9/30/2013

Brantley Heiser
Mas Operating Company
PO Box 52167
Midland, TX 79710
432.618.0678

State of New Mexico OCD
1220 South Francis Drive
Santa Fe, NM 87505

Mr. Goetze

Can you please consider converting our BV Lynch A Federal #2 SWD to a commercial disposal (API #30-025-02494, located 660 FSL & 660 FEL Unit P, Section 34, Township 20, Range 34 East, NMPM, Lea County, New Mexico). We have been approached by several offsetting operators that would like to dispose of produced water on our lease. Their produced water is primarily from the Bone Springs. We have taken water samples from two of these operators and the reports show the water to be compatible to the water that we are disposing of on-lease. We would like to start the process and look forward to your direction. I am attaching some past correspondence that we had with Will Jones on the subject, as well as a copy of the original SWD approval, and the water sample results.

Thank You,

Brantley Heiser
Mas Operating Company

cc: New Mexico OCD District 1 Office
1625 N. French Drive
Hobbs, NM 88240

encl.
Yates Petroleum Water Test
Fasken Oil Water Test
Case #8628, Order R7971
Previous Correspondence

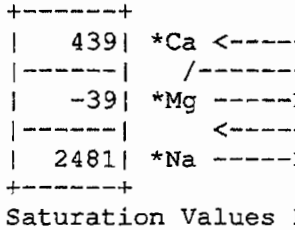
WATER ANALYSIS REPORT

Company	: YATES & MAS	Date	: 8/5/13
Address	:	Date Sampled	: 8/5/13
Lease	: COMPATIBILITY ANALYS	Analysis No.	: 00608
Well	:		
Sample Pt.	:		

	ANALYSIS		mg/L		* meq/L
1.	pH	6.0			
2.	H2S	25			
3.	Specific Gravity	1.100			
4.	Total Dissolved Solids		168172.3		
5.	Suspended Solids		NR		
6.	Dissolved Oxygen		NR		
7.	Dissolved CO2		NR		
8.	Oil In Water		NR		
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)				
11.	Bicarbonate	HCO3	610.0	HCO3	10.0
12.	Chloride	Cl	100500.0	Cl	2835.0
13.	Sulfate	SO4	1700.0	SO4	35.4
14.	Calcium	Ca	8800.0	Ca	439.1
15.	Magnesium	Mg	-479.9	Mg	-39.5
16.	Sodium (calculated)	Na	57032.2	Na	2480.7
17.	Iron	Fe	10.0		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		20000.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter



Saturation Values Dist. Water 20 C

CaCO3	13 mg/L
CaSO4 * 2H2O	2090 mg/L
BaSO4	2.4 mg/L

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	10.0	810
CaSO4	68.1	35.4	2409
CaCl2	55.5	393.7	21848
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6		
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	2441.3	142667

REMARKS:

SCALE TENDENCY REPORT

Company	: YATES & MAS	Date	: 8/5/13
Address	:	Date Sampled	: 8/5/13
Lease	: COMPATIBILITY ANALYS	Analysis No.	: 00608
Well	:	Analyst	: A. MILLER
Sample Pt.	:		

STABILITY INDEX CALCULATIONS
(Stiff-Davis Method)
CaCO3 Scaling Tendency

S.I. =	0.5	at	70 deg. F or	21 deg. C
S.I. =	0.5	at	90 deg. F or	32 deg. C
S.I. =	0.6	at	110 deg. F or	43 deg. C
S.I. =	0.7	at	130 deg. F or	54 deg. C
S.I. =	0.7	at	150 deg. F or	66 deg. C

****

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
(Skillman-McDonald-Stiff Method)
Calcium Sulfate

S =	1921	at	70 deg. F or	21 deg C
S =	2064	at	90 deg. F or	32 deg C
S =	2162	at	110 deg. F or	43 deg C
S =	2207	at	130 deg. F or	54 deg C
S =	2214	at	150 deg. F or	66 deg C

Respectfully submitted,
A. MILLER

Lynch

P.O. BOX 98
MIDLAND, TX. 79702
PHONE (432) 683-4521

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
FAX (432) 682-8819

RESULT OF WATER ANALYSES

LABORATORY NO. 0713-216
SAMPLE RECEIVED 7-8-13
RESULTS REPORTED 7-16-13

TO: Brantley Heiser
PO Box 52167, Midland, TX 79710

COMPANY MAS Operating LEASE Fasken Oil & Ranch

FIELD OR POOL

SECTION ____ BLOCK ____ SURVEY ____ COUNTY ____ STATE ____

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Fasken Oil - Quail Battery. 7-2-13

NO. 2 MAS Operating - Lynch. 7-2-13

NO. 3

NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0912	1.0805		
pH When Sampled				
pH When Received	6.50	6.20		
Bicarbonate as HCO_3	107	151		
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	16,200	5,300		
Calcium as Ca	5,360	980		
Magnesium as Mg	680	693		
Sodium and/or Potassium	51,652	46,986		
Sulfate as SO_4	215	4,980		
Chloride as Cl	90,904	72,439		
Iron as Fe	20	2		
Barium as Ba	0	0		
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	148,919	126,229		
Temperature °F.				
Carbon Dioxide, Calculated	56	166		
Dissolved Oxygen,				
Hydrogen Sulfide	0.0	0.0		
Resistivity, ohms/m at 77° F.	0.070	0.080		
Suspended Oil				
Corrosiveness	Moderate	Severe		
Barium Sulfate Scaling Tendency	None	None		
CaCO3 S.I. @ 77° F. (Stiff-Davis)	-0.29	-1.33		
CaCO3 S.I. @ 122° F. (Stiff-Davis)	0.31	-0.76		
Calcium Sulfate Scaling Tendency	None	None		

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks

CaCO3 S.I. - A positive fig. signifies a scaling potential proportionate to the magnitude of the number, and a negative fig. signifies no scaling potential.

Based on the determinations performed above, a hypothetical combination of these two waters shows they should be compatible. That is so say that no significant calcium carbonate, calcium sulfate, or barium sulfate scale would be likely beyond what already may exist in each water individually.

Form No. 3

By Greg Ogden, B.S.

LATHAM PRINTING CO. - 333-1292

P.O. BOX 98
MIDLAND, TX. 79702
PHONE (432) 683-4521

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
FAX (432) 682-8819

RESULT OF WATER ANALYSES

LABORATORY NO. 0713-216
SAMPLE RECEIVED 7-8-13
RESULTS REPORTED 7-16-13

TO: Brantley Heiser
PO Box 52167, Midland, TX 79710

COMPANY MAS Operating LEASE Fasken Oil & Ranch
FIELD OR POOL
SECTION ____ BLOCK ____ SURVEY ____ COUNTY ____ STATE ____
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Fasken Oil - Quail Battery. 7-2-13
NO. 2 MAS Operating - Lynch. 7-2-13
NO. 3
NO. 4
REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
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pH When Sampled				
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Carbon Dioxide, Calculated	56	166		
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Hydrogen Sulfide	0.0	0.0		
Resistivity, ohms/m at 77° F.	0.070	0.080		
Suspended Oil				
Fixed Solids ~~or Volatile~~ Corrosiveness	Moderate	Severe		
~~Volatile Solids~~ Barium Sulfate Scaling Tendency	None	None		
CaCO3 S.I. @ 77° F. (Stiff-Davis)	-0.29	-1.33		
CaCO3 S.I. @ 122° F. (Stiff-Davis)	0.31	-0.76		
Calcium Sulfate Scaling Tendency	None	None		

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Based on the determinations performed above, a hypothetical combination of these two waters shows they should be compatible. That is so say that no significant calcium carbonate, calcium sulfate, or barium sulfate scale would be likely beyond what already may exist in each water individually.

Form No. 3

By Greg Ogden, B.S.

LATHAM PRINTING CO - 333-1292

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 8628
Order No. R-7971

APPLICATION OF TEXACO INC. FOR
SALT WATER DISPOSAL, LEA COUNTY,
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8 a.m. on June 19, 1985, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 2nd day of July, 1985, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) The applicant, Texaco Inc., is the owner and operator of the B. V. Lynch "A" Federal Well No. 2, located 660 feet from the South and East lines (Unit P) of Section 34, Township 20 South, Range 34 East, NMPM, Lynch Yates-Seven Rivers Pool, Lea County, New Mexico.

(3) The applicant proposes to utilize said well to dispose of produced salt water into the Seven Rivers and Yates formations with injection into the open-hole interval from approximately 3630 feet to 4200 feet.

(4) The injection should be accomplished through 2 3/8-inch plastic lined tubing installed in a packer set at approximately 3550 feet; the casing-tubing annulus should be filled with an inert fluid; and a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(5) Prior to commencing injection operations, the casing in the subject well should be pressure-tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(6) The injection well or system should be equipped with a pressure limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 730 psi.

(7) The Director of the Division should be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such higher pressure will not result in migration of the injected waters from the Lynch Yates-Seven Rivers Pool.

(8) The operator should notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment and of the mechanical integrity pressure test in order that the same may be witnessed.

(9) The operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(10) Approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Texaco Inc., is hereby authorized to utilize its B. V. Lynch "A" Federal Well No. 2, located 660 feet from the South and East lines (Unit P) of Section 34, Township 20 South, Range 34 East, NMPM, Lea County, New Mexico, to dispose of produced salt water in the Lynch Yates-Seven Rivers Pool, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 3550 feet, with injection into the open-hole interval from approximately 3630 feet to 4200 feet;

PROVIDED HOWEVER THAT, the tubing shall be internally plastic-lined; the casing-tubing annulus shall be filled with an inert fluid; and a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, and/or packer.

PROVIDED FURTHER THAT, prior to commencing injection operations, the casing in the subject well shall be pressure-tested to assure the integrity of such casing in a manner that is satisfactory to the supervisor of the Division's district office at Hobbs.

(2) The injection well or system shall be equipped with a pressure limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 730 psi.

(3) The Director of the Division upon proper application may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Lynch Yates-Seven Rivers Pool.

(4) The operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment and of the mechanical integrity pressure test in order that the same may be witnessed.

(5) The operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(6) The applicant shall conduct disposal operations and submit monthly reports in accordance with Rules 702, 703, 704, 705, 706, 708, and 1120 of the Division Rules and Regulations.

(7) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

R. L. STAMETS
Director

S E A L
fd/

Subject: Re: OCD & Lynch 2

From: Brantley Heiser (bwheiser@sbcglobal.net)

To: brian@permitswest.com;

Cc: jgresham@bluestemenergy.com; William.V.Jones@state.nm.us;

Date: Friday, January 18, 2013 11:00 AM

Sorry, here is the attachment.

Brantley Heiser

Mas Operating Company
SA Brown Company
Blaine's Pub
PO Box 52167
Midland, TX 79710

432.618.0678 office
432.349.3846 mobile
432.618.9947 fax

From: Brantley Heiser <bwheiser@sbcglobal.net>
To: Brian Wood <brian@permitswest.com>
Cc: Jim Gresham <jgresham@bluestemenergy.com>; "EMNRD Jones, William V." <William.V.Jones@state.nm.us>
Sent: Fri, January 18, 2013 10:59:36 AM
Subject: Re: OCD & Lynch 2

Here is a copy of the current wellbore diagram. I have sent this, and a log to the Hobbs distrct office for file. I do not have a
plot of Disposal Rate and Pressure vs Time from the date the well was permitted for disposal (July 1985). I belive all samples have been taken by Bluestem and analyzed. We plan on rigging up on this well within the next few weeks to tag up and clean out the open hole to 4003' and check injection rate, if necessary, we will deepen to 4200' as permitted. Of course, we will notify OCD with the appropriate forms before and after. Please let me know what else is needed on our end.

Thank you,

Brantley Heiser

Mas Operating Company
SA Brown Company
Blaine's Pub
PO Box 52167
Midland, TX 79710

432.618.0678 office
432.349.3846 mobile
432.618.9947 fax

From: Brian Wood <brian@permitswest.com>
To: Brantley Heiser <bwheiser@sbcglobal.net>
Cc: Jim Gresham <jgresham@bluestemenergy.com>
Sent: Thu, January 3, 2013 9:44:01 AM
Subject: OCD & Lynch 2

Can you provide the diagram, logs, & plot?
Jim, we can evaluate compatibility if you have Bone Spring water analysis.

Begin forwarded message:

> **From:** "Jones, William V., EMNRD" <William.V.Jones@state.nm.us>
> **Subject: RE: Bluestem & Mas**
> **Date:** January 2, 2013 5:44:21 PM MST
> **To:** Brian Wood <brian@permitswest.com>
> **Cc:** "pswartz@blm.gov" <pswartz@blm.gov>, "Wesley_Ingram@blm.gov" <Wesley_Ingram@blm.gov>, "Kautz, Paul, EMNRD" <paul.kautz@state.nm.us>
>
> Brian,
> Happy New Year!!
>
> Looks like several Yates/Seven Rivers "SWD" wells have been permitted in this area. This is supposedly on top of the Capitan Reef and under the Potash defined area, so I would want to make sure the well has not been deepened into the Reef or endangering any Potash. This well was permitted as Open Hole from 3630 to 4200 feet but our records show it was only deepened to 4003 feet and the injection did encounter pressure. This well was permitted (it seems only) to handle other Yates/Seven Rivers water, so handling Bone Spring water is questionable.
>
> And since this is a Federal well, they would need to approve anything like that proposed.

For us to further evaluate this:
Would you send another wellbore diagram showing the well as it is equipped for disposal with tubing/packer/open hole depths etc?
Would you ask your client to send copies of any logs it has on this well to our Hobbs district office - our records show no logs at all.
Also, if possible, send a plot of Disposal Rate and Pressure vs Time from the date the well was permitted for disposal (July 1985).
We also ask that the operator notify the surface owner of this well site they will be taking water off-lease.

Do this and I will let you know our thoughts?

Will

-----Original Message-----
From: Brian Wood [mailto:brian@permitswest.com]
Sent: Wednesday, January 02, 2013 3:09 PM
To: Jones, William V., EMNRD
Subject: Bluestem & Mas

Bluestem is considering whether to dispose of Bone Spring water in Mas' B V Lynch A Federal 2 (30-025-02494).
Mas is disposing only its own water currently (Case 8628, Order R-7971).
What does Mas need to do to accept Bluestem's water?
Thanks and Happy New Year !

B.V. Lynch A Fed. No. 2

API # 30-025-02444

Completion Date 8-28-84

Elev. 3781' DF
3778 GL

← Casing Size 20"
Weight 90 lb
Grade NA
Set @ 114'
Hole size NA
Cement 65 sx @ Bol. circ sx @ top

Tubing - 2 7/8" IPC

Note: 15 1/2" csg. was landed @ 620' then pulled & 10" csg was landed @ 940' then pulled.

← Casing size 8 5/8"
Weight 32 lb
Grade NA
Set @ 1687'
Hole Size est. 9 7/8
Cement 75 sx TOC @ 971' calc. 70% fill

Present - 1/2013
Wellbore Diagram

AS-1X packer @ 3515'

Top 3630'

Lynch Yates Seven Rivers

← Casing Size 5 1/2"
Weight 15.5/16
Grade NA
Set @ 3630'
Hole Size est 6 3/4"
Cement 70 sx TOC @ 2938' calc 70% fill

← Open Hole Size 4 3/4"

PBTD 4003' TD 4003'

SUPPLEMENTAL DRILLING DATA

HANAGAN PETROLEUM CORPORATION
No.1 Union Federal
SWSE Sec.15-21S-25E
Eddy County, NM

NM 029128

The following items supplement Form 3160-3 in accordance with instructions contained in Onshore Oil and Gas Order No.1:

1. SURFACE FORMATION: Permian

2. ESTIMATED TOPS OF GEOLOGIC MARKERS:

Capitan Reef	700'
Base of Reef	1130'
Delaware	1650'
Cherry Canyon	2400'

3. ESTIMATED DEPTHS TO WATER, OIL OR GAS FORMATION:

0' - 1650' - Brackish water

2400' - 3000' - Oil or gas zone

4. PROPOSED CASING PROGRAM:

8-5/8" Casing - 24# ST&C casing will be set to about 1700' with cement circulated.

5-1/2" Casing - 15.5# ST&C casing will be set thru the producing zone and cemented to isolate all oil, gas and water zones.

The surface and production casing will be tested to 1000 psi.

5. PRESSURE CONTROL EQUIPMENT: Pressure control equipment will include a 3000#WP blowout preventer stack, with Series 900 blind and pipe rams. The BOP stack will include a kill line and choke manifold tested to 2000 psi. BOP hydraulic controls will be operated at least daily. A diagrammatic sketch of the BOP stack is attached as Exhibit "D".

30-015-26181

2/1991 - Injection 2600' to 3038'

P&A 2001

SWD-392