

# VES SURVEY

I Dustin Byers certify that I am employed by VES Survey International. That I did on the day(s) of 09/05/17 through 09/05/17 conduct or supervise the taking of a Rate Gyro survey from a depth of 0.00 feet to a depth of 925.00 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of COG Operating for the Dodd Federal Unit Well # 920H API # 30-015-44368 in Eddy County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by VES Survey International.

  
\_\_\_\_\_  
Dustin Byers  
Service Technician  
VES Survey International



September 12, 2017

Concho Resources, Inc.  
One Concho Center  
600 W. Illinois Avenue  
Midland, Texas 79701

Attn: Kanicia Castillo

RE: **Dodd Federal Unit No. 920H**

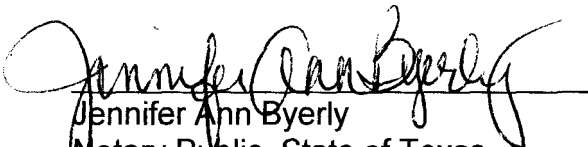
Please find enclosed a copy of the survey from 0' to 925' ran on the above referenced well.

Sincerely,

  
Keith Havelka  
Operations

STATE OF TEXAS     §  
                                  §  
COUNTY OF NUECES §

This instrument was acknowledged before me on the 12th day of September, A.D., 2017, by Keith Havelka.

  
Jennifer Ann Byerly  
Notary Public, State of Texas



Company: COG OPERATING

Lease/Well: DODD FEDERAL UNIT No/920H



VES SURVEY

Rig Name: SILVER OAK 3

State/County: NEW MEXICO/EDDY

VS-Azi: 0.00 Degrees

Latitude: 32.82335, Longitude: -104.03698

Grid North = True North -0.16 degs (NAD 27)

Grid Correction Applied = -0.16 degs

Depth Reference : RKB 18'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: eline-de\_01.ut

Minimum Curvature Method

Report Date/Time: 9/12/2017 / 11:11

VES Survey International  
West Texas

432-563-5444

Surveyor: Dustin Byers

Dodd Federal Unit No. 920H / API 30-015-44368

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure		Closure Direction Deg	Dogleg Severity Deg/100
							Distance FT			
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	****
100.00	0.15	77.30	100.00	0.03	0.13	0.03	0.13		77.30	0.15
200.00	0.07	194.61	200.00	0.00	0.24	0.00	0.24		90.18	0.19
300.00	0.75	332.75	300.00	0.52	-0.07	0.52	0.53		351.87	0.80
400.00	0.95	328.45	399.99	1.81	-0.81	1.81	1.98		335.96	0.21
500.00	1.07	343.41	499.97	3.42	-1.51	3.42	3.73		336.16	0.29
600.00	1.15	8.32	599.95	5.31	-1.63	5.31	5.55		342.91	0.49
700.00	1.33	14.51	699.93	7.43	-1.19	7.43	7.52		350.86	0.22
800.00	1.29	20.45	799.90	9.61	-0.51	9.61	9.62		356.96	0.14
900.00	1.18	23.71	899.88	11.61	0.30	11.61	11.61		1.47	0.13
925.00	1.16	35.22	924.87	12.05	0.55	12.05	12.06		2.60	0.94



VES Survey International  
West Texas  
432-563-5444  
Surveyor: Dustin Byers  
Dodd Federal Unit No. 920H / API 30-015-44368



SURVEY

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Depth=925.0, Inc=1.2, AzG=35.2

0  
-S/+N

Depth=0.0, Inc=0.0, AzG=0.0

0

-W/+E

VES Survey Date: 9/5/2017

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