

**NM OIL CONSERVATION
ARTESIA DISTRICT**

DEC 17 2018

Form 3160-4
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No.
NMNM112273

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.

8. Lease Name and Well No.
COLLINSOCOPY FEDERAL 1

9. API Well No.
30-015-33758

10. Field and Pool or Exploratory
BURTON PLAT DELAWARE SWD Delaware
96100

11. Sec., T., R., M., on Block and
Survey or Area Sec 7 T20S R30E

12. County or Parish
EDDY COUNTY

13. State
NM

17. Elevations (DF, RKB, RT, GL)*
3328 (RKB)

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion ☐ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Zones ☐ Hydraulic Fracturing
Other: _____

2. Name of Operator
OWL SWD OPERATING LLC

3. Address
8214 WESTCHESTER DRIVE SUITE 850, DALLAS, TX 75255

3a. Phone No. (Include area code)
214-292-2011

4. Location of Well (Report location clearly and in accordance with Federal requirements)*
At surface Sec 7 T20S R30E 1095FSL 430FWL

At top prod. interval reported below

At total depth

14. Date Spudded
12/18/2004

15. Date T.D. Reached
02/06/2005

16. Date Completed **8/30/2018**
☐ D & A ☒ Ready to Prod.

18. Total Depth: MD 12400
TVD 12400

19. Plug Back T.D.: MD 5175
TVD 5175

20. Depth Bridge Plug Set: MD
TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)

22. Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit report)
Directional Survey? ☒ No ☐ Yes (Submit copy)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Shurry Vol. (BBL)	Cement Top*	Amount Pulled
26	20"	94 H 40	315'	315'	315'	750 type NA	0	0	None
17 1/2	13 3/8"	54.5 J 55	1783'	1783'	1783'	1350 type NA	0	0	None
12 1/4	8 5/8	32 J 55	3425'	3425'	3425'	1400 Type NA	0	0	None
7 7/8	5 1/2	17 P105	12400'	12400'		2100 Type NA	2000	2000	None

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
3 1/2"	3725	3725						

25. Producing Intervals

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) Delaware	3310		3752- 5140	0.42	1962	
B)						
C)						
D)						

27. Acid, Fracture, Treatment, Cement Squeeze, Post hydraulic fracturing chemical disclosures on FracFocus.org

Depth Interval	Amount, Type of Material and Date of Chemical Disclosure upload on FracFocus.org
3752'-5140'	238 bbls 15% HLI

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API.	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			→						

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API.	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			→						

*(See instructions and spaces for additional data on page 2)

Pending BLM approvals will
subsequently be reviewed
and scanned

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API.	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API.	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

29. Disposition of Gas (Solid, used for fuel, vented, etc.)

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top
					Meas. Depth

32. Additional remarks (include plugging procedure).

33. Indicate which items have been attached by placing a check in the appropriate boxes:

- ☐ Electrical/Mechanical Logs (1 full set req'd.)
 ☐ Geologic Report
 ☐ DST Report
 ☐ Directional Survey
☐ Sundry Notice for plugging and cement verification
 ☐ Core Analysis
 ☐ Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print) Matthew Hoffman Title Workover & Completions Manager
 Signature Matthew Hoffman Date 12/12/18

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Workover Summary

Company: OWL SWD Operating

Well: Collinsoscopy Fed SWD #1

Workover: Well Conversion to SWD

Consultants: Integrated Petroleum Technologies

8/6/2018

Pull tested anchors on location (good test).

8/8/18

Spotted rig, frac tanks and equipment.

8/9/18

Spotted pump, tested & nipple up BOP's. Secured well.

8/10/18

Ran in hole with retrieval tool and pulled out of hole with retrievable bridge plug (set at 2686'). Secured well.

8/11/18

Made bit and scraper run down to the CIBP at 3881' but the CIBP was not found in the well. Pulled out of hole with bit and scraper. Ran in hole with test packer to 3550'. Annular held 900 psi, tubing pressured to 1500 psi then dropped to 0 psi. Pulled out of hole with test packer. Made bit and scraper run to 5327' and tagged 3 times. Circulated 9.9# produced water to clean hole. Collected 40 bbl of oil back at surface at the end of the day. Secured well.

8/13/18

Spoke with BLM who wanted to drill 50' past the tagged point at 5327' to see if there was good cement. Pulled out of hole with bit & scraper. Made up and ran in hole with retrievable bridge plug and packer. Tested to 2000 psi between 4872' – 5000' (good test). Moved packer to test between 4809' – 5000' and established injection rate of 4 BPM @ 1300 psi. Released and pulled packer & bridge plug up hole. Tested to 2000 psi between 3540' – 4809' (good test). Release packer to test between 3446' – 4809' and established injection rate of 3 BPM @ 750 psi. Spotted sand on top of retrievable bridge plug at 4809', pulled test packer and topped off well with produced water. Secured well.

8/14/18

Set cast iron cement retainer at 3446' and pressure tested casing to 1000 psi (good test). Stung into cement retainer and established injection rate of 2 BPM @ 800 psi. Pumped 200 sks of Class C neat cement @ 2.5 BPM and displace tubing with 20.5 bbls of fresh water. Reverse circulate tubing. Secured well.

8/15/18

Stung into cement retainer at 3446' and pressure tested to 1000 psi, but pressure dropped to 600 psi in 10 minutes. Established injection rate of 1.0 BPM @ 3200 psi. Pumped 50 sks of Class C neat cement and hesitation squeezed last 5 bbls @ 1230 psi for 10 minutes. Cement successfully held 800 psi. Reverse circulated tubing. Secured well.

8/16/18

Pressure tested squeeze and noticed leak off at cement retainer. Pulled out of hole. Made up and ran in hole with bit and collars. Drilled out cement retainer at 3446' to the top of the perfs at 3500' and did not find cement. Established injection rate of 1.0 BPM @ 2300 psi. Secured well.

8/17/18

Pulled out of hole with bit and collars. Set cast iron cement retainer at 3444'. Pressure tested above retainer at 1000 psi (good test) and established injection rate through retainer at 1.0 BPM and 2300 psi. Squeezed perfs with 50 sks of Class C cement containing additive 10% C-15 for water loss. The last 3 bbls were staged to achieve a final squeeze pressure of 1520 psi. Circulated tubing and pulled out of hole. Made up bit and collars and ran in one joint. Secured well.

8/18/18

Ran in hole with bit and collars and tagged cement at 3436'. Pick up to 3431' and circulate. Drilled cement and shut down due to weather. Secured well.

8/19/18

Drilled retainer at 3444' and cement down to the top of the retrievable bridge plug set at 4809'. Pressure tested casing to 1050 psi and observed 20 psi loss over 20 minutes (good test). Pulled out of hole with bit and collars. Ran retrieval tool, washed over bridge plug, released it and pull out of the hole. Ran in hole with bit and collars and reamed out bridges from 5327' – 6037' until solid cement was found at 6037'. Reverse circulate tubing. Secured well.

8/20/18

Pulled out of hole with bit and collars. Ran in hole with tubing and set 25 sk balanced cement plug from 5800' – 6037'. Circulated tubing and pulled tubing to 5620'. Waited for cement to set. Tagged top of cement at 5801'. Pulled tubing to 5410' and set a 25 sk balanced cement plug from 5175' – 5410'. Circulated and pulled tubing. Secured well.

8/21/18

Ran in and tagged cement at 5175'. Pulled tubing out of hole. Rigged up wireline and ran in hole with CBL and logged out. Rigged up charges and ran in hole to perforate intervals between 4775' – 5140' shooting 4 spf. Secured well.

8/22/18

Perforated intervals between 3752' – 4688' shooting 4 spf. Ran in hole and set PermaPak packer at 3725'. Released wireline. Made up packer seal assembly on 3.5" internal coated tubing, ran in hole, stung into packer, spaced out with half of the string weight down on the packer, pumped packer fluid, stung seal assembly into PermaPak packer, landed hanger and tested backside. Nipped down BOP, nipped up wellhead and valves. Secured well.

8/23/18

Attempted multiple MIT pressure tests but annular failed to hold pressure. Pulled slips and pulled 40k into packer and slacked off 28k; repeated pull & slack twice and let sit for 10 minutes. Applied 2700 psi pressure to the annulus and established injection rate of 1.0 BPM. Notified office. Nipped down wellhead, nipped up and tested BOP. Released seal assembly and stood back tubing. Made up and ran in hole with mechanical test packer and pressure tested from 3486' to surface (good test). Released test packer and reset at 3722' and pressure tested from 3722' to surface (good test). Secured well.

8/24/18

Pulled out of hole and laid down test packer. Ran in and set retrievable bridge plug at 3547'. Ran in and set cement retainer at 3486'. Pressure tested lines, stung into cast iron cement retainer and squeezed the casing leak at the with 60 sks of Class C neat cement with 10% C-15 additive. Achieved 4000 psi squeeze and held pressure. Left 4000 psi on the squeeze, stung out, circulated tubing and pulled out of hole. Secured well.

8/25/18

Ran in hole with bit and collars and tagged cement at 3475'. Drilled cement and part of the cement retainer at 3486' when the bit lost a cone. Pulled out of hole with bit and collars. Made up and ran back in with mill and collars to mill cone and retainer. Circulated hole clean and pulled out of hole. Made up and ran in hole with new bit and collars. Only made 6". Secured well.

8/26/18

Pulled out of hole with bit and collars, rigged up sand line and magnet. Made 3 runs and fished out small pieces of cone and a large amount of cast iron until magnet runs came back clean. Rigged down sand line and made up bit and collars and ran in hole. Drilled on the cement retainer at 3486' (only made 4"). Prepared for bit trip. Secured well.

8/27/18

Pulled out of hole with bit and collars. Waited on new bit and stabilizers. Secured well.

8/28/18

Made up a new bit and stabilized BHA. Drilled out cement retainer at 3486' and cement. Pulled out of hole with bit and stabilized BHA. Made up and ran in hole with a test packer. Set test packer at 3490' and tested the squeezed perms between 3500' – 3508'. Both the tubing and annulus tests were good at 500 psi with no pressure bleed off. Released test packer and tested against the retrievable bridge plug at 3547'. Pressure tested from 3547' to surface with 560 psi; lost 20 psi over 30-minute test (good test). Bled off pressure and secured well.

8/29/18

Pulled test packer out of the hole. Ran in hole, released the bridge plug set at 3547' and pulled it out of the hole. Made up and ran in hole with anchor seal assembly on 3.5" coated tubing and stung into packer at 3725'. Spaced out, pumped packer fluid, stung seals back into packer, land hanger and tested backside. Nipped down BOP and nipped up wellhead and valves. Pressured annulus to 550 psi (good test). Secured well.

8/30/18

Performed MIT test at 590 psi, lost 15 psi over 30 minutes (good test). Witnessed by: Gilbert Cordero NMOCD Dist 2. Rigged down and demob. Spotted acid trucks and tested lines. Opened well and burst disk at 2507 psi.

Established an injection rate into the formation.

Acidized with 238 bbl acid at 12 BPM & 2280 psi.

Pumped 50 bbls of gel water at 12 BPM & 2275 psi.

Pumped 238 bbl of acid at 12 BPM & 2282 psi.

Pumped 50 bbls of gel water at 12 BPM & 2278 psi.

Pumped 238 bbl of acid at 12 BPM & 2270 psi.

Pumped 50 bbls of gel water at 12 BPM & 2280 psi.

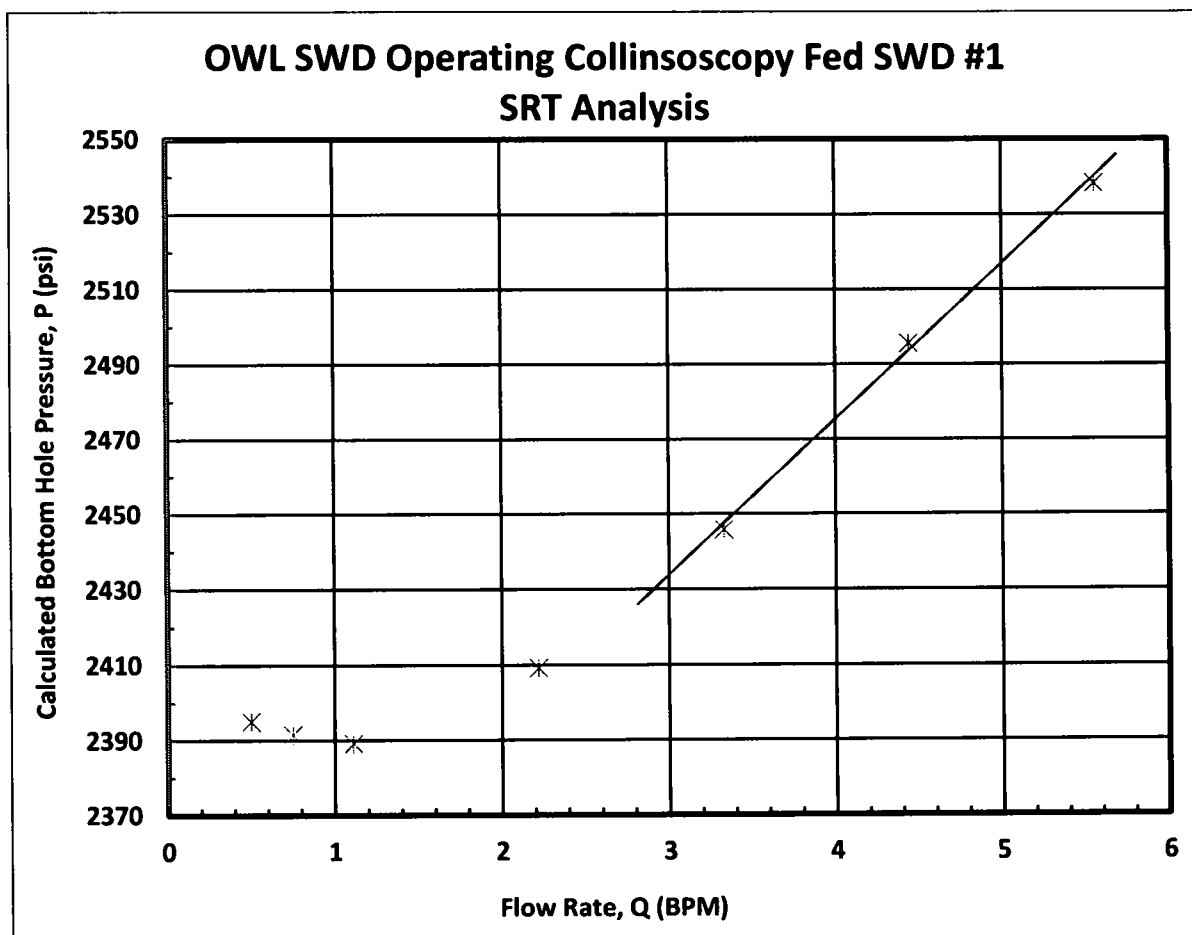
Pumped 238 bbl of acid at 2 BPM & 2276 psi (decrease rate to bottom of tank).

Pumped 500 bbls of produced water to flush at 12 BPM with a startup pressure of 1645 psi and end pressure of 1915 psi, ISIP 743 psi, 5-minute 741 psi, 10-minute 737 psi. Conducted step rate test at 0.5, 0.75, 1.11, 2.22, 3.33, 4.44 & 5.56 BPM. ISIP: 726 psi, 5-minute 712 psi. Pumped a total of 537 barrels of 9.8 ppg produced water during the SRT. Secured well.

8/31/18

Cleaned up location.

The 7-step Step Rate Test was performed after the acidizing job to identify the fracture gradient. However, the rates were not high enough to produce pressures above the fracture gradient, and thus, a break over point was not identified.



The wellhead pressures were recorded in 5-minute intervals throughout each 30-minute rate step. The following illustrates the corresponding pump rates and wellhead pressures witnessed.

Pumped a total of 537 barrels of produced water during the SRT.

5-Minute Recorded Wellhead Pressures (psi) for Each SRT Pump Rate							
Rate (bbl/min)	Time (minutes)						
	0	5	10	15	20	25	30
0.5	716	713	712	711	711	710	709
0.75	713	712	712	711	709	708	706
1.11	715	713	712	713	713	712	713
2.22	745	752	755	757	760	761	763
3.33	820	824	826	828	839	836	839
4.44	919	922	924	929	934	930	936
5.56	1045	1036	1046	1046	1015	1004	997

Perforations

COLLINSOSCOPY FED SWD #1

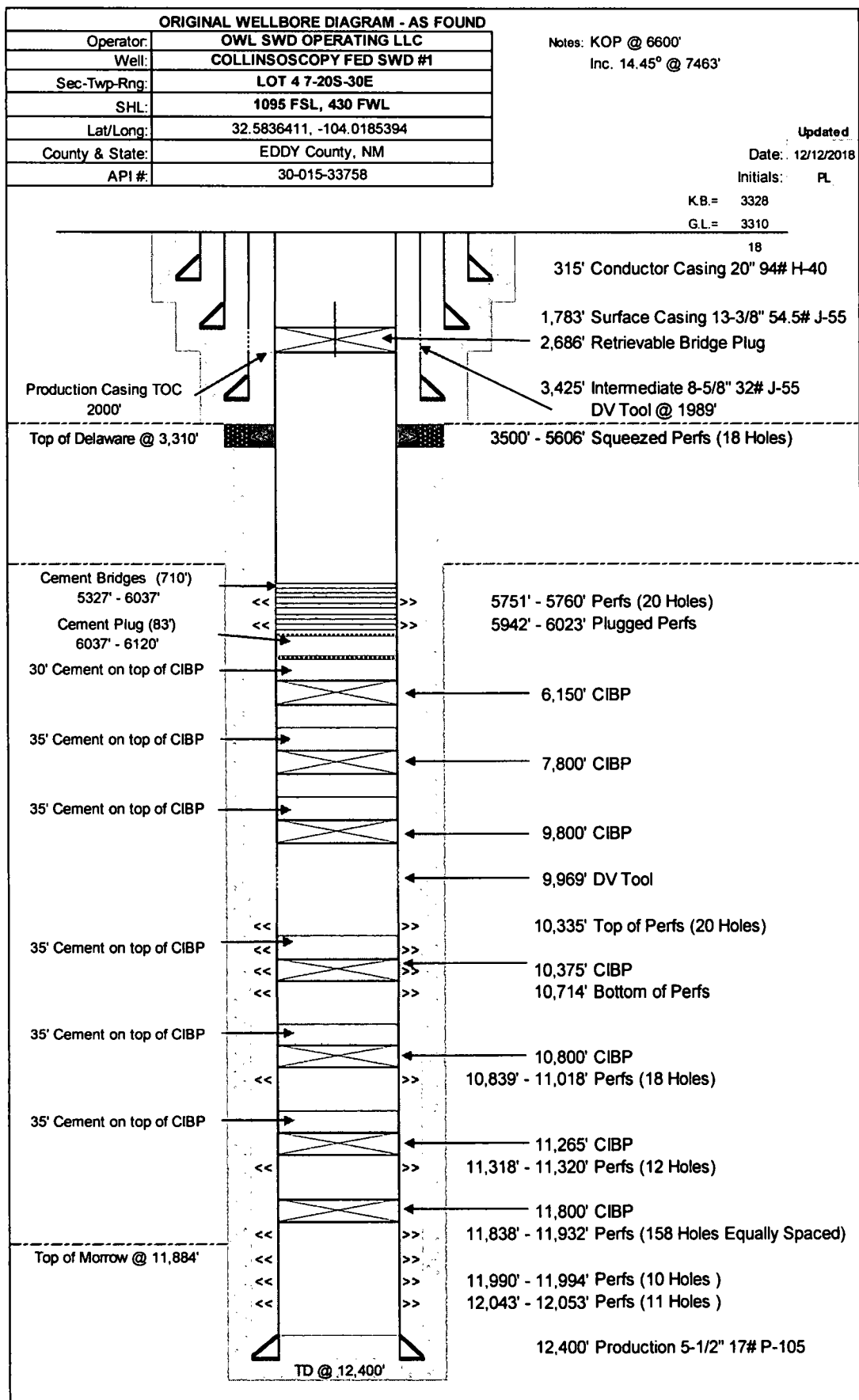
Perforation Schedule

Interval	Top Depth	BTM Depth	Net Pay
1	5,136'	5,140'	4'
2	5,116'	5,126'	10'
3	5,088'	5,093'	5'
4	5,066'	5,076'	10'
5	5,040'	5,050'	10'
6	5,016'	5,026'	10'
7	4,998'	5,008'	10'
8	4,986'	4,992'	6'
9	4,962'	4,972'	10'
10	4,942'	4,948'	6'
11	4,900'	4,920'	20'
12	4,888'	4,892'	4'
13	4,880'	4,886'	6'
14	4,872'	4,876'	4'
15	4,860'	4,870'	10'
16	4,836'	4,856'	20'
17	4,822'	4,830'	8'
18	4,812'	4,814'	2'
19	4,788'	4,798'	10'
20	4,775'	4,780'	5'
21	4,678'	4,688'	10'
22	4,638'	4,646'	8'
23	4,604'	4,612'	8'
24	4,590'	4,598'	8'
25	4,544'	4,564'	20'
26	4,490'	4,510'	20'
27	4,452'	4,472'	20'
28	4,410'	4,430'	20'
29	4,390'	4,398'	8'
30	4,354'	4,364'	10'
31	4,318'	4,328'	10'
32	4,280'	4,300'	20'
33	4,243'	4,247'	4'
34	4,222'	4,232'	10'
35	4,204'	4,214'	10'
36	4,168'	4,172'	4'
37	4,102'	4,116'	14'
38	4,088'	4,098'	10'
39	4,063'	4,068'	5'
40	4,024'	4,034'	10'
41	4,005'	4,008'	3'
42	3,990'	4,000'	10'
43	3,956'	3,960'	4'
44	3,936'	3,944'	8'
45	3,920'	3,924'	4'
46	3,888'	3,892'	4'
47	3,860'	3,870'	10'
48	3,836'	3,846'	10'
49	3,818'	3,826'	8'
50	3,768'	3,788'	20'
51	3,752'	3,762'	10'

TOTAL NET PAY (feet) 490'

TOTAL HOLES (4 SPF) 1960

Original Wellbore Diagram



As Built Wellbore Diagram

