

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505



RECEIVED OGD

ADMINISTRATIVE APPLICATION CHECKLIST 2012 JUN 21 P 3: 16

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
- [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
- [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
- [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
- [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
- [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

- [D] Other: Specify _____

OGRID 230930
API
Well Name Lakewood SWD #2
Located F-9-195-26E
B-9-195-26E
API 30-015-21319

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply

- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
- [B] ☐ Offset Operators, Leaseholders or Surface Owner
- [C] ☐ Application is One Which Requires Published Legal Notice
- [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☒ For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] CERTIFICATION: I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Mark A. Fairchild	<u>Mark A. Fairchild</u>	Senior Operations Engineer	05/16/2012
Print or Type Name	Signature	Title	Date
		MFairchild@Conchoresources.com	
		e-mail Address	

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance ☒ Disposal _____ Storage
Application qualifies for administrative approval? _____ Yes _____ No
- II. OPERATOR: **COG Operating, LLC.**
ADDRESS: **550 West Texas, Ste 100, Midland TX 79701-4287**
CONTACT PARTY: **Mark A. Fairchild** PHONE: **432-686-3021**
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? _____ Yes ☒ No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: **Mark A. Fairchild** TITLE: **Sr. Operations Engr.**
SIGNATURE: Mark A. Fairchild DATE: **5/16/2012**
E-MAIL ADDRESS: **MFairchild@Concho.com**
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

OPERATOR: **COG Operating, LLC.**WELL NAME & NUMBER: **Lakewood SWD #2**WELL LOCATION: **1470' FNL; 1980' FWL**

FOOTAGE LOCATION

F

UNIT LETTER

9

SECTION

T19S

TOWNSHIP

R26E

RANGE

WELLBORE SCHEMATIC

*Cement volumes will increase of those shown on this application to account for hole conditions unknown at this time.

WELL CONSTRUCTION DATASurface Casing

Well: Lakewood SWD #2
 Location: 1470 FNL; 1980 FWL. Sec 9
 T19S, R26E, Eddy Co., NM

Hole Size: **12 1/4"**Casing Size: **9 5/8"**Cemented with: **400** sx.or **ft³**Top of Cement: **Surface**Method Determined: **Circulate**Intermediate Casing

Hole Size: _____

Casing Size: _____

Cemented with: _____ sx.

or **ft³**

Top of Cement: _____

Method Determined: _____

Production CasingHole Size: **8 3/4"**Casing Size: **7"**Cemented with: **1,075** sx.or **ft³**Top of Cement: **Surface**Method Determined: **Circulate**Total Depth: **8,400'**Injection Interval**7,720** feet to **8,000****Interval perforated**

(Perforated or Open Hole; indicate which)

9 5/8" @ 1,200'

7" @ 8,400'

INJECTION WELL DATA SHEET

Tubing Size: 3 1/2" EUE Lining Material: Internally plastic coated

Type of Packer: Double grip type, set in neutral

Packer Setting Depth: no more than 100' above top perf

Other Type of Tubing/Casing Seal (if applicable): N/A

Additional Data

1. Is this a new well drilled for injection? X Yes No

If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: Canyon

3. Name of Field or Pool (if applicable): None

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. _____

No, none

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: _____

Yeso formation at approx. 2,630'

COG SENM SWD Well Questionnaires

Date: 5/16/12

By: Mark A. Fairchild, Office: 432-686-3021

Note: Answers to questions in this color

What will be the well name?

Lakewood SWD #2

What logs have been/will be run in the well?

Logs will be run as follows: porosity and resistivity

How will you re-enter/drill/convert the well?

The well will be drilled 100% with rotary tools.

How will you test the mechanical integrity of the casing?

A State of New Mexico supervised MIT test to 500 psig will be run on the tubing/casing annulus.

What size tubing do you plan to use?

The tubing will be 3 1/2" Nominal OD.

How will tubing be internally lined?

The tubing will be internally plastic coated.

What type packer will be used?

A nickel plated compression set packer will be utilized.

Where will packer be set?

To within 50 to 100' above casing shoe.

Will there be any other type of casing/tubing seal?

No.

What is the fracture gradient?

Approx 0.75

Will the well be stimulated?

Yes

If yes, how will the well be stimulated?

Large conventional acid job.

Into what perforated intervals will you inject?

Canyon Reef: 7,720 to 8000

What will be the average daily volume injected?

10-15,000 BWPD

What will be the maximum daily volume injected?

20, 000 BWPD

What will be the average injection pressure?

Vacuum

What will be the maximum injection pressure?

1572 psig

Will water be trucked or piped to the well?

Piped

What wells will dispose into it?

Various wells owned exclusively by COG on our SWD water line system

Any non-COG wells?

No outside operated water will be disposed of.

What surface facilities (e.g.; tanks, pumps, filters) will be installed?

4 - 750 Bbl water storage tanks, 1 - 1,000 Bbl Gun Barrel

2 - 500 Bbl steel tanks, 1 - 400 BHP H pump

Do you have an analysis of the produced water you plan to inject?

Yes

Do you have an analysis of the formation water into which you'll inject?

No, these well are on a vacuum and do not produce.

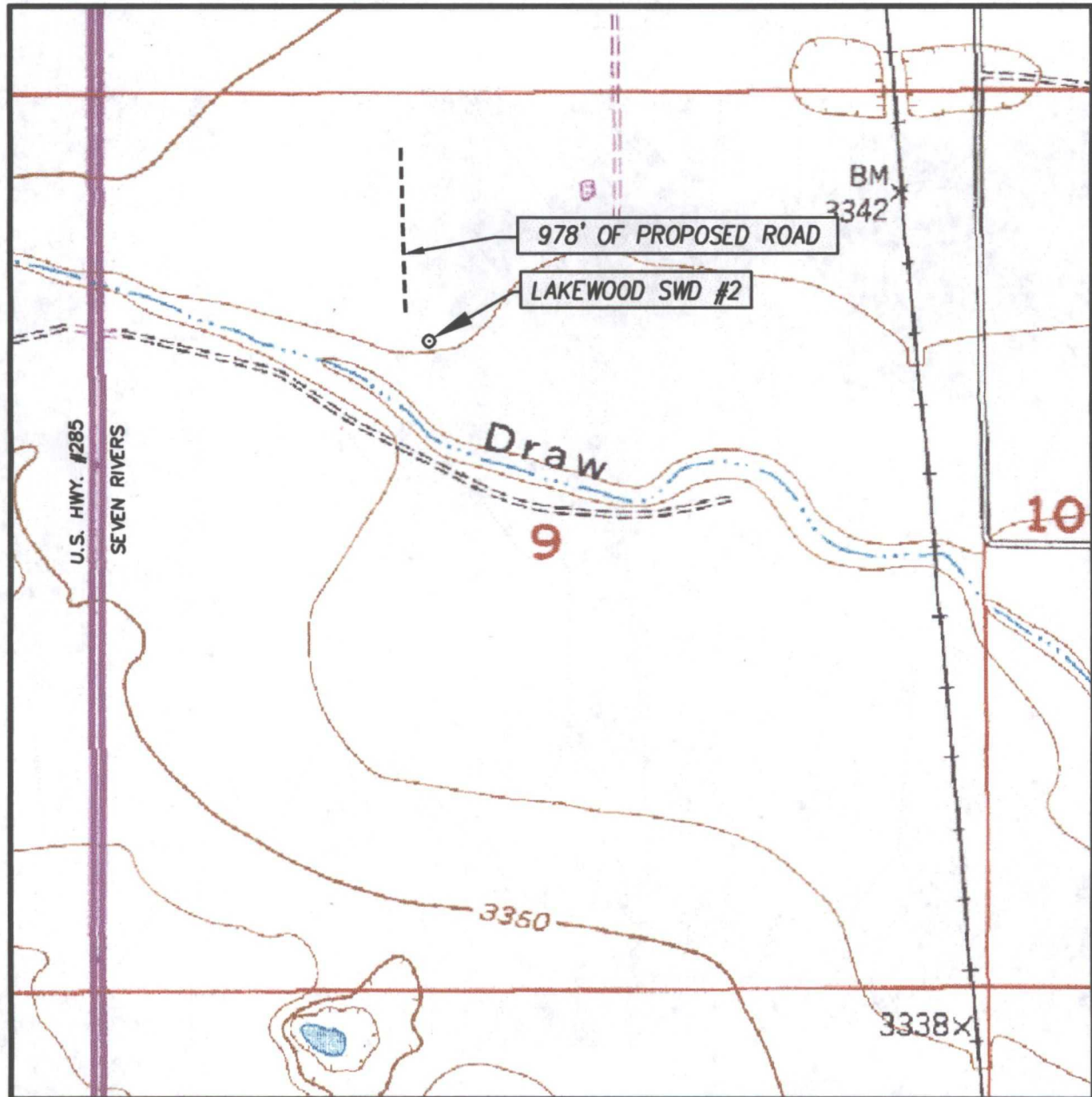
How will the geology prevent migration into fresh water zones (e.g., thickness of shale or salt layers)?

Various impervious geological barriers exist between the Cisco and the surface.

Will the system be open or closed?

Closed

LOCATION VERIFICATION MAP



SCALE: 1" = 1000'

CONTOUR INTERVAL:
DAYTON, N.M. - 10'

SEC. 9 TWP. 19-S RGE. 26-E

SURVEY _____ N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

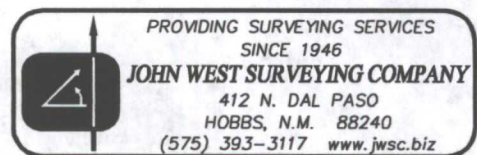
DESCRIPTION 1470' FNL & 1980' FWL

ELEVATION 3341'

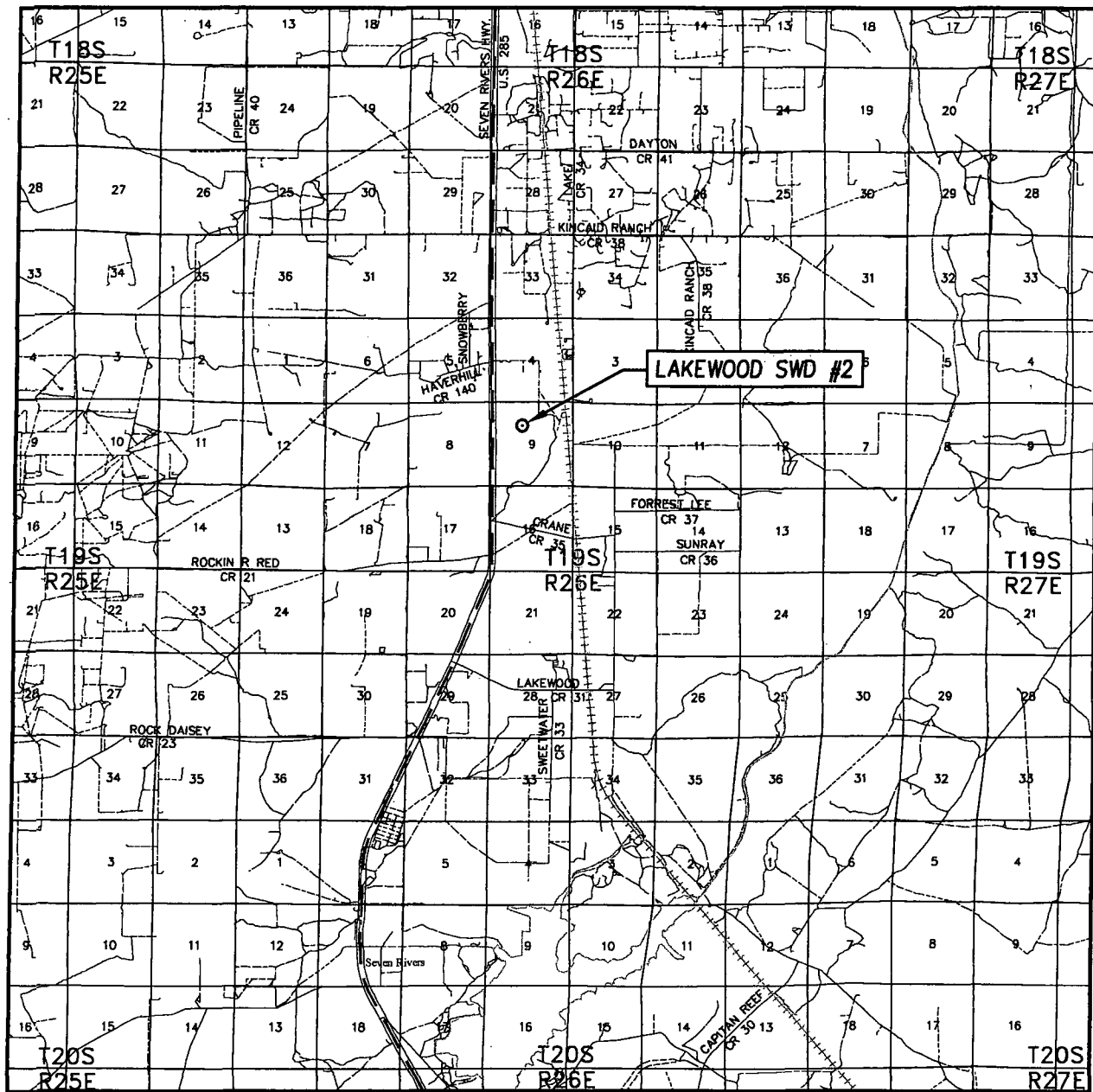
OPERATOR COG OPERATING, LLC

LEASE LAKEWOOD SWD

U.S.G.S. TOPOGRAPHIC MAP
DAYTON, N.M.

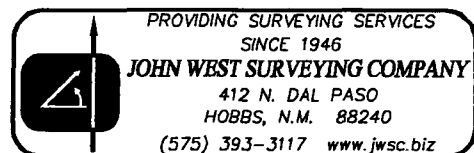


VICINITY MAP

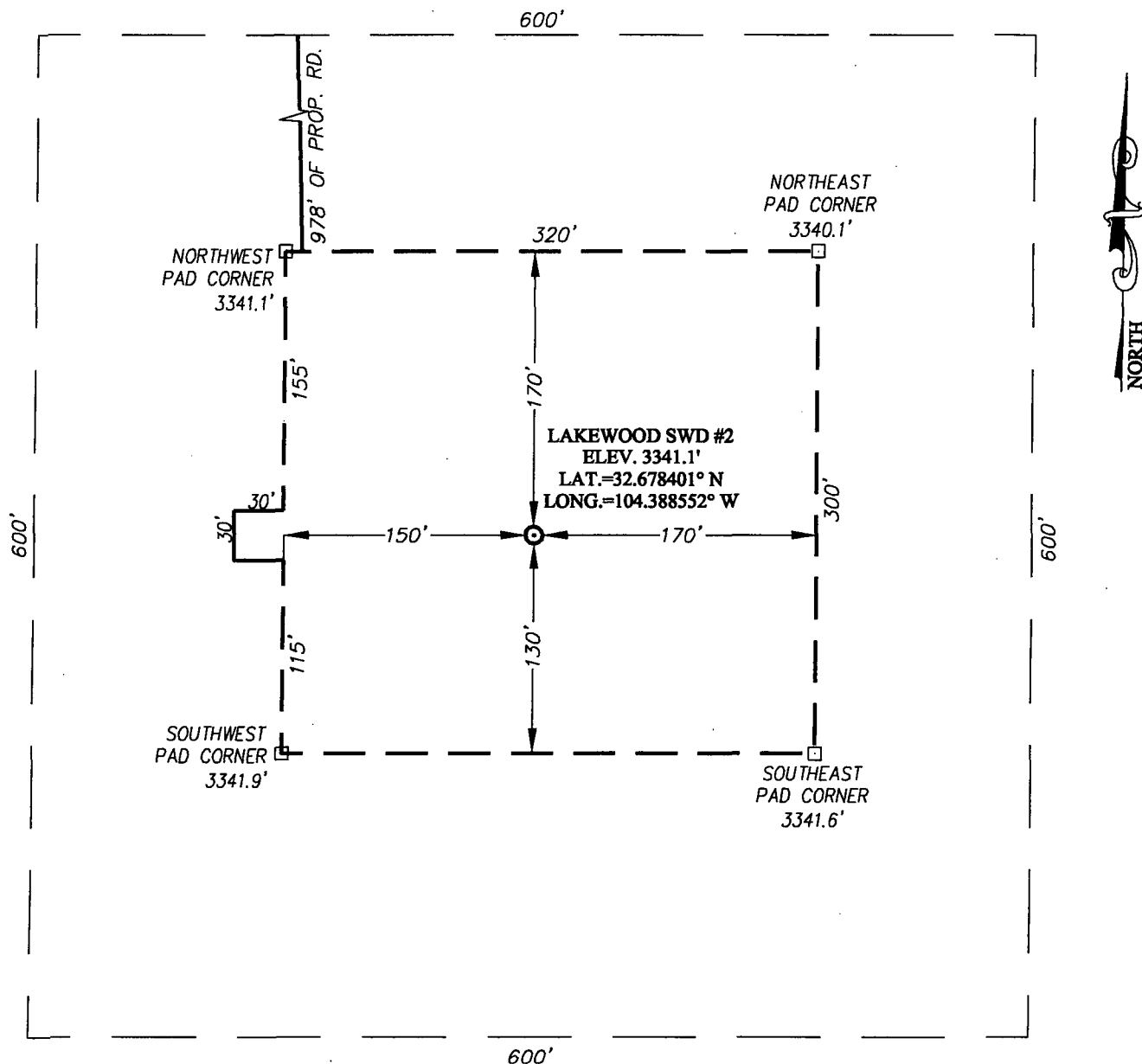


SCALE: 1" = 2 MILES

SEC. 9 TWP. 19-S RGE. 26-E
 SURVEY N.M.P.M.
 COUNTY EDDY STATE NEW MEXICO
 DESCRIPTION 1470' FNL & 1980' FWL
 ELEVATION 3341'
 OPERATOR COG OPERATING, LLC
 LEASE LAKEWOOD SWD

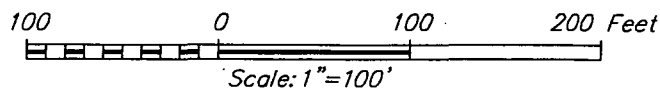


SECTION 9, TOWNSHIP 19 SOUTH, RANGE 26 EAST, N.M.P.M.
EDDY COUNTY **NEW MEXICO**



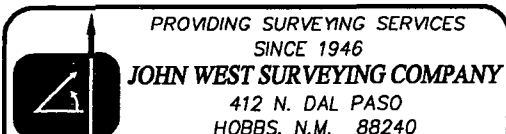
DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. #285 (SEVEN RIVERS) AND CO. RD. #140 (HAVEN HILL), GO SOUTH ON U.S. HWY. #285 APPROX. 0.4 MILES TO STAKED RD. TURN LEFT AND GO EAST APPROX. 0.3 MILES. TURN RIGHT AND GO SOUTH APPROX. 419 FEET TO THE NORTHWEST CORNER PAD OF STONEWALL 9 FEE #2H. FROM THE SOUTHEAST CORNER OF PAD FOLLOW ROAD SURVEY SOUTH APPROX. 978 FEET TO THIS LOCATION.

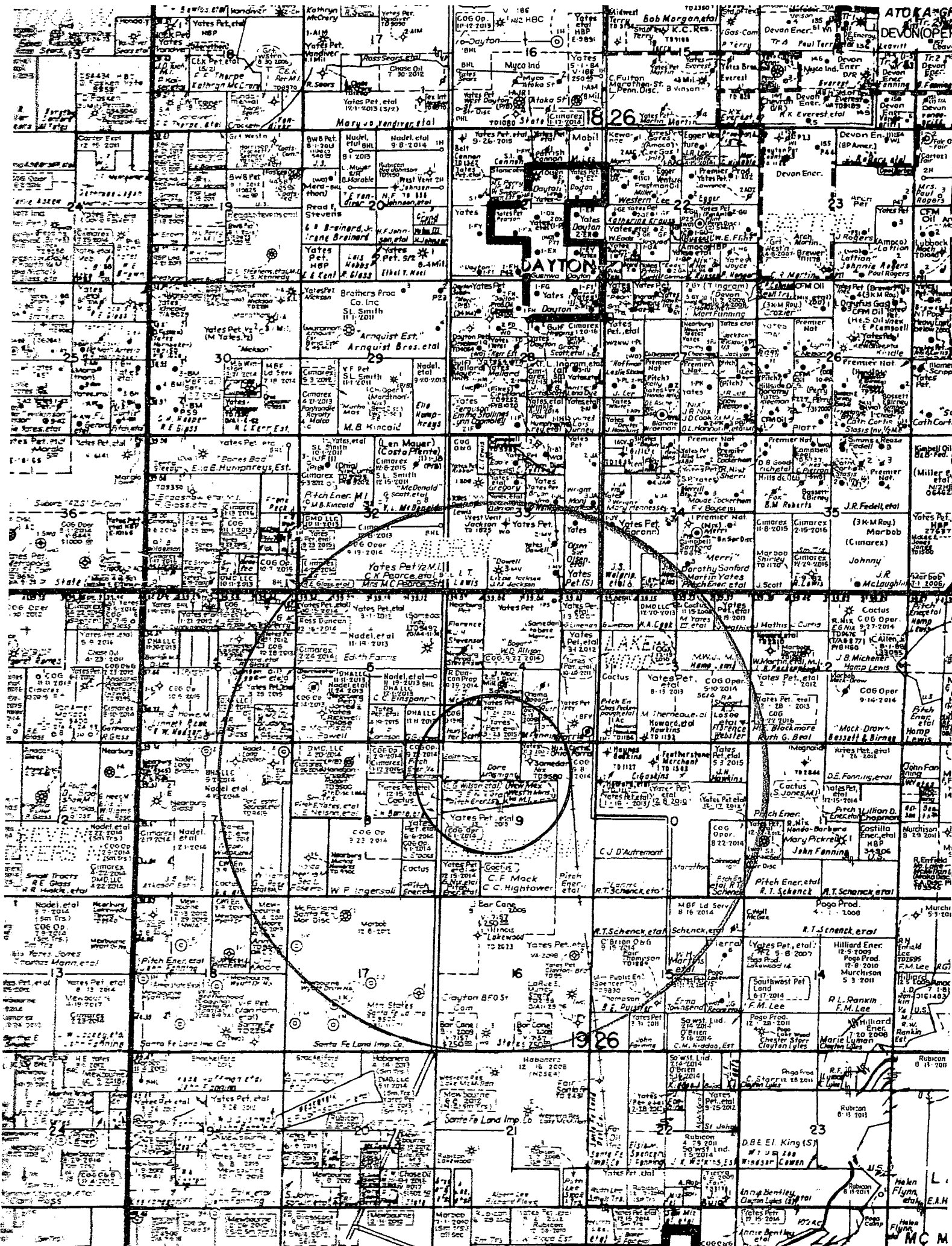


COG OPERATING, LLC

LAKEWOOD SWD #2 WELL
LOCATED 1470 FEET FROM THE NORTH LINE
AND 1980 FEET FROM THE WEST LINE OF SECTION 9,
TOWNSHIP 19 SOUTH, RANGE 26 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO



Survey Date: 3/01/12	CAD Date: 3/13/12	Drawn By: ACR
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Lakewood SWD #2

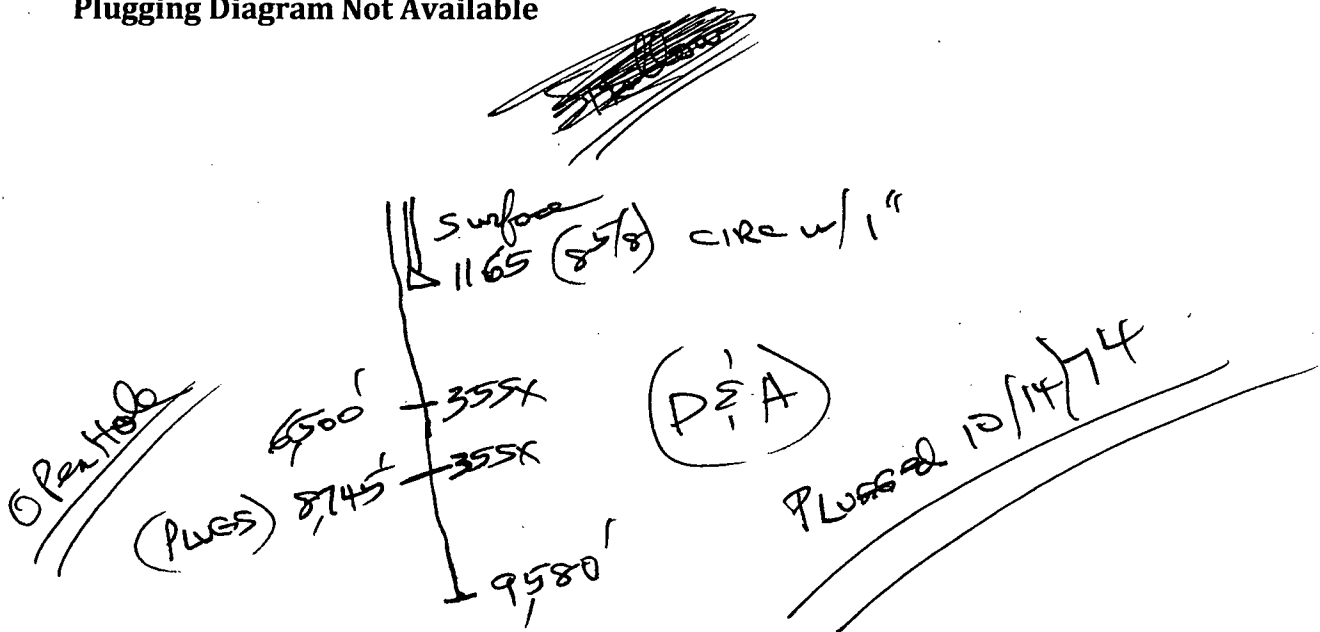
Wells within area of review that penetrate proposed disposal interval:

None.

Plugged Wells within area of review:

API #: 3001521319 Well Name: NIX Property Number.: 001
Location: B-9-19.0S-26E, 660 FNL, 2310 FEL
Lat: 32.6807507822 Long: -104.385930072
Operator Name: SAMEDAN OIL CORP County: Eddy
Land Type: Unknown Well Type: Oil Spud Date: 1/1/1900 1 Plug
Date: 1/1/1900 1
Elevation GL: 0 Depth TVD: 0
Plugging Diagram Not Available

SPUD 1974





New Mexico Office of the State Engineer
Active & Inactive Points of Diversion
(with Ownership Information)

No PODs found.

POD Search:

POD Basin: Jal

Basin/County Search:

County: Eddy

PLSS Search:

Section(s): 9

Township: 19S

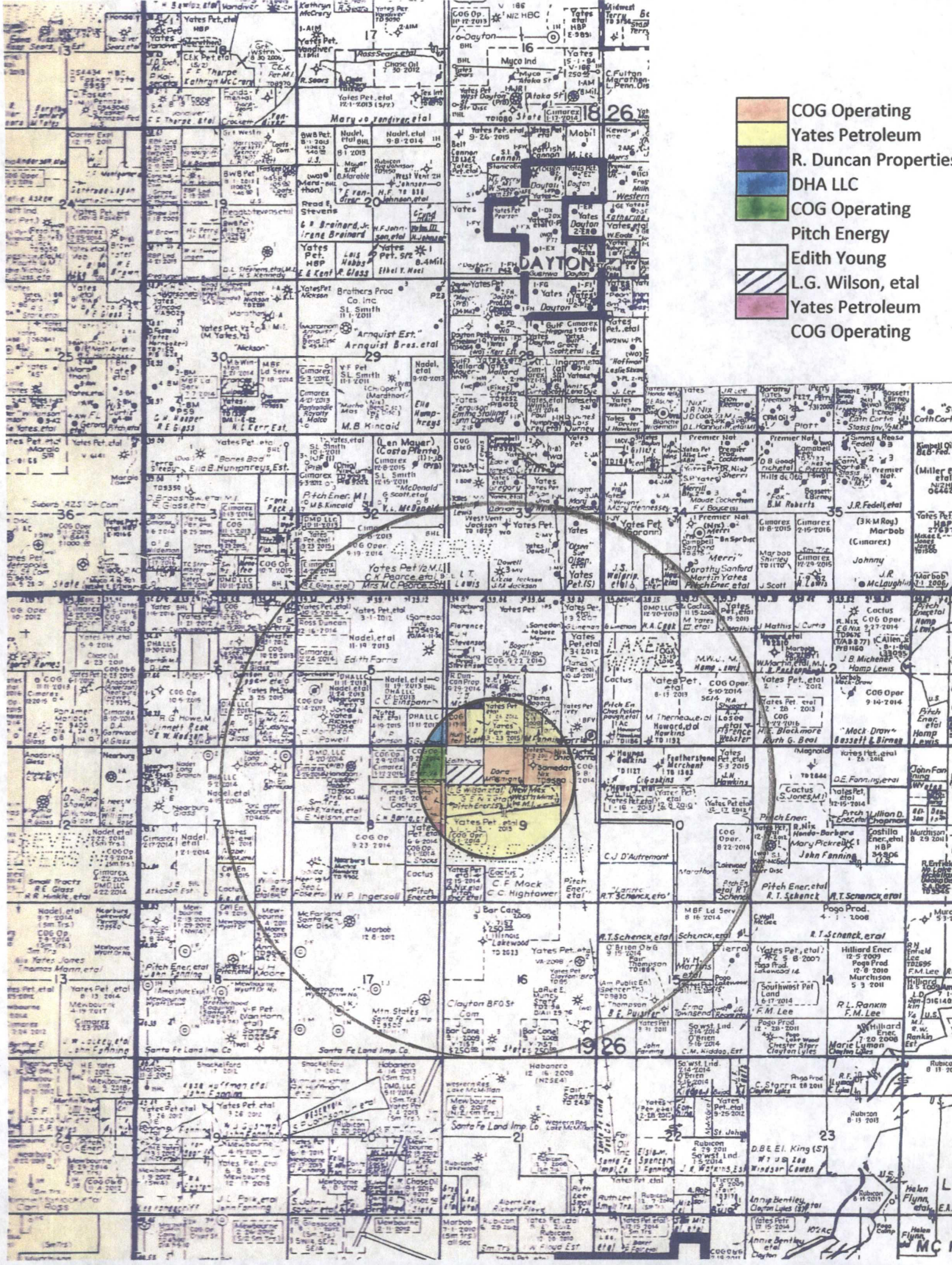
Range: 26E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

5/30/12 9:24 AM

Page 1 of 1

ACTIVE & INACTIVE POINTS OF DIVERSION



- COG Operating
- Yates Petroleum
- R. Duncan Properties
- DHA LLC
- COG Operating
- Pitch Energy
- Edith Young
- L.G. Wilson, et al
- Yates Petroleum
- COG Operating

Notice

June 4, 2012

R. Duncan Properties
17777 S. Harrison St.
Denver, CO 80210

COG Operating LLC is applying (see attached application) to drill the Lakewood SWD #2 well as a salt water disposal well described below. As required by New Mexico Oil Conservation Division Rules, I am notifying you of the following proposed water disposal well. This letter is a notice only. No action is needed unless you have questions or objections.

Well: Lakewood SWD #2

Proposed Disposal Zone: Canyon (from 7,720' to 8,000')

Location: 1470' FNL & 1980' FWL Sec 9, T19S, R26E

Eddy County, NM

Approximate Location: 3 miles North of Lakewood, NM

Applicant Name: COG Operating LLC (432) 685-4340

Applicant's Address: 550 West Texas, Suite 1300, Midland, TX 79701

Submittal Information: Application for a water disposal well will be filed with the NM Oil Conservation Division. If they determine the application complies with the applicable regulations, then it will be approved. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr., Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

Mark Fairchild
T.O

Mark Fairchild
(432) 686-3021

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Street, Apt. No.,
or PO Box No.
City, State, ZIP+4

R. Duncan Properties
17777 S. Harrison St.
Denver, CO 80210

PS Form 3800, Aug 2004

MIDLAND TX VILLAGE STA 19704
USPS
JUN 9 2012

Notice

June 4, 2012

Pitch Energy Corporation
P.O. Box 304
Artesia, NM 88211

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Mark Fairchild
T.O.

Mark Fairchild
(432) 686-3021

7011 0470 0001 5496 4012

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Total Postage & Fees	\$

Se
Str
or
City

Pitch Energy Corporation
P.O. Box 304
Artesia, NM 88211

MIDLAND TX VILLAGE STA
JUN 16 2012
79704

Notice

June 4, 2012

DHA LLC
1220 South St. Francis
Santa Fe, NM 87504

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$
Sent To DHA LLC Street, Apt. No., or PO Box No. 1220 South St. Francis City, State, ZIP+4 Santa Fe, NM 87504	

PS Form 3800, August 2006 See Reverse for Instructions

7011 0470 0001 5496 3930

MIDLAND TX VILLAGE STA 79701
JUN 19 2012
USPS

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Mark Fairchild
T.O.

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(432) 686-3021

Notice

June 4, 2012

DHA LLC
12204 Towner Ne
Albuquerque, NM 87100

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T.C.

Mark Fairchild
(432) 686-3021

9846 5445 1000 0440 0440 7011

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Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees	\$ \$6.80

550 WEST TEXAS, SUITE 1300, MIDLAND, TX 79701
JUN 07 2012

To: DHA LLC
Street, Apt. No.: 12204 Towner NE
City, State, ZIP+4: Albuquerque, NM 87100
PS Form 3800, August 2005 See Reverse for Instructions

Notice

June 4, 2012

Yates Petroleum Corporation
Attn: Michelle Taylor
105 S. 4th St.
Artesia, NM 88210

7011 0470 0001 5496 3985

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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Sent To: Yates Petroleum Corporation
Street, Apt. No., or PO Box No.: Attn: Michelle Taylor
City, State, ZIP+4: 105 S. 4th St.
Artesia, NM 88210

Postmark: MIDLAND TX VILLAGE STA 79704 JUN 19 2012

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Applicant Name: COG Operating LLC (432) 685-4340

Applicant's Address: 550 West Texas, Suite 1300, Midland, TX 79701

Submittal Information: Application for a water disposal well will be filed with the NM Oil Conservation Division. If they determine the application complies with the applicable regulations, then it will be approved. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr., Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

Mark Fairchild
T.O.

Mark Fairchild
(432) 686-3021

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

Kathy McCarroll, being first duly sworn,
on oath says:

That she is the Classified Supervisor of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

June 6 _____ 2012

That the cost of publication is **\$44.75** and that payment thereof has been made and will be assessed as court costs.

[Signature]

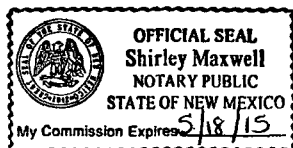
Subscribed and sworn to before me this

18th day of June, 2012

[Signature]

My commission Expires on May 18, 2015

Notary Public



June 6, 2012

Legal Notice
June 4, 2012

COG Operating LLC is applying to drill the Lake-wood SWD #2 as a water disposal well. The well is located at 1470' FNL & 1980' FWL, Sec. 9, T. 19 S., R. 26 E., Eddy County, NM. The well will dispose of water produced from oil and gas wells into the Canyon Reef zone at a depth of 7720' to 8000' at a maximum rate of 20,000 barrels of water per day and at a maximum pressure of 1,572.5 psi. Interested parties must file objections or requests for hearing with the NM Oil Conservation Division, 1220 South Saint Francis Dr., Santa Fe, NM 87505, within 15 days. Additional information can be obtained by contacting Mark Fairchild, COG Operating, LLC, phone number is (432) 686-3021.

Jones, William V., EMNRD

From: Jones, William V., EMNRD
Sent: Thursday, August 02, 2012 5:00 PM
To: 'Mark Fairchild'; 'Mark Fairchild'
Cc: Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; Brooks, David K., EMNRD
Subject: Disposal application from COG Operating, LLC: proposed Lakewood SWD #2 30-015-NA 1470fnl 1980fwl F/9/19S/26E Eddy Canyon formation perforated from 7720 to 8000 feet

Hello Mark,
Would you let me know:

1. Who owns the surface at this proposed well site and were they noticed (the application does not say)
2. Please send the proof of notice to Edith Young and L.G. Wilson – I did not find those certifications in the application.
3. Would you send me the depth you will use for DV tool in this proposed well and the cementing volumes above and below that stage tool.
4. Send a wellbore diagram of the plugged well in the Area of Review – there is data on the OCD web site about this well – see below.
5. Are there any fresh water sources (windmills located by your field people) within 1 mile of this location?

The biggest issue:

The application showed one P&Aed AOR well without any wellbore diagram. From the Division's web site it appears this was a dry hole drilled to 9580 feet and plugged without running casing. The plugs were set 8745 feet which seems to be at the top of the Strawn and at 6500 feet which may be somewhere in the Wolfcamp formation.

I can either write the permit requiring COG to re-enter this old well and attempt to put plugs over the top and bottom of your intended disposal interval OR COG could in effect widen its proposed disposal interval. COG could send a certified letter to all the affected parties explaining this disposal well is actually unbounded in the Area of Review between 6500 feet and 8745 feet over the Wolfcamp, Cisco, and Canyon formations. We could then wait 15 days for objections. I would write the permit for the depths 7720 to 8000 feet, but it would have been clear to all parties that the disposed fluid was only bounded between 6500 to 8745 feet.

Thank You,

William V. Jones, P.E.
Engineering, Oil Conservation Division
1220 South St. Francis Drive, Santa Fe, NM 87505
Tel 505.476.3448 ~ Fax 505.476.3462



Jones, William V., EMNRD

From: Mark Fairchild <MFairchild@concho.com>
Sent: Monday, August 13, 2012 9:19 AM
To: Jones, William V., EMNRD
Subject: RE: Disposal application from COG Operating, LLC: proposed Lakewood SWD #2
30-015-NA 1470fnl 1980fwl F/9/19S/26E Eddy Canyon formation perforated from
7720 to 8000 feet

Will, more answers to the #2 Questions:

1. Surface: Owner Concho

2. Please send the proof of notice to Edith Young and L.G. Wilson – I did not find those certifications in the application.
Mark,

Sorry for the delayed response but I have looked back through my files and according to my research it wasn't necessary to notify Edith Young or L.G. Wilson. I am thinking Will thinks these are surface owners that needed to be notified but both sites are on surface owned by Pitch Energy who was notified. If Will thinks I am wrong or that I am missing something please let me know. Thanks.

tye Orr
Consulting Landman

3. Please see the cementing data submitted for the SWD #1
4. P&A'd well. Will, here is what Concho would propose. We drill the SWD #1 with SWD permit stipulation. If it makes a well, the stipulation would be that we re enter and plug to NMOCD specs the P&A well in the Area of Review.
5. Windmill: N 32' 41.360. W 104' 25.784

M.A. Fairchild
COG OPERATING LLC
Office: 432-686-3021
Cell: 432-230-7170



From: Jones, William V., EMNRD [<mailto:William.V.Jones@state.nm.us>]
Sent: Thursday, August 02, 2012 6:00 PM
To: Mark Fairchild; Mark Fairchild
Cc: Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; Brooks, David K., EMNRD

Subject: Disposal application from COG Operating, LLC: proposed Lakewood SWD #2 30-015-NA 1470fml 1980fml F/9/19S/26E Eddy Canyon formation perforated from 7720 to 8000 feet

Hello Mark,

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COG could in effect widen its proposed disposal interval. COG could send a certified letter to all the affected parties explaining this disposal well is actually unbounded in the Area of Review between 6500 feet and 8745 feet over the Wolfcamp, Cisco, and Canyon formations. We could then wait 15 days for objections. I would write the permit for the depths 7720 to 8000 feet, but it would have been clear to all parties that the disposed fluid was only bounded between 6500 to 8745 feet.

Thank You,

William V Jones, P.E.
Engineering, Oil Conservation Division
1220 South St. Francis Drive, Santa Fe, NM 87505
Tel 505.476.3448 ~ Fax 505.476.3462



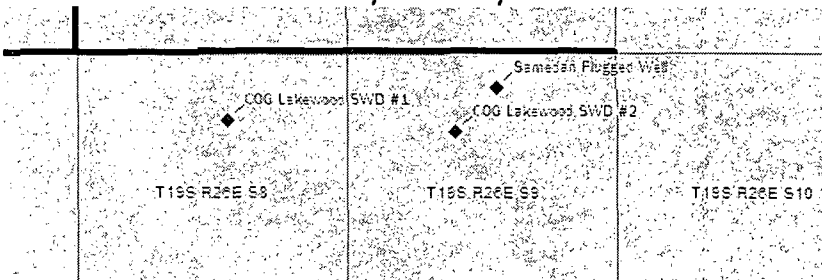
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Jones, William V., EMNRD

From: Mark Fairchild <MFairchild@concho.com>
Sent: Friday, August 17, 2012 10:21 AM
To: Jones, William V., EMNRD
Subject: Lakewood SWD #2
Attachments: COG SENM WBD Samedan PandA.xlsx

Will, trying to understand and get done your suggestion.

1. A wbd of the Samedan P&A is attached.
2. A map is shown below.
3. See if this is correct
 - a. We send cert'd ltr to all 'affected persons' the notice list
 - b. We include the P&A wbd
 - c. what does 'explain that the SWD well is unbounded' mean?
 - d. Dunno exactly what you want me to write?



M.A. Fairchild
COG OPERATING LLC
Office: 432-686-3021
Cell: 432-230-7170



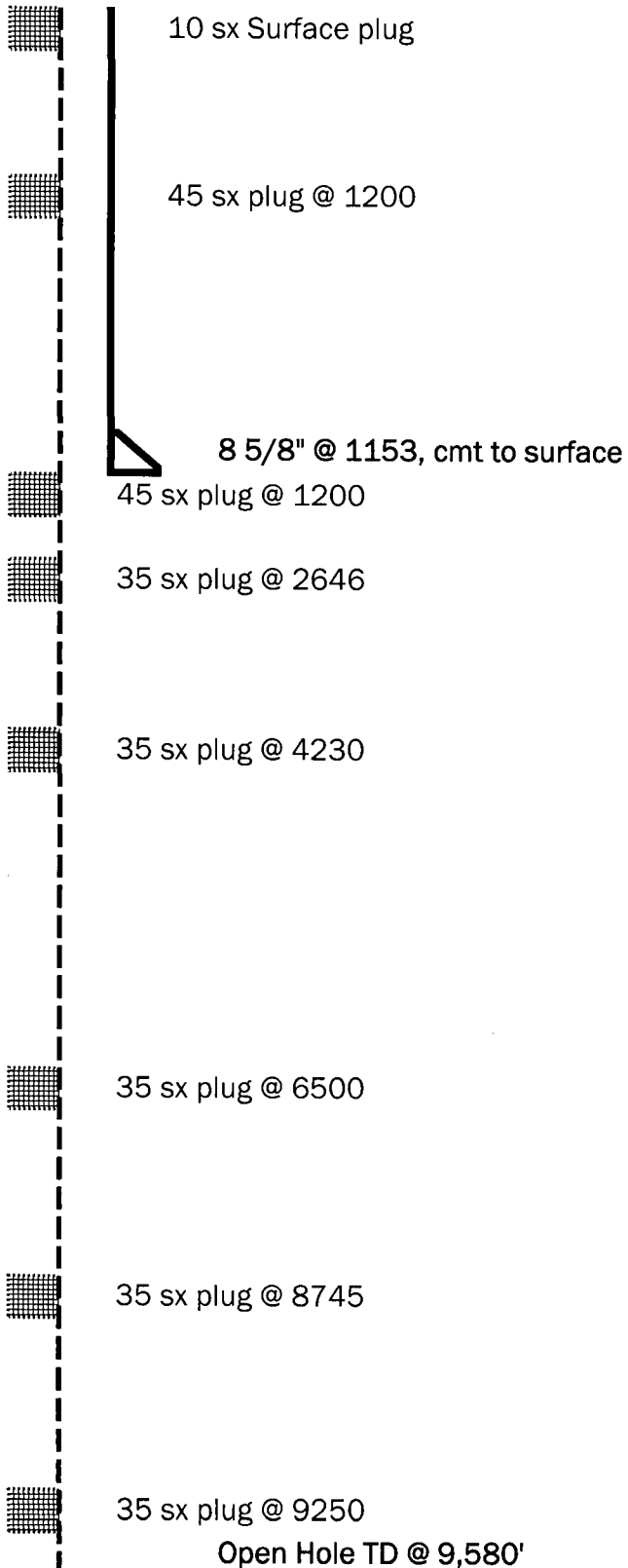
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COG SENM SWD

Well: Samedan Oil Corp.

Location: B-9-19S, 26E, 660 FNL; 2310 FEL, Eddy Co. NM

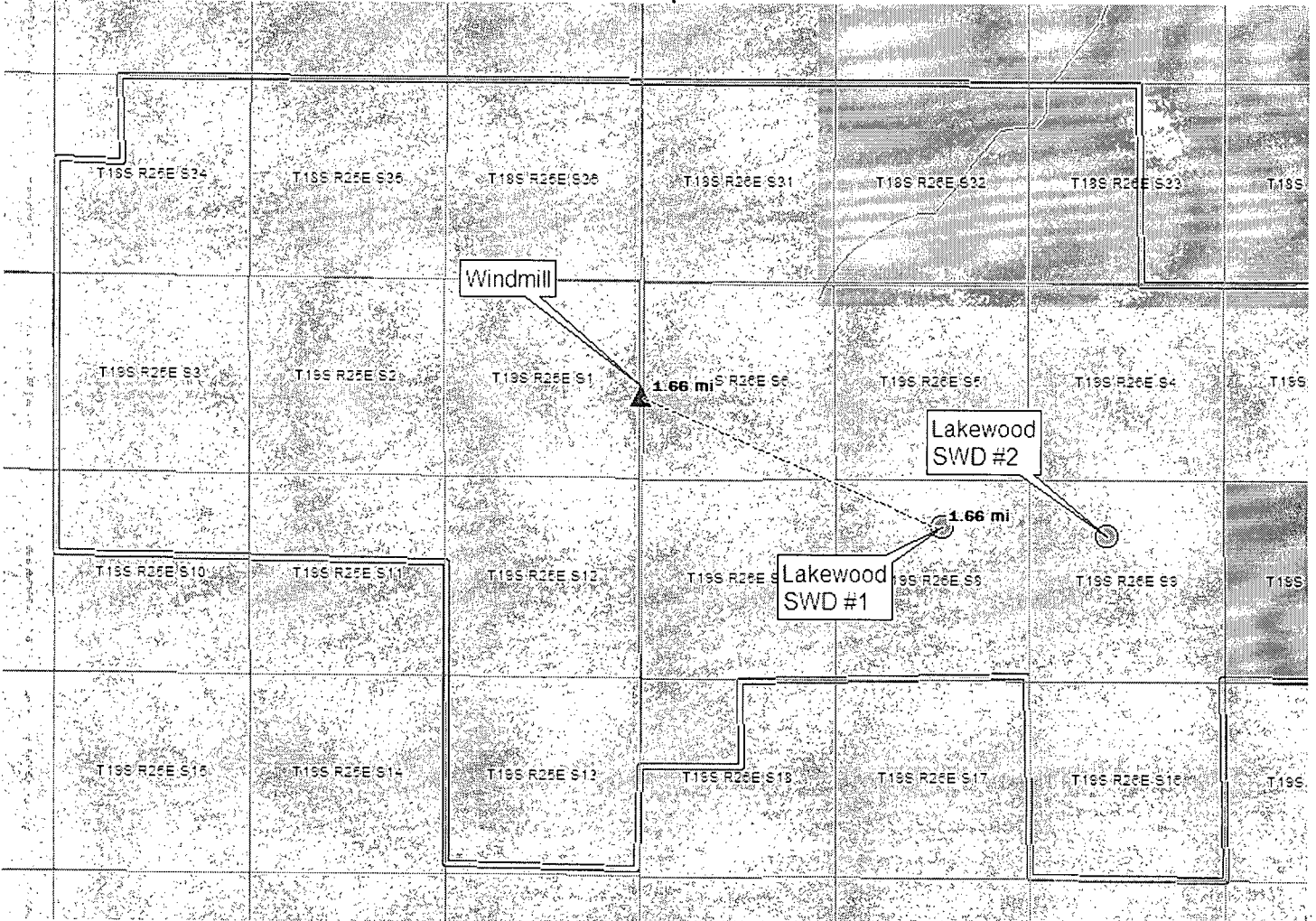
API: 30-015-21319



Jones, William V., EMNRD

From: Mark Fairchild <MFairchild@concho.com>
Sent: Monday, August 13, 2012 3:01 PM
To: Jones, William V., EMNRD
Subject: Windmill

Will, we are 1.66 miles from this windmill, please see below.



M.A. Fairchild
COG OPERATING LLC
Office: 432-686-3021
Cell: 432-230-7170



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Jones, William V., EMNRD

From: Jones, William V., EMNRD
Sent: Wednesday, August 15, 2012 2:38 PM
To: 'Mark Fairchild'
Subject: Disposal application from Concho: Lakewood SWD #2 issues

Here it is:

The biggest issue:

The application showed one P&Aed AOR well without any wellbore diagram. From the Division's web site it appears this was a dry hole drilled to 9580 feet and plugged without running casing. The plugs were set 8745 feet which seems to be at the top of the Strawn and at 6500 feet which may be somewhere in the Wolfcamp formation.

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Mark – if you want to, you could run the letter by your legal people and myself before sending. If you attach to this letter a wellbore diagram with formation tops marked on it and also these two intervals marked on it, it may help explain it to the people being noticed – up to you.

From: Mark Fairchild [<mailto:MFairchild@concho.com>]
Sent: Wednesday, August 15, 2012 12:46 PM
To: Jones, William V., EMNRD
Subject: What you said

Will, I have somehow misplaced the instructions you gave me on what you want us to do on changing and re noticing the injection interval for one of the Lakewood's. Can you tell me again or just re send that email. I am sorry, Thanks!!!!

M.A. Fairchild
COG OPERATING LLC
Office: 432-686-3021
Cell: 432-230-7170



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Jones, William V., EMNRD

From: Mark Fairchild <MFairchild@concho.com>
Sent: Wednesday, August 22, 2012 9:09 AM
To: Jones, William V., EMNRD
Subject: COG SENM Lakewood SWD 2 Interval Expansion NMOCD ver.docx
Attachments: COG SENM Lakewood SWD 2 Interval Expansion NMOCD ver.docx

1. This letter will go out today, just a couple of minor tweaks, I really liked your letter best.
2. Working on a cross section for justification of expansion of the disposal but showing the boundaries that will prevent disposal migration to other zones.

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Monday, August 20, 2012

Amendment to SWD Application:

In June of this year, you were formally noticed that COG Operating LLC has applied for approval to drill a new disposal well to be located in Unit letter F of Section 9, Township 19 South, Range 26 East, NMPM, Eddy County, New Mexico. This new well would be used for water disposal into the Pennsylvanian Cisco/Canyon formation(s) from 7720 feet to 8000 feet.

There is a Dry and Abandoned well (API No. 30-015-21319) located approximately $\frac{1}{4}$ mile away within the Area of Review. This well has a plug set in the open hole at 6500 feet and another plug at 8745 feet. Within this 6500 to 8745 feet depth range are the Wolfcamp formation and the Upper Pennsylvanian formations down to the top of the Strawn formation. COG believes re-entering and re-plugging this well is not necessary since the proposed disposal depths have much higher permeability and will preferentially take the disposed waters and these waters will not endanger mineral recovery from vertically adjacent formations. COG Operating LLC will cement to surface the long string of their proposed SWD well. This cementing will also preclude movement of disposal fluids outside of the applied for disposal interval.

COG Operating LLC is hereby noticing you of the presence of this old wellbore and continues to solicit your approval of the proposed disposal into the Canyon formation from 7720 feet to 8000 feet.

If you wish to protest, please do so within 15 days by notifying the Division in writing and copy any concerns to Mr. Mark Fairchild with COG at 432-686-3021.

Jones, William V., EMNRD

From: Mark Fairchild <MFairchild@concho.com>
Sent: Thursday, August 30, 2012 3:01 PM
To: Jones, William V., EMNRD
Subject: RE: Can you open this?

You will NOT believe this, I was typing a question to you to see if you could open the cross section when yours arrived. Man you must have ESP and I cannot spell ESP.

No productive formations within the expanded area!

M.A. Fairchild
COG OPERATING LLC
Office: 432-686-3021
Cell: 432-230-7170

-----Original Message-----

From: Jones, William V., EMNRD [<mailto:William.V.Jones@state.nm.us>]
Sent: Thursday, August 30, 2012 3:58 PM
To: Mark Fairchild
Subject: RE: Can you open this?

Mark,
Yes - VERY NICE.

This shows the correlation of the hopefully highly permeable Canyon Reef.

Did your Geologist see any possible productive potential of the expanded depth interval between those two plugs in that Area of Review well?

Thanks

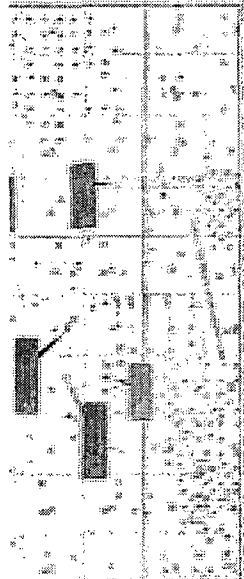
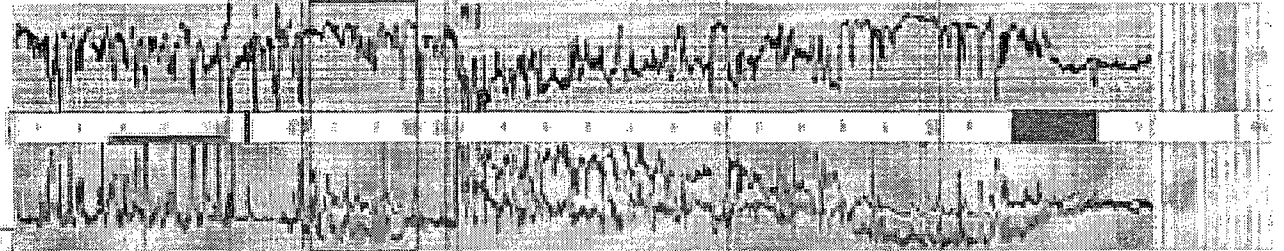
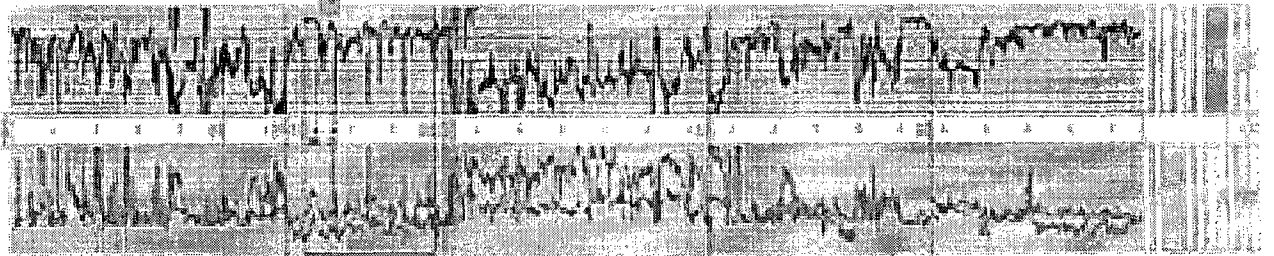
Will

-----Original Message-----

From: Mark Fairchild [<mailto:MFairchild@concho.com>]
Sent: Thursday, August 30, 2012 7:22 AM
To: Jones, William V., EMNRD
Subject: Can you open this?

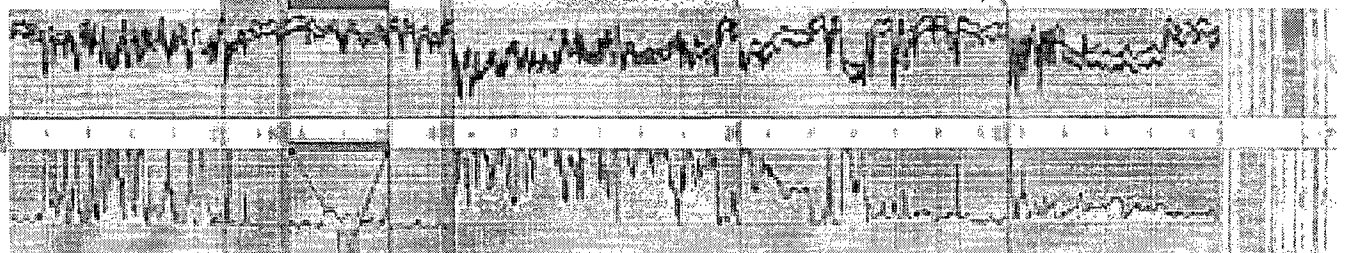
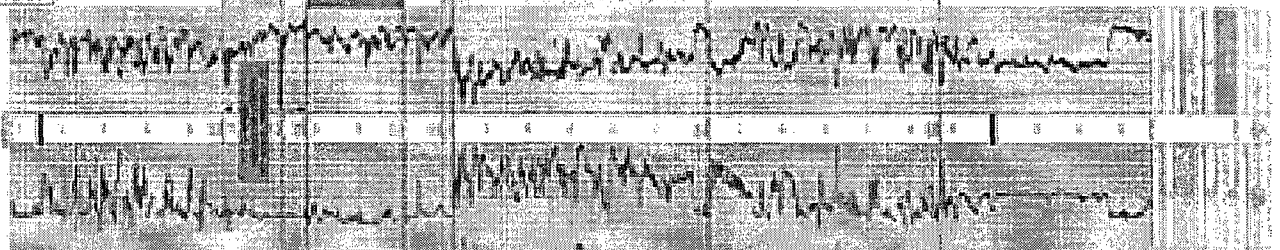
The message is ready to be sent with the following file or link attachments:

COG_LAKEWOOD_SWD2_XSEC_NMOCD.jpg



5155
LATE 1950S
RECORDING STRIP

5156
LATE 1950S
RECORDING STRIP



A

30018258000
MERQUITE SWD INCORPORATED
AUG 1
1880 PUL/1880 PVL
TWP 18 S - Range 28 E - Sec 18

7717 S

30018258000
NEARBURG PRODUCING COMPANY
CHILCASSER HARBET CON 1
880 PUL/1880 PVL
TWP 18 S - Range 28 E - Sec 5

682 S

GC_LAKEWOOD_SWD_1
LAKEWOOD SWD 1
1235 PUL/1880 PVL
TWP 18 S - Range 28 E - Sec 8

682 S

GC_LAKEWOOD_SWD_2
LAKEWOOD SWD 2
1475 PUL/1880 PVL
TWP 18 S - Range 28 E - Sec 5

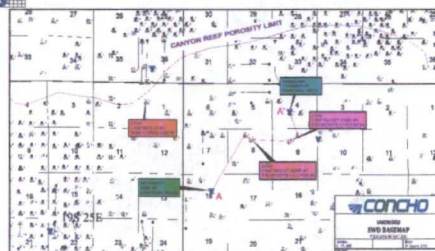
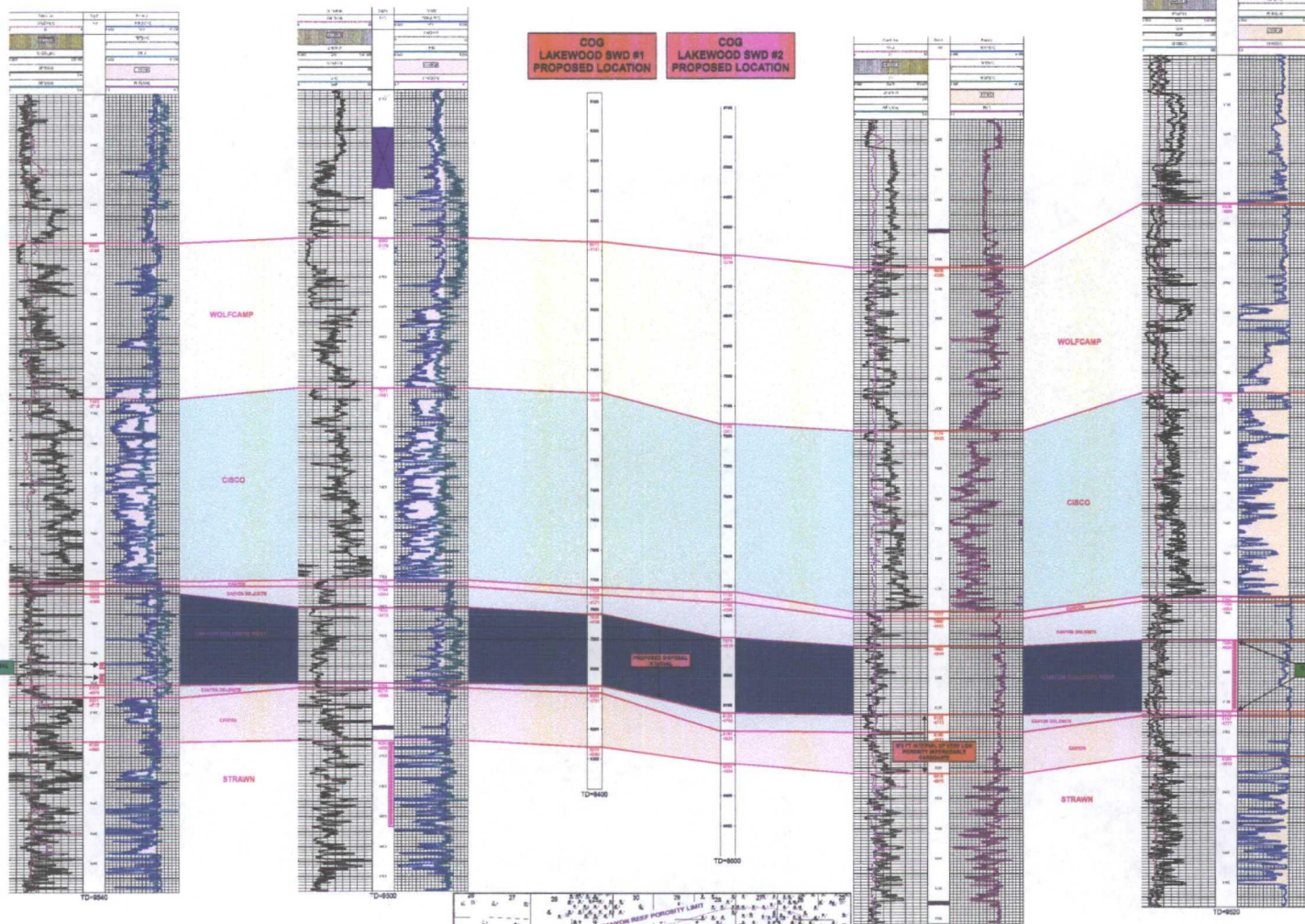
1348 S

300182131800
SAMEDAY OIL CORP
RUL 1
880 PUL/2310 PVL
TWP 18 S - Range 28 E - Sec 9

2788 S

30018258000
SAMEDAY OIL CORPORATION
RAGWOOD 3
1880 PUL/1880 PVL
TWP 18 S - Range 28 E - Sec 4

A'



A

30015258000
MESQUITE SWD INCORPORATED
ADJ 1
1980 FNL/1980 FEL
TWP. 19 S - Range 26 E - Sec. 18

7717 ft

30015258900
NEARBURG PRODUCING COMPANY
CRUSADER RABBIT COM 1
600 FNL/1980 FNL
TWP. 19 S - Range 26 E - Sec. 8

832 ft

GC_LAKEWOOD_SWD_1
LAKEWOOD SWD 1
1220 FNL/2480 FEL
TWP. 19 S - Range 26 E - Sec. 8

4503 ft

GC_LAKEWOOD_SWD_2
LAKEWOOD SWD 2
1470 FNL/1980 FNL
TWP. 19 S - Range 26 E - Sec. 9

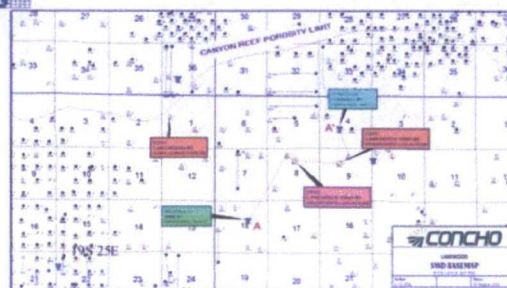
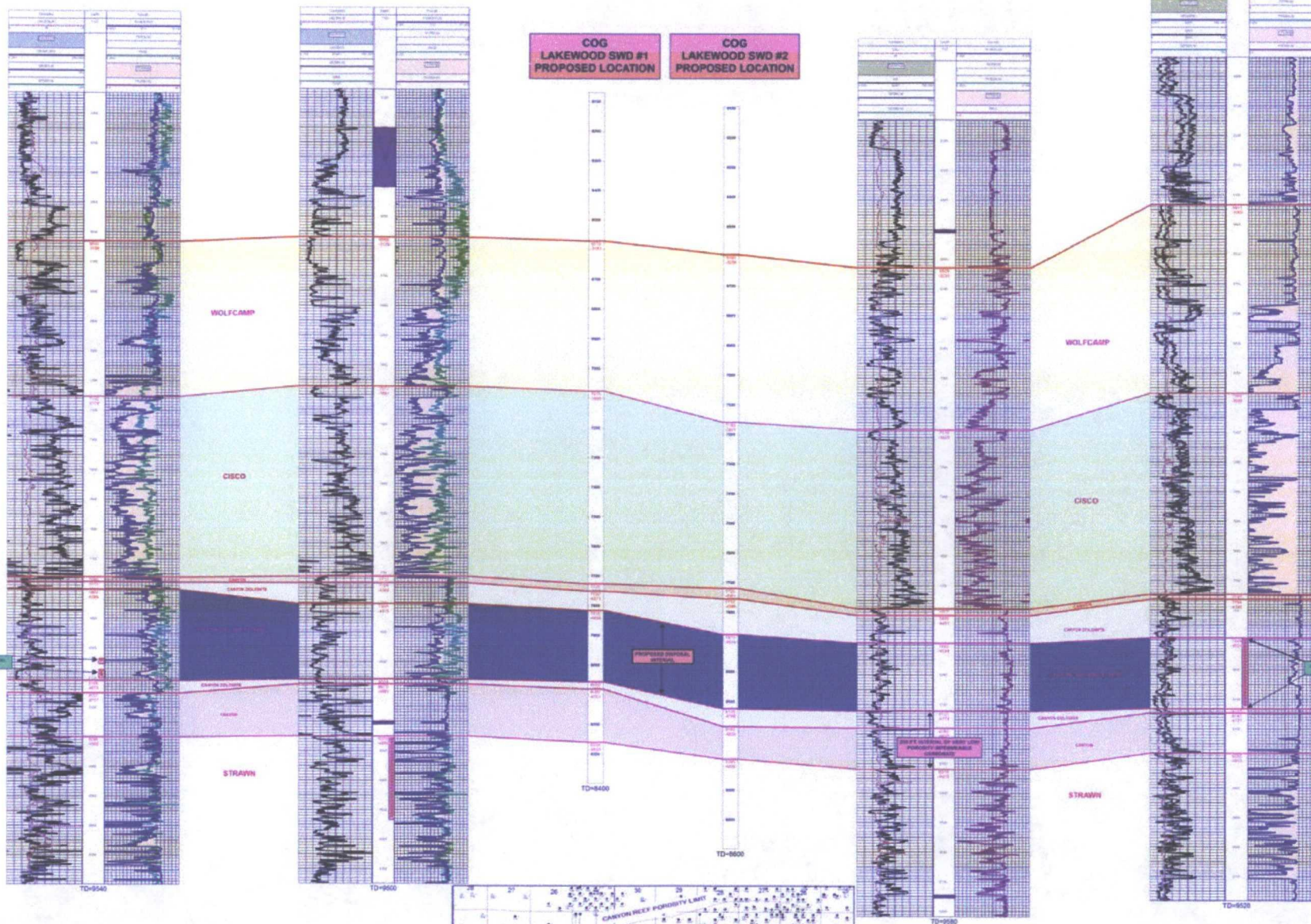
1248 ft

300152131900
SAMEDAN OIL CORP
ADJ 1
600 FNL/2010 FEL
TWP. 19 S - Range 26 E - Sec. 9

2796 ft

300152082000
SAMEDAN OIL CORPORATION
FANNING 7
1980 FNL/1980 FNL
TWP. 19 S - Range 26 E - Sec. 4

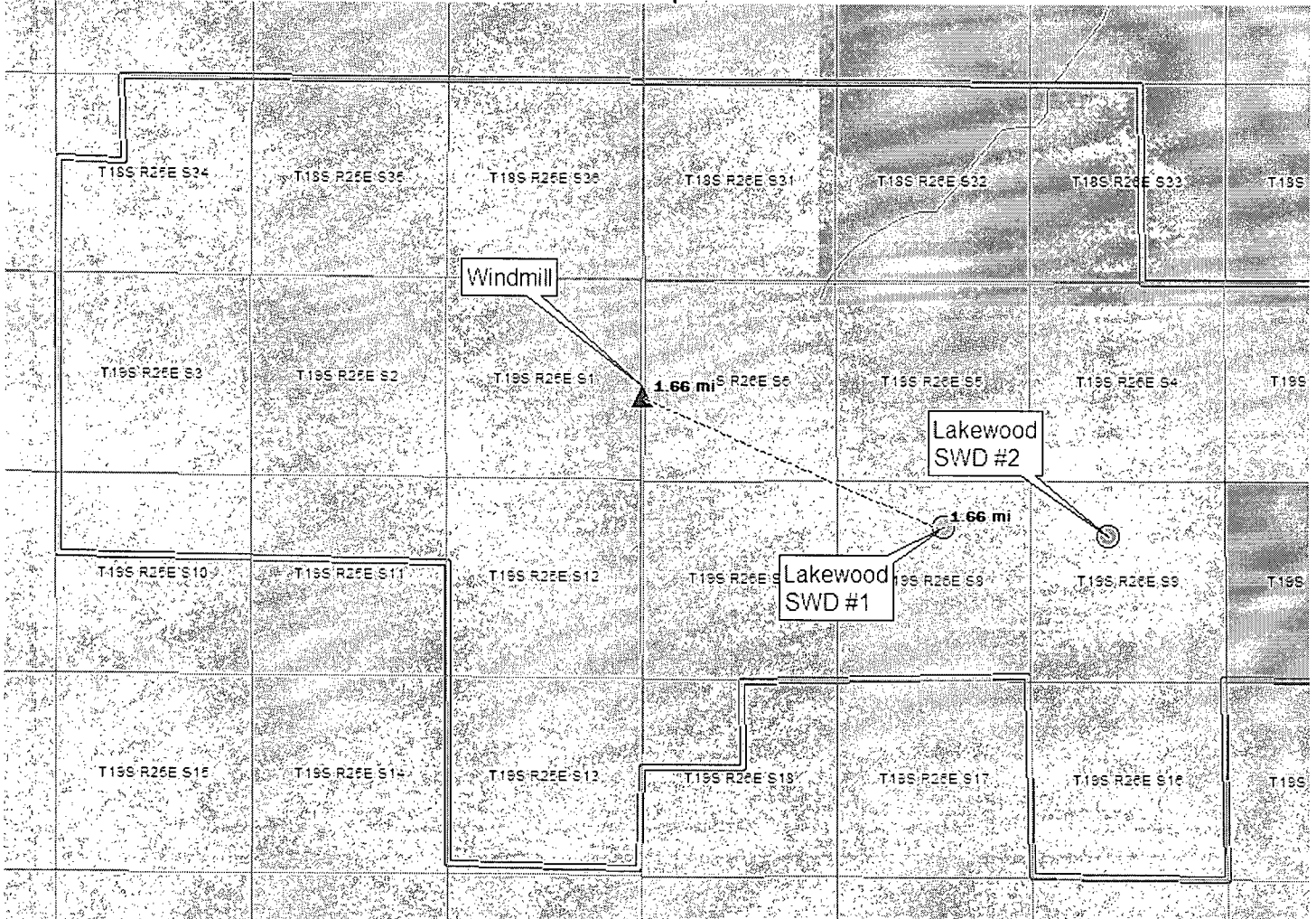
A'



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Sent: Monday, August 13, 2012 3:01 PM
To: Jones, William V., EMNRD
Subject: Windmill

Will, we are 1.66 miles from this windmill, please see below.



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COG OPERATING LLC
Office: 432-686-3021
Cell: 432-230-7170



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Miss	Row	C-108	C-108 disposal application submittals... CHECKLIST to ensure all items are supplied or considered.
	1		<u>Operator, Well, and Contact info:</u>
	2	II	Name of person submitting the application Mark A. Fairchild Other Contact? _____
	3	II	Did you Include a contact Email in the application? Yes and Mailing Address? Yes and Phone? Yes
	4	II	Operator Name: COG Operating LLC. OGRID Num: 229137
	5		RULE 5.9 Compliance..... Number of Inactive Wells _____ vs Total Wells Operated _____ Is financial assurance required on any well? _____
	6		Is there any hearing order finding this operator out of compliance with Division Rule 19.15.5.9 NMAC? _____
	7		Are all Rule 5.9 issues OK to allow the Division to issue Disposal Permits? _____
	8	III	Well Name: Fill this in
	9	III	API Num: <u>30-0</u> Not yet issued Spud Date: After receipt of permit
	10		Have you included API numbers on all wellbore diagrams and well list(s) in this application? WBD, Yes: No API yet issued
	11	III	Proposed well...Footages 1,470 FNL; 1,980 FWL Unit F Sec 9 Tsp T19S Rge 26E County Eddy
	12		General Location (i.e. Y miles NW of Z): 15 miles North of Carlsbad, NM.
	13		Current Well Status: Awaiting State of New Mexico Drilling APD and SWD Permit
	14	I	General Summary of Planned Work to Well: Drill and complete as an SWD well.
	15		<u>INTERVAL TOP and BOTTOM:</u>
	16	IIIB.(2)	Proposed disposal Top Depth: 7,720 Formation Name: Canyon (include Member Names for Delaware or Mesaverde)
	17	IIIB.(2)	Proposed disposal Bottom Depth: 8,000 Formation Name: Canyon
	18	IIIB.(2)	Is the disposal interval OpenHole? N/A or Perfed? Yes or Both? No
	19	IIIB.(2)	What will be the disposal tubing size OD? 3 1/2" Packer Seat, Feet: within 100' of top perf.

Miss	Row	C-108	C-108 disposal application submittals... CHECKLIST to ensure all items are supplied or considered.
	20	VII	What max surf inj. psi are you proposing? NMOCD Specified If differing from 0.2 psi/ft surf. Grad., is supporting data attached such as a Step Rate Test? N/A
	21		<u>FRESH WATERS:</u>
	22	VIII	Depth to bottom of Fresh Waters: None Present Formation Name(s)? Not Applicable
	23	XI	Any Fresh Water Wells Within 1 Mile? No If so, did you attach an analysis from these Wells? Not Applicable
	24		Are all "Fresh" waters isolated with Casing and Cement? Yes ("Fresh" water is defined as less than 10,000 mg/l of TDS)
	25	XII	Included "Affirmative Statement" concerning any Connection from Disposal Depths to existing Fresh Waters? No
	26		<u>WASTE WATERS:</u>
	27	XIV	Will this be a Lease Only disposal well? No or only used for the Operator's own waste needs? Operator only or Commercial Disposal? Not Commercial
	28	VII	Which formations will supply the waste waters to be disposed into this well Yeso List most common...?
	29	VII	Are Waste waters compatible with proposed disposal interval waters? Yes Did you include waste water analysis? No, surrounding SWD's confirm compatibility
	30		<u>AT PROPOSED WELL....INSITU WATERS AND HYDROCARBON POTENTIAL:</u>
	31		Is a discussion included of the potential for future OIL/GAS recovery from the proposed disposal interval? Interval not productive of hydrocarbons.
	32		If your proposed well for disposal is a depleted producer (within the proposed interval); do you know what was the cumulative oil/gas/water? New Drill no production and did you include a Rate-Time plot of this depleted interval? Not Applicable
	33	VII	Insitu water analysis Included? NO Is the salinity within the disposal interval more than 10,000 mg/l of TDS? Yes or how will you determine this insitu water salinity?
	34	VIII	Does the application include a list of Formation tops down to and including the bottom of the target formation? Yes it does
	35		What is the top Salt not present and bottom Salt not present of the Salado Salt (....If this well is in the Southeast and the Salt is present)
	36	X	Are all existing Logs (including any CBL over the disposal interval) are on the OCD Web Site? New drill, not logs If logs not there, please send Not Applicable
	37	IIIA.	Are the wellbore diagrams for this well included in the Application.....Before Conversion? Not Applicable and After Conversion? New Drill WBD in C108

Miss	Row	C-108	C-108 disposal application submittals... CHECKLIST to ensure all items are supplied or considered.
	38		Are the top and bottom footage of the proposed disposal interval marked on the "after" diagram? Not Applicable
	39		<u>NOTICE:</u>
	40	XIV	Date of the Newspaper Notice in the County: June 6, 2012.
	41	V	Within 1/2 mile, did you clearly identify (either on a map or by legal description) all separately owned tracts of lands within the disposal interval? Yes
	42	XIII	Did you identify the owner(s) of each of these separately owned tracts? Yes Were they all formally noticed? Yes
	43	XIII	If reentering a P&Aed well, are there depth divisions of ownership within that well? Not Applicable If so, have you also noticed all the shallower interests of the intent to use the well for disposal?
	44	XIII	Is the proposed well within the R-111-P defined Potash Area or the BLM Secretaries Potash Area? No If so, did you send notice to the nearest Potash lessee? N/A
	45	XIV	Who owns the surface lands at the disposal well site (BLM, SLO, or who)? Fee Was that party formally noticed? Yes
	46		<u>Area of Review:</u>
	47	V	Did you include a map identifying all wells within 2 miles? Yes
	48	VI	Did you include a list of all AOR wells? Yes Is the list available to be emailed (if requested) in spreadsheet format? Yes
	49	VI	Does this list identify all wells penetrating (at least the top of) the disposal interval within 1/2 mile of the proposed well? Yes
	50	VI	Did you include wellbore diagrams for all P&Aed wells that exist within the 1/2 mile AOR that penetrate the disposal interval? Yes
	51		How many wells exist within the 1/2 mile AOR that penetrate the disposal interval? None How many of these are Plugged/Dry and Abandoned? N/A
	52	VI	Did you include details on cement coverage of the proposed disposal interval for all wells penetrating the disposal interval within 1/2 mile of the proposed well? Not Applicable
	53	VI	Do all reported cement tops describe how that "top" was determined? N/A If you calced any tops, what fillup efficiency factor did you use? N/A
	54	VI	Did you identify the presence and depth of all Cement Stage Tools (DV) in the subject well and in the AOR wells? Yes
	55	VIII	For the target formation, is there significant formation structural depth changes within the 1/2 mile AOR? No

Miss	Row	C-108	C-108 disposal application submittals... CHECKLIST to ensure all items are supplied or considered.
	56	VIII	Is there any Karst or Massive Limestone in this target formation? No ...or in the formations directly above or below? No
	57		<u>Administrative or Hearing:</u>
	58	VI	How many wells within the 1/2 mile AOR currently are producing (or still have open perforations) within the disposal interval? _____ is it "gas" or "oil"?
	59		... NOTE: If the proposed disposal interval is a "Gas" interval or if any AOR wells are producing or have open perforations within this interval then this application may not be properly classified as a "disposal". These types of applications must be processed at an examiner hearing.
	60		Any other Issues..?

Injection Permit Checklist (11/15/2010)

WFX _____ PMX _____ SWD 1354 Permit Date 9/7/12 UIC Qtr (J/A/S)

Wells 1 Well Name(s): LAKEWOOD SWD #2

API Num: 30-0 15-1A Spud Date: _____ New/Old: N (UIC primacy March 7, 1982)

Footages 1470 FNL/1980 FNL Unit F Sec 9 Tsp 19S Rge 26E County EDDY

General Location: ≈ 4 mi NW of Lake McMillan

Operator: COG OPERATING LLC Contact Mark A. Fairchild

OGRID: 229B7 RULE 5.9 Compliance (Wells) 0/3694 (Finan Assur) OK IS 5.9 OK? OK

Well File Reviewed Current Status: NOT Yet Permitted

Planned Work to Well:

Diagrams: Before Conversion _____ After Conversion _____ Elogs in Imaging File: Ø/R will be Run

Well Details:

	Sizes Hole.....Pipe	Setting Depths	Stage Tool	Cement Sx or Cf	Determination Method
New <u>✓</u> Existing _____ Surface	<u>12 1/4 9 5/8</u>	<u>1200</u>	<u>-</u>	<u>400 SX</u>	<u>CIRC</u>
New _____ Existing _____ Interm					
New <u>✓</u> Existing _____ LongSt	<u>8 3/4 7"</u>	<u>8,400'</u>	<u>Ø</u>	<u>1075 SX</u>	<u>CIRC</u>
New _____ Existing _____ Liner					
New _____ Existing _____ OpenHole					

Depths/Formations:

	Depths, Ft.	Formation	Tops?
Formation(s) Above	<u>6304</u> <u>7746</u>	<u>W.C.</u> <u>CISCO</u>	<u>✓</u> <u>✓</u>
Injection TOP:	<u>7720</u>	<u>COG CANYON</u>	Max. PSI <u>1544</u> OpenHole _____ Perfs <u>✓</u>
Injection BOTTOM:	<u>8000</u>	<u>"</u>	Tubing Size <u>3 1/2</u> Packer Depth <u>< 100' above</u>
Formation(s) Below	<u>8708</u>	<u>STRAIN</u>	<u>✓</u>

Capitan Reef? _____ (Potash? _____ Noticed? _____) (WIPP? _____ Noticed? _____) Salado Top/Bot _____ Cliff House? _____

Fresh Water: Depths: _____ Formation _____ Wells? _____ Analysis? _____ Affirmative Statement ✓

Disposal Fluid Analysis? Sources: COG Module
1/20 @ 2630'

Disposal Interval: Analysis? _____ Production Potential/Testing: _____

Notice: Newspaper Date 6/6/12 Surface Owner COG/CHO Mineral Owner(s) _____

RULE 26.7(A) Affected Persons: DHA/EDITH King/IPC/R. Duncan/PTCH/GE. Wilson (6/19/12)

AOR: Maps? ✓ Well List? ✓ Producing in Interval? NO Wellbore Diagrams? _____

.....Active Wells Ø Repairs? _____ Which Wells? _____

.....P&A Wells Ø Repairs? I Which Wells? _____

Issues:

Request Sent

Reply: