

Santa Fe Main Office  
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State of New Mexico  
Energy, Minerals and Natural Resources

Form C-103  
Revised July 18, 2013

Online Phone Directory Visit:  
<https://www.emnrd.nm.gov/ocd/contact-us/>

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

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) 1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other SWD		WELL API NO. 30-015-26397
2. Name of Operator Longfellow Energy, LP		5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
3. Address of Operator 8115 Preston Road, Suite 800 Dallas, TX 75225		6. State Oil & Gas Lease No.
4. Well Location Unit Letter <u>H</u> : <u>1980</u> feet from the <u>North</u> line and <u>660</u> feet from the <u>East</u> line Section <u>20</u> Township <u>17S</u> Range <u>R29E</u> NMPM County		7. Lease Name or Unit Agreement Name MUSKEGON 20 STATE COM #001
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3,605' ground level elevation		8. Well Number #001
		9. OGRID Number 372210
		10. Pool name or Wildcat [96099] SWD; CISCO

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

<b>NOTICE OF INTENTION TO:</b> PERFORM REMEDIAL WORK <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> TEMPORARILY ABANDON <input type="checkbox"/> CHANGE PLANS <input type="checkbox"/> PULL OR ALTER CASING <input type="checkbox"/> MULTIPLE COMPL <input type="checkbox"/> DOWNHOLE COMMINGLE <input type="checkbox"/> CLOSED-LOOP SYSTEM <input type="checkbox"/> OTHER: <input type="checkbox"/> NOI to conduct a Step Rate Test <input checked="" type="checkbox"/>		<b>SUBSEQUENT REPORT OF:</b> REMEDIAL WORK <input type="checkbox"/> ALTERING CASING <input type="checkbox"/> COMMENCE DRILLING OPNS. <input type="checkbox"/> P AND A <input type="checkbox"/> CASING/CEMENT JOB <input type="checkbox"/> OTHER: <input type="checkbox"/>	
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13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Longfellow Energy, LP intends to conduct a Step Rate Test (SRT) on the Muskegon 20 State Com #001 SWD in accordance with the included Proposed SRT Procedure. Once the submitted procedure is approved by NMOCD, Longfellow Energy intends to schedule the SRT with their contractors, and provide NMOCD with notice to run the test.

The following documents have been attached in support of this request:

- 1). Proposed SRT Procedure
- 2). Muskegon 20 State Com #001 SWD Christmas tree, and wellhead diagram.
- 3). Muskegon 20 State Com #001 SWD WBD
- 4). Muskegon 20 State Com #001 SWD Injection history table
- 5). Muskegon 20 State Com #001 SWD Summary of well treatment and Historical ISIP.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Josh Ticknor TITLE Regulatory Consultant DATE 7/1/2025  
 Type or print name Joshua Ticknor, PE E-mail address: jticknor@all-llc.com PHONE: 580-916-2126  
**For State Use Only**

APPROVED BY: \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
 Conditions of Approval (if any): \_\_\_\_\_

## 1). Proposed SRT Procedure



## Proposed Step-Rate Test Procedure

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<b>Well:</b>	Muskegon 20 State Com #001
<b>Well Information:</b>	
Operator:	Longfellow Energy, LP
Surface Location:	Lat: N 32.8219109°; Long: W -104.090538°; NAD83 Unit Letter H of Section 20 in T17S R29E
API Number:	30-015-26397
OGRID Number:	372210
Surface Casing:	13-3/8" 48# set at approximately 461'
Intermediate Casing:	8-5/8" 24# set at approximately 2,610'
Production Casing:	5-1/2" 17# set at approximately 10,973'
Production Liner:	4-1/2" 12.6# set from approximately Surface to 9,052'
Injection Tubing:	2-7/8" 6.5# plastic lined tubing. Set on AS1X packer (4-1/2" x 2-3/8"). Top of packer at 9,024'
Perforations:	9,080' to 9,395'
Total Depth:	10,973'
PBTD:	9,500' (CIBP)
Injection Interval:	Upper Canyon and Cisco Canyon
Max Injection pressure:	1,816 psia (0.2 psi /ft)
Max Injection Rate	20,000 barrels per day (13.9 barrels per minute)

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### **Step Rate Test Procedure:**

- 1) Shut in the well long enough prior to testing such that the bottom hole pressures approximate shut-in formation pressures.
- 2) Prior to testing, move in sufficient amount of 500 barrel frac tanks on to location and fill with produced water. A water transfer company should be on standby to refill tanks accordingly during testing.
- 3) MIRU pumping equipment consisting of sufficient pumping capacity to maintain rates specified in the Step Rate Test Schedule. It is recommended that pumping equipment be rigged up the day before testing is to commence. A pressure transducer will be installed on the wellhead to record surface pressures. Surface pressure will be continuously monitored and recorded during the test. The surface and down hole pressures recorded will be correlated after testing is completed. Surface pressures will be recorded using a Freemyer / FIP CompAcq Monitoring System (or similar). Flow rates will be recorded using a : Yokogawa Axf11 g Magnetic Flowmeter (or similar). A schematic of the wellhead is attached to this procedure.
- 4) The day of testing, MIRU wireline unit to run BHP digital gauge with real-time read-out capability. The BHP gauge is expected to be a Gowell Pegasus PTF43 (or similar). Zero tool string



to KB. Stab on to well and pressure test unit. Equalize lines and open wellhead while recording pressure. Open wing valve to pumping equipment. Pumping company will record surface pressure while wireline is running in hole.

- 5) Prime up pumps and lines, test both to 1,500 psi. Preference is for larger diameter lines to be run between pump and wellhead (i.e. 4") to reduce frictional losses.
  - 6) RIH while recording pressure and temperature pass. Tool will make one minute gradient stops at 500-foot intervals from surface to end of tubing. Slow tool down (to approximately 1 ft / sec) and perform a high-resolution pressure pass over the perforated interval.
  - 7) Place the BHP gauge near the end of the tubing. BHP will be recorded during entire step rate test program.
  - 8) Pump schedule as per Proposed Step Rate Test Schedule provided on the following page starting at the minimum stable rate attainable by the pumps. The Proposed Step Rate Test Schedule is designed such that the surface injection pressure will be below the expected formation fracture gradient during at least three (3) injection steps of the test. Each step must be performed for the same duration of 30 minutes.
  - 9) Injection rates will be controlled with a constant flow regulator that has been tested prior to use. Injection rates will be measured with a calibrated flowmeter. If there is a clear indication that during testing that the fracture pressure of the formation pressure has been exceeded (i.e. three (3) readings above the fracture pressure are observed), then the test will conclude.
  - 10) During testing, graph injection pressure versus injection rate to approximate the formation fracture pressure and corresponding injection rate. Once an approximate formation fracture pressure has been determined or if the test reaches the end of the Proposed Step Rate Test Schedule, shutdown. Shut in well to pumping equipment. RDMO pumping equipment.
  - 11) Continue recording pressure with pressure recorder until stable reservoir pressure is achieved or for 6 hours.
  - 12) Begin to POOH. Proceed to surface at normal operating speed. Perform one-minute gradient stops every 500-foot to surface.
  - 13) RIH and retrieve the downhole temperature and pressure recording device. RDMO wireline unit. Step rate testing completed.
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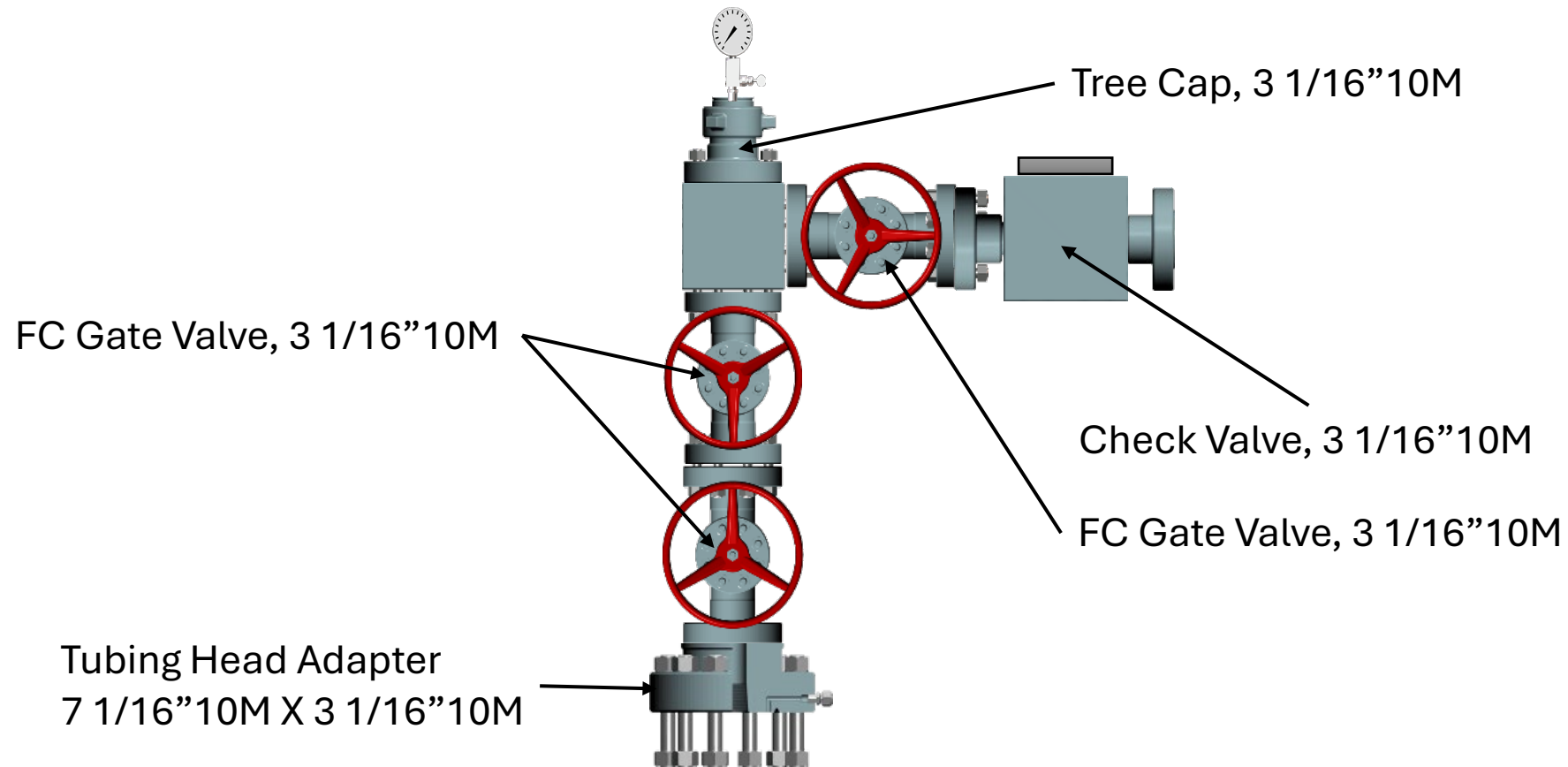


## Proposed Step Rate Test Schedule

Step #	Rate (bpm)	Rate (bpd)	Fluid Type	Stg Vol (bbl)	Cum Vol (bbl)	Stg Time (mins)
1	1	1,440	Produced Water	30	30	30
2	1.5	2,160	Produced Water	45	75	30
3	2	2,880	Produced Water	60	135	30
4	2.5	3,600	Produced Water	75	210	30
5	3	4,320	Produced Water	90	300	30
6	3.5	5,040	Produced Water	105	405	30
7	4	5,760	Produced Water	120	525	30
8	4.5	6,480	Produced Water	135	660	30
9	5	7,200	Produced Water	150	810	30
10	5.5	7,920	Produced Water	165	975	30
11	6	8,640	Produced Water	180	1155	30
12	6.5	9,360	Produced Water	195	1350	30
13	7	10,080	Produced Water	210	1560	30
14	7.5	10,800	Produced Water	225	1785	30
15	8	11,520	Produced Water	240	2025	30
Total					2,025 bbls	7.5 HRS

2). Muskegon 20 State Com #001 SWD Christmas Tree,  
and Wellhead Diagram.

# Longfellow Energy LP Wellhead and X-mas Tree Diagram



### 3). Muskegon 20 State Com #001 SWD WBD



## Wellbore Schematic

Printed: 6/27/2025

Page 1

## Muskegon State 20 Com # 1

API # 30-015-26397

Muskegon State 20 Com # 1, 6/27/2025

1980 FNL & 660 FEL	GL Elev:	3,605.00	KOP:	
Section 20, Township 17S, Range 29E	EOC:			
County, State: Eddy, NM	Fill Depth:	9,421		
Aux ID:	PBTD:	9,500.00		
'KB' correction: 31; All Depths Corr To: KB	TD:	10,957.00		
	BOP:	7 1/16		

## Hole Size

Diameter	Top At	Btm At	Date Drilled
17.5000	0.00	445.00	8/28/1990
12.2500	445.00	2,594.00	9/3/1990
7.8750	2,594.00	10,957.00	9/25/1990

## Surface Casing

Date Ran: 8/28/1990

Description	#	Diameter	Weight	Grade	Length	Top At	Btm At
Casing	11	13.3750	48.00	H40	430.00	31.00	461.00

## Intermediate Casing

Date Ran: 9/3/1990

Description	#	Diameter	Weight	Grade	Length	Top At	Btm At
Casing	64	8.6250	24.00	J55	2,579.00	31.00	2,610.00

## Production Casing

Date Ran: 9/25/1990

Description	#	Diameter	Weight	Grade	Length	Top At	Btm At
Casing	150	5.5000	17.00	J55	6,689.00	31.00	6,720.00
Casing	50	5.5000	17.00	N80	2,235.00	6,720.00	8,955.00
Casing	45	5.5000	17.00	S-95	2,018.00	8,955.00	10,973.00

## Production Liner

Date Ran: 5/31/2023

Description	#	Diameter	Weight	Grade	Length	Top At	Btm At
Casing	207	4.5000	12.60	13CR95	6,219.55	31.00	6,250.55
Marker Jt	1	4.5000	12.60	13CR95	24.62	6,250.55	6,275.17
Casing	91	4.5000	12.60	13CR95	2,743.44	6,275.17	9,018.61
Float Collar	1	4.5000			1.69	9,018.61	9,020.30
Casing	1	4.5000	12.60	13CR95	30.08	9,020.30	9,050.38
Float Shoe	1	4.5000	12.60	13CR95	1.74	9,050.38	9,052.12

## Cement

Top At	Btm At	I D	O D	TOC Per	# - Type	# Sx	Class	Wt.
0.00	445.00	13.375	17.500	Circ	1 - Lead	200	Thix	
					2 - Tail	475	C	
					3 - Lead	100	C	
					4 - Lead	150	C	

Did not circ. Tag 1" @ 200'. Pump 100 sx. Tag TOC @ 135', pump 150 sx and circ cmt.

0.00	2,594.00	8.625	12.250	Circ	1 - Lead	1150	C	
					2 - Tail	300	C	

## Circ 159 sx

8,140.00	10,957.00	5.500	7.875	TS	1 - Lead	700	H	15.60
2,950.00	3,910.00	5.500	7.875	CBL	1 - Lead	120	60/40 Poz	

## Suicide squeeze f/ squeeze holes through casing leak

0.00	9,035.00	4.500	5.500	Circ	1 - Lead	510	Lite	13.00
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## 4.5" Flush Jt Cement Operation

5,600.00	8,140.00	5.500	7.875	CBL	1 - Lead	320		13.50
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## Suicide Squeeze

4,600.00	5,400.00	5.500	7.875	CBL	1 - Lead	120		13.50
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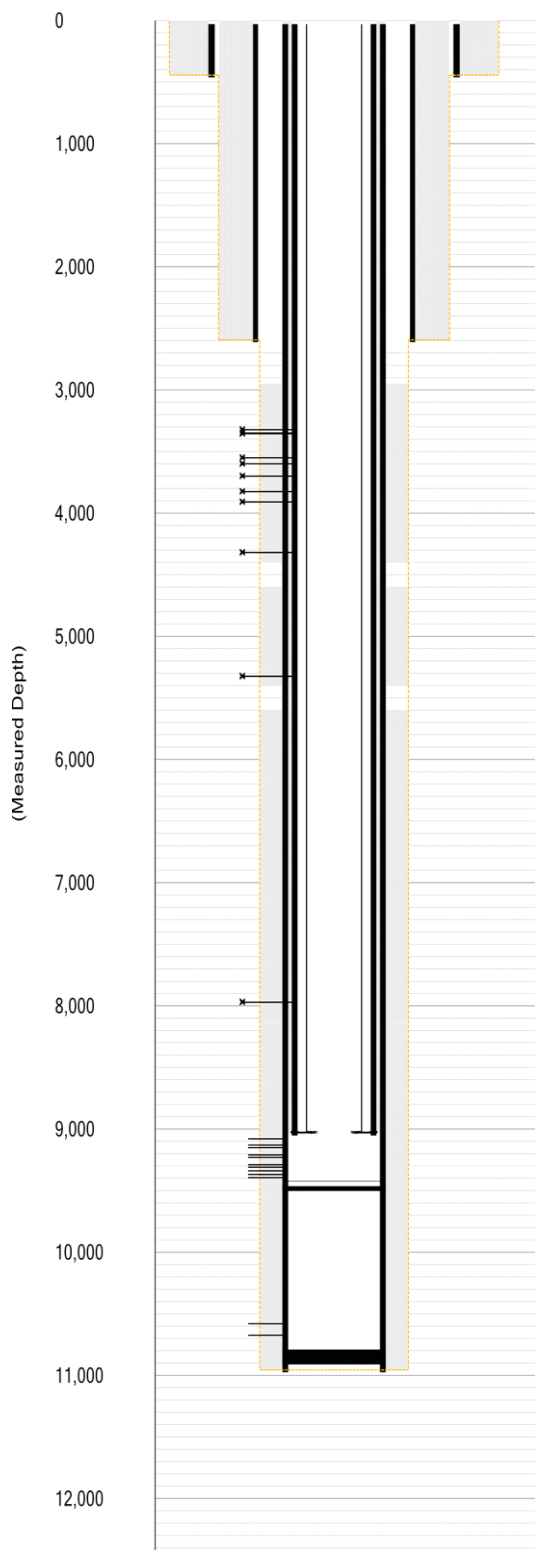
## Suicide Squeeze

3,910.00	4,400.00	5.500	7.875	CBL	1 - Lead	125		13.50
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## Squeeze

9,465.00	9,500.00	5.000	5.500	Est				
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## Dump bail 35' cement



## Wellbore Schematic

Printed: 6/27/2025

Page 2

Muskegon State 20 Com # 1

API # 30-015-26397

## Zone and Perfs

## Comments / Completion Summary

Ran temp survey after pumping, shows 8140'. Found casing leak between 3314' - 3825'. Squeeze holes at 3910'. Suicide squeeze up 5 1/2" for holes. 3356' - 3551' still losing some psi ~60 psi for 60 min.

5.5" casing inspection log showed bad casing from 2600' - 4200'; 4500' - 7000' & 7500' - 8000'. Holes @ 7827', 3930', 3530', 3499', 3484', 3386'.

Attempted suicide squeezes from 7970' - 4200' to put cement behind pipe. Tried resin and cement balanced squeezes from 4000' - 2500' to repair holes. Could not get casing to test. Leaks ranged from .1 - 20 psi/min leak-off. Circulated leak-off 10 ppg mud multiple times, had mixed results but could not sustain pressure test. Decision to run 4.5" Flush jt inside of 5.5" to repair casing integrity.

Stg	Top	Btm	AIR	AIP	MIR	MIP	ISIP	AcidVol	Acid %	
TotVol	Notes									
1	9370	9395	3.3	6000	3.6	7500	4020	7500	20	290
150	BS, no ball act									
2	9310	9340	5.5	5550	6.2	8000	4487	8000	20	290
180	BS, Big acid brk									
3	9080	9290	7.5	5350	9	5500	1450	40000	28	1110
360	BS, no Ball act									

## Perforations

Top	Bottom	Formation	Status	Opened	Closed	# / Ft	Ttl #
3,323.00	3,350.00	Casing Leak	PA	3/7/2008	3/7/2008		50
Casing Leak 3314 - 3825'							
3,356.00	3,551.00	Casing Leak	PA	3/7/2008	12/23/2022		50
Active Leak Area							
3,600.00	3,700.00	Casing Leak	PA	3/7/2008	3/7/2008		50
Casing Leak 3314 - 3825'							
3,700.00	3,825.00	Casing Leak	PA	3/7/2008	3/7/2008		50
Casing Leak 3314 - 3825'							
3,910.00	3,910.00	Squeeze	PA	3/7/2008	3/7/2008		4
Squeeze holes below Casing leak							
4,320.00	4,321.00	Squeeze	PA	9/5/2022	9/10/2022	4	4
Squeeze holes							
5,325.00	5,326.00	Squeeze	PA	9/5/2022	9/10/2022	4	4
Squeeze holes							
7,970.00	7,971.00	Squeeze	PA	9/5/2022	9/10/2022	4	4
Squeeze holes below leak							
9,080.00	9,130.00	Canyon	A	10/17/2022		4	200
5TH INTERVAL OF UPPER CANYON, 50' INTERVAL.							
9,150.00	9,210.00	Canyon	A	10/17/2022		4	240
4TH INTERVAL OF UPPER CANYON, 60' INTERVAL.							
9,230.00	9,290.00	Canyon	A	10/14/2022		4	240
3RD INTERVAL OF UPPER CANYON, 60' INTERVAL.							
9,310.00	9,340.00	CISCO	A	10/13/2022		4	120
2ND INTERVAL OF CISCO CANYON, 30' INTERVAL.							
9,370.00	9,395.00	CISCO	A	10/6/2022		4	100
1ST INTERVAL OF CISCO CANYON, 25' INTERVAL							
10,581.00	10,674.00	Morrow	TA	12/29/1990			20
CIBP @ 9500'							

## Wellbore Schematic

Printed: 6/27/2025

Page 3

Muskegon State 20 Com # 1

API # 30-015-26397

## Wellbore Plugs and Junk

Top	Bottom	Type	Diameter	Solid	Date
9,421.00	9,423.00	Unknown	5.500	Yes	6/1/2023
<i>Plug parts, rubber, cement, etc</i>					
9,465.00	9,500.00	Cement	5.500	Yes	8/24/2022
<i>Dump bail 35' of cement</i>					
9,500.00	9,502.00	CIBP	5.500	Yes	8/22/2022
10,791.00	10,910.00	Junk	5.500	Yes	3/7/2008
<i>Unknown fish</i>					

## Tubing

Date Ran: 5/22/2024

Description	#	Diameter	Weight	Grade	Length	Top At	Btm At
Plastic Lined Tbg	1	2.8750	6.50	L80	32.79	31.00	63.79
<i>2-7/8</i>							
Plastic Lined Tbg	1	2.8750	6.50	L80	4.10	63.79	67.89
<i>2-7/8</i>							
Plastic Lined Tbg	1	2.8750	6.50	L80	10.10	67.89	77.99
<i>2-7/8</i>							
Plastic Lined Tbg	273	2.8750	6.50	L80	7,925.59	77.99	8,003.58
<i>2-7/8</i>							
Plastic Lined Tbg	31	2.8750	6.50	L80	1,018.28	8,003.58	9,021.86
<i>2-7/8 enertube</i>							
Crossover		2.3750			0.43	9,021.86	9,022.29
<i>2-3/8 eue 8rd x 2-7/8 eue 8rd bx</i>							
On-Off Tool		3.7500			1.70	9,022.29	9,023.99
<i>2-3/8 x 1.78 "F" SS Stringer &amp; 4-1/2 x 2-3/8 on/off tool</i>							
Packer		4.5000			6.60	9,023.99	9,030.59
<i>4-1/2 x 2-3/8 (9.5-13.5#) N.P ASI x PKR</i>							
Tubing Sub		2.3750	4.70		4.10	9,030.59	9,034.69
<i>2-3/8 x 4 N.P L-80 sub</i>							
XN Nipple		2.3750			0.80	9,034.69	9,035.49
<i>2-3/8 x 1.75 R SS landing nipple</i>							
Reentry Guide		2.3750			0.33	9,035.49	9,035.82
<i>2-3/8 SS wireline entry guide</i>							

#### 4). Muskegon 20 State Com #001 SWD Injection history Table

<b>Injection History Table</b> <b>Muskegon 20 State Com #001</b> <b>API Number:30-015-26397</b>		
<b>Month</b>	<b>Volume (bbls)</b>	<b>Average of Wellhead Pressure (psi)</b>
September-23	480 bbls	1,000
October-23		578
November-23	54,606 bbls	800
December-23	150,868 bbls	1,565
January-24	119,466 bbls	1,296
February-24	113,249 bbls	1,440
March-24	129,291 bbls	1,640
April-24	22,602 bbls	292
May-24		0
June-24	77,962 bbls	1,272
July-24	64,860 bbls	1,258
August-24	28,667 bbls	1,250
September-24	76,350 bbls	1,125
October-24	80,698 bbls	1,375
November-24	90,118 bbls	1,450
December-24	108,334 bbls	1,546
January-25	111,315 bbls	1,701
February-25	104,474 bbls	1,755
March-25	92,306 bbls	1,502
April-25	94,962 bbls	1,499
May-25	109,580 bbls	1,589
June-25	86,125 bbls	1,537
<b>Grand Total: 1,716,313 bbls</b>		

5). Muskegon 20 State Com #001 SWD Summary of Well  
Treatment and Historical ISIP.

Summary of Well Treatments and ISIPs												
Date Completed	Type	Top Perf	Btm Perf	Holes	ISIP (psi)	ISIP @ 5 min	ISIP @ 10 min	ISIP @ 15 min	Max Rate	Holes	Fluid Type	Amt (bbls)
10/9/2022	Acid Treatment	9370	9395	100	4020	2920	2599	2371	3.6	100	15% HCL	110
10/13/2022	Acid Treatment	9310	9340	120	4487	3056	2512	2378	6.25	120	15% HCL	15
10/19/2022	Acid Treatment	9080	9130	200	1474	1009	986	969	8.75	680	28% HCL	970

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State of New Mexico  
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1220 S. St Francis Dr.  
Santa Fe, NM 87505

CONDITIONS

Action 483357

CONDITIONS

Operator: LONGFELLOW ENERGY, LP 8115 Preston Road Dallas, TX 75225	OGRID: 372210
	Action Number: 483357
	Action Type: [C-103] NOI General Sundry (C-103X)

CONDITIONS

Created By	Condition	Condition Date
pgoetze	None	9/23/2025