



RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 11/09/2015
Tracking No.: 142295

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT, AND LOG

OPERATOR INFORMATION

Operator Name: MEMORIAL PRODUCTION OPER. LLC Operator No.: 559624
Operator Address: 500 DALLAS STREET SUITE 1800 HOUSTON, TX 77002-0000

WELL INFORMATION

API No.: 42-003-46000 County: ANDREWS
Well No.: 7 RRC District No.: 08
Lease Name: WEMAC SOUTH (WOLFCAMP) UNIT Field Name: WEMAC, SOUTH (WOLFCAMP)
RRC Lease No.: 24603 Field No.: 96296500
Location: Section: 31, Block: 3, Survey: PSL/MC CARLEY, W D, Abstract: 2006

Latitude: 32.26003 Longitude: -102.45762
This well is located 6.5 miles in a SE direction from ANDREWS, which is the nearest town in the county.

FILING INFORMATION

Purpose of filing: Initial Potential
Type of completion: New Well
Well Type: Producing Completion or Recompletion Date: 05/07/2014

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or Deepen	10/09/2014	779313
Rule 37 Exception		0287622
Fluid Injection Permit		
O&G Waste Disposal Permit		
Other:		

COMPLETION INFORMATION

Spud date: 03/28/2014	Date of first production after rig released: 05/07/2014
Date plug back, deepening, recompletion, or drilling operation commenced: 03/28/2014	Date plug back, deepening, recompletion, or drilling operation ended: 05/04/2014
Number of producing wells on this lease in this field (reservoir) including this well: 2	Distance to nearest well in lease & reservoir (ft.): 920.0
Total number of acres in lease: 596.88	Elevation (ft.): 14 RKB
Total depth TVD (ft.): 9454	Total depth MD (ft.):
Plug back depth TVD (ft.):	Plug back depth MD (ft.):
Was directional survey made other than inclination (Form W-12)? Yes	Rotation time within surface casing (hours): 83.5
Recompletion or reclass? No	Is Cementing Affidavit (Form W-15) attached? Yes
Type(s) of electric or other log(s) run: Combo of Induction/Neutron/Density	Multiple completion? No
Electric Log Other Description:	
Location of well, relative to nearest lease boundaries	Off Lease : No
of lease on which this well is located: 2467.0 Feet from the South Line and 2224.0 Feet from the East Line of the WEMAC, SOUTH (WOLFCAMP) UNIT Lease.	

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease No.	Well No.	Prior Service Type
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PACKET: N/A

W2:	N/A		
FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:			
GAU Groundwater Protection Determination	Depth (ft.):	1700.0	Date: 02/11/2014
SWR 13 Exception	Depth (ft.):	1800.0	

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION			
Date of test: 05/08/2014		Production method: Pumping	
Number of hours tested: 24		Choke size:	
Was swab used during this test? No		Oil produced prior to test: 33.00	
PRODUCTION DURING TEST PERIOD:			
Oil (BBLS): 41.00		Gas (MCF):	
Gas - Oil Ratio:		Flowing Tubing Pressure:	
Water (BBLS): 259			
CALCULATED 24-HOUR RATE			
Oil (BBLS): 41.0		Gas (MCF):	
Oil Gravity - API - 60.: 38.8		Casing Pressure:	
Water (BBLS): 259			

CASING RECORD											
Row	Type of Casing	Casing Size (in.)	Hole Size (in.)	Setting Depth (ft.)	Multi - Stage Depth (ft.)	Multi - Stage Shoe Depth (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement (ft.)	TOC Determined By
1	Surface	11 3/4	14 3/4	1788			C	1020	1588.0	0	Circulated to Surface
2	Intermediate	8 5/8	11	5299			C	840	8417.0	0	Circulated to Surface
3	Conventional Production	5 1/2	7 7/8	9454			H	485	1040.0	5252	Calculation

LINER RECORD									
Row	Liner Size (in.)	Hole Size (in.)	Liner Top (ft.)	Liner Bottom (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement (ft.)	TOC Determined By
N/A									

TUBING RECORD			
Row	Size (in.)	Depth (ft.)	Packer Depth (ft.)/Type
1	2 3/8	9194	8740 / TUBING ANCHOR

PRODUCING/INJECTION/DISPOSAL INTERVAL			
Row	Open hole?	From (ft.)	To (ft.)
1	No	L 9149	9152.0
2	No	L 9011	9016.0
3	No	L 9000	9008.0
4	No	L 8983	8986.0
5	No	L 8964	8968.0
6	No	L 8953	8955.0
7	No	L 8778	8783.0
8	No	L 8787	8808.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.				
Was hydraulic fracturing treatment performed?		No		
Is well equipped with a downhole actuation sleeve?		No		
		If yes, actuation pressure (PSIG):		
Production casing test pressure (PSIG) prior to hydraulic fracturing treatment:		Actual maximum pressure (PSIG) during hydraulic fracturing:		
Has the hydraulic fracturing fluid disclosure been reported to FracFocus disclosure registry (SWR29)?		No		
Row	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)	
1	Other	PERFORATED 5-1/2" CSG	9327	9338
2	Acid	2500 GAL 28% HCL	9327	9338
3	Cast Iron Bridge Plug	CIBP W/ 20' CMT IN 5-1/2" CSG	9285	9305
4	Other	PERFORATED 5-1/2" CSG	9149	9152
5	Other	PERFORATED 5-1/2" CSG	9011	9016
6	Other	PERFORATED 5-1/2" CSG	9000	9008
7	Other	PERFORATED 5-1/2" CSG	8983	8986
8	Other	PERFORATED 5-1/2" CSG	8964	8968
9	Other	PERFORATED 5-1/2" CSG	8953	8955
10	Acid	5000 GAL 28% HCL	8955	9149
11	Other	PERFORATED 5-1/2" CSG	8778	8783
12	Other	PERFORATED 5-1/2" CSG	8787	8808
13	Acid	3 BBLS 28% HCL 71BBLS 2%KCL 18BBLS NEFE	8778	8808

FORMATION RECORD					
Formations	Encountered	Depth TVD (ft.)	Depth MD (ft.)	Is formation isolated?	Remarks
YATES	Yes	3270.0		Yes	ESTIMATED / CMTD 8-5/8" CSG F/ 5299' - SURF
SEVEN RIVERS	No			No	NOT PRESENT IN AREA
QUEEN	No			No	NOT PRESENT IN AREA
GRAYBURG	No			No	NOT PRESENT IN AREA
SAN ANDRES - CO2 FLOOD, HIGH FLOWS, H2S, CORROSIVE	Yes	4945.0		Yes	ESTIMATED / CMTD 8-5/8" CSG F/ 5299' - SURF
HOLT	No			No	NOT PRESENT IN AREA
GLORIETA	Yes	5860.0		Yes	ESTIMATED / CMTD 5-1/2" CSG F/ 9454' - 5252'
TUBB	No			No	NOT PRESENT IN AREA
CLEARFORK	Yes	7043.0		Yes	CMTD 5-1/2" CSG F/ 9454' - 5252'
PERMIAN DETRITAL	No			No	NOT ENCOUNTERED
LEON	No			No	NOT ENCOUNTERED
WICHITA ALBANY	No			No	NOT ENCOUNTERED
SPRABERRY	Yes	7399.0		Yes	CMTD 5-1/2" CSG 9454' - 5252'
DEAN	No			No	NOT ENCOUNTERED
WOLFCAMP	Yes	8581.0		No	PERFORATED F/ 8787' - 9111'
CANYON	No			No	NOT DEEP ENOUGH
PENNSYLVANIAN	No			No	NOT DEEP ENOUGH

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm (SWR 36)? No

Is the completion being downhole commingled (SWR 10)? No

PUBLIC COMMENTS:

CASING RECORD :

TUBING RECORD:

PRODUCING/INJECTION/DISPOSAL INTERVAL :

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

POTENTIAL TEST DATA:

Printed Name: Heather Dolphin	Title: Sr. Regulatory Specialist
Telephone No.: (832) 408-8603	Date Certified: 11/04/2015

Cementer: Fill in shaded areas.
Operator: Fill in other items.

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

Form W-15
Cementing Report
Rev. 4/1/83
483-045

1. Operator's Name (As shown on Form P-5, Organization Report) Memorial Production Operating LLC		2. RRC Operator No. 559624	3. RRC District No. 08	4. County of Well Site Andrews
5. Field Name (Wildcat or exactly as shown on RRC records) Wemac, South (Wolfcamp)			6. API No. 42-003-46000	7. Drilling Permit No. 779313
8. Lease Name WEMAC South (Wolfcamp) Unit		9. Rule 37 Case No.	10. Oil Lease/Gas ID No. 24603	11. Well No. 7

CASING CEMENTING DATA:			SURFACE CASING	INTER-MEDIATE CASING	PRODUCTION CASING		MULTI-STAGE CEMENTING PROCESS	
					Single String	Multiple Parallel Strings	Tool	Shoe
12. Cementing Date			4/1/14					
13. • Drilled hole size			14 3/4"					
• Est. % wash or hole enlargement			0					
14. Size of casing (in. O.D.)			11 3/4"					
15. Top of liner (ft.)			Surface					
16. Setting depth (ft.)			1788'					
17. Number of centralizers used								
18. Hrs. waiting on cement before drill-out			31.5					
1st Slurry	19. API cement used: No. of sacks ▶	650						
	Class ▶	65/35/6 C						
	Additives ▶	See Remarks						
2nd Slurry	No. of sacks ▶	370						
	Class ▶	C						
	Additives ▶	See Remarks						
3rd Slurry	No. of sacks ▶	—						
	Class ▶	—						
	Additives ▶	—						
1st	20. Slurry pumped: Volume (cu. ft.) ▶	1092						
	Height (ft.) ▶	2518'						
2nd	Volume (cu. ft.) ▶	496						
	Height (ft.) ▶	1144'						
3rd	Volume (cu. ft.) ▶	—						
	Height (ft.) ▶	—						
Total	Volume (cu. ft.) ▶	1588						
	Height (ft.) ▶	3662'						
21. Was cement circulated to ground surface (or bottom of cellar) outside casing?			Yes					
22. Remarks Pumped with 190 sx Class C 2% Cacl2, .25pps Celloflake Circulated 42sx to pit								

CEMENTING TO PLUG AND ABANDON	PLUG # 1	PLUG # 2	PLUG # 3	PLUG # 4	PLUG # 5	PLUG # 6	PLUG # 7	PLUG # 8
23. Cementing date								
24. Size of hole or pipe plugged (in.)								
25. Depth to bottom of tubing or drill pipe (ft.)								
26. Sacks of cement used (each plug)								
27. Slurry volume pumped (cu. ft.)								
28. Calculated top of plug (ft.)								
29. Measured top of plug, if tagged (ft.)								
30. Slurry wt. (lbs/gal)								
31. Type cement								

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in the well as shown in this report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

Misty Webb, Staff Assistant	Basic Energy Services	<i>Misty Webb</i>
Name and title of cementer's representative	Cementing Company	Signature
P O Box 10451	Midland	TX 79702
Address	City	State Zip Code
		432-687-1994
		Tel.: Area Code Number
		4/1/14
		Date: mo. Day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that the data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

<i>Heather Dolphin</i>	<i>Regulatory Specialist</i>	<i>[Signature]</i>
Typed or printed name of operator's representative	Title	Signature
<i>500 Dallas St, Ste 1800 Houston TX 77002</i>	<i>832.408.8603</i>	<i>7/10/14</i>
Address	City State Zip Code	Tel.: Area Code Number
		Date: mo. Day yr.

Instructions to Form W-15, Cementing Report

IMPORTANT: Operators and cementing companies must comply with the requirements of the Commission's Statewide Rules 8 (Water Protection), 13 (Casing, Cementing, Drilling, and Completion), and 14 (Well Plugging). For offshore operations, see the requirements of Rule 13 (c).

A. What to file. An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form. Form W-15 should be filed with the following:

- An initial oil or gas completion report, **Form W-2 or G-1**, as required by Statewide or special field rules;
- **Form W-4**, Application for Multiple Completion, if the well is a multiple parallel casing completion; and
- **Form W-3**, Plugging Record, unless the W-3 is signed by the cementing company representative. When reporting **dry holes**, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. Where to file. The appropriate Commission District Office for the country in which the well is located.

C. Surface casing. An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Texas Department of Water Resources, Austin. Before drilling a well in any field or area in which no field rules are in effect or in which surface casing requirements are not specified in the applicable rules, an operator must obtain a letter from the Department of Water Resources stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

D. Centralizers. Surface casing must be centralized at the shoe, above and below a stage collar or diverting tool, if run, and through usable-quality water zones. In nondeviated holes, a centralizer must be placed every fourth joint from the cement shoe to the ground surface or to the bottom of the cellar. All centralizers must meet API specifications.

E. Exceptions and alternative casing programs. The District Director may grant an exception to the requirements of Statewide Rule 13. In a written application, an operator must state the reason for the requested exception and outline an alternate program for casing and cementing through the protection depth for strata containing usable-quality water. The District Director may approve, modify, or reject a proposed program. **An operator must obtain approval of any exception before beginning casing and cementing operations.**

F. Intermediate and production casing. For specific technical requirements, operators should consult Statewide Rule 13 (b) (3) and (4).

G. Plugging and abandoning. Cement plugs must be placed in the wellbore as required by Statewide Rule 14. The District Director may require additional cement plugs. For onshore or inland wells, a 10-foot cement plug must be placed in the top of the well, and the casing must be cut off three feet below the ground surface. All cement plugs, except the top plug, must have sufficient slurry volume to fill 100 feet of hole, plus ten percent for each 1,000 feet of depth from the ground surface to the bottom of the plug.

To plug and abandon a well, operators must use only cementers approved by the Director of Field Operations. Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

Cementer: Fill in shaded areas.
Operator: Fill in other items.

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

Form W-15
Cementing Report
Rev. 4/1/83
483-045

1. Operator's Name (As shown on Form P-5, Organization Report) Memorial Production Operating LLC		2. RRC Operator No. 559624	3. RRC District No. 08	4. County of Well Site Andrews
5. Field Name (Wildcat or exactly as shown on RRC records) Wemac, South (Wolfcamp)			6. API No. 42-003-46000	7. Drilling Permit No. 779313
8. Lease Name WEMAC South (Wolfcamp) Unit		9. Rule 37 Case No.	10. Oil Lease/Gas ID No. 24603	11. Well No. 7

CASING CEMENTING DATA:			SURFACE CASING	INTER-MEDIATE CASING	PRODUCTION CASING		MULTI-STAGE CEMENTING PROCESS	
					Single String	Multiple Parallel Strings	Tool	Shoe
12. Cementing Date				4/7/14				
13. • Drilled hole size				11"				
• Est. % wash or hole enlargement				3090				
14. Size of casing (in. O.D.)				8 5/8"				
15. Top of liner (ft.)				Surface				
16. Setting depth (ft.)				5299'				
17. Number of centralizers used				12				
18. Hrs. waiting on cement before drill-out				29.5				
1st Slurry	19. API cement used: No. of sacks ▶			540				
	Class ▶			50/50 POZ C				
	Additives ▶			See Remarks				
2nd Slurry	No. of sacks ▶			300				
	Class ▶			C				
	Additives ▶			See Remarks				
3rd Slurry	No. of sacks ▶			—				
	Class ▶			—				
	Additives ▶			—				
1st	20. Slurry pumped: Volume (cu. ft.) ▶			1307				
	Height (ft.) ▶			5141'				
2nd	Volume (cu. ft.) ▶			399				
	Height (ft.) ▶			1570'				
3rd	Volume (cu. ft.) ▶			—				
	Height (ft.) ▶			—				
Total	Volume (cu. ft.) ▶			8417				
	Height (ft.) ▶			6711'				
21. Was cement circulated to ground surface (or bottom of cellar) outside casing?				Yes				
22. Remarks lead with 540 sx 50/50 POZ Class C with 10% gel + 5% Salt + .25pps Celloflake + .2% C-41P + 5pps Kol Seal + .25pps PFA + .2% C-35 tail with 300 sx Class C with .25pps PFA Circulated 28sx to Surface								

CEMENTING TO PLUG AND ABANDON	PLUG # 1	PLUG # 2	PLUG # 3	PLUG # 4	PLUG # 5	PLUG # 6	PLUG # 7	PLUG # 8
23. Cementing date								
24. Size of hole or pipe plugged (in.)								
25. Depth to bottom of tubing or drill pipe (ft.)								
26. Sacks of cement used (each plug)								
27. Slurry volume pumped (cu. ft.)								
28. Calculated top of plug (ft.)								
29. Measured top of plug, if tagged (ft.)								
30. Slurry wt. (lbs/gal)								
31. Type cement								

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in the well as shown in this report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

Misty Webb, Staff Assistant Basic Energy Services Misty Webb
Name and title of cementer's representative Cementing Company Signature

P O Box 10451 Midland TX 79702 432-687-1994 4/7/14
Address City State Zip Code Tel.: Area Code Number Date: mo. Day yr.

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Heather Dalphin Regulatory Specialist [Signature]
Typed or printed name of operator's representative Title Signature

500 Dallas St., Ste 180 Houston TX 77002 832.408.8603 7/10/14
Address City State Zip Code Tel.: Area Code Number Date: mo. Day yr.

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E. Exceptions and alternative casing programs. The District Director may grant an exception to the requirements of Statewide Rule 13. In a written application, an operator must state the reason for the requested exception and outline an alternate program for casing and cementing through the protection depth for strata containing usable-quality water. The District Director may approve, modify, or reject a proposed program. **An operator must obtain approval of any exception before beginning casing and cementing operations.**

F. Intermediate and production casing. For specific technical requirements, operators should consult Statewide Rule 13 (b) (3) and (4).

G. Plugging and abandoning. Cement plugs must be placed in the wellbore as required by Statewide Rule 14. The District Director may require additional cement plugs. For onshore or inland wells, a 10-foot cement plug must be placed in the top of the well, and the casing must be cut off three feet below the ground surface. All cement plugs, except the top plug, must have sufficient slurry volume to fill 100 feet of hole, plus ten percent for each 1,000 feet of depth from the ground surface to the bottom of the plug.

To plug and abandon a well, operators must use only cementers approved by the Director of Field Operations. Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

Cementer: Fill in shaded areas.
Operator: Fill in other items.

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Oil and Gas Division

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Cementing Report
Rev. 4/1/83
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8. Lease Name WEMAC South (Wolfcamp) Unit		9. Rule 37 Case No.	10. Oil Lease/Gas ID No. 24603	11. Well No. 7

CASING CEMENTING DATA:		SURFACE CASING	INTER-MEDIATE CASING	PRODUCTION CASING		MULTI-STAGE CEMENTING PROCESS	
				Single String	Multiple Parallel Strings	Tool	Shoe
12. Cementing Date				4/20/14			
13. • Drilled hole size				7 7/8"			
• Est. % wash or hole enlargement				30%			
14. Size of casing (in. O.D.)				5 1/2"			
15. Top of liner (ft.)				Surface			
16. Setting depth (ft.)				9454'			
17. Number of centralizers used				31			
18. Hrs. waiting on cement before drill-out				N/A			
1st Slurry	19. API cement used: No. of sacks ▶			300			
	Class ▶			50/50 POZ H			
	Additives ▶			See Remarks			
2nd Slurry	No. of sacks ▶			185			
	Class ▶			Super H			
	Additives ▶			See Remarks			
3rd Slurry	No. of sacks ▶			—			
	Class ▶			—			
	Additives ▶			—			
1st	20. Slurry pumped: Volume (cu. ft.) ▶			729			
	Height (ft.) ▶			4208'			
2nd	Volume (cu. ft.) ▶			311			
	Height (ft.) ▶			1795'			
3rd	Volume (cu. ft.) ▶			—			
	Height (ft.) ▶			—			
Total	Volume (cu. ft.) ▶			1040			
	Height (ft.) ▶			6003'			
21. Was cement circulated to ground surface (or bottom of cellar) outside casing?				NO			
22. Remarks Lead with 300 sx 50/50 POZ Class H with 10% gel + 5% Salt + .25 pps Celloflake + .3% C-41P + .1% C-20 + 5pps Kol Seal + .25pps Plexfiber A Tail with 185 sx Super H with 61# + 15# + 11# + 1.25% C-12 + 3pps Kol Seal + .4% C-45 + 5pps Plexcrete STE + .3% C-49 + .25pps Plexfiber A							

OVER ►

CEMENTING TO PLUG AND ABANDON	PLUG # 1	PLUG # 2	PLUG # 3	PLUG # 4	PLUG # 5	PLUG # 6	PLUG # 7	PLUG # 8
23. Cementing date								
24. Size of hole or pipe plugged (in.)								
25. Depth to bottom of tubing or drill pipe (ft.)								
26. Sacks of cement used (each plug)								
27. Slurry volume pumped (cu. ft.)								
28. Calculated top of plug (ft.)								
29. Measured top of plug, if tagged (ft.)								
30. Slurry wt. (lbs/gal)								
31. Type cement								

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Misty Webb, Staff Assistant

Name and title of cementer's representative

Basic Energy Services

Cementing Company

Misty Webb
Signature

P O Box 10451

Address

Midland

City

TX

State

79702

Zip Code

432-687-1994

Tel.: Area Code

Number

4/28/14

Date: mo. Day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that the data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

Heathus Dolphin
Typed or printed name of operator's representative

St. Regulatory Specialist II
Title

[Signature]
Signature

500 Dallas St. Ste 1800 Houston TX 77002
Address

City

State

Zip Code

832.408.8603
Tel.: Area Code

Number

7/10/14
Date: mo. Day yr.

Instructions to Form W-15, Cementing Report

IMPORTANT: Operators and cementing companies must comply with the requirements of the Commission's Statewide Rules 8 (Water Protection), 13 (Casing, Cementing, Drilling, and Completion), and 14 (Well Plugging). For offshore operations, see the requirements of Rule 13 (c).

A. What to file. An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form. Form W-15 should be filed with the following:

- An initial oil or gas completion report, **Form W-2 or G-1**, as required by Statewide or special field rules;
- **Form W-4**, Application for Multiple Completion, if the well is a multiple parallel casing completion; and
- **Form W-3**, Plugging Record, unless the W-3 is signed by the cementing company representative. When reporting **dry** holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. Where to file. The appropriate Commission District Office for the country in which the well is located.

C. Surface casing. An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Texas Department of Water Resources, Austin. Before drilling a well in any field or area in which no field rules are in effect or in which surface casing requirements are not specified in the applicable rules, an operator must obtain a letter from the Department of Water Resources stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

D. Centralizers. Surface casing must be centralized at the shoe, above and below a stage collar or diverting tool, if run, and through usable-quality water zones. In nondeviated holes, a centralizer must be placed every fourth joint from the cement shoe to the ground surface or to the bottom of the cellar. All centralizers must meet API specifications.

E. Exceptions and alternative casing programs. The District Director may grant an exception to the requirements of Statewide Rule 13. In a written application, an operator must state the reason for the requested exception and outline an alternate program for casing and cementing through the protection depth for strata containing usable-quality water. The District Director may approve, modify, or reject a proposed program. **An operator must obtain approval of any exception before beginning casing and cementing operations.**

F. Intermediate and production casing. For specific technical requirements, operators should consult Statewide Rule 13 (b) (3) and (4).

G. Plugging and abandoning. Cement plugs must be placed in the wellbore as required by Statewide Rule 14. The District Director may require additional cement plugs. For onshore or inland wells, a 10-foot cement plug must be placed in the top of the well, and the casing must be cut off three feet below the ground surface. All cement plugs, except the top plug, must have sufficient slurry volume to fill 100 feet of hole, plus ten percent for each 1,000 feet of depth from the ground surface to the bottom of the plug.

To plug and abandon a well, operators must use only cementers approved by the Director of Field Operations. Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.



RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Form W-15

Rev. 08/2014

CEMENTING REPORT

Cementer: Fill in shaded areas.

Operator: Fill in other items.

OPERATOR INFORMATION	
Operator Name: <u>Memorial Production Co LLC</u>	Operator P-5 No.: <u>559624</u>
Cementer Name: <u>Capitan</u>	Cementer P-5 No.:

WELL INFORMATION	
District No.: <u>08</u>	County: <u>Andrews</u>
Well No.: <u># 7</u>	API No.: <u>42-003-46000</u> Drilling Permit No.: <u>779313</u>
Lease Name: <u>Wemac South (Holtcamp) Unit</u>	Lease No.: <u>24603</u>
Field Name: <u>Wemac South (Holtcamp)</u>	Field No.: <u>96296500</u>

I. CASING CEMENTING DATA			
Type of casing: <input type="checkbox"/> Conductor <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Liner <input type="checkbox"/> Production			
Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.		Setting depth shoe (ft.):	Top of liner (ft.):
		Setting depth liner (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:	

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

II. CASING CEMENTING DATA			
Type of casing: <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Production <input type="checkbox"/> Tapered production <input type="checkbox"/> Multi-stage cement shoe <input type="checkbox"/> Multiple parallel strings			
Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:	
Tapered string drilled hole size (in.)		Tapered string depth of drilled hole (ft.)	
Upper:	Lower:	Upper:	Lower:
Tapered string size of casing in O.D. (in.)		Tapered string casing weight (lbs/ft) and grade	
Upper:	Lower:	Upper:	Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO		Setting depth shoe (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:	

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA			
Type of casing: <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Production <input type="checkbox"/> Tapered production <input type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> Multiple parallel strings			
Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:	
Tapered string drilled hole size (in.)		Tapered string depth of drilled hole (ft.)	
Upper:	Lower:	Upper:	Lower:
Tapered string size of casing in O.D. (in.)		Tapered string casing weight (lbs/ft) and grade	
Upper:	Lower:	Upper:	Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO		Setting depth tool (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:	

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date	4-28-14						
Size of hole or pipe (in.)	5 1/2"						
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)	9305'						
Amount of cement on top of CIBP (ft.)	20'						
Sacks of cement used	2						
Slurry volume pumped (cu. ft.)	1.32						
Calculated top of plug (ft.)	9285'						
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)	14.6						
Class/type of cement	H						
Perforate and squeeze (YES/NO)	No						

REMARKS

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

Jacob Skipworth Capitan Jacob Skipworth
 Name and title of cementer's representative Cementing Company Signature
1814 13th St Levelland TX 79336 806 891-1449 4-28-14
 Address City, State, Zip Code Tel: Area Code Number Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

Heather Dolphin S. Regulatory Specialist II Heather Dolphin
 Typed or printed name of operator's representative Title Signature
500 Dallas St. Ste 1800 Houston TX 77002 832-408-8203 11/2/15
 Address City, State, Zip Code Tel: Area Code Number Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

- What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.
The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.
- How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (<https://webapps.rrc.state.tx.us/security/login.do>) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).
- Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.
To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 ([http://info.sos.state.tx.us/pls/pub/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14](http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14)). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.
- Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.
- Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.
- Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.
- Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.



RAILROAD COMMISSION OF TEXAS
STATEWIDE RULE 13 EXCEPTION APPLICATION/ALTERNATIVE REQUEST
Surface Casing: 13(b)(1)(H), Tubing: 13(b)(4)(B), Drilling Fluid: 13(a)(6)(C), or Non-standard Cement 13(b)(1)(D)

1. Operator: Memorial Production Oper. LLC		2. P-5 No.: 559624		3. Lease Name: Wemac, South (Wolfcamp) Unit		4. Well No.: 7	
5. Street Address: 1301 McKinney St., Suite 2100, Houston, TX 77010				6. RRC District: 08		7. Drill Permit No.: 779313	
8. Field Name: Wemac, South (Wolfcamp)		9. County: Andrews		10. Proposed Depth: 96.00		<input checked="" type="checkbox"/> TVD <input type="checkbox"/> MD	
11. Survey: UL		12. Abstract No.: U1		13. Block/Township: 1		14. Section: 1	
15. GPS Datum: Nad 27		Coordinates: N 32.260032		W -102.457625			
16. GAU No.: 16448 (attach letter)		Recommendation Type (below)		17. Usable-Quality Water (determined by GAU): 275 ft.			
<input type="checkbox"/> Well <input checked="" type="checkbox"/> Lease <input type="checkbox"/> Survey <input type="checkbox"/> Pad <input type="checkbox"/> Radius:				Separation points: 1100' to 1700' ft.			

18. Exception Request: <input type="checkbox"/> Short Surface Csg <input checked="" type="checkbox"/> Excess Surface Csg <input type="checkbox"/> Single-string <input type="checkbox"/> Tubing <input checked="" type="checkbox"/> Area-wide ²	
19. Alternate Program Request: <input type="checkbox"/> Drilling Fluid Program <input type="checkbox"/> Non-API Cement <input type="checkbox"/> Other: _____	
20. Reason for this request: <input type="checkbox"/> Economic <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Other Please explain: _____ If this application includes a request for exception to tubing requirements outlined in 13(b)(4)(A), indicate requested duration: _____	
21. Is this a proposed injection or disposal well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
22. Is this a Minimum Separation well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
23. Are there any water wells within ¼ mile of this proposed well location? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, provide information requested below Type of water well: _____ Depth: _____ Distance: _____ Direction: _____	
24. Are there any INJECTION or DISPOSAL wells within ¼ mile of the proposed well location? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, list names and depths of all formations permitted for INJECTION OR DISPOSAL within ¼ miles of the well location: Wemac, South (Wolfcamp) Unit #2W, RRC ID# 24603 Injecting in the Wolfcamp formation	
25. Have there been any blowouts within a mile of this wellsite? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, name operator(s), lease(s), and date(s) blowout(s) occurred: _____	

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(B)(2)(g)(iii) OR AS REQUIRED BY THE DISTRICT OFFICE.

	26. Proposed Casing and Cementing Program	Surface Casing			Intermediate Casing			Production Casing		
		14-3/4"			11"			7 7/8"		
	Hole Size (in.)	11-3/4"			J55			32#		
	O.D. (in.), Grade, Weight (lb/ft.)	11-3/4"			8-5/8"			5-1/2"		
	Setting Depth (ft.)	1800'			5300'			9450'		
	Multi-Stage Tool Depth (ft.)	N/A			N/A			N/A		
LEAD/FILLER CEMENT	Type and Free Water Content	65/35 POZ C			50/50 POZ C			50/50, POZ H		
	# of Sacks and Yield (cu. ft/sk)	650			540			420		
	Cement Additives	NaCl, Cello Fik, CPT-503p, CPT-20			Cello Fik, Gel, Fiber C41P, NaCl			NaCl, Cello Fik, C41P, C20, Kolseal		
	24/72-Hr. Comp. Strength (psi)	829			825			920		
	Cement Height (TOC) (ft.)	0' (surface)			1000'			4500'		
	% Excess	100%			50%			35%		
TAIL/CRITICAL CEMENT	Type and Free Water Content	C, Prem +			C			H		
	# of Sacks and Yield (cu. ft/sk)	370			300			280		
	Cement Additives	Cello Flake, CaCl			Fiber			NaCl, C49, C45, Plexcrete, STB, Kolseal		
	24/72-Hr. Comp. Strength (psi)	2313			2315			1625		
	Cement Height (TOC) (ft.)	1240			4310			7860		
	Centralizers No. & Placement ^a	1 per jt. = 25			1/jt 400': 1/ 2/jts 1600' = 30 total			1/jt 400'; 1 per 2 jts 800' - 20 total		
	% Excess	100%			50%			35%		

PROVISIONS APPLICABLE TO RULE 13 EXCEPTIONS:

1. REQUESTS FOR EXCEPTIONS TO STATEWIDE RULE 13 SUBMITTED AFTER THE WELL HAS BEEN DRILLED OR COMPLETED MAY RESULT IN ENFORCEMENT ACTION AGAINST THE OPERATOR.
2. For area-wide exception requests, please provide additional information which clearly defines the area to be exempted. Area-wide approvals are NOT allowed for short surface casing applications (only approved on a well-by-well basis). Note: District Offices are not required to grant area-wide exceptions.
3. **Caution:** If this well is being drilled for injection or disposal purposes, a(n) injection/disposal well permit may be denied unless surface casing is set and cemented through all zones of usable-quality groundwater.
4. A **Minimum Separation Well**, further defined in section 13(a)(2)(L), is a well in which hydraulic fracturing treatments will be conducted AND for which: the vertical distance between BUQW and the top of the formation to be fracture stimulated is less than 1000 ft. or for which the District Director has determined there to be inadequate separation between the BUQW and the top of the formation to be fracture stimulated.
5. Review applications 1-3 (Groundwater Database, Submitted Driller's Report, and Brackish Groundwater Database) at the following link to determine location(s) of water wells within ¼ mile of the proposed well: <http://wiid.twdb.texas.gov/>.
6. Refer to the Railroad Commission of Texas Public GIS map viewer to locate injection and disposal wells within ¼ mile of the well(s) mentioned on this application: <http://www.rrc.state.tx.us/data/online/gis/index.php>.
7. Review W-14 or H-1a applications at (<http://www.rrc.state.tx.us/data/online/OGImagedRecordsQuery.php>) to determine permitted injection/disposal zones for wells within ¼ mile of the proposed well. Additionally, refer to Rule 13 Formation Tables provided on the RRC website for information regarding saltwater, H2S, and other notable formation depths by county. (<http://www.rrc.state.tx.us/environmental/rule13/index.php>). Statewide Rule 13 may require additional cementing across these formations.
8. Blowout and well-control problem records can be found at the following URL: <http://www.rrc.state.tx.us/data/drilling/blowouts/index.php>.
9. Centralizers must be used through all usable-quality waters. Refer to Rule 13(b)(1)(G).
10. Notify District Office at least 8 hours prior to setting and cementing casing.
11. The alternative surface casing program authorized by this letter is subject to the condition that drilling fluid used while drilling to the base of usable quality groundwater have a salinity of 3000 ppm TDS or less and be conditioned to form a filter cake sufficient to prevent infiltration into the protected water while drilling with fluid having a salinity greater than 3000 ppm TDS below the base of usable quality groundwater to the approved surface casing depth. *The use of oil-based and emulsion drilling fluids are prohibited until casing is set and cemented across the base of usable quality groundwater.*
12. **Note:** The following attachments may be requested by the District Office:
 - a. Proposed wellbore diagram or cementing proposal
 - b. Lab reports containing compressive strength and free water data for Lead and/or Tail Slurry
 - c. Any other information that may be required by the District Office.
13. Please note that a copy of the approved application form must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing and Cementing Program on the original application without additional approval from the District Office.

OPERATOR CONTACT INFORMATION			
Signature: <u>X <i>Stephanie Brassovan</i></u>	Name: <u>Stephanie Brassovan</u>	Title: <u>Sr. Regulatory Specialist</u>	
Date: <u>3/31/2014</u>	Phone: <u>713 588-8383</u>	Fax: <u>713 588 8301</u>	
Email Address (optional): <u>sbrassova@memorialrd.com</u>			

RRC
Use
Only ▶

RRC District Office Action:		Ref. No:	
TUBING EXCEPTION: <input type="checkbox"/> Approved <input type="checkbox"/> Approved as Modified <input type="checkbox"/> Denied	By:		Date:
SURFACE CASING EXCEPTION: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Approved as Modified <input type="checkbox"/> Denied	By: <u><i>A-38</i></u>		Date: <u>4-8-14</u>
DRILLING FLUID PROGRAM: <input type="checkbox"/> Approved <input type="checkbox"/> Approved as Modified <input type="checkbox"/> Denied	By:		Date:
ALTERNATE CEMENT PROGRAM: <input type="checkbox"/> Approved <input type="checkbox"/> Approved as Modified <input type="checkbox"/> Denied	By:		Date:
Remarks/Modifications: <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div>			

Tracking No.: 142295

This facsimile L-1 was generated electronically from data submitted to the RRC.

Instructions

When to File Form L-1:

- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:

- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:

- with the appropriate Commission district office

Filling out Form L-1:

- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:

- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: MEMORIAL PRODUCTION OPER. LLC	District No. 08	Completion Date: 05/07/2014
Field Name WEMAC, SOUTH (WOLFCAMP)	Drilling Permit No. 779313	
Lease Name WEMAC SOUTH (WOLFCAMP) UNIT	Lease/ID No. 24603	Well No. 7
County ANDREWS	API No. 42- 003-46000	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN☒ B. BASIC ELECTRIC LOG RUN. (Select one)

- ☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.
- ☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).
- ☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).
- ☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

Heather Dolphin

Signature

MEMORIAL PRODUCTION OPER. LLC

Name (print)

Sr. Regulatory Specialist

Title

(832) 408-8603

Phone

10/19/2015

Date

-FOR RAILROAD COMMISSION USE ONLY-

HALLIBURTON

TRIPLE COMBO

COMPANY MEMORIAL PRODUCTION OPER. LLC		WELL WEMAC, SOUTH (WOLFCAMP) UNIT No. 7		FIELD/BLOCK WEMAC, SOUTH (WOLFCAMP)		COUNTY ANDREWS		STATE TEXAS	
COMPANY		WELL		FIELD/BLOCK		COUNTY		STATE	
Permanent Datum		GL		Elev. 3094.0 ft		Elev.: K.B.		3108.0 ft	
Log measured from		KB		14.0 ft above perm. Datum		D.F.		3107.0 ft	
Drilling measured from		KB				G.L.		3094.0 ft	
Date		18-Apr-14							
Run No.		ONE							
Depth - Driller		9450.00 ft							
Depth - Logger		9436.0 ft							
Bottom - Logged Interval		9421.0 ft							
Top - Logged Interval		5290.0 ft							
Casing - Driller		8.625 in @ 5300.0 ft		@		@			
Casing - Logger		5290.0 ft							
Bit Size		7.875 in		@		@			
Type Fluid in Hole		CUT BRINE							
Density	Viscosity	9.0 ppg	32.00 s/qt						
PH	Fluid Loss	11.00 pH							
Source of Sample		FLOWLINE							
Rm @ Meas. Temperature		0.319 ohmm @ 75.50 degF		@		@			
Rmf @ Meas. Temperature		0.25 ohmm @ 75.50 degF		@		@			
Rmc @ Meas. Temperature		0.332 ohmm @ 75.50 degF		@		@			
Source Rmf	Rmc	MEAS	MEAS						
Rm @ BHT		0.16 ohmm @ 155.0 degF		@		@			
Time Since Circulation		9.0000 hr							
Time on Bottom		18-Apr-14 09:27							
Max. Rec. Temperature		155.0 degF @ 9436.0 ft		@		@			
Equipment	Location	11153040	ODESSA, TX						
Recorded By		RAUL RIOS							
Witnessed By		CHRIS LAMBERT							

Fold here

Service Ticket No.: 901275258		API Serial No.: 42-003-46000		PGM Version: WL INSITE R4.2.0 (Build 2)			
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE				RESISTIVITY SCALE CHANGES			
Date	Sample No.			Type Log	Depth	Scale Up Hole	Scale Down Hole
Depth-Driller							
Type Fluid in Hole							
Density	Viscosity						
Ph	Fluid Loss						
Source of Sample							
Rm @ Meas. Temp	@	@	@	Run No.	Tool Type & No.	Pad Type	Tool Pos.
Rmf @ Meas. Temp.	@	@	@	ONE	ACRT	N/A	FREE
Rmc @ Meas. Temp.	@	@	@		11487800		1.5" S.O.
Source Rmf					11404154		
Rm @ BHT	@	@	@				
Rmf @ BHT	@	@	@				
Rmc @ BHT	@	@	@				
EQUIPMENT DATA				RESISTIVITY EQUIPMENT DATA			
GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	11958955	Serial No.		Serial No.	66265115	Serial No.	11899166
Model No.	GTET	Model No.		Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.		Diameter	4.5"	Diameter	3.625"
Detector Model No.	GTET	Spacing		Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	Cs137	Source Type	Am241Be
Length	8"	LSA [Y/N]		Serial No.	24509B	Serial No.	21481B
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 Ci	Strength	15 Ci
				LOGGING DATA			

CERTIFICATE OF POOLING AUTHORITY

Revised 05/2001

P-12

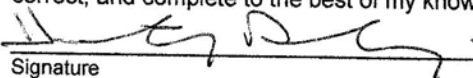
1. Field Name(s) Wemac, South (Wolfcamp) & Wildcat	2. Lease/ID Number (if assigned) 24603	3. RRC District Number 08
4. Operator Name Memorial Production Operating LL	5. Operator P-5 Number 559624	6. Well Number 7
7. Pooled Unit Name Wemac, South (Wolfcamp) Unit	8. API Number 42-003-46000	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Andrews	11. Total acres in pooled unit 596.88	

DESCRIPTION OF INDIVIDUAL TRACTS CONTAINED WITHIN THE POOLED UNIT

TRACT/PLAT IDENTIFIER	TRACT NAME	ACRES IN TRACT (See inst. #7 below)	INDICATE UNDIVIDED INTERESTS	
			UNLEASED	NON-POOLED
*Tract 1	Amoco Prod. Co. University "DT"	332.00	<input type="checkbox"/>	<input type="checkbox"/>
	No. 50220		<input type="checkbox"/>	<input type="checkbox"/>
Tract 2	Amoco-Cities Service A.B. Settle	37.88	<input type="checkbox"/>	<input type="checkbox"/>
Tract 3	Amoco-Cities Serv. Hayden Miles	227.00	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

CERTIFICATION:

I declare under penalties prescribed pursuant to the Sec. 91.143, Texas Natural Resources Code, that I am authorized to make the foregoing statements and that the information provided by me or under my direction on this Certificate of Pooling Authority is true, correct, and complete to the best of my knowledge.



Heather Dolphin

Signature

Sr. Regulatory Specialist

heather.dolphin@memorialrd.com

Print Name

10/01/2014

(832) 797-1334

Title

E-mail (if available)

Date

Phone

INSTRUCTIONS — Reference: Statewide Rules 31, 38 and 40

- When two or more tracts are pooled to form a unit to obtain a drilling permit, file completion paperwork, or reform a pooled unit pursuant to Rule 38(d)(3) the operator must file an original Certificate of Pooling Authority and certified plat.
- The certified plat shall designate each tract with an outline and a tract identifier. The tract identifier on the plat shall correspond to the tract identifier and associated information listed on the Certificate.
- If within an individual tract, a non-pooled and/or unleased interest exists, indicate by checking the appropriate box.
- If the Purpose of Filing is to obtain a drilling permit, in box #1 list all applicable fields separately or enter "All Fields" if the Certificate pertains to all fields requested on Form W-1.
- If the Purpose of Filing is to file completion paperwork, enter the applicable field name in box #1 for the completion.
- Identify the drill site tract with an * to the left of the tract identifier.
- The total number of acres in the pooled unit in #11 should equal the total of all acres in the individual tracts listed.

Clear Form

Groundwater
Advisory Unit

GROUNDWATER PROTECTION DETERMINATION

Date **February 11, 2014**

GAU File No.: SC- **16448**

***** EXPEDITED APPLICATION *****

API Number **00300000**

Attention: **ADONYA DRYDEN**

RRC Lease No. **00000**

SC_559624_00300000_00000_16448.pdf

**MEMORIAL PRODUCTION OPER LLC
400 TEXAS ST
STE 600
SHREVEPORT LA 71101**

--Measured--

2224 ft FEL

184 ft FNL

MRL:SECTION

P-5# 559624

Digital Map Location:

X-coord/Long **467995**

Y-coord/Lat **252026**

Datum **27** Zone **NC**

County **ANDREWS**

Lease & Well No. **WEMAC, SOUTH (WOLFCAMP) UNIT #7&ALL**

Purpose **ND**

Location **SUR-UL, BLK-1, SEC-1, -- [TD=8900], [RRC 8],**

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Texas Railroad Commission recommends:

The interval from the land surface to a depth of 275 feet and the ZONE from 1100 feet to 1700 feet must be protected.

This recommendation is applicable to all wells drilled in this SECTION 1 ON THIS LEASE.

Note: Unless stated otherwise, this recommendation is intended to apply only to the subject well and not for area wide use. This recommendation is intended for normal drilling, production, and plugging operations only. It does not apply to saltwater disposal operation into a nonproductive zone (RRC Form W-14).

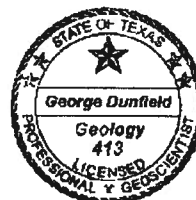
If you have any questions, please contact us at 512-463-2741, gau@rrc.state.tx.us, or by mail.

Sincerely,

Digitally signed by George Dunfield
DN: cn=US, st=TEXAS, o=Austin, ou=Railroad
Commission of Texas, ou=Groundwater
Advisory Unit, cn=George Dunfield,
email=george.dunfield@rrc.state.tx.us
Date: 2014.02.11 11:56:10 -0600

George Dunfield, P.G.

GEOLOGIST SEAL



Geologist, Groundwater Advisory Unit
Oil & Gas Division

The seal appearing on this document was authorized by George Dunfield on 2/11/2014
Note: Alteration of this electronic document will invalidate the digital signature.

