-169.32	-104.4	-267.2	317.1	285.4	31.75	9.988	
4,600.0	4,516.8	4,585.2	4,561.7	18.3	16.6	-169.40	-108.9	-280.5	331.7	299.2	32.51	10.204	
4,700.0	4,612.7	4,684.2	4,659.7	18.8	17.0	-169.47	-113.4	-293.8	346.3	313.0	33.26	10.411	
4,800.0	4,708.7	4,783.1	4,757.6	19.3	17.4	-169.53	-117.9	-307.1	360.9	326.8	34.02	10.607	
4,900.0	4,804.7	4,882.0	4,855.5	19.9	17.8	-169.59	-122.5	-320.5	375.4	340.7	34.78	10.795	
5,000.0	4,900.6	4,981.0	4,953.4	20.4	18.2	-169.65	-127.0	-333.8	390.0	354.5	35.54	10.974	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 514H - OH - Plan 0.1												Offset Site Error: 0.0 usft		
Survey Program: 0-B001Mb_MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre			Rule Assigned:				Offset Well Error: 0.0 usft	
Measured Depth (usft)	Reference Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,100.0	4,996.6	5,079.9	5,051.4	20.9	18.6	-169.70	-131.5	-347.1	404.6	368.3	36.30	11.146		
5,200.0	5,092.5	5,178.8	5,149.3	21.4	19.0	-169.75	-136.0	-360.4	419.2	382.1	37.06	11.310		
5,300.0	5,188.5	5,277.8	5,247.2	21.9	19.4	-169.80	-140.6	-373.7	433.7	395.9	37.82	11.467		
5,400.0	5,284.4	5,376.7	5,345.2	22.4	19.8	-169.84	-145.1	-387.0	448.3	409.7	38.59	11.618		
5,500.0	5,380.4	5,475.6	5,443.1	23.0	20.2	-169.88	-149.6	-400.4	462.9	423.6	39.35	11.763		
5,600.0	5,476.3	5,574.6	5,541.0	23.5	20.6	-169.92	-154.1	-413.7	477.5	437.4	40.12	11.901		
5,700.0	5,572.3	5,673.5	5,638.9	24.0	21.0	-169.95	-158.7	-427.0	492.1	451.2	40.89	12.035		
5,800.0	5,668.2	5,772.4	5,736.9	24.5	21.4	-169.98	-163.2	-440.3	506.6	465.0	41.65	12.163		
5,900.0	5,764.2	5,871.4	5,834.8	25.1	21.8	-170.01	-167.7	-453.6	521.2	478.8	42.42	12.287		
6,000.0	5,860.1	5,970.3	5,932.7	25.6	22.2	-170.04	-172.2	-467.0	535.8	492.6	43.19	12.406		
6,100.0	5,956.1	6,069.2	6,030.6	26.1	22.6	-170.07	-176.8	-480.3	550.4	506.4	43.96	12.520		
6,200.0	6,052.0	6,168.1	6,128.6	26.6	23.0	-170.10	-181.3	-493.6	565.0	520.2	44.73	12.631		
6,300.0	6,148.0	6,267.1	6,226.5	27.2	23.4	-170.12	-185.8	-506.9	579.5	534.0	45.50	12.737		
6,400.0	6,243.9	6,366.0	6,324.4	27.7	23.8	-170.15	-190.3	-520.2	594.1	547.9	46.27	12.840		
6,500.0	6,339.9	6,464.9	6,422.3	28.2	24.2	-170.17	-194.9	-533.6	608.7	561.7	47.04	12.940		
6,600.0	6,435.8	6,563.9	6,520.3	28.8	24.6	-170.19	-199.4	-546.9	623.3	575.5	47.81	13.036		
6,700.0	6,531.8	6,662.8	6,618.2	29.3	25.0	-170.21	-203.9	-560.2	637.9	589.3	48.59	13.129		
6,800.0	6,627.7	6,761.7	6,716.1	29.8	25.4	-170.23	-208.4	-573.5	652.4	603.1	49.36	13.219		
6,900.0	6,723.7	6,860.7	6,814.0	30.4	25.8	-170.25	-213.0	-586.8	667.0	616.9	50.13	13.306		
7,000.0	6,819.6	6,959.6	6,912.0	30.9	26.2	-170.27	-217.5	-600.2	681.6	630.7	50.91	13.390		
7,100.0	6,915.6	7,058.5	7,009.9	31.4	26.6	-170.29	-222.0	-613.5	696.2	644.5	51.68	13.471		
7,200.0	7,011.5	7,157.5	7,107.8	32.0	27.0	-170.30	-226.5	-626.8	710.8	658.3	52.45	13.550		
7,300.0	7,107.5	7,256.4	7,205.7	32.5	27.4	-170.32	-231.1	-640.1	725.4	672.1	53.23	13.627		
7,400.0	7,203.5	7,355.3	7,303.7	33.0	27.8	-170.33	-235.6	-653.4	739.9	685.9	54.00	13.702		
7,500.0	7,299.4	7,454.2	7,401.6	33.6	28.2	-170.35	-240.1	-666.8	754.5	699.7	54.78	13.774		
7,600.0	7,395.4	7,553.2	7,499.5	34.1	28.6	-170.36	-244.7	-680.1	769.1	713.5	55.55	13.844		
7,700.0	7,491.3	7,652.1	7,597.4	34.6	29.0	-170.38	-249.2	-693.4	783.7	727.4	56.33	13.912		
7,800.0	7,587.3	7,751.0	7,695.4	35.2	29.4	-170.39	-253.7	-706.7	798.3	741.2	57.11	13.978		
7,900.0	7,683.2	7,850.0	7,793.3	35.7	29.8	-170.40	-258.2	-720.0	812.8	755.0	57.88	14.043		
8,000.0	7,779.2	7,948.9	7,891.2	36.2	30.2	-170.42	-262.8	-733.4	827.4	768.8	58.66	14.105		
8,100.0	7,875.1	8,047.8	7,989.1	36.8	30.6	-170.43	-267.3	-746.7	842.0	782.6	59.44	14.166		
8,200.0	7,971.1	8,146.8	8,087.1	37.3	31.0	-170.44	-271.8	-760.0	856.6	796.4	60.21	14.226		
8,300.0	8,067.0	8,245.7	8,185.0	37.9	31.4	-170.45	-276.3	-773.3	871.2	810.2	60.99	14.283		
8,400.0	8,163.0	8,344.6	8,282.9	38.4	31.8	-170.46	-280.9	-786.6	885.8	824.0	61.77	14.339		
8,500.0	8,258.9	8,443.6	8,380.9	38.9	32.2	-170.47	-285.4	-800.0	900.3	837.8	62.55	14.394		
8,600.0	8,354.9	8,542.5	8,478.8	39.5	32.6	-170.48	-289.9	-813.3	914.9	851.6	63.33	14.447		
8,700.0	8,451.4	8,641.7	8,577.0	40.0	33.0	-170.52	-294.4	-826.6	927.6	863.5	64.10	14.470		
8,800.0	8,548.7	8,721.4	8,656.0	40.5	33.3	-170.53	-297.9	-836.7	937.7	873.0	64.76	14.480		
8,900.0	8,646.8	8,800.0	8,734.1	40.9	33.6	-170.55	-300.6	-844.6	946.9	881.5	65.37	14.485		
9,000.0	8,745.5	8,873.1	8,807.0	41.3	33.9	-170.58	-302.4	-850.2	955.2	889.3	65.89	14.495		
9,100.0	8,844.7	8,948.8	8,882.6	41.7	34.2	-170.62	-303.8	-854.0	962.5	896.1	66.39	14.497		
9,200.0	8,944.2	9,024.4	8,958.2	42.1	34.4	-170.67	-304.4	-856.0	968.9	902.0	66.84	14.496		
9,300.0	9,044.1	9,110.8	9,044.6	42.4	34.7	-170.72	-304.5	-856.3	974.0	906.7	67.36	14.461		
9,400.0	9,144.0	9,210.8	9,144.5	42.7	35.0	-170.75	-304.5	-856.3	976.2	908.2	68.02	14.352		
9,500.0	9,244.0	9,310.8	9,244.5	42.9	35.3	89.61	-304.5	-856.3	976.2	907.5	68.66	14.218		
9,600.0	9,343.6	9,410.8	9,344.0	43.2	35.6	93.06	-296.5	-856.4	976.6	907.4	69.28	14.097		
9,700.0	9,439.3	9,510.7	9,439.6	43.4	35.9	92.86	-268.0	-856.6	978.2	908.4	69.83	14.008		
9,800.0	9,527.0	9,610.6	9,527.2	43.6	36.1	92.54	-220.4	-856.9	980.8	910.5	70.30	13.951		
9,900.0	9,602.9	9,710.4	9,603.0	43.8	36.3	92.12	-155.7	-857.3	984.3	913.6	70.70	13.922		
10,000.0	9,663.6	9,810.2	9,663.6	43.9	36.3	91.59	-76.6	-857.8	988.6	917.6	71.05	13.914		
10,100.0	9,706.6	9,909.9	9,706.5	43.9	36.4	91.01	13.2	-858.4	993.5	922.2	71.36	13.922		
10,200.0	9,729.9	10,009.7	9,729.8	43.9	36.3	90.38	110.0	-859.1	998.8	927.2	71.66	13.939		

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Anticollision Report

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Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 514H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.0	9,734.0	10,109.5	9,734.0	44.0	36.3	89.97	209.6	-859.7	1,004.0	932.0	71.95	13.954	
10,400.0	9,734.0	10,209.4	9,734.0	44.0	36.4	89.97	309.5	-860.4	1,006.4	934.1	72.33	13.913	
10,500.0	9,734.0	10,309.4	9,734.0	44.1	36.5	89.97	409.5	-861.0	1,006.5	933.6	72.83	13.820	
10,600.0	9,734.0	10,409.4	9,734.0	44.2	36.7	89.97	509.5	-861.7	1,006.5	933.1	73.44	13.706	
10,700.0	9,734.0	10,509.4	9,734.0	44.3	37.0	89.97	609.5	-862.4	1,006.5	932.4	74.15	13.574	
10,800.0	9,734.0	10,609.4	9,734.0	44.5	37.4	89.97	709.5	-863.0	1,006.6	931.6	74.97	13.425	
10,900.0	9,734.0	10,709.4	9,734.0	44.8	37.9	89.97	809.5	-863.7	1,006.6	930.7	75.90	13.263	
11,000.0	9,734.0	10,809.4	9,734.0	45.1	38.4	89.97	909.5	-864.3	1,006.6	929.7	76.92	13.087	
11,100.0	9,734.0	10,909.4	9,734.0	45.4	39.0	89.97	1,009.5	-865.0	1,006.7	928.6	78.03	12.900	
11,200.0	9,734.0	11,009.4	9,734.0	45.8	39.6	89.97	1,109.5	-865.7	1,006.7	927.5	79.24	12.705	
11,300.0	9,734.0	11,109.4	9,734.0	46.3	40.2	89.97	1,209.5	-866.3	1,006.7	926.2	80.53	12.501	
11,400.0	9,734.0	11,209.4	9,734.0	46.8	40.9	89.97	1,309.5	-867.0	1,006.8	924.9	81.90	12.292	
11,500.0	9,734.0	11,309.4	9,734.0	47.3	41.7	89.97	1,409.5	-867.7	1,006.8	923.4	83.35	12.079	
11,600.0	9,734.0	11,409.4	9,734.0	47.9	42.5	89.97	1,509.5	-868.3	1,006.8	921.9	84.88	11.862	
11,700.0	9,734.0	11,509.4	9,734.0	48.5	43.3	89.97	1,609.5	-869.0	1,006.9	920.4	86.47	11.643	
11,800.0	9,734.0	11,609.4	9,734.0	49.2	44.1	89.97	1,709.5	-869.6	1,006.9	918.8	88.14	11.424	
11,900.0	9,734.0	11,709.4	9,734.0	49.9	45.0	89.97	1,809.5	-870.3	1,006.9	917.1	89.86	11.206	
12,000.0	9,734.0	11,809.4	9,734.0	50.7	45.9	89.97	1,909.5	-871.0	1,007.0	915.3	91.64	10.988	
12,100.0	9,734.0	11,909.4	9,734.0	51.5	46.8	89.97	2,009.5	-871.6	1,007.0	913.5	93.48	10.772	
12,200.0	9,734.0	12,009.4	9,734.0	52.3	47.8	89.97	2,109.5	-872.3	1,007.0	911.6	95.37	10.559	
12,300.0	9,734.0	12,109.4	9,734.0	53.2	48.7	89.97	2,209.5	-872.9	1,007.1	909.7	97.31	10.349	
12,400.0	9,734.0	12,209.4	9,734.0	54.0	49.7	89.97	2,309.5	-873.6	1,007.1	907.8	99.30	10.142	
12,500.0	9,734.0	12,309.4	9,734.0	54.9	50.8	89.97	2,409.5	-874.3	1,007.1	905.8	101.33	9.939	
12,600.0	9,734.0	12,409.4	9,734.0	55.9	51.8	89.97	2,509.5	-874.9	1,007.1	903.7	103.40	9.740	
12,700.0	9,734.0	12,509.4	9,734.0	56.8	52.9	89.97	2,609.5	-875.6	1,007.2	901.7	105.51	9.546	
12,800.0	9,734.0	12,609.4	9,734.0	57.8	53.9	89.97	2,709.5	-876.3	1,007.2	899.6	107.66	9.356	
12,900.0	9,734.0	12,709.4	9,734.0	58.8	55.0	89.97	2,809.5	-876.9	1,007.2	897.4	109.84	9.170	
13,000.0	9,734.0	12,809.4	9,734.0	59.9	56.2	89.97	2,909.5	-877.6	1,007.3	895.2	112.05	8.989	
13,100.0	9,734.0	12,909.4	9,734.0	60.9	57.3	89.97	3,009.5	-878.2	1,007.3	893.0	114.30	8.813	
13,200.0	9,734.0	13,009.4	9,734.0	62.0	58.4	89.97	3,109.5	-878.9	1,007.3	890.8	116.57	8.642	
13,300.0	9,734.0	13,109.4	9,734.0	63.0	59.6	89.97	3,209.5	-879.6	1,007.4	888.5	118.87	8.475	
13,400.0	9,734.0	13,209.4	9,734.0	64.1	60.7	89.97	3,309.5	-880.2	1,007.4	886.2	121.19	8.312	
13,500.0	9,734.0	13,309.4	9,734.0	65.2	61.9	89.97	3,409.5	-880.9	1,007.4	883.9	123.54	8.155	
13,600.0	9,734.0	13,409.4	9,734.0	66.3	63.1	89.97	3,509.5	-881.5	1,007.5	881.6	125.92	8.001	
13,700.0	9,734.0	13,509.4	9,734.0	67.5	64.3	89.97	3,609.5	-882.2	1,007.5	879.2	128.31	7.852	
13,800.0	9,734.0	13,609.4	9,734.0	68.6	65.5	89.97	3,709.5	-882.9	1,007.5	876.8	130.72	7.707	
13,900.0	9,734.0	13,709.4	9,734.0	69.8	66.7	89.97	3,809.5	-883.5	1,007.6	874.4	133.16	7.567	
14,000.0	9,734.0	13,809.4	9,734.0	70.9	68.0	89.97	3,909.5	-884.2	1,007.6	872.0	135.61	7.430	
14,100.0	9,734.0	13,909.4	9,734.0	72.1	69.2	89.97	4,009.5	-884.9	1,007.6	869.6	138.07	7.298	
14,200.0	9,734.0	14,009.4	9,734.0	73.3	70.4	89.97	4,109.5	-885.5	1,007.7	867.1	140.56	7.169	
14,300.0	9,734.0	14,109.4	9,734.0	74.5	71.7	89.97	4,209.5	-886.2	1,007.7	864.6	143.06	7.044	
14,400.0	9,734.0	14,209.4	9,734.0	75.7	72.9	89.97	4,309.5	-886.8	1,007.7	862.2	145.57	6.922	
14,500.0	9,734.0	14,309.4	9,734.0	76.9	74.2	89.97	4,409.5	-887.5	1,007.8	859.7	148.10	6.805	
14,600.0	9,734.0	14,409.4	9,734.0	78.1	75.5	89.97	4,509.4	-888.2	1,007.8	857.2	150.64	6.690	
14,700.0	9,734.0	14,509.4	9,734.0	79.4	76.8	89.97	4,609.4	-888.8	1,007.8	854.6	153.20	6.579	
14,800.0	9,734.0	14,609.4	9,734.0	80.6	78.0	89.97	4,709.4	-889.5	1,007.9	852.1	155.76	6.470	
14,900.0	9,734.0	14,709.4	9,734.0	81.9	79.3	89.97	4,809.4	-890.1	1,007.9	849.5	158.34	6.365	
15,000.0	9,734.0	14,809.4	9,734.0	83.1	80.6	89.97	4,909.4	-890.8	1,007.9	847.0	160.93	6.263	
15,100.0	9,734.0	14,909.4	9,734.0	84.4	81.9	89.97	5,009.4	-891.5	1,008.0	844.4	163.53	6.164	
15,200.0	9,734.0	15,009.4	9,734.0	85.6	83.2	89.97	5,109.4	-892.1	1,008.0	841.9	166.14	6.067	
15,300.0	9,734.0	15,109.4	9,734.0	86.9	84.5	89.97	5,209.4	-892.8	1,008.0	839.3	168.75	5.973	
15,400.0	9,734.0	15,209.4	9,734.0	88.2	85.9	89.97	5,309.4	-893.4	1,008.1	836.7	171.38	5.882	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 514H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,500.0	9,734.0	15,309.4	9,734.0	89.4	87.2	89.97	5,409.4	-894.1	1,008.1	834.1	174.01	5.793	
15,600.0	9,734.0	15,409.4	9,734.0	90.7	88.5	89.97	5,509.4	-894.8	1,008.1	831.5	176.66	5.707	
15,700.0	9,734.0	15,509.4	9,734.0	92.0	89.8	89.97	5,609.4	-895.4	1,008.1	828.8	179.31	5.622	
15,800.0	9,734.0	15,609.4	9,734.0	93.3	91.1	89.97	5,709.4	-896.1	1,008.2	826.2	181.97	5.540	
15,900.0	9,734.0	15,709.4	9,734.0	94.6	92.5	89.97	5,809.4	-896.8	1,008.2	823.6	184.63	5.461	
16,000.0	9,734.0	15,809.4	9,734.0	95.9	93.8	89.97	5,909.4	-897.4	1,008.2	820.9	187.30	5.383	
16,100.0	9,734.0	15,909.4	9,734.0	97.2	95.2	89.97	6,009.4	-898.1	1,008.3	818.3	189.98	5.307	
16,200.0	9,734.0	16,009.4	9,734.0	98.5	96.5	89.97	6,109.4	-898.7	1,008.3	815.6	192.67	5.233	
16,300.0	9,734.0	16,109.4	9,734.0	99.9	97.8	89.97	6,209.4	-899.4	1,008.3	813.0	195.36	5.161	
16,400.0	9,734.0	16,209.4	9,734.0	101.2	99.2	89.97	6,309.4	-900.1	1,008.4	810.3	198.06	5.091	
16,500.0	9,734.0	16,309.4	9,734.0	102.5	100.5	89.97	6,409.4	-900.7	1,008.4	807.6	200.76	5.023	
16,600.0	9,734.0	16,409.4	9,734.0	103.8	101.9	89.97	6,509.4	-901.4	1,008.4	805.0	203.47	4.956	
16,700.0	9,734.0	16,509.4	9,734.0	105.1	103.3	89.97	6,609.4	-902.0	1,008.5	802.3	206.18	4.891	
16,800.0	9,734.0	16,609.4	9,734.0	106.5	104.6	89.97	6,709.4	-902.7	1,008.5	799.6	208.90	4.828	
16,900.0	9,734.0	16,709.4	9,734.0	107.8	106.0	89.97	6,809.4	-903.4	1,008.5	796.9	211.62	4.766	
17,000.0	9,734.0	16,809.4	9,734.0	109.1	107.3	89.97	6,909.4	-904.0	1,008.6	794.2	214.34	4.705	
17,100.0	9,734.0	16,909.4	9,734.0	110.5	108.7	89.97	7,009.4	-904.7	1,008.6	791.5	217.08	4.646	
17,200.0	9,734.0	17,009.4	9,734.0	111.8	110.1	89.97	7,109.4	-905.4	1,008.6	788.8	219.81	4.589	
17,300.0	9,734.0	17,109.4	9,734.0	113.2	111.4	89.97	7,209.4	-906.0	1,008.7	786.1	222.55	4.532	
17,400.0	9,734.0	17,209.4	9,734.0	114.5	112.8	89.97	7,309.4	-906.7	1,008.7	783.4	225.29	4.477	
17,500.0	9,734.0	17,309.4	9,734.0	115.9	114.2	89.97	7,409.4	-907.3	1,008.7	780.7	228.04	4.423	
17,600.0	9,734.0	17,409.4	9,734.0	117.2	115.6	89.97	7,509.4	-908.0	1,008.8	778.0	230.79	4.371	
17,700.0	9,734.0	17,509.4	9,734.0	118.6	116.9	89.97	7,609.4	-908.7	1,008.8	775.2	233.54	4.319	
17,800.0	9,734.0	17,609.4	9,734.0	119.9	118.3	89.97	7,709.4	-909.3	1,008.8	772.5	236.30	4.269	
17,900.0	9,734.0	17,709.4	9,734.0	121.3	119.7	89.97	7,809.4	-910.0	1,008.9	769.8	239.06	4.220	
18,000.0	9,734.0	17,809.4	9,734.0	122.7	121.1	89.97	7,909.4	-910.6	1,008.9	767.1	241.83	4.172	
18,100.0	9,734.0	17,909.4	9,734.0	124.0	122.5	89.97	8,009.4	-911.3	1,008.9	764.3	244.59	4.125	
18,200.0	9,734.0	18,009.4	9,734.0	125.4	123.8	89.97	8,109.4	-912.0	1,009.0	761.6	247.36	4.079	
18,300.0	9,734.0	18,109.4	9,734.0	126.8	125.2	89.97	8,209.4	-912.6	1,009.0	758.8	250.14	4.034	
18,400.0	9,734.0	18,209.4	9,734.0	128.1	126.6	89.97	8,309.4	-913.3	1,009.0	756.1	252.91	3.990	
18,500.0	9,734.0	18,309.4	9,734.0	129.5	128.0	89.97	8,409.4	-914.0	1,009.0	753.4	255.69	3.946	
18,600.0	9,734.0	18,409.4	9,734.0	130.9	129.4	89.97	8,509.4	-914.6	1,009.1	750.6	258.47	3.904	
18,700.0	9,734.0	18,509.4	9,734.0	132.2	130.8	89.97	8,609.4	-915.3	1,009.1	747.9	261.25	3.863	
18,800.0	9,734.0	18,609.4	9,734.0	133.6	132.2	89.97	8,709.4	-915.9	1,009.1	745.1	264.04	3.822	
18,900.0	9,734.0	18,709.4	9,734.0	135.0	133.6	89.97	8,809.4	-916.6	1,009.2	742.4	266.83	3.782	
19,000.0	9,734.0	18,809.4	9,734.0	136.4	135.0	89.97	8,909.4	-917.3	1,009.2	739.6	269.62	3.743	
19,100.0	9,734.0	18,909.4	9,734.0	137.7	136.4	89.97	9,009.4	-917.9	1,009.2	736.8	272.41	3.705	
19,200.0	9,734.0	19,009.4	9,734.0	139.1	137.8	89.97	9,109.3	-918.6	1,009.3	734.1	275.20	3.667	
19,300.0	9,734.0	19,109.4	9,734.0	140.5	139.2	89.97	9,209.3	-919.2	1,009.3	731.3	278.00	3.631	
19,400.0	9,734.0	19,209.4	9,734.0	141.9	140.6	89.97	9,309.3	-919.9	1,009.3	728.5	280.80	3.595	
19,500.0	9,734.0	19,309.4	9,734.0	143.3	142.0	89.97	9,409.3	-920.6	1,009.4	725.8	283.60	3.559	
19,600.0	9,734.0	19,409.4	9,734.0	144.7	143.4	89.97	9,509.3	-921.2	1,009.4	723.0	286.40	3.524	
19,700.0	9,734.0	19,509.4	9,734.0	146.1	144.8	89.97	9,609.3	-921.9	1,009.4	720.2	289.20	3.490	
19,800.0	9,734.0	19,609.4	9,734.0	147.4	146.2	89.97	9,709.3	-922.5	1,009.5	717.5	292.01	3.457	
19,900.0	9,734.0	19,709.4	9,734.0	148.8	147.6	89.97	9,809.3	-923.2	1,009.5	714.7	294.82	3.424	
20,000.0	9,734.0	19,809.4	9,734.0	150.2	149.0	89.97	9,909.3	-923.9	1,009.5	711.9	297.63	3.392	
20,100.0	9,734.0	19,909.4	9,734.0	151.6	150.4	89.97	10,009.3	-924.5	1,009.6	709.1	300.44	3.360	
20,200.0	9,734.0	20,009.4	9,734.0	152.9	151.8	89.97	10,109.3	-925.2	1,009.6	706.6	303.03	3.332	
20,207.7	9,734.0	20,017.1	9,734.0	153.0	151.9	89.97	10,117.0	-925.2	1,009.6	706.4	303.23	3.329	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 515H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
0.0	0.0	1.1	1.1	0.0	0.0	89.90	0.1	60.0	60.0			
100.0	100.0	101.1	101.1	0.1	0.1	89.90	0.1	60.0	60.0	59.7	0.27	224.404
200.0	200.0	201.1	201.1	0.5	0.5	89.90	0.1	60.0	60.0	59.0	0.98	60.963
300.0	300.0	301.1	301.1	0.8	0.9	89.90	0.1	60.0	60.0	58.3	1.70	35.273
400.0	400.0	401.1	401.1	1.2	1.2	89.90	0.1	60.0	60.0	57.6	2.42	24.816
500.0	500.0	501.1	501.1	1.6	1.6	89.90	0.1	60.0	60.0	56.9	3.14	19.141
600.0	600.0	601.1	601.1	1.9	1.9	89.90	0.1	60.0	60.0	56.2	3.85	15.578
700.0	700.0	701.1	701.1	2.3	2.3	89.90	0.1	60.0	60.0	55.4	4.57	13.134
800.0	800.0	801.1	801.1	2.6	2.6	89.90	0.1	60.0	60.0	54.7	5.29	11.353
900.0	900.0	901.1	901.1	3.0	3.0	89.90	0.1	60.0	60.0	54.0	6.00	9.997
1,000.0	1,000.0	1,001.1	1,001.1	3.4	3.4	89.90	0.1	60.0	60.0	53.3	6.72	8.930
1,100.0	1,100.0	1,101.1	1,101.1	3.7	3.7	89.90	0.1	60.0	60.0	52.6	7.44	8.069
1,200.0	1,200.0	1,201.1	1,201.1	4.1	4.1	89.90	0.1	60.0	60.0	51.9	8.15	7.360
1,300.0	1,300.0	1,301.1	1,301.1	4.4	4.4	89.90	0.1	60.0	60.0	51.1	8.87	6.765
1,400.0	1,400.0	1,401.1	1,401.1	4.8	4.8	89.90	0.1	60.0	60.0	50.4	9.59	6.259
1,500.0	1,500.0	1,501.1	1,501.1	5.2	5.2	89.90	0.1	60.0	60.0	49.7	10.30	5.824
1,600.0	1,600.0	1,601.1	1,601.1	5.5	5.5	89.90	0.1	60.0	60.0	49.0	11.02	5.445
1,700.0	1,700.0	1,701.1	1,701.1	5.9	5.9	89.90	0.1	60.0	60.0	48.3	11.74	5.112
1,800.0	1,800.0	1,801.1	1,801.1	6.2	6.2	89.90	0.1	60.0	60.0	47.6	12.46	4.818
1,900.0	1,900.0	1,901.1	1,901.1	6.6	6.6	89.90	0.1	60.0	60.0	46.8	13.17	4.556
1,916.3	1,916.3	1,917.4	1,917.4	6.6	6.6	89.90	0.1	60.0	60.0	46.7	13.29	4.516 CC
2,000.0	2,000.0	2,001.1	2,001.1	6.9	6.9	89.90	0.1	60.0	60.0	46.1	13.89	4.321 ES
2,100.0	2,100.0	2,100.8	2,100.8	7.3	7.3	-169.09	-1.7	60.2	62.0	47.4	14.58	4.251 SF
2,200.0	2,199.8	2,200.0	2,199.8	7.6	7.6	-165.54	-6.8	60.9	68.0	52.8	15.23	4.464
2,300.0	2,299.5	2,298.8	2,298.2	8.0	7.9	-160.88	-15.3	62.0	78.5	62.6	15.89	4.939
2,400.0	2,398.7	2,397.3	2,396.1	8.3	8.3	-156.69	-26.2	63.3	93.4	76.8	16.56	5.641
2,500.0	2,497.5	2,495.5	2,493.7	8.7	8.6	-154.32	-37.1	64.7	111.8	94.5	17.23	6.488
2,600.0	2,595.6	2,593.1	2,590.7	9.0	8.9	-153.25	-48.0	66.1	133.3	115.4	17.90	7.446
2,700.0	2,693.1	2,690.0	2,687.0	9.4	9.3	-152.98	-58.8	67.4	157.9	139.3	18.58	8.497
2,800.0	2,789.6	2,786.1	2,782.5	9.8	9.6	-153.20	-69.5	68.8	185.5	166.2	19.27	9.627
2,900.0	2,885.6	2,881.6	2,877.4	10.2	9.9	-153.79	-80.1	70.1	215.1	195.1	19.95	10.779
3,000.0	2,981.6	2,977.1	2,972.3	10.6	10.3	-154.28	-90.8	71.4	244.7	224.1	20.64	11.856
3,100.0	3,077.5	3,072.6	3,067.2	11.1	10.6	-154.66	-101.4	72.8	274.4	253.1	21.34	12.858
3,200.0	3,173.5	3,168.1	3,162.1	11.5	10.9	-154.97	-112.0	74.1	304.1	282.0	22.04	13.794
3,300.0	3,269.4	3,263.6	3,256.9	12.0	11.3	-155.23	-122.6	75.4	333.8	311.0	22.75	14.669
3,400.0	3,365.4	3,359.0	3,351.8	12.4	11.6	-155.44	-133.3	76.8	363.5	340.0	23.47	15.487
3,500.0	3,461.3	3,454.5	3,446.7	12.9	12.0	-155.62	-143.9	78.1	393.2	369.0	24.19	16.254
3,600.0	3,557.3	3,550.0	3,541.6	13.4	12.3	-155.78	-154.5	79.4	422.9	397.9	24.91	16.974
3,700.0	3,653.2	3,645.5	3,636.5	13.8	12.7	-155.92	-165.2	80.8	452.6	426.9	25.64	17.651
3,800.0	3,749.2	3,741.0	3,731.3	14.3	13.0	-156.03	-175.8	82.1	482.3	455.9	26.37	18.287
3,900.0	3,845.1	3,836.5	3,826.2	14.8	13.4	-156.14	-186.4	83.5	512.0	484.9	27.11	18.887
4,000.0	3,941.1	3,931.9	3,921.1	15.3	13.8	-156.23	-197.0	84.8	541.7	513.8	27.84	19.454
4,100.0	4,037.0	4,027.4	4,016.0	15.8	14.1	-156.32	-207.7	86.1	571.4	542.8	28.58	19.988
4,200.0	4,133.0	4,122.9	4,110.9	16.3	14.5	-156.39	-218.3	87.5	601.1	571.7	29.33	20.495
4,300.0	4,228.9	4,218.4	4,205.7	16.8	14.8	-156.46	-228.9	88.8	630.8	600.7	30.07	20.974
4,400.0	4,324.9	4,313.9	4,300.6	17.3	15.2	-156.52	-239.5	90.1	660.5	629.7	30.82	21.428
4,500.0	4,420.8	4,409.4	4,395.5	17.8	15.5	-156.58	-250.2	91.5	690.2	658.6	31.57	21.860
4,600.0	4,516.8	4,504.8	4,490.4	18.3	15.9	-156.63	-260.8	92.8	719.9	687.6	32.33	22.270
4,700.0	4,612.7	4,600.3	4,585.3	18.8	16.3	-156.68	-271.4	94.1	749.6	716.5	33.08	22.660
4,800.0	4,708.7	4,696.0	4,680.3	19.3	16.6	-156.72	-282.1	95.5	779.3	745.5	33.84	23.031
4,900.0	4,804.7	4,801.5	4,785.4	19.9	17.0	-156.91	-291.8	96.7	808.4	773.8	34.66	23.324
5,000.0	4,900.6	4,907.5	4,891.2	20.4	17.4	-157.34	-297.8	97.5	836.4	800.9	35.46	23.583

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 515H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
5,100.0	4,996.6	5,013.7	4,997.4	20.9	17.8	-158.00	-299.8	97.7	863.2	826.9	36.25	23.814
5,200.0	5,092.5	5,109.9	5,093.6	21.4	18.1	-158.68	-299.8	97.7	889.5	852.5	36.95	24.073
5,300.0	5,188.5	5,205.9	5,189.6	21.9	18.4	-159.32	-299.8	97.7	915.9	878.3	37.65	24.325
5,400.0	5,284.4	5,301.8	5,285.5	22.4	18.7	-159.92	-299.8	97.7	942.5	904.1	38.36	24.570
5,500.0	5,380.4	5,397.8	5,381.5	23.0	19.1	-160.49	-299.8	97.7	969.1	930.0	39.06	24.809
5,600.0	5,476.3	5,493.7	5,477.4	23.5	19.4	-161.03	-299.8	97.7	995.8	956.0	39.77	25.040
5,700.0	5,572.3	5,589.7	5,573.4	24.0	19.7	-161.54	-299.8	97.7	1,022.6	982.1	40.48	25.264
5,800.0	5,668.2	5,685.6	5,669.3	24.5	20.0	-162.02	-299.8	97.7	1,049.4	1,008.2	41.18	25.482
5,900.0	5,764.2	5,781.6	5,765.3	25.1	20.4	-162.48	-299.8	97.7	1,076.3	1,034.5	41.89	25.693
6,000.0	5,860.1	5,877.6	5,861.2	25.6	20.7	-162.92	-299.8	97.7	1,103.3	1,060.7	42.60	25.899
6,100.0	5,956.1	5,973.5	5,957.2	26.1	21.0	-163.34	-299.8	97.7	1,130.4	1,087.1	43.31	26.098
6,200.0	6,052.0	6,069.5	6,053.1	26.6	21.3	-163.74	-299.8	97.7	1,157.5	1,113.4	44.02	26.292
6,300.0	6,148.0	6,165.4	6,149.1	27.2	21.7	-164.12	-299.8	97.7	1,184.6	1,139.9	44.74	26.480
6,400.0	6,243.9	6,261.4	6,245.0	27.7	22.0	-164.48	-299.8	97.7	1,211.8	1,166.4	45.45	26.662
6,500.0	6,339.9	6,357.3	6,341.0	28.2	22.3	-164.83	-299.8	97.7	1,239.0	1,192.9	46.16	26.840
6,600.0	6,435.8	6,453.3	6,436.9	28.8	22.7	-165.16	-299.8	97.7	1,266.3	1,219.4	46.88	27.012
6,700.0	6,531.8	6,549.2	6,532.9	29.3	23.0	-165.48	-299.8	97.7	1,293.6	1,246.0	47.60	27.180
6,800.0	6,627.7	6,645.2	6,628.8	29.8	23.3	-165.79	-299.8	97.7	1,321.0	1,272.7	48.31	27.343
6,900.0	6,723.7	6,741.1	6,724.8	30.4	23.6	-166.08	-299.8	97.7	1,348.4	1,299.3	49.03	27.502
7,000.0	6,819.6	6,837.1	6,820.7	30.9	24.0	-166.36	-299.8	97.7	1,375.8	1,326.0	49.75	27.656
7,100.0	6,915.6	6,933.0	6,916.7	31.4	24.3	-166.63	-299.8	97.7	1,403.2	1,352.8	50.47	27.806
7,200.0	7,011.5	7,029.0	7,012.6	32.0	24.6	-166.89	-299.8	97.7	1,430.7	1,379.5	51.19	27.952
7,300.0	7,107.5	7,124.9	7,108.6	32.5	25.0	-167.14	-299.8	97.7	1,458.2	1,406.3	51.91	28.094
7,400.0	7,203.5	7,220.9	7,204.6	33.0	25.3	-167.38	-299.8	97.7	1,485.7	1,433.1	52.63	28.232
7,500.0	7,299.4	7,316.8	7,300.5	33.6	25.6	-167.62	-299.8	97.7	1,513.3	1,459.9	53.35	28.367
7,600.0	7,395.4	7,412.8	7,396.5	34.1	26.0	-167.84	-299.8	97.7	1,540.8	1,486.8	54.07	28.498
7,700.0	7,491.3	7,508.7	7,492.4	34.6	26.3	-168.06	-299.8	97.7	1,568.4	1,513.6	54.79	28.625
7,800.0	7,587.3	7,604.7	7,588.4	35.2	26.6	-168.27	-299.8	97.7	1,596.1	1,540.5	55.51	28.750
7,900.0	7,683.2	7,700.6	7,684.3	35.7	27.0	-168.47	-299.8	97.7	1,623.7	1,567.4	56.24	28.871
8,000.0	7,779.2	7,796.6	7,780.3	36.2	27.3	-168.66	-299.8	97.7	1,651.3	1,594.4	56.96	28.989
8,100.0	7,875.1	7,892.5	7,876.2	36.8	27.6	-168.85	-299.8	97.7	1,679.0	1,621.3	57.69	29.105
8,200.0	7,971.1	7,988.5	7,972.2	37.3	28.0	-169.03	-299.8	97.7	1,706.7	1,648.3	58.41	29.217
8,300.0	8,067.0	8,084.4	8,068.1	37.9	28.3	-169.21	-299.8	97.7	1,734.4	1,675.2	59.14	29.327
8,400.0	8,163.0	8,180.4	8,164.1	38.4	28.6	-169.38	-299.8	97.7	1,762.1	1,702.2	59.87	29.434
8,500.0	8,258.9	8,276.4	8,260.0	38.9	29.0	-169.55	-299.8	97.7	1,789.8	1,729.2	60.59	29.538
8,600.0	8,354.9	8,372.3	8,356.0	39.5	29.3	-169.71	-299.8	97.7	1,817.5	1,756.2	61.32	29.640
8,700.0	8,451.4	8,468.8	8,452.5	40.0	29.6	-169.95	-299.8	97.7	1,843.4	1,781.4	62.05	29.711
8,800.0	8,548.7	8,566.1	8,549.8	40.5	30.0	-170.16	-299.8	97.7	1,866.0	1,803.2	62.77	29.728
8,900.0	8,646.8	8,664.2	8,647.9	40.9	30.3	-170.32	-299.8	97.7	1,885.2	1,821.7	63.49	29.695
9,000.0	8,745.5	8,762.9	8,746.6	41.3	30.7	-170.46	-299.8	97.7	1,901.1	1,836.9	64.20	29.611
9,100.0	8,844.7	8,862.1	8,845.8	41.7	31.0	-170.56	-299.8	97.7	1,913.5	1,848.6	64.91	29.480
9,200.0	8,944.2	8,961.7	8,945.3	42.1	31.4	-170.64	-299.8	97.7	1,922.5	1,856.9	65.61	29.304
9,300.0	9,044.1	9,061.5	9,045.2	42.4	31.7	-170.68	-299.8	97.7	1,928.1	1,861.8	66.30	29.083
9,400.0	9,144.0	9,161.5	9,145.1	42.7	32.1	-170.70	-299.8	97.7	1,930.2	1,863.2	66.98	28.820
9,500.0	9,244.0	9,261.5	9,245.1	42.9	32.4	89.66	-299.8	97.7	1,930.2	1,862.6	67.64	28.538
9,600.0	9,343.6	9,366.6	9,369.2	43.2	32.8	93.08	-286.4	96.9	1,930.1	1,861.7	68.41	28.212
9,700.0	9,439.3	9,512.8	9,486.5	43.4	33.2	92.83	-240.9	94.1	1,929.7	1,860.6	69.07	27.937
9,800.0	9,527.0	9,634.7	9,584.7	43.6	33.5	92.42	-169.4	89.7	1,929.1	1,859.5	69.60	27.716
9,900.0	9,602.9	9,751.3	9,658.8	43.8	33.7	91.90	-79.9	84.3	1,928.4	1,858.4	70.03	27.537
10,000.0	9,663.6	9,862.1	9,707.2	43.9	34.0	91.31	19.3	78.2	1,927.8	1,857.4	70.39	27.386
10,100.0	9,706.6	9,967.2	9,730.7	43.9	34.2	90.67	121.4	71.9	1,927.4	1,856.7	70.72	27.256
10,157.4	9,722.4	10,022.8	9,734.0	43.9	34.3	90.32	176.7	68.6	1,927.3	1,856.4	70.88	27.190

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 515H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,200.0	9,729.9	10,049.3	9,734.0	43.9	34.3	90.16	203.2	67.1	1,927.5	1,856.5	70.98	27.155	
10,300.0	9,734.0	10,100.0	9,734.0	44.0	34.4	89.97	253.8	64.9	1,929.3	1,858.0	71.22	27.089	
10,400.0	9,734.0	10,178.9	9,734.0	44.0	34.6	89.97	332.7	63.3	1,930.3	1,858.7	71.60	26.961	
10,405.2	9,734.0	10,178.9	9,734.0	44.0	34.6	89.97	332.7	63.3	1,930.3	1,858.6	71.60	26.957	
10,500.0	9,734.0	10,261.8	9,734.0	44.1	34.9	89.97	415.6	62.7	1,930.3	1,858.2	72.07	26.784	
10,600.0	9,734.0	10,361.8	9,734.0	44.2	35.2	89.97	515.6	62.1	1,930.3	1,857.6	72.71	26.550	
10,700.0	9,734.0	10,461.8	9,734.0	44.3	35.6	89.97	615.6	61.4	1,930.3	1,856.9	73.45	26.281	
10,800.0	9,734.0	10,561.8	9,734.0	44.5	36.1	89.97	715.6	60.8	1,930.4	1,856.1	74.30	25.980	
10,900.0	9,734.0	10,661.8	9,734.0	44.8	36.6	89.97	815.6	60.1	1,930.4	1,855.2	75.25	25.652	
11,000.0	9,734.0	10,761.8	9,734.0	45.1	37.1	89.97	915.6	59.4	1,930.4	1,854.1	76.31	25.299	
11,100.0	9,734.0	10,861.8	9,734.0	45.4	37.7	89.97	1,015.6	58.8	1,930.5	1,853.0	77.45	24.925	
11,200.0	9,734.0	10,961.8	9,734.0	45.8	38.4	89.97	1,115.6	58.1	1,930.5	1,851.8	78.68	24.535	
11,300.0	9,734.0	11,061.8	9,734.0	46.3	39.1	89.97	1,215.6	57.5	1,930.5	1,850.5	80.00	24.130	
11,400.0	9,734.0	11,161.8	9,734.0	46.8	39.8	89.97	1,315.6	56.8	1,930.6	1,849.2	81.41	23.715	
11,500.0	9,734.0	11,261.8	9,734.0	47.3	40.6	89.97	1,415.6	56.1	1,930.6	1,847.7	82.89	23.293	
11,600.0	9,734.0	11,361.8	9,734.0	47.9	41.4	89.97	1,515.6	55.5	1,930.6	1,846.2	84.44	22.865	
11,700.0	9,734.0	11,461.8	9,734.0	48.5	42.2	89.97	1,615.6	54.8	1,930.7	1,844.6	86.06	22.434	
11,800.0	9,734.0	11,561.8	9,734.0	49.2	43.1	89.97	1,715.6	54.2	1,930.7	1,843.0	87.75	22.003	
11,900.0	9,734.0	11,661.8	9,734.0	49.9	44.0	89.97	1,815.6	53.5	1,930.7	1,841.3	89.50	21.574	
12,000.0	9,734.0	11,761.8	9,734.0	50.7	44.9	89.97	1,915.6	52.8	1,930.8	1,839.5	91.30	21.147	
12,100.0	9,734.0	11,861.8	9,734.0	51.5	45.9	89.97	2,015.6	52.2	1,930.8	1,837.7	93.16	20.725	
12,200.0	9,734.0	11,961.8	9,734.0	52.3	46.9	89.97	2,115.6	51.5	1,930.9	1,835.8	95.08	20.308	
12,300.0	9,734.0	12,061.8	9,734.0	53.2	47.9	89.97	2,215.6	50.9	1,930.9	1,833.8	97.04	19.898	
12,400.0	9,734.0	12,161.8	9,734.0	54.0	48.9	89.97	2,315.6	50.2	1,930.9	1,831.9	99.05	19.495	
12,500.0	9,734.0	12,261.8	9,734.0	54.9	49.9	89.97	2,415.6	49.5	1,931.0	1,829.9	101.10	19.100	
12,600.0	9,734.0	12,361.8	9,734.0	55.9	51.0	89.97	2,515.6	48.9	1,931.0	1,827.8	103.19	18.713	
12,700.0	9,734.0	12,461.8	9,734.0	56.8	52.1	89.97	2,615.6	48.2	1,931.0	1,825.7	105.32	18.335	
12,800.0	9,734.0	12,561.8	9,734.0	57.8	53.2	89.97	2,715.6	47.6	1,931.1	1,823.6	107.49	17.966	
12,900.0	9,734.0	12,661.8	9,734.0	58.8	54.3	89.97	2,815.6	46.9	1,931.1	1,821.4	109.68	17.606	
13,000.0	9,734.0	12,761.8	9,734.0	59.9	55.5	89.97	2,915.6	46.3	1,931.1	1,819.2	111.91	17.255	
13,100.0	9,734.0	12,861.8	9,734.0	60.9	56.6	89.97	3,015.6	45.6	1,931.2	1,817.0	114.17	16.914	
13,200.0	9,734.0	12,961.8	9,734.0	62.0	57.8	89.97	3,115.6	44.9	1,931.2	1,814.7	116.46	16.582	
13,300.0	9,734.0	13,061.8	9,734.0	63.0	58.9	89.97	3,215.5	44.3	1,931.2	1,812.5	118.78	16.259	
13,400.0	9,734.0	13,161.8	9,734.0	64.1	60.1	89.97	3,315.5	43.6	1,931.3	1,810.1	121.12	15.945	
13,500.0	9,734.0	13,261.8	9,734.0	65.2	61.3	89.97	3,415.5	43.0	1,931.3	1,807.8	123.48	15.641	
13,600.0	9,734.0	13,361.8	9,734.0	66.3	62.5	89.97	3,515.5	42.3	1,931.3	1,805.5	125.87	15.344	
13,700.0	9,734.0	13,461.8	9,734.0	67.5	63.8	89.97	3,615.5	41.6	1,931.4	1,803.1	128.27	15.057	
13,800.0	9,734.0	13,561.8	9,734.0	68.6	65.0	89.97	3,715.5	41.0	1,931.4	1,800.7	130.70	14.778	
13,900.0	9,734.0	13,661.8	9,734.0	69.8	66.2	89.97	3,815.5	40.3	1,931.4	1,798.3	133.14	14.506	
14,000.0	9,734.0	13,761.8	9,734.0	70.9	67.5	89.97	3,915.5	39.7	1,931.5	1,795.9	135.61	14.243	
14,100.0	9,734.0	13,861.8	9,734.0	72.1	68.7	89.97	4,015.5	39.0	1,931.5	1,793.4	138.09	13.988	
14,200.0	9,734.0	13,961.8	9,734.0	73.3	70.0	89.97	4,115.5	38.3	1,931.5	1,791.0	140.58	13.740	
14,300.0	9,734.0	14,061.8	9,734.0	74.5	71.3	89.97	4,215.5	37.7	1,931.6	1,788.5	143.09	13.499	
14,400.0	9,734.0	14,161.8	9,734.0	75.7	72.5	89.97	4,315.5	37.0	1,931.6	1,786.0	145.61	13.265	
14,500.0	9,734.0	14,261.8	9,734.0	76.9	73.8	89.97	4,415.5	36.4	1,931.6	1,783.5	148.15	13.038	
14,600.0	9,734.0	14,361.8	9,734.0	78.1	75.1	89.97	4,515.5	35.7	1,931.7	1,781.0	150.70	12.818	
14,700.0	9,734.0	14,461.8	9,734.0	79.4	76.4	89.97	4,615.5	35.0	1,931.7	1,778.4	153.27	12.604	
14,800.0	9,734.0	14,561.8	9,734.0	80.6	77.7	89.97	4,715.5	34.4	1,931.7	1,775.9	155.84	12.396	
14,900.0	9,734.0	14,661.8	9,734.0	81.9	79.0	89.97	4,815.5	33.7	1,931.8	1,773.3	158.43	12.193	
15,000.0	9,734.0	14,761.8	9,734.0	83.1	80.3	89.97	4,915.5	33.1	1,931.8	1,770.8	161.02	11.997	
15,100.0	9,734.0	14,861.8	9,734.0	84.4	81.6	89.97	5,015.5	32.4	1,931.8	1,768.2	163.63	11.806	
15,200.0	9,734.0	14,961.8	9,734.0	85.6	82.9	89.97	5,115.5	31.7	1,931.9	1,765.6	166.25	11.621	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 515H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,300.0	9,734.0	15,061.8	9,734.0	86.9	84.3	89.97	5,215.5	31.1	1,931.9	1,763.0	168.87	11.440	
15,400.0	9,734.0	15,161.8	9,734.0	88.2	85.6	89.97	5,315.5	30.4	1,931.9	1,760.4	171.50	11.265	
15,500.0	9,734.0	15,261.8	9,734.0	89.4	86.9	89.97	5,415.5	29.8	1,932.0	1,757.8	174.15	11.094	
15,600.0	9,734.0	15,361.8	9,734.0	90.7	88.3	89.97	5,515.5	29.1	1,932.0	1,755.2	176.80	10.928	
15,700.0	9,734.0	15,461.8	9,734.0	92.0	89.6	89.97	5,615.5	28.5	1,932.1	1,752.6	179.45	10.766	
15,800.0	9,734.0	15,561.8	9,734.0	93.3	90.9	89.97	5,715.5	27.8	1,932.1	1,750.0	182.12	10.609	
15,900.0	9,734.0	15,661.8	9,734.0	94.6	92.3	89.97	5,815.5	27.1	1,932.1	1,747.3	184.79	10.456	
16,000.0	9,734.0	15,761.8	9,734.0	95.9	93.6	89.97	5,915.5	26.5	1,932.2	1,744.7	187.47	10.307	
16,100.0	9,734.0	15,861.8	9,734.0	97.2	95.0	89.97	6,015.5	25.8	1,932.2	1,742.0	190.15	10.161	
16,200.0	9,734.0	15,961.8	9,734.0	98.5	96.3	89.97	6,115.5	25.2	1,932.2	1,739.4	192.84	10.020	
16,300.0	9,734.0	16,061.8	9,734.0	99.9	97.7	89.97	6,215.5	24.5	1,932.3	1,736.7	195.54	9.882	
16,400.0	9,734.0	16,161.8	9,734.0	101.2	99.0	89.97	6,315.5	23.8	1,932.3	1,734.0	198.24	9.747	
16,500.0	9,734.0	16,261.8	9,734.0	102.5	100.4	89.97	6,415.5	23.2	1,932.3	1,731.4	200.95	9.616	
16,600.0	9,734.0	16,361.8	9,734.0	103.8	101.8	89.97	6,515.5	22.5	1,932.4	1,728.7	203.66	9.488	
16,700.0	9,734.0	16,461.8	9,734.0	105.1	103.1	89.97	6,615.5	21.9	1,932.4	1,726.0	206.38	9.363	
16,800.0	9,734.0	16,561.8	9,734.0	106.5	104.5	89.97	6,715.5	21.2	1,932.4	1,723.3	209.10	9.242	
16,900.0	9,734.0	16,661.8	9,734.0	107.8	105.9	89.97	6,815.5	20.5	1,932.5	1,720.6	211.83	9.123	
17,000.0	9,734.0	16,761.8	9,734.0	109.1	107.2	89.97	6,915.5	19.9	1,932.5	1,717.9	214.56	9.007	
17,100.0	9,734.0	16,861.8	9,734.0	110.5	108.6	89.97	7,015.5	19.2	1,932.5	1,715.2	217.29	8.894	
17,200.0	9,734.0	16,961.8	9,734.0	111.8	110.0	89.97	7,115.5	18.6	1,932.6	1,712.5	220.03	8.783	
17,300.0	9,734.0	17,061.8	9,734.0	113.2	111.4	89.97	7,215.5	17.9	1,932.6	1,709.8	222.78	8.675	
17,400.0	9,734.0	17,161.8	9,734.0	114.5	112.7	89.97	7,315.5	17.2	1,932.6	1,707.1	225.52	8.570	
17,500.0	9,734.0	17,261.8	9,734.0	115.9	114.1	89.97	7,415.5	16.6	1,932.7	1,704.4	228.28	8.466	
17,600.0	9,734.0	17,361.8	9,734.0	117.2	115.5	89.97	7,515.5	15.9	1,932.7	1,701.7	231.03	8.366	
17,700.0	9,734.0	17,461.8	9,734.0	118.6	116.9	89.97	7,615.5	15.3	1,932.7	1,698.9	233.79	8.267	
17,800.0	9,734.0	17,561.8	9,734.0	119.9	118.3	89.97	7,715.5	14.6	1,932.8	1,696.2	236.55	8.171	
17,900.0	9,734.0	17,661.8	9,734.0	121.3	119.7	89.97	7,815.4	13.9	1,932.8	1,693.5	239.31	8.076	
18,000.0	9,734.0	17,761.8	9,734.0	122.7	121.0	89.97	7,915.4	13.3	1,932.8	1,690.8	242.08	7.984	
18,100.0	9,734.0	17,861.8	9,734.0	124.0	122.4	89.97	8,015.4	12.6	1,932.9	1,688.0	244.85	7.894	
18,200.0	9,734.0	17,961.8	9,734.0	125.4	123.8	89.97	8,115.4	12.0	1,932.9	1,685.3	247.62	7.806	
18,300.0	9,734.0	18,061.8	9,734.0	126.8	125.2	89.97	8,215.4	11.3	1,932.9	1,682.5	250.40	7.719	
18,400.0	9,734.0	18,161.8	9,734.0	128.1	126.6	89.97	8,315.4	10.6	1,933.0	1,679.8	253.18	7.635	
18,500.0	9,734.0	18,261.8	9,734.0	129.5	128.0	89.97	8,415.4	10.0	1,933.0	1,677.0	255.96	7.552	
18,600.0	9,734.0	18,361.8	9,734.0	130.9	129.4	89.97	8,515.4	9.3	1,933.0	1,674.3	258.74	7.471	
18,700.0	9,734.0	18,461.8	9,734.0	132.2	130.8	89.97	8,615.4	8.7	1,933.1	1,671.5	261.53	7.391	
18,800.0	9,734.0	18,561.8	9,734.0	133.6	132.2	89.97	8,715.4	8.0	1,933.1	1,668.8	264.32	7.314	
18,900.0	9,734.0	18,661.8	9,734.0	135.0	133.6	89.97	8,815.4	7.4	1,933.1	1,666.0	267.11	7.237	
19,000.0	9,734.0	18,761.8	9,734.0	136.4	135.0	89.97	8,915.4	6.7	1,933.2	1,663.3	269.90	7.163	
19,100.0	9,734.0	18,861.8	9,734.0	137.7	136.4	89.97	9,015.4	6.0	1,933.2	1,660.5	272.69	7.089	
19,200.0	9,734.0	18,961.8	9,734.0	139.1	137.8	89.97	9,115.4	5.4	1,933.2	1,657.8	275.49	7.017	
19,300.0	9,734.0	19,061.8	9,734.0	140.5	139.2	89.97	9,215.4	4.7	1,933.3	1,655.0	278.29	6.947	
19,400.0	9,734.0	19,161.8	9,734.0	141.9	140.6	89.97	9,315.4	4.1	1,933.3	1,652.2	281.09	6.878	
19,500.0	9,734.0	19,261.8	9,734.0	143.3	142.0	89.97	9,415.4	3.4	1,933.4	1,649.5	283.89	6.810	
19,600.0	9,734.0	19,361.8	9,734.0	144.7	143.4	89.97	9,515.4	2.7	1,933.4	1,646.7	286.70	6.744	
19,700.0	9,734.0	19,461.8	9,734.0	146.1	144.8	89.97	9,615.4	2.1	1,933.4	1,643.9	289.51	6.678	
19,800.0	9,734.0	19,561.8	9,734.0	147.4	146.2	89.97	9,715.4	1.4	1,933.5	1,641.1	292.31	6.614	
19,900.0	9,734.0	19,661.8	9,734.0	148.8	147.6	89.97	9,815.4	0.8	1,933.5	1,638.4	295.12	6.551	
20,000.0	9,734.0	19,761.8	9,734.0	150.2	149.1	89.97	9,915.4	0.1	1,933.5	1,635.6	297.93	6.490	
20,100.0	9,734.0	19,861.8	9,734.0	151.6	150.5	89.97	10,015.4	-0.6	1,933.6	1,632.8	300.75	6.429	
20,200.0	9,734.0	19,961.8	9,734.0	152.9	151.7	89.97	10,115.4	-1.2	1,933.6	1,630.4	303.21	6.377	
20,207.7	9,734.0	19,969.5	9,734.0	153.0	151.8	89.97	10,123.1	-1.3	1,933.6	1,630.2	303.39	6.373	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 516H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	1.2	1.2	0.0	0.0	89.89	0.1	80.0	80.0				
100.0	100.0	101.2	101.2	0.1	0.1	89.89	0.1	80.0	80.0	79.7	0.27	298.717	
200.0	200.0	201.2	201.2	0.5	0.5	89.89	0.1	80.0	80.0	79.0	0.98	81.231	
300.0	300.0	301.2	301.2	0.8	0.9	89.89	0.1	80.0	80.0	78.3	1.70	47.007	
400.0	400.0	401.2	401.2	1.2	1.2	89.89	0.1	80.0	80.0	77.6	2.42	33.073	
500.0	500.0	501.2	501.2	1.6	1.6	89.89	0.1	80.0	80.0	76.9	3.14	25.511	
600.0	600.0	601.2	601.2	1.9	1.9	89.89	0.1	80.0	80.0	76.1	3.85	20.763	
700.0	700.0	701.2	701.2	2.3	2.3	89.89	0.1	80.0	80.0	75.4	4.57	17.505	
800.0	800.0	801.2	801.2	2.6	2.6	89.89	0.1	80.0	80.0	74.7	5.29	15.131	
900.0	900.0	901.2	901.2	3.0	3.0	89.89	0.1	80.0	80.0	74.0	6.00	13.324	
1,000.0	1,000.0	1,001.2	1,001.2	3.4	3.4	89.89	0.1	80.0	80.0	73.3	6.72	11.903	
1,100.0	1,100.0	1,101.2	1,101.2	3.7	3.7	89.89	0.1	80.0	80.0	72.6	7.44	10.755	
1,200.0	1,200.0	1,201.2	1,201.2	4.1	4.1	89.89	0.1	80.0	80.0	71.8	8.15	9.810	
1,300.0	1,300.0	1,301.2	1,301.2	4.4	4.4	89.89	0.1	80.0	80.0	71.1	8.87	9.017	
1,400.0	1,400.0	1,401.2	1,401.2	4.8	4.8	89.89	0.1	80.0	80.0	70.4	9.59	8.343	
1,500.0	1,500.0	1,501.2	1,501.2	5.2	5.2	89.89	0.1	80.0	80.0	69.7	10.30	7.762	
1,600.0	1,600.0	1,601.2	1,601.2	5.5	5.5	89.89	0.1	80.0	80.0	69.0	11.02	7.257	
1,700.0	1,700.0	1,701.2	1,701.2	5.9	5.9	89.89	0.1	80.0	80.0	68.3	11.74	6.814	
1,800.0	1,800.0	1,801.2	1,801.2	6.2	6.2	89.89	0.1	80.0	80.0	67.5	12.46	6.422	
1,900.0	1,900.0	1,901.2	1,901.2	6.6	6.6	89.89	0.1	80.0	80.0	66.8	13.17	6.072	
1,916.3	1,916.3	1,917.5	1,917.5	6.6	6.6	89.89	0.1	80.0	80.0	66.7	13.29	6.019 CC	
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	89.89	0.1	80.0	80.0	66.1	13.88	5.762 ES	
2,100.0	2,100.0	2,098.5	2,098.5	7.3	7.3	-170.29	-0.4	81.6	83.4	68.8	14.57	5.722 SF	
2,200.0	2,199.8	2,195.1	2,195.0	7.6	7.6	-169.85	-1.9	86.3	93.4	78.2	15.21	6.138	
2,300.0	2,299.5	2,290.5	2,290.0	8.0	7.9	-169.28	-4.4	94.0	110.0	94.2	15.84	6.943	
2,400.0	2,398.7	2,384.0	2,382.8	8.3	8.3	-168.71	-7.8	104.4	133.1	116.6	16.45	8.088	
2,500.0	2,497.5	2,478.4	2,476.3	8.7	8.6	-168.25	-11.9	117.2	161.8	144.7	17.09	9.465	
2,600.0	2,595.6	2,573.1	2,570.0	9.0	8.9	-168.09	-16.1	130.2	193.9	176.1	17.75	10.922	
2,700.0	2,693.1	2,666.6	2,662.6	9.4	9.3	-168.10	-20.3	143.0	229.2	210.8	18.41	12.451	
2,800.0	2,789.6	2,758.9	2,753.9	9.8	9.6	-168.22	-24.4	155.7	267.7	248.6	19.06	14.043	
2,900.0	2,885.6	2,850.3	2,844.3	10.2	9.9	-168.50	-28.4	168.2	308.3	288.6	19.71	15.638	
3,000.0	2,981.6	2,941.7	2,934.7	10.6	10.3	-168.74	-32.5	180.7	348.9	328.6	20.37	17.133	
3,100.0	3,077.5	3,033.0	3,025.1	11.1	10.6	-168.93	-36.5	193.2	389.6	368.6	21.02	18.531	
3,200.0	3,173.5	3,124.4	3,115.5	11.5	11.0	-169.08	-40.6	205.7	430.2	408.6	21.69	19.839	
3,300.0	3,269.4	3,215.7	3,205.9	12.0	11.3	-169.21	-44.6	218.2	470.9	448.5	22.35	21.067	
3,400.0	3,365.4	3,307.1	3,296.3	12.4	11.7	-169.32	-48.7	230.7	511.6	488.5	23.02	22.219	
3,500.0	3,461.3	3,398.4	3,386.7	12.9	12.0	-169.41	-52.7	243.3	552.2	528.5	23.70	23.303	
3,600.0	3,557.3	3,489.8	3,477.1	13.4	12.4	-169.49	-56.8	255.8	592.9	568.5	24.38	24.323	
3,700.0	3,653.2	3,581.2	3,567.6	13.8	12.7	-169.56	-60.8	268.3	633.5	608.5	25.06	25.285	
3,800.0	3,749.2	3,672.5	3,658.0	14.3	13.1	-169.62	-64.9	280.8	674.2	648.5	25.74	26.193	
3,900.0	3,845.1	3,763.9	3,748.4	14.8	13.4	-169.67	-68.9	293.3	714.9	688.4	26.43	27.052	
4,000.0	3,941.1	3,855.2	3,838.8	15.3	13.8	-169.72	-73.0	305.8	755.5	728.4	27.11	27.865	
4,100.0	4,037.0	3,946.6	3,929.2	15.8	14.1	-169.76	-77.1	318.4	796.2	768.4	27.81	28.635	
4,200.0	4,133.0	4,037.9	4,019.6	16.3	14.5	-169.80	-81.1	330.9	836.9	808.4	28.50	29.365	
4,300.0	4,228.9	4,129.3	4,110.0	16.8	14.8	-169.84	-85.2	343.4	877.5	848.3	29.19	30.059	
4,400.0	4,324.9	4,220.7	4,200.4	17.3	15.2	-169.87	-89.2	355.9	918.2	888.3	29.89	30.719	
4,500.0	4,420.8	4,312.0	4,290.8	17.8	15.6	-169.90	-93.3	368.4	958.9	928.3	30.59	31.347	
4,600.0	4,516.8	4,403.4	4,381.2	18.3	15.9	-169.93	-97.3	380.9	999.5	968.2	31.29	31.945	
4,700.0	4,612.7	4,494.7	4,471.6	18.8	16.3	-169.95	-101.4	393.5	1,040.2	1,008.2	31.99	32.515	
4,800.0	4,708.7	4,586.1	4,562.0	19.3	16.6	-169.97	-105.4	406.0	1,080.9	1,048.2	32.69	33.060	
4,900.0	4,804.7	4,677.4	4,652.4	19.9	17.0	-170.00	-109.5	418.5	1,121.5	1,088.1	33.40	33.580	
5,000.0	4,900.6	4,768.8	4,742.8	20.4	17.4	-170.02	-113.5	431.0	1,162.2	1,128.1	34.10	34.077	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 516H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program:		0-B001Mb_MWD+HRGM				Rule Assigned:				Offset Well Error:	0.0 usft			
Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor	
5,100.0	4,996.6	4,860.2	4,833.2	20.9	17.7	-170.03	-117.6	443.5	1,202.9	1,168.0	34.81	34.553		
5,200.0	5,092.5	4,951.5	4,923.6	21.4	18.1	-170.05	-121.6	456.0	1,243.5	1,208.0	35.52	35.009		
5,300.0	5,188.5	5,042.9	5,014.0	21.9	18.5	-170.07	-125.7	468.5	1,284.2	1,248.0	36.23	35.446		
5,400.0	5,284.4	5,134.2	5,104.4	22.4	18.8	-170.08	-129.7	481.1	1,324.8	1,287.9	36.94	35.865		
5,500.0	5,380.4	5,225.6	5,194.8	23.0	19.2	-170.10	-133.8	493.6	1,365.5	1,327.9	37.65	36.268		
5,600.0	5,476.3	5,316.9	5,285.2	23.5	19.6	-170.11	-137.9	506.1	1,406.2	1,367.8	38.36	36.654		
5,700.0	5,572.3	5,408.3	5,375.7	24.0	19.9	-170.12	-141.9	518.6	1,446.9	1,407.8	39.08	37.026		
5,800.0	5,668.2	5,499.7	5,466.1	24.5	20.3	-170.14	-146.0	531.1	1,487.5	1,447.7	39.79	37.383		
5,900.0	5,764.2	5,591.0	5,556.5	25.1	20.7	-170.15	-150.0	543.6	1,528.2	1,487.7	40.51	37.727		
6,000.0	5,860.1	5,682.4	5,646.9	25.6	21.0	-170.16	-154.1	556.2	1,568.9	1,527.6	41.22	38.059		
6,100.0	5,956.1	5,773.7	5,737.3	26.1	21.4	-170.17	-158.1	568.7	1,609.5	1,567.6	41.94	38.378		
6,200.0	6,052.0	5,865.1	5,827.7	26.6	21.8	-170.18	-162.2	581.2	1,650.2	1,607.5	42.66	38.686		
6,300.0	6,148.0	5,956.4	5,918.1	27.2	22.1	-170.19	-166.2	593.7	1,690.9	1,647.5	43.37	38.983		
6,400.0	6,243.9	6,047.8	6,008.5	27.7	22.5	-170.20	-170.3	606.2	1,731.5	1,687.4	44.09	39.270		
6,500.0	6,339.9	6,139.2	6,098.9	28.2	22.9	-170.20	-174.3	618.7	1,772.2	1,727.4	44.81	39.547		
6,600.0	6,435.8	6,230.5	6,189.3	28.8	23.2	-170.21	-178.4	631.3	1,812.9	1,767.3	45.53	39.815		
6,700.0	6,531.8	6,321.9	6,279.7	29.3	23.6	-170.22	-182.4	643.8	1,853.5	1,807.3	46.25	40.073		
6,800.0	6,627.7	6,413.2	6,370.1	29.8	24.0	-170.23	-186.5	656.3	1,894.2	1,847.2	46.97	40.324		
6,900.0	6,723.7	6,504.6	6,460.5	30.4	24.3	-170.23	-190.6	668.8	1,934.9	1,887.2	47.70	40.566		
7,000.0	6,819.6	6,595.9	6,550.9	30.9	24.7	-170.24	-194.6	681.3	1,975.5	1,927.1	48.42	40.800		
7,100.0	6,915.6	6,687.3	6,641.3	31.4	25.1	-170.25	-198.7	693.8	2,016.2	1,967.0	49.14	41.027		
7,200.0	7,011.5	6,778.7	6,731.7	32.0	25.5	-170.25	-202.7	706.3	2,056.9	2,007.0	49.87	41.247		
7,300.0	7,107.5	6,870.0	6,822.1	32.5	25.8	-170.26	-206.8	718.9	2,097.5	2,046.9	50.59	41.461		
7,400.0	7,203.5	6,961.4	6,912.5	33.0	26.2	-170.27	-210.8	731.4	2,138.2	2,086.9	51.32	41.667		
7,500.0	7,299.4	7,052.7	7,002.9	33.6	26.6	-170.27	-214.9	743.9	2,178.9	2,126.8	52.04	41.868		
7,600.0	7,395.4	7,144.1	7,093.3	34.1	26.9	-170.28	-218.9	756.4	2,219.5	2,166.8	52.77	42.063		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 604H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	165.64	-160.0	41.0	165.2				
100.0	100.0	100.0	100.0	0.1	0.1	165.64	-160.0	41.0	165.2	164.9	0.26	626.976	
200.0	200.0	200.0	200.0	0.5	0.5	165.64	-160.0	41.0	165.2	164.2	0.98	168.493	
300.0	300.0	300.0	300.0	0.8	0.8	165.64	-160.0	41.0	165.2	163.5	1.70	97.324	
400.0	400.0	400.0	400.0	1.2	1.2	165.64	-160.0	41.0	165.2	162.8	2.41	68.423	
500.0	500.0	500.0	500.0	1.6	1.6	165.64	-160.0	41.0	165.2	162.1	3.13	52.756	
600.0	600.0	600.0	600.0	1.9	1.9	165.64	-160.0	41.0	165.2	161.3	3.85	42.928	
700.0	700.0	700.0	700.0	2.3	2.3	165.64	-160.0	41.0	165.2	160.6	4.57	36.186	
800.0	800.0	800.0	800.0	2.6	2.6	165.64	-160.0	41.0	165.2	159.9	5.28	31.274	
900.0	900.0	900.0	900.0	3.0	3.0	165.64	-160.0	41.0	165.2	159.2	6.00	27.537	
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	165.64	-160.0	41.0	165.2	158.5	6.72	24.597	
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	165.64	-160.0	41.0	165.2	157.8	7.43	22.225	
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	165.64	-160.0	41.0	165.2	157.0	8.15	20.270	
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	165.64	-160.0	41.0	165.2	156.3	8.87	18.631	
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	165.64	-160.0	41.0	165.2	155.6	9.58	17.237	
1,500.0	1,500.0	1,500.0	1,500.0	5.2	5.2	165.64	-160.0	41.0	165.2	154.9	10.30	16.037	
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	165.64	-160.0	41.0	165.2	154.2	11.02	14.994	
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	165.64	-160.0	41.0	165.2	153.5	11.73	14.078	
1,800.0	1,800.0	1,800.0	1,800.0	6.2	6.2	165.64	-160.0	41.0	165.2	152.7	12.45	13.267	
1,900.0	1,900.0	1,900.0	1,900.0	6.6	6.6	165.64	-160.0	41.0	165.2	152.0	13.17	12.545	
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	165.64	-160.0	41.0	165.2	151.3	13.89	11.897	
2,100.0	2,100.0	2,100.5	2,100.5	7.3	7.3	-94.73	-160.3	39.2	165.2	150.6	14.58	11.326	
2,200.0	2,199.8	2,201.1	2,200.9	7.6	7.6	-94.72	-161.2	34.0	165.1	149.9	15.27	10.817	
2,300.0	2,299.5	2,301.6	2,301.0	8.0	8.0	-94.71	-162.6	25.3	165.1	149.1	15.96	10.344	
2,388.3	2,387.1	2,390.1	2,389.0	8.3	8.3	-94.78	-164.2	15.0	165.0	148.4	16.57	9.955 CC	
2,400.0	2,398.7	2,401.8	2,400.6	8.3	8.3	-94.83	-164.4	13.6	165.0	148.3	16.65	9.906	
2,500.0	2,497.5	2,501.8	2,499.8	8.7	8.7	-96.01	-166.4	1.5	165.2	147.8	17.36	9.515 ES	
2,600.0	2,595.6	2,601.5	2,598.8	9.0	9.0	-98.36	-168.3	-10.6	166.0	147.9	18.08	9.179	
2,700.0	2,693.1	2,701.0	2,697.5	9.4	9.4	-101.81	-170.3	-22.6	167.7	148.9	18.81	8.914	
2,800.0	2,789.6	2,800.0	2,795.8	9.8	9.8	-106.26	-172.2	-34.6	171.0	151.4	19.55	8.745	
2,900.0	2,885.6	2,898.7	2,893.7	10.2	10.1	-111.23	-174.1	-46.6	176.1	155.8	20.30	8.677	
3,000.0	2,981.6	2,997.4	2,991.6	10.6	10.5	-115.93	-176.1	-58.6	182.6	161.5	21.05	8.675	
3,100.0	3,077.5	3,096.1	3,089.6	11.1	10.8	-120.29	-178.0	-70.5	190.2	168.4	21.79	8.726	
3,200.0	3,173.5	3,194.8	3,187.5	11.5	11.2	-124.29	-179.9	-82.5	198.8	176.3	22.54	8.821	
3,300.0	3,269.4	3,293.5	3,285.4	12.0	11.6	-127.96	-181.8	-94.5	208.3	185.1	23.28	8.949	
3,400.0	3,365.4	3,392.1	3,383.4	12.4	12.0	-131.29	-183.8	-106.4	218.7	194.6	24.02	9.102	
3,500.0	3,461.3	3,490.8	3,481.3	12.9	12.3	-134.32	-185.7	-118.4	229.7	204.9	24.76	9.275	
3,600.0	3,557.3	3,589.5	3,579.3	13.4	12.7	-137.07	-187.6	-130.3	241.2	215.7	25.50	9.461	
3,700.0	3,653.2	3,688.2	3,677.2	13.8	13.1	-139.56	-189.5	-142.3	253.3	227.1	26.23	9.657	
3,800.0	3,749.2	3,786.9	3,775.1	14.3	13.4	-141.83	-191.5	-154.3	265.8	238.9	26.97	9.858	
3,900.0	3,845.1	3,885.6	3,873.1	14.8	13.8	-143.89	-193.4	-166.2	278.7	251.0	27.70	10.062	
4,000.0	3,941.1	3,984.2	3,971.0	15.3	14.2	-145.77	-195.3	-178.2	291.9	263.5	28.43	10.268	
4,100.0	4,037.0	4,082.9	4,068.9	15.8	14.6	-147.49	-197.3	-190.1	305.5	276.3	29.17	10.473	
4,200.0	4,133.0	4,181.6	4,166.9	16.3	15.0	-149.06	-199.2	-202.1	319.2	289.3	29.90	10.675	
4,300.0	4,228.9	4,280.3	4,264.8	16.8	15.3	-150.50	-201.1	-214.1	333.2	302.5	30.64	10.875	
4,400.0	4,324.9	4,379.0	4,362.8	17.3	15.7	-151.82	-203.0	-226.0	347.3	316.0	31.37	11.072	
4,500.0	4,420.8	4,477.7	4,460.7	17.8	16.1	-153.04	-205.0	-238.0	361.7	329.6	32.11	11.264	
4,600.0	4,516.8	4,576.3	4,558.6	18.3	16.5	-154.17	-206.9	-250.0	376.1	343.3	32.84	11.452	
4,700.0	4,612.7	4,675.0	4,656.6	18.8	16.9	-155.22	-208.8	-261.9	390.8	357.2	33.58	11.636	
4,800.0	4,708.7	4,773.7	4,754.5	19.3	17.2	-156.19	-210.7	-273.9	405.5	371.2	34.32	11.814	
4,900.0	4,804.7	4,872.4	4,852.4	19.9	17.6	-157.09	-212.7	-285.8	420.3	385.3	35.06	11.988	
5,000.0	4,900.6	4,971.1	4,950.4	20.4	18.0	-157.93	-214.6	-297.8	435.3	399.4	35.80	12.157	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 604H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	4,996.6	5,069.8	5,048.3	20.9	18.4	-158.71	-216.5	-309.8	450.3	413.7	36.54	12.321	
5,200.0	5,092.5	5,168.4	5,146.3	21.4	18.8	-159.45	-218.4	-321.7	465.4	428.1	37.29	12.480	
5,300.0	5,188.5	5,267.1	5,244.2	21.9	19.2	-160.13	-220.4	-333.7	480.5	442.5	38.03	12.635	
5,400.0	5,284.4	5,365.8	5,342.1	22.4	19.5	-160.78	-222.3	-345.6	495.8	457.0	38.78	12.785	
5,500.0	5,380.4	5,464.5	5,440.1	23.0	19.9	-161.39	-224.2	-357.6	511.0	471.5	39.52	12.931	
5,600.0	5,476.3	5,563.2	5,538.0	23.5	20.3	-161.96	-226.1	-369.6	526.4	486.1	40.27	13.072	
5,700.0	5,572.3	5,661.9	5,635.9	24.0	20.7	-162.50	-228.1	-381.5	541.8	500.8	41.01	13.209	
5,800.0	5,668.2	5,760.5	5,733.9	24.5	21.1	-163.01	-230.0	-393.5	557.2	515.4	41.76	13.342	
5,900.0	5,764.2	5,859.2	5,831.8	25.1	21.5	-163.49	-231.9	-405.4	572.7	530.2	42.51	13.471	
6,000.0	5,860.1	5,957.9	5,929.8	25.6	21.8	-163.95	-233.9	-417.4	588.2	544.9	43.26	13.596	
6,100.0	5,956.1	6,056.6	6,027.7	26.1	22.2	-164.38	-235.8	-429.4	603.7	559.7	44.01	13.718	
6,200.0	6,052.0	6,155.3	6,125.6	26.6	22.6	-164.79	-237.7	-441.3	619.3	574.5	44.76	13.836	
6,300.0	6,148.0	6,254.0	6,223.6	27.2	23.0	-165.18	-239.6	-453.3	634.9	589.4	45.51	13.950	
6,400.0	6,243.9	6,352.6	6,321.5	27.7	23.4	-165.56	-241.6	-465.3	650.5	604.3	46.27	14.061	
6,500.0	6,339.9	6,451.3	6,419.4	28.2	23.8	-165.91	-243.5	-477.2	666.2	619.2	47.02	14.169	
6,600.0	6,435.8	6,550.0	6,517.4	28.8	24.2	-166.25	-245.4	-489.2	681.9	634.1	47.77	14.274	
6,700.0	6,531.8	6,648.7	6,615.3	29.3	24.5	-166.57	-247.3	-501.1	697.6	649.1	48.52	14.376	
6,800.0	6,627.7	6,747.4	6,713.2	29.8	24.9	-166.88	-249.3	-513.1	713.3	664.0	49.28	14.475	
6,900.0	6,723.7	6,846.1	6,811.2	30.4	25.3	-167.18	-251.2	-525.1	729.1	679.0	50.03	14.572	
7,000.0	6,819.6	6,944.8	6,909.1	30.9	25.7	-167.46	-253.1	-537.0	744.8	694.0	50.79	14.665	
7,100.0	6,915.6	7,043.4	7,007.1	31.4	26.1	-167.74	-255.0	-549.0	760.6	709.1	51.54	14.757	
7,200.0	7,011.5	7,142.1	7,105.0	32.0	26.5	-168.00	-257.0	-560.9	776.4	724.1	52.30	14.845	
7,300.0	7,107.5	7,240.8	7,202.9	32.5	26.9	-168.25	-258.9	-572.9	792.2	739.2	53.06	14.932	
7,400.0	7,203.5	7,339.5	7,300.9	33.0	27.3	-168.49	-260.8	-584.9	808.1	754.2	53.81	15.016	
7,500.0	7,299.4	7,438.2	7,398.8	33.6	27.7	-168.72	-262.7	-596.8	823.9	769.3	54.57	15.098	
7,600.0	7,395.4	7,536.9	7,496.7	34.1	28.0	-168.94	-264.7	-608.8	839.7	784.4	55.33	15.177	
7,700.0	7,491.3	7,635.5	7,594.7	34.6	28.4	-169.16	-266.6	-620.8	855.6	799.5	56.09	15.255	
7,800.0	7,587.3	7,734.2	7,692.6	35.2	28.8	-169.36	-268.5	-632.7	871.5	814.6	56.85	15.331	
7,900.0	7,683.2	7,832.9	7,790.6	35.7	29.2	-169.56	-270.5	-644.7	887.4	829.8	57.60	15.405	
8,000.0	7,779.2	7,931.6	7,888.5	36.2	29.6	-169.75	-272.4	-656.6	903.3	844.9	58.36	15.477	
8,100.0	7,875.1	8,030.3	7,986.4	36.8	30.0	-169.94	-274.3	-668.6	919.2	860.1	59.12	15.547	
8,200.0	7,971.1	8,129.0	8,084.4	37.3	30.4	-170.12	-276.2	-680.6	935.1	875.2	59.88	15.615	
8,300.0	8,067.0	8,227.6	8,182.3	37.9	30.8	-170.29	-278.2	-692.5	951.0	890.4	60.64	15.682	
8,400.0	8,163.0	8,326.3	8,280.2	38.4	31.1	-170.46	-280.1	-704.5	967.0	905.5	61.40	15.747	
8,500.0	8,258.9	8,425.0	8,378.2	38.9	31.5	-170.62	-282.0	-716.4	982.9	920.7	62.16	15.811	
8,600.0	8,354.9	8,523.7	8,476.1	39.5	31.9	-170.78	-283.9	-728.4	998.8	935.9	62.93	15.873	
8,700.0	8,451.4	8,622.7	8,574.3	40.0	32.3	-170.96	-285.9	-740.4	1,012.9	949.2	63.68	15.905	
8,800.0	8,548.7	8,722.1	8,673.0	40.5	32.7	-171.10	-287.8	-752.5	1,023.5	959.1	64.44	15.884	
8,900.0	8,646.8	8,821.8	8,772.0	40.9	33.1	-171.19	-289.8	-764.5	1,030.7	965.5	65.19	15.812	
9,000.0	8,745.5	8,921.7	8,871.1	41.3	33.5	-171.24	-291.7	-776.6	1,034.5	968.5	65.93	15.691	
9,100.0	8,844.7	9,021.7	8,970.4	41.7	33.9	-171.25	-293.7	-788.8	1,034.8	968.1	66.66	15.524	
9,200.0	8,944.2	9,121.7	9,069.6	42.1	34.3	-171.21	-295.6	-800.9	1,031.6	964.2	67.38	15.311	
9,300.0	9,044.1	9,221.4	9,168.6	42.4	34.7	-171.14	-297.6	-813.0	1,025.0	957.0	68.09	15.054	
9,400.0	9,144.0	9,320.9	9,267.3	42.7	35.1	-171.03	-299.5	-825.0	1,015.0	946.2	68.79	14.755	
9,500.0	9,244.0	9,415.6	9,361.3	42.9	35.4	89.44	-301.3	-836.5	1,002.9	933.5	69.45	14.442	
9,600.0	9,343.6	9,500.0	9,445.2	43.2	35.8	94.49	-302.7	-845.1	993.1	923.0	70.06	14.175	
9,700.0	9,439.3	9,560.2	9,505.2	43.4	36.0	96.24	-303.5	-849.8	987.6	917.0	70.54	14.000	
9,736.7	9,472.6	9,585.0	9,530.0	43.5	36.1	96.92	-303.7	-851.3	987.0	916.2	70.74	13.952	
9,800.0	9,527.0	9,625.5	9,570.4	43.6	36.2	97.99	-304.1	-853.4	988.1	917.0	71.11	13.896	
9,900.0	9,602.9	9,682.2	9,627.1	43.8	36.4	99.11	-304.4	-855.4	996.6	924.9	71.70	13.900	
10,000.0	9,663.6	9,727.7	9,672.6	43.9	36.6	99.00	-304.5	-856.2	1,014.6	942.3	72.30	14.033	
10,100.0	9,706.6	9,761.7	9,706.6	43.9	36.7	97.24	-304.5	-856.3	1,043.0	970.1	72.90	14.307	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 604H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,200.0	9,729.9	9,785.0	9,729.9	43.9	36.8	93.58	-304.5	-856.3	1,081.4	1,007.9	73.49	14.714	
10,300.0	9,734.0	9,789.1	9,734.0	44.0	36.8	90.00	-304.5	-856.3	1,128.0	1,054.0	73.94	15.256	
10,400.0	9,734.0	9,789.1	9,734.0	44.0	36.8	90.00	-304.5	-856.3	1,179.0	1,104.6	74.33	15.861	
10,500.0	9,734.0	9,789.1	9,734.0	44.1	36.8	90.00	-304.5	-856.3	1,234.1	1,159.4	74.69	16.522	
10,600.0	9,734.0	11,193.3	10,529.0	44.2	39.8	128.31	509.5	-861.7	1,282.6	1,211.2	71.44	17.955	
10,700.0	9,734.0	11,293.3	10,529.0	44.3	40.2	128.30	609.5	-862.4	1,282.7	1,210.4	72.29	17.743	
10,800.0	9,734.0	11,393.3	10,529.0	44.5	40.6	128.30	709.5	-863.0	1,282.7	1,209.5	73.21	17.519	
10,900.0	9,734.0	11,493.3	10,529.0	44.8	41.1	128.30	809.5	-863.7	1,282.7	1,208.5	74.21	17.285	
11,000.0	9,734.0	11,593.3	10,529.0	45.1	41.6	128.30	909.5	-864.3	1,282.7	1,207.5	75.28	17.040	
11,100.0	9,734.0	11,693.3	10,529.0	45.4	42.2	128.30	1,009.5	-865.0	1,282.8	1,206.3	76.40	16.789	
11,200.0	9,734.0	11,793.3	10,529.0	45.8	42.8	128.30	1,109.5	-865.7	1,282.8	1,205.2	77.60	16.531	
11,300.0	9,734.0	11,893.3	10,529.0	46.3	43.5	128.30	1,209.5	-866.3	1,282.8	1,204.0	78.85	16.269	
11,400.0	9,734.0	11,993.3	10,529.0	46.8	44.2	128.30	1,309.5	-867.0	1,282.8	1,202.7	80.16	16.004	
11,500.0	9,734.0	12,093.3	10,529.0	47.3	44.9	128.30	1,409.5	-867.7	1,282.9	1,201.3	81.52	15.737	
11,600.0	9,734.0	12,193.3	10,529.0	47.9	45.6	128.30	1,509.5	-868.3	1,282.9	1,199.9	82.93	15.469	
11,700.0	9,734.0	12,293.3	10,529.0	48.5	46.4	128.30	1,609.5	-869.0	1,282.9	1,198.5	84.39	15.202	
11,800.0	9,734.0	12,393.3	10,529.0	49.2	47.3	128.29	1,709.5	-869.6	1,282.9	1,197.0	85.90	14.935	
11,900.0	9,734.0	12,493.3	10,529.0	49.9	48.1	128.29	1,809.5	-870.3	1,283.0	1,195.5	87.45	14.671	
12,000.0	9,734.0	12,593.3	10,529.0	50.7	49.0	128.29	1,909.5	-871.0	1,283.0	1,193.9	89.04	14.408	
12,100.0	9,734.0	12,693.3	10,529.0	51.5	49.9	128.29	2,009.5	-871.6	1,283.0	1,192.3	90.68	14.149	
12,200.0	9,734.0	12,793.3	10,529.0	52.3	50.9	128.29	2,109.5	-872.3	1,283.0	1,190.7	92.35	13.894	
12,300.0	9,734.0	12,893.3	10,529.0	53.2	51.8	128.29	2,209.5	-872.9	1,283.1	1,189.0	94.05	13.642	
12,400.0	9,734.0	12,993.3	10,529.0	54.0	52.8	128.29	2,309.5	-873.6	1,283.1	1,187.3	95.79	13.395	
12,500.0	9,734.0	13,093.3	10,529.0	54.9	53.8	128.29	2,409.5	-874.3	1,283.1	1,185.5	97.56	13.152	
12,600.0	9,734.0	13,193.3	10,529.0	55.9	54.8	128.29	2,509.5	-874.9	1,283.1	1,183.8	99.36	12.914	
12,700.0	9,734.0	13,293.3	10,529.0	56.8	55.9	128.29	2,609.5	-875.6	1,283.2	1,182.0	101.19	12.681	
12,800.0	9,734.0	13,393.3	10,529.0	57.8	56.9	128.29	2,709.5	-876.3	1,283.2	1,180.1	103.04	12.453	
12,900.0	9,734.0	13,493.3	10,529.0	58.8	58.0	128.28	2,809.5	-876.9	1,283.2	1,178.3	104.92	12.230	
13,000.0	9,734.0	13,593.3	10,529.0	59.9	59.1	128.28	2,909.5	-877.6	1,283.2	1,176.4	106.83	12.012	
13,100.0	9,734.0	13,693.3	10,529.0	60.9	60.2	128.28	3,009.5	-878.2	1,283.3	1,174.5	108.76	11.799	
13,200.0	9,734.0	13,793.3	10,529.0	62.0	61.3	128.28	3,109.5	-878.9	1,283.3	1,172.6	110.71	11.592	
13,300.0	9,734.0	13,893.3	10,529.0	63.0	62.5	128.28	3,209.5	-879.6	1,283.3	1,170.6	112.67	11.389	
13,400.0	9,734.0	13,993.3	10,529.0	64.1	63.6	128.28	3,309.5	-880.2	1,283.3	1,168.7	114.66	11.192	
13,500.0	9,734.0	14,093.3	10,529.0	65.2	64.8	128.28	3,409.5	-880.9	1,283.4	1,166.7	116.67	11.000	
13,600.0	9,734.0	14,193.3	10,529.0	66.3	65.9	128.28	3,509.5	-881.5	1,283.4	1,164.7	118.70	10.812	
13,700.0	9,734.0	14,293.3	10,529.0	67.5	67.1	128.28	3,609.5	-882.2	1,283.4	1,162.7	120.74	10.630	
13,800.0	9,734.0	14,393.3	10,529.0	68.6	68.3	128.28	3,709.5	-882.9	1,283.4	1,160.6	122.80	10.452	
13,900.0	9,734.0	14,493.3	10,529.0	69.8	69.5	128.28	3,809.5	-883.5	1,283.5	1,158.6	124.87	10.278	
14,000.0	9,734.0	14,593.3	10,529.0	70.9	70.7	128.27	3,909.5	-884.2	1,283.5	1,156.5	126.95	10.110	
14,100.0	9,734.0	14,693.3	10,529.0	72.1	71.9	128.27	4,009.5	-884.9	1,283.5	1,154.4	129.06	9.945	
14,200.0	9,734.0	14,793.3	10,529.0	73.3	73.2	128.27	4,109.5	-885.5	1,283.5	1,152.4	131.17	9.785	
14,300.0	9,734.0	14,893.3	10,529.0	74.5	74.4	128.27	4,209.5	-886.2	1,283.6	1,150.3	133.29	9.629	
14,400.0	9,734.0	14,993.3	10,529.0	75.7	75.6	128.27	4,309.5	-886.8	1,283.6	1,148.1	135.43	9.478	
14,500.0	9,734.0	15,093.3	10,529.0	76.9	76.9	128.27	4,409.5	-887.5	1,283.6	1,146.0	137.58	9.330	
14,600.0	9,734.0	15,193.3	10,529.0	78.1	78.1	128.27	4,509.4	-888.2	1,283.6	1,143.9	139.74	9.186	
14,700.0	9,734.0	15,293.3	10,529.0	79.4	79.4	128.27	4,609.4	-888.8	1,283.7	1,141.7	141.91	9.046	
14,800.0	9,734.0	15,393.3	10,529.0	80.6	80.7	128.27	4,709.4	-889.5	1,283.7	1,139.6	144.09	8.909	
14,900.0	9,734.0	15,493.3	10,529.0	81.9	81.9	128.27	4,809.4	-890.1	1,283.7	1,137.4	146.28	8.776	
15,000.0	9,734.0	15,593.3	10,529.0	83.1	83.2	128.27	4,909.4	-890.8	1,283.7	1,135.3	148.47	8.646	
15,100.0	9,734.0	15,693.3	10,529.0	84.4	84.5	128.26	5,009.4	-891.5	1,283.8	1,133.1	150.68	8.520	
15,200.0	9,734.0	15,793.3	10,529.0	85.6	85.8	128.26	5,109.4	-892.1	1,283.8	1,130.9	152.89	8.397	
15,300.0	9,734.0	15,893.3	10,529.0	86.9	87.1	128.26	5,209.4	-892.8	1,283.8	1,128.7	155.12	8.276	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 604H - OH - Plan 0.1												Offset Site Error: 0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM				Rule Assigned:				Offset Well Error: 0.0 usft					
Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Distance		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.0	9,734.0	15,993.3	10,529.0	88.2	88.4	128.26	5,309.4	-893.4	1,283.8	1,126.5	157.35	8.159	
15,500.0	9,734.0	16,093.3	10,529.0	89.4	89.7	128.26	5,409.4	-894.1	1,283.9	1,124.3	159.58	8.045	
15,600.0	9,734.0	16,193.3	10,529.0	90.7	91.0	128.26	5,509.4	-894.8	1,283.9	1,122.1	161.83	7.934	
15,700.0	9,734.0	16,293.3	10,529.0	92.0	92.3	128.26	5,609.4	-895.4	1,283.9	1,119.8	164.08	7.825	
15,800.0	9,734.0	16,393.3	10,529.0	93.3	93.6	128.26	5,709.4	-896.1	1,283.9	1,117.6	166.33	7.719	
15,900.0	9,734.0	16,493.3	10,529.0	94.6	95.0	128.26	5,809.4	-896.8	1,284.0	1,115.4	168.59	7.616	
16,000.0	9,734.0	16,593.3	10,529.0	95.9	96.3	128.26	5,909.4	-897.4	1,284.0	1,113.1	170.86	7.515	
16,100.0	9,734.0	16,693.3	10,529.0	97.2	97.6	128.26	6,009.4	-898.1	1,284.0	1,110.9	173.14	7.416	
16,200.0	9,734.0	16,793.3	10,529.0	98.5	98.9	128.25	6,109.4	-898.7	1,284.0	1,108.6	175.42	7.320	
16,300.0	9,734.0	16,893.3	10,529.0	99.9	100.3	128.25	6,209.4	-899.4	1,284.1	1,106.4	177.70	7.226	
16,400.0	9,734.0	16,993.3	10,529.0	101.2	101.6	128.25	6,309.4	-900.1	1,284.1	1,104.1	179.99	7.134	
16,500.0	9,734.0	17,093.3	10,529.0	102.5	103.0	128.25	6,409.4	-900.7	1,284.1	1,101.8	182.28	7.045	
16,600.0	9,734.0	17,193.3	10,529.0	103.8	104.3	128.25	6,509.4	-901.4	1,284.1	1,099.5	184.58	6.957	
16,700.0	9,734.0	17,293.3	10,529.0	105.1	105.6	128.25	6,609.4	-902.0	1,284.2	1,097.3	186.89	6.871	
16,800.0	9,734.0	17,393.3	10,529.0	106.5	107.0	128.25	6,709.4	-902.7	1,284.2	1,095.0	189.19	6.788	
16,900.0	9,734.0	17,493.3	10,529.0	107.8	108.3	128.25	6,809.4	-903.4	1,284.2	1,092.7	191.51	6.706	
17,000.0	9,734.0	17,593.3	10,529.0	109.1	109.7	128.25	6,909.4	-904.0	1,284.2	1,090.4	193.82	6.626	
17,100.0	9,734.0	17,693.3	10,529.0	110.5	111.1	128.25	7,009.4	-904.7	1,284.3	1,088.1	196.14	6.548	
17,200.0	9,734.0	17,793.3	10,529.0	111.8	112.4	128.25	7,109.4	-905.4	1,284.3	1,085.8	198.46	6.471	
17,300.0	9,734.0	17,893.3	10,529.0	113.2	113.8	128.24	7,209.4	-906.0	1,284.3	1,083.5	200.79	6.396	
17,400.0	9,734.0	17,993.3	10,529.0	114.5	115.1	128.24	7,309.4	-906.7	1,284.3	1,081.2	203.12	6.323	
17,500.0	9,734.0	18,093.3	10,529.0	115.9	116.5	128.24	7,409.4	-907.3	1,284.4	1,078.9	205.46	6.251	
17,600.0	9,734.0	18,193.3	10,529.0	117.2	117.9	128.24	7,509.4	-908.0	1,284.4	1,076.6	207.79	6.181	
17,700.0	9,734.0	18,293.3	10,529.0	118.6	119.2	128.24	7,609.4	-908.7	1,284.4	1,074.3	210.13	6.112	
17,800.0	9,734.0	18,393.3	10,529.0	119.9	120.6	128.24	7,709.4	-909.3	1,284.4	1,072.0	212.48	6.045	
17,900.0	9,734.0	18,493.3	10,529.0	121.3	122.0	128.24	7,809.4	-910.0	1,284.5	1,069.6	214.82	5.979	
18,000.0	9,734.0	18,593.3	10,529.0	122.7	123.4	128.24	7,909.4	-910.6	1,284.5	1,067.3	217.17	5.915	
18,100.0	9,734.0	18,693.3	10,529.0	124.0	124.7	128.24	8,009.4	-911.3	1,284.5	1,065.0	219.52	5.851	
18,200.0	9,734.0	18,793.3	10,529.0	125.4	126.1	128.24	8,109.4	-912.0	1,284.5	1,062.7	221.88	5.789	
18,300.0	9,734.0	18,893.3	10,529.0	126.8	127.5	128.24	8,209.4	-912.6	1,284.6	1,060.3	224.23	5.729	
18,400.0	9,734.0	18,993.3	10,529.0	128.1	128.9	128.23	8,309.4	-913.3	1,284.6	1,058.0	226.59	5.669	
18,500.0	9,734.0	19,093.3	10,529.0	129.5	130.2	128.23	8,409.4	-914.0	1,284.6	1,055.7	228.95	5.611	
18,600.0	9,734.0	19,193.3	10,529.0	130.9	131.6	128.23	8,509.4	-914.6	1,284.6	1,053.3	231.32	5.554	
18,700.0	9,734.0	19,293.3	10,529.0	132.2	133.0	128.23	8,609.4	-915.3	1,284.7	1,051.0	233.68	5.497	
18,800.0	9,734.0	19,393.3	10,529.0	133.6	134.4	128.23	8,709.4	-915.9	1,284.7	1,048.6	236.05	5.442	
18,900.0	9,734.0	19,493.3	10,529.0	135.0	135.8	128.23	8,809.4	-916.6	1,284.7	1,046.3	238.42	5.388	
19,000.0	9,734.0	19,593.3	10,529.0	136.4	137.2	128.23	8,909.4	-917.3	1,284.7	1,043.9	240.80	5.335	
19,100.0	9,734.0	19,693.3	10,529.0	137.7	138.6	128.23	9,009.4	-917.9	1,284.8	1,041.6	243.17	5.283	
19,200.0	9,734.0	19,793.3	10,529.0	139.1	140.0	128.23	9,109.3	-918.6	1,284.8	1,039.2	245.55	5.232	
19,300.0	9,734.0	19,893.3	10,529.0	140.5	141.3	128.23	9,209.3	-919.2	1,284.8	1,036.9	247.93	5.182	
19,400.0	9,734.0	19,993.3	10,529.0	141.9	142.7	128.23	9,309.3	-919.9	1,284.8	1,034.5	250.31	5.133	
19,500.0	9,734.0	20,093.3	10,529.0	143.3	144.1	128.22	9,409.3	-920.6	1,284.9	1,032.2	252.69	5.085	
19,600.0	9,734.0	20,193.3	10,529.0	144.7	145.5	128.22	9,509.3	-921.2	1,284.9	1,029.8	255.07	5.037	
19,700.0	9,734.0	20,293.3	10,529.0	146.1	146.9	128.22	9,609.3	-921.9	1,284.9	1,027.4	257.46	4.991	
19,800.0	9,734.0	20,393.3	10,529.0	147.4	148.3	128.22	9,709.3	-922.5	1,284.9	1,025.1	259.85	4.945	
19,900.0	9,734.0	20,493.3	10,529.0	148.8	149.7	128.22	9,809.3	-923.2	1,285.0	1,022.7	262.24	4.900	
20,000.0	9,734.0	20,593.3	10,529.0	150.2	151.1	128.22	9,909.3	-923.9	1,285.0	1,020.4	264.63	4.856	
20,100.0	9,734.0	20,693.3	10,529.0	151.6	152.5	128.22	10,009.3	-924.5	1,285.0	1,018.0	267.02	4.812	
20,200.0	9,734.0	20,793.3	10,529.0	152.9	153.9	128.22	10,109.3	-925.2	1,285.0	1,015.9	269.15	4.774	
20,207.7	9,734.0	20,801.0	10,529.0	153.0	154.0	128.22	10,117.0	-925.2	1,285.0	1,015.7	269.32	4.771 SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 605H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	159.17	-159.9	60.8	171.1				
100.0	100.0	99.9	99.9	0.1	0.1	159.17	-159.9	60.8	171.1	170.8	0.26	649.712	
200.0	200.0	199.9	199.9	0.5	0.5	159.17	-159.9	60.8	171.1	170.1	0.98	174.579	
300.0	300.0	299.9	299.9	0.8	0.8	159.17	-159.9	60.8	171.1	169.4	1.70	100.824	
400.0	400.0	399.9	399.9	1.2	1.2	159.17	-159.9	60.8	171.1	168.7	2.41	70.879	
500.0	500.0	499.9	499.9	1.6	1.6	159.17	-159.9	60.8	171.1	168.0	3.13	54.649	
600.0	600.0	599.9	599.9	1.9	1.9	159.17	-159.9	60.8	171.1	167.3	3.85	44.466	
700.0	700.0	699.9	699.9	2.3	2.3	159.17	-159.9	60.8	171.1	166.5	4.56	37.482	
800.0	800.0	799.9	799.9	2.6	2.6	159.17	-159.9	60.8	171.1	165.8	5.28	32.394	
900.0	900.0	899.9	899.9	3.0	3.0	159.17	-159.9	60.8	171.1	165.1	6.00	28.523	
1,000.0	1,000.0	999.9	999.9	3.4	3.4	159.17	-159.9	60.8	171.1	164.4	6.72	25.478	
1,100.0	1,100.0	1,099.9	1,099.9	3.7	3.7	159.17	-159.9	60.8	171.1	163.7	7.43	23.020	
1,200.0	1,200.0	1,199.9	1,199.9	4.1	4.1	159.17	-159.9	60.8	171.1	162.9	8.15	20.995	
1,300.0	1,300.0	1,299.9	1,299.9	4.4	4.4	159.17	-159.9	60.8	171.1	162.2	8.87	19.297	
1,400.0	1,400.0	1,399.9	1,399.9	4.8	4.8	159.17	-159.9	60.8	171.1	161.5	9.58	17.854	
1,500.0	1,500.0	1,499.9	1,499.9	5.2	5.1	159.17	-159.9	60.8	171.1	160.8	10.30	16.611	
1,600.0	1,600.0	1,599.9	1,599.9	5.5	5.5	159.17	-159.9	60.8	171.1	160.1	11.02	15.530	
1,700.0	1,700.0	1,699.9	1,699.9	5.9	5.9	159.17	-159.9	60.8	171.1	159.4	11.73	14.581	
1,800.0	1,800.0	1,799.9	1,799.9	6.2	6.2	159.17	-159.9	60.8	171.1	158.6	12.45	13.742	
1,900.0	1,900.0	1,899.9	1,899.9	6.6	6.6	159.17	-159.9	60.8	171.1	157.9	13.17	12.993	
2,000.0	2,000.0	1,999.9	1,999.9	6.9	6.9	159.17	-159.9	60.8	171.1	157.2	13.89	12.323 CC, ES	
2,100.0	2,100.0	2,095.0	2,094.9	7.3	7.3	-101.43	-161.5	60.6	172.9	158.3	14.55	11.879	
2,200.0	2,199.8	2,192.3	2,192.2	7.6	7.6	-102.23	-165.9	59.8	177.8	162.6	15.20	11.698	
2,300.0	2,299.5	2,292.0	2,291.7	8.0	7.9	-103.95	-170.7	59.0	184.0	168.2	15.87	11.594	
2,400.0	2,398.7	2,391.3	2,390.9	8.3	8.2	-106.54	-175.6	58.2	191.4	174.8	16.55	11.563	
2,500.0	2,497.5	2,490.2	2,489.7	8.7	8.6	-109.81	-180.4	57.4	200.3	183.0	17.23	11.621	
2,600.0	2,595.6	2,588.5	2,587.9	9.0	8.9	-113.61	-185.2	56.6	211.2	193.3	17.92	11.784	
2,700.0	2,693.1	2,686.2	2,685.5	9.4	9.2	-117.72	-190.0	55.8	224.7	206.0	18.62	12.067	
2,800.0	2,789.6	2,783.1	2,782.3	9.8	9.6	-121.96	-194.7	55.1	241.1	221.8	19.32	12.481	
2,900.0	2,885.6	2,879.4	2,878.4	10.2	9.9	-126.24	-199.4	54.3	260.2	240.2	20.02	12.997	
3,000.0	2,981.6	2,975.7	2,974.6	10.6	10.2	-129.99	-204.2	53.5	280.7	259.9	20.73	13.540	
3,100.0	3,077.5	3,072.0	3,070.8	11.1	10.5	-133.24	-208.9	52.7	302.1	280.7	21.44	14.094	
3,200.0	3,173.5	3,168.3	3,167.0	11.5	10.9	-136.06	-213.6	51.9	324.4	302.3	22.15	14.649	
3,300.0	3,269.4	3,264.6	3,263.1	12.0	11.2	-138.53	-218.3	51.2	347.4	324.5	22.86	15.197	
3,400.0	3,365.4	3,360.9	3,359.3	12.4	11.6	-140.68	-223.0	50.4	370.9	347.3	23.57	15.735	
3,500.0	3,461.3	3,457.1	3,455.5	12.9	11.9	-142.59	-227.7	49.6	394.8	370.5	24.29	16.258	
3,600.0	3,557.3	3,553.4	3,551.6	13.4	12.2	-144.27	-232.4	48.8	419.1	394.1	25.00	16.765	
3,700.0	3,653.2	3,649.7	3,647.8	13.8	12.6	-145.78	-237.1	48.0	443.8	418.0	25.72	17.254	
3,800.0	3,749.2	3,746.0	3,744.0	14.3	12.9	-147.12	-241.8	47.2	468.7	442.2	26.44	17.726	
3,900.0	3,845.1	3,842.3	3,840.2	14.8	13.2	-148.34	-246.5	46.5	493.8	466.6	27.16	18.180	
4,000.0	3,941.1	3,938.6	3,936.3	15.3	13.6	-149.43	-251.2	45.7	519.1	491.2	27.88	18.617	
4,100.0	4,037.0	4,034.9	4,032.5	15.8	13.9	-150.42	-255.9	44.9	544.5	515.9	28.60	19.036	
4,200.0	4,133.0	4,131.2	4,128.7	16.3	14.3	-151.33	-260.7	44.1	570.1	540.8	29.33	19.438	
4,300.0	4,228.9	4,227.5	4,224.8	16.8	14.6	-152.16	-265.4	43.3	595.8	565.8	30.06	19.824	
4,400.0	4,324.9	4,323.8	4,321.0	17.3	15.0	-152.92	-270.1	42.6	621.7	590.9	30.78	20.194	
4,500.0	4,420.8	4,420.0	4,417.2	17.8	15.3	-153.62	-274.8	41.8	647.6	616.1	31.51	20.550	
4,600.0	4,516.8	4,516.3	4,513.4	18.3	15.6	-154.26	-279.5	41.0	673.6	641.3	32.24	20.891	
4,700.0	4,612.7	4,612.6	4,609.5	18.8	16.0	-154.86	-284.2	40.2	699.7	666.7	32.97	21.219	
4,800.0	4,708.7	4,708.9	4,705.7	19.3	16.3	-155.42	-288.9	39.4	725.8	692.1	33.71	21.534	
4,900.0	4,804.7	4,805.2	4,801.9	19.9	16.7	-155.93	-293.6	38.7	752.0	717.6	34.44	21.837	
5,000.0	4,900.6	4,902.2	4,898.8	20.4	17.0	-156.44	-298.1	37.9	778.3	743.1	35.18	22.125	
5,100.0	4,996.6	4,999.9	4,996.4	20.9	17.4	-157.12	-299.8	37.6	804.4	768.5	35.90	22.405	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 605H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
5,200.0	5,092.5	5,095.9	5,092.4	21.4	17.7	-157.87	-299.8	37.6	830.6	794.0	36.61	22.688
5,300.0	5,188.5	5,191.8	5,188.4	21.9	18.0	-158.58	-299.8	37.6	856.9	819.6	37.31	22.963
5,400.0	5,284.4	5,287.8	5,284.3	22.4	18.3	-159.24	-299.8	37.6	883.3	845.3	38.02	23.231
5,500.0	5,380.4	5,383.7	5,380.3	23.0	18.7	-159.87	-299.8	37.6	909.8	871.1	38.73	23.490
5,600.0	5,476.3	5,479.7	5,476.2	23.5	19.0	-160.46	-299.8	37.6	936.4	897.0	39.44	23.742
5,700.0	5,572.3	5,575.6	5,572.2	24.0	19.3	-161.02	-299.8	37.6	963.1	923.0	40.15	23.987
5,800.0	5,668.2	5,671.6	5,668.1	24.5	19.7	-161.54	-299.8	37.6	989.9	949.0	40.86	24.225
5,900.0	5,764.2	5,767.5	5,764.1	25.1	20.0	-162.04	-299.8	37.6	1,016.8	975.2	41.58	24.455
6,000.0	5,860.1	5,863.5	5,860.0	25.6	20.3	-162.52	-299.8	37.6	1,043.7	1,001.4	42.29	24.679
6,100.0	5,956.1	5,959.4	5,956.0	26.1	20.7	-162.97	-299.8	37.6	1,070.7	1,027.7	43.01	24.897
6,200.0	6,052.0	6,055.4	6,051.9	26.6	21.0	-163.40	-299.8	37.6	1,097.7	1,054.0	43.72	25.108
6,300.0	6,148.0	6,151.3	6,147.9	27.2	21.3	-163.81	-299.8	37.6	1,124.8	1,080.4	44.44	25.313
6,400.0	6,243.9	6,247.3	6,243.8	27.7	21.7	-164.20	-299.8	37.6	1,152.0	1,106.8	45.15	25.513
6,500.0	6,339.9	6,343.2	6,339.8	28.2	22.0	-164.57	-299.8	37.6	1,179.2	1,133.3	45.87	25.706
6,600.0	6,435.8	6,439.2	6,435.7	28.8	22.3	-164.92	-299.8	37.6	1,206.5	1,159.9	46.59	25.895
6,700.0	6,531.8	6,535.1	6,531.7	29.3	22.7	-165.26	-299.8	37.6	1,233.7	1,186.4	47.31	26.078
6,800.0	6,627.7	6,631.1	6,627.6	29.8	23.0	-165.59	-299.8	37.6	1,261.1	1,213.0	48.03	26.255
6,900.0	6,723.7	6,727.0	6,723.6	30.4	23.3	-165.90	-299.8	37.6	1,288.4	1,239.7	48.75	26.428
7,000.0	6,819.6	6,823.0	6,819.5	30.9	23.7	-166.20	-299.8	37.6	1,315.8	1,266.4	49.47	26.597
7,100.0	6,915.6	6,919.0	6,915.5	31.4	24.0	-166.48	-299.8	37.6	1,343.3	1,293.1	50.20	26.760
7,200.0	7,011.5	7,014.9	7,011.4	32.0	24.4	-166.76	-299.8	37.6	1,370.7	1,319.8	50.92	26.920
7,300.0	7,107.5	7,110.9	7,107.4	32.5	24.7	-167.02	-299.8	37.6	1,398.2	1,346.6	51.64	27.075
7,400.0	7,203.5	7,206.8	7,203.4	33.0	25.0	-167.28	-299.8	37.6	1,425.7	1,373.3	52.37	27.226
7,500.0	7,299.4	7,302.8	7,299.3	33.6	25.4	-167.52	-299.8	37.6	1,453.2	1,400.2	53.09	27.373
7,600.0	7,395.4	7,398.7	7,395.3	34.1	25.7	-167.75	-299.8	37.6	1,480.8	1,427.0	53.82	27.516
7,700.0	7,491.3	7,494.7	7,491.2	34.6	26.0	-167.98	-299.8	37.6	1,508.4	1,453.8	54.54	27.656
7,800.0	7,587.3	7,590.6	7,587.2	35.2	26.4	-168.20	-299.8	37.6	1,536.0	1,480.7	55.27	27.792
7,900.0	7,683.2	7,686.6	7,683.1	35.7	26.7	-168.41	-299.8	37.6	1,563.6	1,507.6	56.00	27.924
8,000.0	7,779.2	7,782.5	7,779.1	36.2	27.0	-168.61	-299.8	37.6	1,591.3	1,534.5	56.72	28.053
8,100.0	7,875.1	7,878.5	7,875.0	36.8	27.4	-168.81	-299.8	37.6	1,618.9	1,561.5	57.45	28.179
8,200.0	7,971.1	7,974.4	7,971.0	37.3	27.7	-169.00	-299.8	37.6	1,646.6	1,588.4	58.18	28.302
8,300.0	8,067.0	8,070.4	8,066.9	37.9	28.1	-169.18	-299.8	37.6	1,674.3	1,615.4	58.91	28.422
8,400.0	8,163.0	8,166.3	8,162.9	38.4	28.4	-169.36	-299.8	37.6	1,702.0	1,642.4	59.64	28.539
8,500.0	8,258.9	8,262.3	8,258.8	38.9	28.7	-169.53	-299.8	37.6	1,729.7	1,669.4	60.37	28.654
8,600.0	8,354.9	8,358.2	8,354.8	39.5	29.1	-169.71	-299.8	37.6	1,757.5	1,696.4	61.10	28.765
8,700.0	8,451.4	8,454.7	8,451.3	40.0	29.4	-169.95	-299.8	37.6	1,783.4	1,721.5	61.83	28.845
8,800.0	8,548.7	8,552.1	8,548.6	40.5	29.8	-170.16	-299.8	37.6	1,805.9	1,743.4	62.55	28.871
8,900.0	8,646.8	8,650.1	8,646.7	40.9	30.1	-170.33	-299.8	37.6	1,825.2	1,761.9	63.27	28.846
9,000.0	8,745.5	8,748.8	8,745.4	41.3	30.5	-170.46	-299.8	37.6	1,841.0	1,777.0	63.99	28.770
9,100.0	8,844.7	8,848.0	8,844.6	41.7	30.8	-170.57	-299.8	37.6	1,853.4	1,788.7	64.70	28.647
9,200.0	8,944.2	8,947.6	8,944.1	42.1	31.2	-170.65	-299.8	37.6	1,862.4	1,797.0	65.40	28.477
9,300.0	9,044.1	9,047.4	9,044.0	42.4	31.5	-170.69	-299.8	37.6	1,868.0	1,801.9	66.09	28.263
9,400.0	9,144.0	9,147.4	9,143.9	42.7	31.9	-170.71	-299.8	37.6	1,870.1	1,803.4	66.78	28.006
9,500.0	9,244.0	9,247.4	9,243.9	42.9	32.2	-89.65	-299.8	37.6	1,870.2	1,802.7	67.44	27.730
9,600.0	9,343.6	9,346.9	9,343.5	43.2	32.6	-93.34	-299.8	37.6	1,870.6	1,802.5	68.11	27.466
9,700.0	9,439.3	9,442.6	9,439.2	43.4	32.9	-93.94	-299.8	37.6	1,872.5	1,803.8	68.76	27.232
9,800.0	9,527.0	9,530.3	9,526.9	43.6	33.2	-94.71	-299.8	37.6	1,876.7	1,807.3	69.38	27.049
9,900.0	9,602.9	9,606.2	9,602.8	43.8	33.5	-95.30	-299.8	37.6	1,884.2	1,814.3	69.94	26.940
10,000.0	9,663.6	9,667.0	9,663.5	43.9	33.7	-95.29	-299.8	37.6	1,896.4	1,826.0	70.42	26.929
10,100.0	9,706.6	9,710.0	9,706.5	43.9	33.9	-94.30	-299.8	37.6	1,914.2	1,843.4	70.81	27.035
10,200.0	9,729.9	9,733.2	9,729.8	43.9	33.9	-92.07	-299.8	37.6	1,937.9	1,866.8	71.07	27.268
10,300.0	9,734.0	9,737.3	9,733.9	44.0	33.9	-90.00	-299.8	37.6	1,966.7	1,895.5	71.21	27.620

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 605H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program:		0-B001Mb_MWD+HRGM						Rule Assigned:					Offset Well Error: 0.0 usft	
Measured Depth (usft)	Reference Depth (usft)	Measured Depth (usft)	Offset Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
10,400.0	9,734.0	9,737.3	9,733.9	44.0	33.9	90.00	-299.8	37.6	1,997.5	1,926.2	71.33	28.004		
10,500.0	9,734.0	9,737.3	9,733.9	44.1	33.9	90.00	-299.8	37.6	2,030.6	1,959.1	71.46	28.418		
10,600.0	9,734.0	9,737.3	9,733.9	44.2	33.9	90.00	-299.8	37.6	2,068.0	1,996.4	71.59	28.887		
10,700.0	9,734.0	11,243.6	10,529.0	44.3	38.5	112.38	615.7	61.9	2,088.1	2,012.8	75.27	27.740		
10,800.0	9,734.0	11,343.6	10,529.0	44.5	39.0	112.38	715.7	61.2	2,088.2	2,012.0	76.17	27.414		
10,900.0	9,734.0	11,443.6	10,529.0	44.8	39.5	112.38	815.7	60.6	2,088.2	2,011.0	77.15	27.065		
11,000.0	9,734.0	11,543.6	10,529.0	45.1	40.0	112.38	915.7	59.9	2,088.2	2,010.0	78.22	26.696		
11,100.0	9,734.0	11,643.6	10,529.0	45.4	40.6	112.38	1,015.7	59.2	2,088.2	2,008.9	79.37	26.310		
11,200.0	9,734.0	11,743.6	10,529.0	45.8	41.3	112.38	1,115.7	58.6	2,088.3	2,007.7	80.59	25.911		
11,300.0	9,734.0	11,843.6	10,529.0	46.3	41.9	112.38	1,215.7	57.9	2,088.3	2,006.4	81.89	25.501		
11,400.0	9,734.0	11,943.6	10,529.0	46.8	42.6	112.38	1,315.7	57.2	2,088.3	2,005.1	83.26	25.082		
11,500.0	9,734.0	12,043.6	10,529.0	47.3	43.4	112.38	1,415.7	56.6	2,088.3	2,003.6	84.70	24.657		
11,600.0	9,734.0	12,143.6	10,529.0	47.9	44.2	112.38	1,515.7	55.9	2,088.4	2,002.2	86.19	24.229		
11,700.0	9,734.0	12,243.6	10,529.0	48.5	45.0	112.38	1,615.7	55.3	2,088.4	2,000.6	87.75	23.799		
11,800.0	9,734.0	12,343.6	10,529.0	49.2	45.9	112.38	1,715.7	54.6	2,088.4	1,999.1	89.37	23.369		
11,900.0	9,734.0	12,443.6	10,529.0	49.9	46.7	112.38	1,815.7	53.9	2,088.4	1,997.4	91.04	22.940		
12,000.0	9,734.0	12,543.6	10,529.0	50.7	47.7	112.38	1,915.7	53.3	2,088.5	1,995.7	92.76	22.515		
12,100.0	9,734.0	12,643.6	10,529.0	51.5	48.6	112.38	2,015.7	52.6	2,088.5	1,994.0	94.53	22.094		
12,200.0	9,734.0	12,743.6	10,529.0	52.3	49.5	112.38	2,115.7	51.9	2,088.5	1,992.2	96.34	21.678		
12,300.0	9,734.0	12,843.6	10,529.0	53.2	50.5	112.38	2,215.7	51.3	2,088.6	1,990.4	98.20	21.268		
12,400.0	9,734.0	12,943.6	10,529.0	54.0	51.5	112.38	2,315.7	50.6	2,088.6	1,988.5	100.10	20.865		
12,500.0	9,734.0	13,043.6	10,529.0	54.9	52.6	112.38	2,415.7	49.9	2,088.6	1,986.6	102.03	20.470		
12,600.0	9,734.0	13,143.6	10,529.0	55.9	53.6	112.38	2,515.7	49.3	2,088.6	1,984.6	104.01	20.082		
12,700.0	9,734.0	13,243.6	10,529.0	56.8	54.7	112.38	2,615.7	48.6	2,088.7	1,982.6	106.01	19.702		
12,800.0	9,734.0	13,343.6	10,529.0	57.8	55.8	112.38	2,715.7	47.9	2,088.7	1,980.6	108.05	19.330		
12,900.0	9,734.0	13,443.6	10,529.0	58.8	56.8	112.37	2,815.7	47.3	2,088.7	1,978.6	110.12	18.967		
13,000.0	9,734.0	13,543.6	10,529.0	59.9	58.0	112.37	2,915.7	46.6	2,088.7	1,976.5	112.22	18.612		
13,100.0	9,734.0	13,643.6	10,529.0	60.9	59.1	112.37	3,015.7	46.0	2,088.8	1,974.4	114.35	18.267		
13,200.0	9,734.0	13,743.6	10,529.0	62.0	60.2	112.37	3,115.6	45.3	2,088.8	1,972.3	116.50	17.930		
13,300.0	9,734.0	13,843.6	10,529.0	63.0	61.4	112.37	3,215.6	44.6	2,088.8	1,970.1	118.68	17.601		
13,400.0	9,734.0	13,943.6	10,529.0	64.1	62.5	112.37	3,315.6	44.0	2,088.9	1,968.0	120.88	17.281		
13,500.0	9,734.0	14,043.6	10,529.0	65.2	63.7	112.37	3,415.6	43.3	2,088.9	1,965.8	123.10	16.969		
13,600.0	9,734.0	14,143.6	10,529.0	66.3	64.9	112.37	3,515.6	42.6	2,088.9	1,963.6	125.34	16.666		
13,700.0	9,734.0	14,243.6	10,529.0	67.5	66.1	112.37	3,615.6	42.0	2,088.9	1,961.3	127.60	16.371		
13,800.0	9,734.0	14,343.6	10,529.0	68.6	67.3	112.37	3,715.6	41.3	2,089.0	1,959.1	129.88	16.084		
13,900.0	9,734.0	14,443.6	10,529.0	69.8	68.5	112.37	3,815.6	40.6	2,089.0	1,956.8	132.18	15.805		
14,000.0	9,734.0	14,543.6	10,529.0	70.9	69.8	112.37	3,915.6	40.0	2,089.0	1,954.5	134.49	15.533		
14,100.0	9,734.0	14,643.6	10,529.0	72.1	71.0	112.37	4,015.6	39.3	2,089.0	1,952.2	136.82	15.269		
14,200.0	9,734.0	14,743.6	10,529.0	73.3	72.2	112.37	4,115.6	38.6	2,089.1	1,949.9	139.16	15.011		
14,300.0	9,734.0	14,843.6	10,529.0	74.5	73.5	112.37	4,215.6	38.0	2,089.1	1,947.6	141.52	14.761		
14,400.0	9,734.0	14,943.6	10,529.0	75.7	74.7	112.37	4,315.6	37.3	2,089.1	1,945.2	143.90	14.518		
14,500.0	9,734.0	15,043.6	10,529.0	76.9	76.0	112.37	4,415.6	36.7	2,089.1	1,942.9	146.28	14.282		
14,600.0	9,734.0	15,143.6	10,529.0	78.1	77.3	112.37	4,515.6	36.0	2,089.2	1,940.5	148.68	14.052		
14,700.0	9,734.0	15,243.6	10,529.0	79.4	78.6	112.37	4,615.6	35.3	2,089.2	1,938.1	151.09	13.828		
14,800.0	9,734.0	15,343.6	10,529.0	80.6	79.8	112.37	4,715.6	34.7	2,089.2	1,935.7	153.51	13.610		
14,900.0	9,734.0	15,443.6	10,529.0	81.9	81.1	112.37	4,815.6	34.0	2,089.3	1,933.3	155.94	13.398		
15,000.0	9,734.0	15,543.6	10,529.0	83.1	82.4	112.37	4,915.6	33.3	2,089.3	1,930.9	158.38	13.191		
15,100.0	9,734.0	15,643.6	10,529.0	84.4	83.7	112.37	5,015.6	32.7	2,089.3	1,928.5	160.83	12.990		
15,200.0	9,734.0	15,743.6	10,529.0	85.6	85.0	112.37	5,115.6	32.0	2,089.3	1,926.0	163.29	12.795		
15,300.0	9,734.0	15,843.6	10,529.0	86.9	86.3	112.37	5,215.6	31.3	2,089.4	1,923.6	165.76	12.604		
15,400.0	9,734.0	15,943.6	10,529.0	88.2	87.6	112.37	5,315.6	30.7	2,089.4	1,921.1	168.24	12.419		
15,500.0	9,734.0	16,043.6	10,529.0	89.4	89.0	112.37	5,415.6	30.0	2,089.4	1,918.7	170.73	12.238		

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 605H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,600.0	9,734.0	16,143.6	10,529.0	90.7	90.3	112.37	5,515.6	29.3	2,089.4	1,916.2	173.22	12.062	
15,700.0	9,734.0	16,243.6	10,529.0	92.0	91.6	112.37	5,615.6	28.7	2,089.5	1,913.7	175.72	11.891	
15,800.0	9,734.0	16,343.6	10,529.0	93.3	92.9	112.37	5,715.6	28.0	2,089.5	1,911.3	178.23	11.724	
15,900.0	9,734.0	16,443.6	10,529.0	94.6	94.3	112.37	5,815.6	27.4	2,089.5	1,908.8	180.74	11.561	
16,000.0	9,734.0	16,543.6	10,529.0	95.9	95.6	112.37	5,915.6	26.7	2,089.6	1,906.3	183.27	11.402	
16,100.0	9,734.0	16,643.6	10,529.0	97.2	96.9	112.37	6,015.6	26.0	2,089.6	1,903.8	185.79	11.247	
16,200.0	9,734.0	16,743.6	10,529.0	98.5	98.3	112.36	6,115.6	25.4	2,089.6	1,901.3	188.33	11.096	
16,300.0	9,734.0	16,843.6	10,529.0	99.9	99.6	112.36	6,215.6	24.7	2,089.6	1,898.8	190.87	10.948	
16,400.0	9,734.0	16,943.6	10,529.0	101.2	101.0	112.36	6,315.6	24.0	2,089.7	1,896.2	193.41	10.804	
16,500.0	9,734.0	17,043.6	10,529.0	102.5	102.3	112.36	6,415.6	23.4	2,089.7	1,893.7	195.96	10.664	
16,600.0	9,734.0	17,143.6	10,529.0	103.8	103.7	112.36	6,515.6	22.7	2,089.7	1,891.2	198.52	10.527	
16,700.0	9,734.0	17,243.6	10,529.0	105.1	105.0	112.36	6,615.6	22.0	2,089.7	1,888.7	201.08	10.393	
16,800.0	9,734.0	17,343.6	10,529.0	106.5	106.4	112.36	6,715.6	21.4	2,089.8	1,886.1	203.64	10.262	
16,900.0	9,734.0	17,443.6	10,529.0	107.8	107.7	112.36	6,815.6	20.7	2,089.8	1,883.6	206.21	10.134	
17,000.0	9,734.0	17,543.6	10,529.0	109.1	109.1	112.36	6,915.6	20.0	2,089.8	1,881.0	208.79	10.009	
17,100.0	9,734.0	17,643.6	10,529.0	110.5	110.5	112.36	7,015.6	19.4	2,089.8	1,878.5	211.37	9.887	
17,200.0	9,734.0	17,743.6	10,529.0	111.8	111.8	112.36	7,115.6	18.7	2,089.9	1,875.9	213.95	9.768	
17,300.0	9,734.0	17,843.6	10,529.0	113.2	113.2	112.36	7,215.6	18.0	2,089.9	1,873.4	216.53	9.652	
17,400.0	9,734.0	17,943.6	10,529.0	114.5	114.6	112.36	7,315.6	17.4	2,089.9	1,870.8	219.12	9.538	
17,500.0	9,734.0	18,043.6	10,529.0	115.9	115.9	112.36	7,415.6	16.7	2,090.0	1,868.2	221.72	9.426	
17,600.0	9,734.0	18,143.6	10,529.0	117.2	117.3	112.36	7,515.6	16.1	2,090.0	1,865.7	224.32	9.317	
17,700.0	9,734.0	18,243.6	10,529.0	118.6	118.7	112.36	7,615.5	15.4	2,090.0	1,863.1	226.92	9.211	
17,800.0	9,734.0	18,343.6	10,529.0	119.9	120.1	112.36	7,715.5	14.7	2,090.0	1,860.5	229.52	9.106	
17,900.0	9,734.0	18,443.6	10,529.0	121.3	121.4	112.36	7,815.5	14.1	2,090.1	1,857.9	232.13	9.004	
18,000.0	9,734.0	18,543.6	10,529.0	122.7	122.8	112.36	7,915.5	13.4	2,090.1	1,855.4	234.74	8.904	
18,100.0	9,734.0	18,643.6	10,529.0	124.0	124.2	112.36	8,015.5	12.7	2,090.1	1,852.8	237.35	8.806	
18,200.0	9,734.0	18,743.6	10,529.0	125.4	125.6	112.36	8,115.5	12.1	2,090.1	1,850.2	239.97	8.710	
18,300.0	9,734.0	18,843.6	10,529.0	126.8	127.0	112.36	8,215.5	11.4	2,090.2	1,847.6	242.59	8.616	
18,400.0	9,734.0	18,943.6	10,529.0	128.1	128.4	112.36	8,315.5	10.7	2,090.2	1,845.0	245.21	8.524	
18,500.0	9,734.0	19,043.6	10,529.0	129.5	129.8	112.36	8,415.5	10.1	2,090.2	1,842.4	247.83	8.434	
18,600.0	9,734.0	19,143.6	10,529.0	130.9	131.1	112.36	8,515.5	9.4	2,090.3	1,839.8	250.46	8.346	
18,700.0	9,734.0	19,243.6	10,529.0	132.2	132.5	112.36	8,615.5	8.7	2,090.3	1,837.2	253.09	8.259	
18,800.0	9,734.0	19,343.6	10,529.0	133.6	133.9	112.36	8,715.5	8.1	2,090.3	1,834.6	255.72	8.174	
18,900.0	9,734.0	19,443.6	10,529.0	135.0	135.3	112.36	8,815.5	7.4	2,090.3	1,832.0	258.35	8.091	
19,000.0	9,734.0	19,543.6	10,529.0	136.4	136.7	112.36	8,915.5	6.8	2,090.4	1,829.4	260.99	8.009	
19,100.0	9,734.0	19,643.6	10,529.0	137.7	138.1	112.36	9,015.5	6.1	2,090.4	1,826.8	263.63	7.929	
19,200.0	9,734.0	19,743.6	10,529.0	139.1	139.5	112.36	9,115.5	5.4	2,090.4	1,824.1	266.27	7.851	
19,300.0	9,734.0	19,843.6	10,529.0	140.5	140.9	112.36	9,215.5	4.8	2,090.4	1,821.5	268.91	7.774	
19,400.0	9,734.0	19,943.6	10,529.0	141.9	142.3	112.36	9,315.5	4.1	2,090.5	1,818.9	271.56	7.698	
19,500.0	9,734.0	20,043.6	10,529.0	143.3	143.7	112.35	9,415.5	3.4	2,090.5	1,816.3	274.20	7.624	
19,600.0	9,734.0	20,143.6	10,529.0	144.7	145.1	112.35	9,515.5	2.8	2,090.5	1,813.7	276.85	7.551	
19,700.0	9,734.0	20,243.6	10,529.0	146.1	146.5	112.35	9,615.5	2.1	2,090.5	1,811.0	279.50	7.480	
19,800.0	9,734.0	20,343.6	10,529.0	147.4	147.9	112.35	9,715.5	1.4	2,090.6	1,808.4	282.15	7.409	
19,900.0	9,734.0	20,443.6	10,529.0	148.8	149.3	112.35	9,815.5	0.8	2,090.6	1,805.8	284.81	7.340	
20,000.0	9,734.0	20,543.6	10,529.0	150.2	150.7	112.35	9,915.5	0.1	2,090.6	1,803.2	287.46	7.273	
20,100.0	9,734.0	20,643.6	10,529.0	151.6	152.1	112.35	10,015.5	-0.6	2,090.7	1,800.5	290.12	7.206	
20,200.0	9,734.0	20,743.6	10,529.0	152.9	153.4	112.35	10,115.5	-1.2	2,090.7	1,798.2	292.44	7.149	
20,207.7	9,734.0	20,751.3	10,529.0	153.0	153.5	112.35	10,123.2	-1.3	2,090.7	1,798.1	292.61	7.145 SF	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 606H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	153.16	-159.7	80.8	179.0				
100.0	100.0	99.3	99.3	0.1	0.1	153.16	-159.7	80.8	179.0	178.7	0.26	681.675	
200.0	200.0	199.3	199.3	0.5	0.5	153.16	-159.7	80.8	179.0	178.0	0.98	183.020	
300.0	300.0	299.3	299.3	0.8	0.8	153.16	-159.7	80.8	179.0	177.3	1.69	105.600	
400.0	400.0	399.3	399.3	1.2	1.2	153.16	-159.7	80.8	179.0	176.6	2.41	74.209	
500.0	500.0	499.3	499.3	1.6	1.6	153.16	-159.7	80.8	179.0	175.8	3.13	57.204	
600.0	600.0	599.3	599.3	1.9	1.9	153.16	-159.7	80.8	179.0	175.1	3.85	46.540	
700.0	700.0	699.3	699.3	2.3	2.3	153.16	-159.7	80.8	179.0	174.4	4.56	39.227	
800.0	800.0	799.3	799.3	2.6	2.6	153.16	-159.7	80.8	179.0	173.7	5.28	33.900	
900.0	900.0	899.3	899.3	3.0	3.0	153.16	-159.7	80.8	179.0	173.0	6.00	29.847	
1,000.0	1,000.0	999.3	999.3	3.4	3.4	153.16	-159.7	80.8	179.0	172.3	6.71	26.659	
1,100.0	1,100.0	1,099.3	1,099.3	3.7	3.7	153.16	-159.7	80.8	179.0	171.5	7.43	24.087	
1,200.0	1,200.0	1,199.3	1,199.3	4.1	4.1	153.16	-159.7	80.8	179.0	170.8	8.15	21.968	
1,300.0	1,300.0	1,299.3	1,299.3	4.4	4.4	153.16	-159.7	80.8	179.0	170.1	8.86	20.191	
1,400.0	1,400.0	1,399.3	1,399.3	4.8	4.8	153.16	-159.7	80.8	179.0	169.4	9.58	18.680	
1,500.0	1,500.0	1,499.3	1,499.3	5.2	5.1	153.16	-159.7	80.8	179.0	168.7	10.30	17.379	
1,600.0	1,600.0	1,599.3	1,599.3	5.5	5.5	153.16	-159.7	80.8	179.0	168.0	11.02	16.248	
1,700.0	1,700.0	1,699.3	1,699.3	5.9	5.9	153.16	-159.7	80.8	179.0	167.2	11.73	15.255	
1,800.0	1,800.0	1,799.3	1,799.3	6.2	6.2	153.16	-159.7	80.8	179.0	166.5	12.45	14.377	
1,900.0	1,900.0	1,899.3	1,899.3	6.6	6.6	153.16	-159.7	80.8	179.0	165.8	13.17	13.594	
2,000.0	2,000.0	1,999.3	1,999.3	6.9	6.9	153.16	-159.7	80.8	179.0	165.1	13.88	12.892 CC, ES	
2,100.0	2,100.0	2,095.7	2,095.7	7.3	7.3	-108.10	-159.9	82.4	180.5	165.9	14.56	12.391	
2,200.0	2,199.8	2,191.5	2,191.3	7.6	7.6	-110.69	-160.6	87.1	185.3	170.1	15.22	12.172 SF	
2,300.0	2,299.5	2,285.9	2,285.5	8.0	7.9	-114.62	-161.8	94.9	194.2	178.3	15.87	12.234	
2,400.0	2,398.7	2,380.2	2,379.1	8.3	8.3	-119.46	-163.4	105.6	208.0	191.4	16.51	12.592	
2,500.0	2,497.5	2,476.4	2,474.6	8.7	8.6	-124.53	-165.1	117.1	225.8	208.6	17.18	13.141	
2,600.0	2,595.6	2,571.7	2,569.2	9.0	8.9	-129.35	-166.8	128.5	247.5	229.7	17.85	13.866	
2,700.0	2,693.1	2,665.8	2,662.6	9.4	9.3	-133.80	-168.5	139.7	273.3	254.8	18.52	14.757	
2,800.0	2,789.6	2,758.7	2,754.8	9.8	9.6	-137.81	-170.1	150.9	303.1	283.9	19.18	15.800	
2,900.0	2,885.6	2,850.7	2,846.2	10.2	9.9	-141.63	-171.7	161.9	336.1	316.2	19.85	16.934	
3,000.0	2,981.6	2,942.7	2,937.5	10.6	10.3	-144.86	-173.4	172.9	370.3	349.8	20.51	18.056	
3,100.0	3,077.5	3,034.7	3,028.8	11.1	10.6	-147.56	-175.0	183.9	405.4	384.2	21.17	19.146	
3,200.0	3,173.5	3,126.8	3,120.2	11.5	11.0	-149.83	-176.7	194.9	441.2	419.4	21.84	20.199	
3,300.0	3,269.4	3,218.8	3,211.5	12.0	11.3	-151.77	-178.3	206.0	477.6	455.0	22.52	21.210	
3,400.0	3,365.4	3,310.8	3,302.8	12.4	11.6	-153.44	-179.9	217.0	514.3	491.1	23.19	22.178	
3,500.0	3,461.3	3,402.8	3,394.2	12.9	12.0	-154.89	-181.6	228.0	551.4	527.5	23.87	23.103	
3,600.0	3,557.3	3,494.8	3,485.5	13.4	12.3	-156.16	-183.2	239.0	588.7	564.2	24.55	23.985	
3,700.0	3,653.2	3,586.8	3,576.8	13.8	12.7	-157.28	-184.8	250.0	626.3	601.1	25.23	24.826	
3,800.0	3,749.2	3,678.8	3,668.2	14.3	13.0	-158.27	-186.5	261.0	664.1	638.2	25.91	25.627	
3,900.0	3,845.1	3,770.8	3,759.5	14.8	13.4	-159.16	-188.1	272.0	702.0	675.4	26.60	26.391	
4,000.0	3,941.1	3,862.8	3,850.8	15.3	13.7	-159.96	-189.8	283.1	740.1	712.8	27.29	27.120	
4,100.0	4,037.0	3,954.8	3,942.1	15.8	14.1	-160.68	-191.4	294.1	778.2	750.2	27.98	27.815	
4,200.0	4,133.0	4,046.8	4,033.5	16.3	14.4	-161.33	-193.0	305.1	816.5	787.8	28.67	28.478	
4,300.0	4,228.9	4,138.8	4,124.8	16.8	14.8	-161.93	-194.7	316.1	854.8	825.4	29.36	29.110	
4,400.0	4,324.9	4,230.8	4,216.1	17.3	15.1	-162.47	-196.3	327.1	893.2	863.2	30.06	29.715	
4,500.0	4,420.8	4,322.8	4,307.5	17.8	15.5	-162.98	-197.9	338.1	931.7	900.9	30.76	30.293	
4,600.0	4,516.8	4,414.8	4,398.8	18.3	15.8	-163.44	-199.6	349.1	970.2	938.8	31.46	30.845	
4,700.0	4,612.7	4,506.8	4,490.1	18.8	16.2	-163.86	-201.2	360.2	1,008.8	976.7	32.15	31.374	
4,800.0	4,708.7	4,598.9	4,581.4	19.3	16.5	-164.26	-202.9	371.2	1,047.4	1,014.6	32.86	31.880	
4,900.0	4,804.7	4,690.9	4,672.8	19.9	16.9	-164.62	-204.5	382.2	1,086.1	1,052.6	33.56	32.366	
5,000.0	4,900.6	4,782.9	4,764.1	20.4	17.2	-164.96	-206.1	393.2	1,124.8	1,090.6	34.26	32.831	
5,100.0	4,996.6	4,874.9	4,855.4	20.9	17.6	-165.28	-207.8	404.2	1,163.5	1,128.6	34.97	33.277	

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Emerald Pad 2 - Emerald Fed Com 606H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,200.0	5,092.5	4,966.9	4,946.8	21.4	18.0	-165.58	-209.4	415.2	1,202.3	1,166.6	35.67	33.706	
5,300.0	5,188.5	5,058.9	5,038.1	21.9	18.3	-165.86	-211.1	426.3	1,241.1	1,204.7	36.38	34.118	
5,400.0	5,284.4	5,150.9	5,129.4	22.4	18.7	-166.12	-212.7	437.3	1,279.9	1,242.8	37.08	34.514	
5,500.0	5,380.4	5,242.9	5,220.8	23.0	19.0	-166.37	-214.3	448.3	1,318.7	1,281.0	37.79	34.895	
5,600.0	5,476.3	5,334.9	5,312.1	23.5	19.4	-166.60	-216.0	459.3	1,357.6	1,319.1	38.50	35.261	
5,700.0	5,572.3	5,426.9	5,403.4	24.0	19.7	-166.82	-217.6	470.3	1,396.5	1,357.3	39.21	35.614	
5,800.0	5,668.2	5,518.9	5,494.7	24.5	20.1	-167.03	-219.2	481.3	1,435.4	1,395.4	39.92	35.954	
5,900.0	5,764.2	5,610.9	5,586.1	25.1	20.5	-167.23	-220.9	492.3	1,474.3	1,433.6	40.63	36.282	
6,000.0	5,860.1	5,702.9	5,677.4	25.6	20.8	-167.42	-222.5	503.4	1,513.2	1,471.8	41.35	36.599	
6,100.0	5,956.1	5,794.9	5,768.7	26.1	21.2	-167.60	-224.2	514.4	1,552.1	1,510.1	42.06	36.904	
6,200.0	6,052.0	5,886.9	5,860.1	26.6	21.5	-167.77	-225.8	525.4	1,591.1	1,548.3	42.77	37.199	
6,300.0	6,148.0	5,978.9	5,951.4	27.2	21.9	-167.93	-227.4	536.4	1,630.0	1,586.5	43.49	37.484	
6,400.0	6,243.9	6,071.0	6,042.7	27.7	22.2	-168.08	-229.1	547.4	1,669.0	1,624.8	44.20	37.759	
6,500.0	6,339.9	6,163.0	6,134.1	28.2	22.6	-168.23	-230.7	558.4	1,707.9	1,663.0	44.92	38.026	
6,600.0	6,435.8	6,255.0	6,225.4	28.8	23.0	-168.37	-232.3	569.5	1,746.9	1,701.3	45.63	38.283	
6,700.0	6,531.8	6,347.0	6,316.7	29.3	23.3	-168.50	-234.0	580.5	1,785.9	1,739.6	46.35	38.533	
6,800.0	6,627.7	6,439.0	6,408.0	29.8	23.7	-168.63	-235.6	591.5	1,824.9	1,777.9	47.07	38.774	
6,900.0	6,723.7	6,531.0	6,499.4	30.4	24.0	-168.75	-237.3	602.5	1,863.9	1,816.1	47.78	39.008	
7,000.0	6,819.6	6,623.0	6,590.7	30.9	24.4	-168.87	-238.9	613.5	1,902.9	1,854.4	48.50	39.235	
7,100.0	6,915.6	6,715.0	6,682.0	31.4	24.8	-168.98	-240.5	624.5	1,942.0	1,892.7	49.22	39.455	
7,200.0	7,011.5	6,807.0	6,773.4	32.0	25.1	-169.09	-242.2	635.5	1,981.0	1,931.0	49.94	39.668	
7,300.0	7,107.5	6,899.0	6,864.7	32.5	25.5	-169.20	-243.8	646.6	2,020.0	1,969.4	50.66	39.875	
7,400.0	7,203.5	6,991.0	6,956.0	33.0	25.8	-169.30	-245.4	657.6	2,059.1	2,007.7	51.38	40.076	
7,500.0	7,299.4	7,083.0	7,047.4	33.6	26.2	-169.39	-247.1	668.6	2,098.1	2,046.0	52.10	40.271	
7,600.0	7,395.4	7,175.0	7,138.7	34.1	26.5	-169.49	-248.7	679.6	2,137.2	2,084.3	52.82	40.460	
7,700.0	7,491.3	7,267.0	7,230.0	34.6	26.9	-169.58	-250.4	690.6	2,176.2	2,122.7	53.54	40.644	
7,800.0	7,587.3	7,359.0	7,321.3	35.2	27.3	-169.66	-252.0	701.6	2,215.3	2,161.0	54.26	40.823	

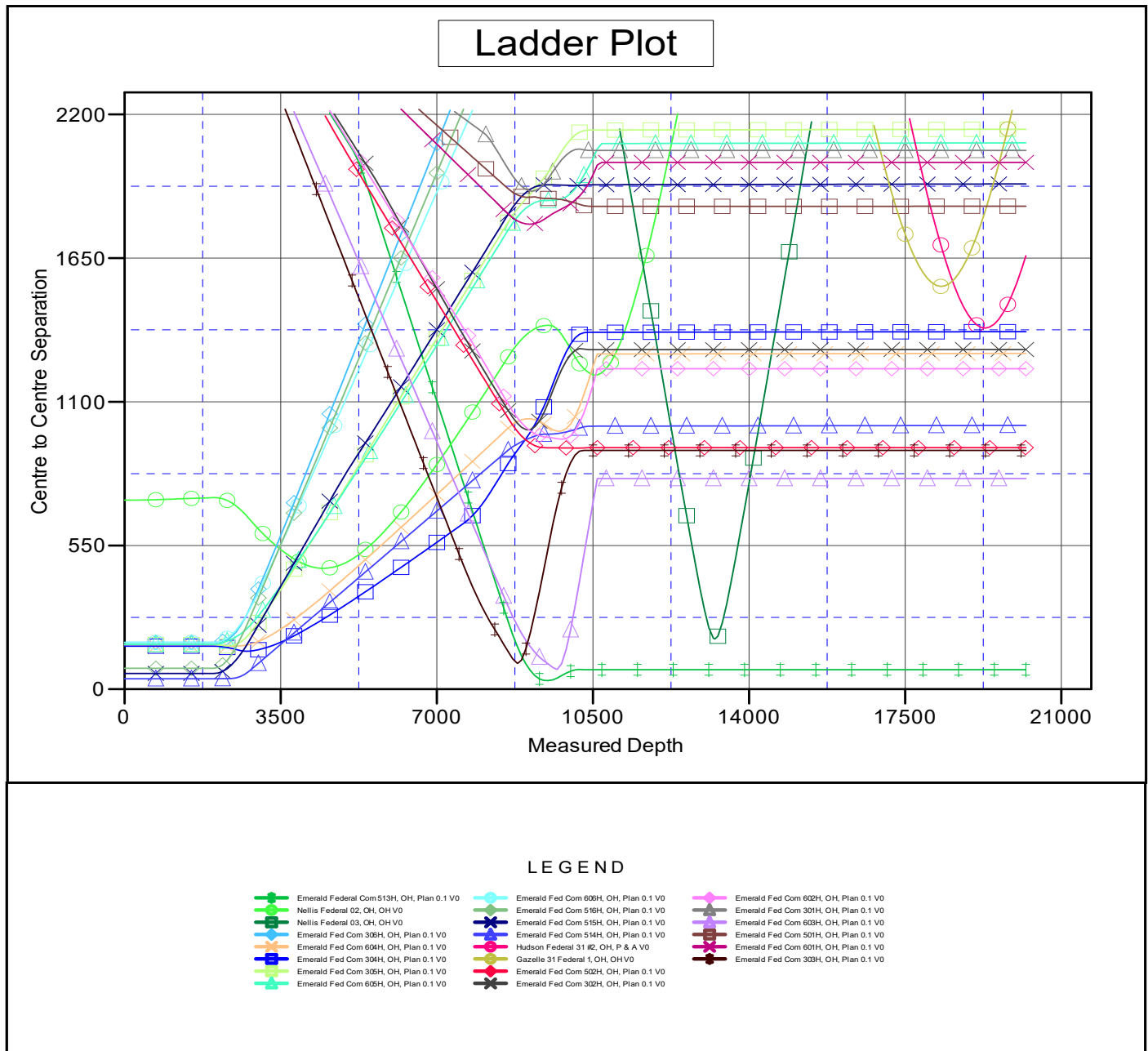
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 3709.1usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Emerald Fed Com 503H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.34°



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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 503H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.1usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.1usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 503H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 3709.1usft (Original Well Ele

Offset Depths are relative to Offset Datum

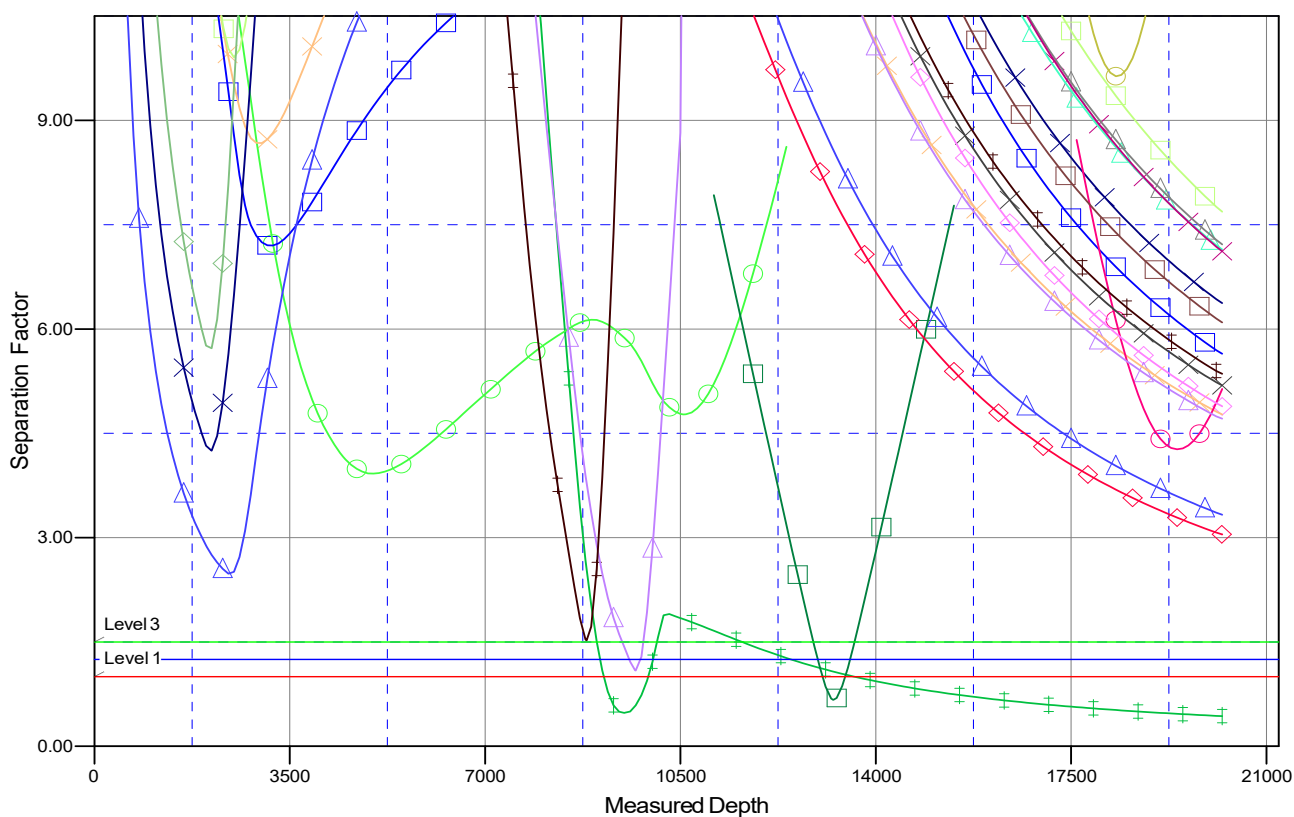
Central Meridian is -104.333334

Coordinates are relative to: Emerald Fed Com 503H

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

Grid Convergence at Surface is: 0.34°

Separation Factor Plot



LEGEND

Emerald Federal Com 513H, OH, Plan 0.1 V0	Emerald Fed Com 506H, OH, Plan 0.1 V0	Emerald Fed Com 602H, OH, Plan 0.1 V0
Nellis Federal 02, OH, OHV0	Emerald Fed Com 516H, OH, Plan 0.1 V0	Emerald Fed Com 301H, OH, Plan 0.1 V0
Nellis Federal 03, OH, OHV0	Emerald Fed Com 515H, OH, Plan 0.1 V0	Emerald Fed Com 603H, OH, Plan 0.1 V0
Emerald Fed Com 306H, OH, Plan 0.1 V0	Emerald Fed Com 514H, OH, Plan 0.1 V0	Emerald Fed Com 501H, OH, Plan 0.1 V0
Emerald Fed Com 604H, OH, Plan 0.1 V0	Hudson Federal 31 42, OH, P & A V0	Emerald Fed Com 601H, OH, Plan 0.1 V0
Emerald Fed Com 304H, OH, Plan 0.1 V0	Gazelle 31 Federal 1, OH, OHV0	Emerald Fed Com 303H, OH, Plan 0.1 V0
Emerald Fed Com 305H, OH, Plan 0.1 V0	Emerald Fed Com 502H, OH, Plan 0.1 V0	
Emerald Fed Com 605H, OH, Plan 0.1 V0	Emerald Fed Com 302H, OH, Plan 0.1 V0	

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

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District II
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District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
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1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 384426

CONDITIONS

Operator: Avant Operating, LLC 1515 Wynkoop Street Denver, CO 80202	OGRID: 330396
	Action Number: 384426
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	EFFECTIVE DATE FOR SUBMITTING NEW FORM C-102 WAS 08/01/2024. PLEASE SUBMIT C-102 ON NEW FORM.	9/18/2024