

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

FORM APPROVED
OMB NO. 1004-0137
Expires March 31, 2007

S

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion: ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other _____

2. Name of Operator
Cimarex Energy Co. of Colorado

3. Address
PO Box 140907; Irving, TX 75014

3a Phone No. (include area code)
972-443-6489

4. Location of Well (Report Location clearly and in accordance with Federal requirements)*

At surface 2260 FNL & 330 FWL

At top prod. interval reported below 2257 FNL & 358 FWL

At total depth 2107 FNL & 1663 FEL

JUL 25 2008
OCD-ARTESIA

14. Date Spudded
03.25.08

15. Date T.D. Reached
05.02.08

16. Date Completed 06.07.08
☐ D & A ☒ Ready to Prod

17. Elevations (DF, RKB, RT, GL)*
3614' GR

18. Total Depth. MD 9,913' TVD 6,744'
19. Plug Back TD: MD 9,540' TVD 6,730'

20 Depth Bridge Plug Set: MD Kick-off plug @ 6492'
TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)

Porosity, Gamma Ray

22 Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit report)
Directional Survey ☐ No ☒ Yes (Submit copy)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#/ft)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol (BBL)	Cement Top*	Amount Pulled
17½"	13¾" H-40	48	0'	409'		420 sx HLPP & PP		0'	
12¼"	9¾" J-55	40	0'	2,520'		900 sx IntC & PP		0'	
8¾"	7" P-110	26	0'	7,260'		1225 sx IntH & SupH		0'	
6¾"	4½" P-110	11.6	6374'	9,540'		0			

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2½"	6,314'	RSB Pkr @ 6374'						

25. Producing Intervals

Formation	Top	Bottom	Perforated Interval	Size	No Holes	Perf. Status
A) Abo	6,601'	6,822'	No perfs			
B)						
C)						
D)						

26. Perforation Record

27. Acid, Fracture, Treatment, Cement Squeeze, etc.

Depth Interval	Amount and Type of Material
	Please see attachment...

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
06.07.08	07.06.08	24	→	81	199	255	38.3	1.522	Pumping
Choke Size	Tbg Press Flwg	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
Open	SI 190	50	→				2,457	Producing	

28. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
			→						
Choke Size	Tbg Press Flwg	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
	SI		→						

ACCEPTED FOR RECORD

JUL 22 2008

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

28b. Production - Interval C									
Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
Choke Size	Tbg Press Flwg SI	Csg Press	24 Hr Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

28c. Production - Interval D									
Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
Choke Size	Tbg Press Flwg SI	Csg Press	24 Hr Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

29. Disposition of Gas (*Sold, used for fuel, vented, etc.*)

Flared from 06-07-08 to 07-04-08, then sold.

30. Summary of Porous Zones (Include Aquifers):	31. Formation (Log) Markers
Show all important zones of porosity and contents thereof. Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.	

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top
					Meas Depth
				GLORIETA	3,521'
				PADDOCK	3,543'
				BLINEBRY	4,263'
				LABO_MKR	6,601'
				BASE_ANHYDRITE	6,702'
				BASE_ANHYDRITE	6,705'
				HUECO_(WLFC)	6,822'
				HUECO(WOLFCAMP)	6,824'

32. Additional remarks (include plugging procedure):

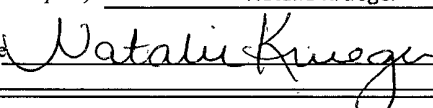
2½" x 2" x 20' RHBC frac pump installed.

33. Indicate which items have been attached by placing a check in the appropriate boxes:

☒ Electrical/Mechanical Logs (1 full set req'd.)
 ☐ Geologic Report
 ☐ DST Report
 ☒ Directional Survey
☐ Sundry Notice for plugging and cement verification
☐ Core Analysis
☒ Other: PEAK Systems Drawing, Frac Job Attachment

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (*please print*) Natalie Krueger Title Regulatory Analyst

Signature  Date July 14, 2008

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.

Cave Lake 24 Federal Com No. 3

24-16S-28E

Eddy County, NM

Depth Interval	Amount and Type of Material Used
<u>Stage 1</u> 8839'-9431'	Pump hydraulic strata-port open at 9155.' Pump 119 bbl of 15% HCl NeFe acid, 286 bbl slickwater, SD, 476 bbl Deepspot 15% HCl acid, 667 bbl slickwater, 238 bbl Lightning 2000 x-linker pad, 0.5 to 1 ppg 30/50# white sand in lightning 2000 gel, 476 bbl slickwater & flush with 20# linear gel. Pump down 7" & 4½" liner 68 BPM. Drop 2¾" ball. Pump 119 bbl of 15% HCl NeFe acid & 149 bbl slick water, seat ball open port at 8570.' 12500# 30/50 white sand pumped.
<u>Stage 2</u> 8253'-8839'	Cont pumping 137 bbl slickwater, SD, 190 bbl slickwater, 476 bbl Deepspot 15% HCl acid, 952 bbl slickwater, 238 bbl Lightning 2000 x-linker pad, 0.5 to 1 ppg 30/50# white sand in lightning 2000 gel, 714 bbl slick water & flush with 20# linear gel. Drop 3" ball. Pump 119 bbl 15% HCl NeFe acid, 139 bbl slickwater, seat ball, open port at 7935.' Avg rate 75 BPM. 12500# 30/50 white sand pumped.
<u>Stage 3</u> 7583'-8253'	Cont pumping 155 bbl slickwater, SD, 202 bbl slickwater, 595 bbl Deepspot 15% HCl acid, 953 bbl slickwater, 238 bbl Lightning 2000 x-linker pad, 0.5 to 1 ppg 30/50# white sand in lightning 2000 gel, 952 bbl slickwater & flush with 20# linear gel. Drop 3 1/2" ball. Pump 119 bbl 15% HCl NeFe acid, 138 bbl slickwater, seat ball, open port at 7265.' Avg rate 85 BPM. 15000# 30/50# white sand pumped.
<u>Stage 4</u> 6980'-7583'	Cont pumping 124 bbl slickwater, SD, 214 bbl slick water, 476 bbl Deepspot 15% HCl acid, 714 bbl slickwater, 238 bbl Lightning 2000 x-linker pad, 0.5 to 1 ppg 30/50# white sand in lightning 2000 gel, 714 bbl slickwater & flush with 258 bbl 20# linear gel. Avg rate 85 BPM. 15000# 30/50 white sand pumped. RU to flowback.

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-36144	Pool Code	Pool Name Abo Wildcat
Property Code	Property Name CAVE LAKE "24" FEDERAL COM	Well Number 3
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3614'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	24	16 S	28 E		2260	NORTH	330	WEST	EDDY

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
G	24	16 S	28 E		2107	NORTH	1663	EAST	EDDY
Dedicated Acres 120	Joint or Infill	Consolidation Code P	Order No.						

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

SURFACE LOCATION Lat - N32°54'35.84" Long - W104°08'14.00" NMSPCE- N 694831.9 E 601521.5 (NAD-83) Penetration Point Abo 2257 FNL & 358 FWL (6601' TVD)	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Zeno Farris</i> 07-14-08 Signature Date Zeno Farris Printed Name
	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. NOVEMBER 14, 2007 Date Surveyed GARY L. JONES Signature & Seal Professional Surveyor Certificate No. Gary L. Jones 7977 BASIN SURVEYS

OPERATOR Cimarex Energy Company
WELL/LEASE Cave Lake 24 #3H
COUNTY Eddy RIG 74

STATE OF NEW MEXICO
DEVIATION REPORT

360	0.75
861	1.00
1,353	0.50
1,886	0.50
2,333	0.75
2,850	0.75
3,358	0.75
3,817	0.50
4,327	1.00
4,836	1.00
5,312	1.00
5,852	1.00
6,295	1.00
6,773	1.00
7,218	0.75

STATE OF TEXAS

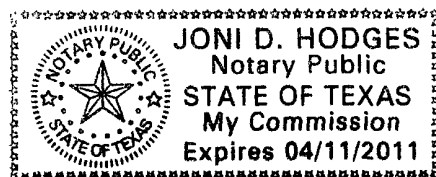
COUNTY OF MIDLAND

BY: Steve Moore

The foregoing instrument was acknowledged before me on _____
Moore on behalf of Patterson-UTL Drilling Company LLC.

June 5th, 2008, by Steve

Joni D. Hodges
Notary Public for Midland County, Texas
My Commission Expires: 4/11/11





Actual Wellpath Report

No. 3H AWP

Page 1 of 8



INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Cave) Sec. 24, T16S, R28E	Wellbore	No. 3H AWB
Facility	Cave Lake 24 Fed Com No. 3H	Sidetrack from	No. 3H AWB OH at 6491.00 MD

REPORT SETUP INFORMATION			
Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999913	Report Generated	5/22/2008 at 2:50:21 PM
Convergence at slot	0.11° East	Database/Source file	WA_Midland/No._3H_AWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	601521.50	694831.90	32°54'35.837"N	104°08'14.001"W
Facility Reference Pt			601521.50	694831.90	32°54'35.837"N	104°08'14.001"W
Field Reference Pt			601521.50	694831.90	32°54'35.837"N	104°08'14.001"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 3H SHL (RT) to Facility Vertical Datum	18.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 3H SHL (RT) to Mean Sea Level	3632.00ft
Vertical Reference Pt	Rig on No. 3H SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 3H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	87.35°



Actual Wellpath Report

No. 3H AWP

Page 2 of 8



INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Cave) Sec. 24, T16S, R28E	Wellbore	No. 3H AWB
Facility	Cave Lake 24 Fed Com No. 3H	Sidetrack from	No. 3H AWB OH at 6491.00 MD

WELLPATH DATA (177 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
0.00	0.000	17.089	0.00	0.00	0.00	0.00	601521.50	694831.90	32°54'35.837"N	104°08'14.001"W	0.00
100.00	0.203	17.089	100.00	0.06	0.17	0.05	601521.55	694832.07	32°54'35.839"N	104°08'14.001"W	0.20
200.00	0.276	347.333	200.00	0.08	0.57	0.05	601521.55	694832.47	32°54'35.843"N	104°08'14.001"W	0.14
300.00	0.231	322.937	300.00	-0.08	0.97	-0.12	601521.38	694832.87	32°54'35.847"N	104°08'14.003"W	0.12
400.00	0.277	355.023	400.00	-0.20	1.37	-0.27	601521.23	694833.27	32°54'35.851"N	104°08'14.004"W	0.15
500.00	0.199	328.363	500.00	-0.30	1.76	-0.38	601521.12	694833.66	32°54'35.855"N	104°08'14.006"W	0.13
600.00	0.080	330.511	600.00	-0.41	1.97	-0.50	601521.00	694833.87	32°54'35.857"N	104°08'14.007"W	0.12
700.00	0.093	26.011	700.00	-0.40	2.10	-0.50	601521.00	694834.00	32°54'35.858"N	104°08'14.007"W	0.08
800.00	0.193	19.344	800.00	-0.30	2.34	-0.41	601521.09	694834.23	32°54'35.861"N	104°08'14.006"W	0.10
900.00	0.375	349.115	899.99	-0.29	2.82	-0.42	601521.08	694834.72	32°54'35.865"N	104°08'14.006"W	0.23
965.30	0.427	353.832	965.29	-0.33	3.27	-0.48	601521.02	694835.17	32°54'35.870"N	104°08'14.007"W	0.09
1060.60	0.535	293.957	1060.59	-0.75	3.80	-0.93	601520.57	694835.70	32°54'35.875"N	104°08'14.012"W	0.51
1155.80	0.593	345.221	1155.79	-1.25	4.46	-1.46	601520.04	694836.36	32°54'35.882"N	104°08'14.018"W	0.52
1251.10	0.599	0.971	1251.08	-1.32	5.43	-1.58	601519.92	694837.33	32°54'35.891"N	104°08'14.020"W	0.17
1346.40	0.435	23.523	1346.38	-1.13	6.26	-1.42	601520.08	694838.16	32°54'35.899"N	104°08'14.018"W	0.27
1441.70	0.303	43.966	1441.67	-0.79	6.78	-1.11	601520.39	694838.67	32°54'35.905"N	104°08'14.014"W	0.19
1537.00	0.833	38.830	1536.97	-0.15	7.50	-0.50	601521.00	694839.40	32°54'35.912"N	104°08'14.007"W	0.56
1632.20	0.591	51.686	1632.16	0.71	8.34	0.32	601521.82	694840.24	32°54'35.920"N	104°08'13.997"W	0.30
1727.50	0.398	14.138	1727.46	1.20	8.97	0.79	601522.29	694840.87	32°54'35.926"N	104°08'13.992"W	0.39
1822.80	0.388	332.512	1822.76	1.16	9.57	0.72	601522.22	694841.47	32°54'35.932"N	104°08'13.993"W	0.29
1918.10	0.537	334.570	1918.05	0.85	10.26	0.38	601521.88	694842.16	32°54'35.939"N	104°08'13.997"W	0.16
2013.40	0.279	343.373	2013.35	0.63	10.89	0.12	601521.62	694842.79	32°54'35.945"N	104°08'14.000"W	0.28
2108.60	0.207	325.928	2108.55	0.48	11.25	-0.04	601521.46	694843.15	32°54'35.949"N	104°08'14.002"W	0.11
2203.90	0.163	329.985	2203.85	0.33	11.51	-0.20	601521.30	694843.41	32°54'35.951"N	104°08'14.003"W	0.05
2299.20	0.113	355.166	2299.15	0.26	11.73	-0.28	601521.22	694843.62	32°54'35.953"N	104°08'14.004"W	0.08
2394.50	0.257	349.350	2394.45	0.23	12.03	-0.33	601521.17	694843.93	32°54'35.956"N	104°08'14.005"W	0.15
2489.80	0.235	5.365	2489.75	0.23	12.43	-0.35	601521.15	694844.33	32°54'35.960"N	104°08'14.005"W	0.08
2585.00	0.208	6.065	2584.95	0.28	12.80	-0.31	601521.19	694844.70	32°54'35.964"N	104°08'14.005"W	0.03
2680.30	0.199	354.892	2680.25	0.30	13.14	-0.31	601521.19	694845.04	32°54'35.967"N	104°08'14.005"W	0.04
2775.60	0.186	253.536	2775.55	0.14	13.26	-0.47	601521.03	694845.16	32°54'35.969"N	104°08'14.007"W	0.31



Actual Wellpath Report

No. 3H AWP

Page 3 of 8



INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Cave) Sec. 24, T16S, R28E	Wellbore	No. 3H AWB
Facility	Cave Lake 24 Fed Com No. 3H	Sidetrack from	No. 3H AWB OH at 6491.00 MD

WELLPATH DATA (177 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
2870.90	0.312	237.284	2870.85	-0.23	13.07	-0.84	601520.66	694844.97	32°54'35.967"N	104°08'14.011"W	0.15
2966.20	0.462	214.509	2966.14	-0.69	12.62	-1.27	601520.23	694844.52	32°54'35.962"N	104°08'14.016"W	0.22
3061.40	0.375	205.288	3061.34	-1.07	12.02	-1.62	601519.88	694843.92	32°54'35.956"N	104°08'14.020"W	0.12
3156.70	0.464	208.801	3156.64	-1.41	11.40	-1.94	601519.56	694843.30	32°54'35.950"N	104°08'14.024"W	0.10
3252.00	0.416	218.985	3251.94	-1.85	10.79	-2.35	601519.15	694842.69	32°54'35.944"N	104°08'14.029"W	0.10
3347.30	0.471	148.102	3347.23	-1.88	10.19	-2.36	601519.14	694842.09	32°54'35.938"N	104°08'14.029"W	0.54
3442.60	0.619	104.963	3442.53	-1.20	9.73	-1.65	601519.85	694841.62	32°54'35.934"N	104°08'14.021"W	0.44
3537.80	0.322	155.383	3537.73	-0.61	9.35	-1.04	601520.46	694841.25	32°54'35.930"N	104°08'14.013"W	0.51
3633.10	0.373	196.171	3633.03	-0.61	8.81	-1.02	601520.48	694840.71	32°54'35.925"N	104°08'14.013"W	0.26
3728.40	0.535	207.794	3728.32	-0.94	8.12	-1.31	601520.19	694840.02	32°54'35.918"N	104°08'14.017"W	0.19
3823.70	0.571	219.054	3823.62	-1.48	7.36	-1.82	601519.68	694839.25	32°54'35.910"N	104°08'14.023"W	0.12
3919.00	0.492	231.793	3918.91	-2.13	6.73	-2.44	601519.06	694838.63	32°54'35.904"N	104°08'14.030"W	0.15
4014.20	0.651	250.908	4014.11	-2.98	6.30	-3.27	601518.23	694838.20	32°54'35.900"N	104°08'14.040"W	0.26
4109.50	0.752	261.078	4109.40	-4.12	6.03	-4.40	601517.10	694837.93	32°54'35.897"N	104°08'14.053"W	0.17
4204.80	0.619	267.822	4204.70	-5.25	5.91	-5.53	601515.97	694837.81	32°54'35.896"N	104°08'14.066"W	0.16
4300.10	0.524	265.947	4299.99	-6.20	5.86	-6.48	601515.02	694837.76	32°54'35.896"N	104°08'14.077"W	0.10
4395.40	0.430	275.514	4395.29	-6.99	5.87	-7.27	601514.23	694837.77	32°54'35.896"N	104°08'14.087"W	0.13
4490.60	0.380	286.255	4490.48	-7.65	5.99	-7.93	601513.57	694837.89	32°54'35.897"N	104°08'14.094"W	0.10
4585.90	0.281	281.108	4585.78	-8.17	6.12	-8.46	601513.04	694838.02	32°54'35.898"N	104°08'14.100"W	0.11
4681.20	0.247	257.100	4681.08	-8.60	6.12	-8.89	601512.61	694838.02	32°54'35.898"N	104°08'14.106"W	0.12
4776.50	0.269	253.116	4776.38	-9.02	6.01	-9.31	601512.19	694837.91	32°54'35.897"N	104°08'14.110"W	0.03
4871.80	0.310	262.700	4871.68	-9.49	5.91	-9.78	601511.72	694837.81	32°54'35.896"N	104°08'14.116"W	0.07
4967.00	0.437	283.818	4966.88	-10.10	5.97	-10.39	601511.12	694837.87	32°54'35.897"N	104°08'14.123"W	0.19
5062.30	0.539	282.619	5062.17	-10.88	6.15	-11.18	601510.33	694838.05	32°54'35.899"N	104°08'14.132"W	0.11
5157.60	0.620	263.261	5157.47	-11.83	6.19	-12.13	601509.38	694838.09	32°54'35.899"N	104°08'14.143"W	0.22
5252.90	0.813	254.927	5252.76	-13.00	5.95	-13.29	601508.21	694837.85	32°54'35.897"N	104°08'14.157"W	0.23
5348.20	0.615	249.155	5348.05	-14.15	5.59	-14.42	601507.08	694837.49	32°54'35.893"N	104°08'14.170"W	0.22
5443.40	0.429	234.178	5443.25	-14.93	5.20	-15.19	601506.31	694837.10	32°54'35.889"N	104°08'14.179"W	0.24
5538.70	0.260	176.334	5538.55	-15.23	4.78	-15.46	601506.04	694836.68	32°54'35.885"N	104°08'14.183"W	0.38
5634.00	0.734	132.741	5633.85	-14.79	4.15	-15.00	601506.50	694836.05	32°54'35.879"N	104°08'14.177"W	0.60



Actual Wellpath Report

No. 3H AWP

Page 4 of 8



INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Cave) Sec. 24, T16S, R28E	Wellbore	No. 3H AWB
Facility	Cave Lake 24 Fed Com No. 3H	Sidetrack from	No. 3H AWB OH at 6491.00 MD

WELLPATH DATA (177 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
5729.30	0.758	129.602	5729.14	-13.90	3.33	-14.07	601507.43	694835.23	32°54'35.871"N	104°08'14.166"W	0.05
5824.60	0.683	124.631	5824.43	-12.98	2.61	-13.11	601508.39	694834.51	32°54'35.864"N	104°08'14.155"W	0.10
5919.80	0.657	102.657	5919.62	-12.00	2.17	-12.12	601509.39	694834.07	32°54'35.859"N	104°08'14.143"W	0.27
6015.10	0.499	107.004	6014.92	-11.08	1.93	-11.19	601510.32	694833.83	32°54'35.857"N	104°08'14.132"W	0.17
6110.40	0.807	104.549	6110.21	-10.05	1.64	-10.14	601511.36	694833.53	32°54'35.854"N	104°08'14.120"W	0.32
6205.70	1.084	92.559	6205.50	-8.51	1.43	-8.59	601512.91	694833.33	32°54'35.852"N	104°08'14.102"W	0.36
6301.00	1.107	91.307	6300.78	-6.70	1.37	-6.77	601514.73	694833.26	32°54'35.851"N	104°08'14.081"W	0.03
6396.20	1.050	93.072	6395.97	-4.91	1.30	-4.98	601516.52	694833.20	32°54'35.850"N	104°08'14.060"W	0.07
6491.50	0.939	93.735	6491.25	-3.27	1.20	-3.33	601518.17	694833.10	32°54'35.849"N	104°08'14.040"W	0.12
6517.00	8.500	91.400	6516.65	-1.18	1.14	-1.23	601520.27	694833.04	32°54'35.849"N	104°08'14.016"W	29.65
6533.00	12.200	92.500	6532.38	1.69	1.04	1.64	601523.14	694832.94	32°54'35.848"N	104°08'13.982"W	23.16
6565.00	20.400	86.200	6563.07	10.65	1.26	10.60	601532.10	694833.16	32°54'35.850"N	104°08'13.877"W	26.18
6597.00	27.900	85.700	6592.25	23.73	2.19	23.65	601545.15	694834.09	32°54'35.859"N	104°08'13.724"W	23.45
6628.00	35.000	83.600	6618.68	39.87	3.73	39.74	601561.23	694835.63	32°54'35.874"N	104°08'13.535"W	23.17
6660.00	43.000	82.900	6643.53	59.94	6.10	59.72	601581.21	694838.00	32°54'35.897"N	104°08'13.301"W	25.04
6692.00	51.600	81.900	6665.21	83.34	9.23	83.01	601604.50	694841.13	32°54'35.927"N	104°08'13.028"W	26.97
6723.00	60.800	80.100	6682.44	108.91	13.27	108.42	601629.91	694845.17	32°54'35.967"N	104°08'12.729"W	30.07
6753.00	70.900	80.900	6694.70	136.06	17.78	135.38	601656.87	694849.68	32°54'36.011"N	104°08'12.413"W	33.75
6785.00	80.300	80.900	6702.65	166.82	22.67	165.95	601687.44	694854.57	32°54'36.059"N	104°08'12.054"W	29.37
6816.00	85.200	80.800	6706.56	197.37	27.56	196.30	601717.79	694859.46	32°54'36.107"N	104°08'11.698"W	15.81
6846.00	87.300	80.500	6708.52	227.10	32.43	225.84	601747.32	694864.32	32°54'36.154"N	104°08'11.352"W	7.07
6880.00	88.300	81.000	6709.82	260.85	37.89	259.37	601780.85	694869.78	32°54'36.208"N	104°08'10.958"W	3.29
6910.00	89.200	80.500	6710.48	290.64	42.71	288.97	601810.45	694874.60	32°54'36.255"N	104°08'10.611"W	3.43
6943.00	89.100	80.800	6710.97	323.41	48.07	321.53	601843.00	694879.96	32°54'36.307"N	104°08'10.229"W	0.96
6975.00	87.000	81.200	6712.06	355.19	53.07	353.12	601874.59	694884.97	32°54'36.356"N	104°08'09.858"W	6.68
7006.00	87.100	81.700	6713.65	385.99	57.67	383.73	601905.20	694889.57	32°54'36.401"N	104°08'09.499"W	1.64
7038.00	86.800	83.600	6715.35	417.83	61.76	415.42	601936.89	694893.66	32°54'36.441"N	104°08'09.127"W	6.00
7069.00	86.800	85.500	6717.09	448.75	64.70	446.23	601967.69	694896.60	32°54'36.469"N	104°08'08.766"W	6.12
7101.00	85.500	86.600	6719.23	480.67	66.90	478.08	601999.54	694898.80	32°54'36.491"N	104°08'08.392"W	5.32
7133.00	86.900	87.900	6721.35	512.59	68.43	509.98	602031.43	694900.33	32°54'36.505"N	104°08'08.018"W	5.96



Actual Wellpath Report

No. 3H AWP

Page 5 of 8



INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Cave) Sec. 24, T16S, R28E	Wellbore	No. 3H AWB
Facility	Cave Lake 24 Fed Com No. 3H	Sidetrack from	No. 3H AWB OH at 6491.00 MD

WELLPATH DATA (177 stations)											
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
7164.00	88.900	88.500	6722.49	543.57	69.41	540.94	602062.39	694901.30	32°54'36.514"N	104°08'07.655"W	6.74
7196.00	89.400	89.600	6722.97	575.55	69.94	572.93	602094.38	694901.83	32°54'36.519"N	104°08'07.280"W	3.78
7228.00	89.500	89.000	6723.27	607.53	70.33	604.93	602126.37	694902.22	32°54'36.522"N	104°08'06.904"W	1.90
7259.00	90.800	89.600	6723.19	638.51	70.71	635.92	602157.37	694902.60	32°54'36.525"N	104°08'06.541"W	4.62
7291.00	90.700	89.500	6722.77	670.48	70.96	667.92	602189.36	694902.85	32°54'36.527"N	104°08'06.165"W	0.44
7322.00	90.500	89.400	6722.45	701.46	71.25	698.92	602220.35	694903.15	32°54'36.530"N	104°08'05.802"W	0.72
7354.00	90.400	89.000	6722.20	733.44	71.70	730.91	602252.35	694903.60	32°54'36.533"N	104°08'05.426"W	1.29
7385.00	89.900	88.600	6722.12	764.43	72.35	761.90	602283.34	694904.24	32°54'36.539"N	104°08'05.063"W	2.07
7417.00	90.800	89.600	6721.92	796.42	72.85	793.90	602315.33	694904.75	32°54'36.544"N	104°08'04.688"W	4.20
7449.00	91.400	89.700	6721.31	828.39	73.05	825.89	602347.32	694904.94	32°54'36.545"N	104°08'04.312"W	1.90
7481.00	91.400	89.800	6720.52	860.35	73.19	857.88	602379.31	694905.08	32°54'36.546"N	104°08'03.937"W	0.31
7512.00	91.300	89.400	6719.79	891.32	73.40	888.87	602410.29	694905.30	32°54'36.547"N	104°08'03.574"W	1.33
7544.00	91.500	89.700	6719.01	923.28	73.66	920.86	602442.28	694905.55	32°54'36.549"N	104°08'03.198"W	1.13
7576.00	91.900	89.900	6718.06	955.24	73.77	952.85	602474.26	694905.66	32°54'36.550"N	104°08'02.823"W	1.40
7608.00	91.800	89.500	6717.03	987.20	73.94	984.83	602506.24	694905.83	32°54'36.551"N	104°08'02.448"W	1.29
7640.00	90.600	89.700	6716.36	1019.16	74.16	1016.82	602538.23	694906.05	32°54'36.552"N	104°08'02.073"W	3.80
7671.00	88.800	89.900	6716.52	1050.13	74.27	1047.82	602569.23	694906.16	32°54'36.553"N	104°08'01.709"W	5.84
7703.00	89.100	89.400	6717.11	1082.10	74.46	1079.81	602601.22	694906.36	32°54'36.554"N	104°08'01.334"W	1.82
7735.00	89.700	89.600	6717.44	1114.08	74.74	1111.81	602633.21	694906.63	32°54'36.556"N	104°08'00.959"W	1.98
7767.00	90.600	90.100	6717.36	1146.05	74.83	1143.81	602665.21	694906.72	32°54'36.557"N	104°08'00.583"W	3.22
7798.00	89.600	90.800	6717.31	1177.00	74.58	1174.81	602696.21	694906.48	32°54'36.554"N	104°08'00.220"W	3.94
7830.00	90.300	91.300	6717.33	1208.93	74.00	1206.80	602728.20	694905.89	32°54'36.547"N	104°07'59.844"W	2.69
7861.00	91.100	91.700	6716.95	1239.85	73.18	1237.79	602759.18	694905.08	32°54'36.539"N	104°07'59.481"W	2.89
7891.00	89.900	93.100	6716.69	1269.73	71.93	1267.76	602789.15	694903.82	32°54'36.526"N	104°07'59.129"W	6.15
7923.00	88.600	92.500	6717.11	1301.58	70.36	1299.72	602821.10	694902.26	32°54'36.509"N	104°07'58.755"W	4.47
7954.00	86.700	91.900	6718.38	1332.44	69.18	1330.67	602852.05	694901.07	32°54'36.497"N	104°07'58.392"W	6.43
7986.00	84.600	91.400	6720.81	1364.26	68.26	1362.56	602883.94	694900.15	32°54'36.487"N	104°07'58.018"W	6.74
8018.00	84.300	91.400	6723.90	1396.03	67.48	1394.40	602915.78	694899.37	32°54'36.479"N	104°07'57.644"W	0.94
8049.00	85.100	91.300	6726.77	1426.82	66.75	1425.26	602946.63	694898.65	32°54'36.471"N	104°07'57.282"W	2.60
8081.00	88.300	89.000	6728.61	1458.73	66.67	1457.20	602978.57	694898.56	32°54'36.470"N	104°07'56.908"W	12.31



Actual Wellpath Report

No. 3H AWP

Page 6 of 8



INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Cave) Sec. 24, T16S, R28E	Wellbore	No. 3H AWB
Facility	Cave Lake 24 Fed Com No. 3H	Sidetrack from	No. 3H AWB OH at 6491.00 MD

WELLPATH DATA (177 stations)											
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
8113.00	90.300	88.000	6729.00	1490.71	67.51	1489.19	603010.55	694899.40	32°54'36.478"N	104°07'56.532"W	6.99
8145.00	90.800	87.600	6728.69	1522.71	68.73	1521.16	603042.53	694900.63	32°54'36.489"N	104°07'56.157"W	2.00
8176.00	91.000	87.700	6728.21	1553.71	70.01	1552.13	603073.49	694901.90	32°54'36.501"N	104°07'55.794"W	0.72
8208.00	90.800	87.700	6727.70	1585.70	71.29	1584.10	603105.46	694903.18	32°54'36.513"N	104°07'55.419"W	0.62
8240.00	91.000	87.700	6727.20	1617.70	72.57	1616.07	603137.43	694904.47	32°54'36.525"N	104°07'55.044"W	0.62
8271.00	91.000	87.600	6726.66	1648.69	73.84	1647.04	603168.39	694905.74	32°54'36.537"N	104°07'54.681"W	0.32
8303.00	91.400	87.700	6725.99	1680.69	75.16	1679.01	603200.36	694907.05	32°54'36.550"N	104°07'54.306"W	1.29
8335.00	91.700	87.800	6725.12	1712.67	76.41	1710.97	603232.32	694908.31	32°54'36.562"N	104°07'53.931"W	0.99
8367.00	91.100	87.300	6724.34	1744.66	77.78	1742.93	603264.28	694909.67	32°54'36.574"N	104°07'53.556"W	2.44
8399.00	89.500	88.300	6724.18	1776.66	79.01	1774.91	603296.25	694910.90	32°54'36.586"N	104°07'53.181"W	5.90
8430.00	89.300	88.600	6724.50	1807.65	79.85	1805.89	603327.23	694911.74	32°54'36.594"N	104°07'52.817"W	1.16
8462.00	89.400	88.500	6724.86	1839.64	80.66	1837.88	603359.22	694912.55	32°54'36.601"N	104°07'52.442"W	0.44
8494.00	88.800	89.200	6725.37	1871.63	81.30	1869.87	603391.20	694913.19	32°54'36.607"N	104°07'52.067"W	2.88
8525.00	89.100	88.700	6725.93	1902.61	81.87	1900.86	603422.19	694913.76	32°54'36.612"N	104°07'51.703"W	1.88
8557.00	90.300	88.000	6726.10	1934.61	82.79	1932.84	603454.17	694914.68	32°54'36.620"N	104°07'51.328"W	4.34
8589.00	90.500	89.000	6725.88	1966.60	83.63	1964.83	603486.16	694915.52	32°54'36.628"N	104°07'50.953"W	3.19
8620.00	90.800	88.400	6725.53	1997.59	84.33	1995.82	603517.15	694916.22	32°54'36.634"N	104°07'50.589"W	2.16
8652.00	90.700	88.200	6725.11	2029.58	85.28	2027.81	603549.13	694917.17	32°54'36.643"N	104°07'50.214"W	0.70
8683.00	90.500	88.200	6724.78	2060.58	86.25	2058.79	603580.11	694918.14	32°54'36.652"N	104°07'49.851"W	0.65
8715.00	88.800	88.300	6724.98	2092.57	87.23	2090.77	603612.09	694919.12	32°54'36.661"N	104°07'49.476"W	5.32
8747.00	88.700	86.900	6725.68	2124.56	88.57	2122.74	603644.05	694920.46	32°54'36.674"N	104°07'49.101"W	4.39
8778.00	88.600	87.900	6726.41	2155.55	89.97	2153.69	603675.00	694921.87	32°54'36.687"N	104°07'48.737"W	3.24
8810.00	88.900	87.300	6727.10	2187.54	91.31	2185.66	603706.96	694923.21	32°54'36.700"N	104°07'48.362"W	2.10
8842.00	88.900	87.300	6727.72	2219.54	92.82	2217.62	603738.92	694924.71	32°54'36.714"N	104°07'47.988"W	0.00
8873.00	88.900	87.200	6728.31	2250.53	94.31	2248.58	603769.88	694926.20	32°54'36.728"N	104°07'47.624"W	0.32
8905.00	88.800	87.100	6728.96	2282.53	95.90	2280.53	603801.83	694927.79	32°54'36.744"N	104°07'47.250"W	0.44
8937.00	88.800	87.000	6729.63	2314.52	97.55	2312.48	603833.78	694929.44	32°54'36.759"N	104°07'46.875"W	0.31
8969.00	88.700	87.200	6730.32	2346.51	99.16	2344.43	603865.72	694931.06	32°54'36.775"N	104°07'46.500"W	0.70
9000.00	88.800	87.700	6731.00	2377.50	100.54	2375.39	603896.68	694932.43	32°54'36.788"N	104°07'46.137"W	1.64
9032.00	90.100	88.100	6731.31	2409.50	101.72	2407.37	603928.66	694933.61	32°54'36.799"N	104°07'45.762"W	4.25



Actual Wellpath Report

No. 3H AWP

Page 7 of 8



INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Cave) Sec. 24, T16S, R28E	Wellbore	No. 3H AWP
Facility	Cave Lake 24 Fed Com No. 3H	Sidetrack from	No. 3H AWP OH at 6491.00 MD

WELLPATH DATA (177 stations) † = interpolated/extrapolated station											
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
9063.00	90.400	87.800	6731.17	2440.50	102.82	2438.35	603959.63	694934.72	32°54'36.809"N	104°07'45.398"W	1.37
9095.00	90.500	87.100	6730.92	2472.50	104.25	2470.32	603991.60	694936.14	32°54'36.823"N	104°07'45.023"W	2.21
9127.00	90.300	87.100	6730.70	2504.49	105.87	2502.28	604023.55	694937.76	32°54'36.838"N	104°07'44.648"W	0.62
9159.00	89.900	87.200	6730.64	2536.49	107.46	2534.24	604055.51	694939.35	32°54'36.853"N	104°07'44.273"W	1.29
9190.00	90.200	86.100	6730.62	2567.49	109.27	2565.18	604086.45	694941.16	32°54'36.870"N	104°07'43.910"W	3.68
9222.00	90.000	85.600	6730.56	2599.48	111.59	2597.10	604118.37	694943.48	32°54'36.893"N	104°07'43.536"W	1.68
9254.00	89.800	85.800	6730.62	2631.47	113.98	2629.01	604150.27	694945.87	32°54'36.916"N	104°07'43.162"W	0.88
9285.00	89.900	86.200	6730.70	2662.46	116.15	2659.93	604181.20	694948.04	32°54'36.937"N	104°07'42.799"W	1.33
9317.00	89.900	86.600	6730.75	2694.45	118.16	2691.87	604213.13	694950.05	32°54'36.956"N	104°07'42.424"W	1.25
9349.00	90.700	86.100	6730.58	2726.45	120.19	2723.80	604245.06	694952.08	32°54'36.975"N	104°07'42.050"W	2.95
9381.00	90.800	86.300	6730.17	2758.44	122.31	2755.73	604276.99	694954.20	32°54'36.996"N	104°07'41.675"W	0.70
9412.00	91.100	86.300	6729.65	2789.43	124.31	2786.66	604307.91	694956.20	32°54'37.015"N	104°07'41.312"W	0.97
9444.00	90.700	86.300	6729.15	2821.42	126.38	2818.59	604339.84	694958.27	32°54'37.035"N	104°07'40.938"W	1.25
9476.00	90.300	86.500	6728.87	2853.41	128.39	2850.53	604371.77	694960.28	32°54'37.054"N	104°07'40.563"W	1.40
9507.00	89.300	87.000	6728.98	2884.41	130.15	2881.48	604402.72	694962.03	32°54'37.071"N	104°07'40.200"W	3.61
9539.00	88.800	87.000	6729.51	2916.41	131.82	2913.43	604434.67	694963.71	32°54'37.087"N	104°07'39.825"W	1.56
9571.00	88.400	87.700	6730.29	2948.40	133.30	2945.38	604466.62	694965.19	32°54'37.101"N	104°07'39.450"W	2.52
9602.00	88.400	87.200	6731.16	2979.38	134.68	2976.34	604497.58	694966.57	32°54'37.114"N	104°07'39.087"W	1.61
9634.00	88.300	86.700	6732.08	3011.37	136.38	3008.28	604529.51	694968.27	32°54'37.130"N	104°07'38.712"W	1.59
9666.00	88.200	86.700	6733.05	3043.35	138.22	3040.21	604561.44	694970.11	32°54'37.148"N	104°07'38.338"W	0.31
9697.00	87.900	86.600	6734.11	3074.33	140.03	3071.14	604592.37	694971.92	32°54'37.165"N	104°07'37.975"W	1.02
9729.00	87.800	86.300	6735.31	3106.31	142.01	3103.06	604624.28	694973.90	32°54'37.184"N	104°07'37.601"W	0.99
9760.00	87.500	86.600	6736.58	3137.28	143.93	3133.97	604655.19	694975.82	32°54'37.202"N	104°07'37.238"W	1.37
9792.00	87.400	86.900	6738.00	3169.24	145.74	3165.89	604687.11	694977.63	32°54'37.220"N	104°07'36.863"W	0.99
9824.00	87.500	86.900	6739.43	3201.21	147.47	3197.81	604719.03	694979.36	32°54'37.236"N	104°07'36.489"W	0.31
9856.00	87.600	86.700	6740.80	3233.18	149.26	3229.73	604750.95	694981.14	32°54'37.253"N	104°07'36.115"W	0.70
9913.00†	87.600	86.700	6743.18	3290.13	152.53	3286.59	604807.80	694984.42	32°54'37.285"N	104°07'35.448"W	0.00



Actual Wellpath Report

No. 3H AWP

Page 8 of 8



INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Cave) Sec. 24, T16S, R28E	Wellbore	No. 3H AWB
Facility	Cave Lake 24 Fed Com No. 3H	Sidetrack from	No. 3H AWB OH at 6491.00 MD

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
No. 3H LT @ 2250' VS		6682.00	104.63	2247.34	603768.64	694936.52	32°54'36.831"N	104°07'47.639"W	point
No. 3H BHL Rev 1		6783.00	211.31	4568.35	606089.44	695043.19	32°54'37.841"N	104°07'20.412"W	point

WELLPATH COMPOSITION					Ref Wellbore: No. 3H AWB		Ref Wellpath: No. 3H AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment		Wellbore	
0.00	6491.50	Gyrodata standard - Drop gyro or Multi-shot			GYRO		No. 3H AWB OH	
6491.50	9856.00	NaviTrak (Standard)			MWD		No. 3H AWB	
9856.00	9913.00	Blind Drilling (std)			Projection to bit		No. 3H AWB	



Cimarex Energy Co.

Location: Eddy County, NM
Field: (Cave) Sec. 24, T16S, R28E
Facility: Cave Lake 24 Fed Com No. 3H

Slot: No. 3H SHL
Well: No. 3H
Wellbore: No. 3H PWB

[Plot reference wellbore to Plot 23]	
True vertical depths are referenced to Rig on No. 3H BHL (RT)	Grid System: NAD83 / TM New Mexico State Plane - Eastern Zone (2011) US feet
Measured depths are referenced to Rig on No. 3H SHL (RT)	North Reference: Grid north
Rig on No. 3H SHL (RT) to Mean Sea Level 2632 feet	Scale: True distance
Mean Sea Level to Midline Facility: Cave Lake 24 Fed Com No. 3H -3814 feet	Depth axis is feet
Coordinates are in feet referenced to Facility Center	Created by: Victor Hernandez on 02/10/2008

