



Texas Drilling Observer

-the oil & gas regulatory report-

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March 14, 2014

Val Verde County Clerks Office
Attn: The Honorable Generosa Gracia-Ramon
400 Pecan Street, 1st Floor
Del Rio, TX 78840

Re: Massie West #3 SWD application

Dear Ms. Gracia-Ramon,

My name is Patrick Forbis and I am an oil and gas regulatory consultant who does regular work on behalf of Synergy-West Exploration Co. LLC, an operator of oil wells in Texas. I am sending you this letter because Synergy-West Exploration Co LLC is filing an application to amend the existing injection well permit for its Massie West Lease, Well No. 3, in the Massie West (Paluxy) Field, Val Verde County. The Massie West #3 well has had fluid injection permits since the mid 1960s. Over the decades the injection permits for the well have been amended on multiple occasions as prior operators in the field implemented various methods of enhanced oil recovery operations.

Synergy-West is requesting that the Railroad Commission issue an amended injection well permit for the Massie West #3 in order for air and nitrogen to be injected for enhanced oil recovery purposes. The application also includes a request to change the amount of produced fresh water that can be injected through the well. The Paluxy oil reservoir lies above the base of usable quality water. The fresh water that is being re-injected is fresh water produced from the oil wells, not fresh water extracted from the Edwards aquifer or any surface water source. Railroad Commission regulations no longer permit operators to inject fresh water from sources other than fresh water fluids produced by the lease oil wells in circumstances where injection is occurring at a depth above the base of usable quality water. After Synergy-West acquired the Massie West Field in 2013, the company has reactivated wells and generated increasing fluid production, of which about 10% is oil and 90% is produced water. The amended water injection volume is needed to maintain oil production and inject the produced water back into the reservoir.

As County Clerk, under Railroad Commission rules, we are required to send your office notice of this application and give you an opportunity to protest the application at a hearing called by the Texas Railroad Commission. I have enclosed a copy of Railroad Commission Forms H-1 and H-1A giving the details of the well's location, construction and Synergy-West's injection well application. ~~If you have any questions about this application please contact me on my cell at 512-826-3732.~~ If you wish to protest this application, it must be sent in writing to Susan Moore within the Environmental Services Division of the Railroad Commission. Her email address is susan.moore@rrc.state.tx.us. I look forward to speaking to you if you have any questions or concerns about this application.

Yours very truly,

Patrick C. Forbis
Publisher, Texas Drilling Observer

RECEIVED
2014 MAR 20 AM 11:06
GENEROSA GRACIA RAMON
VAL VERDE COUNTY CLERK
BY DEPU

**RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION**

Form H-1
05/2004

APPLICATION TO INJECT FLUID INTO A RESERVOIR PRODUCTIVE OF OIL OR GAS

1. Operator name Synergy-West Exploration Co LLC 2. Operator P-5 No. 833652
(as shown on P-5, Organization Report)

3. Operator Address 5338 Old Mooringsport Road --- Shreveport, LA 71107

4. County Val Verde 5. RRC District No. 01

6. Field Name Massie West (Paluxy) 7. Field No. 58115500

8. Lease Name West, Massie 9. Lease/Gas ID No. 02592

10. Check the Appropriate Boxes: New Project Amendment

If amendment, Fluid Injection Project No. F- 43

Reason for Amendment: Add wells Add or change types of fluids Change pressure

 Change volume Change interval Other (explain) _____

RESERVOIR DATA FOR A NEW PROJECT

11. Name of Formation Paluxy 12. Lithology sandstone
(e.g., dolomite, limestone, sand, etc.)

13. Type of Trap monocline 14. Type of Drive during Primary Production unknown
(anticline, fault trap, stratigraphic trap, etc.)

15. Average Pay Thickness 11 feet 16. Lse/Unit Acreage 500 17. Current Bottom Hole Pressure (psig) unknown

18. Average Horizontal Permeability (mds) 1,200 19. Average Porosity (%) 30%

INJECTION PROJECT DATA

20. No. of Injection Wells in this application 1

21. Type of Injection Project: Waterflood Pressure Maintenance Miscible Displacement Natural Gas Storage

 Steam Thermal Recovery Disposal Other in-situ combustion

22. If disposal, are fluids from leases other than the lease identified in Item 9? Yes No

23. Is this application for a Commercial Disposal Well? Yes No

24. If for commercial disposal, will non-hazardous oil and gas waste other than produced water be disposed? Yes No

25. Type(s) of Injection Fluid:

Salt Water Brackish Water Fresh Water CO₂ N₂ Air H₂S LPG NORM

Natural Gas Polymer Other (explain) _____

26. If water other than produced salt water will be injected, identify the source of each type of injection water by formation, or by aquifer and depths, or by name of surface water source:

The injected fresh water is produced water from the Paluxy Formation (300'-500'). The water produced from the oil formation is fresh water.

CERTIFICATE

I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, that this report was prepared by me or under my supervision and direction, and that the data and facts stated therein are true, correct, and complete, to the best of my knowledge.

Patrick C Forbis 3-14-2014
Signature Date

Patrick C. Forbis
Name of Person (type or print)

Phone (512) 826-3732 Fax pforbis@ix.netcom.com

For Office Use Only	Register No.	Amount \$
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INSTRUCTIONS FOR FORM H-1

1. **Application.** File the original Form H-1 application, including all attachments, with Assistant Director, Environmental Services, Railroad Commission of Texas, P. O. Box 12967, Capitol Station, Austin, Texas 78711. File one copy of the application and all attachments with the appropriate Railroad Commission District Office. Include with the original application a non-refundable fee of \$200, payable to the Railroad Commission of Texas. Submit an additional \$150 for each request for an exception to Statewide Rule 46(g)(3) and/or (j)(5)(B).
2. **Well Logs.** Attach the complete electric log or a similar well log for one of the proposed injection wells or for a nearby well. Attach any other logging and testing data, such as a cement bond log, available for the well that supports this application.
3.
 - (a) **For a new project,** attach a map with surveys marked showing the location and depth of all wells of public record within one-quarter (1/4) mile radius of the proposed injection well(s).
 - (b) **For an amendment to add wells to a previous authority,** attach a map with surveys marked showing the location and depth of all wells of public record within one-quarter (1/4) mile radius of the additional wells, unless such data has been submitted previously for the project.
 - (c) **Table of Wells.** For those wells in 3(a) or 3(b) that penetrate the top of the injection interval, attach a table of wells showing the dates drilled and their current status. The Commission may adjust or waive this data requirement in accordance with provisions in the "Area of Review" section of Statewide Rule 46 (Rule 46(e)).
4. **Water Letter.** Attach a letter from the Texas Commission on Environmental Quality (TCEQ) or its predecessor or successor agencies for a well within the project area stating the depth to which usable quality water occurs.
5. **Form(s) H-1A.** Attach Form H-1A showing each injection well to be used in the project. Up to TWO wells can be listed on each Form H-1A.
6. **Use of Fresh Water.** Attach Form H-7, Fresh Water Data Form, for a new injection project that includes the use of fresh water. An updated Form H-7 must be attached to Form H-1 for an expansion of a previously authorized fresh water injection project unless the fresh water is purchased from a commercial supplier, public entity, or from another operator.
7. **Plat of Leases, Notice and Hearings**
 - (a) **Plat of Leases.** Attach a plat of leases showing producing wells, injection wells, offset wells and identifying ownership of all surrounding leases within one-half (1/2) mile.
 - (b) **Notice.**
 - (1) Send or deliver a copy of the application to the owner of record of the surface tract on which the well(s) is located; each Commission-designated operator of any well located within one-half (1/2) mile of the proposed injection well(s); and the clerk of the city and county in which the well(s) is located. If this is the initial application for fluid injection authority for this reservoir, send copies of the application to all operators in the reservoir. Attach a signed statement indicating the date the copies of the application were mailed or delivered and the names and addresses of the persons to whom copies were sent.
 - (2) Attach an affidavit of publication signed by the publisher that notice of the application has been published in a newspaper of general circulation in the county where the well(s) will be located. Notice instructions and forms may be obtained from the Commission's Austin Office, the Commission's website (www.rrc.state.tx.us) or the District Offices. Attach a newspaper clipping of the published notice.
 - (c) **Protests and Hearings.** An affected person or local government may protest this application. A hearing on the application will be held if a protest is received and the applicant requests a hearing, or if the Commission determines that a hearing is in the public interest. Any such request for a public hearing shall be in writing and contain: (1) the name, mailing address and phone number of the person making the request; and (2) a brief description of how the protestant would be adversely affected by the granting of the application. If the Commission determines that a valid protest has been received, or that a hearing would be in the public interest, a hearing will be held after issuance of proper and timely notice of the hearing by the Commission. If no protest is received within fifteen (15) days of publication or receipt in Austin of the application, the application may be processed administratively.

RAILROAD COMMISSION OF TEXAS -- OIL AND GAS DIVISION

05/2004

Form H-1A

INJECTION WELL DATA (attach to Form H-1)

1. Operator Name (as shown on P-5) Synergy-West Exploration Co LLC						2. Operator P-5 No. 833652		
3. Field Name Massie West (Paluxy)						4. Field No. 58115500		
5. Current Lease Name West, Massie						6. Lease/Gas ID No. 02592		
7. Lease is <u>5</u> miles in a <u>West</u> direction from <u>Juno</u> (center of nearest town).								
8. Well No. <u>3</u>	9. API No. <u>465-00002</u>	10. UIC No. <u>000000795</u>	11. Total Depth <u>407'</u>	12. Date Drilled <u>7-28-1959</u>	13. Base of Usable Quality Water (ft) <u>1,000'</u>			
14. (a) Legal description of well location, including distance and direction from survey lines: <u>8,115' FEL & 1,564' FSL; League 1 Mason CSL Survey, A-1297</u>								
(b) Latitude and Longitude of well location, if known (optional) Lat. <u>30.180007 (NAD27)</u> Long. <u>-101.1929724 (NAD27)</u>								
15. New Injection Well <input type="checkbox"/> or Injection Well Amendment <input checked="" type="checkbox"/>				Reason for Amendment: Pressure <input checked="" type="checkbox"/> Volume <input checked="" type="checkbox"/> Interval <input type="checkbox"/> Fluid Type <input checked="" type="checkbox"/>				
Other (explain) _____								
Casing	Size	Setting Depth	Hole Size	Casing Weight	Cement Class	# Sacks of Cement	Top of Cement	Top Determined by
16. Surface	<u>5-1/2"</u>	<u>404'</u>	<u>6-3/4"</u>	<u>14#</u>	<u>Class A -</u>	<u>100</u>	<u>surface</u>	<u>circulated</u>
17. Intermediate			<u>& 8"</u>		<u>Reg. Long-</u>			
18. Long string					<u>horn</u>			
19. Liner								
20. Tubing size <u>2-3/8"</u>	21. Tubing depth <u>340'</u>	22. Injection tubing packer depth <u>340'</u>			23. Injection interval <u>360'</u> to <u>374'</u>			
24. Cement Squeeze Operations (List all)			Squeeze Interval (ft)		No. of Sacks		Top of Cement (ft)	
25. Multiple Completion? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			26. Downhole Water Separation? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		NOTE: If the answer is "Yes" to Item 25 or 26, provide a Wellbore Sketch			
27. Fluid Type <u>produced fresh water</u>			28. Maximum daily injection volume for each fluid type (rate in bpd or mcf/d) <u>1,000</u>		29. Estimated average daily injection volume for each fluid type (rate in bpd or mcf/d) <u>500</u>			
<u>air & N2</u>			<u>1,600</u>		<u>800</u>			
30. Maximum Surface Injection Pressure: for Liquid <u>180</u> psig for Gas <u>180</u> psig.								
8. Well No.	9. API No.	10. UIC No.	11. Total Depth	12. Date Drilled	13. Base of Usable Quality Water (ft)			
14. (a) Legal description of well location, including distance and direction from survey lines:								
(b) Latitude and Longitude of well location, if known (optional) Lat. _____ Long. _____								
15. New Injection Well <input type="checkbox"/> or Injection Well Amendment <input type="checkbox"/>				Reason for Amendment: Pressure <input type="checkbox"/> Volume <input type="checkbox"/> Interval <input type="checkbox"/> Fluid Type <input type="checkbox"/>				
Other (explain) _____								
Casing	Size	Setting Depth	Hole Size	Casing Weight	Cement Class	# Sacks of Cement	Top of Cement	Top Determined by
16. Surface								
17. Intermediate								
18. Long string								
19. Liner								
20. Tubing size	21. Tubing depth	22. Injection tubing packer depth			23. Injection interval _____ to _____			
24. Cement Squeeze Operations (List all)			Squeeze Interval (ft)		No. of Sacks		Top of Cement (ft)	
25. Multiple Completion? Yes <input type="checkbox"/> No <input type="checkbox"/>			26. Downhole Water Separation? Yes <input type="checkbox"/> No <input type="checkbox"/>		NOTE: If the answer is "Yes" to Item 25 or 26, provide a Wellbore Sketch			
27. Fluid Type			28. Maximum daily injection volume for each fluid type (rate in bpd or mcf/d)		29. Estimated average daily injection volume for each fluid type (rate in bpd or mcf/d)			
30. Maximum Surface Injection Pressure: for Liquid _____ psig for Gas _____ psig.								

FORM H-1A INSTRUCTIONS

05/2004

1. File as an attachment to Form H-1 to provide injection well data for each application for a new injection well permit or to amend an injection well permit.
2. Complete the current field name and number (Items 3 and 4) with the current field designation in Commission records.
3. Complete the current lease name and number (Items 5 and 6) with the current lease identification in Commission records for each well in the application. Use separate H-1A Forms for each lease.
4. Provide the current well number(s) for existing wells in Item 8. Provide the proposed well numbers for wells that have not yet been drilled.
5. Check in Item 15 the appropriate box for a new injection well permit or an amendment to an injection well permit. If an amendment, check the appropriate boxes for the reason(s) for the application(s) for amendment. If "other" is checked, provide a brief explanation.
6. Provide complete well construction information (Items 16 through 26), including all proposed re-completion (e.g. liner, cement squeeze, tubing, packer). Attach additional sheets if necessary. For Item 19, if the liner was not to the surface, indicate both the top and the bottom depth of the liner as the "Setting Depth."