Submit To Appropriate District Office
Two Copies
District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-105
Revised April 3, 2017

1. WELL API NO. 30-025-46579
2. Type of Lease ☒ STATE ☐ FEE ☐ FED/INDIAN
3. State Oil & Gas Lease No. SW-455

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

4. Reason for filing:

☒ **COMPLETION REPORT** (Fill in boxes #1 through #31 for State and Fee wells only)

☐ **C-144 CLOSURE ATTACHMENT** (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)

5. Lease Name or Unit Agreement Name: P-15
6. Well Number: #001

7. Type of Completion:
☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER

8. Name of Operator: Rice Operating Company
9. OGRID: 19174
10. Address of Operator: 112 W Taylor, Hobbs, NM 88240
11. Pool name or Wildcat: SWD; San Andres

12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:	P	15	21S	36E		58	S	988	E	Lea
BH:	P	15	21S	36E		58	S	988	E	Lea

13. Date Spudded	14. Date T.D. Reached	15. Date Rig Released	16. Date Completed (Ready to Produce)	17. Elevations (DF and RKB, RT, GR, etc.)
7-12-2020	7-20-2020	7-24-2020	9-24-2020	GR 3576'

18. Total Measured Depth of Well	19. Plug Back Measured Depth	20. Was Directional Survey Made?	21. Type Electric and Other Logs Run
5100'	5100'	Yes	Attached

22. Producing Interval(s), of this completion - Top, Bottom, Name: NA

23. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8	48#	1330'	17 1/2"	1100 sks	340 sks
9 5/8	40#	5100'	12 1/4"	1340 sks	TOC by CBL 500'

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
5 1/2"	4182'	4182'

26. Perforation record (interval, size, and number): 4202 - 5050

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED

28. PRODUCTION

Date First Production	Production Method (*Flowing, gas lift, pumping - Size and type pump*)	Well Status (*Prod. or Shut-in*)

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl	Gas - MCF	Water - Bbl.	Gas - Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (*Corr.*)

29. Disposition of Gas (*Sold, used for fuel, vented, etc.*)
30. Test Witnessed By
31. List Attachments
32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.
33. Rig Release Date:
34. If an on-site burial was used at the well, report the exact location of the on-site burial:

Latitude Longitude NAD83

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature: [signature] Printed Name: Hayden Holub Title: Operations Manager Date: 9/30/2020

E-mail Address: hholub@riceswd.com

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy 1220	T. Canyon	T. Ojo Alamo	T. Penn A"
T. Salt 1380	T. Strawn	T. Kirtland	T. Penn. "B"
B. Salt 2498	T. Atoka	T. Fruitland	T. Penn. "C"
T. Yates 2674	T. Miss	T. Pictured Cliffs	T. Penn. "D"
T. 7 Rivers 2930	T. Devonian	T. Cliff House	T. Leadville
T. Queen 3374	T. Silurian	T. Menefee	T. Madison
T. Grayburg 3696	T. Montoya	T. Point Lookout	T. Elbert
T. San Andres 3933	T. Simpson	T. Mancos	T. McCracken
T. Glorieta 5173	T. McKee	T. Gallup	T. Ignacio Otzte
T. Paddock	T. Ellenburger	Base Greenhorn	T.Granite
T. Blinebry	T. Gr. Wash	T. Dakota	
T.Tubb	T. Delaware Sand	T. Morrison	
T. Drinkard	T. Bone Springs	T.Todilto	
T. Abo	T.	T. Entrada	
T. Wolfcamp	T.	T. Wingate	
T. Penn	T.	T. Chinle	
T. Cisco (Bough C)	T.	T. Permian	

OIL OR GAS SANDS OR ZONES

No. 1, from.....to..... No. 3, from.....to.....

No. 2, from.....to..... No. 4, from.....to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....

No. 2, from.....to.....feet.....

No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness In Feet	Lithology	From	To	Thickness In Feet	Lithology


MIDNIGHT
NOON
6 AM
6 PM
cal 7-8-2020
9-29-2020

[Type text]

AES Drilling Fluids

END OF WELL REPORT

Operator	RICE OPERATING COMPANY / OWL SWD OPERATING LLC
Well / Lease Name	P-15 SWD 1
Drilling Contractor	Norton 7
API Number	
County / State	Lea, Nm
LAT / LONG	32.47183228 / -103.24785614
Field / Survey / Abstract	SEC 15 T21S R36E
Target Formation	Glorieta
Spud Date	07-12-20
Rig Release Date	07-20-20
Days - AFE / Actual	9 days
Fluid Cost / Cost / ft	$18,285.37 / $3.585366/ft
Drill Site Managers	Randal Taylor
Field Supervisor	Jason Tyler
Fluid Engineers	Eugene Vasquez / Bullet Burchett
Surface Casing	13 3/8" Set at 1,330'.
Production Casing	9 5/8" Set at 5,100'

FORMATION TOPS	TVD (ft)
Top of Anhydrite	1,220
13 3/8 casing point	1,330
Top of Salt	1,380
Bottom of Salt	2,498
Yates	2,674
Seven Rivers	2,930
Queen	3,374
Greyburg	3,696
San Andres	3,933
9 5/8 Casing Point	5,100
Glorieta	5,173

WELL SUMMARY

- The project is located in Lea County, NM and Drilled with Norton 7.
- The project was completed in 9 days from spud to rig release to a total depth of 5,100'
- The total related drilling fluids cost was $18,285.37 or $.3.585366/ft and $7,858.44, more than the planned cost of $10,426.93 due to the continuous wt. issues, sweeping well, heavily with additions of salt gel & EnerPLUS along with back yard hand using it for solids, with back to back trucking for delivery & product return with forklift charges for materials sent back.

INTERVAL SUMMARY

Surface Interval: (0 – 1,330')

- Rig has moved to The P-15 SWD 1, began rigging up and continue to rig up as it prepares to spud in.
- Once rig was an order, picked up BHA, testing motor and making up 17.5" bit. Once rig began drilling ahead, circulating active with fresh water and running all solids equipment with centrifuges.
- Reported having to pick up @221' and unplug flow line, hitting mud hard with surfactant and continuing to drill ahead, also alternating pumping gel/EnerPLUS sweeps.
- After reporting having to pull of bottom for red bed issues, continued drilling ahead reporting @824', plugging flow line having to pick up off bottom and unplug before getting back to bottom.
- Once back on bottom, rig continued drilling ahead limiting parameters while td @1,330' with no other reported issues.
- Once td, rig circulated and are in process of pooh for 11 stand short trip with no issues.
- Once on bottom, rig circulated bottoms up, spotted hi vis filtrate pill on bottom and pooh laying out BHA with 17.5" bit.
- After BHA was laid out, rigged up and ran 13 3/8" surface casing, filling up on the fly and getting to bottom with no reported issues, circulating casing on bottom.
- After rigged up cementers, began pumping 20bbl spacer, 800sk 259bbl lead @12.8ppg, and 300sk tail @14.8ppg, displaced with 200bbls of fresh water and bumped plug @5am reporting 340sks cement to surface.
- Rig waited on cement, cut off conductor and began nippling up, and testing.

Production: (1,330' – 5,100')

- Once rig completed testing, picked up BHA with 12.25" bit and tripped in collars, slipped and cut drill line.
- Rig's hydromatic needed repair, shut down operation to repair rig.
- After rig completed rig repairs, loaded up pipe racks with pipe, and c/o shaker screens to 120's
- finished tripping in hole, tagging cement @1,280'. Drilled out cement and cement equipment.
- Begin drilling under surface while circulating active, pumping salt gel and EnerPLUS sweeps using lime for ph.
- Rig has dumped volume to keep up with letting wt. climb up and continue to monitor as rig drills ahead with no other reported issues.
- Rig had drilled ahead controlling wt. issues with a continuing to pump and dump to control wt.
- As rig drilled to @3,627' during connection, rig reamed stand, and on the way down @3,619' bit hydrostatically stuck.
- Made decision to work pipe as rig worked pipe in order to free, with no success.
- Pumped 30bbl of fresh water w/20gallon of diesel to try and help free it, with no success as rig continued to work pipe.
- Rig picked up surface jars, after making up jars, they had minimal success due to not being able to adjust jars, made decision to lay them down.
- After laying down tools, rig continued to work pipe as orders were made to bring out diff fishing equipment.
- As rig worked pipe, pump truck arrived pumping 5bbls of acid down hole to aide in freeing bit continued to work pipe w/ success coming free.
- Rig continued working pipe as they pumped several high vis salt gel sweeps to clean hole.
- Rig circulated hole clean in preparation to pooh.
- After circulating hole clean, rig pooh to c/o bit with BHA, tripped back in to shoe.
- Worked on gas buster being unable to circulate through it, so they removed plate and cleaned it out.
- Rig continued to TIH after clean out, washing to bottom F/3,149' and continuing to drill ahead as rig nears td.
- Rig drilled ahead while continued to dump heavy fluid to keep mud wt down.
- As rig drilled to 4,215', reported pulling of bottom and circulating to change out rotating head.
- After changing it out, got back to bottom as rig drilled to @5,045' and reported partial losses right into 100% losses.
- Rig continued to dry drill as returns were regained as it drilled ahead.
- Rig td @5,100', began circulating pumping high vis salt gel sweeps.
- Once hole was clean, began pooh for short trip up to @3,400', and are having to back ream after 2nd stand pulled.
- After completing pooh @3,400' for short trip, began running back in hole, having to wash back to bottom due to tight hole.
- Two stands from bottom, rig shut down to repair rig and reported after getting back to bottom, shut down to tighten chain in drum.
- Rig pumped sweep and circulated, spotting pill on bottom to begin laying down drill pipe.
- Spotted hi vis pill on bottom, pulling out 5 stands to begin LDDP with lay down machine.

- After LDDP, rig began running 9 5/8" casing, setting @5,100' zero returns also setting separate dv tools @2,679' & 4,109' followed both with packers in case dv tools fail.
- Circulated on bottom while getting cementers ready. After spacer, cementers pumped 1st stage of 170sk lead, circulating capacity.
- Dropped bomb to set packer and open dv tool, cir bottoms up. Cementers began pumping 2nd 220sk lead and 270sk tail stage, reporting getting back 40bbls of cement.
- Repeating process while opening dv tool FOR third stage.
- On 3rd stage, pumped lead 300sk and tail 380sk tail, not circulating cement, bumping plug @12:22.
- DSM will run casing bond log to determine where cement reached to surface, making decision to move, get workover rig and perf to finish job.

P-15 SWD Completion Report

AOL 7:00 am. The forklift AOL at 7:55, WSU at 9:00 along with the rest of the equipment. MIRU WSU, RU, pipe racks, laydown mach. Rack and tally 165 joints of 2 7/8" L-80 tbg and 10 4 1/8" DC's. NU 11" hydraulic BOP. Loaded the RU pit with 120 BBLS FW and 120 BBLS FW in the frac tank. Upon inspection of the bit we determined it should be replaced. New 8 5/8" bit on location, RIH W/ bit, bit sub, 10 - 4 1/8" DC's and 11 joints 2 7/8" WS. At 5:00 lightning was striking within 10 miles, shut down for 20 min, the storm did not pass. Shut in the well, SDFN.

Held safety meeting. Continue RIH W/ bit and tbg. Tagged at 2703' Pick up power swivel and broke circulation. Washed down to 2720' to the DV tool. Drilled for 7 hours W/ 3-4 points on the bit and 110 RPM. Got cement and rubber pieces back and some sand with aluminum shavings. Fell through the DV tool at 6:00 pm. Circulated bottoms up and picked up 1 joint and ran down and back up without tagging or dragging. Pulled the swivel up into the derick with the tbg valve shut and shut in the well. SDFN

AOL 7:00 held safety meeting. RIH to tag at 4073' pick up power swivel, broke circulation and started drilling down. The pump ran out of diesel, someone may have stolen @ 80 gallons out of the pump overnight. Pump running again and drilling at 9:00 drilled for @ 9 hours and made it down to 4096'. The bit started bouncing and not torqueing. Circulated bottoms up, shut in the well, SDFN at 7:00 pm

Held safety meeting. POOH for bit trip. Found a large chunk of rubber in the bit. RIH W/ same bit, Continue drilling on the second DV tool at 11:00. By 2:30 we had made 2', by 4:30 we had made another 1'. The bit started plugging off, switched to conventional circulating, tried several different weights in the bit and several different speeds on the swivel. With 20 points on the bit and 140 RPB we started making better progress. At 6:10 we fell through the DV tool. Picked up tbg going in, tagged at 5042' Broke circulation and started drilling out the FC Made @ 2' and started getting back wet cement. Circulated clean pulled 4 joints, shut in the well, SDFN at 9:45 pm

Held safety meeting, Broke circulation and washed down to FC at 5010'. Drilled through FC at 5014'. Washed down to 5036' the swivel broke down, swivel repaired and back to drilling. Drilled down to 5083', pick up 3' and circulate 550 BBLS. POOH W/ tbg and collars laying down. MIRU WL, log well from TD up to 1000'. RDMO WL. Shut in the well, SDFN.

Held safety meeting. Rack and tally 5 1/2" IPC tbg. Wait on WL truck. Perforate the 9 5/8" from 5050' to 4202' (157' total). RDMO WL truck. Shut in the well, SDFN. Perforation depths are as follows: 4202'-4212', 4216'-4228', 4236'-4248', 4253'-4260', 4284'-4288', 4305'-4315', 4352'-4364', 4374'-4380', 4396'-4416', 4431'-4439', 4600'-4606', 4708'-4710', 4738'-4742', 4770'-4790', 4825'-4829', 5030'-5050'.

Held safety meeting. MIRU casing crew and vac trucks. RIH W/ 9 5/8" casing packer from Hudson Packers with 1 joint below and a pump out plug on the bottom, ran 98 joints above the packer torque each joint to 2200. Set tbg slips in the wellhead with the string weight on the slips (78,000). Pressure test the tbg to 1000 psi for 15 min, good test no leak off. Pumped out the plug and pumped 10 BBLS to ensure the plug was gone with 0 psi. Shut in the well, SDFN.

Held safety meeting. Circulate 250 bbls down the casing. Set 9 5/8" Casing packer with 48,000 on the packer and 22,000 on the tubing slips. NU secondary wellhead, test 9 5/8" to 560 psi for 30 min, good test, no leak off. Clean RU tank/empty all tanks on location. Test casing to 560 psi good test, pumped down the tbg at 850 psi with no gain in pressure on the casing, casing pressure at 0 psi. Shut in the well, SDFN. Will rig down in the morning and return well to owner.

Company: **Rice Operating Company**
Field: **Northern Lea Disposal**
Cty/Blk/Par: **Lea, NM**
Well Name: **SWD P-15 # 1**
Rig: **Norton # 7**

Job Number: **1**
Magnetic Decl.: **6.53**
Grid Corr.: **0.60**
Total Survey Corr.: **5.93**
Target Info: **SanAndres**

Minimum Curvature
Proposed Azimuth: **0.00**
Depth Reference: **RKB**
Date Printed: **09/30/20**

TARGET INFORMATION
TVD **5100.00** **CSG.**
VS **0.00**
N/S **0.00**
E/W **0.00**

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth(ft)	TVD (ft)	VS (ft)	Coordinates N/S (ft)		Coordinates E/W (ft)		Closure Dist (ft)	Closure Ang (°)	DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')	INC NEEDED	DIRECTION NEEDED	DIST TO TARGET
0	tie In	0.00	0.00	0.00		0.00	0.00	0.00	S	0.00	W	0.00	0.00						
1	Teledrift	186.00	0.40		186	186.00	0.65	0.65	N	0.00	E	0.65	0.00	0.22	0.2	0.0	0.01	180.0	0.65
2	Wire	366.00	0.10		180	366.00	1.43	1.43	N	0.00	E	1.43	0.00	0.17	-0.2	0.0	0.02	180.0	1.43
3	Teledrift	599.00	0.00		233	599.00	1.64	1.64	N	0.00	E	1.64	0.00	0.04	0.0	0.0	0.02	180.0	1.64
4	Teledrift	916.00	0.20		317	916.00	2.19	2.19	N	0.00	E	2.19	0.00	0.06	0.1	0.0	0.03	180.0	2.19
5	Teledrift	1106.00	0.10		190	1105.99	2.69	2.69	N	0.00	E	2.69	0.00	0.05	-0.1	0.0	0.04	180.0	2.69
6	Teledrift	1292.00	0.10		186	1291.99	3.01	3.01	N	0.00	E	3.01	0.00	0.00	0.0	0.0	0.05	180.0	3.01
7	Teledrift	1597.00	0.30		305	1596.99	4.08	4.08	N	0.00	E	4.08	0.00	0.07	0.1	0.0	0.07	180.0	4.08
8	Teledrift	1809.00	0.30		212	1808.99	5.19	5.19	N	0.00	E	5.19	0.00	0.00	0.0	0.0	0.09	180.0	5.19
9	Teledrift	2063.00	0.30		254	2062.99	6.52	6.52	N	0.00	E	6.52	0.00	0.00	0.0	0.0	0.12	180.0	6.52
10	Teledrift	2317.00	1.70		254	2316.94	10.95	10.95	N	0.00	E	10.95	0.00	0.55	0.6	0.0	0.23	180.0	10.95
11	Teledrift	2570.00	1.90		253	2569.82	18.90	18.90	N	0.00	E	18.90	0.00	0.08	0.1	0.0	0.43	180.0	18.90
12	Teledrift	2697.00	1.90		127	2696.75	23.11	23.11	N	0.00	E	23.11	0.00	0.00	0.0	0.0	0.55	180.0	23.11
13	Teledrift	2824.00	1.40		127	2823.69	26.77	26.77	N	0.00	E	26.77	0.00	0.39	-0.4	0.0	0.67	180.0	26.77
14	Teledrift	3077.00	1.20		253	3076.63	32.51	32.51	N	0.00	E	32.51	0.00	0.08	-0.1	0.0	0.92	180.0	32.51
15	Teledrift	3330.00	1.10		253	3329.58	37.58	37.58	N	0.00	E	37.58	0.00	0.04	0.0	0.0	1.22	180.0	37.58
16	Teledrift	3646.00	0.60		316	3645.54	42.27	42.27	N	0.00	E	42.27	0.00	0.16	-0.2	0.0	1.66	180.0	42.27
17	Teledrift	3900.00	0.50		254	3899.53	44.71	44.71	N	0.00	E	44.71	0.00	0.04	0.0	0.0	2.13	180.0	44.71
18	Teledrift	4153.00	0.80		253	4152.51	47.58	47.58	N	0.00	E	47.58	0.00	0.12	0.1	0.0	2.87	180.0	47.58
19	Teledrift	4407.00	0.90		254	4406.48	51.35	51.35	N	0.00	E	51.35	0.00	0.04	0.0	0.0	4.23	180.0	51.35
20	Teledrift	4661.00	0.80		254	4660.46	55.11	55.11	N	0.00	E	55.11	0.00	0.04	0.0	0.0	7.15	180.0	55.11
21	Teledrift	4914.00	0.70		253	4913.43	58.43	58.43	N	0.00	E	58.43	0.00	0.04	0.0	0.0	17.39	180.0	58.43
22	Proj.	5100.00	0.70		186	5099.42	60.70	60.70	N	0.00	E	60.70	0.00	0.00	0.0	0.0	89.45	180.0	60.70
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Field: **Northern Lea Disposal**
Cty/Blk/Par: **Lea, NM**
Well Name: **SWD P-15 # 1**
Rig: **Norton # 7**

Job Number: **1**
Magnetic Decl.: **6.53**
Grid Corr.: **0.60**
Total Survey Corr.: **5.93**
Target Info: **SanAndres**

Minimum Curvature
Proposed Azimuth: **0.00**
Depth Reference: **RKB**
Date Printed: **09/30/20**

TARGET INFORMATION
TVD **5100.00** **CSG.**
VS **0.00**
N/S **0.00**
E/W **0.00**

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth(ft)	TVD (ft)	VS (ft)	Coordinates N/S (ft)	Coordinates E/W (ft)	Closure Dist (ft)	Closure Ang (°)	DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')	INC NEEDED	DIRECTION NEEDED	DIST TO TARGET
41																	
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VS	**0.00**	
N/S	**0.00**	
E/W	**0.00**	

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth(ft)	TVD (ft)	VS (ft)	Coordinates N/S (ft)	Coordinates E/W (ft)	Closure Dist (ft)	Closure Ang (°)	DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')	INC NEEDED	DIRECTION NEEDED	DIST TO TARGET
80																	
81																	
82																	
83																	
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DownHole SAT™ Water Analysis Report

French Creek Software

SYSTEM IDENTIFICATION

Rice Operating
P-15 Formation Sample
Oil-in-Water 5 ppm

Sample ID#: 0
ID:

Sample Date: 09-29-2020 at 1553
Report Date: 09-29-2020

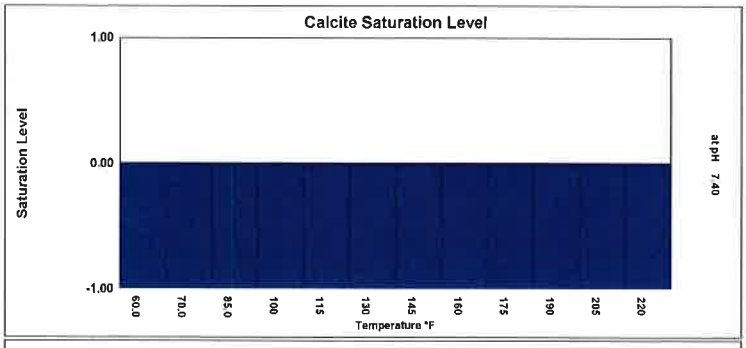
WATER CHEMISTRY

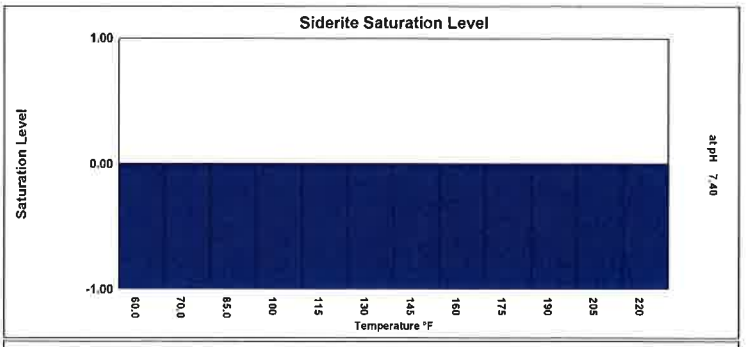
CATIONS		ANIONS	
Calcium(as Ca)	3200	Chloride(as Cl)	74070
Magnesium(as Mg)	907.00	Sulfate(as SO_4)	1569
Barium(as Ba)	1.50	Dissolved CO_2(as CO_2)	0.00
Strontium(as Sr)	77.00	Bicarbonate(as HCO_3)	0.00
Sodium(as Na)	43037	H_2S (as H_2S)	0.00
Potassium(as K)	988.00	Boron(as B)	13.00
Lithium(as Li)	4.90		
Iron(as Fe)	0.00		
Manganese(as Mn)	0.00	**PARAMETERS**	
		Temperature(°F)	77.00
		Sample pH	7.00
		Conductivity	175239
		T.D.S.	121239
		Resistivity	5.71
		Sp.Gr.(g/mL)	1.08
Zinc(as Zn)	0.00		

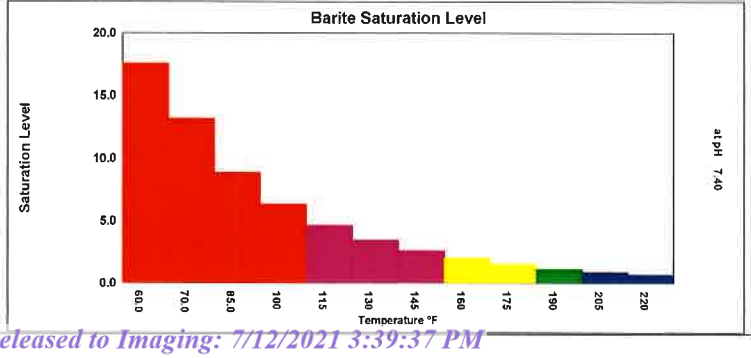
SCALE AND CORROSION POTENTIAL

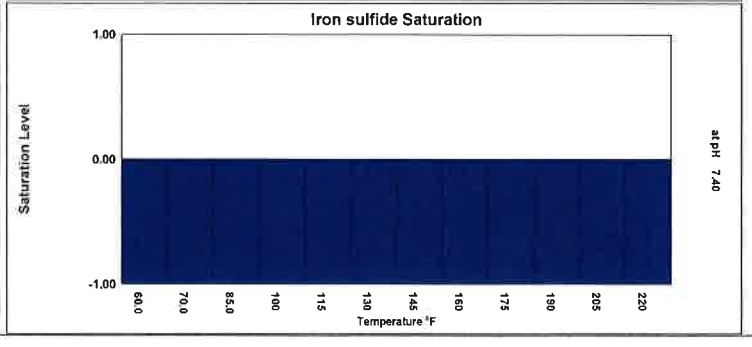
Temp. (°F)	Press. (psig)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
60.00	0.00	0.00	-0.0455	0.463	-347.20	0.705	-148.99	17.52	0.837	0.458	-54.23	0.00	-0.379	0.00	-0.215	0.00	0.00
70.00	0.30	0.00	-0.0421	0.447	-358.11	0.659	-177.67	13.11	0.820	0.435	-58.75	0.00	-0.352	0.00	-0.287	0.00	0.00
85.00	23.80	0.00	-0.0380	0.441	-351.68	0.604	-214.86	8.85	0.788	0.415	-62.54	0.00	-0.317	0.00	-0.429	0.00	0.00
100.00	47.30	0.00	-0.0346	0.456	-320.17	0.562	-243.32	6.28	0.747	0.407	-63.85	0.00	-0.288	0.00	-0.622	0.00	0.00
115.00	70.80	0.00	-0.0319	0.492	-270.47	0.586	-213.77	4.62	0.696	0.403	-64.30	0.00	-0.264	0.00	-0.876	0.00	0.00
130.00	94.30	0.00	-0.0297	0.549	-209.79	0.624	-177.04	3.43	0.629	0.397	-65.25	0.00	-0.243	0.00	-1.20	0.00	0.00
145.00	117.80	0.00	-0.0280	0.635	-144.54	0.659	-147.82	2.57	0.542	0.389	-66.66	0.00	-0.226	0.00	-1.59	0.00	0.00
160.00	141.30	0.00	-0.0265	0.755	-80.08	0.690	-124.66	1.95	0.431	0.380	-68.50	0.00	-0.211	0.00	-2.04	0.00	0.00
175.00	164.80	0.00	-0.0254	0.924	-20.26	0.718	-106.42	1.48	0.289	0.369	-70.78	0.00	-0.199	0.00	-2.56	0.00	0.00
190.00	188.30	0.00	-0.0246	1.16	32.54	0.742	-92.20	1.14	0.108	0.358	-73.49	0.00	-0.188	0.00	-3.12	0.00	0.00
205.00	211.80	0.00	-0.0240	1.48	77.31	0.762	-81.34	0.881	-0.120	0.345	-76.63	0.00	-0.179	0.00	-3.74	0.00	0.00
220.00	235.30	0.00	-0.0243	1.90	114.11	0.767	-79.39	0.675	-0.426	0.327	-82.13	0.00	-0.174	0.00	-4.46	0.00	0.00
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $\{Ca\}\{CO_3\}/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.









DownHole SAT(tm)

SURFACE WATER CHEMISTRY INPUT

Rice Operating
Oil-in-Water 5 ppm

P-15 Formation Sample

Report Date: 09-29-2020
Sampled: 09-29-2020 at 1553
Sample ID:

CATIONS		ANIONS	
Calcium (as Ca)	3200	Chloride (as Cl)	74070
Magnesium (as Mg)	907.00	Sulfate (as SO_4)	1569
Barium (as Ba)	1.50	Dissolved CO_2 (as CO_2)	0.00
Strontium (as Sr)	77.00	Bicarbonate (as HCO_3)	0.00
Sodium (as Na)	43037	H_2S (as H_2S)	0.00
Potassium (as K)	988.00	Boron (as B)	13.00
Lithium (as Li)	4.90		
Iron (as Fe)	0.00		
Manganese (as Mn)	0.00		
Zinc (as Zn)	0.00		

PARAMETERS

Calculated T.D.S.	121239
Molar Conductivity	175239
Resistivity	5.71
Sp.Gr.(g/mL)	1.08
Pressure(psia)	15.00
Temperature (^oF)	77.00
pH	7.00

CORROSION RATE PREDICTION

CO_2 - H_2S Rate(mpy)	0.00

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

DownHole SAT(tm)

SURFACE WATER
DEPOSITION POTENTIAL INDICATORS

Rice Operating
Oil-in-Water 5 ppm

P-15 Formation Sample

Report Date: 09-29-2020
Sampled: 09-29-2020 at 1553
Sample ID:

SATURATION LEVEL	
Calcite ($CaCO_3$)	0.00
Aragonite ($CaCO_3$)	0.00
Witherite ($BaCO_3$)	0.00
Strontianite ($SrCO_3$)	0.00
Calcium oxalate (CaC_2O_4)	0.00
Magnesite ($MgCO_3$)	0.00
Anhydrite ($CaSO_4$)	0.443
Gypsum ($CaSO_4*2H_2O$)	0.632
Barite ($BaSO_4$)	10.86
Celestite ($SrSO_4$)	0.424
Fluorite (CaF_2)	0.00
Calcium phosphate	0.00
Hydroxyapatite	0.00
Silica (SiO_2)	0.00
Brucite ($Mg(OH)_2$)	< 0.001
Magnesium silicate	0.00
Iron hydroxide ($Fe(OH)_3$)	0.00
Strengite ($FePO_4*2H_2O$)	0.00
Siderite ($FeCO_3$)	0.00
Halite (NaCl)	0.0494
Thenardite ($Na2SO_4$)	< 0.001
Iron sulfide (FeS)	0.00

MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite ($CaCO_3$)	-0.0400
Aragonite ($CaCO_3$)	-0.0432
Witherite ($BaCO_3$)	-24.75
Strontianite ($SrCO_3$)	-1.40
Calcium oxalate (CaC_2O_4)	-0.0204
Magnesite ($MgCO_3$)	-0.115
Anhydrite ($CaSO_4$)	-357.59
Gypsum ($CaSO_4*2H_2O$)	-195.34
Barite ($BaSO_4$)	0.806
Celestite ($SrSO_4$)	-60.75
Fluorite (CaF_2)	-4.74
Calcium phosphate	>-0.001
Hydroxyapatite	-340.23
Silica (SiO_2)	-34.62
Brucite ($Mg(OH)_2$)	0.00321
Magnesium silicate	-102.74
Iron hydroxide ($Fe(OH)_3$)	-0.206
Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	-0.334
Halite (NaCl)	-137405
Thenardite ($Na2SO_4$)	-80244
Iron sulfide (FeS)	-0.348

SIMPLE INDICES	
Langelier	N/A
Ryznar	N/A
Puckorius	N/A
Larson-Skold Index	N/A
Stiff Davis Index	N/A
Oddo-Tomson	N/A

BOUND IONS	TOTAL	FREE
Calcium	3200	3049
Barium	1.50	1.50
Carbonate	0.00	0.00
Phosphate	0.00	0.00
Sulfate	1569	685.39

OPERATING CONDITIONS

Temperature (^oF)	77.00
Time(mins)	3.00

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

District I
1625 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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

ACKNOWLEDGMENTS

Operator: RICE OPERATING COMPANY 122 W Taylor Hobbs, NM 88240	OGRID: 19174
	Action Number: 25288
	Action Type: [C-105] Well (Re)Completion (C-105)

ACKNOWLEDGMENTS

☐	I hereby certify that the required Water Use Report has been, or will be, submitted for this wells completion.
☐	I hereby certify that the required FracFocus disclosure has been, or will be, submitted for this wells completion.

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CONDITIONS

Operator:	OGRID:
RICE OPERATING COMPANY 122 W Taylor Hobbs, NM 88240	19174
	Action Number: 25288
	Action Type: [C-105] Well (Re)Completion (C-105)

CONDITIONS

Created By	Condition	Condition Date
pgoetze	None	7/12/2021