

For KCC Use:

Effective Date: _____

District # _____

SGA? Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form C-1

March 2010

Form must be Typed
Form must be Signed
All blanks must be Filled

NOTICE OF INTENT TO DRILL

Must be approved by KCC five (5) days prior to commencing well

Form KSONA-1, Certification of Compliance with the Kansas Surface Owner Notification Act, MUST be submitted with this form.

Expected Spud Date: _____
month day year

OPERATOR: License# _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: _____

CONTRACTOR: License# _____

Name: _____

Well Drilled For:	Well Class:	Type Equipment:
<input type="checkbox"/> Oil	<input type="checkbox"/> Enh Rec	<input type="checkbox"/> Infield
<input type="checkbox"/> Gas	<input type="checkbox"/> Storage	<input type="checkbox"/> Pool Ext.
	<input type="checkbox"/> Disposal	<input type="checkbox"/> Wildcat
<input type="checkbox"/> Seismic ; _____ # of Holes	<input type="checkbox"/> Other	<input type="checkbox"/> Mud Rotary
<input type="checkbox"/> Other: _____		<input type="checkbox"/> Air Rotary
		<input type="checkbox"/> Cable
<input type="checkbox"/> If OWWO: old well information as follows:		

Operator: _____

Well Name: _____

Original Completion Date: _____ Original Total Depth: _____

Directional, Deviated or Horizontal wellbore? Yes No

If Yes, true vertical depth: _____

Bottom Hole Location: _____

KCC DKT #: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ E W
(Q/Q/Q/Q)

_____ feet from N / S Line of Section

_____ feet from E / W Line of Section

Is SECTION: Regular Irregular?

(Note: Locate well on the Section Plat on reverse side)

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Is this a Prorated / Spaced Field? Yes No

Target Formation(s): _____

Nearest Lease or unit boundary line (in footage): _____

Ground Surface Elevation: _____ feet MSL

Water well within one-quarter mile: Yes No

Public water supply well within one mile: Yes No

Depth to bottom of fresh water: _____

Depth to bottom of usable water: _____

Surface Pipe by Alternate: I II

Length of Surface Pipe Planned to be set: _____

Length of Conductor Pipe (if any): _____

Projected Total Depth: _____

Formation at Total Depth: _____

Water Source for Drilling Operations:

Well Farm Pond Other: _____

DWR Permit #: _____

(Note: Apply for Permit with DWR)

Will Cores be taken? Yes No

If Yes, proposed zone: _____

AFFIDAVIT

The undersigned hereby affirms that the drilling, completion and eventual plugging of this well will comply with K.S.A. 55 et. seq.

It is agreed that the following minimum requirements will be met:

1. Notify the appropriate district office **prior** to spudding of well;
2. A copy of the approved notice of intent to drill **shall be** posted on each drilling rig;
3. The minimum amount of surface pipe as specified below **shall be set** by circulating cement to the top; in all cases surface pipe **shall be set** through all unconsolidated materials plus a minimum of 20 feet into the underlying formation.
4. If the well is dry hole, an agreement between the operator and the district office on plug length and placement is necessary **prior to plugging**;
5. The appropriate district office will be notified before well is either plugged or production casing is cemented in;
6. If an ALTERNATE II COMPLETION, production pipe shall be cemented from below any usable water to surface within **120 DAYS** of spud date. Or pursuant to Appendix "B" - Eastern Kansas surface casing order #133,891-C, which applies to the KCC District 3 area, alternate II cementing must be completed within 30 days of the spud date or the well shall be plugged. **In all cases, NOTIFY district office** prior to any cementing.

Submitted Electronically

For KCC Use ONLY

API # 15 - _____

Conductor pipe required _____ feet

Minimum surface pipe required _____ feet per ALT. I II

Approved by: _____

This authorization expires: _____
(This authorization void if drilling not started within 12 months of approval date.)

Spud date: _____ Agent: _____

Remember to:

- File Certification of Compliance with the Kansas Surface Owner Notification Act (KSONA-1) with Intent to Drill;
- File Drill Pit Application (form CDP-1) with Intent to Drill;
- File Completion Form ACO-1 within 120 days of spud date;
- File acreage attribution plat according to field proration orders;
- Notify appropriate district office 48 hours prior to workover or re-entry;
- Submit plugging report (CP-4) after plugging is completed (within 60 days);
- Obtain written approval before disposing or injecting salt water.
- If well will not be drilled or permit has expired (See: authorized expiration date) please check the box below and return to the address below.

Well will not be drilled or Permit Expired Date: _____
Signature of Operator or Agent:

E
 W

For KCC Use ONLY

API # 15 - _____

IN ALL CASES PLOT THE INTENDED WELL ON THE PLAT BELOW

In all cases, please fully complete this side of the form. Include items 1 through 5 at the bottom of this page.

Operator: _____

Lease: _____

Well Number: _____

Field: _____

Number of Acres attributable to well: _____

QTR/QTR/QTR/QTR of acreage: _____ - _____ - _____ - _____

Location of Well: County: _____

_____ feet from N / S Line of Section

_____ feet from E / W Line of Section

Sec. _____ Twp. _____ S. R. _____ E W

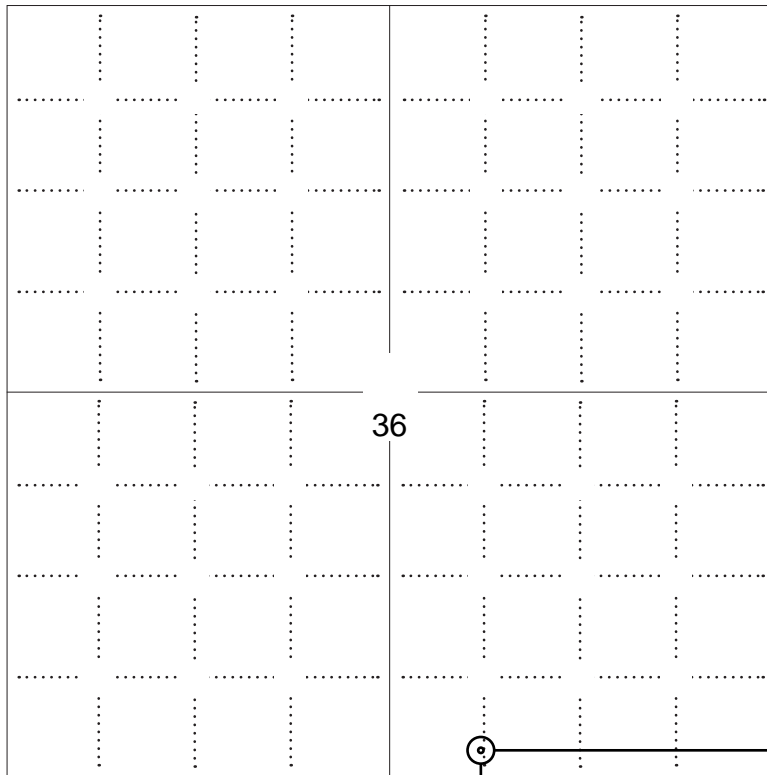
Is Section: Regular or Irregular

If Section is Irregular, locate well from nearest corner boundary.

Section corner used: NE NW SE SW

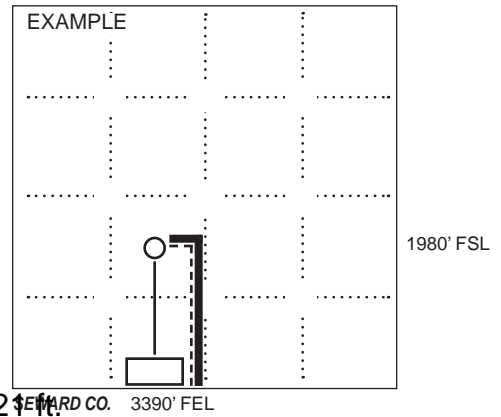
PLAT

Show location of the well. Show footage to the nearest lease or unit boundary line. Show the predicted locations of lease roads, tank batteries, pipelines and electrical lines, as required by the Kansas Surface Owner Notice Act (House Bill 2032). You may attach a separate plat if desired.



LEGEND

- Well Location
- Tank Battery Location
- Pipeline Location
- Electric Line Location
- Lease Road Location



NOTE: In all cases locate the spot of the proposed drilling locaton.

189 ft.

In plotting the proposed location of the well, you must show:

1. The manner in which you are using the depicted plat by identifying section lines, i.e. 1 section, 1 section with 8 surrounding sections, 4 sections, etc.
2. The distance of the proposed drilling location from the south / north and east / west outside section lines.
3. The distance to the nearest lease or unit boundary line (in footage).
4. If proposed location is located within a prorated or spaced field a certificate of acreage attribution plat must be attached: (C0-7 for oil wells; CG-8 for gas wells).
5. The predicted locations of lease roads, tank batteries, pipelines, and electrical lines.

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form CDP-1
May 2010
Form must be Typed

APPLICATION FOR SURFACE PIT

Submit in Duplicate

Operator Name:		License Number:	
Operator Address:			
Contact Person:		Phone Number:	
Lease Name & Well No.:		Pit Location (QQQQ): ____ - ____ - ____ - ____	
Type of Pit: <input type="checkbox"/> Emergency Pit <input type="checkbox"/> Burn Pit <input type="checkbox"/> Settling Pit <input type="checkbox"/> Drilling Pit <input type="checkbox"/> Workover Pit <input type="checkbox"/> Haul-Off Pit <i>(If WP Supply API No. or Year Drilled)</i>		Pit is: <input type="checkbox"/> Proposed <input type="checkbox"/> Existing If Existing, date constructed: _____ Pit capacity: _____ (bbls)	
Is the pit located in a Sensitive Ground Water Area? <input type="checkbox"/> Yes <input type="checkbox"/> No		Chloride concentration: _____ mg/l <i>(For Emergency Pits and Settling Pits only)</i>	
Is the bottom below ground level? <input type="checkbox"/> Yes <input type="checkbox"/> No		Artificial Liner? <input type="checkbox"/> Yes <input type="checkbox"/> No	
How is the pit lined if a plastic liner is not used?			
Pit dimensions (all but working pits): _____ Length (feet) _____ Width (feet) <input type="checkbox"/> N/A: Steel Pits Depth from ground level to deepest point: _____ (feet) <input type="checkbox"/> No Pit			
If the pit is lined give a brief description of the liner material, thickness and installation procedure.		Describe procedures for periodic maintenance and determining liner integrity, including any special monitoring.	
Distance to nearest water well within one-mile of pit: _____ feet Depth of water well _____ feet		Depth to shallowest fresh water _____ feet. Source of information: <input type="checkbox"/> measured <input type="checkbox"/> well owner <input type="checkbox"/> electric log <input type="checkbox"/> KDWR	
Emergency, Settling and Burn Pits ONLY: Producing Formation: _____ Number of producing wells on lease: _____ Barrels of fluid produced daily: _____ Does the slope from the tank battery allow all spilled fluids to flow into the pit? <input type="checkbox"/> Yes <input type="checkbox"/> No		Drilling, Workover and Haul-Off Pits ONLY: Type of material utilized in drilling/workover: _____ Number of working pits to be utilized: _____ Abandonment procedure: _____ _____ Drill pits must be closed within 365 days of spud date.	
Submitted Electronically			

KCC OFFICE USE ONLY			
		<input type="checkbox"/> Liner <input type="checkbox"/> Steel Pit <input type="checkbox"/> RFAC <input type="checkbox"/> RFAS	
Date Received: _____		Permit Number: _____	
Permit Date: _____		Lease Inspection: <input type="checkbox"/> Yes <input type="checkbox"/> No	

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form KSONA-1
January 2014
Form Must Be Typed
Form must be Signed
All blanks must be Filled

**CERTIFICATION OF COMPLIANCE WITH THE
KANSAS SURFACE OWNER NOTIFICATION ACT**

This form must be submitted with all Forms C-1 (Notice of Intent to Drill); CB-1 (Cathodic Protection Borehole Intent); T-1 (Request for Change of Operator Transfer of Injection or Surface Pit Permit); and CP-1 (Well Plugging Application). Any such form submitted without an accompanying Form KSONA-1 will be returned.

Select the corresponding form being filed: C-1 (Intent) CB-1 (Cathodic Protection Borehole Intent) T-1 (Transfer) CP-1 (Plugging Application)

OPERATOR: License # _____
Name: _____
Address 1: _____
Address 2: _____
City: _____ State: _____ Zip: _____ + _____
Contact Person: _____
Phone: (_____) _____ Fax: (_____) _____
Email Address: _____

Well Location:
____ - ____ - ____ - ____ Sec. ____ Twp. ____ S. R. ____ East West
County: _____
Lease Name: _____ Well #: _____

If filing a Form T-1 for multiple wells on a lease, enter the legal description of the lease below:

Surface Owner Information:

Name: _____
Address 1: _____
Address 2: _____
City: _____ State: _____ Zip: _____ + _____

When filing a Form T-1 involving multiple surface owners, attach an additional sheet listing all of the information to the left for each surface owner. Surface owner information can be found in the records of the register of deeds for the county, and in the real estate property tax records of the county treasurer.

If this form is being submitted with a Form C-1 (Intent) or CB-1 (Cathodic Protection Borehole Intent), you must supply the surface owners and the KCC with a plat showing the predicted locations of lease roads, tank batteries, pipelines, and electrical lines. The locations shown on the plat are preliminary non-binding estimates. The locations may be entered on the Form C-1 plat, Form CB-1 plat, or a separate plat may be submitted.

Select one of the following:

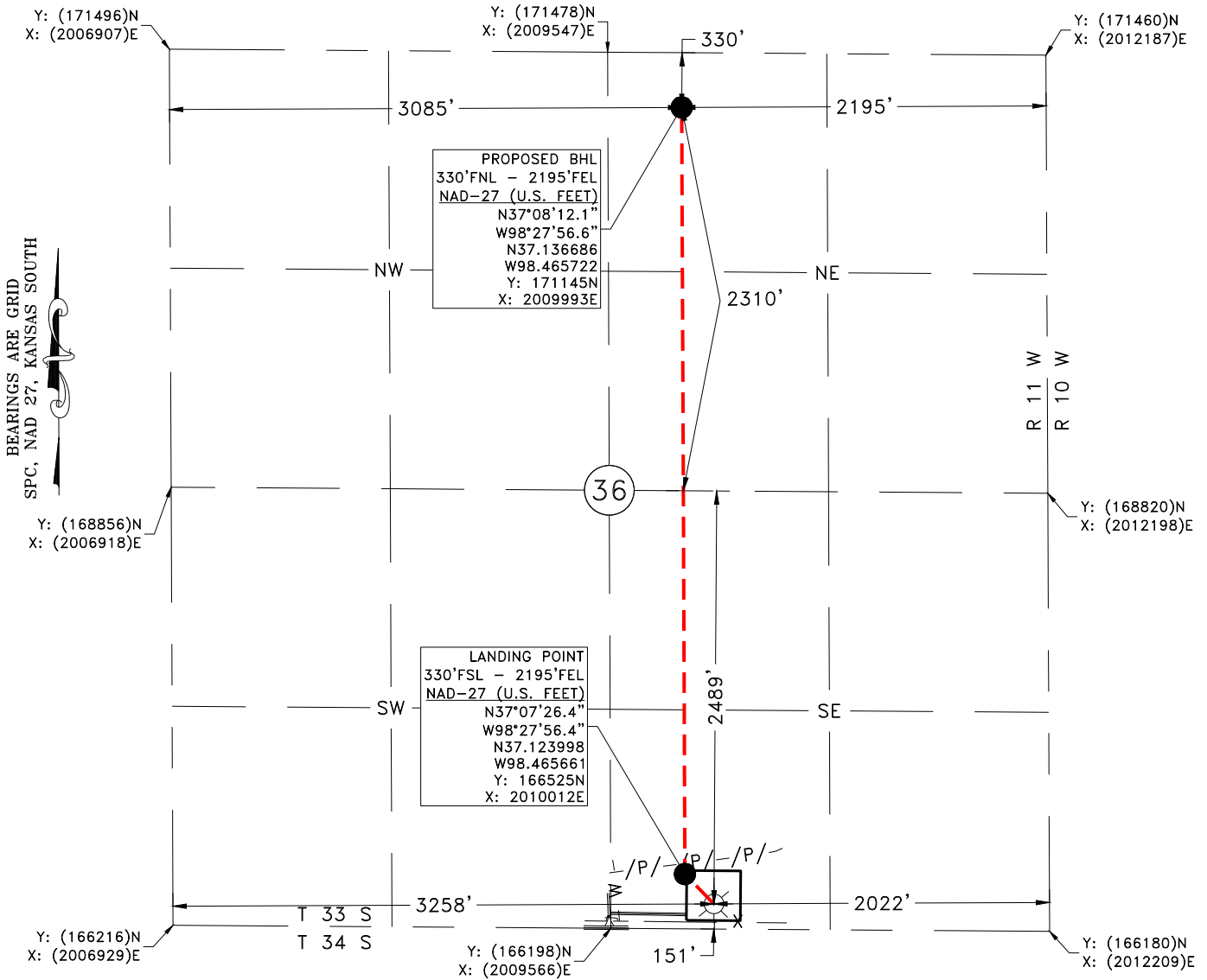
- I certify that, pursuant to the Kansas Surface Owner Notice Act (House Bill 2032), I have provided the following to the surface owner(s) of the land upon which the subject well is or will be located: 1) a copy of the Form C-1, Form CB-1, Form T-1, or Form CP-1 that I am filing in connection with this form; 2) if the form being filed is a Form C-1 or Form CB-1, the plat(s) required by this form; and 3) my operator name, address, phone number, fax, and email address.
- I have not provided this information to the surface owner(s). I acknowledge that, because I have not provided this information, the KCC will be required to send this information to the surface owner(s). To mitigate the additional cost of the KCC performing this task, I acknowledge that I must provide the name and address of the surface owner by filling out the top section of this form and that I am being charged a \$30.00 handling fee, payable to the KCC, which is enclosed with this form.

If choosing the second option, submit payment of the \$30.00 handling fee with this form. If the fee is not received with this form, the KSONA-1 form and the associated Form C-1, Form CB-1, Form T-1, or Form CP-1 will be returned.

I Submitted Electronically

I

BARBER County, Kansas
 151'FSL - 2022'FEL Section 36 Township 33S Range 11W 6th P.M.



GPS OBSERVATION: LATITUDE: N37°07'24.6"
 LONGITUDE: W98°27'54.2"
 LATITUDE: N37.123503
 LONGITUDE: W98.465064
 STATE PLANE NAD 27 OKLAHOMA NORTH ZONE Y: 166345N
 X: 2010187E

Operator: MACH RESOURCES Date Staked: 2/8/2022
 Lease Name: LUTHI 36-33-11 Well No.: 1H Elevation: 1445'
 Topography and Vegetation: PASTURE
 Good Drill Site? YES Reference or Alt. Location Stakes Set: NONE
 Best Accessibility to Location: FROM COUNTY ROAD

Distance and Direction
 from Hwy. Jct. or town: FROM HAZELTON, HEAD NORTH 2.25 MILES ON 1ST ST./TRI-CITY RD., THEN
HEAD WEST 3.5 MILES ON GERLANE RD., THEN TURN NORTH INTO LOCATION.

PRELIMINARY

JOHN T. BIRKHAHN DATE
 OKLAHOMA L.P.L.S. NO.: 1738

NOTE:
 This is a plat of a proposed well location and does not represent a true boundary survey. The information shown hereon shall not be relied upon for the location or establishment of land boundary lines. All of the positions shown hereon have not been verified as being actual Section, Quarter or Property corners. Positions shown in (Parentheses) are based upon local occupation and improvements or calculated per proportional measurement and/or G.L.O. record distances. Review this plat and notify Gateway Services Group, LLC immediately of any possible discrepancy.

MACH
 RESOURCES

Gateway
 Gateway Services Group, LLC

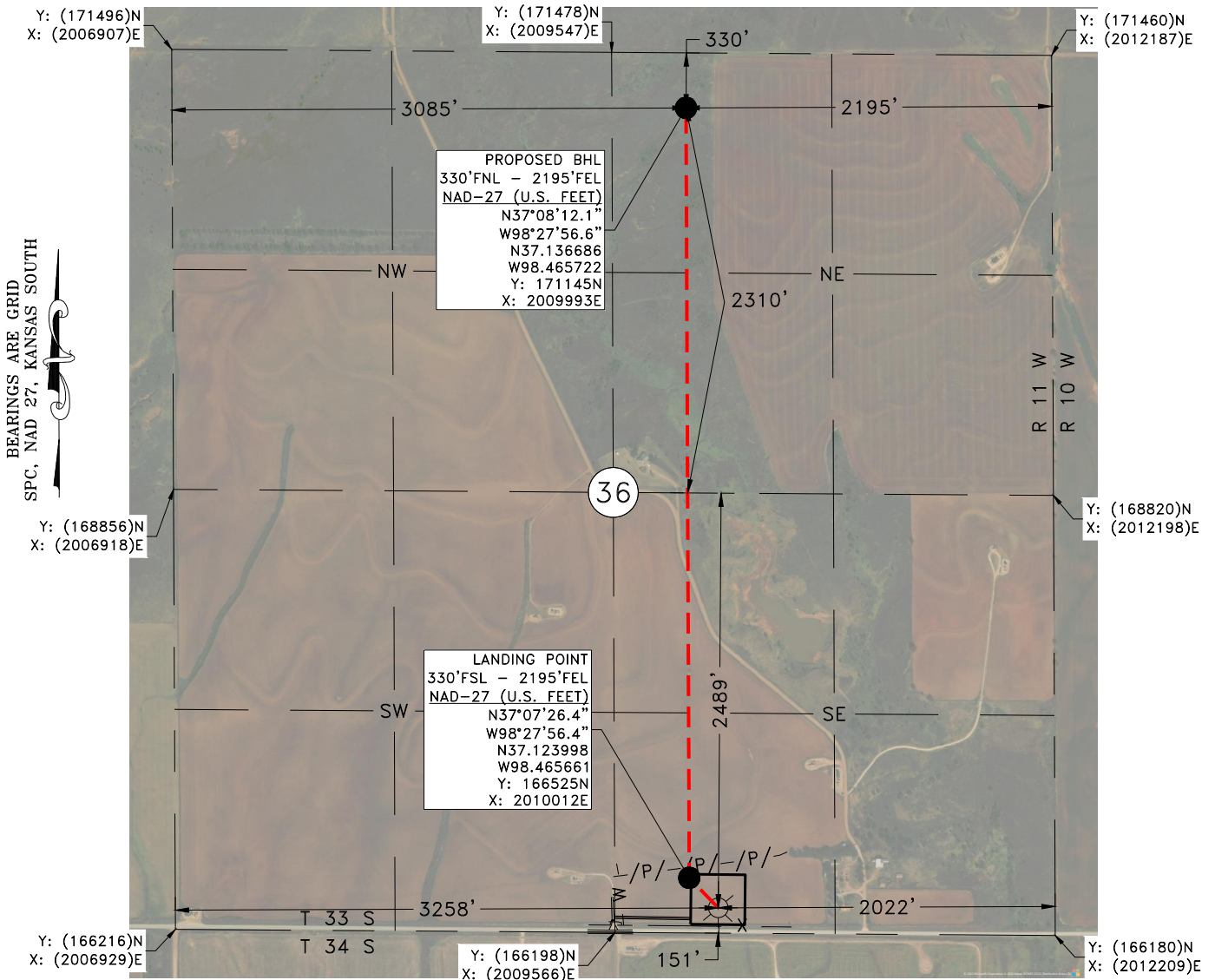
80 E. 5TH ST., STE 400
 EDMOND, OK 73034
 OFF. (405) 285-5884
 FAX (405) 285-5886
 C.A. NO. 4091 (LS)
 EXP. DATE 6-30-2022

EXHIBIT "A" PRELIMINARY

LUTHI 36-33-11 1H
 151' FSL - 2022' FEL
 SECTION 36, T 33 S - R 11 W, 6TH P.M.,
 BARBER COUNTY, KANSAS

DRAWN BY: JE	DATE: 2/15/22	CHK'D: CLC
GATEWAY NO.: 22-0046-201	SCALE: 1"=1000'	
LINE NO.:	AFE:	
REV. DWN.	DESCRIPTION	DATE

BARBER County, Kansas
 151'FSL - 2022'FEL Section 36 Township 33S Range 11W 6th P.M.



GPS OBSERVATION: LATITUDE: N37°07'24.6"
 LONGITUDE: W98°27'54.2" STATE PLANE NAD 27 Y: 166345N
 LATITUDE: N37.123503 OKLAHOMA NORTH ZONE X: 2010187E
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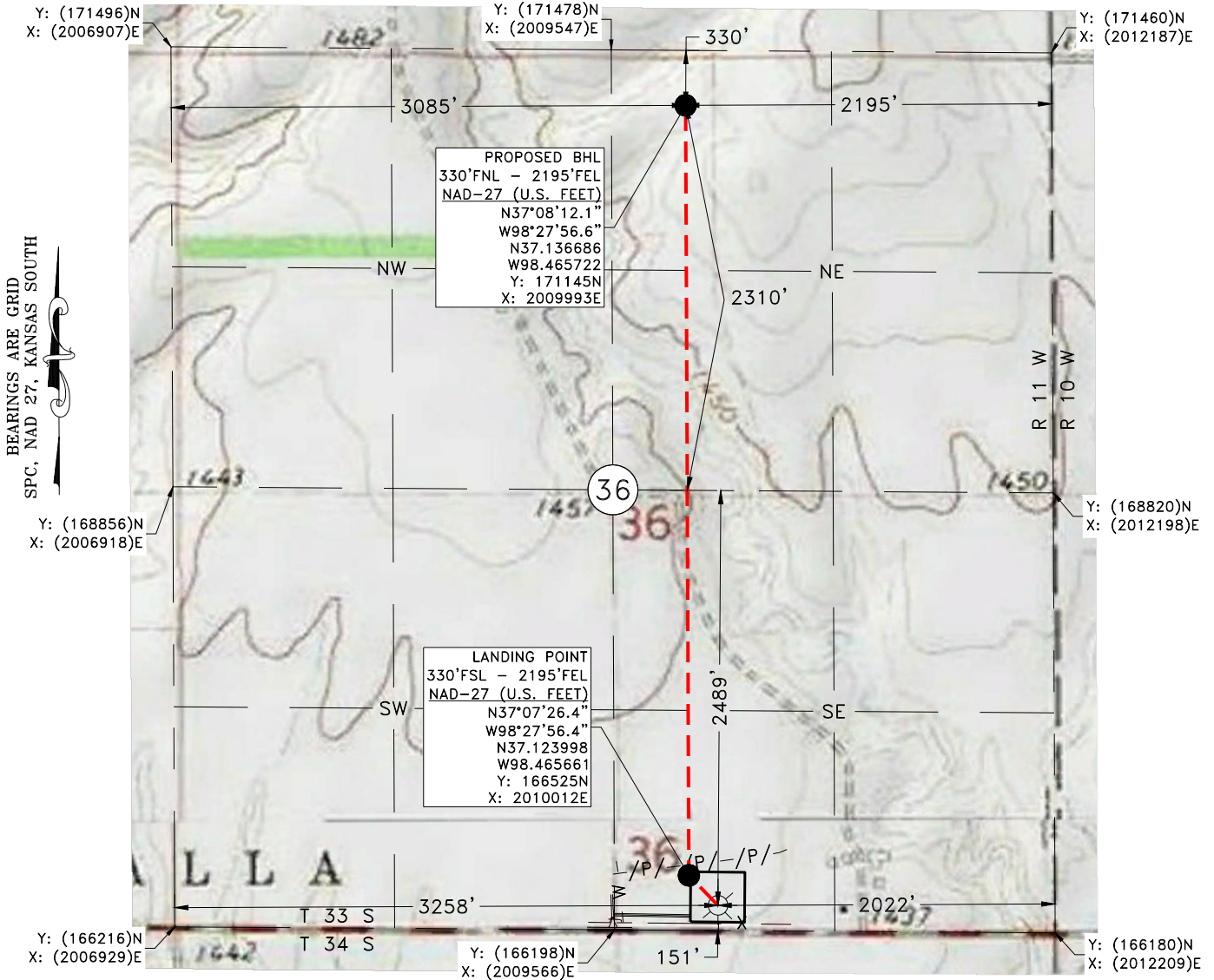
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 EDMOND, OK 73034
 OFF. (405) 285-5884
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 EXP. DATE 6-30-2022

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 151' FSL - 2022' FEL
 SECTION 36, T 33 S - R 11 W, 6TH P.M.,
 BARBER COUNTY, KANSAS

DRAWN BY: JE		DATE: 2/15/22	CHK'D: CLC
GATEWAY NO.: 22-0046-202		SCALE: 1"=1000'	
LINE NO.:	AFE:		
REV. DWN.	DESCRIPTION	DATE	

BARBER County, Kansas
 151'FSL - 2022'FEL Section 36 Township 33S Range 11W 6th P.M.



Operator: MACH RESOURCES Date Staked: 2/8/2022
 Lease Name: LUTHI 36-33-11 Well No.: 1H Elevation: 1445'
 Topography and Vegetation: PASTURE
 Good Drill Site? YES Reference or Alt. Location Stakes Set: NONE
 Best Accessibility to Location: FROM COUNTY ROAD

Distance and Direction
 from Hwy. Jct. or town: FROM HAZELTON, HEAD NORTH 2.25 MILES ON 1ST ST./TRI-CITY RD., THEN
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 EXP. DATE 6-30-2022

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 LUTHI 36-33-11 1H
 151' FSL - 2022' FEL
 SECTION 36, T 33 S - R 11 W, 6TH P.M.,
 BARBER COUNTY, KANSAS

DRAWN BY: JE	DATE: 2/15/22	CHK'D: CLC
GATEWAY NO.: 22-0046-203		SCALE: 1"=1000'
LINE NO.:	AFE:	
REV. DWN.	DESCRIPTION	DATE

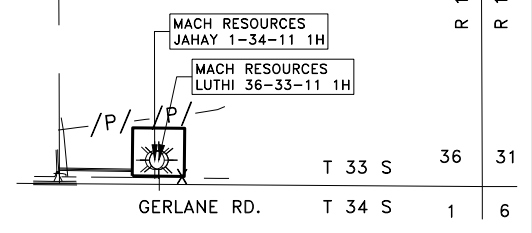
BEARINGS ARE GRID
SPC, NAD 27, KANSAS SOUTH

T 33 S - R 11 W

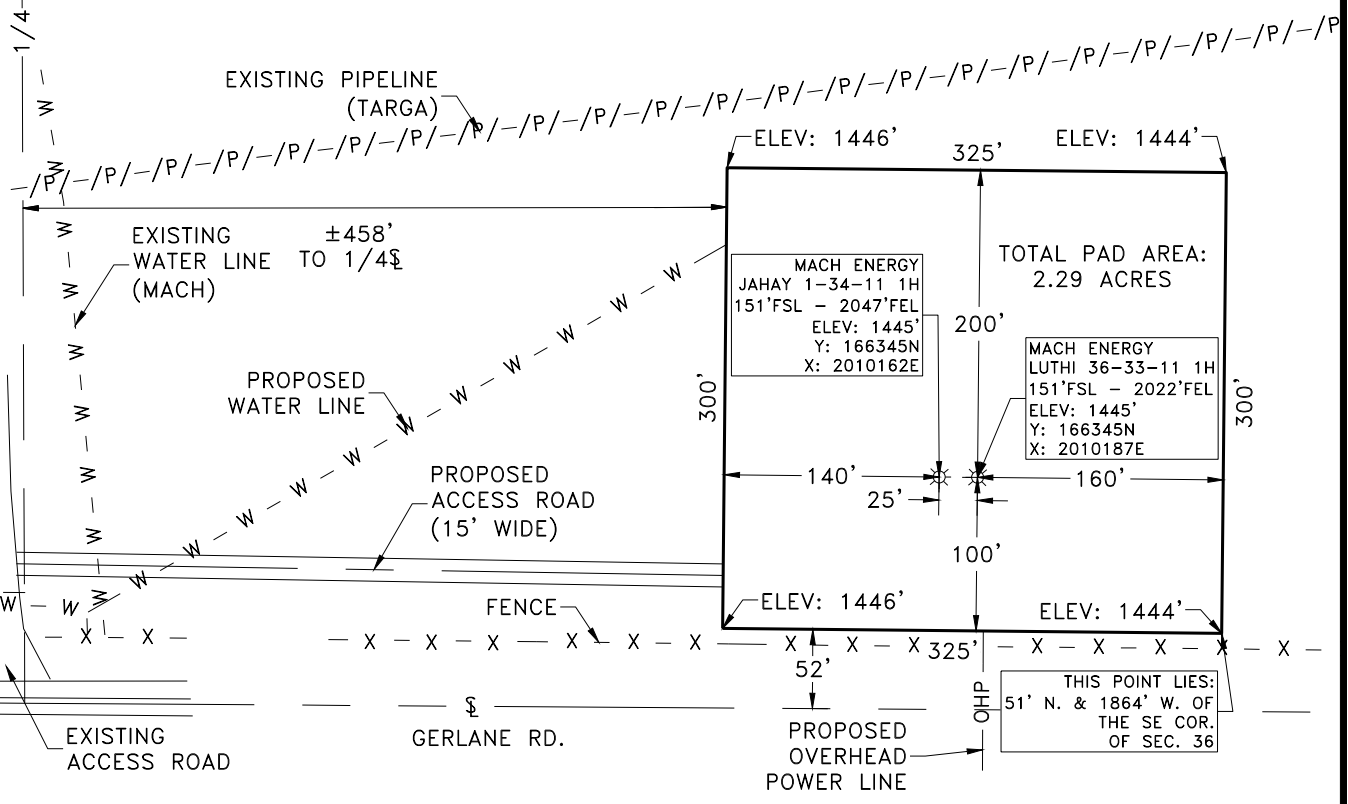
V-DOOR DIRECTION: EAST →

36

VICINITY MAP: N.T.S.



SE/4
SECTION 36



PLAT SHOWING:
PROPOSED PAD AREA IN THE SE/4 OF
SECTION 36, T 33 S - R 11 W, 6TH P.M.,
BARBER COUNTY, KANSAS

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BARBER COUNTY, KANSAS

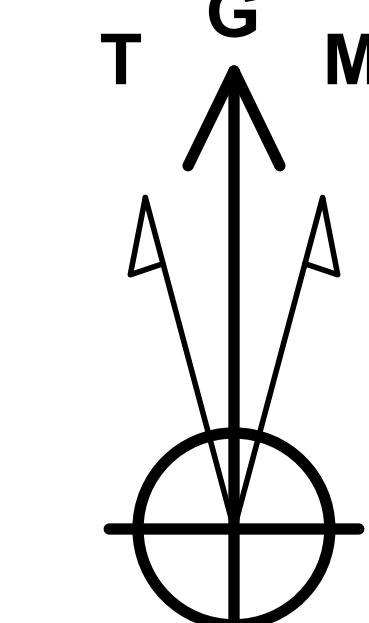
DRAWN BY: JE	DATE: 2/15/22	CHK'D: CLC
GATEWAY NO.: 22-0046-204		SCALE: 1"=125'
LINE NO.:	AFE:	
REV.	DWN.	DESCRIPTION
		DATE

WELL DETAILS: LUTHI 36-33-11 1H						
			1445.00			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	166345.00	2010187.00	37.12350358	-98.46506224	

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
768.03	7.36	208.18	767.02	-20.81	-11.15	2.00	208.18	-20.81	
3318.86	7.36	208.18	3296.83	-308.87	-165.49	0.00	0.00	-308.87	
3564.22	0.00	0.00	3541.51	-322.74	-172.92	3.00	180.00	-322.74	
4064.22	0.00	0.00	4041.51	-322.74	-172.92	0.00	0.00	-322.74	
4664.22	60.00	359.76	4537.71	-36.26	-174.10	10.00	359.76	-36.26	
4814.22	60.00	359.76	4612.71	93.64	-174.64	0.00	0.00	93.64	
4907.97	75.00	359.76	4648.48	180.01	-175.00	16.00	-0.01	180.01	
5008.59	91.10	359.76	4660.62	279.56	-175.41	16.00	0.01	279.56	
9529.90	91.10	359.76	4573.82	4800.00	-194.10	0.00	0.00	4800.00	

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL Luthi (330' FNL 2195' FEL)	4573.84	4800.00	-194.00	171145.00	2009993.00	37.13668663	-98.46572154
FTP LUTHI	4648.48	180.00	-175.00	166525.00	2010012.00	37.12399813	-98.46566220
Luthi 2	0.00	1743.48	-1088.50	168088.48	2009098.50	37.12829298	-98.46879340
Luthi Gas Unit 3	0.00	191.69	-957.94	166536.69	2009229.06	37.12403098	-98.46834740
Luthi Gas Unit 5	0.00	862.85	603.35	167207.85	2010790.35	37.12587268	-98.46299180
Swartz 'A' 1	0.00	-491.84	367.44	165853.16	2010554.44	37.12215238	-98.46380270

Project: BARBER CO. KANSAS (NAD27)
Site: SEC 36-T33S-R11W
Well: LUTHI 36-33-11 1H
Wellbore: HORIZONTAL
Design: PLAN 2



Azimuths to Grid North

True North: -0.02°

Magnetic North: 3.93°

Magnetic Field

Strength: 50676.8nT

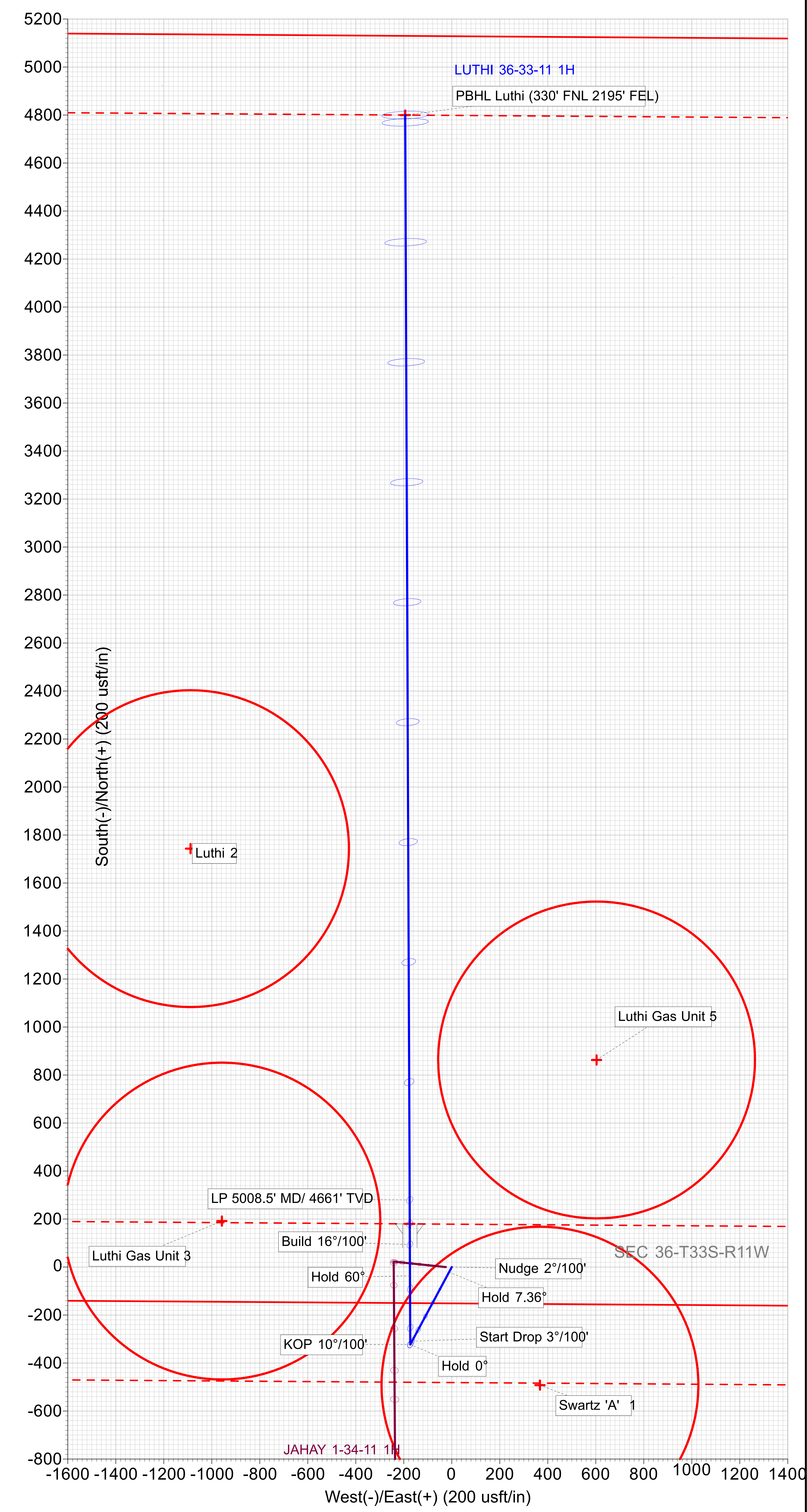
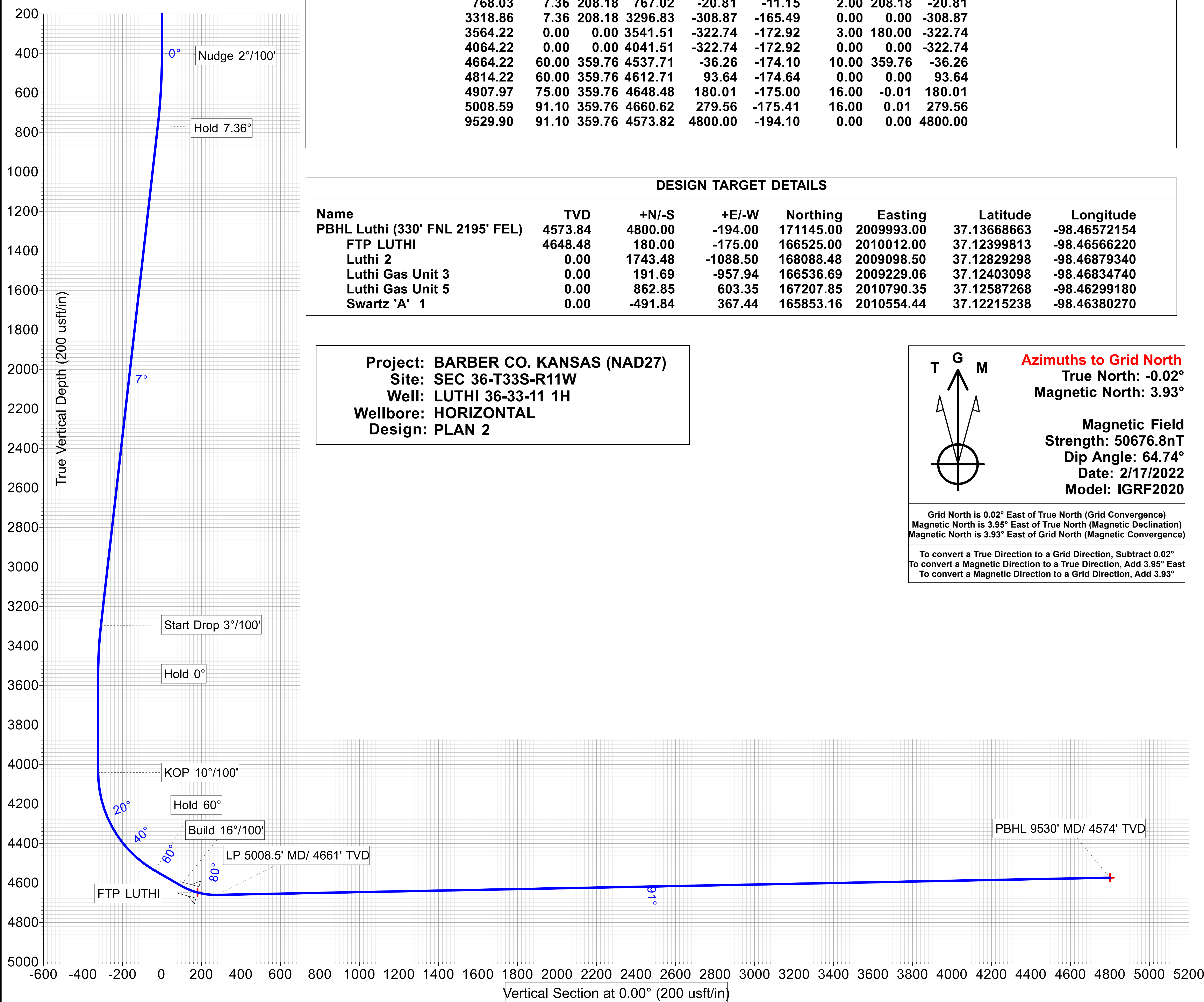
Dip Angle: 64.74°

Date: 2/17/2022

Model: IGRF2020

Grid North is 0.02° East of True North (Grid Convergence)
Magnetic North is 3.95° East of True North (Magnetic Declination)
Magnetic North is 3.93° East of Grid North (Magnetic Convergence)

To convert a True Direction to a Grid Direction, Subtract 0.02°
To convert a Magnetic Direction to a True Direction, Add 3.95° East
To convert a Magnetic Direction to a Grid Direction, Add 3.93°



Atlas Rig #3

Well: Luthi 36-33-11 1H
 District: Medicine Lodge
 County: Barber County, Kansas
 Surface: 151' FSL & 2022' FEL of 36-T33S-R11W
 PBHL: 330' FNL & 2195' FEL of 36-T33S-R11W

Drilling Engineer: Lance Reid
 VP Drilling: Steve Miller
 VP Geology: Dean Fratarcangeli
 Geologist: Tammy Alcorn
 EVP Operations: Rick Hughes
 VP Land: Clay Hubbard
 Sr. Landman: Betsy Ball

GL: 1,445 KB: 1,461

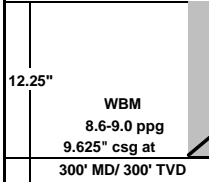
AFE #: **DC22011**

Comp Int: **330' FNL/FSL**

Target Formation: Miss Lime

Rig #: **405-250-9447**

Soil Farm Permit #: **N/A**

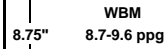


BTW 180'

FIT: 12 ppg

Wellhead Equipment	
Tubing Head	11" 5M x 7-1/16" 5M
A-Section	9-5/8" SOW x 11" 5M

Tubular Detail										
	Size	Wt	Grade	Conn	From	To	ID (in)	Drift (in)	IYP (psi)	Collapse (psi)
Surface	9.625"	40#	J55	LTC	0	300	8.84	8.75	3950	2570
Intermediate	7"	26#	P110	TCBC	0	4,908	6.28	6.151	9950	7800
Production	4.5"	13.50#	P110	BTC	4,814	9,530	3.92	3.795	12410	10680



Directional Program									
	MD(ft)	Inc(°)	Az(°)	TVD(ft)	N/S(ft)	E/W(ft)	DLS(°/100)	VS(ft)	
Begin Nudge	400	0.0	0.0	400	0.0	0.0	0.0	0.0	0.0
Hold	768	7.4	208.0	767	-21.0	-11.0	2.0	-21.0	
Begin Drop	3319	7.4	208.0	3297	-309.0	-165.0	0.0	-309.0	
Back to Vertical	3564	0.0	0.0	3542	-323.0	-173.0	3.0	-323.0	
KOP	4064	0.0	0.0	4042	-323.0	-173.0	0.0	-323.0	
Start Tangent	4664	60.0	359.7	4538	-36.0	-174.0	10.0	-36.0	
End Tangent	4814	60.0	359.7	4613	94.0	-175.0	0.0	94.0	
7" ICP	4908	75.0	359.7	4648	180.0	-175.0	16.0	180.0	
EOC	5009	91.1	359.7	4661	280.0	-175.0	16.0	280.0	
PBHL	9530	91.1	359.7	4574	4800.0	-194.0	0.0	4800.0	

3662' TVD
 3662' TVD
 3902' TVD

 4165' TVD

 4440' TVD
 4570' TVD
 4598' TVD

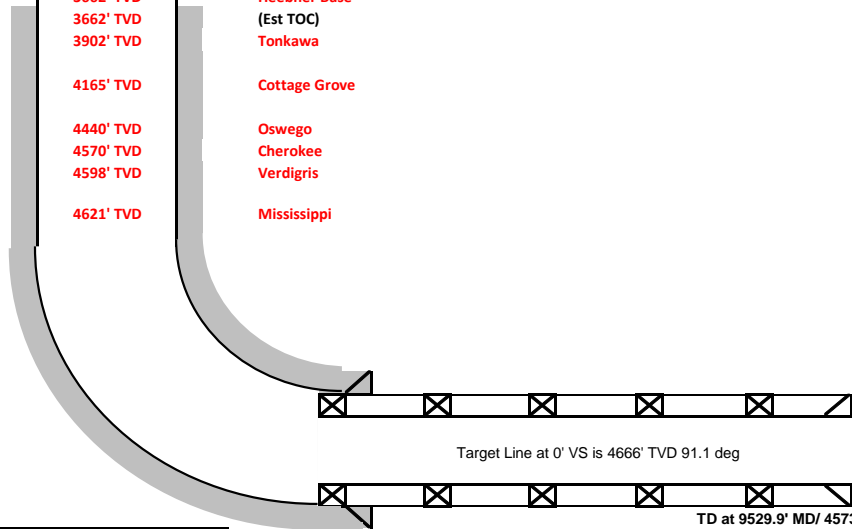
 4621' TVD

Heebner Base
 (Est TOC)
 Tonkawa

 Cottage Grove

 Oswego
 Cherokee
 Verdigris

 Mississippi



Target Line at 0° VS is 4666' TVD 91.1 deg

TD at 9529.9' MD/ 4573.82' TVD

Target Box	
TVD	+/-5'
East/West	+/-50'

WBM 8.4-8.6 ppg
 6.125"

Prepared By	Date	Cement Company:	Bits:	Wellhead:	Mud Company:	Directional Company:
Lance Reid	2/22/2022	Spinnaker	Taurex	Tri-Power	AES	SB

Mach Resources
Luthi 36-33-11 1H
API #:15-007-#####
Sec 36, T33N, R11W
Barber County, Kansas
Proposal #31580001
Service point El Reno, Oklahoma
2/22/2022
Rig - Atlas 3

Price Book Version 020422-1

Prepared for:

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405-410-6082

Prepared by:

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Contact:

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clint.symes@spinnakeroil.com
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Contact:

Scott Walton
El Reno - Area Field Manager
scotty.walton@spinnakeroil.com
(405) 535-6561

El Reno Central Coordinators phone - (405) 420-3534

Spinnaker - Primary Cementing Best Practices

Primary cement job failures are predominately due to a breakdown in the "displacement process." This results in poor zonal isolation manifested by channeling or non-uniform displacement of the annular fluid(s) by the cementing fluid(s). These guidelines will enhance the displacement process and improve the probability of successful primary cementing.

1) Flow Rate: Regardless of the flow regime, high-energy displacement rates are most effective for ensuring good displacement. Turbulent flow conditions are usually more desirable, but frequently cannot be achieved or are not always required. When turbulent flow is not a viable option for a situation, use the highest pump rate that is feasible for the wellbore conditions. The best results are obtained when (1) the spacer and/or cement is pumped in such a way as to deliver maximum energy to the annulus, (2) the spacer or flush is appropriately designed to remove the drilling fluid, (3) and a competent cement is used.

2) Conditioning the Drilling Fluid: The condition of the drilling fluid is one of the most important variables in achieving good displacement during a cement job. A fluid that has excellent properties for drilling may be inappropriate for cementing purposes. Regaining and maintaining good mobility is the key. An easily displaced drilling fluid will have low, non-progressive gel strengths and low fluid loss. Pockets of gelled fluid, which commonly exist following the drilling of a wellbore, make displacement difficult. These volumes of gelled fluid must be broken up and mobilized.

Industry experience has indicated that it may be necessary to circulate up to ten complete hole volumes prior to the cement job in order to ensure that the hole is well conditioned and clean. A minimum of two bottoms-up is recommended in all scenarios prior to pumping.

3) Spacers and Flushes: Spacers and flushes are effective displacement aids because they separate unlike fluids such as cement and drilling fluid, and enhance the removal of gelled mud allowing a better cement bond. Spacers can be designed to serve various needs. For example, weighted spacers can help with well control, and reactive spacers can provide increased mud-removal benefits. Flushes are used for thinning and dispersing drilling fluid particles. Typically, 8 to 10 minutes contact time or 1000 feet of annular space with spacers or flushes, whichever is greater, are adequate.

4. Pipe Centralization: Centralizing the casing with mechanical centralizers across the intervals to be isolated helps optimize drilling fluid displacement. Good pipe standoff insures a uniform flow pattern around the casing and helps equalize the force that the flowing cement exerts around the casing, increasing drilling fluid removal. In a deviated wellbore, standoff is even more critical to prevent a solids bed from accumulating on the low-side of the annulus. Generally, the industry strives for about 70% standoff.

5) Pipe Movement: Pipe movement is one of the most effective methods of transferring energy downhole. Pipe rotation or reciprocation before and during cementing helps break up gelled, stationary pockets of drilling fluid and loosens cuttings trapped in the gelled drilling fluid. If the pipe is poorly centralized, pipe movement can compensate by changing the flow path through the annulus and allowing the slurry to circulate completely around the casing. The industry does not specify a minimum requirement for pipe movement, however it is acknowledged the even a small amount of pipe movement will enhance the displacement process.

6) Hole Size: Best mud displacement under optimum rates is achieved when annular tolerances are approximately 1.5 to 2 inches. Centralization of very small annuli is very difficult, and pipe movement and displacement rates may be severely restricted. Very large annuli may require extreme displacement rates to generate enough flow energy to remove the drilling fluid and cuttings.

7) Wiper Plugs: Top & bottom wiper plugs are recommended on every primary cementing job unless prohibited by mechanical or other special restrictions. The bottom plug serves to minimize contamination of the cement as it is pumped, in some cases it may be prudent to use multiple bottom plugs to separate mud/spacer and spacer/cement interfaces. The top plug is used to prevent any contamination of the cement slurry by the displacement fluid and minimize the chances of leaving a cement sheath inside the casing. Top plug also gives a positive indication that the cement has been displaced.

8) Rat Hole: When applicable, a weighted, viscous pill in the rat hole prevents cement from swapping with lighter weight mud during the cement job or when displacement stops.

9) Shoe Joint: A shoe joint is recommended on all primary casing/liner jobs. The length of the shoe joint will vary. The absolute minimum length is one joint of pipe. If conditions exist, such as not running a bottom plug, two joints of pipe is a minimum requirement.

Job Data

JOB TYPE	Surface
CASING SIZE	9.625 in., 40 lbs, J55 LTC
HOLE SIZE	12.25 in.
TOTAL DEPTH	300 Feet
EXCESS	225%
FILL REQUIRED	300 Feet
BHST	83 Degrees
BHCT	80 Degrees

FLUID REQUIREMENTS

SPACER	30 bbls H2O
LEAD CEMENT SLURRY	75 Sacks Oilwell Standard Cement, 3% Gypsum, 0.5% SMS, 2.5% Calcium Chloride, 0.25 lbs Poly Flake
WEIGHT	11.4 ppg
YIELD	2.94 cu.ft./sk
WATER	18.1 gals/sk
TOC	Surface
BBLS of Slurry	39.28 bbls
TAIL CEMENT SLURRY	95 Sacks Oilwell Standard Cement, 3% Gypsum, 0.5% SMS, 2.5% Calcium Chloride, 0.25 lbs Poly Flake
WEIGHT	13.2 ppg
YIELD	1.85 cu.ft./sk
WATER	9.95 gals/sk
TOC	150 ft
BBLS of Slurry	31.31 bbls
DISPLACEMENT	19.72 bbls H2O

Ref. #	Description	Quantity	Unit Price	Sub Total	Total
***** Cementing Service and Materials *****					
MLPU1	Pickup Mileage 1 unit (roundtrip miles)	300	\$3.94	\$1,182.00	\$472.80
MLHE3	Heavy Vehicle Mileage 3 units (roundtrip miles)	300	\$20.34	\$6,102.00	\$2,440.80
MLTN	Bulk Cement Delivery/Return (per Ton-Mile)	1,274	\$2.73	\$3,478.02	\$1,391.21
MXBK	Bulk Material Mixing Service Charge (Per cu.ft.)	170	\$3.03	\$515.10	\$206.04
CMTHD	Cement Head with manifold (per Job)	1	\$1,895.00	\$1,895.00	\$758.00
PC1K	Pump Charge 0-1000' (Per 4 hrs)	1	\$1,887.60	\$1,887.60	\$755.04
DAQ	Data Acquisition System	1	\$1,331.00	\$1,331.00	\$532.40
FLSCG	Fuel Surcharge (per unit/per job)	3	\$605.00	\$1,815.00	\$726.00
ENVFEE	Environmental Fee	1	\$211.75	\$211.75	\$84.70
DAMSS	Data Monitoring System/Supervisor	1	\$800.00	\$800.00	\$320.00
CIRON	Circulation Equipment (40' of equipment per job)	1	\$1,512.50	\$1,512.50	\$605.00
CSTD	Class A Type Standard Cement (per sack)	170	\$31.81	\$5,407.70	\$2,163.08
CEXTGYP	Gypsum (per lb)	480	\$0.54	\$259.20	\$103.68
CACCSMS	SMS (per lb)	80	\$3.86	\$308.80	\$123.52
CACCCC	Calcium Chloride (per lb)	400	\$1.45	\$580.00	\$232.00
CLCMPF	Poly Flake (per lb)	43	\$3.23	\$138.89	\$55.56
<i>Additional Items if used</i>					
PCADD	Primary Pump Unit Addl Hours	0	\$594.50	\$0.00	\$0.00
RESTK	Product Restocking Fee (per truck)	0	\$1,250.00	\$0.00	\$0.00
DERKC	Derrick Charge (Cement Head Stabbing Above 8 ft)	0	\$726.00	\$0.00	\$0.00
CDFDIAL	ATF Cement Defoamer (per gal)	0	\$29.50	\$0.00	\$0.00
FTRP958	9 5/8" Top Rubber Plug	0	\$220.00	\$0.00	\$0.00
ADDDHOSE	Additional HOSES (above 120 ft/per ft)	0	\$3.55	\$0.00	\$0.00
	Book Price			\$27,424.56	
	Estimated Total (Exclusive of Sales Tax)				\$10,969.82

Job Data

JOB TYPE	Intermediate
CASING SIZE	7 in., 26 lbs, P-110 TCBC
HOLE SIZE	8.75 in.
MUD	8.7-9.6 ppg WBM
TVD	4667 ft
MD	4908 ft
EXCESS	30%
BHST	132 Degrees
BHCT	105 Degrees

FLUID REQUIREMENTS

SPACER	40 bbls Fresh Water
LEAD CEMENT SLURRY	65 Sacks 65/35 Oilwell Standard Cement/Poz, 12% GEL, 12% Gypsum, 1.5% SA-2, 12% SFA, 0.3 lbs Poly Flake
WEIGHT	10.2 ppg
YIELD	5.49 cu.ft./sk
WATER	35.89 gals/sk
TOC	3662 feet
BBLs OF SLURRY	63.56 bbls
TAIL CEMENT SLURRY	150 Sacks 50/50 Oilwell Standard Cement/Poz, 3% GEL, 2% Gypsum, 0.35% SFL-5
WEIGHT	13.8 ppg
YIELD	1.39 cu.ft./sk
WATER	6.57 gals/sk
TOC	3908 feet
BBLs OF SLURRY	37.14 bbls
DISPLACEMENT	186.08 bbls H2O

Ref. #	Description	Quantity	Unit Price	Sub Total	Total
***** Cementing Service and Materials *****					
MLPU1	Pickup Mileage 1 unit (roundtrip miles)	300	\$3.94	\$1,182.00	\$472.80
MLHE3	Heavy Vehicle Mileage 3 units (roundtrip miles)	300	\$20.34	\$6,102.00	\$2,440.80
MLTN	Bulk Cement Delivery/Return (per Ton-Mile)	1,581	\$2.73	\$4,316.13	\$1,726.45
MXBK	Bulk Material Mixing Service Charge (Per cu.ft.)	215	\$3.03	\$651.45	\$260.58
CMTHD	Cement Head with manifold (per Job)	1	\$1,895.00	\$1,895.00	\$758.00
PC6K	Pump Charge 5001-6000' (Per 5 hrs)	1	\$4,325.75	\$4,325.75	\$1,730.30
DAQ	Data Acquisition System	1	\$1,331.00	\$1,331.00	\$532.40
FLSCG	Fuel Surcharge (per unit/per job)	3	\$605.00	\$1,815.00	\$726.00
ENVFEE	Environmental Fee	1	\$211.75	\$211.75	\$84.70
DAMSS	Data Monitoring System/Supervisor	1	\$800.00	\$800.00	\$320.00
CIRON	Circulation Equipment (40' of equipment per job)	1	\$1,512.50	\$1,512.50	\$605.00
CSTD	Class A Type Standard Cement (per sack)	118	\$31.81	\$3,753.58	\$1,501.43
CPOZF	POZ (per sack)	98	\$17.35	\$1,700.30	\$680.12
CEXTGEL	GEL (per lb)	1,100	\$0.63	\$693.00	\$277.20
CEXTGYP	Gypsum (per lb)	931	\$0.54	\$502.74	\$201.10
CEXTSFA	SFA (per lb)	679	\$1.21	\$821.59	\$328.64
CFL5	SFL-5 (per lb)	45	\$18.56	\$835.20	\$334.08
CFWCSA1	SA-2 (per lb)	85	\$19.52	\$1,659.20	\$663.68
CLCMPF	Poly Flake (per lb)	20	\$3.23	\$64.60	\$25.84
Additional Items if used					
STBYPU	Standby Pump Unit	0	\$5,850.00	\$0.00	\$0.00
PCADD	Primary Pump Unit Addl Hours	0	\$594.50	\$0.00	\$0.00
PCADD1	Standby Pump Unit Addl Hours	0	\$450.50	\$0.00	\$0.00
DERKC	Derrick Charge (Cement Head Stabbing Above 8 ft)	0	\$726.00	\$0.00	\$0.00
CDFDIAL	ATF Cement Defoamer (per gal)	0	\$29.50	\$0.00	\$0.00
FTRP7	7" Top Rubber Plug	0	\$140.00	\$0.00	\$0.00
CSUGAR	Sugar (per lb)	0	\$1.47	\$0.00	\$0.00
	Book Price			\$34,172.79	
	Estimated Total (Exclusive of Sales Tax)				\$13,669.12



February 22, 2022

Kansas Corporation Commission
Oil & Gas Conservation Division
130 S. Market, Rm. 2078
Wichita, KS 67202

Re: BCE-Mach III LLC's – Luthi 36-33-11 1H
Section 36-33S-11W
Barber County, Kansas

To whom it may concern:

BCE-Mach III LLC intends to drill the subject well to an approximate true vertical depth of between 4,570' and 4,670' in the Mississippi Formation. The producing wellbore will be in a 640 acre production unit consisting of ALL of Section 36-33S-11W, Barber County, Kansas. The nearest lease or unit boundary will be no less than 330' from any portion of the effective completion interval. The estimated length of the effective completion interval will be 4,622'.

Should you have any questions, you may contact the undersigned at (405) 410-6082.

Respectively,

BCE-Mach III LLC

A handwritten signature in black ink, appearing to read "Lance Reid", written over a white background.

Lance Reid



Conservation Division
266 N. Main St., Ste. 220
Wichita, KS 67202-1513



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Dwight D. Keen, Chair
Susan K. Duffy, Commissioner
Andrew J. French, Commissioner

Laura Kelly, Governor

February 23, 2022

Spence Laird
BCE-Mach III LLC
14201 WIRELESS WAY SUITE 300
OKLAHOMA CITY, OK 73134-2521

Re: Drilling Pit Application
Luthi 36-33-11 1H
SE/4 Sec.36-33S-11W
Barber County, Kansas

Dear Spence Laird:

According to the drilling pit application referenced above, no earthen pits will be used at this location. Steel pits will be used. Please inform the Commission in writing as to which disposal well you utilized to dispose of the contents in the steel pits and the amount of fluid that was disposed. Please file form CDP-5 (August 2008), Exploration and Production Waste Transfer, within 30 days of fluid removal.

Should a haul-off pit be necessary please file form CDP-1 (April 2004), Application for Surface Pit, through KOLAR. This location will have to be inspected prior to approval of the haul-off pit application.

A copy of this letter should be posted in the doghouse along with the approved Intent to Drill. If you have any questions or concerns please feel free to contact the District Office at (620) 682-7933.

HAUL-OFF PIT APPLICATION FILING REQUIREMENTS

82-3-607.

DISPOSAL OF DIKE AND PIT CONTENTS.

(a)
pit

Each operator shall perform one of the following when disposing of dike or contents:

- (1) Remove the liquid contents to a disposal well or other oil and gas operation approved by the commission or to road maintenance or construction locations approved by the department;
- (2) dispose of reserve pit waste down the annular space of a well completed according to the alternate I requirements of K.A.R. 82-3-106, if the waste to be disposed of was generated during the drilling and completion of the well;

or

- (3) dispose of the remaining solid contents in any manner required by the commission. The requirements may include any of the following:
 - (A) Burial in place, in accordance with the grading and restoration requirements in K.A.R. 82-3-602 (f);
 - (B) removal and placement of the contents in an on-site disposal area approved by the commission;
 - (C) removal and placement of the contents in an off-site disposal area

on

lease

from

acreage owned by the same landowner or to another producing or unit operated by the same operator, if prior written permission the landowner has been obtained; or

approved (D) removal of the contents to a permitted off-site disposal area
by the department.

(b) Each violation of this regulation shall be punishable by the following:

- (1) A \$1,000 penalty for the first violation;
- (2) a \$2,500 penalty for the second violation; and
- (3) a \$5,000 penalty and an operator license review for the third violation.

File Haul-Off Pit Application in KOLAR. Review the information below and attach all required documents to the pit application when submitting through KOLAR. This form will automatically generate and fill in from questions asked in KOLAR.

Haul-off pit will be located in an on-site disposal area: ___Yes ___No

Haul-off pit is located in an off-site disposal area on acreage owned by the same landowner: ___Yes ___No If yes, written permission from the land owner must be obtained. Attach written permission to haul-off pit application.

Haul-off pit is located in an off-site disposal area on another **producing** lease or unit operated by the same operator: ___Yes ___No If yes, written permission from the land owner must be obtained. Attach permission and a copy of the lease assignment that covers the acreage where the haul-off pit is to be located, to the haul-off pit application.