

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.5. Lease Serial No.
NMNM123528

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
SEBASTIAN FEDERAL COM 703H9. API Well No.
30-025-46985-00-X110. Field and Pool or Exploratory Area
WC-025 G09 S243310P-UP WOLFCMP11. County or Parish, State
LEA COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

COG OPERATING LLC

Contact: STAN WAGNER

E-Mail: swagner@concho.com

3a. Address

ONE CONCHO CENTER 600 W ILLINOIS AVENUE
MIDLAND, TX 79701-4287

3b. Phone No. (include area code)

Ph: 432.253.9685

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

Sec 18 T24S R34E NWNE 250FNL 2195FEL
32.224136 N Lat, 103.507591 W Lon

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

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

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

COG Operating LLC requests an amendment to our approved APD for this well to reflect a change in BHL as detailed by the attachments to this sundry.

Change BHL TO: 50' FSL & 990' FEL SESE 18-24S-34E

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

Electronic Submission #507334 verified by the BLM Well Information System
For COG OPERATING LLC, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 03/17/2020 (20PP1697SE)

Name (Printed/Typed) STAN WAGNER

Title REGULATORY ADVISOR

Signature (Electronic Submission)

Date 03/17/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JENNIFER SANCHEZ

Title PETROLEUM ENGINEER

Date 11/02/2020

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 Hobbs

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

(Instructions on page 2)

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

Revisions to Operator-Submitted EC Data for Sundry Notice #507334

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM123528	NMNM123528
Agreement:		
Operator:	COG OPERATING LLC ATTN: STAN WAGNER 600 WEST ILLINOIS AVE. MIDLAND, TX 79701 Ph: 432-253-9685	COG OPERATING LLC ONE CONCHO CENTER 600 W ILLINOIS AVENUE MIDLAND, TX 79701-4287 Ph: 432.685.4342
Admin Contact:	STAN WAGNER REGULATORY ADVISOR E-Mail: swagner@concho.com Ph: 432-253-9685	STAN WAGNER REGULATORY ADVISOR E-Mail: swagner@concho.com Ph: 432.253.9685
Tech Contact:	STAN WAGNER REGULATORY ADVISOR E-Mail: swagner@concho.com Ph: 432-253-9685	STAN WAGNER REGULATORY ADVISOR E-Mail: swagner@concho.com Ph: 432.253.9685
Location:		
State:	NM	NM
County:	LEA	LEA
Field/Pool:	WILDCAT WOLFCAMP OIL	WC-025 G09 S243310P-UP WOLFCMP
Well/Facility:	SEBASTIAN FEDERAL COM 703H Sec 18 T24S R34E Mer NMP NWNE 250FNL 2195FEL	SEBASTIAN FEDERAL COM 703H Sec 18 T24S R34E NWNE 250FNL 2195FEL 32.224136 N Lat, 103.507591 W Lon

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating, LLC
LEASE NO.:	NMM-123528
WELL NAME & NO.:	Sebastian Federal Com 703H
SURFACE HOLE FOOTAGE:	0250' FNL & 2195' FEL
BOTTOM HOLE FOOTAGE:	0050' FSL & 0990' FEL Sec. 18, T.24 S., R.34 E.
LOCATION:	Section 18, T.24 S., R.34 E., NMPM
COUNTY:	Lea County, New Mexico

COA

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

Possible water flows in the Salado and Castile.

Possible lost circulation in the Rustler, Red Beds, and Delaware.

Abnormal pressure may be encountered upon penetrating the 3rd Bone Spring lime and subsequent formations.

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 Onshore Order 6 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 **10-3/4** inch surface casing shall be set at approximately **1315** feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - 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.
2. The minimum required fill of cement behind the **7-5/8** 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 X 5** 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. 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.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 3500 psi.**

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.
- 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)
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for 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.
3. 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.
4. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
5. 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.
6. 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.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- c. 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.
- d. The results of the test shall be reported to the appropriate BLM office.
- e. 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.
- f. 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.
- g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

JAM 11022020

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
Phone: (505) 393-6161 Fax: (505) 393-0720

DISTRICT II
811 S. FIRST ST., ARTESIA, NM 88210
Phone: (505) 748-1283 Fax: (505) 748-9720

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 476-3480 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025- 46985	Pool Code 98135	Pool Name WC-025 G-09 S243310P; UPPER WOLFCAMP
Property Code	Property Name SEBASTIAN FEDERAL COM	Well Number 703H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3585.1'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	18	24-S	34-E		250	NORTH	2195	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	18	24-S	34-E		50	SOUTH	990	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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

LOT 1 39.32 Ac	Y=446514.0 N X=797556.7 E	250' S.L. FTP 100' FNL & 990' FEL Y=446416.9 N X=797891.1 E LAT.=32.224554° N LONG.=103.503693° W GRID AZ. TO FTP 82°24'12"	2195' Y=446525.5 N X=798880.2 E
LOT 2 39.42 Ac	NAD 83 NME SURFACE LOCATION Y=446256.4 N X=796687.9 E LAT.=32.224138° N LONG.=103.507588° W		
LOT 3 39.51 Ac	NAD 83 NME PROPOSED BOTTOM HOLE LOCATION Y=441288.5 N X=797935.7 E LAT.=32.210456° N LONG.=103.503677° W	LEASE X-ING LAT.=32.217573° N LONG.=103.503685° W	
LOT 4 39.60 Ac	Y=441235.8 N X=797606.1 E	LTP 100' FSL & 990' FEL Y=441338.5 N X=797935.2 E LAT.=32.210594° N LONG.=103.503678° W	Y=441246.6 N X=798926.1 E

GRID AZ. - 179°30'09"
HORIZ. DIST. - 5128.6'

50' B.H. 990'

OPERATOR CERTIFICATION

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

Stan Wagner 3/17/20
Signature Date

Stan Wagner
Printed Name

E-mail Address

SURVEYOR CERTIFICATION

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

SEPTEMBER 23, 2019
Date of Survey

Signature & Seal of Professional Surveyor

Chad L. Harcrow 11/4/19
Certificate No. CHAD HARCROW 17777
W.O. # 19-2020 DRAWN BY: VD

Intent ☒ As Drilled ☐

API # 30-025- 46985		
Operator Name: COG Operating LLC	Property Name: Sebastian Federal Com	Well Number 703H

Kick Off Point (KOP)

UL B	Section 18	Township 24S	Range 34E	Lot	Feet	From N/S	Feet	From E/W	County Lea
Latitude					Longitude			NAD 83	

First Take Point (FTP)

UL B	Section 18	Township 24S	Range 34E	Lot	Feet 100	From N/S North	Feet 990	From E/W East	County Lea
Latitude 32.224554					Longitude -103.503693			NAD NAD 83	

Last Take Point (LTP)

UL P	Section 18	Township 24S	Range 34E	Lot	Feet 100	From N/S South	Feet 990	From E/W East	County Lea
Latitude 32.210594					Longitude -103.503678			NAD NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? ☐ YESIs this well an infill well? ☐ NO

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

SEBASTIAN FEDERAL COM 703H

OWB

PWP2

Anticollision Report

16 March, 2020

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Reference Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	SEBASTIAN FEDERAL COM 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP2	Offset TVD Reference:	Offset Datum

Reference	PWP2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.0 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	3/16/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,601.0	PWP2 (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
11,601.0	16,971.2	PWP2 (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction	

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						
BULLDOG						
SEBASTIAN FEDERAL COM 704H - OWB - PWP2	2,500.0	2,499.9	30.0	17.3	2.367	CC, ES, SF
DEEP BSS						
SEBASTIAN FEDERAL COM #1H - OWB - ACTUAL WE						Out of range
SEBASTIAN FEDERAL COM #2H - OWB - ACTUAL WE						Out of range
SEBASTIAN FEDERAL COM #3H - OWB - ACTUAL WE	8,500.0	8,465.2	64.8	50.1	4.399	SF
SEBASTIAN FEDERAL COM #3H - OWB - ACTUAL WE	8,600.0	8,564.6	63.8	49.3	4.406	ES
SEBASTIAN FEDERAL COM #3H - OWB - ACTUAL WE	8,604.9	8,569.5	63.8	49.3	4.408	CC
SEBASTIAN FEDERAL COM #4H - LATERAL 01 - AWP						Out of range
SEBASTIAN FEDERAL COM #4H - OWB-PILOT HOLE	12,277.1	12,062.1	998.6	980.6	55.646	CC, ES
SEBASTIAN FEDERAL COM #4H - OWB-PILOT HOLE	12,320.8	12,066.3	999.6	981.5	55.291	SF

Offset Design BULLDOG - SEBASTIAN FEDERAL COM 704H - OWB - PWP2												Offset Site Error:		0.0 usft
Survey Program: 0-MWD+IFR1+FDIR												Offset Well Error:		3.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.0	0.0	0.0	0.0	3.0	3.0	-90.57	-0.3	-30.0	30.0					
100.0	100.0	99.9	99.9	3.0	3.0	-90.57	-0.3	-30.0	30.0	24.0	6.00	4.998		
200.0	200.0	199.9	199.9	3.0	3.0	-90.57	-0.3	-30.0	30.0	24.0	6.04	4.967		
300.0	300.0	299.9	299.9	3.0	3.1	-90.57	-0.3	-30.0	30.0	23.9	6.12	4.902		
400.0	400.0	399.9	399.9	3.0	3.2	-90.57	-0.3	-30.0	30.0	23.8	6.24	4.808		
500.0	500.0	499.9	499.9	3.1	3.4	-90.57	-0.3	-30.0	30.0	23.6	6.40	4.691		
600.0	600.0	599.9	599.9	3.1	3.6	-90.57	-0.3	-30.0	30.0	23.4	6.58	4.557		
700.0	700.0	699.9	699.9	3.1	3.8	-90.57	-0.3	-30.0	30.0	23.2	6.80	4.413		
800.0	800.0	799.9	799.9	3.2	4.0	-90.57	-0.3	-30.0	30.0	23.0	7.04	4.264		
900.0	900.0	899.9	899.9	3.2	4.2	-90.57	-0.3	-30.0	30.0	22.7	7.29	4.114		
1,000.0	1,000.0	999.9	999.9	3.2	4.5	-90.57	-0.3	-30.0	30.0	22.4	7.57	3.964		
1,100.0	1,100.0	1,099.9	1,099.9	3.3	4.8	-90.57	-0.3	-30.0	30.0	22.1	7.86	3.819		
1,200.0	1,200.0	1,199.9	1,199.9	3.4	5.1	-90.57	-0.3	-30.0	30.0	21.8	8.16	3.678		
1,300.0	1,300.0	1,299.9	1,299.9	3.4	5.3	-90.57	-0.3	-30.0	30.0	21.5	8.47	3.543		
1,400.0	1,400.0	1,399.9	1,399.9	3.5	5.6	-90.57	-0.3	-30.0	30.0	21.2	8.79	3.414		
1,500.0	1,500.0	1,499.9	1,499.9	3.5	6.0	-90.57	-0.3	-30.0	30.0	20.9	9.12	3.291		

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Reference Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	SEBASTIAN FEDERAL COM 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+IFR1+FDIR													Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,600.0	1,600.0	1,599.9	1,599.9	3.6	6.3	-90.57	-0.3	-30.0	30.0	20.5	9.45	3.174		
1,700.0	1,700.0	1,699.9	1,699.9	3.7	6.6	-90.57	-0.3	-30.0	30.0	20.2	9.79	3.063		
1,800.0	1,800.0	1,799.9	1,799.9	3.8	6.9	-90.57	-0.3	-30.0	30.0	19.9	10.14	2.959		
1,900.0	1,900.0	1,899.9	1,899.9	3.9	7.2	-90.57	-0.3	-30.0	30.0	19.5	10.49	2.860		
2,000.0	2,000.0	1,999.9	1,999.9	3.9	7.6	-90.57	-0.3	-30.0	30.0	19.2	10.85	2.766		
2,100.0	2,100.0	2,099.9	2,099.9	4.0	7.9	-90.57	-0.3	-30.0	30.0	18.8	11.21	2.677		
2,200.0	2,200.0	2,199.9	2,199.9	4.1	8.2	-90.57	-0.3	-30.0	30.0	18.4	11.57	2.593		
2,300.0	2,300.0	2,299.9	2,299.9	4.2	8.6	-90.57	-0.3	-30.0	30.0	18.1	11.94	2.514		
2,400.0	2,400.0	2,399.9	2,399.9	4.3	8.9	-90.57	-0.3	-30.0	30.0	17.7	12.31	2.438		
2,500.0	2,500.0	2,499.9	2,499.9	4.4	9.2	-90.57	-0.3	-30.0	30.0	17.3	12.68	2.367 CC, ES, SF		
2,600.0	2,600.0	2,599.9	2,599.9	4.5	9.6	-177.70	-0.3	-30.0	31.7	18.7	13.05	2.432		
2,700.0	2,699.8	2,699.7	2,699.7	4.5	9.9	-178.03	-0.3	-30.0	37.0	23.5	13.43	2.752		
2,750.0	2,749.7	2,749.6	2,749.6	4.5	10.1	-178.21	-0.3	-30.0	40.9	27.3	13.63	3.001		
2,800.0	2,799.5	2,799.4	2,799.4	4.5	10.3	-178.39	-0.3	-30.0	45.3	31.4	13.82	3.274		
2,900.0	2,899.1	2,899.0	2,899.0	4.6	10.6	-178.65	-0.3	-30.0	54.0	39.7	14.21	3.796		
3,000.0	2,998.7	2,998.6	2,998.6	4.6	10.9	-178.83	-0.3	-30.0	62.7	48.1	14.61	4.289		
3,100.0	3,098.4	3,098.3	3,098.3	4.7	11.3	-178.98	-0.3	-30.0	71.4	56.4	15.02	4.755		
3,200.0	3,198.0	3,197.9	3,197.9	4.7	11.6	-179.09	-0.3	-30.0	80.1	64.7	15.42	5.194		
3,300.0	3,297.6	3,297.5	3,297.5	4.8	12.0	-179.18	-0.3	-30.0	88.8	73.0	15.83	5.610		
3,400.0	3,397.2	3,397.1	3,397.1	4.8	12.3	-179.25	-0.3	-30.0	97.5	81.3	16.25	6.003		
3,500.0	3,496.8	3,496.7	3,496.7	4.9	12.7	-179.31	-0.3	-30.0	106.3	89.6	16.67	6.375		
3,600.0	3,596.4	3,596.3	3,596.3	5.0	13.0	-179.36	-0.3	-30.0	115.0	97.9	17.09	6.728		
3,700.0	3,696.1	3,696.0	3,696.0	5.0	13.4	-179.41	-0.3	-30.0	123.7	106.2	17.51	7.063		
3,800.0	3,795.7	3,795.6	3,795.6	5.1	13.7	-179.45	-0.3	-30.0	132.4	114.5	17.94	7.380		
3,900.0	3,895.3	3,895.2	3,895.2	5.2	14.1	-179.48	-0.3	-30.0	141.1	122.7	18.37	7.681		
4,000.0	3,994.9	3,994.8	3,994.8	5.2	14.4	-179.51	-0.3	-30.0	149.8	131.0	18.80	7.968		
4,100.0	4,094.5	4,094.4	4,094.4	5.3	14.8	-179.54	-0.3	-30.0	158.5	139.3	19.24	8.240		
4,200.0	4,194.2	4,194.1	4,194.1	5.4	15.1	-179.56	-0.3	-30.0	167.3	147.6	19.68	8.500		
4,300.0	4,293.8	4,293.7	4,293.7	5.5	15.5	-179.58	-0.3	-30.0	176.0	155.9	20.12	8.747		
4,400.0	4,393.4	4,393.3	4,393.3	5.5	15.8	-179.60	-0.3	-30.0	184.7	164.1	20.56	8.982		
4,500.0	4,493.0	4,492.9	4,492.9	5.6	16.2	-179.62	-0.3	-30.0	193.4	172.4	21.01	9.207		
4,600.0	4,592.6	4,592.5	4,592.5	5.7	16.5	-179.64	-0.3	-30.0	202.1	180.7	21.45	9.422		
4,700.0	4,692.3	4,692.2	4,692.2	5.8	16.9	-179.65	-0.3	-30.0	210.8	188.9	21.90	9.627		
4,800.0	4,791.9	4,791.8	4,791.8	5.9	17.2	-179.67	-0.3	-30.0	219.5	197.2	22.35	9.823		
4,900.0	4,891.5	4,891.4	4,891.4	6.0	17.6	-179.68	-0.3	-30.0	228.3	205.5	22.80	10.011		
5,000.0	4,991.1	4,991.0	4,991.0	6.1	17.9	-179.69	-0.3	-30.0	237.0	213.7	23.25	10.191		
5,100.0	5,090.7	5,090.6	5,090.6	6.2	18.3	-179.70	-0.3	-30.0	245.7	222.0	23.71	10.363		
5,200.0	5,190.4	5,190.3	5,190.3	6.3	18.6	-179.71	-0.3	-30.0	254.4	230.2	24.16	10.528		
5,300.0	5,290.0	5,289.9	5,289.9	6.4	19.0	-179.72	-0.3	-30.0	263.1	238.5	24.62	10.687		
5,400.0	5,389.6	5,389.5	5,389.5	6.5	19.3	-179.73	-0.3	-30.0	271.8	246.8	25.08	10.839		
5,500.0	5,489.2	5,489.1	5,489.1	6.6	19.7	-179.74	-0.3	-30.0	280.6	255.0	25.54	10.986		
5,600.0	5,588.8	5,588.8	5,588.8	6.7	20.0	-179.75	0.9	-30.5	289.7	263.7	25.98	11.150		
5,700.0	5,688.5	5,684.7	5,684.6	6.8	20.4	-178.89	4.1	-31.8	299.7	273.2	26.42	11.341		
5,800.0	5,788.1	5,784.1	5,784.0	6.9	20.7	-178.30	7.4	-33.2	309.6	282.8	26.87	11.526		
5,900.0	5,887.7	5,883.6	5,883.4	7.0	21.1	-177.74	10.7	-34.5	319.7	292.3	27.31	11.705		
6,000.0	5,987.3	5,983.0	5,982.7	7.1	21.4	-177.22	14.0	-35.9	329.7	301.9	27.75	11.879		
6,100.0	6,086.9	6,082.5	6,082.1	7.2	21.8	-176.73	17.4	-37.3	339.8	311.6	28.20	12.048		
6,200.0	6,186.6	6,181.9	6,181.5	7.3	22.1	-176.27	20.7	-38.6	349.9	321.2	28.65	12.211		
6,300.0	6,286.2	6,281.4	6,280.9	7.4	22.5	-175.83	24.0	-40.0	360.0	330.9	29.10	12.370		
6,400.0	6,385.8	6,380.8	6,380.3	7.5	22.8	-175.42	27.3	-41.4	370.1	340.5	29.55	12.524		
6,500.0	6,485.4	6,480.3	6,479.7	7.6	23.2	-175.03	30.6	-42.7	380.2	350.2	30.00	12.674		
6,600.0	6,585.0	6,579.7	6,579.1	7.7	23.5	-174.66	33.9	-44.1	390.4	360.0	30.46	12.819		

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Reference Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	SEBASTIAN FEDERAL COM 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD+IFR1+FDIR												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
6,700.0	6,684.7	6,679.2	6,678.5	7.8	23.9	-174.31	37.2	-45.4	400.6	369.7	30.91	12.960	
6,800.0	6,784.3	6,778.6	6,777.8	7.9	24.2	-173.97	40.5	-46.8	410.8	379.4	31.36	13.097	
6,900.0	6,883.9	6,878.1	6,877.2	8.0	24.6	-173.66	43.8	-48.2	421.0	389.2	31.82	13.231	
7,000.0	6,983.5	6,977.5	6,976.6	8.1	24.9	-173.35	47.1	-49.5	431.2	398.9	32.28	13.360	
7,100.0	7,083.1	7,077.0	7,076.0	8.3	25.3	-173.07	50.4	-50.9	441.5	408.7	32.74	13.486	
7,200.0	7,182.7	7,176.4	7,175.4	8.4	25.7	-172.79	53.7	-52.2	451.7	418.5	33.19	13.608	
7,300.0	7,282.4	7,275.9	7,274.8	8.5	26.0	-172.53	57.0	-53.6	462.0	428.3	33.65	13.727	
7,400.0	7,382.0	7,375.3	7,374.2	8.6	26.4	-172.27	60.4	-55.0	472.2	438.1	34.11	13.842	
7,500.0	7,481.6	7,474.8	7,473.5	8.7	26.7	-172.03	63.7	-56.3	482.5	447.9	34.58	13.954	
7,600.0	7,581.2	7,574.2	7,572.9	8.8	27.1	-171.80	67.0	-57.7	492.8	457.7	35.04	14.064	
7,700.0	7,680.8	7,673.7	7,672.3	8.9	27.4	-171.58	70.3	-59.1	503.0	467.5	35.50	14.170	
7,800.0	7,780.5	7,773.1	7,771.7	9.1	27.8	-171.37	73.6	-60.4	513.3	477.4	35.96	14.274	
7,900.0	7,880.1	7,872.6	7,871.1	9.2	28.1	-171.16	76.9	-61.8	523.6	487.2	36.43	14.375	
8,000.0	7,979.7	7,972.0	7,970.5	9.3	28.5	-170.97	80.2	-63.1	534.0	497.1	36.89	14.473	
8,100.0	8,079.3	8,071.5	8,069.9	9.4	28.8	-170.78	83.5	-64.5	544.3	506.9	37.36	14.569	
8,200.0	8,178.9	8,170.9	8,169.3	9.5	29.2	-170.60	86.8	-65.9	554.6	516.8	37.82	14.662	
8,300.0	8,278.6	8,270.4	8,268.6	9.6	29.5	-170.42	90.1	-67.2	564.9	526.6	38.29	14.753	
8,400.0	8,378.2	8,369.8	8,368.0	9.8	29.9	-170.25	93.4	-68.6	575.2	536.5	38.76	14.842	
8,500.0	8,477.8	8,469.3	8,467.4	9.9	30.3	-170.09	96.7	-69.9	585.6	546.3	39.23	14.928	
8,600.0	8,577.4	8,568.7	8,566.8	10.0	30.6	-169.93	100.0	-71.3	595.9	556.2	39.69	15.013	
8,700.0	8,677.0	8,668.2	8,666.2	10.1	31.0	-169.78	103.3	-72.7	606.2	566.1	40.16	15.095	
8,800.0	8,776.7	8,767.6	8,765.6	10.2	31.3	-169.63	106.7	-74.0	616.6	576.0	40.63	15.175	
8,900.0	8,876.3	8,867.1	8,865.0	10.4	31.7	-169.49	110.0	-75.4	626.9	585.8	41.10	15.254	
9,000.0	8,975.9	8,966.5	8,964.3	10.5	32.0	-169.35	113.3	-76.7	637.3	595.7	41.57	15.330	
9,100.0	9,075.5	9,066.0	9,063.7	10.6	32.4	-169.22	116.6	-78.1	647.7	605.6	42.04	15.405	
9,200.0	9,175.1	9,165.4	9,163.1	10.7	32.7	-169.09	119.9	-79.5	658.0	615.5	42.51	15.478	
9,300.0	9,274.8	9,264.9	9,262.5	10.8	33.1	-168.96	123.2	-80.8	668.4	625.4	42.98	15.549	
9,400.0	9,374.4	9,364.3	9,361.9	11.0	33.4	-168.84	126.5	-82.2	678.8	635.3	43.46	15.619	
9,500.0	9,474.0	9,463.8	9,461.3	11.1	33.8	-168.73	129.8	-83.6	689.1	645.2	43.93	15.687	
9,600.0	9,573.6	9,563.3	9,560.7	11.2	34.2	-168.61	133.1	-84.9	699.5	655.1	44.40	15.754	
9,700.0	9,673.2	9,662.7	9,660.1	11.3	34.5	-168.50	136.4	-86.3	709.9	665.0	44.87	15.819	
9,800.0	9,772.9	9,762.2	9,759.4	11.5	34.9	-168.39	139.7	-87.6	720.2	674.9	45.35	15.883	
9,900.0	9,872.5	9,861.6	9,858.8	11.6	35.2	-168.29	143.0	-89.0	730.6	684.8	45.82	15.945	
10,000.0	9,972.1	9,961.1	9,958.2	11.7	35.6	-168.19	146.3	-90.4	741.0	694.7	46.30	16.006	
10,100.0	10,071.7	10,060.5	10,057.6	11.8	35.9	-168.09	149.6	-91.7	751.4	704.6	46.77	16.065	
10,200.0	10,171.3	10,160.0	10,157.0	11.9	36.3	-167.99	153.0	-93.1	761.8	714.5	47.25	16.124	
10,300.0	10,271.0	10,259.4	10,256.4	12.1	36.6	-167.90	156.3	-94.4	772.2	724.5	47.72	16.181	
10,400.0	10,370.6	10,358.9	10,355.8	12.2	37.0	-167.81	159.6	-95.8	782.6	734.4	48.20	16.237	
10,500.0	10,470.2	10,458.3	10,455.1	12.3	37.4	-167.72	162.9	-97.2	793.0	744.3	48.67	16.291	
10,600.0	10,569.8	10,557.8	10,554.5	12.4	37.7	-167.63	166.2	-98.5	803.4	754.2	49.15	16.345	
10,700.0	10,669.4	10,657.2	10,653.9	12.6	38.1	-167.55	169.5	-99.9	813.8	764.1	49.63	16.397	
10,800.0	10,769.0	10,756.7	10,753.3	12.7	38.4	-167.47	172.8	-101.3	824.1	774.0	50.10	16.449	
10,900.0	10,868.7	10,856.1	10,852.7	12.8	38.8	-167.39	176.1	-102.6	834.5	784.0	50.58	16.499	
11,000.0	10,968.3	10,955.6	10,952.1	12.9	39.1	-167.31	179.4	-104.0	845.0	793.9	51.06	16.548	
11,100.0	11,067.9	11,055.0	11,051.5	13.1	39.5	-167.23	182.7	-105.3	855.4	803.8	51.54	16.597	
11,200.0	11,167.5	11,154.5	11,150.9	13.2	39.8	-167.16	186.0	-106.7	865.8	813.7	52.02	16.644	
11,300.0	11,267.1	11,253.9	11,250.2	13.3	40.2	-167.09	189.3	-108.1	876.2	823.7	52.49	16.691	
11,400.0	11,366.8	11,353.4	11,349.6	13.4	40.6	-167.02	192.6	-109.4	886.6	833.6	52.97	16.736	
11,500.0	11,466.4	11,452.8	11,449.0	13.6	40.9	-166.95	195.9	-110.8	897.0	843.5	53.45	16.781	
11,601.2	11,567.2	11,553.8	11,550.0	13.7	41.3	-166.90	199.2	-112.2	907.5	853.6	53.92	16.830	
11,625.0	11,590.9	11,576.1	11,572.1	13.7	41.4	-170.39	197.6	-112.7	910.0	856.0	54.00	16.851	
11,650.0	11,615.6	11,600.9	11,596.7	13.7	41.5	-157.37	193.1	-113.2	913.1	859.0	54.09	16.881	

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Reference Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	SEBASTIAN FEDERAL COM 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP2	Offset TVD Reference:	Offset Datum

Offset Design BULLDOG - SEBASTIAN FEDERAL COM 704H - OWB - PWP2												Offset Site Error:	0.0 usft
Survey Program: 0-MWD+IFR1+FDIR												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,675.0	11,640.2	11,671.2	11,666.3	13.7	41.6	149.71	185.7	-113.6	916.6	862.4	54.19	16.916	
11,700.0	11,664.5	11,708.1	11,701.7	13.7	41.8	144.60	175.6	-114.0	920.6	866.3	54.28	16.959	
11,725.0	11,688.6	11,744.2	11,735.6	13.7	41.9	140.80	163.1	-114.3	925.1	870.7	54.39	17.009	
11,750.0	11,712.2	11,779.5	11,767.8	13.7	42.0	137.74	148.5	-114.6	930.0	875.5	54.49	17.067	
11,775.0	11,735.4	11,814.1	11,798.0	13.7	42.0	135.11	131.9	-114.9	935.4	880.8	54.60	17.133	
11,800.0	11,758.0	11,847.7	11,826.3	13.7	42.1	132.75	113.7	-115.1	941.3	886.6	54.71	17.207	
11,825.0	11,780.1	11,880.5	11,852.5	13.7	42.2	130.55	94.1	-115.2	947.7	892.9	54.82	17.289	
11,850.0	11,801.6	11,912.3	11,876.7	13.7	42.2	128.46	73.3	-115.4	954.6	899.6	54.92	17.380	
11,875.0	11,822.4	11,943.3	11,898.8	13.7	42.3	126.42	51.7	-115.5	961.9	906.9	55.03	17.479	
11,900.0	11,842.4	11,973.3	11,918.9	13.8	42.4	124.42	29.3	-115.5	969.7	914.6	55.14	17.587	
11,925.0	11,861.6	12,002.6	11,937.0	13.8	42.4	122.44	6.3	-115.6	978.0	922.7	55.24	17.703	
11,950.0	11,880.0	12,031.0	11,953.3	13.8	42.5	120.46	-17.0	-115.6	986.7	931.3	55.35	17.827	
11,975.0	11,897.4	12,058.8	11,967.8	13.8	42.5	118.48	-40.6	-115.5	995.8	940.3	55.45	17.959	

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Reference Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	SEBASTIAN FEDERAL COM 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP2	Offset TVD Reference:	Offset Datum

Offset Design DEEP BSS - SEBASTIAN FEDERAL COM #3H - OWB - ACTUAL WELLPATH												Offset Site Error:	0.0 usft
Survey Program: 100- VES GyroFlex, 10459-MWD												Offset Well Error:	2.0 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	3.0	2.0	81.56	63.0	424.4	429.3				
100.0	100.0	80.4	80.4	3.0	2.0	81.60	62.8	424.9	429.5	424.5	5.00	85.898	
200.0	200.0	179.1	179.1	3.0	2.0	81.70	62.2	426.3	430.9	425.8	5.01	86.034	
300.0	300.0	281.6	281.6	3.0	2.0	81.77	61.9	427.6	432.0	427.0	5.03	85.901	
400.0	400.0	380.6	380.6	3.0	2.1	81.81	61.7	428.4	432.9	427.8	5.06	85.508	
500.0	500.0	480.1	480.0	3.1	2.1	81.85	61.5	429.6	434.0	428.9	5.11	84.976	
600.0	600.0	579.6	579.6	3.1	2.2	81.90	61.3	430.8	435.2	430.0	5.16	84.272	
700.0	700.0	679.8	679.7	3.1	2.2	81.94	61.2	432.1	436.5	431.2	5.23	83.401	
800.0	800.0	781.4	781.4	3.2	2.3	81.96	61.2	433.2	437.5	432.2	5.31	82.330	
900.0	900.0	883.2	883.2	3.2	2.4	81.99	61.1	433.9	438.2	432.8	5.40	81.133	
1,000.0	1,000.0	981.8	981.7	3.2	2.5	82.03	60.8	434.5	438.7	433.3	5.49	79.934	
1,100.0	1,100.0	1,080.1	1,080.1	3.3	2.5	82.09	60.5	435.5	439.7	434.1	5.59	78.710	
1,200.0	1,200.0	1,179.2	1,179.2	3.4	2.6	82.17	60.1	436.8	441.0	435.3	5.69	77.463	
1,300.0	1,300.0	1,279.1	1,279.0	3.4	2.8	82.25	59.6	438.3	442.3	436.5	5.81	76.186	
1,400.0	1,400.0	1,381.0	1,380.9	3.5	2.9	82.32	59.3	439.5	443.6	437.6	5.93	74.808	
1,500.0	1,500.0	1,484.1	1,484.0	3.5	3.0	82.35	59.2	440.2	444.2	438.1	6.06	73.279	
1,600.0	1,600.0	1,584.6	1,584.5	3.6	3.1	82.35	59.2	440.4	444.3	438.1	6.20	71.683	
1,700.0	1,700.0	1,684.4	1,684.3	3.7	3.2	82.33	59.3	440.5	444.5	438.1	6.32	70.322	
1,800.0	1,800.0	1,784.7	1,784.6	3.8	3.2	82.27	59.8	440.6	444.6	438.2	6.41	69.376	
1,900.0	1,900.0	1,886.7	1,886.5	3.9	3.2	82.15	60.7	440.4	444.5	438.1	6.46	68.807	
2,000.0	2,000.0	1,985.3	1,985.2	3.9	3.2	82.04	61.5	440.0	444.3	437.8	6.51	68.286	
2,004.7	2,004.7	1,989.9	1,989.8	3.9	3.2	82.04	61.6	440.0	444.3	437.8	6.51	68.265	
2,100.0	2,100.0	2,084.7	2,084.6	4.0	3.2	81.95	62.2	440.0	444.4	437.8	6.57	67.604	
2,200.0	2,200.0	2,186.3	2,186.2	4.1	3.3	81.83	63.1	439.8	444.3	437.7	6.64	66.963	
2,300.0	2,300.0	2,289.5	2,289.3	4.2	3.3	81.67	64.3	439.1	443.8	437.1	6.67	66.541	
2,400.0	2,400.0	2,388.5	2,388.3	4.3	3.3	81.47	65.7	438.0	442.9	436.2	6.70	66.109	
2,500.0	2,500.0	2,489.0	2,488.9	4.4	3.3	81.20	67.7	436.9	442.1	435.4	6.74	65.567	
2,600.0	2,600.0	2,588.4	2,588.2	4.5	3.3	-6.13	69.8	435.7	439.6	432.8	6.80	64.646	
2,700.0	2,699.8	2,689.9	2,689.6	4.5	3.3	-6.49	71.7	434.5	433.5	426.6	6.86	63.173	
2,750.0	2,749.7	2,739.0	2,738.8	4.5	3.4	-6.67	72.4	433.9	429.1	422.2	6.89	62.238	
2,800.0	2,799.5	2,787.7	2,787.5	4.5	3.4	-6.84	73.1	433.4	424.4	417.4	6.93	61.257	
2,900.0	2,899.1	2,885.1	2,884.9	4.6	3.4	-7.18	74.4	432.7	415.3	408.3	7.02	59.198	
3,000.0	2,998.7	2,983.7	2,983.5	4.6	3.5	-7.57	76.1	432.4	406.6	399.5	7.13	57.057	
3,100.0	3,098.4	3,082.3	3,082.0	4.7	3.6	-8.02	78.1	432.3	398.2	391.0	7.25	54.894	
3,200.0	3,198.0	3,180.8	3,180.5	4.7	3.7	-8.51	80.3	432.4	390.1	382.7	7.40	52.731	
3,300.0	3,297.6	3,279.8	3,279.5	4.8	3.8	-8.97	82.2	432.7	382.3	374.7	7.56	50.588	
3,400.0	3,397.2	3,380.0	3,379.6	4.8	3.9	-9.45	84.1	433.1	374.4	366.7	7.72	48.492	
3,500.0	3,496.8	3,477.1	3,476.7	4.9	4.0	-9.96	86.1	433.7	366.8	358.9	7.90	46.458	
3,600.0	3,596.4	3,575.7	3,575.3	5.0	4.1	-10.52	88.4	434.8	359.9	351.8	8.09	44.501	
3,700.0	3,696.1	3,673.9	3,673.4	5.0	4.3	-11.13	91.0	436.1	353.3	345.0	8.29	42.617	
3,800.0	3,795.7	3,771.0	3,770.5	5.1	4.4	-11.76	93.7	438.0	347.3	338.8	8.50	40.835	
3,900.0	3,895.3	3,871.2	3,870.6	5.2	4.5	-12.28	95.7	440.6	341.8	333.1	8.73	39.141	
4,000.0	3,994.9	3,971.8	3,971.2	5.2	4.7	-12.79	97.6	442.9	336.0	327.0	8.97	37.467	
4,100.0	4,094.5	4,071.8	4,071.2	5.3	4.8	-13.34	99.5	445.0	330.1	320.9	9.21	35.853	
4,200.0	4,194.2	4,171.1	4,170.5	5.4	4.9	-13.90	101.3	447.2	324.2	314.8	9.45	34.310	
4,300.0	4,293.8	4,269.8	4,269.1	5.5	5.1	-14.42	102.9	449.7	318.6	308.9	9.70	32.858	
4,400.0	4,393.4	4,365.9	4,365.1	5.5	5.2	-14.84	104.2	452.9	313.7	303.8	9.94	31.549	
4,500.0	4,493.0	4,463.6	4,462.7	5.6	5.3	-15.22	105.4	457.4	310.1	299.9	10.20	30.417	
4,600.0	4,592.6	4,563.8	4,562.8	5.7	5.4	-15.50	106.3	462.3	306.6	296.2	10.44	29.359	
4,700.0	4,692.3	4,664.2	4,663.0	5.8	5.6	-15.83	107.2	467.1	303.0	292.3	10.70	28.325	
4,800.0	4,791.9	4,764.5	4,763.2	5.9	5.7	-16.07	107.6	471.9	299.3	288.4	10.95	27.342	
4,900.0	4,891.5	4,864.9	4,863.5	6.0	5.8	-16.16	107.3	476.8	295.4	284.3	11.19	26.410	

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Reference Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	SEBASTIAN FEDERAL COM 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP2	Offset TVD Reference:	Offset Datum

Offset Design DEEP BSS - SEBASTIAN FEDERAL COM #3H - OWB - ACTUAL WELLPATH												Offset Site Error:	0.0 usft
Survey Program: 100- VES GyroFlex, 10459-MWD												Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,000.0	4,991.1	4,966.0	4,964.5	6.1	5.9	-16.13	106.2	481.8	291.3	279.9	11.42	25.514	
5,100.0	5,090.7	5,067.2	5,065.6	6.2	6.0	-16.15	105.3	486.1	286.7	275.1	11.65	24.604	
5,200.0	5,190.4	5,169.3	5,167.6	6.3	6.1	-16.26	104.5	489.9	281.6	269.7	11.89	23.674	
5,300.0	5,290.0	5,271.3	5,269.5	6.4	6.2	-16.45	103.8	492.7	275.6	263.4	12.14	22.704	
5,400.0	5,389.6	5,371.7	5,369.9	6.5	6.3	-16.70	103.2	494.8	269.0	256.7	12.38	21.734	
5,500.0	5,489.2	5,472.3	5,470.6	6.6	6.4	-16.94	102.4	496.9	262.3	249.7	12.62	20.792	
5,600.0	5,588.8	5,572.2	5,570.4	6.7	6.5	-17.25	101.8	498.5	255.4	242.5	12.86	19.862	
5,700.0	5,688.5	5,672.4	5,670.6	6.8	6.6	-17.56	101.1	500.3	248.4	235.3	13.09	18.970	
5,800.0	5,788.1	5,772.7	5,770.9	6.9	6.7	-17.96	100.5	501.6	241.1	227.8	13.34	18.082	
5,900.0	5,887.7	5,873.6	5,871.8	7.0	6.9	-18.47	100.2	502.5	233.6	220.0	13.58	17.206	
6,000.0	5,987.3	5,972.8	5,971.0	7.1	6.9	-19.03	99.9	503.1	225.8	212.0	13.81	16.352	
6,100.0	6,086.9	6,072.7	6,070.9	7.2	7.0	-19.59	99.4	504.0	218.2	204.2	14.03	15.547	
6,200.0	6,186.6	6,172.2	6,170.4	7.3	7.1	-20.17	98.9	504.8	210.5	196.2	14.26	14.758	
6,300.0	6,286.2	6,272.0	6,270.2	7.4	7.3	-20.87	98.7	505.5	202.9	188.4	14.50	13.996	
6,400.0	6,385.8	6,371.5	6,369.6	7.5	7.4	-21.59	98.3	506.3	195.4	180.6	14.74	13.258	
6,500.0	6,485.4	6,471.2	6,469.3	7.6	7.5	-22.40	98.1	507.1	187.9	173.0	14.98	12.548	
6,600.0	6,585.0	6,570.8	6,568.9	7.7	7.6	-23.33	98.0	507.9	180.5	165.3	15.23	11.855	
6,700.0	6,684.7	6,670.4	6,668.6	7.8	7.8	-24.38	98.1	508.6	173.2	157.8	15.49	11.188	
6,800.0	6,784.3	6,770.5	6,768.7	7.9	7.9	-25.56	98.2	509.2	165.9	150.2	15.74	10.540	
6,900.0	6,883.9	6,869.8	6,868.0	8.0	8.1	-26.84	98.2	509.7	158.6	142.6	15.99	9.917	
7,000.0	6,983.5	6,969.4	6,967.6	8.1	8.2	-28.19	98.3	510.5	151.5	135.3	16.23	9.339	
7,100.0	7,083.1	7,069.5	7,067.7	8.3	8.4	-29.70	98.3	511.2	144.5	128.0	16.46	8.779	
7,200.0	7,182.7	7,169.4	7,167.6	8.4	8.5	-31.43	98.3	511.5	137.2	120.6	16.66	8.235	
7,300.0	7,282.4	7,269.1	7,267.2	8.5	8.6	-33.32	98.2	511.8	130.0	113.2	16.83	7.723	
7,400.0	7,382.0	7,368.9	7,367.1	8.6	8.7	-35.38	97.9	512.1	122.9	106.0	16.96	7.249	
7,500.0	7,481.6	7,469.0	7,467.1	8.7	8.8	-37.54	97.3	512.4	115.8	98.7	17.02	6.802	
7,600.0	7,581.2	7,568.6	7,566.7	8.8	8.8	-39.98	96.5	512.5	108.5	91.5	17.01	6.378	
7,700.0	7,680.8	7,668.1	7,666.2	8.9	8.8	-42.88	95.9	512.6	101.6	84.7	16.95	5.996	
7,800.0	7,780.5	7,767.8	7,765.9	9.1	8.9	-46.24	95.5	512.6	95.1	78.2	16.83	5.647	
7,900.0	7,880.1	7,867.5	7,865.7	9.2	8.9	-49.95	94.8	512.8	88.8	72.1	16.67	5.323	
8,000.0	7,979.7	7,967.1	7,965.2	9.3	9.0	-54.08	94.0	513.0	82.8	66.4	16.46	5.031	
8,100.0	8,079.3	8,066.5	8,064.7	9.4	9.0	-58.73	93.2	513.4	77.6	61.4	16.19	4.789	
8,200.0	8,178.9	8,165.9	8,164.1	9.5	9.1	-64.20	92.9	513.7	73.2	57.4	15.85	4.618	
8,300.0	8,278.6	8,265.7	8,263.8	9.6	9.3	-70.07	92.6	514.4	69.8	54.3	15.49	4.505	
8,400.0	8,378.2	8,365.5	8,363.6	9.8	9.4	-76.50	92.1	514.9	66.9	51.8	15.10	4.434	
8,500.0	8,477.8	8,465.2	8,463.4	9.9	9.4	-83.57	91.5	515.3	64.8	50.1	14.73	4.399 SF	
8,600.0	8,577.4	8,564.6	8,562.7	10.0	9.5	-91.31	90.9	515.3	63.8	49.3	14.48	4.406 ES	
8,604.9	8,582.3	8,569.5	8,567.6	10.0	9.5	-91.70	90.9	515.3	63.8	49.3	14.48	4.408 CC	
8,700.0	8,677.0	8,664.0	8,662.1	10.1	9.4	-99.20	90.8	515.1	64.5	50.1	14.45	4.467	
8,800.0	8,776.7	8,763.5	8,761.6	10.2	9.4	-106.95	90.8	514.6	66.6	52.0	14.61	4.561	
8,900.0	8,876.3	8,863.0	8,861.1	10.4	9.3	-114.27	90.9	513.9	70.1	55.2	14.91	4.701	
9,000.0	8,975.9	8,962.5	8,960.6	10.5	9.3	-120.79	90.9	513.3	74.5	59.2	15.31	4.869	
9,100.0	9,075.5	9,061.7	9,059.8	10.6	9.2	-126.60	91.1	512.4	80.1	64.4	15.74	5.087	
9,200.0	9,175.1	9,161.1	9,159.2	10.7	9.2	-132.13	91.1	510.6	86.8	70.6	16.21	5.355	
9,300.0	9,274.8	9,260.3	9,258.4	10.8	9.1	-136.94	90.9	508.7	94.2	77.5	16.68	5.650	
9,400.0	9,374.4	9,359.5	9,357.5	11.0	9.1	-141.67	90.0	505.8	102.6	85.5	17.15	5.983	
9,500.0	9,474.0	9,458.6	9,456.6	11.1	9.0	-145.95	88.7	502.5	111.7	94.1	17.60	6.346	
9,600.0	9,573.6	9,557.8	9,555.7	11.2	9.0	-149.43	87.7	499.3	121.5	103.5	17.99	6.755	
9,700.0	9,673.2	9,657.5	9,655.3	11.3	9.0	-152.45	86.6	496.0	131.6	113.3	18.31	7.188	
9,800.0	9,772.9	9,757.1	9,754.9	11.5	8.9	-154.84	85.8	493.3	141.6	123.0	18.58	7.619	
9,900.0	9,872.5	9,856.6	9,854.4	11.6	8.9	-156.87	85.1	490.7	151.7	132.9	18.83	8.056	
10,000.0	9,972.1	9,955.9	9,953.6	11.7	8.9	-158.94	83.5	488.0	161.9	142.8	19.09	8.479	

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Reference Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	SEBASTIAN FEDERAL COM 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP2	Offset TVD Reference:	Offset Datum

Offset Design DEEP BSS - SEBASTIAN FEDERAL COM #3H - OWB - ACTUAL WELLPATH												Offset Site Error:	0.0 usft
Survey Program: 100- VES GyroFlex, 10459-MWD												Offset Well Error:	2.0 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.0	10,071.7	10,055.7	10,053.4	11.8	8.9	-160.81	81.8	485.1	172.3	152.9	19.32	8.915	
10,200.0	10,171.3	10,156.3	10,153.9	11.9	8.9	-162.29	80.6	483.0	182.2	162.7	19.51	9.340	
10,300.0	10,271.0	10,256.1	10,253.8	12.1	8.8	-163.38	79.9	481.6	191.7	172.0	19.69	9.739	
10,400.0	10,370.6	10,355.9	10,353.5	12.2	8.9	-164.36	79.3	480.2	201.3	181.4	19.93	10.104	
10,500.0	10,470.2	10,457.5	10,454.9	12.3	9.7	-166.43	74.3	478.6	210.3	189.7	20.66	10.182	
10,600.0	10,569.8	10,564.7	10,560.0	12.4	9.9	-172.21	54.5	477.5	217.5	196.2	21.24	10.238	
10,700.0	10,669.4	10,658.2	10,646.4	12.6	10.0	178.41	18.8	477.7	226.0	203.9	22.07	10.239	
10,800.0	10,769.0	10,733.8	10,710.7	12.7	10.2	168.83	-20.8	477.7	244.8	221.2	23.65	10.351	
10,900.0	10,868.7	10,795.3	10,758.4	12.8	10.3	160.52	-59.6	476.9	278.9	252.5	26.41	10.558	
11,000.0	10,968.3	10,848.5	10,795.3	12.9	10.5	153.36	-97.9	476.3	327.6	298.0	29.56	11.083	
11,100.0	11,067.9	10,893.4	10,823.1	13.1	10.7	147.57	-133.1	476.8	387.8	355.3	32.48	11.941	
11,200.0	11,167.5	10,927.1	10,841.9	13.2	10.9	143.48	-161.0	477.4	457.1	422.0	35.06	13.038	
11,300.0	11,267.1	10,953.8	10,855.4	13.3	11.0	140.46	-184.0	477.8	533.2	496.0	37.17	14.344	
11,400.0	11,366.8	10,975.5	10,865.5	13.4	11.1	138.14	-203.3	478.1	614.3	575.4	38.89	15.797	
11,500.0	11,466.4	10,996.0	10,874.2	13.6	11.3	136.09	-221.8	478.2	699.0	658.8	40.25	17.366	
11,601.2	11,567.2	11,009.5	10,879.5	13.7	11.4	134.81	-234.2	478.2	787.6	745.9	41.64	18.913	
11,625.0	11,590.9	11,013.1	10,880.8	13.7	11.4	107.12	-237.6	478.2	808.6	766.7	41.89	19.303	
11,650.0	11,615.6	11,017.2	10,882.3	13.7	11.4	89.41	-241.3	478.2	830.6	788.4	42.14	19.709	
11,675.0	11,640.2	11,027.0	10,885.8	13.7	11.5	77.39	-250.5	478.2	852.4	810.1	42.32	20.144	
11,700.0	11,664.5	11,027.0	10,885.8	13.7	11.5	68.99	-250.5	478.2	873.9	831.3	42.61	20.508	
11,725.0	11,688.6	11,027.0	10,885.8	13.7	11.5	62.38	-250.5	478.2	895.1	852.2	42.89	20.868	
11,750.0	11,712.2	11,039.7	10,890.1	13.7	11.6	56.80	-262.5	478.1	915.9	872.9	43.02	21.290	
11,775.0	11,735.4	11,047.4	10,892.7	13.7	11.6	52.30	-269.7	478.1	936.3	893.1	43.21	21.671	
11,800.0	11,758.0	11,059.0	10,896.4	13.7	11.7	48.54	-280.7	478.0	956.3	912.9	43.35	22.061	
11,825.0	11,780.1	11,059.0	10,896.4	13.7	11.7	45.34	-280.7	478.0	975.7	932.1	43.60	22.378	
11,850.0	11,801.6	11,073.2	10,900.8	13.7	11.8	42.66	-294.2	477.9	994.5	950.8	43.70	22.757	

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Reference Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	SEBASTIAN FEDERAL COM 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP2	Offset TVD Reference:	Offset Datum

Offset Design DEEP BSS - SEBASTIAN FEDERAL COM #4H - OWB-PILOT HOLE - AWP-PH												Offset Site Error:	0.0 usft
Survey Program: 100-GYD_DP_MS												Offset Well Error:	2.0 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,225.0	12,013.0	12,052.1	12,049.9	14.2	3.7	-86.61	171.9	1,887.5	1,000.0	982.2	17.78	56.235	
12,250.0	12,018.0	12,057.6	12,055.3	14.3	3.7	-87.09	171.9	1,887.7	998.9	981.1	17.86	55.932	
12,275.0	12,021.7	12,061.8	12,059.5	14.4	3.7	-87.40	171.9	1,888.0	998.6	980.6	17.94	55.667	
12,277.1	12,021.9	12,062.1	12,059.8	14.4	3.7	-87.42	171.9	1,888.0	998.6	980.6	17.94	55.646 CC, ES	
12,300.0	12,024.0	12,064.8	12,062.5	14.4	3.7	-87.56	171.9	1,888.1	998.8	980.8	18.02	55.444	
12,320.8	12,025.0	12,066.3	12,064.0	14.5	3.7	-87.57	171.9	1,888.2	999.6	981.5	18.08	55.291 SF	

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

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Reference Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	SEBASTIAN FEDERAL COM 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=31' @ 3616.1usft (P 106)

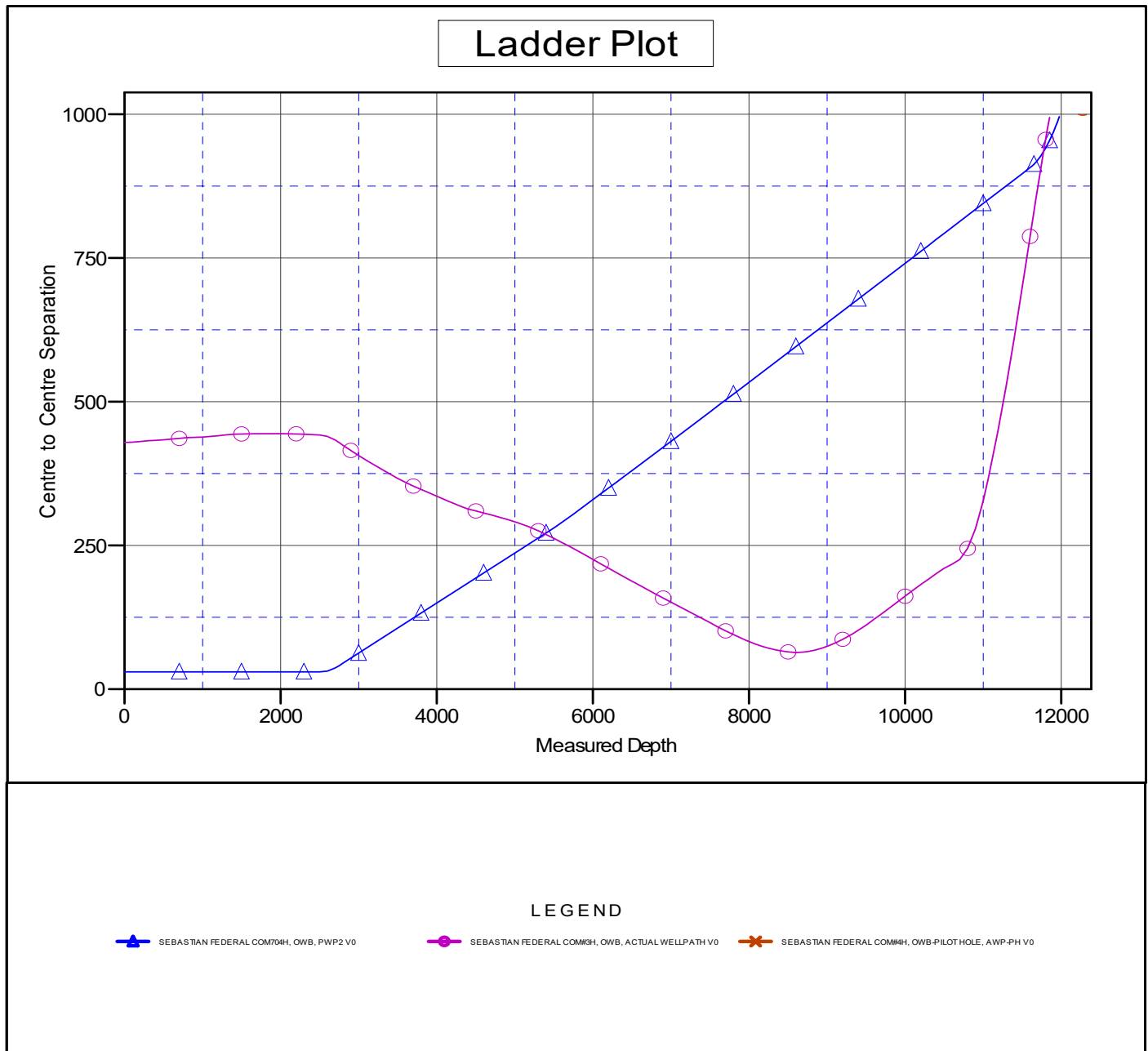
Offset Depths are relative to Offset Datum

Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: SEBASTIAN FEDERAL COM 703H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

Grid Convergence at Surface is: 0.44°



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

3/16/2020 4:41:08PM

Page 10

COMPASS 5000.15 Build 91E

Concho Resources LLC

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Reference Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	SEBASTIAN FEDERAL COM 703H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=31' @ 3616.1usft (P 106)

Offset Depths are relative to Offset Datum

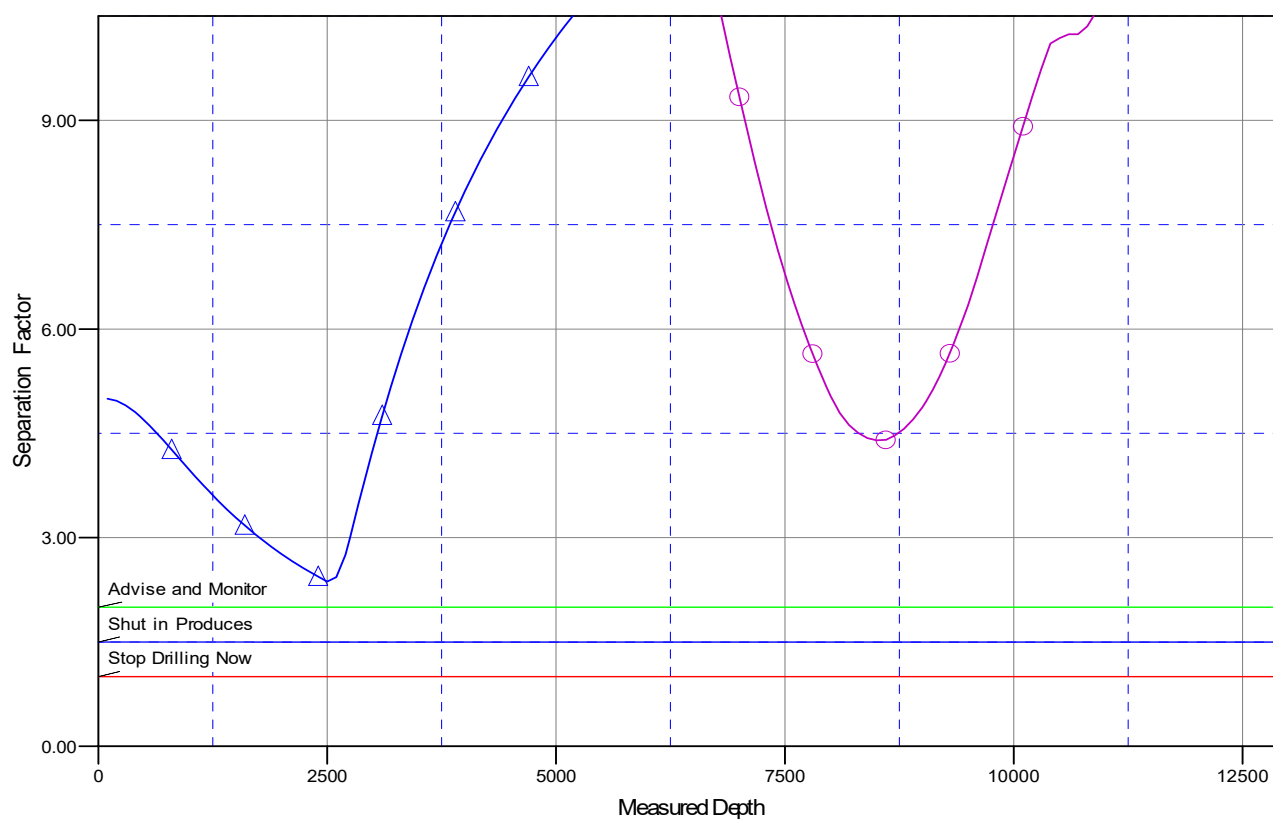
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: SEBASTIAN FEDERAL COM 703H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

Grid Convergence at Surface is: 0.44°

Separation Factor Plot



LEGEND

SEBASTIAN FEDERAL COM704H, OWB, PWP2 V0

SEBASTIAN FEDERAL COM703H, OWB, ACTUAL WELLPATH V0

SEBASTIAN FEDERAL COM704H, OWB-PILOT HOLE, AWP-PH V0

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

3/16/2020 4:41:08PM

Page 11

COMPASS 5000.15 Build 91E

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

SEBASTIAN FEDERAL COM 703H

OWB

Plan: PWP2

Standard Survey Report

16 March, 2020

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Well:	SEBASTIAN FEDERAL COM 703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

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

Well	SEBASTIAN FEDERAL COM 703H				
Well Position	+N/-S	0.0 usft	Northing:	446,197.70 usft	Latitude: 32° 13' 26.451 N
	+E/-W	0.0 usft	Easting:	755,503.60 usft	Longitude: 103° 30' 25.601 W
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft	Ground Level: 3,585.0 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/16/2020	6.62	60.04	47,661.07970473

Design	PWP2				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	165.90	

Survey Tool Program	Date	3/16/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,601.0	PWP2 (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
11,601.0	16,971.2	PWP2 (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction	

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	

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Well:	SEBASTIAN FEDERAL COM 703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,500.0	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
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 2.00									
2,600.0	2.00	87.00	2,600.0	0.1	1.7	0.3	2.00	2.00	0.00
2,700.0	4.00	87.00	2,699.8	0.4	7.0	1.3	2.00	2.00	0.00
2,750.0	5.00	87.00	2,749.7	0.6	10.9	2.1	2.00	2.00	0.00
Start 8851.2 hold at 2750.0 MD									
2,800.0	5.00	87.00	2,799.5	0.8	15.2	2.9	0.00	0.00	0.00
2,900.0	5.00	87.00	2,899.1	1.3	23.9	4.6	0.00	0.00	0.00
3,000.0	5.00	87.00	2,998.7	1.7	32.6	6.3	0.00	0.00	0.00
3,100.0	5.00	87.00	3,098.4	2.2	41.3	8.0	0.00	0.00	0.00
3,200.0	5.00	87.00	3,198.0	2.6	50.1	9.6	0.00	0.00	0.00
3,300.0	5.00	87.00	3,297.6	3.1	58.8	11.3	0.00	0.00	0.00
3,400.0	5.00	87.00	3,397.2	3.5	67.5	13.0	0.00	0.00	0.00
3,500.0	5.00	87.00	3,496.8	4.0	76.2	14.7	0.00	0.00	0.00
3,600.0	5.00	87.00	3,596.4	4.4	84.9	16.4	0.00	0.00	0.00
3,700.0	5.00	87.00	3,696.1	4.9	93.6	18.0	0.00	0.00	0.00
3,800.0	5.00	87.00	3,795.7	5.4	102.3	19.7	0.00	0.00	0.00
3,900.0	5.00	87.00	3,895.3	5.8	111.0	21.4	0.00	0.00	0.00
4,000.0	5.00	87.00	3,994.9	6.3	119.7	23.1	0.00	0.00	0.00
4,100.0	5.00	87.00	4,094.5	6.7	128.4	24.7	0.00	0.00	0.00
4,200.0	5.00	87.00	4,194.2	7.2	137.1	26.4	0.00	0.00	0.00
4,300.0	5.00	87.00	4,293.8	7.6	145.8	28.1	0.00	0.00	0.00
4,400.0	5.00	87.00	4,393.4	8.1	154.5	29.8	0.00	0.00	0.00
4,500.0	5.00	87.00	4,493.0	8.6	163.2	31.5	0.00	0.00	0.00
4,600.0	5.00	87.00	4,592.6	9.0	171.9	33.1	0.00	0.00	0.00
4,700.0	5.00	87.00	4,692.3	9.5	180.6	34.8	0.00	0.00	0.00
4,800.0	5.00	87.00	4,791.9	9.9	189.3	36.5	0.00	0.00	0.00
4,900.0	5.00	87.00	4,891.5	10.4	198.0	38.2	0.00	0.00	0.00
5,000.0	5.00	87.00	4,991.1	10.8	206.7	39.8	0.00	0.00	0.00
5,100.0	5.00	87.00	5,090.7	11.3	215.4	41.5	0.00	0.00	0.00
5,200.0	5.00	87.00	5,190.4	11.7	224.1	43.2	0.00	0.00	0.00
5,300.0	5.00	87.00	5,290.0	12.2	232.8	44.9	0.00	0.00	0.00
5,400.0	5.00	87.00	5,389.6	12.7	241.5	46.5	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Well:	SEBASTIAN FEDERAL COM 703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,500.0	5.00	87.00	5,489.2	13.1	250.2	48.2	0.00	0.00	0.00	
5,600.0	5.00	87.00	5,588.8	13.6	258.9	49.9	0.00	0.00	0.00	
5,700.0	5.00	87.00	5,688.5	14.0	267.6	51.6	0.00	0.00	0.00	
5,800.0	5.00	87.00	5,788.1	14.5	276.3	53.3	0.00	0.00	0.00	
5,900.0	5.00	87.00	5,887.7	14.9	285.1	54.9	0.00	0.00	0.00	
6,000.0	5.00	87.00	5,987.3	15.4	293.8	56.6	0.00	0.00	0.00	
6,100.0	5.00	87.00	6,086.9	15.9	302.5	58.3	0.00	0.00	0.00	
6,200.0	5.00	87.00	6,186.6	16.3	311.2	60.0	0.00	0.00	0.00	
6,300.0	5.00	87.00	6,286.2	16.8	319.9	61.6	0.00	0.00	0.00	
6,400.0	5.00	87.00	6,385.8	17.2	328.6	63.3	0.00	0.00	0.00	
6,500.0	5.00	87.00	6,485.4	17.7	337.3	65.0	0.00	0.00	0.00	
6,600.0	5.00	87.00	6,585.0	18.1	346.0	66.7	0.00	0.00	0.00	
6,700.0	5.00	87.00	6,684.7	18.6	354.7	68.4	0.00	0.00	0.00	
6,800.0	5.00	87.00	6,784.3	19.0	363.4	70.0	0.00	0.00	0.00	
6,900.0	5.00	87.00	6,883.9	19.5	372.1	71.7	0.00	0.00	0.00	
7,000.0	5.00	87.00	6,983.5	20.0	380.8	73.4	0.00	0.00	0.00	
7,100.0	5.00	87.00	7,083.1	20.4	389.5	75.1	0.00	0.00	0.00	
7,200.0	5.00	87.00	7,182.7	20.9	398.2	76.7	0.00	0.00	0.00	
7,300.0	5.00	87.00	7,282.4	21.3	406.9	78.4	0.00	0.00	0.00	
7,400.0	5.00	87.00	7,382.0	21.8	415.6	80.1	0.00	0.00	0.00	
7,500.0	5.00	87.00	7,481.6	22.2	424.3	81.8	0.00	0.00	0.00	
7,600.0	5.00	87.00	7,581.2	22.7	433.0	83.5	0.00	0.00	0.00	
7,700.0	5.00	87.00	7,680.8	23.1	441.7	85.1	0.00	0.00	0.00	
7,800.0	5.00	87.00	7,780.5	23.6	450.4	86.8	0.00	0.00	0.00	
7,900.0	5.00	87.00	7,880.1	24.1	459.1	88.5	0.00	0.00	0.00	
8,000.0	5.00	87.00	7,979.7	24.5	467.8	90.2	0.00	0.00	0.00	
8,100.0	5.00	87.00	8,079.3	25.0	476.5	91.8	0.00	0.00	0.00	
8,200.0	5.00	87.00	8,178.9	25.4	485.2	93.5	0.00	0.00	0.00	
8,300.0	5.00	87.00	8,278.6	25.9	493.9	95.2	0.00	0.00	0.00	
8,400.0	5.00	87.00	8,378.2	26.3	502.6	96.9	0.00	0.00	0.00	
8,500.0	5.00	87.00	8,477.8	26.8	511.3	98.5	0.00	0.00	0.00	
8,600.0	5.00	87.00	8,577.4	27.3	520.0	100.2	0.00	0.00	0.00	
8,700.0	5.00	87.00	8,677.0	27.7	528.8	101.9	0.00	0.00	0.00	
8,800.0	5.00	87.00	8,776.7	28.2	537.5	103.6	0.00	0.00	0.00	
8,900.0	5.00	87.00	8,876.3	28.6	546.2	105.3	0.00	0.00	0.00	
9,000.0	5.00	87.00	8,975.9	29.1	554.9	106.9	0.00	0.00	0.00	
9,100.0	5.00	87.00	9,075.5	29.5	563.6	108.6	0.00	0.00	0.00	
9,200.0	5.00	87.00	9,175.1	30.0	572.3	110.3	0.00	0.00	0.00	
9,300.0	5.00	87.00	9,274.8	30.4	581.0	112.0	0.00	0.00	0.00	
9,400.0	5.00	87.00	9,374.4	30.9	589.7	113.6	0.00	0.00	0.00	
9,500.0	5.00	87.00	9,474.0	31.4	598.4	115.3	0.00	0.00	0.00	
9,600.0	5.00	87.00	9,573.6	31.8	607.1	117.0	0.00	0.00	0.00	
9,700.0	5.00	87.00	9,673.2	32.3	615.8	118.7	0.00	0.00	0.00	
9,800.0	5.00	87.00	9,772.9	32.7	624.5	120.4	0.00	0.00	0.00	

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Well:	SEBASTIAN FEDERAL COM 703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,900.0	5.00	87.00	9,872.5	33.2	633.2	122.0	0.00	0.00	0.00
10,000.0	5.00	87.00	9,972.1	33.6	641.9	123.7	0.00	0.00	0.00
10,100.0	5.00	87.00	10,071.7	34.1	650.6	125.4	0.00	0.00	0.00
10,200.0	5.00	87.00	10,171.3	34.6	659.3	127.1	0.00	0.00	0.00
10,300.0	5.00	87.00	10,271.0	35.0	668.0	128.7	0.00	0.00	0.00
10,400.0	5.00	87.00	10,370.6	35.5	676.7	130.4	0.00	0.00	0.00
10,500.0	5.00	87.00	10,470.2	35.9	685.4	132.1	0.00	0.00	0.00
10,600.0	5.00	87.00	10,569.8	36.4	694.1	133.8	0.00	0.00	0.00
10,700.0	5.00	87.00	10,669.4	36.8	702.8	135.4	0.00	0.00	0.00
10,800.0	5.00	87.00	10,769.0	37.3	711.5	137.1	0.00	0.00	0.00
10,900.0	5.00	87.00	10,868.7	37.7	720.2	138.8	0.00	0.00	0.00
11,000.0	5.00	87.00	10,968.3	38.2	728.9	140.5	0.00	0.00	0.00
11,100.0	5.00	87.00	11,067.9	38.7	737.6	142.2	0.00	0.00	0.00
11,200.0	5.00	87.00	11,167.5	39.1	746.3	143.8	0.00	0.00	0.00
11,300.0	5.00	87.00	11,267.1	39.6	755.0	145.5	0.00	0.00	0.00
11,400.0	5.00	87.00	11,366.8	40.0	763.8	147.2	0.00	0.00	0.00
11,500.0	5.00	87.00	11,466.4	40.5	772.5	148.9	0.00	0.00	0.00
11,600.0	5.00	87.00	11,566.0	40.9	781.2	150.5	0.00	0.00	0.00
11,601.2	5.00	87.00	11,567.2	40.9	781.3	150.6	0.00	0.00	0.00
Start DLS 12.00 TFO 64.35									
11,700.0	14.72	133.81	11,664.5	32.5	794.7	162.1	12.00	9.84	47.37
11,800.0	26.39	142.12	11,758.0	6.0	817.6	193.3	12.00	11.67	8.32
11,900.0	38.25	145.53	11,842.4	-37.2	848.8	242.8	12.00	11.87	3.40
12,000.0	50.17	147.50	11,913.9	-95.3	887.1	308.5	12.00	11.92	1.97
12,100.0	62.12	148.88	11,969.6	-165.8	930.8	387.5	12.00	11.95	1.38
12,200.0	74.08	149.98	12,006.8	-245.5	977.8	476.3	12.00	11.96	1.10
12,300.0	86.04	150.95	12,024.0	-331.1	1,026.3	571.1	12.00	11.96	0.98
12,320.7	88.51	151.15	12,025.0	-349.2	1,036.3	591.0	12.00	11.96	0.95
Start DLS 4.00 TFO 90.34									
12,320.8	88.53	151.15	12,025.0	-349.3	1,036.4	591.2	12.00	11.96	0.94
12,400.0	88.51	154.32	12,027.1	-419.6	1,072.6	668.2	4.00	-0.02	4.00
12,500.0	88.49	158.32	12,029.7	-511.2	1,112.8	766.8	4.00	-0.02	4.00
12,600.0	88.48	162.32	12,032.3	-605.3	1,146.4	866.3	4.00	-0.01	4.00
12,700.0	88.48	166.32	12,035.0	-701.5	1,173.4	966.2	4.00	0.00	4.00
12,800.0	88.49	170.32	12,037.6	-799.4	1,193.7	1,066.0	4.00	0.00	4.00
12,900.0	88.50	174.32	12,040.2	-898.4	1,207.0	1,165.3	4.00	0.01	4.00
13,000.0	88.52	178.33	12,042.8	-998.2	1,213.4	1,263.6	4.00	0.02	4.00
13,029.5	88.53	179.50	12,043.6	-1,027.6	1,214.0	1,292.3	4.00	0.02	4.00
Start 3941.7 hold at 13029.5 MD									
13,029.7	88.53	179.51	12,043.6	-1,027.8	1,214.0	1,292.5	4.00	0.03	4.00
13,100.0	88.53	179.51	12,045.4	-1,098.1	1,214.6	1,360.9	0.00	0.00	0.00
13,200.0	88.53	179.51	12,048.0	-1,198.1	1,215.4	1,458.0	0.00	0.00	0.00
13,300.0	88.53	179.51	12,050.6	-1,298.1	1,216.3	1,555.2	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Well:	SEBASTIAN FEDERAL COM 703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

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)
13,400.0	88.53	179.51	12,053.1	-1,398.0	1,217.1	1,652.4	0.00	0.00	0.00
13,500.0	88.53	179.51	12,055.7	-1,498.0	1,218.0	1,749.5	0.00	0.00	0.00
13,600.0	88.53	179.51	12,058.3	-1,597.9	1,218.8	1,846.7	0.00	0.00	0.00
13,700.0	88.53	179.51	12,060.9	-1,697.9	1,219.7	1,943.8	0.00	0.00	0.00
13,800.0	88.53	179.51	12,063.4	-1,797.9	1,220.5	2,041.0	0.00	0.00	0.00
13,900.0	88.53	179.51	12,066.0	-1,897.8	1,221.4	2,138.2	0.00	0.00	0.00
14,000.0	88.53	179.51	12,068.6	-1,997.8	1,222.2	2,235.3	0.00	0.00	0.00
14,100.0	88.53	179.51	12,071.1	-2,097.8	1,223.1	2,332.5	0.00	0.00	0.00
14,200.0	88.53	179.51	12,073.7	-2,197.7	1,223.9	2,429.6	0.00	0.00	0.00
14,300.0	88.53	179.51	12,076.3	-2,297.7	1,224.8	2,526.8	0.00	0.00	0.00
14,400.0	88.53	179.51	12,078.9	-2,397.6	1,225.6	2,624.0	0.00	0.00	0.00
14,500.0	88.53	179.51	12,081.4	-2,497.6	1,226.5	2,721.1	0.00	0.00	0.00
14,600.0	88.53	179.51	12,084.0	-2,597.6	1,227.3	2,818.3	0.00	0.00	0.00
14,700.0	88.53	179.51	12,086.6	-2,697.5	1,228.2	2,915.4	0.00	0.00	0.00
14,800.0	88.53	179.51	12,089.1	-2,797.5	1,229.0	3,012.6	0.00	0.00	0.00
14,900.0	88.53	179.51	12,091.7	-2,897.5	1,229.9	3,109.8	0.00	0.00	0.00
15,000.0	88.53	179.51	12,094.3	-2,997.4	1,230.7	3,206.9	0.00	0.00	0.00
15,100.0	88.53	179.51	12,096.9	-3,097.4	1,231.6	3,304.1	0.00	0.00	0.00
15,200.0	88.53	179.51	12,099.4	-3,197.4	1,232.4	3,401.2	0.00	0.00	0.00
15,300.0	88.53	179.51	12,102.0	-3,297.3	1,233.3	3,498.4	0.00	0.00	0.00
15,400.0	88.53	179.51	12,104.6	-3,397.3	1,234.1	3,595.6	0.00	0.00	0.00
15,500.0	88.53	179.51	12,107.2	-3,497.2	1,235.0	3,692.7	0.00	0.00	0.00
15,600.0	88.53	179.51	12,109.7	-3,597.2	1,235.8	3,789.9	0.00	0.00	0.00
15,700.0	88.53	179.51	12,112.3	-3,697.2	1,236.7	3,887.0	0.00	0.00	0.00
15,800.0	88.53	179.51	12,114.9	-3,797.1	1,237.5	3,984.2	0.00	0.00	0.00
15,900.0	88.53	179.51	12,117.4	-3,897.1	1,238.4	4,081.4	0.00	0.00	0.00
16,000.0	88.53	179.51	12,120.0	-3,997.1	1,239.2	4,178.5	0.00	0.00	0.00
16,100.0	88.53	179.51	12,122.6	-4,097.0	1,240.1	4,275.7	0.00	0.00	0.00
16,200.0	88.53	179.51	12,125.2	-4,197.0	1,240.9	4,372.8	0.00	0.00	0.00
16,300.0	88.53	179.51	12,127.7	-4,297.0	1,241.8	4,470.0	0.00	0.00	0.00
16,400.0	88.53	179.51	12,130.3	-4,396.9	1,242.6	4,567.2	0.00	0.00	0.00
16,500.0	88.53	179.51	12,132.9	-4,496.9	1,243.5	4,664.3	0.00	0.00	0.00
16,600.0	88.53	179.51	12,135.5	-4,596.8	1,244.3	4,761.5	0.00	0.00	0.00
16,700.0	88.53	179.51	12,138.0	-4,696.8	1,245.2	4,858.6	0.00	0.00	0.00
16,800.0	88.53	179.51	12,140.6	-4,796.8	1,246.0	4,955.8	0.00	0.00	0.00
16,900.0	88.53	179.51	12,143.2	-4,896.7	1,246.9	5,053.0	0.00	0.00	0.00
16,971.2	88.53	179.51	12,145.0	-4,967.9	1,247.5	5,122.1	0.00	0.00	0.00
TD at 16971.2									

Concho Resources LLC

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well SEBASTIAN FEDERAL COM 703H
Project:	LEA COUNTY, NM	TVD Reference:	KB=31' @ 3616.1usft (P 106)
Site:	BULLDOG	MD Reference:	KB=31' @ 3616.1usft (P 106)
Well:	SEBASTIAN FEDERAL COM 703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

Design Targets

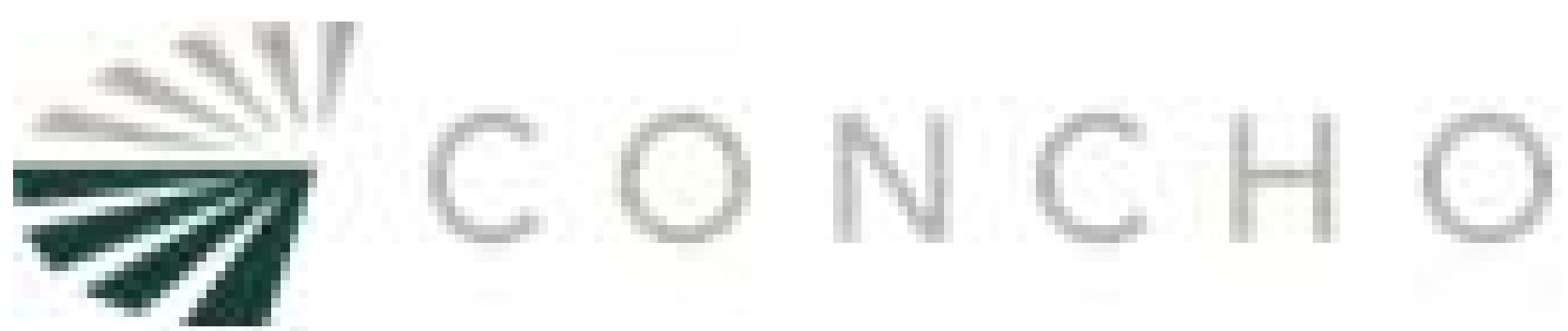
Target Name

- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
SEBASTIAN FEDER ^A	0.00	0.00	12,025.0	160.4	1,203.2	446,358.10	756,706.80	32° 13' 27.946 N	103° 30' 11.581 W
- plan misses target center by 420.4usft at 12019.5usft MD (11926.2 TVD, -108.2 N, 895.3 E)									
- Circle (radius 50.0)									
SEBASTIAN FEDER ^A	0.00	0.00	12,145.0	-4,917.9	1,247.1	441,279.80	756,750.70	32° 12' 37.691 N	103° 30' 11.527 W
- plan misses target center by 21.2usft at 16900.0usft MD (12143.2 TVD, -4896.7 N, 1246.9 E)									
- Point									
SEBASTIAN FEDER ^A	-1.47	359.51	12,145.0	-4,967.9	1,247.5	441,229.80	756,751.10	32° 12' 37.196 N	103° 30' 11.527 W
- plan hits target center									
- Rectangle (sides W100.0 H5,129.0 D20.0)									

Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
2500	2500	0	0	Start Build 2.00
2750	2750	1	11	Start 8851.2 hold at 2750.0 MD
11,601	11,567	41	781	Start DLS 12.00 TFO 64.35
12,321	12,025	-349	1036	Start DLS 4.00 TFO 90.34
13,029	12,044	-1028	1214	Start 3941.7 hold at 13029.5 MD
16,971	12,145	-4968	1247	TD at 16971.2

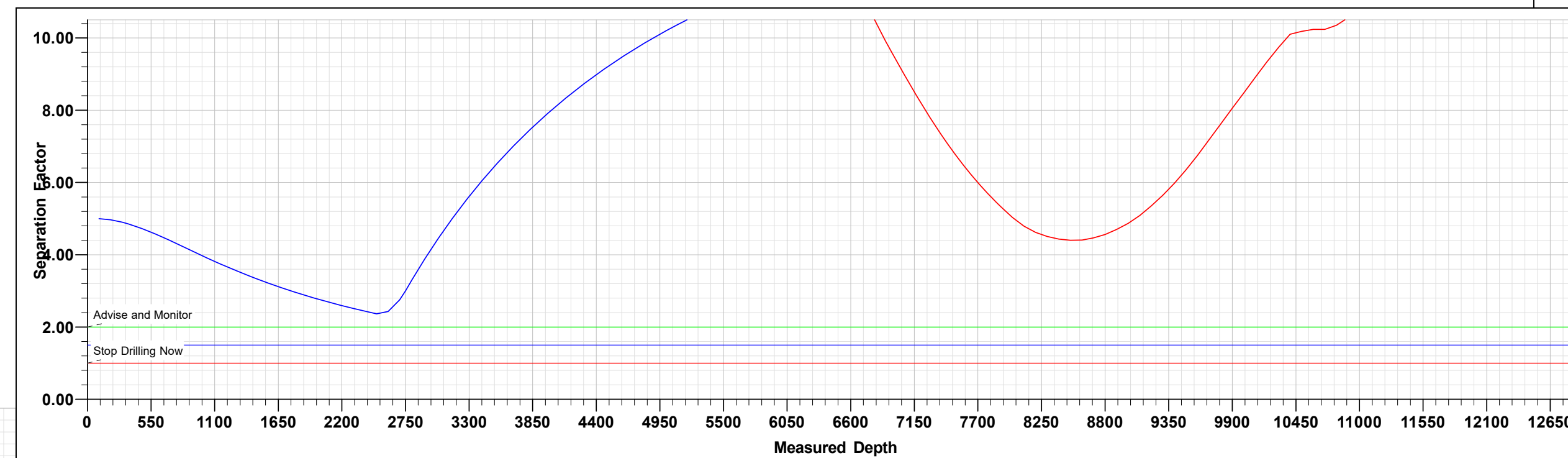
Checked By: _____ Approved By: _____ Date: _____



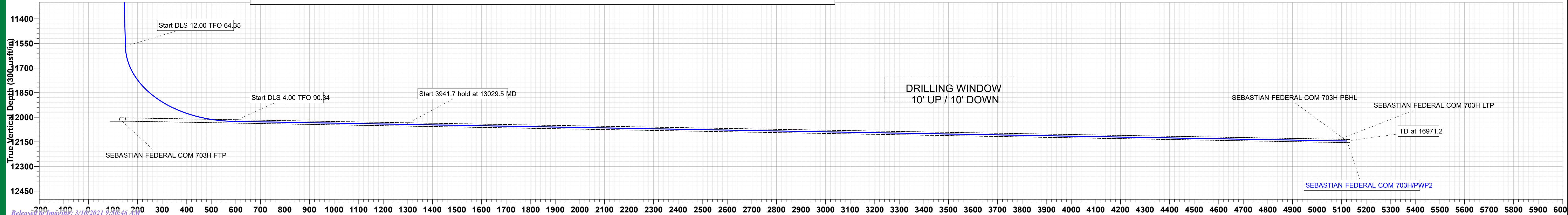
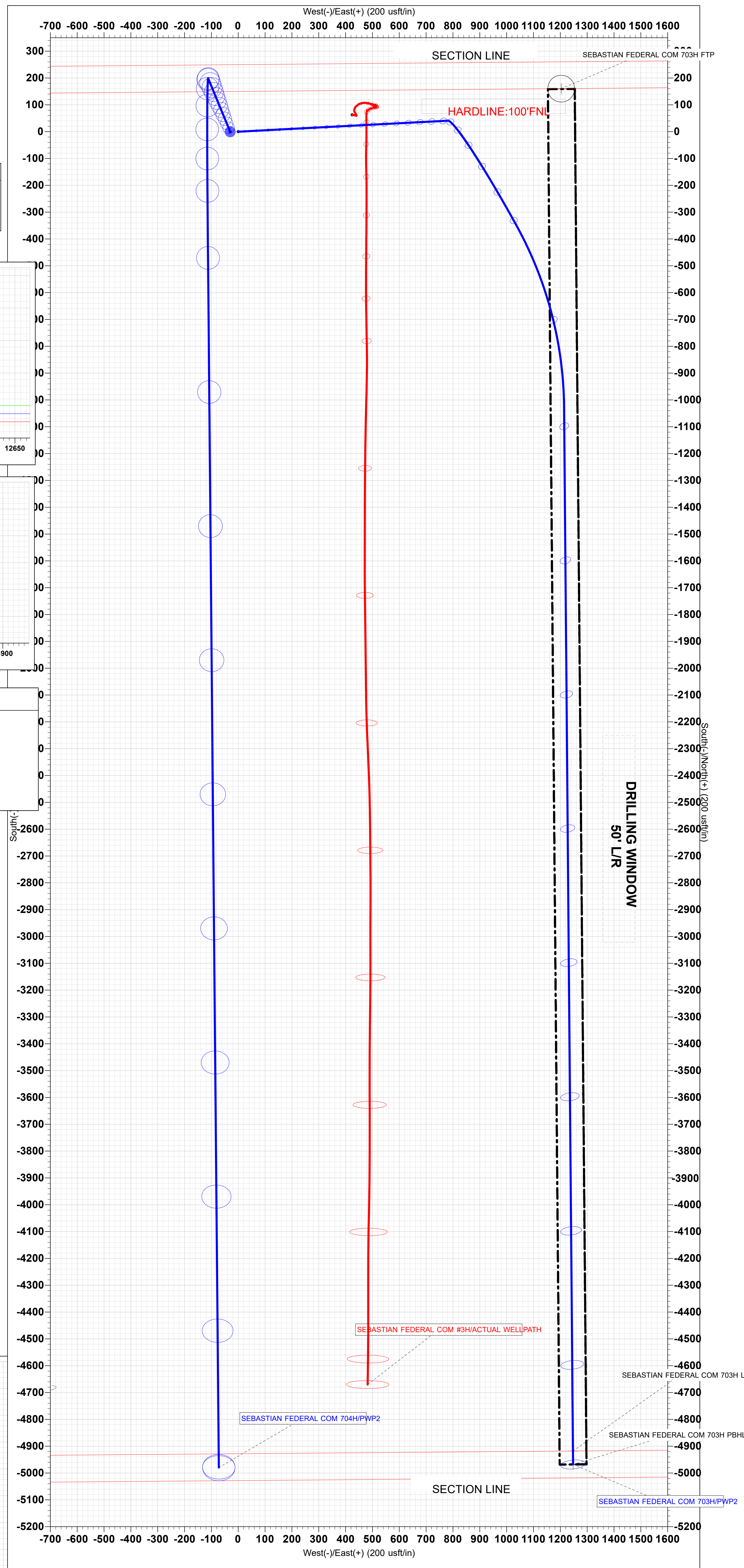
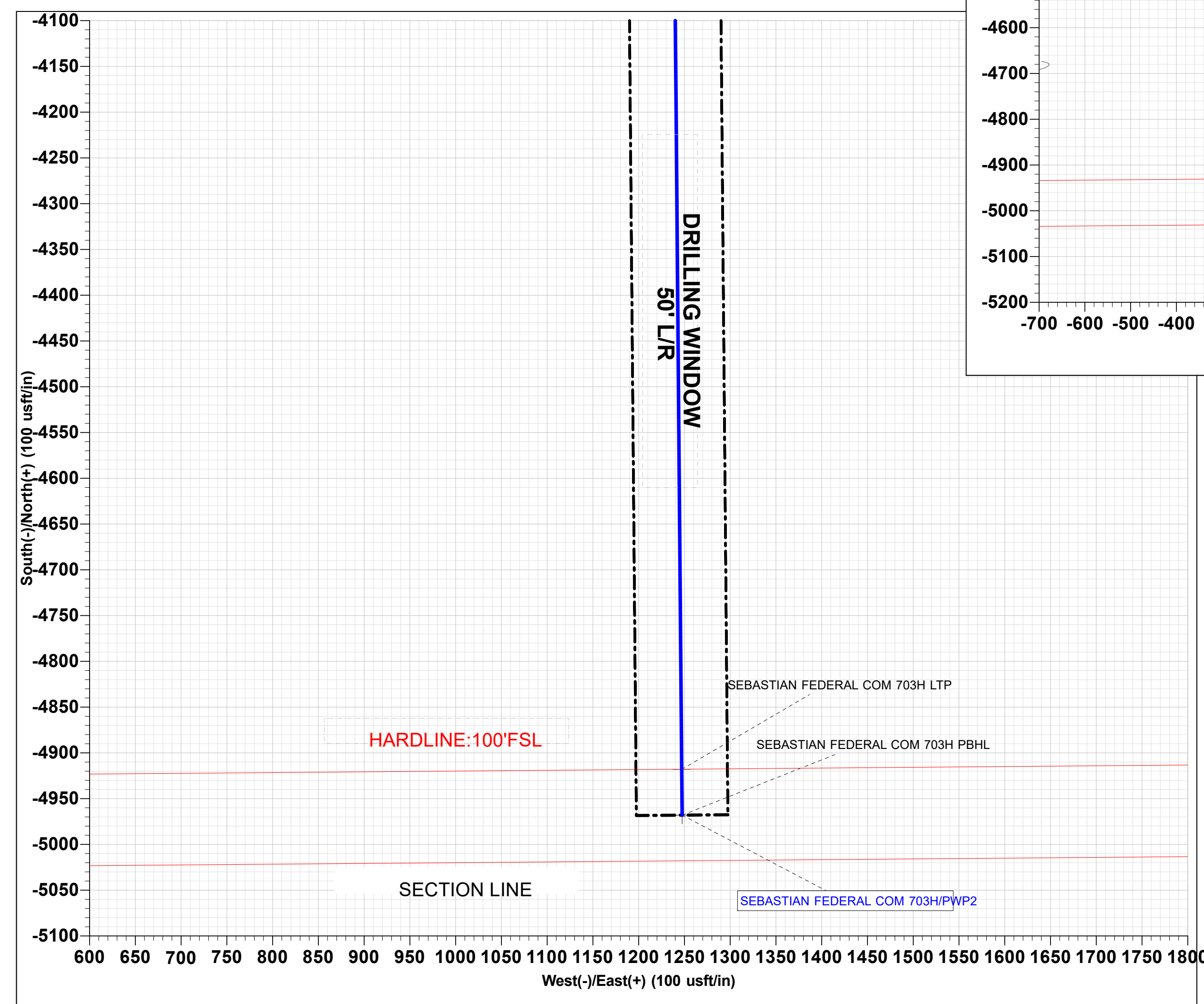
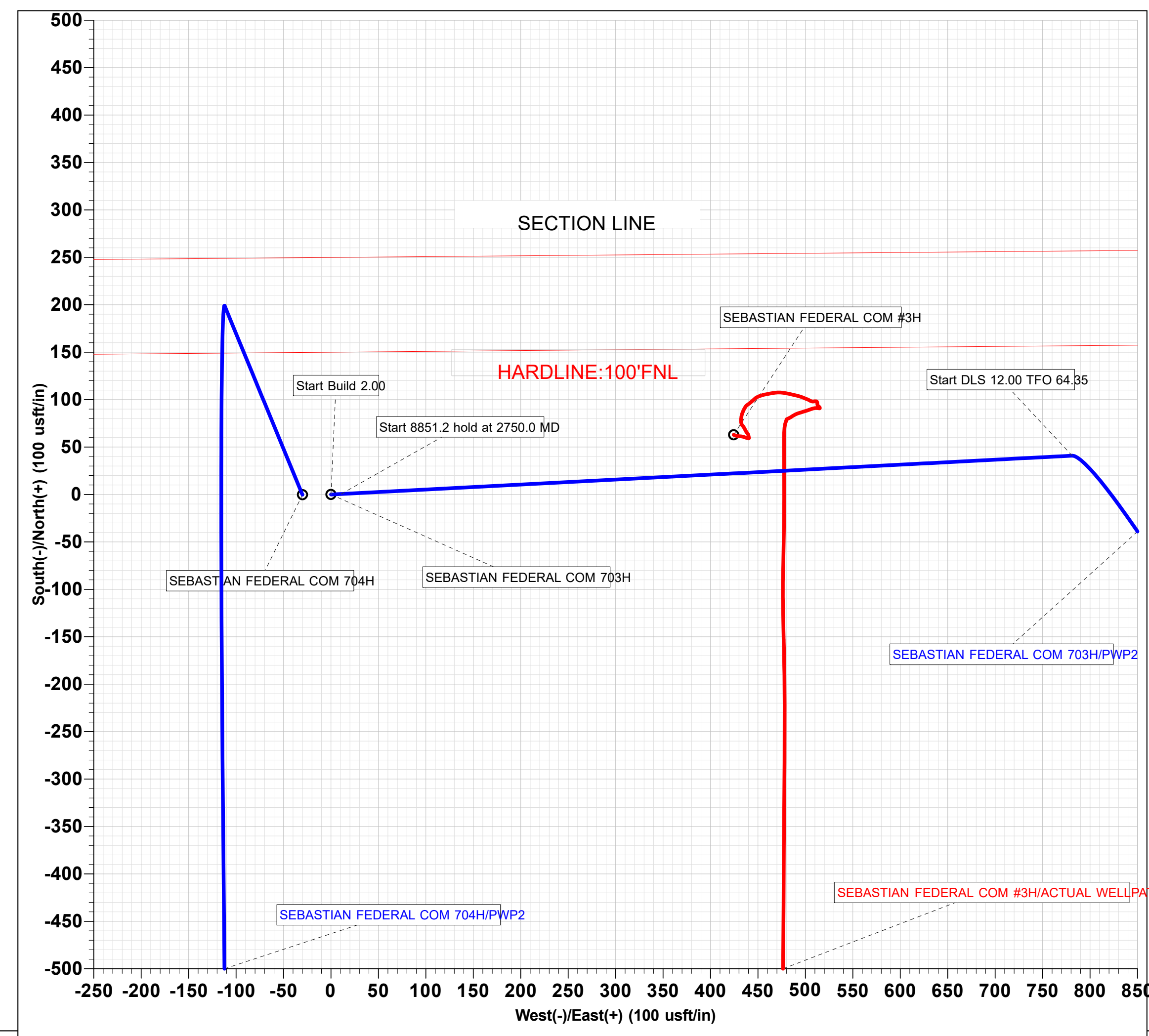
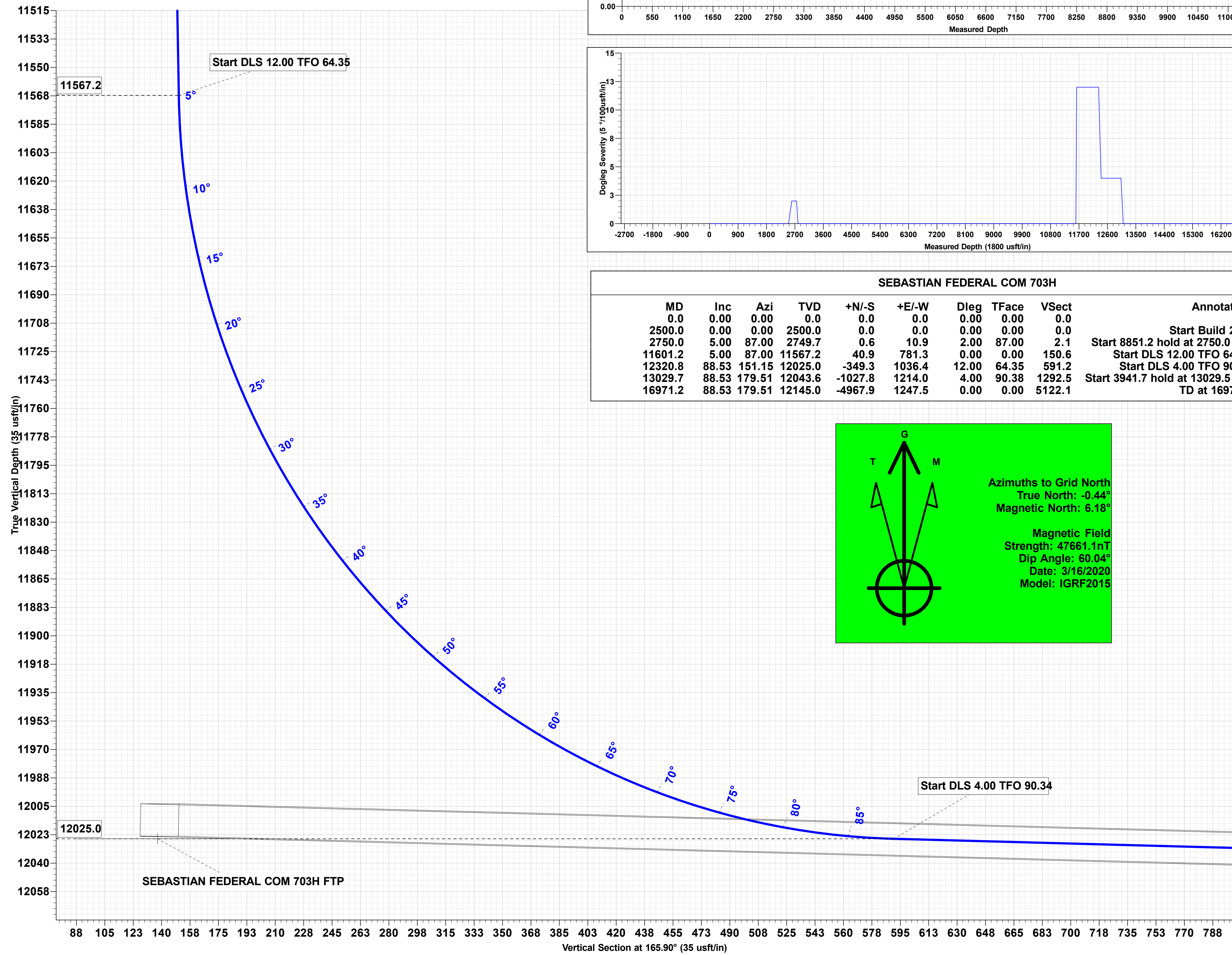
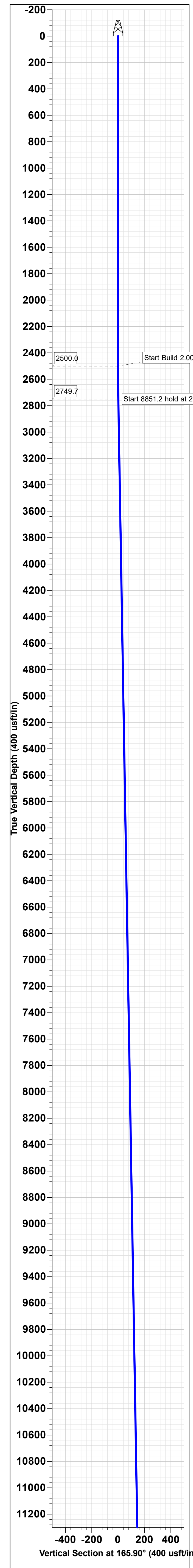
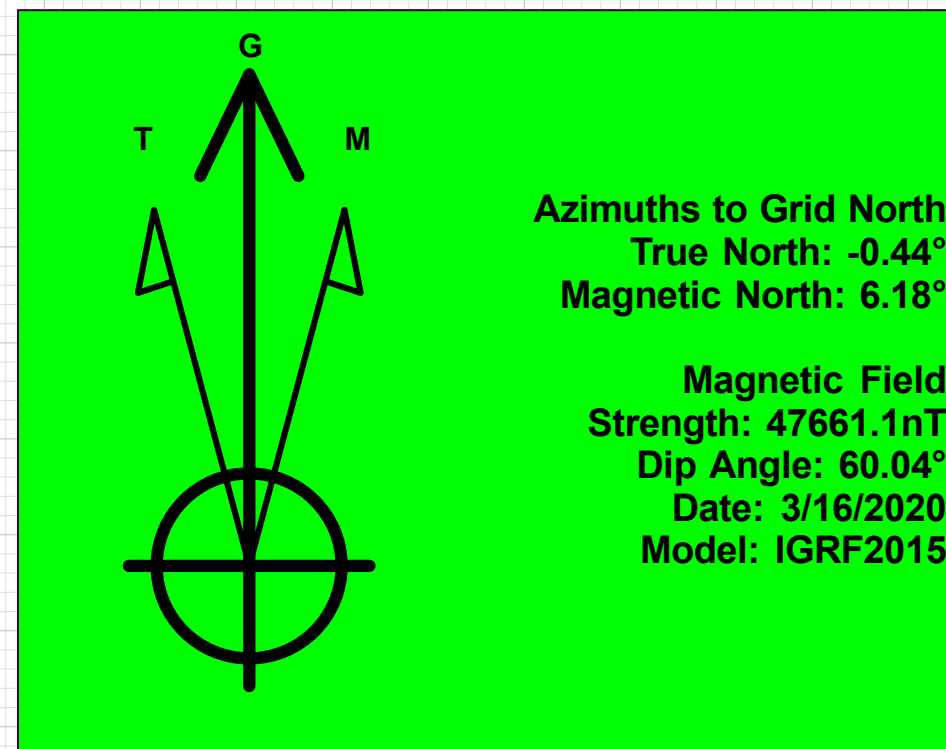
Project: LEA COUNTY, NM
Site: BULLDOG
Well: SEBASTIAN FEDERAL COM 703H
Wellbore: OWB
Design: PWP2
GL: 3585.0
KB=31' @ 3616.1usft (P 106)

WELL DETAILS: SEBASTIAN FEDERAL COM 703H					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	446197.70	755503.60	32° 13' 26.451 N	103° 30' 25.601 W

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
SEBASTIAN FEDERAL COM 703H FTP	12025.0	160.4	1203.2	446358.10	756706.80	32° 13' 27.946 N
SEBASTIAN FEDERAL COM 703H LTP	12145.0	-4917.9	1247.1	441279.80	756750.70	32° 12' 37.691 N
SEBASTIAN FEDERAL COM 703H PBHL	12145.0	-4967.9	1247.5	441229.80	756751.10	32° 12' 37.196 N



SEBASTIAN FEDERAL COM 703H										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.0	Start Build 2.00	
2500.0	0.00	0.00	2500.0	0.0	0.0	0.0	0.00	0.0	Start 8851.2 hold at 2750.0 MD	
2750.0	5.00	87.00	2749.7	0.6	10.9	2.00	87.00	2.1	Start DLS 12.00 TFO 64.35	
11601.2	5.00	87.00	11567.2	40.9	781.3	0.00	0.00	150.6	Start DLS 4.00 TFO 90.34	
12320.8	88.53	151.15	12025.0	-349.3	1036.4	12.00	64.35	591.2	Start 3941.7 hold at 13029.5 MD	
13029.7	88.53	179.51	12043.6	-1027.8	1214.0	4.00	90.38	1292.5	TD at 16971.2	
16971.2	88.53	179.51	12145.0	-4967.9	1247.5	0.00	0.00	5122.1		



District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 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

COMMENTS

Action 20207

COMMENTS

Operator:	COG OPERATING LLC	600 W Illinois Ave	Midland, TX79701	OGRID:	229137	Action Number:	20207	Action Type:	C-103A
Created By	jagarcia			Comment	Accepted for Record			Comment Date	03/10/2021

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 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 20207

CONDITIONS OF APPROVAL

Operator:	COG OPERATING LLC	600 W Illinois Ave	Midland, TX79701	OGRID:	229137	Action Number:	20207	Action Type:	C-103A
OCD Reviewer									Condition
jagarcia									None