

District I1625 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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170**District IV**1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462**State of New Mexico****Energy Minerals and Natural Resources****Oil Conservation Division****1220 South St. Francis Dr.****Santa Fe, NM 87505**Form C-101
Revised July 18, 2013☐ AMENDED REPORT**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

¹ Operator Name and Address Armstrong Energy Corporation PO Box 1973, Roswell NM 88202		² OGRID Number 1092
		³ API Number 30-041-20943
⁴ Property Code 38445	⁵ Property Name Mustang Sally	⁶ Well No. 001

⁷ Surface Location

UL - Lot N	Section 19	Township 05S	Range 34E	Lot Idn	Feet from 456	N/S Line South	Feet From 2108	E/W Line West	County Roosevelt
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⁸ Proposed Bottom Hole Location

UL - Lot N	Section 19	Township 05S	Range 34E	Lot Idn	Feet from 592	N/S Line South	Feet From 1984	E/W Line West	County Roosevelt
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⁹ Pool Information

WC-041 G-05 S053419N;FUSSELMAN	Pool Name	Pool Code 97868
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Additional Well Information

¹¹ Work Type E	¹² Well Type O	¹³ Cable/Rotary R	¹⁴ Lease Type P	¹⁵ Ground Level Elevation 4332' GR
¹⁶ Multiple N	¹⁷ Proposed Depth 8066' MD/8063' TVD	¹⁸ Formation Fusselman	¹⁹ Contractor	²⁰ Spud Date 5/3/2011
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits**²¹ Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Conductor	17.5"	14"		40'	20sx	0'
Int	12.25"	8.625"	24/32	2742'	1190sx	0'
Prod	7.875"	5.5"	15.5/17	8066' MD	1200sx	2200'

Casing/Cement Program: Additional Comments

Conductor and Intermediate strings are already in place. Production string will be run in sidetrack back to surface.

²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular & Double Ram	5000	5000	

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐, if applicable.

Signature:

Kyle Alpers

Printed name: Kyle Alpers

Title: VP Engineering

E-mail Address: kalpers@aecn.com

Date: 11/6/20

Phone: 575-625-2222

OIL CONSERVATION DIVISION

Approved By:

[Signature]

Title:

Approved Date: 12/01/2020

Expiration Date: 12/01/2022

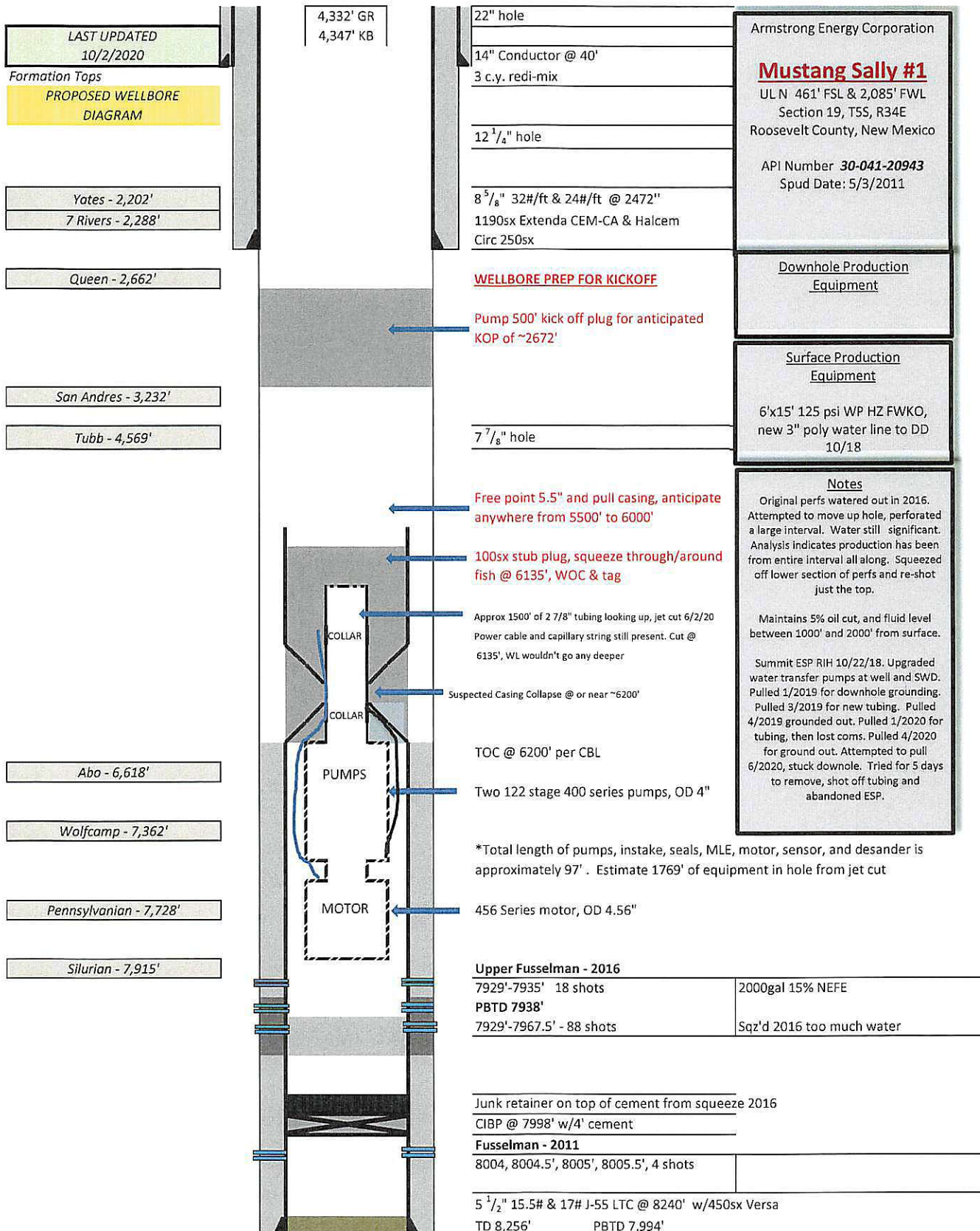
Conditions of Approval Attached

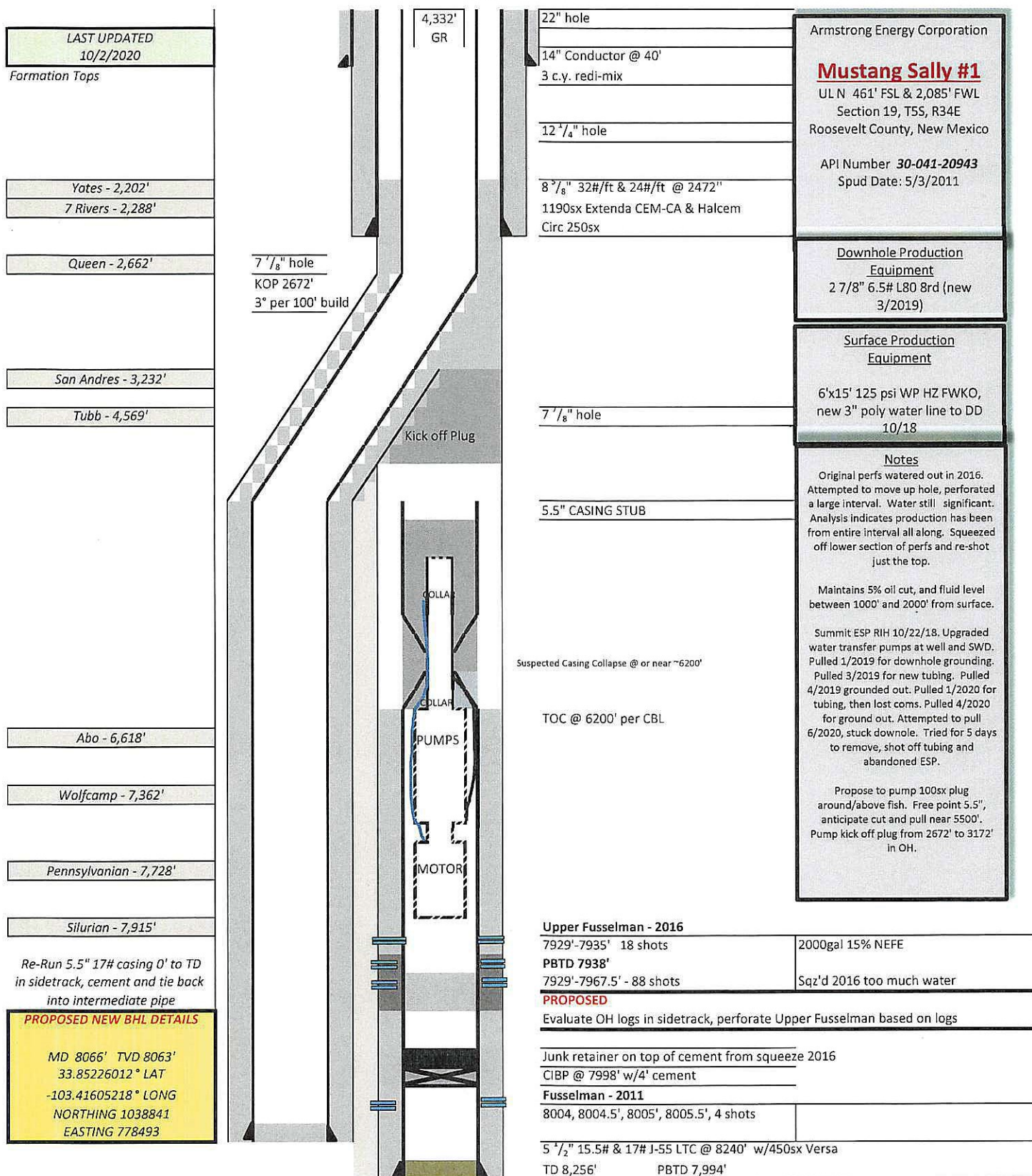


Mustang Sally #1
API 30-041-20943
Section 19 T5S R34E
456' FSL & 2108' FWL
Roosevelt County, NM

Anticipated Plugback and Kickoff procedure

1. Pending Wellbore Prep Work performed under C-103 submitted to OCD on 10/2/20.
2. Proceed as follows with location to make room for rig (anticipate UDI #52).
 - a. Leave tanks and heater treater in current positions
 - b. Move separator, flowlines, free water knockout, fence, dog house, and various electrical using combination of field personnel and third party.
 - c. Extend location pad by at least 100' to the north, and at least 50' to the west.
 - d. Drill rat hole/mouse hole.
3. MIRU drilling rig, tanks, solids control, mudlogger, etc.
4. NUBOP, test blind and pipe rams.
5. TIH with 7 7/8" bit and directional tools and time drill off KOP.
6. Drill ahead per directional plans (Plan attached) to TD of 8066' MD 8063' TVD, new BHL target is Lat 33.85226012° Long -103.41605218°, Northing 1038841 Easting 778493, UL N Sec 19, T5S R34E, 592' FSL & 1984' FWL, Roosevelt County, NM.
7. Run OH logs in new sidetrack bore from 8066' MD to above KOP (GR/DSN/SD/DLL).
8. Condition hole and prep to run 5.5" back in, PU any replacement joints to make up inspection kick outs.
9. Run 5.5" 17# J-55 new/used & inspected casing to new TD.
10. Cement 5.5" in place with 1200sx cement to tie back into Intermediate @ 2472'. WOC.
11. NU WH.
12. Release drilling rig and RD.
13. RU completion unit.
14. TIH w/WL, tie in and perforate Fusselman per geology rec based on logs. TOOH w/WL.
15. TIH w/tubing, acidize perforations, swab in, test production for need for artificial lift or further stimulation.
16. RD completion unit.





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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, NM 87505

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 10/29/20

☒ Original

Operator & OGRID No.: Armstrong Energy Corporation 1092

☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Mustang Sally #001	30-041-20943	UL N Sec 19 T5S R34E	461' FSL 2085' FWL	300 MCFD	Vented	We have an existing gas sales connection at this location and anticipate turning down the pipeline ASAP

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Targa and will be connected to Targa's low/high pressure gathering system located in Roosevelt County, New Mexico. It will require 0 ' of pipeline to connect the facility to low/high pressure gathering system. Armstrong Energy Corp provides (periodically) to Targa a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Armstrong Energy Corp and Targa have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Targa's Processing Plant located in Sec. 34, Twn. 14S, Rng. 33E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Targa's system at that time. Based on current information, it is AEC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 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 30-041-20943	Pool Code 97836	Pool Name WC-041 G-05 S053419N;FUSSELMAN
Property Code 38445	Property Name MUSTANG SALLY	Well Number 1
GRID No. 1092	Operator Name ARMSTRONG ENERGY CORPORATION	Elevation 4333.4'

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	19	5 SOUTH	34 EAST, N.M.P.M.		456'	SOUTH	2108'	WEST	ROOSEVELT

Bottom Hole Location If Different From Surface

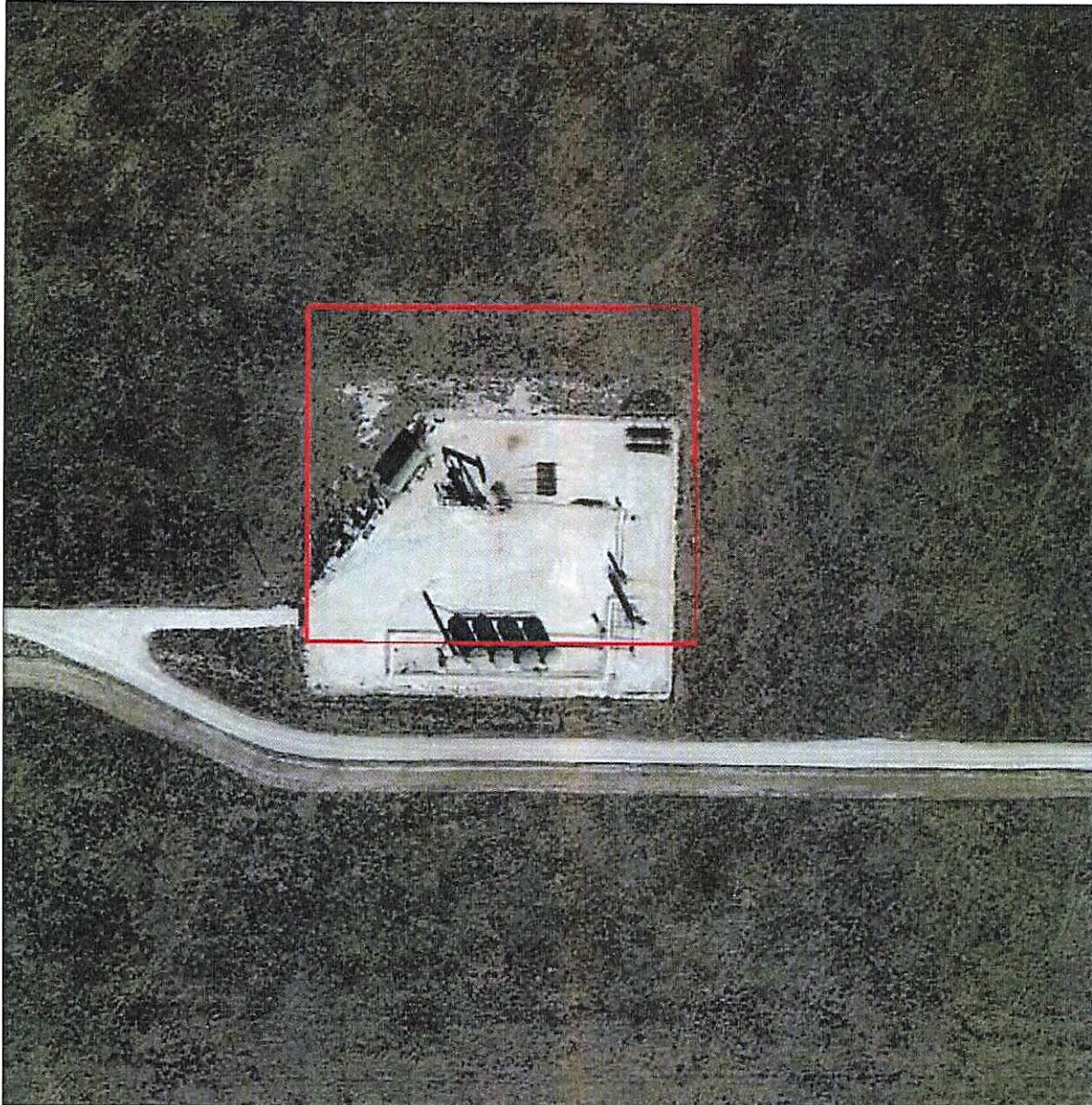
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	19	5 SOUTH	34 EAST, N.M.P.M.		592'	SOUTH	1984'	WEST	ROOSEVELT

Dedicated Acres	Joint or Infill	Consolidation Code	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.

		OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>[Signature]</i> 11/6/20 Signature Date Kyle Alpers Printed Name kalpers@aecnm.com E-mail Address
BOTTOM HOLE LOCATION NEW MEXICO EAST NAD 1927 Y=1038844.85 US FT X=778485.01 US FT LAT.: N 33.8522709' LONG.: W 103.4160783' KICK OFF POINT NEW MEXICO EAST NAD 1927 Y=1038720.94 US FT X=778613.84 US FT LAT.: N 33.8519272' LONG.: W 103.4156576' SURFACE LOCATION NEW MEXICO EAST NAD 1927 Y=1038708.74 US FT X=778610.25 US FT LAT.: N 33.8518938' LONG.: W 103.4156698' GRID AZ = 313°53'05" 178.75' (KOP TO BHL) GRID AZ = 16°24'02" 12.72' (SHL TO KOP)		SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from a balance of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. OCTOBER 19, 2020 Date of Survey Signature and Seal of Professional Surveyor Certificate Number 15079 WO# 201019WL (KA)

AERIAL MAP



SCALE: NOT TO SCALE

SEC. 19 TWP. 5-S RGE. 34-E

SURVEY N.M.P.M.

COUNTY ROOSEVELT

DESCRIPTION 456' FSL & 2108' FWL

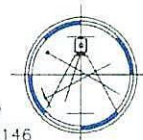
ELEVATION 4333.4'

OPERATOR ARMSTRONG ENERGY CORP.

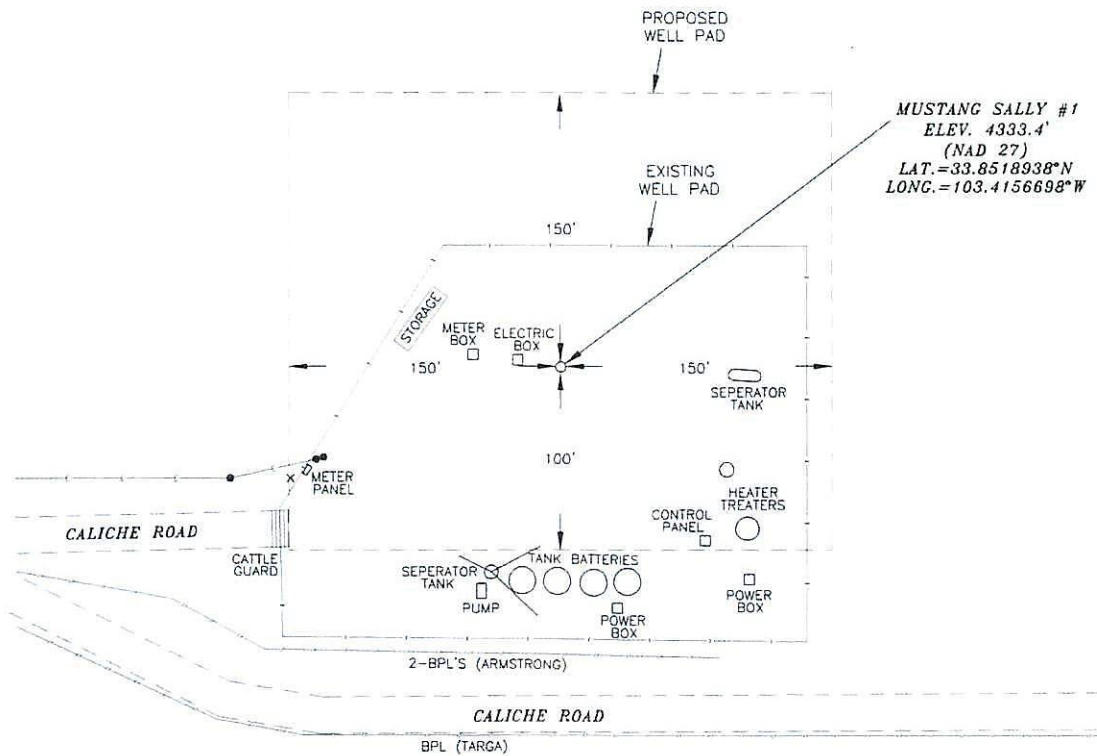
LEASE MUSTANG SALLY #1

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146



ARMSTRONG ENERGY CORP. MUSTANG SALLY #1 SITE PLAN



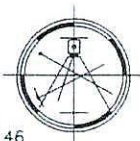
SURVEYORS CERTIFICATE

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS.

Terry J. Asel 10/23/2020
Terry J. Asel N.M. R.P.L.S. No. 15079

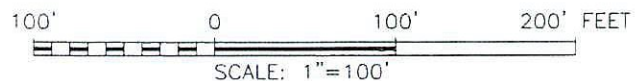
Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146



LEGEND

- DENOTES PROPOSED WELL PAD
- DENOTES ELECTRIC LINE
- DENOTES POWER POLE
- DENOTES FENCE LINE



ARMSTRONG ENERGY CORP.

MUSTANG SALLY #1 LOCATED AT
456' FSL & 2108' FWL IN SECTION 19,
TOWNSHIP 5 SOUTH, RANGE 34 EAST,
N.M.P.M., ROOSEVELT COUNTY, NEW MEXICO

Survey Date: 10/19/20	Sheet 1 of 1 Sheets
W.O. Number: 201019WL	Drawn By: KA Rev:
Date: 10/23/20	201019WL Scale: 1"=100'

Armstrong Energy Corporation

Roosevelt County, NM

Mustang Sally #1

Mustang Sally #1

Sidetrack

Plan: ST Plan #2

Standard Planning Report - Geographic

03 November, 2020

Planning Report - Geographic

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Mustang Sally #1
Company:	Armstrong Energy Corporation	TVD Reference:	KB Elev @ 4351.40usft
Project:	Roosevelt County, NM	MD Reference:	KB Elev @ 4351.40usft
Site:	Mustang Sally #1	North Reference:	Grid
Well:	Mustang Sally #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack		
Design:	ST Plan #2		

Project	Roosevelt 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		

Site	Mustang Sally #1				
Site Position:		Northing:	1,038,708.74 usft	Latitude:	33.85189376
From:	Map	Easting:	778,610.25 usft	Longitude:	-103.41566979
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.51 °

Well	Mustang Sally #1					
Well Position	+N/-S	0.00 usft	Northing:	1,038,708.74 usft	Latitude:	33.85189376
	+E/-W	0.00 usft	Easting:	778,610.25 usft	Longitude:	-103.41566979
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,333.40 usft

Wellbore	Sidetrack				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	9/29/2020	6.68	61.41	48,534.86579014

Design	ST Plan #2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	2,672.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	318.44

Plan Survey Tool Program	Date	11/3/2020			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	2,672.00	8,065.74 ST Plan #2 (Sidetrack)	MWD+IGRF		
			OWSG MWD + IGRF or WMM		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
2,672.00	0.46	337.48	2,671.95	12.20	3.59	0.00	0.00	0.00	0.00	
2,718.90	1.82	314.78	2,718.84	12.90	2.99	3.00	2.90	-48.39	-29.87	
7,930.68	1.82	314.78	7,928.00	129.26	-114.25	0.00	0.00	0.00	0.00	Target (Mustang Sally)
8,065.75	1.82	314.78	8,063.00	132.28	-117.29	0.00	0.00	0.00	0.00	

Planning Report - Geographic

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Mustang Sally #1
Company:	Armstrong Energy Corporation	TVD Reference:	KB Elev @ 4351.40usft
Project:	Roosevelt County, NM	MD Reference:	KB Elev @ 4351.40usft
Site:	Mustang Sally #1	North Reference:	Grid
Well:	Mustang Sally #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack		
Design:	ST Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
2,672.00	0.46	337.48	2,671.95	12.20	3.59	1,038,720.94	778,613.84	33.85192720	-103.41565760
KOP - Build & Turn @ 3°/100'									
2,700.00	1.26	318.02	2,699.95	12.53	3.34	1,038,721.27	778,613.59	33.85192811	-103.41565841
2,718.90	1.82	314.78	2,718.84	12.90	2.99	1,038,721.64	778,613.24	33.85192912	-103.41565955
EOB & T - Hold @ 1.82 INC, 314.78 AZI									
2,800.00	1.82	314.78	2,799.90	14.71	1.17	1,038,723.45	778,611.42	33.85193414	-103.41566551
2,900.00	1.82	314.78	2,899.85	16.94	-1.08	1,038,725.68	778,609.17	33.85194033	-103.41567285
3,000.00	1.82	314.78	2,999.80	19.17	-3.33	1,038,727.92	778,606.92	33.85194652	-103.41568020
3,100.00	1.82	314.78	3,099.75	21.40	-5.58	1,038,730.15	778,604.67	33.85195271	-103.41568754
3,200.00	1.82	314.78	3,199.70	23.64	-7.83	1,038,732.38	778,602.42	33.85195890	-103.41569488
3,243.32	1.82	314.78	3,243.00	24.60	-8.80	1,038,733.35	778,601.44	33.85196159	-103.41569806
San Andres									
3,300.00	1.82	314.78	3,299.65	25.87	-10.08	1,038,734.61	778,600.17	33.85196509	-103.41570222
3,400.00	1.82	314.78	3,399.60	28.10	-12.33	1,038,736.85	778,597.92	33.85197129	-103.41570957
3,500.00	1.82	314.78	3,499.55	30.34	-14.58	1,038,739.08	778,595.67	33.85197748	-103.41571691
3,600.00	1.82	314.78	3,599.50	32.57	-16.83	1,038,741.31	778,593.42	33.85198367	-103.41572425
3,700.00	1.82	314.78	3,699.45	34.80	-19.08	1,038,743.54	778,591.17	33.85198986	-103.41573160
3,800.00	1.82	314.78	3,799.40	37.03	-21.33	1,038,745.78	778,588.92	33.85199605	-103.41573894
3,900.00	1.82	314.78	3,899.35	39.27	-23.58	1,038,748.01	778,586.67	33.85200224	-103.41574628
4,000.00	1.82	314.78	3,999.30	41.50	-25.83	1,038,750.24	778,584.42	33.85200843	-103.41575363
4,100.00	1.82	314.78	4,099.25	43.73	-28.08	1,038,752.48	778,582.17	33.85201462	-103.41576097
4,200.00	1.82	314.78	4,199.20	45.96	-30.33	1,038,754.71	778,579.92	33.85202081	-103.41576831
4,300.00	1.82	314.78	4,299.15	48.20	-32.57	1,038,756.94	778,577.67	33.85202700	-103.41577566
4,400.00	1.82	314.78	4,399.10	50.43	-34.82	1,038,759.17	778,575.42	33.85203319	-103.41578300
4,500.00	1.82	314.78	4,499.05	52.66	-37.07	1,038,761.41	778,573.17	33.85203938	-103.41579034
4,572.99	1.82	314.78	4,572.00	54.29	-38.72	1,038,763.04	778,571.53	33.85204390	-103.41579570
Glorieta									
4,600.00	1.82	314.78	4,599.00	54.90	-39.32	1,038,763.64	778,570.92	33.85204557	-103.41579768
4,700.00	1.82	314.78	4,698.95	57.13	-41.57	1,038,765.87	778,568.67	33.85205176	-103.41580503
4,800.00	1.82	314.78	4,798.90	59.36	-43.82	1,038,768.10	778,566.42	33.85205795	-103.41581237
4,900.00	1.82	314.78	4,898.85	61.59	-46.07	1,038,770.34	778,564.18	33.85206414	-103.41581971
5,000.00	1.82	314.78	4,998.80	63.83	-48.32	1,038,772.57	778,561.93	33.85207033	-103.41582706
5,100.00	1.82	314.78	5,098.75	66.06	-50.57	1,038,774.80	778,559.68	33.85207652	-103.41583440
5,200.00	1.82	314.78	5,198.70	68.29	-52.82	1,038,777.03	778,557.43	33.85208271	-103.41584174
5,300.00	1.82	314.78	5,298.64	70.52	-55.07	1,038,779.27	778,555.18	33.85208890	-103.41584909
5,400.00	1.82	314.78	5,398.59	72.76	-57.32	1,038,781.50	778,552.93	33.85209509	-103.41585643
5,500.00	1.82	314.78	5,498.54	74.99	-59.57	1,038,783.73	778,550.68	33.85210128	-103.41586377
5,600.00	1.82	314.78	5,598.49	77.22	-61.82	1,038,785.97	778,548.43	33.85210748	-103.41587112
5,700.00	1.82	314.78	5,698.44	79.46	-64.07	1,038,788.20	778,546.18	33.85211367	-103.41587846
5,800.00	1.82	314.78	5,798.39	81.69	-66.32	1,038,790.43	778,543.93	33.85211986	-103.41588580
5,889.65	1.82	314.78	5,888.00	83.69	-68.34	1,038,792.43	778,541.91	33.85212541	-103.41589239
Tubb									
5,900.00	1.82	314.78	5,898.34	83.92	-68.57	1,038,792.66	778,541.68	33.85212605	-103.41589314
6,000.00	1.82	314.78	5,998.29	86.15	-70.82	1,038,794.90	778,539.43	33.85213224	-103.41590049
6,100.00	1.82	314.78	6,098.24	88.39	-73.07	1,038,797.13	778,537.18	33.85213843	-103.41590783
6,200.00	1.82	314.78	6,198.19	90.62	-75.32	1,038,799.36	778,534.93	33.85214462	-103.41591517
6,300.00	1.82	314.78	6,298.14	92.85	-77.57	1,038,801.59	778,532.68	33.85215081	-103.41592252
6,400.00	1.82	314.78	6,398.09	95.08	-79.82	1,038,803.83	778,530.43	33.85215700	-103.41592986
6,500.00	1.82	314.78	6,498.04	97.32	-82.07	1,038,806.06	778,528.18	33.85216319	-103.41593720
6,600.00	1.82	314.78	6,597.99	99.55	-84.32	1,038,808.29	778,525.93	33.85216938	-103.41594455
6,628.02	1.82	314.78	6,626.00	100.18	-84.95	1,038,808.92	778,525.30	33.85217111	-103.41594660
Abo									
6,700.00	1.82	314.78	6,697.94	101.78	-86.56	1,038,810.53	778,523.68	33.85217557	-103.41595189
6,800.00	1.82	314.78	6,797.89	104.02	-88.81	1,038,812.76	778,521.43	33.85218176	-103.41595923

Planning Report - Geographic

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Mustang Sally #1
Company:	Armstrong Energy Corporation	TVD Reference:	KB Elev @ 4351.40usft
Project:	Roosevelt County, NM	MD Reference:	KB Elev @ 4351.40usft
Site:	Mustang Sally #1	North Reference:	Grid
Well:	Mustang Sally #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack		
Design:	ST Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,900.00	1.82	314.78	6,897.84	106.25	-91.06	1,038,814.99	778,519.18	33.85218795	-103.41596658
7,000.00	1.82	314.78	6,997.79	108.48	-93.31	1,038,817.22	778,516.93	33.85219414	-103.41597392
7,100.00	1.82	314.78	7,097.74	110.71	-95.56	1,038,819.46	778,514.68	33.85220033	-103.41598126
7,200.00	1.82	314.78	7,197.69	112.95	-97.81	1,038,821.69	778,512.43	33.85220652	-103.41598861
7,300.00	1.82	314.78	7,297.64	115.18	-100.06	1,038,823.92	778,510.19	33.85221271	-103.41599595
7,373.40	1.82	314.78	7,371.00	116.82	-101.71	1,038,825.56	778,508.53	33.85221726	-103.41600134
XX									
7,400.00	1.82	314.78	7,397.59	117.41	-102.31	1,038,826.15	778,507.94	33.85221890	-103.41600329
7,486.45	1.82	314.78	7,484.00	119.34	-104.26	1,038,828.08	778,505.99	33.85222426	-103.41600964
W1									
7,500.00	1.82	314.78	7,497.54	119.64	-104.56	1,038,828.39	778,505.69	33.85222509	-103.41601063
7,600.00	1.82	314.78	7,597.49	121.88	-106.81	1,038,830.62	778,503.44	33.85223128	-103.41601798
7,700.00	1.82	314.78	7,697.44	124.11	-109.06	1,038,832.85	778,501.19	33.85223747	-103.41602532
7,722.57	1.82	314.78	7,720.00	124.61	-109.57	1,038,833.36	778,500.68	33.85223887	-103.41602698
Penn (P)									
7,800.00	1.82	314.78	7,797.39	126.34	-111.31	1,038,835.09	778,498.94	33.85224367	-103.41603266
7,900.00	1.82	314.78	7,897.34	128.58	-113.56	1,038,837.32	778,496.69	33.85224986	-103.41604001
7,930.68	1.82	314.78	7,928.00	129.26	-114.25	1,038,838.00	778,496.00	33.85225175	-103.41604226
Unconformity - Target (Mustang Sally #1 ST)									
8,000.00	1.82	314.78	7,997.29	130.81	-115.81	1,038,839.55	778,494.44	33.85225605	-103.41604735
8,065.74	1.82	314.78	8,063.00	132.28	-117.29	1,038,841.02	778,492.96	33.85226012	-103.41605218
TD - 8065.74 MD, 8063.00 TVD									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Target (Mustang Sally #1	0.00	0.00	7,928.00	129.26	-114.25	1,038,838.00	778,496.00	33.85225175	-103.41604226
- plan hits target center									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,848.03	1,848.00	Rustler			
3,243.32	3,243.00	San Andres			
4,572.99	4,572.00	Glorieta			
5,889.65	5,888.00	Tubb			
6,628.02	6,626.00	Abo			
7,373.40	7,371.00	XX			
7,486.45	7,484.00	W1			
7,722.57	7,720.00	Penn (P)			
7,930.68	7,928.00	Unconformity			

Planning Report - Geographic

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Mustang Sally #1
Company:	Armstrong Energy Corporation	TVD Reference:	KB Elev @ 4351.40usft
Project:	Roosevelt County, NM	MD Reference:	KB Elev @ 4351.40usft
Site:	Mustang Sally #1	North Reference:	Grid
Well:	Mustang Sally #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack		
Design:	ST Plan #2		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,672.00	2,671.95	12.20	3.59	KOP - Build & Turn @ 3°/100'
2,718.90	2,718.84	12.90	2.99	EOB & T - Hold @ 1.82 INC, 314.78 AZI
8,065.74	8,063.00	132.28	-117.29	TD - 8065.74 MD, 8063.00 TVD

Armstrong Energy Corporation

Roosevelt County, NM

Mustang Sally #1

Mustang Sally #1

Sidetrack

ST Plan #2

Anticollision Report

03 November, 2020

Anticollision Report

Company:	Armstrong Energy Corporation	Local Co-ordinate Reference:	Well Mustang Sally #1
Project:	Roosevelt County, NM	TVD Reference:	KB Elev @ 4351.40usft
Reference Site:	Mustang Sally #1	MD Reference:	KB Elev @ 4351.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Mustang Sally #1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Sidetrack	Database:	EDM 5000.15 Single User Db
Reference Design:	ST Plan #2	Offset TVD Reference:	Offset Datum

Reference	ST Plan #2
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum centre distance of 1,000.00usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program	Date	11/3/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	2,672.00	Survey #1 (Original Hole)	MWD+IGRF	OWSG MWD + IGRF or WMM
2,672.00	8,065.74	ST Plan #2 (Sidetrack)	MWD+IGRF	OWSG MWD + IGRF or WMM

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						
Mustang Sally #1						
Mustang Sally #1 - Original Hole - Wellbore #1	3,000.00	2,999.90	7.87	6.57	6.042	CC, ES
Mustang Sally #1 - Original Hole - Wellbore #1	8,066.71	8,066.37	161.00	129.98	5.190	SF

Offset Design:	Mustang Sally #1 - Mustang Sally #1 - Original Hole - Wellbore #1													Offset Site Error:	0.00 usft
Survey Program:	100-MWD+IGRF													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Rule Assigned:	Distance	Minimum	Separation	Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor			
2,675.03	2,674.98	2,675.03	2,674.98	0.01	0.01	155.21	12.22	3.58	0.00	-0.01	0.02	0.145	Collision Risk Procedures Req.		
2,700.00	2,699.95	2,700.00	2,699.95	0.05	0.10	169.83	12.41	3.50	0.20	0.05	0.15	1.341	Collision Risk Procedures Req.		
2,718.90	2,718.84	2,718.90	2,718.85	0.06	0.17	172.12	12.55	3.45	0.57	0.35	0.22	2.608			
2,800.00	2,799.90	2,799.97	2,799.91	0.10	0.46	167.49	13.30	3.39	2.63	2.12	0.50	5.213			
2,900.00	2,899.85	2,899.93	2,899.87	0.17	0.81	164.51	14.36	3.52	5.27	4.35	0.92	5.721			
3,000.00	2,999.80	2,999.90	2,999.84	0.23	1.17	163.53	15.44	3.60	7.87	6.57	1.30	6.042	CC, ES		
3,100.00	3,099.75	3,099.86	3,099.79	0.29	1.53	163.14	16.50	3.68	10.48	8.82	1.66	6.306			
3,200.00	3,199.70	3,199.82	3,199.75	0.36	1.89	162.73	17.57	3.82	13.13	11.16	1.98	6.646			
3,300.00	3,299.65	3,299.77	3,299.68	0.44	2.25	162.37	18.63	4.04	15.87	13.49	2.38	6.678			
3,400.00	3,399.60	3,399.73	3,399.64	0.54	2.61	162.01	19.68	4.33	18.67	15.82	2.85	6.545			
3,500.00	3,499.55	3,499.69	3,499.60	0.64	2.96	161.73	20.75	4.62	21.46	18.13	3.33	6.450			
3,600.00	3,599.50	3,599.62	3,599.52	0.75	3.32	161.45	21.82	4.99	24.32	20.51	3.81	6.385			
3,700.00	3,699.45	3,699.67	3,699.56	0.88	3.68	161.37	22.86	5.23	27.08	22.78	4.30	6.298			
3,800.00	3,799.40	3,799.64	3,799.53	1.02	4.04	161.49	23.90	5.27	29.66	24.86	4.80	6.181			
3,900.00	3,899.35	3,899.63	3,899.51	1.16	4.40	161.52	25.00	5.29	32.20	26.89	5.31	6.065			
4,000.00	3,999.30	3,999.56	3,999.43	1.32	4.75	160.91	26.43	5.49	34.76	28.93	5.83	5.962			
4,100.00	4,099.25	4,099.45	4,099.31	1.49	5.11	159.81	28.13	6.00	37.48	31.11	6.36	5.890			
4,200.00	4,199.20	4,199.34	4,199.18	1.67	5.47	158.89	29.74	6.66	40.39	33.48	6.90	5.851			
4,300.00	4,299.15	4,299.16	4,298.99	1.85	5.83	158.05	31.29	7.54	43.54	36.09	7.45	5.844			
4,400.00	4,399.10	4,399.08	4,398.89	2.05	6.19	157.16	32.90	8.64	46.87	38.86	8.01	5.854			
4,500.00	4,499.05	4,498.98	4,498.75	2.25	6.54	155.95	34.84	9.95	50.29	41.72	8.57	5.867			
4,600.00	4,599.00	4,598.93	4,598.67	2.46	6.90	154.44	37.18	11.43	53.76	44.61	9.15	5.877			
4,700.00	4,698.95	4,698.86	4,698.55	2.68	7.26	152.81	39.81	12.99	57.24	47.51	9.73	5.883			
4,800.00	4,798.90	4,798.67	4,798.31	2.91	7.62	151.20	42.58	14.68	60.87	50.55	10.32	5.899			

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

Anticollision Report

Company:	Armstrong Energy Corporation	Local Co-ordinate Reference:	Well Mustang Sally #1
Project:	Roosevelt County, NM	TVD Reference:	KB Elev @ 4351.40usft
Reference Site:	Mustang Sally #1	MD Reference:	KB Elev @ 4351.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Mustang Sally #1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Sidetrack	Database:	EDM 5000.15 Single User Db
Reference Design:	ST Plan #2	Offset TVD Reference:	Offset Datum

Offset Design: Mustang Sally #1 - Mustang Sally #1 - Original Hole - Wellbore #1

Offset Site Error: 0.00 usft

Offset Well Error: 0.00 usft

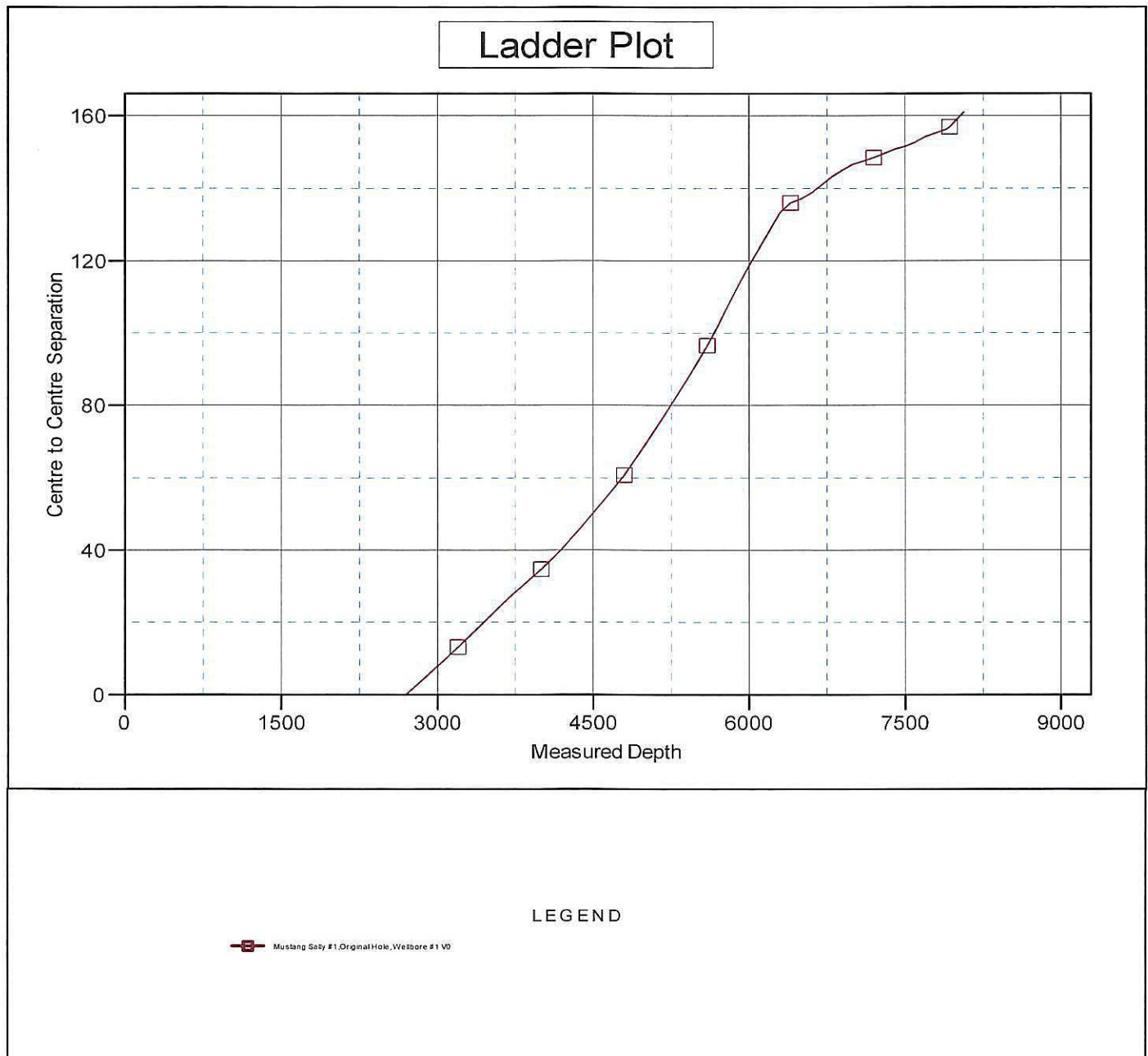
Survey Program:		100-MWD+IGRF		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
4,900.00	4,898.85	4,898.26	4,897.83	3.14	7.98	149.56	45.49	16.77	64.88	53.97	10.91	5.946	
5,000.00	4,998.80	4,998.16	4,997.66	3.38	8.34	148.11	48.35	19.12	69.20	57.69	11.51	6.011	
5,100.00	5,098.75	5,098.10	5,097.55	3.62	8.70	146.99	51.02	21.37	73.51	61.39	12.12	6.065	
5,200.00	5,198.70	5,197.86	5,197.24	3.87	9.06	146.01	53.66	23.68	77.90	65.17	12.73	6.120	
5,300.00	5,298.64	5,297.73	5,297.05	4.13	9.42	145.15	56.26	26.09	82.42	69.07	13.34	6.177	
5,400.00	5,398.59	5,397.65	5,396.91	4.39	9.78	144.33	58.93	28.50	86.95	72.98	13.96	6.227	
5,500.00	5,498.54	5,497.42	5,496.60	4.65	10.14	143.45	61.82	30.99	91.53	76.95	14.59	6.275	
5,600.00	5,598.49	5,596.84	5,595.93	4.92	10.49	142.32	65.23	33.84	96.45	81.23	15.21	6.339	
5,700.00	5,698.44	5,696.27	5,695.22	5.19	10.86	141.00	69.11	37.20	101.85	86.00	15.85	6.428	
5,800.00	5,798.39	5,795.94	5,794.74	5.47	11.22	139.76	73.07	40.85	107.58	91.09	16.48	6.526	
5,900.00	5,898.34	5,896.13	5,894.79	5.75	11.58	138.60	77.14	44.42	113.25	96.12	17.13	6.611	
6,000.00	5,998.29	5,996.26	5,994.79	6.03	11.95	137.63	81.05	47.62	118.60	100.82	17.78	6.671	
6,100.00	6,098.24	6,096.91	6,095.39	6.32	12.31	137.74	82.85	50.28	123.51	105.08	18.42	6.704	
6,200.00	6,198.19	6,196.10	6,194.54	6.61	12.66	138.23	83.76	52.96	128.51	109.46	19.06	6.744	
6,300.00	6,298.14	6,297.33	6,295.73	6.90	13.01	139.16	83.59	55.55	133.46	113.76	19.70	6.775	
6,400.00	6,398.09	6,401.06	6,399.45	7.20	13.35	140.71	82.05	55.58	136.03	115.69	20.34	6.687	
6,500.00	6,498.04	6,501.47	6,499.83	7.50	13.68	141.96	81.21	54.10	137.13	116.16	20.97	6.541	
6,600.00	6,597.99	6,600.36	6,598.72	7.80	14.01	142.76	81.31	53.26	138.78	117.19	21.59	6.427	
6,700.00	6,697.94	6,699.91	6,698.27	8.10	14.34	143.78	80.75	52.85	141.00	118.78	22.22	6.345	
6,800.00	6,797.89	6,800.35	6,798.70	8.41	14.67	144.98	79.71	52.38	143.27	120.42	22.85	6.270	
6,900.00	6,897.84	6,900.70	6,899.05	8.72	15.01	145.85	79.47	51.50	145.06	121.57	23.49	6.175	
7,000.00	6,997.79	7,001.76	7,000.10	9.03	15.34	147.07	78.37	50.19	146.64	122.51	24.13	6.077	
7,100.00	7,097.74	7,102.10	7,100.41	9.34	15.67	148.24	77.48	48.14	147.52	122.75	24.77	5.956	
7,200.00	7,197.69	7,201.90	7,200.19	9.65	16.01	149.51	76.31	46.06	148.48	123.08	25.41	5.844	
7,300.00	7,297.64	7,301.66	7,299.92	9.97	16.34	150.71	75.21	44.11	149.63	123.58	26.05	5.744	
7,400.00	7,397.59	7,402.05	7,400.28	10.28	16.67	151.94	74.04	42.06	150.77	124.08	26.70	5.648	
7,500.00	7,497.54	7,502.86	7,501.05	10.60	17.01	153.07	73.21	39.63	151.52	124.17	27.35	5.541	
7,600.00	7,597.49	7,600.92	7,599.08	10.92	17.34	154.26	72.03	37.54	152.72	124.73	27.99	5.457	
7,700.00	7,697.44	7,701.74	7,699.86	11.24	17.68	155.69	70.16	35.47	154.29	125.65	28.64	5.387	
7,800.00	7,797.39	7,802.47	7,800.55	11.57	18.02	156.94	68.87	32.98	155.34	126.05	29.29	5.303	
7,900.00	7,897.34	7,901.58	7,899.63	11.89	18.35	158.07	67.87	30.47	156.31	126.37	29.95	5.220	
7,930.68	7,928.00	7,931.03	7,929.07	11.99	18.45	158.43	67.41	29.93	156.89	126.75	30.14	5.205	
8,000.00	7,997.29	7,998.75	7,996.77	12.22	18.68	159.30	65.89	29.32	158.99	128.41	30.58	5.199	
8,065.75	8,063.00	8,065.39	8,063.39	12.43	18.90	160.09	64.54	28.74	160.97	129.96	31.02	5.190	
8,066.71	8,063.96	8,066.37	8,064.37	12.43	18.90	160.10	64.52	28.73	161.00	129.98	31.02	5.190 SF	

Anticollision Report

Company:	Armstrong Energy Corporation	Local Co-ordinate Reference:	Well Mustang Sally #1
Project:	Roosevelt County, NM	TVD Reference:	KB Elev @ 4351.40usft
Reference Site:	Mustang Sally #1	MD Reference:	KB Elev @ 4351.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Mustang Sally #1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Sidetrack	Database:	EDM 5000.15 Single User Db
Reference Design:	ST Plan #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB Elev @ 4351.40usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.33333334

Coordinates are relative to: Mustang Sally #1
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 300
 Grid Convergence at Surface is: 0.51°



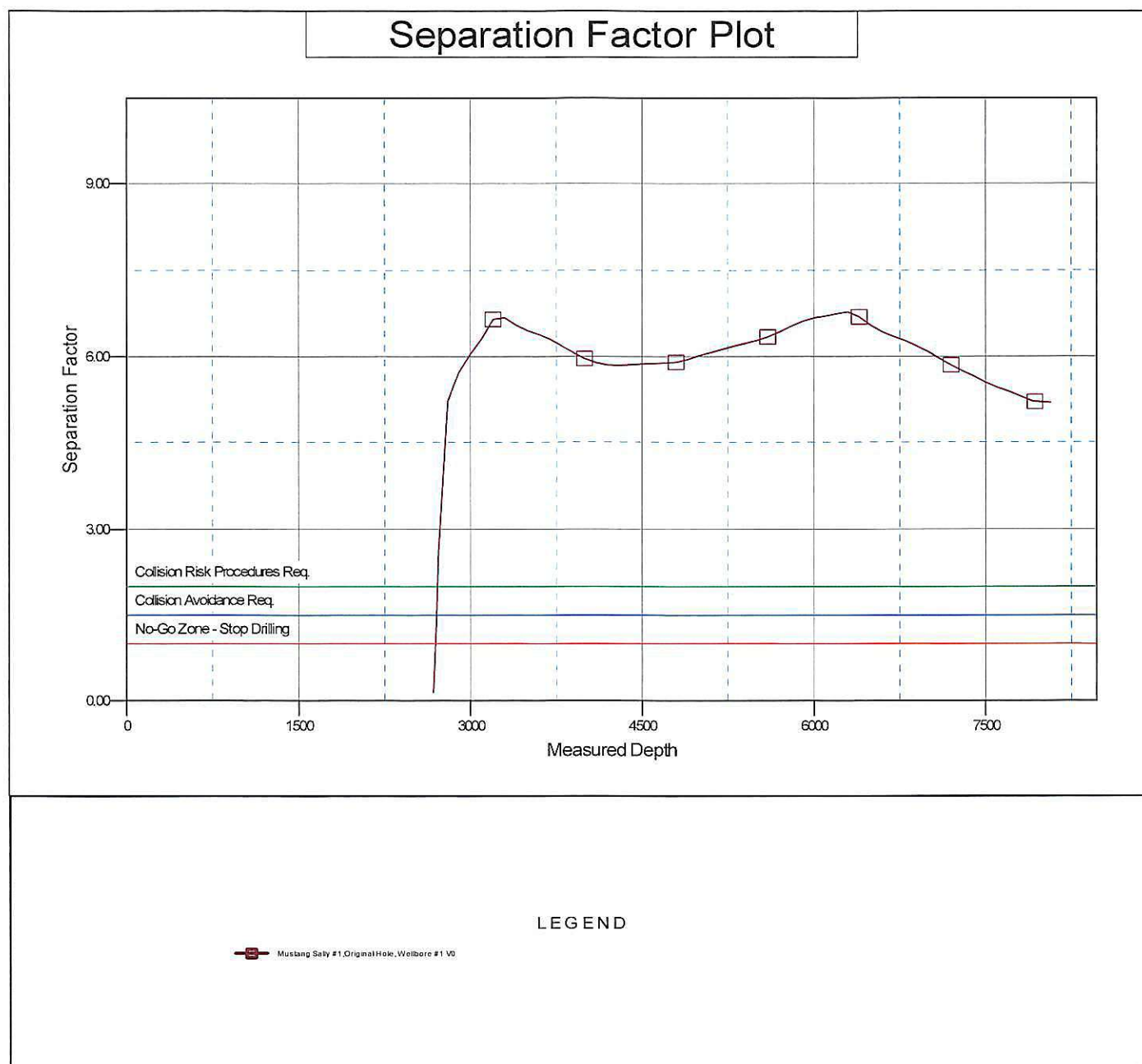
Anticollision Report

Company: Armstrong Energy Corporation
Project: Roosevelt County, NM
Reference Site: Mustang Sally #1
Site Error: 0.00 usft
Reference Well: Mustang Sally #1
Well Error: 0.00 usft
Reference Wellbore: Sidetrack
Reference Design: ST Plan #2

Local Co-ordinate Reference: Well Mustang Sally #1
TVD Reference: KB Elev @ 4351.40usft
MD Reference: KB Elev @ 4351.40usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.15 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB Elev @ 4351.40usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.33333334

Coordinates are relative to: Mustang Sally #1
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 300
 Grid Convergence at Surface is: 0.51°





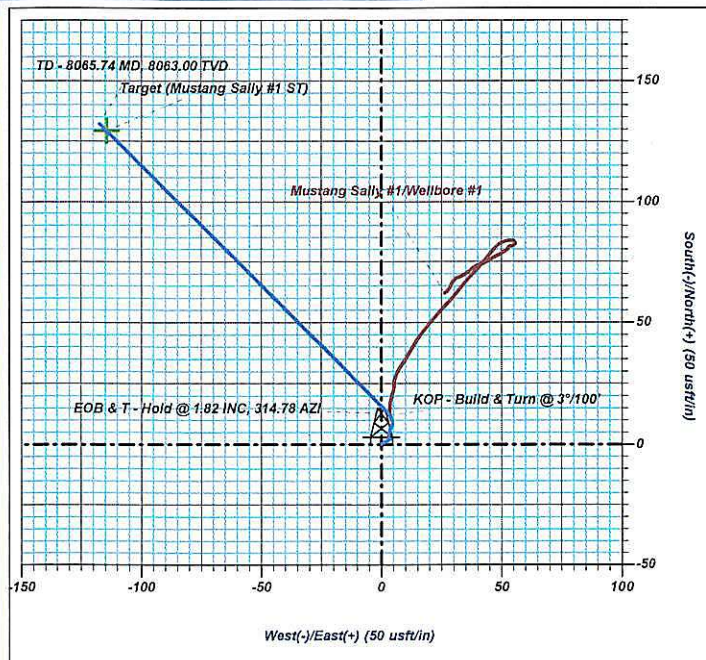
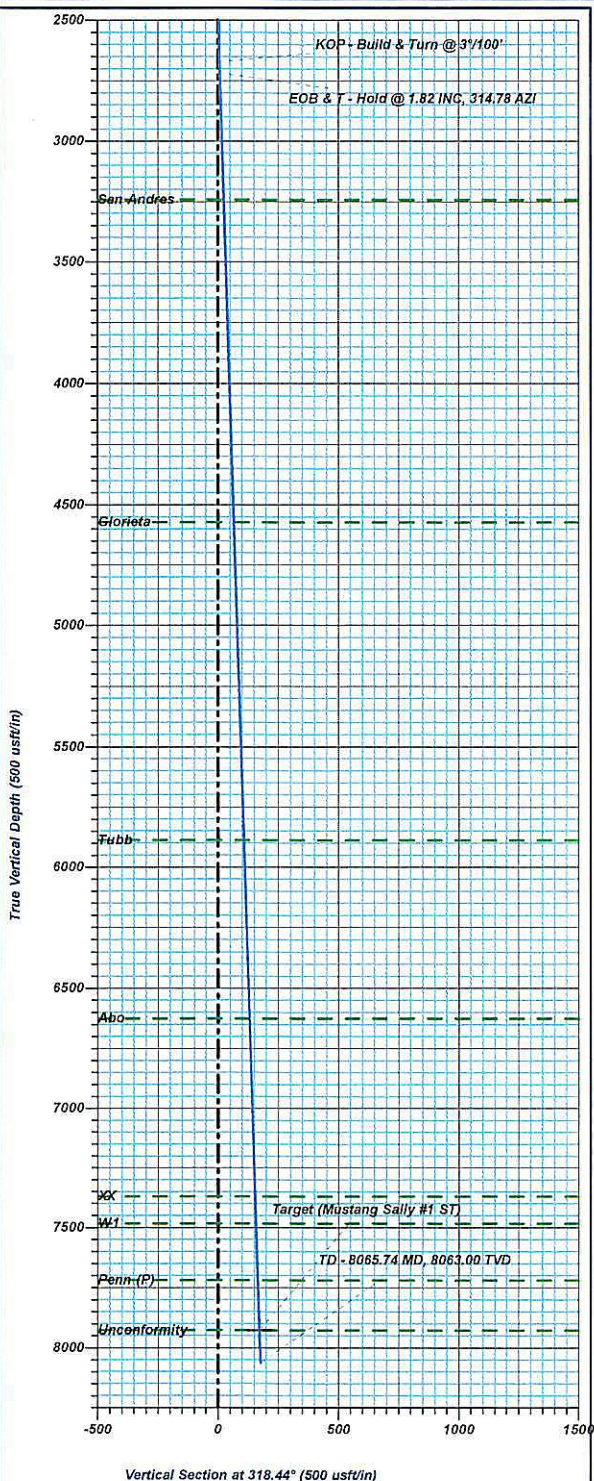
Armstrong Energy Corporation
Mustang Sally #1
Roosevelt County, NM
Sidetrack
ST Plan #2



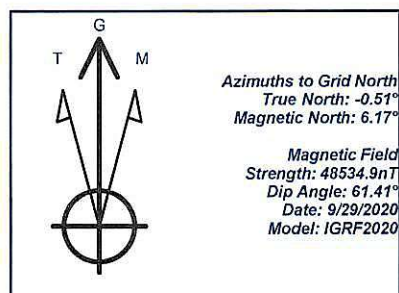
SURFACE LOCATION		Ground Elevation: 4333.40		KB Elev @ 4351.40usft	
+N-S	+E-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1038708.74	778610.25	33.85189376	-103.41566979

TARGET LOCATIONS						
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude Longitude
Target (Mustang Sally #1 ST)	7928.00	-114.25	129.26	1038838.00	778496.00	33.85225176 -103.41604226

SECTION DETAILS:										
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Annotation
1	2672.00	0.46	337.48	2671.95	12.20	3.59	0.00	0.00	6.74	KOP - Build & Turn @ 3°/100'
2	2718.90	1.82	314.78	2718.84	12.90	2.99	3.00	-29.87	7.66	EOB & T - Hold @ 1.82 INC, 314.78 AZI
3	7930.68	1.82	314.78	7928.00	129.26	-114.25	0.00	0.00	172.51	
4	8065.74	1.82	314.78	8063.00	132.28	-117.29	0.00	0.00	176.79	TD - 8065.74 MD, 8063.00 TVD



Well Planning: Chris Thomas
 12:47, November 03 2020



Map System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone Name: New Mexico East 3001

Latitude: 33.85189376
 Longitude: -103.41566979

Grid East: 778610.25
 Grid North: 1038708.74
 Scale Factor: 1.000

Geomagnetic Model: IGRF2020
 Sample Date: 29-Sep-20
 Magnetic Declination: 6.68°
 Dip Angle from Horizontal: 61.41°
 Magnetic Field Strength: 48534.86579014nT

To convert a Magnetic Direction to a Grid Direction, Add 6.17°

Armstrong Energy Corporation
Mustang Sally #1 - ST Plan #2

Roosevelt County, NM
Mustang Sally #1
Your Ref:

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (dega/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.43	55.69	100.00	0.21	0.31	-0.05	0.43
200.00	0.46	58.82	200.00	0.63	0.96	-0.17	0.04
300.00	0.40	51.48	299.99	1.06	1.58	-0.26	0.08
400.00	0.40	61.53	399.99	1.44	2.16	-0.36	0.07
500.00	0.28	58.49	499.99	1.73	2.67	-0.48	0.12
600.00	0.20	68.78	599.99	1.92	3.05	-0.58	0.09
700.00	0.19	48.86	699.99	2.10	3.33	-0.64	0.07
800.00	0.06	20.25	799.99	2.26	3.48	-0.62	0.14
900.00	0.06	326.17	899.99	2.35	3.47	-0.54	0.05
1000.00	0.09	325.87	999.99	2.46	3.39	-0.41	0.03
1100.00	0.09	332.73	1099.99	2.59	3.31	-0.26	0.01
1200.00	0.19	319.02	1199.99	2.79	3.17	-0.02	0.10
1300.00	0.32	358.12	1299.99	3.19	3.05	0.36	0.21
1400.00	0.41	10.80	1399.98	3.82	3.11	0.80	0.12
1500.00	0.39	24.55	1499.98	4.48	3.32	1.15	0.10
1600.00	0.45	7.47	1599.98	5.18	3.51	1.55	0.14
1700.00	0.44	3.64	1699.98	5.95	3.58	2.08	0.03
1800.00	0.46	24.03	1799.97	6.70	3.77	2.51	0.16
1900.00	0.48	23.55	1899.97	7.45	4.10	2.86	0.02
2000.00	0.53	26.23	1999.97	8.25	4.47	3.21	0.06
2100.00	0.44	3.03	2099.96	9.05	4.70	3.65	0.21
2200.00	0.32	340.01	2199.96	9.70	4.62	4.19	0.19
2300.00	0.24	341.24	2299.96	10.16	4.46	4.64	0.08
2400.00	0.24	336.60	2399.96	10.55	4.31	5.03	0.02
2500.00	0.39	331.17	2499.96	11.04	4.06	5.56	0.15
2600.00	0.42	341.77	2599.95	11.68	3.78	6.23	0.08
2672.00	0.46	337.48	2671.95	12.20	3.59	6.74	0.07
2700.00	1.26	318.02	2699.95	12.53	3.34	7.16	3.00
2718.90	1.82	314.78	2718.84	12.90	2.99	7.66	3.00
2800.00	1.82	314.78	2799.90	14.71	1.17	10.23	0.00
2900.00	1.82	314.78	2899.85	16.94	-1.08	13.39	0.00
3000.00	1.82	314.78	2999.80	19.17	-3.33	16.55	0.00
3100.00	1.82	314.78	3099.75	21.40	-5.58	19.72	0.00

3200.00	1.82	314.78	3199.70	23.64	-7.83	22.88	0.00
3300.00	1.82	314.78	3299.65	25.87	-10.08	26.04	0.00
3400.00	1.82	314.78	3399.60	28.10	-12.33	29.21	0.00
3500.00	1.82	314.78	3499.55	30.34	-14.58	32.37	0.00
3600.00	1.82	314.78	3599.50	32.57	-16.83	35.53	0.00
3700.00	1.82	314.78	3699.45	34.80	-19.08	38.70	0.00
3800.00	1.82	314.78	3799.40	37.03	-21.33	41.86	0.00
3900.00	1.82	314.78	3899.35	39.27	-23.58	45.02	0.00
4000.00	1.82	314.78	3999.30	41.50	-25.83	48.18	0.00
4100.00	1.82	314.78	4099.25	43.73	-28.08	51.35	0.00
4200.00	1.82	314.78	4199.20	45.96	-30.33	54.51	0.00
4300.00	1.82	314.78	4299.15	48.20	-32.57	57.67	0.00
4400.00	1.82	314.78	4399.10	50.43	-34.82	60.84	0.00
4500.00	1.82	314.78	4499.05	52.66	-37.07	64.00	0.00
4600.00	1.82	314.78	4599.00	54.90	-39.32	67.16	0.00
4700.00	1.82	314.78	4698.95	57.13	-41.57	70.33	0.00
4800.00	1.82	314.78	4798.90	59.36	-43.82	73.49	0.00
4900.00	1.82	314.78	4898.85	61.59	-46.07	76.65	0.00
5000.00	1.82	314.78	4998.80	63.83	-48.32	79.82	0.00
5100.00	1.82	314.78	5098.75	66.06	-50.57	82.98	0.00
5200.00	1.82	314.78	5198.69	68.29	-52.82	86.14	0.00
5300.00	1.82	314.78	5298.64	70.52	-55.07	89.30	0.00
5400.00	1.82	314.78	5398.59	72.76	-57.32	92.47	0.00
5500.00	1.82	314.78	5498.54	74.99	-59.57	95.63	0.00
5600.00	1.82	314.78	5598.49	77.22	-61.82	98.79	0.00
5700.00	1.82	314.78	5698.44	79.46	-64.07	101.96	0.00
5800.00	1.82	314.78	5798.39	81.69	-66.32	105.12	0.00
5900.00	1.82	314.78	5898.34	83.92	-68.57	108.28	0.00
6000.00	1.82	314.78	5998.29	86.15	-70.82	111.45	0.00
6100.00	1.82	314.78	6098.24	88.39	-73.07	114.61	0.00
6200.00	1.82	314.78	6198.19	90.62	-75.32	117.77	0.00
6300.00	1.82	314.78	6298.14	92.85	-77.57	120.94	0.00
6400.00	1.82	314.78	6398.09	95.08	-79.82	124.10	0.00
6500.00	1.82	314.78	6498.04	97.32	-82.07	127.26	0.00
6600.00	1.82	314.78	6597.99	99.55	-84.32	130.42	0.00
6700.00	1.82	314.78	6697.94	101.78	-86.56	133.59	0.00
6800.00	1.82	314.78	6797.89	104.02	-88.81	136.75	0.00
6900.00	1.82	314.78	6897.84	106.25	-91.06	139.91	0.00
7000.00	1.82	314.78	6997.79	108.48	-93.31	143.08	0.00
7100.00	1.82	314.78	7097.74	110.71	-95.56	146.24	0.00
7200.00	1.82	314.78	7197.69	112.95	-97.81	149.40	0.00
7300.00	1.82	314.78	7297.64	115.18	-100.06	152.57	0.00
7400.00	1.82	314.78	7397.59	117.41	-102.31	155.73	0.00
7500.00	1.82	314.78	7497.54	119.64	-104.56	158.89	0.00
7600.00	1.82	314.78	7597.49	121.88	-106.81	162.05	0.00
7700.00	1.82	314.78	7697.44	124.11	-109.06	165.22	0.00
7800.00	1.82	314.78	7797.39	126.34	-111.31	168.38	0.00
7900.00	1.82	314.78	7897.34	128.58	-113.56	171.54	0.00
7930.68	1.82	314.78	7928.00	129.26	-114.25	172.51	0.00

8000.00	1.82	314.78	7997.29	130.81	-115.81	174.71	0.00
8065.74	1.82	314.78	8063.00	132.28	-117.29	176.79	0.00

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to KB Elev. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet.
Vertical Section is from Slot and calculated along an Azimuth of 318.436° (Grid).

Coordinate System is NAD 1927 (NADCON CONUS) US State Plane 1927 (Exact solution), New Mexico East 3001.
Central meridian is -104.333°.
Grid Convergence at Surface is 0.511°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 8065.74ft.,
the Bottom Hole Displacement is 176.79ft., in the Direction of 318.436° (Grid).