

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

In the matter of the application of Merit Energy) Docket No. 23-CONS-3080-CUIC
Company, LLC (Operator) for a permit to)
authorize the injection of saltwater into the) CONSERVATION DIVISION
Morrow formation at the WMSU #1602 well in)
Section 32, Township 34 South, Range 41) License No. 32446
West, Morton County, Kansas.)

PRE-FILED TESTIMONY OF

KENNY SULLIVAN

ON BEHALF OF COMMISSION STAFF

FEBRUARY 24, 2023

1 **Q. What is your name and business address?**

2 A. Kenny Sullivan, 210 E. Frontview, Suite A, Dodge City, Kansas, 67801.

3 **Q. By whom are you employed and in what capacity?**

4 A. I am employed by the Conservation Division of the Kansas Corporation Commission
5 (Commission), District #1 Office, as the District #1 Professional Geologist Supervisor.

6 **Q. Would you please briefly describe your background and work experience?**

7 A. I received my Bachelor Degree in Geology from Fort Hays State University in 2011.
8 Additionally, I received a professional geology license from the State of Kansas in 2021. I
9 have worked at the Commission for over eleven years. I was an Environmental Compliance
10 and Regulatory Specialist (ECRS) for three years, a Geology Specialist for six years, and
11 Supervisor for the past two years.

12 **Q. What duties does your position with the Conservation Division entail?**

13 A. I oversee the daily operations of the District #1 Office as they relate to oil and gas activities.
14 I currently supervise one Geology Specialist, ten ECRSs, and one Administrative Specialist.

15 **Q. Have you previously testified before this Commission?**

16 A. No.

17 **Q. What is Operator requesting in these dockets?**

18 A. Operator has applied for authorization to dually complete the Subject Well by producing gas
19 from the Topeka formation while simultaneously injecting produced water from its Wilburton
20 Morrow Sand Unit (WMSU) into the Morrow formation at a maximum rate of 3500 barrels
21 of water per day and maximum surface pressure of 1500 pounds per square inch.

1 **Q. What is the purpose of your testimony in this matter?**

2 A. The purpose of my testimony is to discuss the application for injection filed by Merit Energy
3 Company, LLC (Operator) for its Pearson C #2 well (Subject Well), API #15-129-20675.¹
4 My testimony is in support of Mr. Todd Bryant's testimony that Operator's application to add
5 the Subject Well to permit E-12,571 should be denied.

6 **Q. Why should Operator's application be denied?**

7 A. Operator's application should be denied because the well construction does not meet the
8 requirements of the Commission's regulations, the lease the Subject Well is located on is an
9 old water flood and has a history of issues due to corrosion, Operator has not presented an
10 effective way to test the mechanical integrity of the Subject Well if a permit is issued, and
11 permitting the Subject Well for dual completion will likely cause waste and affect correlative
12 rights.

13 **Q. How does the wellbore construction not conform to the Commission's regulations?**

14 A. The wellbore construction does not appear to meet the requirements of K.A.R. 82-3-403(b)(3),
15 which states that the injection well is to be continuously cemented across the injection and
16 producing intervals. My understanding is there is no cement outside of the casing from 3400
17 feet to 3754 feet. This uncemented interval is directly between Operator's perforations for the
18 producing Wabaunsee/Topeka formations and the Morrow injection formation. My biggest
19 concerns are that this uncemented casing will be directly behind a dead water zone created by
20 Operator's proposed construction and this will have an adverse impact on the formations
21 between the injection and producing intervals. Attached to my testimony as **Exhibit KS-1** is

¹ In its Application, Operator calls the Subject Well the WMSU #1602, but the API number and location listed in the Application describe what is known in Commission databases as the Pearson C #2.

1 a visualization of the locations of the uncemented interval and the dead water zone in the
2 Subject Well using Operator's proposed wellbore diagram.

3 For example, the top of the Lansing formation is at approximately 3600 feet and is a zone
4 within the uncemented interval. While the Lansing is not a productive zone in that area, it is
5 a zone one must drill through to get to the productive Morrow zone. A well blow out could
6 occur if a casing leak was to develop in the Lansing zone that increased the pressure in the
7 zone, and Operator or an offset operator drilled through the zone not anticipating the high
8 pressure caused by the casing leak. Further, the wellbore construction proposed by Operator
9 along with the injection rate may cause significant issues that could lead to spills, waste, and
10 impacts to correlative rights.

11 **Q. Can you provide us with background information on Operator's Wilburton Morrow**
12 **Sand Unit?**

13 A. My understanding is that the WMSU water flood was established in the 1960s. Since then,
14 there have been 18 permitted injection wells on the flood. Operator took over operations of
15 the flood from OXY USA Inc. (OXY), license #5447, in May 2014. At that time there were
16 5 injection wells; there are currently 4 injection wells left in service now.

17 Since assuming operations of the WMSU water flood, Operator plugged one of its injection
18 wells, the WMSU #201W, in October of 2019. My understanding is there were issues
19 plugging the well due to parted tubing at 1600 feet that could not be fished out of the hole.
20 This is reflected in the plugging report I have attached as **Exhibit KS-2**. Additionally,
21 Operator has had to replace/redress packers and/or replace tubing seven times on their
22 injection wells after failed MITs. This information is reflected in the remarks on the completed
23 mechanical integrity test forms I have attached to my testimony as **Exhibit KS-3**. Generally

1 speaking, a packer or tubing needs to be replaced when corrosion has formed a hole in the
2 packer or tubing. Finally, Operator has reported 22 spills at the WMSU water flood over the
3 past 5 years that have accounted for spills of 3202 barrels of produced water and 104 barrels
4 of crude. Of those spills, seven were directly from injection wells and those totaled 2435
5 barrels of produced water. These instances are likely a result of the highly corrosive Topeka
6 and Morrow formation flood water and the aging infrastructure.

7 **Q. On page 6, lines 9-23 of his testimony, Mr. Lahutsky states that the water sample**
8 **collected from the Topeka formation is not corrosive. Do you agree with his opinion?**

9 A. I do agree with Mr, Lahutsky’s assessment that Topeka formation fluid likely isn’t currently
10 causing corrosion to the casing or the tubing. However, I do not agree that the Topeka
11 formation is not a corrosive formation. In his testimony, Mr. Lahutsky states Operator is
12 currently pumping the produced fluids out of the Subject Well as it produces gas. As the fluid
13 enters the wellbore it is being brought to the surface and is not sitting stagnant in the casing.
14 My concern is that Operator’s proposed design creates a “dead fluid” interval of 1508 feet
15 from the bottom of the Topeka perforations to the Morrow injection packer. With the
16 Operator’s design the fluid cannot be chemically treated with corrosion inhibitors and biocide.
17 This large interval will fill up with the high chloride formation fluid from the Topeka
18 formation. The stagnant water could promote an environment for bacterial growth that would
19 likely cause corrosion on the casing and tubing, leading to leaks.

1 **Q. On page 7, line 24 through page 8, line 14 of his testimony, Mr. Lahutsky discusses using**
2 **a radioactive tracer as the way to demonstrate mechanical integrity at the Subject Well.**

3 **Do you agree that is a sufficient method to determine the Subject Well's integrity?**

4 A. No, I do not feel that a radioactive tracer survey is an appropriate way to determine mechanical
5 integrity of this wellbore. The wellbore of the Subject Well has an annular space between the
6 tubing and casing, so while a tracer survey could help us determine integrity of the tubing, it
7 would not be able to determine the integrity of the casing of the Subject Well.

8 **Q. Is the Subject Well a threat to correlative rights?**

9 A. It is a strong possibility that the Subject Well will be a threat to correlative rights due to
10 crossflow of the brine from the Morrow zone into the Topeka zone as soon as Operator
11 recompletes the wellbore of the Subject Well. This would occur due to the high bottom-hole
12 pressure of the Morrow zone crossflowing into the low pressure Topeka zone. Additionally,
13 if the well was to develop a tubing or packer leak, then there would be a conduit up the outside
14 of the tubing. This would allow the injection fluid to flood out the Topeka and Wabaunsee
15 formations, which could impact current or future offset operator's production from these
16 formations.

17 **Q. Will allowing the Subject Well to be permitted cause waste?**

18 A. I believe that waste is likely to occur if the recompletion is commenced and the bridge plug
19 over the Morrow formation is removed. According to CP-111 applications filed by Operator
20 for another well on the WMSU water flood, the Morrow formation in the area has a static
21 fluid level of approximately 800 feet from the surface. This indicates the Morrow formation
22 has approximately a 1700 PSI bottom-hole static pressure. Once the Morrow perforations in
23 the Subject Well are exposed, the bottom-hole pressure will attempt to lift the fluid level to

1 approximately 800 feet. However, since there are open perforations in the Wabaunsee and
2 Topeka formations, where the static pressure is less than 300 PSI, the fluid is likely to infiltrate
3 those formations and begin flooding out the zone. There is a common understanding within
4 the oil and gas industry that fluid infiltrating a gas bearing zone will negatively impact
5 production.

6 Mr. Lahutsky states in his testimony that the Subject Well is currently producing 47 mcf
7 of gas per day. When these zones flood out and the level of production cannot be achieved
8 again after the Morrow is recompleted, it will cause waste to the resource. Further, if the
9 Subject Well develops a tubing or packer leak due to the corrosive formation water, a conduit
10 for the formations to communicate will be created and it would likely cause waste as a result
11 of the loss of gas production.

12 **Q. Is the Subject Well a threat to usable water?**

13 A. It is unlikely that this well is a threat to usable water. The base of the usable water is at
14 approximately 300 feet. There is surface casing set to 1457 feet and cemented to surface with
15 800 sacks of cement, so the usable water zone is protected by casing and cement.

16 **Q. Based on your review of the Application, what is your recommendation?**

17 A. I would recommend Operator's Application be denied. Mr. Lahutsky states in his testimony
18 that these types of dually completed wells are not the norm in the industry, and I believe the
19 issues presented above in my testimony are prime examples of why they are not. The
20 construction of the Subject Well does not comply with Commission regulations and there is
21 354 feet of uncemented casing that will be directly impacted by the 1500 foot dead water
22 zone. After review of the history of the water flood, I think it is clear that the
23 produced/injection water from the Topeka and Morrow formations is highly corrosive and has

1 caused significant spills that are very difficult to remediate due to the amount of produced
2 fluids being spilled along with the soil types and the dry conditions present in Southwestern
3 Kansas. There have also been several tubing and packer leaks and complications with
4 plugging wells. The Commission is tasked with protecting fresh and usable waters, preserving
5 correlative rights, and preventing waste from oil and gas exploration and production. I do not
6 believe permitting this application unequivocally accomplishes those directives.

7 **Q. Does this conclude your testimony?**

8 A. Yes.

MERIT ENERGY COMPANY

WELLBORE DIAGRAM

LEASE & WELL NO. <u>Pearson C-2/WMSU 1602</u>	FORMER NAME <u>Odell U 2, WMSU 1602</u>	WI <u>100%</u>
FIELD NAME <u>Wilburton</u>	COUNTY & STATE <u>Morton, KS</u>	NRI <u>88%</u>
LOCATION <u>32 - 34S - 41W</u>	API NO. <u>15-129-20675</u>	WBS DATE <u>9/1/2022 CIA</u>
KB <u>11'</u>		

SURFACE CASING

SIZE <u>8 5/8"</u>	WEIGHT <u>24.#</u>	DEPTH <u>1457'</u>
GRADE <u>K-55</u>	SX. CMT. <u>800 sx</u>	TOC <u>Surface</u>

PRODUCTION CASING

SIZE <u>5 1/2"</u>	WEIGHT <u>14.#</u>	DEPTH <u>5010'</u>
GRADE <u>K-55</u>	SX. CMT. <u>175 sx</u>	TOC <u>3754'</u>
Remedial cement	SX. CMT. <u>450 sx</u>	TOC <u>700'</u>

PBTD@ 3300'
 TD@ 5011'

L. Morrow Tubing

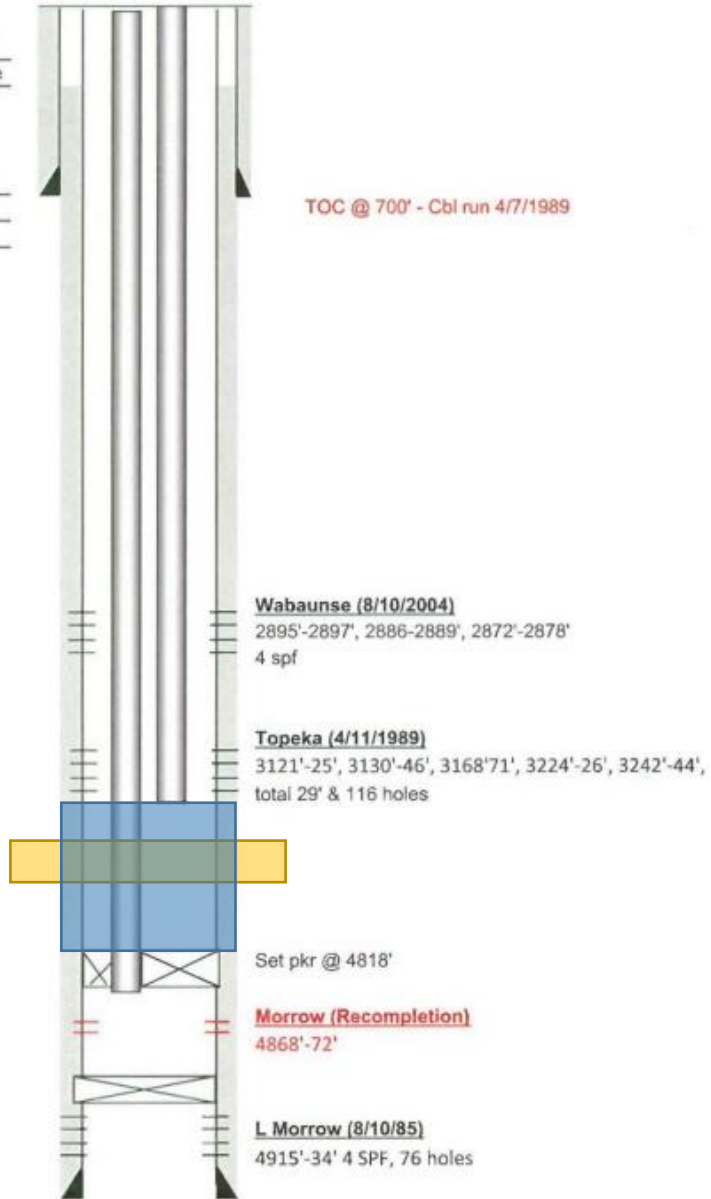
~157 jts of fiberglass lined 2-1/16" IJ tbg
 Pkr @ ~4865'

Topeka Tubing

~107 jts 2-1/16" IJ tbg
 EOT @ 3310

Topeka Rods

~131 5/8" rods w/ slimhole boxes
 .5" x 1.25" Insert pump



Dead Fluid Zone (Blue)
 3310 – 4818 feet

Uncemented Zone (Yellow)
 3400 – 3754 feet

TO: STATE CORPORATION COMMISSION
CONSERVATION DIVISION - PLUGGING
266 N. Main St., Ste. 220
Wichita, KS 67202-1513

API Well Number: 15-129-00062-00-02
Spot: SENWNWSE Sec/Twnshp/Rge: 29-34S-41W
2293 feet from S Section Line, 2291 feet from E Section Line
Lease Name: WILBURTON MORROW SAND Well #: 201W
County: MORTON Total Vertical Depth: 5334 feet

Operator License No.: 32446
Op Name: MERIT ENERGY COMPANY, LLC
Address: 13727 NOEL ROAD, SUITE 1200
DALLAS, TX 75240

String	Size	Depth (ft)	Pulled (ft)	Comments
PROD	5.5	5060	0	WITH 250 SX CMT
SURF	8.625	1440		WITH 500 SX CMT
T1	2.875	4757	1600	

Well Type: OG UIC Docket No: _____ Date/Time to Plug: 10/25/2019 12:00 AM
Plug Co. License No.: 34367 Plug Co. Name: LONESTAR SERVICES LLC
Proposal Rcvd. from: LARRY ROME Company: LONESTAR Phone: _____

Proposed Plugging Method: PLUGGING PROPOSAL SAME AS ACTUAL PLUGGING.

Plugging Proposal Received By: KEN JEHLIK WitnessType: COMPLETE (100%)
Date/Time Plugging Completed: 10/25/2019 12:00 AM KCC Agent: KEN JEHLIK

Actual Plugging Report:

2 7/8" TBG CEMENTED INSIDE THE 5 1/2" CASING AT 4757'. TOC BEHIND THE 2 7/8" IS 1640'. 2 7/8" TBG IS PARTED AT 1600'. SET 5 1/2" CEMENT RETAINER AT 1570'. STING INTO RETAINER WITH 2 3/8" TBG & ATTEMPT TO INJECT DOWN THE 2 7/8" TBG STUB AT 1500 PSI. COULD NOT PUMP INTO. TBG IS PLUGGED. TOOH WITH TBG. PRESSURE TEST THE 5 1/2" CASING TO 1500#. HOLDING. PERFORATE 4 HOLES AT 1500'. ATTEMPT TO PUMP INTO PERFS AT 1500 PSI. COULD NOT. CHECK COMPLETION REPORT & FOUND THAT PREVIOUS OPERATOR PERFORATED THE 5 1/2" CASING AT 1438'-1439' & CIRCULATED CMT TO SURFACE WITH 275 SX CMT ON 11/1/02. RUN TBG TO 1480' & CIRCULATE CMT TO SURFACE WITH 175 SX CMT. TOOH & TOP OFF 5 1/2" CASING WITH 20 SX CMT. ATTEMPT TO PUMP CMT DOWN THE ANNULUS AT 500 PSI. COULD NOT.

Perfs:

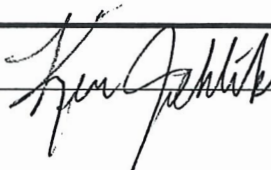
Top	Bot	Thru	Comments
4802	4822		

Remarks: USED 60/40 POZMIX 4% GEL BY COPELAND.

Plugged through: TBG

District: 01

Signed



(TECHNICIAN)

RECEIVED
OCT 29 2019
KCC DODGE CITY

SCANNED
11/15/19

Form CP-2/3

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION
CASING MECHANICAL INTEGRITY TEST

Form U-7
August 2019

Disposal: Enhanced Recovery: KCC District No.: 1
Operator License No.: 32446 Name: Merit Energy Company, LLC
Address 1: 13727 Noel Road, Suite 1200
Address 2: _____
City: Dallas State: TX Zip: 75240 + 7362
Contact Person: Idania Medina Phone: (972) 628-1558

API No.: 15-129-21843-00-04 Permit No.: E12571.17
- NW - NW - NW Sec. 33 Twp. 34 S. R. 41 East West
5165 Feet from North / South Line of Section
4776 Feet from East / West Line of Section
Lease: WILBURTON MORROW SAND UNIT Well No.: 1108 W
County: Morton

Well Construction Details: New well Existing well with changes to construction Existing well with no changes to construction

Maximum Authorized Injection Pressure: 1500 psi Maximum Injection Rate: 3500 bbl/d

	Conductor	Surface	Intermediate	Production	Liner		Tubing
Size:	<u>N/A</u>	<u>8.625</u>	<u>N/A</u>	<u>5.5</u>	<u>N/A</u>	Size:	<u>2.875</u>
Set at:		<u>1433</u>		<u>4996</u>		Set at:	<u>4773</u>
Sacks of Cement:		<u>700</u>		<u>225</u>		Type:	<u>PolyCore</u>
Cement Top:		<u>0</u>		<u>3475</u>			
Cement Bottom:		<u>1433</u>		<u>4996</u>			

Packer Type: AS-1 Set at: 4773

DV Tool Port Collar Depth of: 3412 feet with 225 sacks of cement TD (and plug back): 5000 (4938) feet depth

Zone of Injection Formation: MORROW Top Feet: 4814 Bottom Feet: 4900 Perf. or Open Hole: Perf

Is there a Chemical Sealant or a Mechanical Casing patch in the annular space? Yes No

If Dual Completion - Injection is: Above Production Below Production

FIELD DATA

GPS Location: Datum: NAD27 NAD83 WGS84 Lat: 37.05392 Long: -101.78914 Date Acquired: 10/20/2022

MIT Type: Tubing and Packer (or Initial Pressure) Test MIT Reason: POST WORKOVER TEST

Time in Minute(s):	0	15	30			
Pressures: Set up 1	<u>340</u>	<u>340</u>	<u>340</u>			
Set up 2						
Set up 3						

Tested: Casing or Casing - Tubing Annulus System Pressure during test: _____ Bbls. to load annulus: _____

Test Date: 10/20/2022 Using: Pro-Stim Company's Equipment

The zone tested for this well is between 0 feet and 4773 feet.

The test results were verified by operator's representative:

Name: Patrick Collins Title: Lead Phone: (580) 651-1796

KCC Office Use Only

The results were:

- Satisfactory
- Not Satisfactory

Next MIT: 10/19/2027

State Agent: Salvador Alvarado Title: E.C.R.S. Witness: Yes No

Remarks: Replaced top joint. Retest in 5 yrs.

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form U-7
August 2019

CASING MECHANICAL INTEGRITY TEST

Disposal: Enhanced Recovery: KCC District No.: 1
Operator License No.: 32446 Name: Merit Energy Company, LLC
Address 1: 13727 Noel Road, Suite 1200
Address 2: _____
City: Dallas State: TX Zip: 75240 + 7362
Contact Person: Idania Medina Phone: (972) 628-1558

API No.: 15-129-10333-00-01 Permit No.: E12571.18
SE NW Sec. 33 Twp. 34 S. R. 41 East West
3314 Feet from North / South Line of Section
3274 Feet from East / West Line of Section
Lease: WILBURTON MORROW SAND UNIT Well No.: 1101 W
County: Morton

Well Construction Details: New well Existing well with changes to construction Existing well with no changes to construction

Maximum Authorized Injection Pressure: 1500 psi Maximum Injection Rate: 3500 bbl/d

	Conductor	Surface	Intermediate	Production	Liner		Tubing
Size:	<u>N/A</u>	<u>8.625</u>	<u>N/A</u>	<u>5.5</u>	<u>N/A</u>	Size:	<u>2.875</u>
Set at:		<u>1459</u>		<u>5102</u>		Set at:	<u>4818</u>
Sacks of Cement:		<u>550</u>		<u>200</u>		Type:	<u>Polycore</u>
Cement Top:		<u>0</u>		<u>3850</u>			
Cement Bottom:		<u>1459</u>		<u>5102</u>			

Packer Type: AS-1 Set at: 4818

DV Tool Port Collar Depth of: 3312 feet with 200 sacks of cement TD (and plug back): 5420 (4949) feet depth
Zone of Injection Formation: MORROW Top Feet: 4866 Bottom Feet: 4912 Perf. or Open Hole: Perf

Is there a Chemical Sealant or a Mechanical Casing patch in the annular space? Yes No

If Dual Completion - Injection is: Above Production Below Production

FIELD DATA

GPS Location: Datum: NAD27 NAD83 WGS84 Lat: 37.04889 Long: -101.78399 Date Acquired: 07/22/2016

MIT Type: Tubing and Packer (or Initial Pressure) Test MIT Reason: POST WORKOVER TEST

Time in Minute(s):	0	15	30			
Pressures: Set up 1	<u>340</u>	<u>340</u>	<u>340</u>			
Set up 2						
Set up 3						

Tested: Casing or Casing - Tubing Annulus System Pressure during test: 0 Bbls. to load annulus: .25

Test Date: 01/12/2022 Using: Pro-Stim Company's Equipment

The zone tested for this well is between 0 feet and 4818 feet.

The test results were verified by operator's representative:

Name: Bladimir Chavez Title: Foreman Phone: (620) 629-1019

KCC Office Use Only

The results were:

- Satisfactory
- Not Satisfactory

Next MIT: 01/11/2027

State Agent: Heith Walsh Title: E.C.R.S. Witness: Yes No

Remarks: Replaced 2 joints of tubing and redressed packer

CASING MECHANICAL INTEGRITY TEST

DOCKET # E12571-18

Disposal Enhanced Recovery:

SE SE NW, Sec 33, T 34S, R 41 EA

Repressuring
Flood
Tertiary

3317 Feet from South Section Line
3274 Feet from East Section Line

Date injection started _____
API #15 - 129 - 10333-00-01

Lease WMSH Well # 1101 W
County Morton

Operator: Ment Energy Co. LLC Operator License # 32446
Name & Address 13727 Noel Rd. STE 1200 Contact Person Darrell Eggers
Dallas, TX 75240 Phone 580-651-1785

Max. Auth. Injection Press. 1500 psi; Max. Inj. Rate 2500 bbl/d;
If Dual Completion - Injection above production _____ Injection below production _____

	Conductor	Surface	Production	Liner	Size	Tubing
Size	_____	<u>8 5/8</u>	<u>5 1/2</u>	_____	_____	<u>2 3/8</u>
Set at	_____	<u>1459</u>	<u>5102'</u>	_____	_____	<u>4818'</u>
Cement Top	_____	<u>0</u>	<u>2300'</u>	_____	_____	<u>IPL</u>
" Bottom	_____	<u>1459</u>	<u>5102'</u>	_____	_____	_____
DV/Perf.	_____	_____	_____	_____	<u>5420</u>	_____ ft. depth
Packer type	<u>AS-1</u>	_____	_____	_____	<u>2 7/8 x 6 1/2</u>	Set at <u>4818</u>
Zone of injection	<u>narrow</u>	_____	_____	_____	<u>4966-4912</u>	Perf. or open hole <u>Perf</u>

Type Mit: Pressure Radioactive Tracer Survey Temperature Survey

F Time: Start 0 Min. 15 Min. 30 Min.
I
E Pressures: 305 305 305 Set up 1 | System Pres. during test 0
L Set up 2 | Annular Pres. during test 305
D Set up 3 | Fluid loss during test 0 bbls.
D
A
T
A

Tested: Casing or Casing - Tubing Annulus

The bottom of the tested zone is shut in with A Packer

Test Date 4-29-19 Using Rockwater Energy Company's Equipment

The operator hereby certifies that the zone between 0 feet and 4818 feet

was the zone tested DEGGERS Signature Foreman Title

The results were Satisfactory , Marginal , Not Satisfactory

State Agent Heith Walsh Title ECRS Witness: Yes No

REMARKS: Replaced Packer latest in 5 yrs.

Origin. Conservation Div.; KJHE/T; Dist. Office;

Computer Update

KCC Form U-7 6/84

OPS entered

SCANNED
SISlam

SA

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form U-7
August 2019

CASING MECHANICAL INTEGRITY TEST

Disposal: Enhanced Recovery: KCC District No.: 1
Operator License No.: 32446 Name: Merit Energy Company, LLC
Address 1: 13727 Noel Road, Suite 1200
Address 2: _____
City: Dallas State: TX Zip: 75240 + 7362
Contact Person: Idania Medina Phone: (972) 628-1558

API No.: 15-129-10343-00-01 Permit No.: E12571.13
- - - SE NW Sec. 28 Twp. 34 S. R. 41 East West
3279 Feet from North / South Line of Section
3276 Feet from East / West Line of Section
Lease: WILBURTON MORROW SAND UNIT Well No.: 301
County: Morton

Well Construction Details: New well Existing well with changes to construction Existing well with no changes to construction

Maximum Authorized Injection Pressure: 1500 psi Maximum Injection Rate: 3500 bbl/d

	Conductor	Surface	Intermediate	Production	Liner	Tubing
Size:	<u>N/A</u>	<u>8.625</u>	<u>N/A</u>	<u>5.5</u>	<u>N/A</u>	<u>2.875</u>
Set at:		<u>1466</u>		<u>5000</u>		<u>4787</u>
Sacks of Cement:		<u>600</u>		<u>200</u>		<u>plastic coated</u>
Cement Top:		<u>0</u>		<u>3850</u>		
Cement Bottom:		<u>1466</u>		<u>5000</u>		

Packer Type: Arrowset 1 Set at: 4787
 DV Tool Port Collar Depth of: 3288 feet with 300 sacks of cement TD (and plug back): 5401 (4910) feet depth
Zone of Injection Formation: MORROW Top Feet: 4930 Bottom Feet: 4938 Perf. or Open Hole: Perf

Is there a Chemical Sealant or a Mechanical Casing patch in the annular space? Yes No

If Dual Completion - Injection is: Above Production Below Production

FIELD DATA

GPS Location: Datum: NAD27 NAD83 WGS84 Lat: 37.06341 Long: -101.7841 Date Acquired: 07/20/2011
MIT Type: Tubing and Packer (or Initial Pressure) Test MIT Reason: 90-DAY RETEST - FAILURE
Time in Minute(s): 0 15 30
Pressures: Set up 1 310 310 310
Set up 2 _____
Set up 3 _____
Tested: Casing or Casing - Tubing Annulus System Pressure during test: 0 Bbls. to load annulus: .5
Test Date: 01/21/2022 Using: Pro-Stem Company's Equipment _____
The zone tested for this well is between 0 feet and 4787 feet.
The test results were verified by operator's representative:
Name: Bladimir Chavez Title: Foreman Phone: (620) 629-1019

KCC Office Use Only

The results were:

Satisfactory

Not Satisfactory

Next MIT: 01/20/2027

State Agent: Heith Walsh Title: E.C.R.S. Witness: Yes No

Remarks: Replaced 6 joints of tubing & redressed packer. Retest in 5 years

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form U-7
August 2019

CASING MECHANICAL INTEGRITY TEST

Disposal: Enhanced Recovery: KCC District No.: 1
Operator License No.: 32446 Name: Merit Energy Company, LLC
Address 1: 13727 Noel Road, Suite 1200
Address 2: _____
City: Dallas State: TX Zip: 75240 + 7362
Contact Person: Idania Medina Phone: (972) 628-1558

API No.: 15-129-10343-00-01 Permit No.: E12571.13
SE NW Sec. 28 Twp. 34 S. R. 41 East West
3279 Feet from North / South Line of Section
3276 Feet from East / West Line of Section
Lease: WILBURTON MORROW SAND UNIT Well No.: 301
County: Morton

Well Construction Details: New well Existing well with changes to construction Existing well with no changes to construction

Maximum Authorized Injection Pressure: 1500 psi Maximum Injection Rate: 3500 bbl/d

	Conductor	Surface	Intermediate	Production	Liner		Tubing
Size:	<u>N/A</u>	<u>8.625</u>	<u>N/A</u>	<u>5.5</u>	<u>N/A</u>	Size:	<u>2.875</u>
Set at:		<u>1466</u>		<u>5000</u>		Set at:	<u>4791</u>
Sacks of Cement:		<u>600</u>		<u>200</u>		Type:	<u>P.C.</u>
Cement Top:		<u>0</u>		<u>3850</u>			
Cement Bottom:		<u>1466</u>		<u>5000</u>			

Packer Type: Arrowset 1 Set at: 4791

DV Tool Port Collar Depth of: 3288 feet with 300 sacks of cement TD (and plug back): 5401 (4910) feet depth
Zone of Injection Formation: MORROW Top Feet: 4930 Bottom Feet: 4938 Perf. or Open Hole: Perf

Is there a Chemical Sealant or a Mechanical Casing patch in the annular space? Yes No

If Dual Completion - Injection is: Above Production Below Production

FIELD DATA

GPS Location: Datum: NAD27 NAD83 WGS84 Lat: 37.06341 Long: -101.7841 Date Acquired: 07/20/2011

MIT Type: Tubing and Packer (or Initial Pressure) Test MIT Reason: POST WORKOVER TEST

Time in Minute(s): 0 5 30

Pressures: Set up 1 300 250

Set up 2 _____

Set up 3 _____

Tested: Casing or Casing - Tubing Annulus System Pressure during test: 0 Bbls. to load annulus: .25

Test Date: 01/10/2022 Using: Pro-Stem Company's Equipment

The zone tested for this well is between 0 feet and 4791 feet.

The test results were verified by operator's representative:

Name: Bladimir Chavez Title: Foreman Phone: (620) 629-1019

KCC Office Use Only

The results were:

Satisfactory

Not Satisfactory

Next MIT: 04/10/2022

State Agent: Heith Walsh Title: E.C.R.S. Witness: Yes No

Remarks: Replaced Packer with New

CASING MECHANICAL INTEGRITY TEST

DOCKET # E-12571.13

Disposal Enhanced Recovery:

SE SE NW, Sec. 28, T 34 S, R 41 E

Repressuring
Flood
Tertiary

3279 Feet from South Section Line
3276 Feet from East Section Line

Date injection started _____
API #15 - 129 - 10343-00-01

Lease WMSH Well # 301
County morton

Operator: Merit Energy Com. LLC Operator License # 32446
Name & Address 13727 Noel Rd. STE 1200 Contact Person Lowell Eggers
Dallas, TX 75240 Phone 580-651-1785

Max. Auth. Injection Press. 1100 psi; Max. Inj. Rate 2500 bbl/d;
If Dual Completion - Injection above production _____ Injection below production _____

Size	Conductor	Surface	Production	Liner	Size	Tubing
Set at		8 5/8'	5 1/2'		Set at	2 7/8'
Cement Top		1466'	5000'		Type	4792'
" Bottom		0	1800'			Plastic Coated
TD/Perf. @ 3288' L/300 SX		1466'	5000'			
Packer type AS-1			540'			(4910) ft. depth
Zone of injection morton E			Size 2 1/8" x 5 1/2"		Set at	4792'
			4859-4900			Perf. or open hole perf

Type Mit: Pressure Radioactive Tracer Survey Temperature Survey

F Time: Start 0 Min. 15 Min. 30 Min.
I Pressures: 330 330 330 Set up 1 System Pres. during test 0
L Set up 2 Annular Pres. during test 330
D Set up 3 Fluid loss during test 0 bbls.

Tested: Casing or Casing - Tubing Annulus

The bottom of the tested zone is shut in with A packer

Test Date 6-10-19 Using Rockwater Company's Equipment

The operator hereby certifies that the zone between 0 feet and 4792 feet

was the zone tested Lowell Eggers Signature Foreman Title

The results were Satisfactory , Marginal , Not Satisfactory

State Agent Heath Walsh Title ECRS Witness: Yes No

REMARKS: Replace 7 Int Csg & New packer. Retest in 5 years

Origin. Conservation Div.; KDHE/T; Dist. Office;

Computer Update

SA SCANNED

KCC Form U-7 6/84

GPS entered

KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION CASING MECHANICAL INTEGRITY TEST

Form U-7
August 2019

Disposal: Enhanced Recovery: KCC District No.: 1
Operator License No.: 32446 Name: Merit Energy Company, LLC
Address 1: 13727 Noel Road, Suite 1200
Address 2: _____
City: Dallas State: TX Zip: 75240 + 7362
Contact Person: Idania Medina Phone: (972) 628-1558

API No.: 15-129-21502-00-00 Permit No.: E12571.9
_ _ _ NE SE Sec. 29 Twp. 34 S. R. 41 East West
2006 Feet from North / South Line of Section
634 Feet from East / West Line of Section
Lease: WILBURTON MORROW SAND UNIT Well No.: 2A02
County: Morton

Well Construction Details: New well Existing well with changes to construction Existing well with no changes to construction

Maximum Authorized Injection Pressure: 1500 psi Maximum Injection Rate: 3500 bbl/d

	Conductor	Surface	Intermediate	Production	Liner	Size:	Tubing
Size:	<u>n/a</u>	<u>8.62</u>	<u>n/a</u>	<u>5.5</u>	<u>n/a</u>		<u>2.875</u>
Set at:		<u>1457</u>		<u>4995</u>			<u>4751</u>
Sacks of Cement:		<u>445</u>		<u>170</u>			<u>Polycore</u>
Cement Top:		<u>0</u>		<u>4200</u>			
Cement Bottom:		<u>1457</u>		<u>4995</u>			

Packer Type: AS11 Set at: 4751

DV Tool Port Collar Depth of: 3492 feet with 490 sacks of cement TD (and plug back): 5000 (4981) feet depth
Zone of Injection Formation: MORROW Top Feet: 4822 Bottom Feet: 4877 Perf. or Open Hole: Perf

Is there a Chemical Sealant or a Mechanical Casing patch in the annular space? Yes No

If Dual Completion - Injection is: Above Production Below Production

FIELD DATA

GPS Location: Datum: NAD27 NAD83 WGS84 Lat: 37.05988 Long: -101.79305 Date Acquired: 01/20/2012
MIT Type: Tubing and Packer (or Initial Pressure) Test MIT Reason: POST WORKOVER TEST

Time in Minute(s):	<u>0</u>	<u>15</u>	<u>30</u>			
Pressures: Set up 1	<u>310</u>	<u>310</u>	<u>310</u>			
Set up 2						
Set up 3						

Tested: Casing or Casing - Tubing Annulus System Pressure during test: 0 Bbls. to load annulus: 1.0

Test Date: 03/11/2022 Using: Pro Stem Company's Equipment

The zone tested for this well is between 0 feet and 4751 feet.

The test results were verified by operator's representative:

Name: Bladimir Chavez Title: Foreman Phone: (620) 629-1019

KCC Office Use Only

The results were:

- Satisfactory
- Not Satisfactory

Next MIT: 03/10/2027

State Agent: Heith Walsh Title: E.C.R.S. Witness: Yes No

Remarks: Replaced packer with new packer. Retest in 5 years

CERTIFICATE OF SERVICE

23-CONS-3080-CUIC

I, the undersigned, certify that a true and correct copy of the attached Prefiled Testimony of Kenny Sullivan has been served to the following by means of electronic service on February 24, 2023.

TODD BRYANT, GEOLOGIST SPECIALIST
KANSAS CORPORATION COMMISSION
266 N. Main St., Ste. 220
WICHITA, KS 67202-1513
t.bryant@kcc.ks.gov

KELCEY MARSH, LITIGATION COUNSEL
KANSAS CORPORATION COMMISSION
CENTRAL OFFICE
266 N. MAIN ST, STE 220
WICHITA, KS 67202-1513
k.marsh@kcc.ks.gov

JONATHAN R. MYERS, ASSISTANT GENERAL COUNSEL
KANSAS CORPORATION COMMISSION
266 N. Main St., Ste. 220
WICHITA, KS 67202-1513
j.myers@kcc.ks.gov

JONATHAN A. SCHLATTER, ATTORNEY
MORRIS LAING EVANS BROCK & KENNEDY CHTD
300 N MEAD STE 200
WICHITA, KS 67202-2745
jschlatter@morrislaing.com

/s/ Paula J. Murray
Paula J. Murray
