

DATE: 4.17.12 SUSPENSE ENGINEER: WVS LOGGED: 4.17.12 TYPE: SWD APP NO: 1210870468

ABOVE THIS LINE FOR DIVISION USE ONLY

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



# ADMINISTRATIVE APPLICATION CHECKLIST

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 \_\_\_\_\_

## [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.

Brenda Coffman

Print or Type Name

*Brenda Coffman*  
Signature

Supervisor-Regulatory Compliance

Title  
brenda.coffman@chk.com

e-mail Address

Date

4-13-12

RECEIVED OGD  
2012 APR 17 A 3:12  
C-16-745-31E  
4436'-5476'



Regulatory Department

April 16, 2012

State of New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM

Re: Application for administrative approval to dispose of the salt water in the  
CACTUS 16 STATE 1 well.

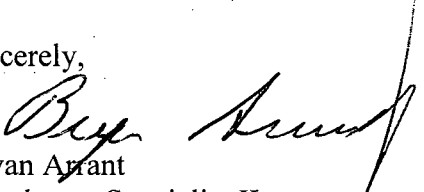
Located in Unit C, of Section 16, T-24-S R-31-E  
330' FNL & 2310' FWL, NMPM  
Eddy Co., New Mexico

Dear Mr. Jones,

Please find our C-108 application for Chesapeake Operating, Inc. to convert this well for salt water disposal.

If you have any questions or need additional information, please call or email me.

Sincerely,

  
Bryan Arrant  
Regulatory Specialist II

405.935.3782  
bryan.arrant@chk.com

RECEIVED OOD  
2012 APR 17 A 10:12

Chesapeake Energy Corporation

P.O. Box 18496 • Oklahoma City, OK 73154-0496 • 6100 N. Western Avenue • Oklahoma City, OK 73118  
405-848-8000

**New Mexico Oil Conservation Division's (C-108)**  
**Application for Authorization to Dispose**

**CACTUS 16 STATE 1**  
**Unit C of Section 16, T-24-S R-31-E**  
**330' FNL & 2310' FWL, NMPM**  
**Eddy County, NM**  
**API# 30-015-27008**

Chesapeake Operating, Inc. proposes to re-enter the above captioned well and convert to salt water disposal in the Bell and Cherry Canyon formations of the Delaware Mountain Group (DMG).

Please find the following application for authorization to dispose with attachments and item information.

- Item I**            The purpose of this application is for salt water disposal.
- Item II**           Chesapeake Operating, Inc. (OGRID # 147179)  
P.O. Box 18496  
Oklahoma City, OK 73154-0496  
Bryan G. Arrant, Contact phone # 405.935.3782
- Item III**          See attached data sheets
- Item IV**          This is not an existing project.
- Item V**           See attached map showing ½ mile and 2 mile radius.
- Item VI**          See attached tabulation of wells of public record within the area of review which penetrate the proposed disposal zone and well-bore schematics of all plugged wells with ½ mile of the AOR.
- Item VII**
- 1) The daily average disposal rate is expected to be 3000 BWPD. The maximum daily rate will be approximately 5000 BWPD.
  - 2) The system will be closed.
  - 3) The proposed average disposal pressure is expected to be 500 psig and the maximum pressure is expected to be 887 psig.
  - 4) The source of water to be disposed is produced water from surrounding wells which produce from the Delaware and Bone Spring. Disposal will be in the Bell Canyon and upper Cherry Canyon formations of the DMG. Proposed perforations will be from 4436'-5426'. Within the Cactus 16 State #1 wellbore, the closest inactive producing perforation to the proposed injection perforations is separated by 589'. Bottom

injection perforation is 5426' and top of the inactive producing perforation is 6015'. The 589' of formation consists of alternating sand, shale, and carbonate.

- 5) The Bell Canyon and upper Cherry Canyon formations of the DMG are regionally non-productive. A chemical analysis from the Delaware formation water of Chesapeake's LOTOS C FEDERAL 905 (API# 30-015-32558), an offset well to the northeast is attached.

#### **Item VIII**

The proposed injection interval consists of porous sandstones. The sands are light gray, clear to frosted, fine to very fine crystalline, sub-rounded with some being sub-angular. well sorted and unconsolidated. The grains are predominantly quartz and feldspar with some carbonates present that are cementing agents. The intervals for injection are a non-hydrocarbon bearing zone. The closest hydrocarbon bearing zone in the area is found in the lower Cherry and Brushy Canyon sands of the DMG.

The geological formation tops for the Cactus 16 State 1 well in the DMG are indicated below:

Lamar Limestone:	4383'
Bell Canyon:	4412'
Cherry Canyon:	5300'
Brushy Canyon:	6890'

**Item IX**      A re-completion procedure is attached.

**Item X**        Electric logs are available for public record on NMOCD's web-site.

**Item XI**        There are no records of any fresh water wells within a radius of over two miles of the proposed disposal well. A document from the New Mexico Office of the State Engineer's document is provided.

The proposed disposal well is located 330' south of the secretary's potash boundary of R-111-P. This well is over 30 miles SE of the Capitan Reef aquifer, and is approximately 19 miles ESE of Loving, N.M.

**Item XII**        There is no evidence of open faults or any other hydrological connections between the disposal zone and any underground sources of drinking water.

**Item XIII**      Proof of Notice

- A copy of the application has been furnished by certified mail to all interest owners. A list is provided.




- A copy of the legal advertisement in the county in which the well is located is provided.
- This well is located on state lands. The New Mexico State Engineer's office has been notified by certified mail.
- A copy of the application has been sent to the NMOCD's District II office.

**Additional information:**

- Geological formation tops
- Permit: Copy of application to re-enter. Submitted to OCD District II Office.

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage  
Application qualifies for administrative approval? Yes No
- II. OPERATOR: Chesapeake Operating, Inc.  
ADDRESS: P.O. Box 18496 Oklahoma City OK 73154  
CONTACT PARTY: Bryan Arrant PHONE: (405)935-3782
- 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 X 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: Bryan Arrant TITLE: Regulatory Specialist II  
SIGNATURE:  DATE: \_\_\_\_\_  
E-MAIL ADDRESS: bryan.arrant@chk.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: \_\_\_\_\_

### 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.

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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: Chesapeake Operating, Inc.WELL NAME & NUMBER: CACTUS 16 STATE 1

WELL LOCATION: <u>330' FNL &amp; 2310' FWL</u>	<u>C</u>	<u>16</u>	<u>24 South</u>	<u>31 East</u>
FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATICWELL CONSTRUCTION DATASurface CasingHole Size: 17 1/2" Casing Size: 13 3/8"Cemented with: 470 sxs sx. or                      ft<sup>3</sup>Top of Cement: 0' Method Determined: CirculatedIntermediate CasingHole Size: 12 1/4" Casing Size: 8 5/8"Cemented with: 1450 sxs sx. or                      ft<sup>3</sup>Top of Cement: 0' Method Determined: CirculatedProduction CasingHole Size: 7 7/8" Casing Size: 5 1/2"Cemented with: 250 sxs sx. or                      ft<sup>3</sup>Top of Cement: 6820' Method Determined: CBLTotal Depth: 8450'Injection Interval4436' feet to 5426' (Perforated)

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEETTubing Size: 2 3/8" Lining Material: PlasticType of Packer: Baker-Loc SetPacker Setting Depth: 4336'

Other Type of Tubing/Casing Seal (if applicable): \_\_\_\_\_

Additional Data

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

If no, for what purpose was the well originally drilled? Oil & Gas Production

2. Name of the Injection Formation: Delaware

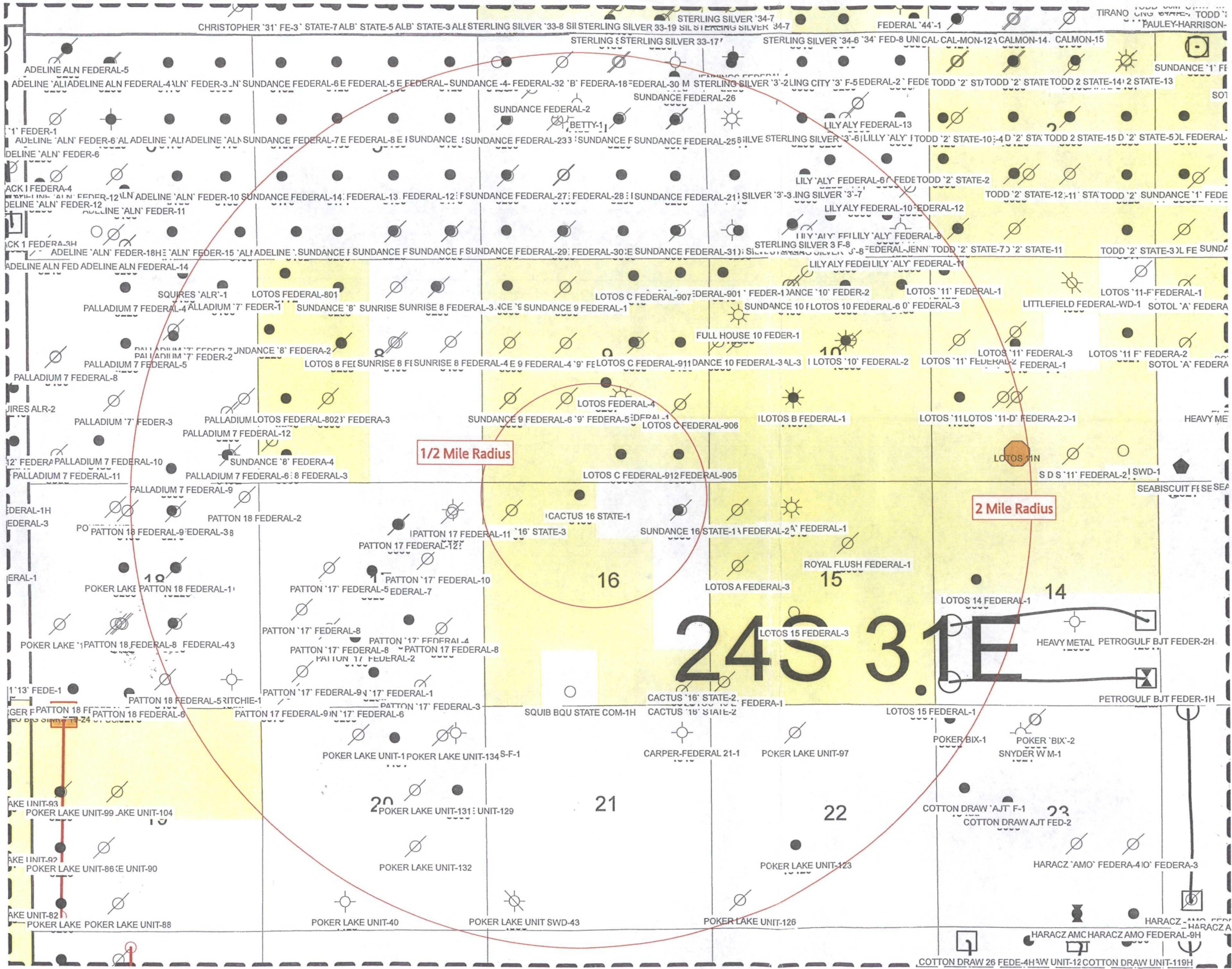
3. Name of Field or Pool (if applicable): POKER LAKE; DELAWARE, NORTH

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. Yes.


6015'-8228' (AO) Detailed well-bore diagram is provided.

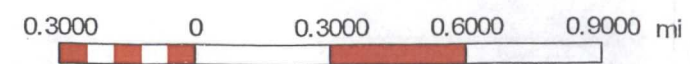
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: All oil and gas production is in the Lower Cherry and Brushy Canyon formations of the DMG. Depths range from 6015'-8228', OA.



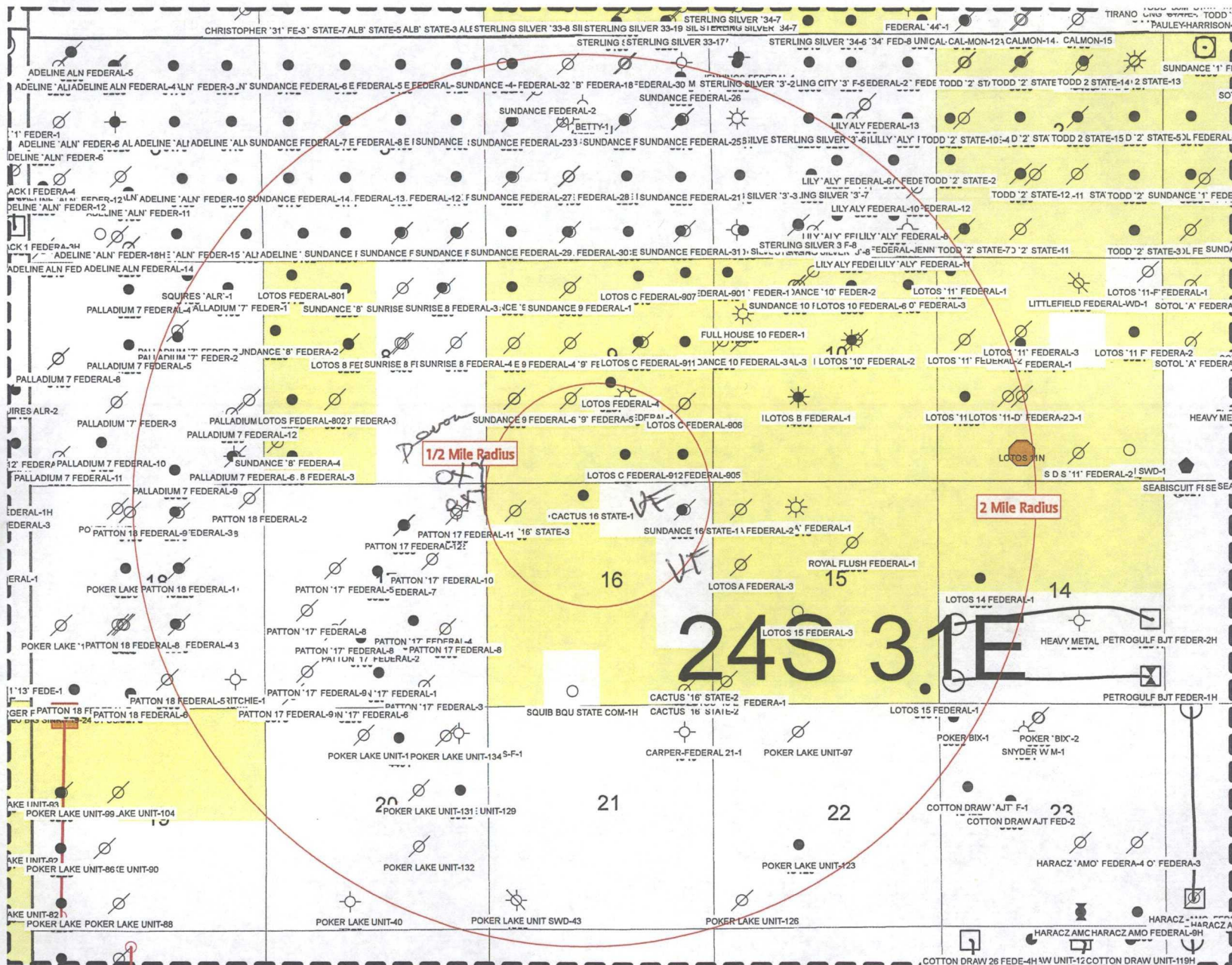


## Item V (Enlarged Drawing)


	<b>CHESAPEAKE OPERATING, INC.</b>
<b>PERMIAN DISTRICT</b> CACTUS 16 STATE 1 EDDY COUNTY, NM 16-24S-31E CACTUS 16 STATE 1.gmp	
Date: 29 February, 2012	Geologist: SARAH LYNCH







Item V

	<b>CHESAPEAKE OPERATING, INC.</b>
<p align="center"> <b>PERMIAN DISTRICT</b>  <b>CACTUS 16 STATE 1</b>  <b>EDDY COUNTY, NM</b>  16-24S-31E  CACTUS 16 STATE 1.gmp </p>	
<p>Date: 29 February, 2012    Geologist: SARAH LYNCH</p>	

## Cactus 16 State 1

Operator	Well Name	API No	County	Sec Twn Range	Type	Status	Spud Date	Comp Date	TD	PBTD	Comp Zone	Comp Interval	Casing Program	TOC	Perfs
Chesapeake	Cactus 16 State 1	3001527008	Eddy	16 T24S R31E	Oil	T/A	6/17/1992	7/17/1992	8450'	5915'	Brushy Canyon	8053'-8089'	13 3/8", 54# @ 626' w/ 470 sxs 8 5/8", 32# @ 4250' w/ 1450 sxs 5 1/2", 15.5# @ 8450' w/ 250 sxs	Surface	6,015-6,020 (20 holes) 6600-6600(4 sqz holes) 8,053-8,089 (36 holes) 8,165-8,168 8,191-8,196 8,224-8,228
V-F Petroleum	Sundance 16 State 1	3001534091	Eddy	16 T24S R31E	Oil	Producing	4/30/2005	1/6/2006	8355'	8303'	Brushy Canyon	8172'-8194'	13 3/8", 48# @ 652' w/ 630 sxs 8 5/8", 32# @ 4290' w/ 1870 sxs 5 1/2", 17# @ 8354' w/ 1130 sxs	Surface	8172'-8194' ✓
Chesapeake	Lotos C Federal 912	3001535356	Eddy	9 T24S R31E	Oil	Shut In	6/12/2007	8/10/2007	8358'	8298'	Delaware	5834'-8222'	13 3/8", 48# @ 925' w/ 760 sxs 8 5/8", 32# @ 4405' w/ 1150 sxs 5 1/2", 17# @ 8358' w/ 1100 sxs	Surface	5834'-5855' 6758'-6766' 7257'-7521' 7977'-8222' ✓
Chesapeake	Lotos C Federal 905	3001532558	Eddy	10 T24S R31E	Oil	Producing	2/24/2003	4/7/2003	8335'	8244'	Delaware	8050'-8192'	13 3/8", 48# @ 780' w/ 611 sxs 8 5/8", 32# @ 4390' w/ 1400 sxs 5 1/2", 17# @ 8335' w/ 1280 sxs	Surface	8050'-8192' ✓
Chesapeake	Lotos Federal 4	3001527593	Eddy	9 T24S R31E	Oil	Producing	7/10/2003	8/1/2003	8257'	7890'	Delaware	6305'-8138'	13 3/8", 48# @ 599' w/ 525 sxs 8 5/8", 24# & 32# @ 4335' w/ 1810 sxs 5 1/2", 15.5# & 17# @ 8257' w/ 800 sxs	Surface	6305'-6317' 7030'-7086' 7936'-7946' 8003'-8138' ✓
POGO Product	Sundance 9 Federal 5	3001527905	Eddy	9 T24S R31E		Not Drilled									
Chesapeake	Cactus 16 3	3001532417	Eddy	17 T24S R31E		Not Drilled									
Sonat Expl.	Mesquite 16 State 1	3001530226	Eddy	16 T24S R31E		Not Drilled									

## Tabulation of Wells

**Item VI**  
**Well-bore schematics of**  
**all wells within the AOR follow this page**



# CURRENT WELLBORE SCHEMATIC

WELL : SUNDANCE 16 STATE 1

OPERATOR : V-F PETROLEUM

FIELD : POKER LAKE

LOCATION : SEC. 16-T24S-R31E

COUNTY : EDDY

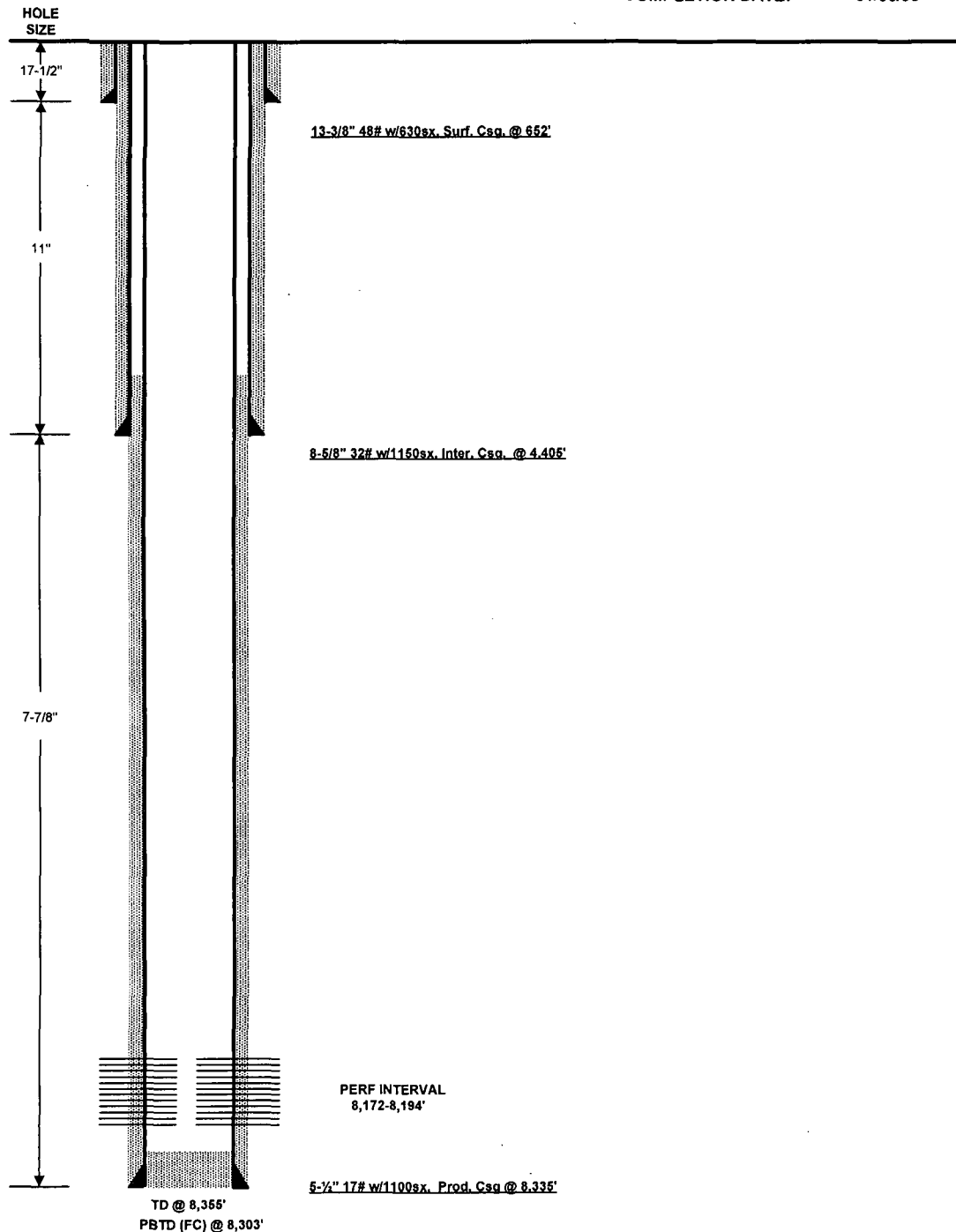
STATE : NM

ELEVATION : GL - 3,488' , RKB - 3,501'

API #: 30-015-34091

SPUD DATE: 04/30/2005

COMPLETION DATE: 01/06/06



PREPARED BY: Melissa Clutter  
UPDATED BY: \_\_\_\_\_

DATE: 3/27/2012  
DATE: \_\_\_\_\_

# Current Wellbore Schematic



API #: 3001527008

Serial #:

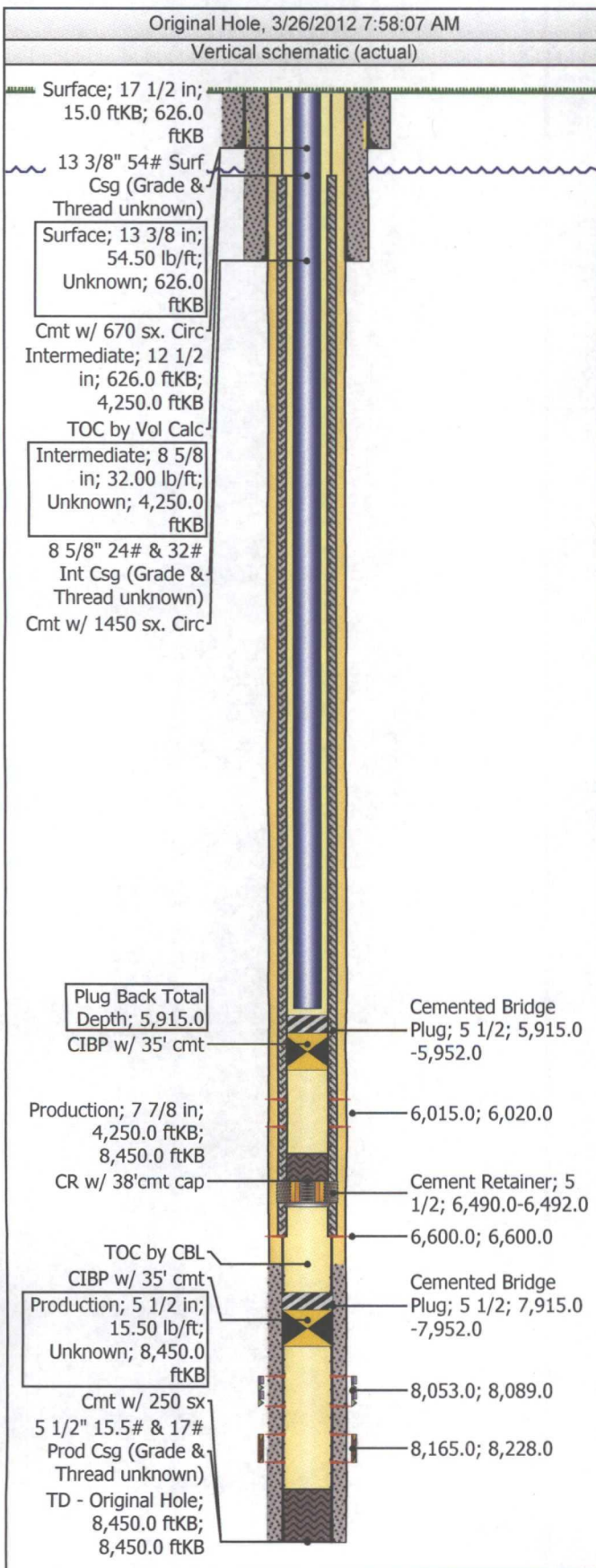
SPUD DATE: 6/17/1992

RIG RELEASE:

FIRST SALES:

Current Status: T/A

WELL (PN): CACTUS 16 STATE 1 (890839)  
 FIELD OFFICE: CON - CONCHO RESOURCES  
 FIELD: WILDCAT BRUSHY CANYON  
 STATE / COUNTY: NEW MEXICO / EDDY  
 LOCATION: SEC 16-24S-31E, 330 FNL & 2310 FWL  
 ROUTE: HOB-NM-ROUTE 19- KENNY HUGHES  
 ELEVATION: GL: 3,492.0 KB: 3,507.0 KB Height: 15.0  
 DEPTHS: TD: 8,450.0



## Perforations

Date	Zone/Formation	Top (ftKB)	Btm (ftKB)	Shot Dens (shot s/ft)	Phasing (°)
8/2/1995	CHERRY CANYON	6,015.0	6,020.0	4.0	
7/30/1995		6,600.0	6,600.0		
7/14/1992	BRUSHY CANYON	8,053.0	8,089.0	1.0	
10/21/1992	BRUSHY CANYON	8,165.0	8,228.0		

## Tubing String: Tubing - Production

Set Depth (ftKB)			Wellbore			Pull Date		
4,400.0			Original Hole					
Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Thread	Top (ftKB)	Btm (ftKB)	Len (ft)
Tubing	2 7/8					15.0	4,395.0	4,380.00
Packer	0.0					4,395.0	4,400.0	5.00



# Current Wellbore Schematic

WELL (PN): CACTUS 16 STATE 1 (890839)  
 FIELD OFFICE: CON - CONCHO RESOURCES  
 FIELD: WILDCAT BRUSHY CANYON  
 STATE / COUNTY: NEW MEXICO / EDDY  
 LOCATION: SEC 16-24S-31E, 330 FNL & 2310 FWL  
 ROUTE: HOB-NM-ROUTE 19- KENNY HUGHES  
 ELEVATION: GL: 3,492.0 KB: 3,507.0 KB Height: 15.0  
 DEPTHS: TD: 8,450.0



API #: 3001527008

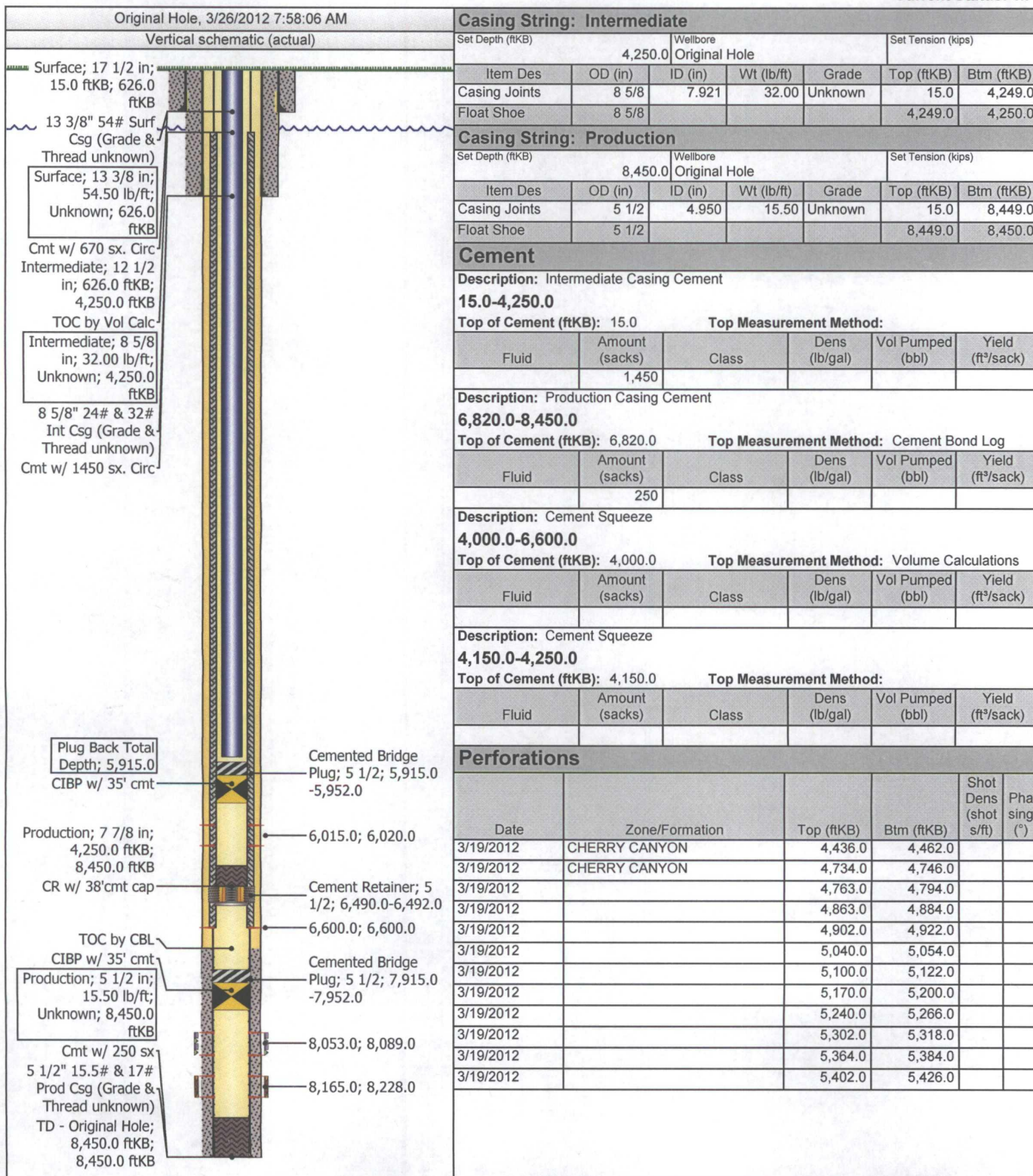
Serial #:

SPUD DATE: 6/17/1992

RIG RELEASE:

FIRST SALES:

Current Status: T/A

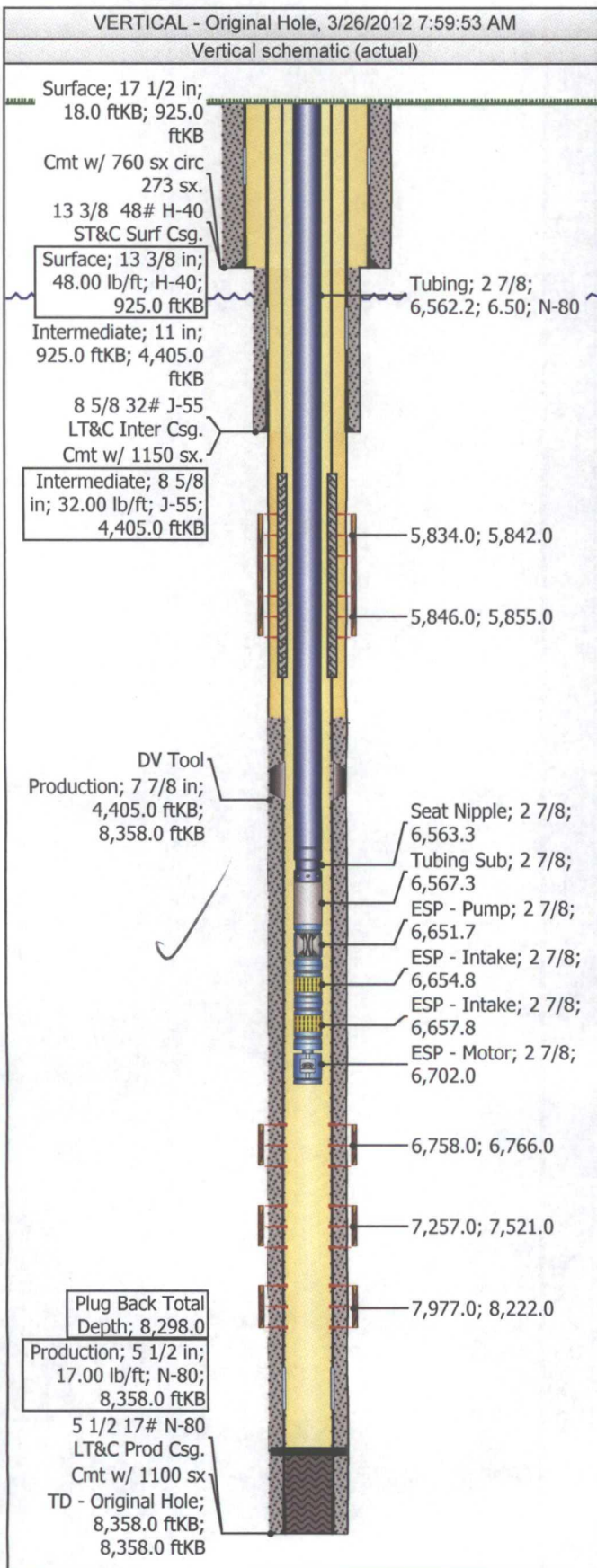




# Current Wellbore Schematic

**Chesapeake**  
ENERGY  
API #: 3001535356  
Serial #:  
SPUD DATE: 6/12/2007  
RIG RELEASE: 7/5/2007  
FIRST SALES:  
Current Status: SHUTIN

WELL (PN): LOTOS C FEDERAL 912 (613357)  
FIELD OFFICE:  
FIELD: Poker Lake Prospect  
STATE / COUNTY: NEW MEXICO / EDDY  
LOCATION: SEC 9-24S-31E, 660 FSL & 1980 FEL  
ROUTE: HOB-NM-ROUTE 19- KENNY HUGHES  
ELEVATION: GL: 3,477.0 KB: 3,495.0 KB Height: 18.0  
DEPTHS: TD: 8,358.0



## Casing String: Intermediate

Set Depth (ftKB)		Wellbore		Set Tension (kips)	
4,405.0		Original Hole			
Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top (ftKB) Btm (ftKB)
Casing Joints	8 5/8	7.921	32.00	J-55	18.0 4,316.9
Float Collar	8 5/8				4,316.9 4,318.1
Casing Joints	8 5/8	7.921	32.00	J-55	4,318.1 4,403.8
Float Shoe	8 5/8				4,403.8 4,405.0

## Casing String: Production

Set Depth (ftKB)		Wellbore		Set Tension (kips)	
8,358.0		Original Hole			
Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top (ftKB) Btm (ftKB)
Casing Joints	5 1/2	4.892	17.00	N-80	18.0 6,314.4
DV Tool	5 1/2				6,314.4 6,316.5
Casing Joints	5 1/2	4.892	17.00	N-80	6,316.5 8,264.3
Float Collar	5 1/2				8,264.3 8,265.4
Casing Joints	5 1/2	4.892	17.00	N-80	8,265.4 8,356.6
Float Shoe	5 1/2				8,356.6 8,358.0

## Cement

Description: Intermediate Casing Cement

925.0-4,405.0

Top of Cement (ftKB): 925.0

Top Measurement Method:

Fluid	Amount (sacks)	Class	Dens (lb/gal)	Vol Pumped (bbl)	Yield (ft <sup>3</sup> /sack)
Lead	950		11.90		2.45
Tail	200		14.80		1.35

Description: Production Casing Cement

6,010.0-8,358.0

Top of Cement (ftKB): 6,010.0

Top Measurement Method: Cement Bond Log

Fluid	Amount (sacks)	Class	Dens (lb/gal)	Vol Pumped (bbl)	Yield (ft <sup>3</sup> /sack)
Lead	500		13.20		1.58
Lead	200		1.33		2.45
Tail	400		14.80		11.90

Description: Cement Squeeze

4,675.0-5,920.0

Top of Cement (ftKB): 4,675.0

Top Measurement Method:

Fluid	Amount (sacks)	Class	Dens (lb/gal)	Vol Pumped (bbl)	Yield (ft <sup>3</sup> /sack)
	250				

## Perforations

Date	Zone/Formation	Top (ftKB)	Btm (ftKB)	Shot Dens (shot s/ft)	Phasing (°)
8/1/2007		5,834.0	5,842.0	4.0	90
8/1/2007		5,846.0	5,855.0	4.0	90
7/26/2007		6,758.0	6,766.0	4.0	
7/20/2007		7,257.0	7,521.0	1.0	
7/14/2007		7,977.0	8,222.0	1.0	

## Tubing String: Tubing - Production

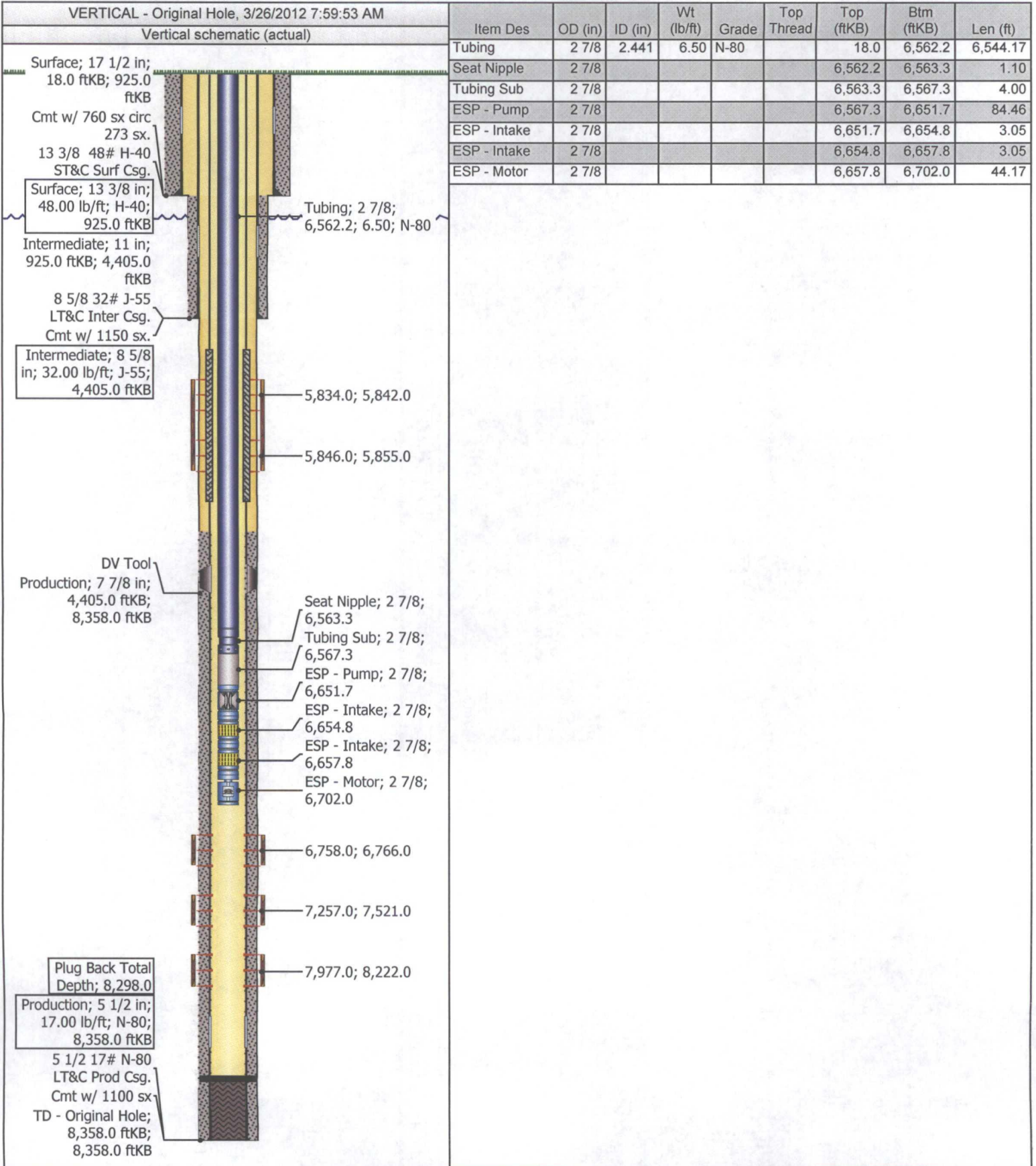
Set Depth (ftKB)	Wellbore	Pull Date
6,702.0	Original Hole	



# Current Wellbore Schematic

WELL (PN): LOTOS C FEDERAL 912 (613357)  
 FIELD OFFICE:  
 FIELD: Poker Lake Prospect  
 STATE / COUNTY: NEW MEXICO / EDDY  
 LOCATION: SEC 9-24S-31E, 660 FSL & 1980 FEL  
 ROUTE: HOB-NM-ROUTE 19- KENNY HUGHES  
 ELEVATION: GL: 3,477.0 KB: 3,495.0 KB Height: 18.0  
 DEPTHS: TD: 8,358.0

**Chesapeake**  
 ENERGY  
 API #: 3001535356  
 Serial #:  
 SPUD DATE: 6/12/2007  
 RIG RELEASE: 7/5/2007  
 FIRST SALES:  
 Current Status: SHUTIN





# Current Wellbore Schematic

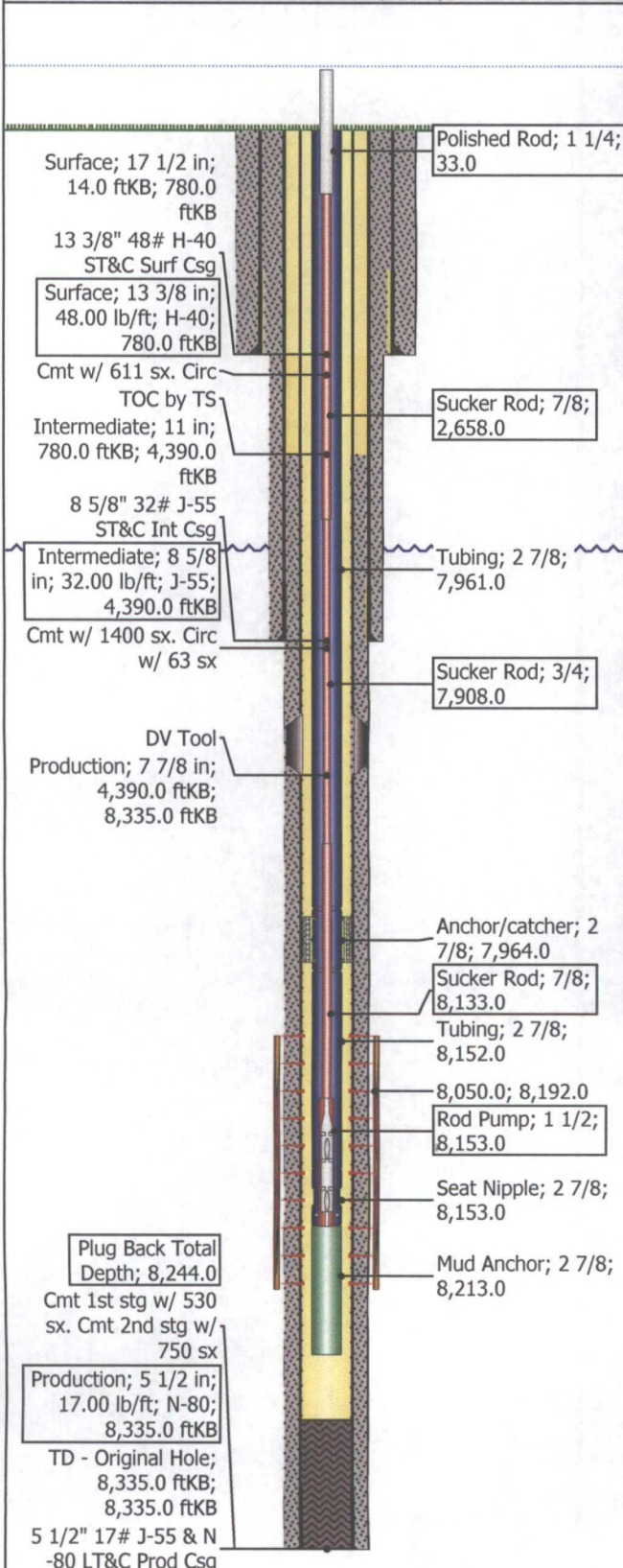


WELL (PN): LOTOS C FEDERAL 905 (890487)  
 FIELD OFFICE: CON - CONCHO RESOURCES  
 FIELD: SAND DUNES DELAWARE WEST  
 STATE / COUNTY: NEW MEXICO / EDDY  
 LOCATION: SEC 9-24S-31E, 660 FSL & 700 FEL  
 ROUTE: HOB-NM-ROUTE 19- KENNY HUGHES  
 ELEVATION: GL: 3,475.0 KB: 3,489.0 KB Height: 14.0  
 DEPTHS: TD: 8,335.0

API #: 3001532558  
 Serial #: 31001  
 SPUD DATE: 2/24/2003  
 RIG RELEASE: 3/12/2003  
 FIRST SALES:  
 Current Status: PRODUCING

Original Hole, 3/26/2012 8:00:12 AM

Vertical schematic (actual)



## Casing String: Intermediate

Set Depth (ftKB)		Wellbore		Set Tension (kips)		
4,390.0		Original Hole				
Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top (ftKB)	Btm (ftKB)
Casing Joints	8 5/8	7.921	32.00	J-55	14.0	4,389.0
Float Shoe	8 5/8				4,389.0	4,390.0

## Casing String: Production

Set Depth (ftKB)		Wellbore		Set Tension (kips)		
8,335.0		Original Hole				
Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top (ftKB)	Btm (ftKB)
Casing Joints	5 1/2	4.892	17.00	N-80	14.0	5,990.0
DV Tool	5 1/2				5,990.0	5,993.0
Casing Joints	5 1/2	4.892	17.00	N-80	5,993.0	8,334.0
Float Shoe	5 1/2				8,334.0	8,335.0

## Cement

Description: Intermediate Casing Cement

14.0-4,390.0

Top of Cement (ftKB): 14.0 Top Measurement Method:

Fluid	Amount (sacks)	Class	Dens (lb/gal)	Vol Pumped (bbl)	Yield (ft³/sack)
	1,400				

Description: Production Casing Cement

5,993.0-8,335.0

Top of Cement (ftKB): 5,993.0 Top Measurement Method:

Fluid	Amount (sacks)	Class	Dens (lb/gal)	Vol Pumped (bbl)	Yield (ft³/sack)
	530				

2,139.0-5,993.0

Top of Cement (ftKB): 2,139.0 Top Measurement Method:

Fluid	Amount (sacks)	Class	Dens (lb/gal)	Vol Pumped (bbl)	Yield (ft³/sack)
	750				

## Perforations

Date	Zone/Formation	Top (ftKB)	Btm (ftKB)	Shot Dens (shot s/ft)	Phasing (°)
3/19/2003		8,050.0	8,192.0	1.0	

## Tubing String: Tubing - Production

Set Depth (ftKB)			Wellbore			Pull Date		
8,213.0			Original Hole					
Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Thread	Top (ftKB)	Btm (ftKB)	Len (ft)
Tubing	2 7/8					14.0	7,961.0	7,947.00
Anchor/catcher	2 7/8					7,961.0	7,964.0	3.00
Tubing	2 7/8					7,964.0	8,152.0	188.00
Seat Nipple	2 7/8					8,152.0	8,153.0	1.00
Mud Anchor	2 7/8					8,153.0	8,213.0	60.00

## Rods: Rod - Conventional

Set Depth (ftKB)		Wellbore					Pull Date		
8,153.0		Original Hole							
Item Des	OD (in)	Grade	Make	Model	Guide s/Rod	Top (ftKB)	Btm (ftKB)	Len (ft)	Top Coupling
Polished Rod	1 1/4					7.0	33.0	26.00	

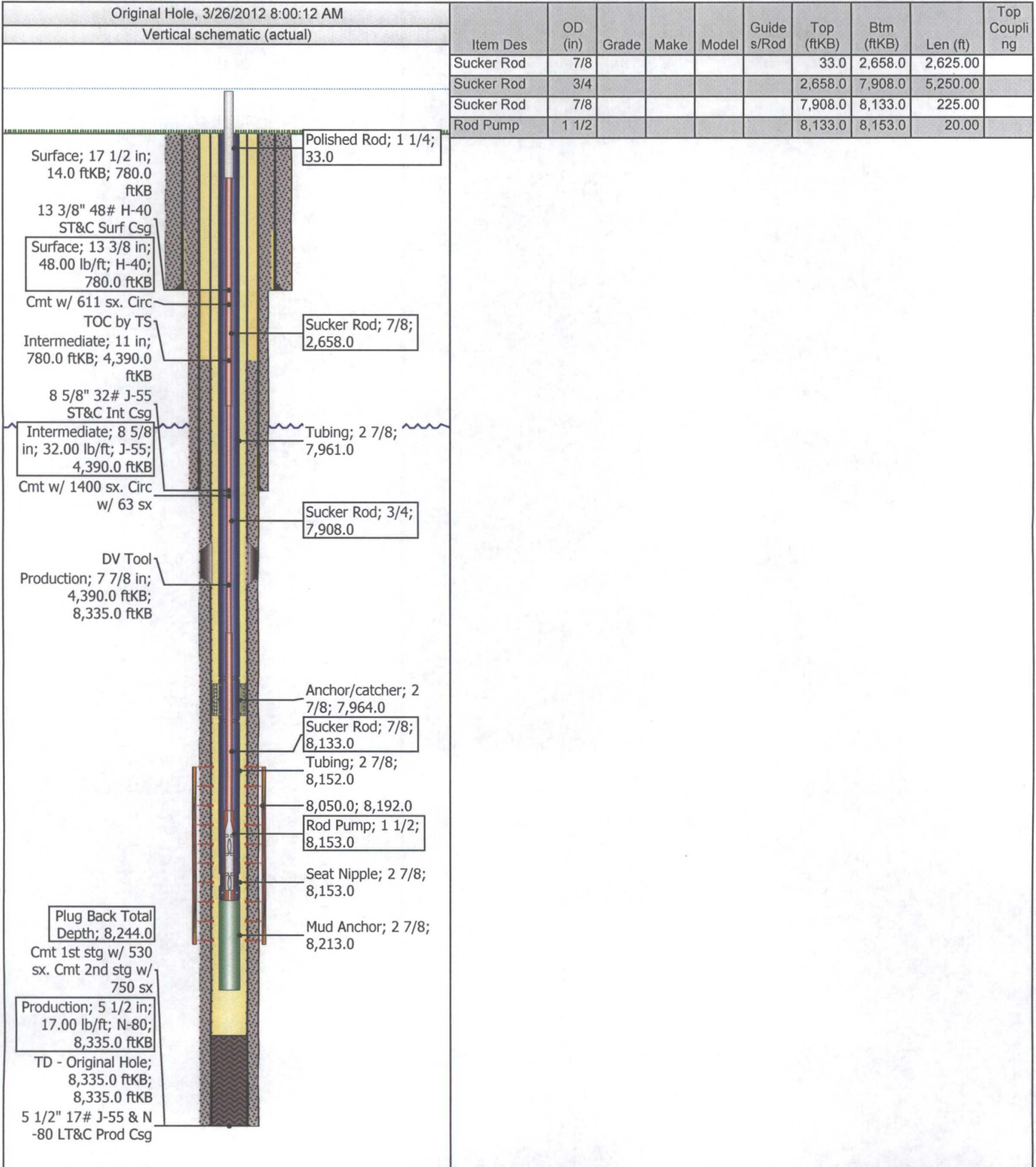


# Current Wellbore Schematic

WELL (PN): LOTOS C FEDERAL 905 (890487)  
 FIELD OFFICE: CON - CONCHO RESOURCES  
 FIELD: SAND DUNES DELAWARE WEST  
 STATE / COUNTY: NEW MEXICO / EDDY  
 LOCATION: SEC 9-24S-31E, 660 FSL & 700 FEL  
 ROUTE: HOB-NM-ROUTE 19- KENNY HUGHES  
 ELEVATION: GL: 3,475.0 KB: 3,489.0 KB Height: 14.0  
 DEPTHS: TD: 8,335.0



API #: 3001532558  
 Serial #: 31001  
 SPUD DATE: 2/24/2003  
 RIG RELEASE: 3/12/2003  
 FIRST SALES:  
 Current Status: PRODUCING





# Current Wellbore Schematic



WELL (PN): LOTOS FEDERAL 4 (890478)  
 FIELD OFFICE: CON - CONCHO RESOURCES  
 FIELD: W SAND DUNES DELAWARE  
 STATE / COUNTY: NEW MEXICO / EDDY  
 LOCATION: SEC 9-24S-31E, 2310 FSL & 2310 FEL  
 ROUTE: HOB-NM-ROUTE 19- KENNY HUGHES  
 ELEVATION: GL: 3,452.8 KB: 3,469.8 KB Height: 17.0  
 DEPTHS: TD: 8,257.0

API #: 3001527593

Serial #:

SPUD DATE: 11/4/1993

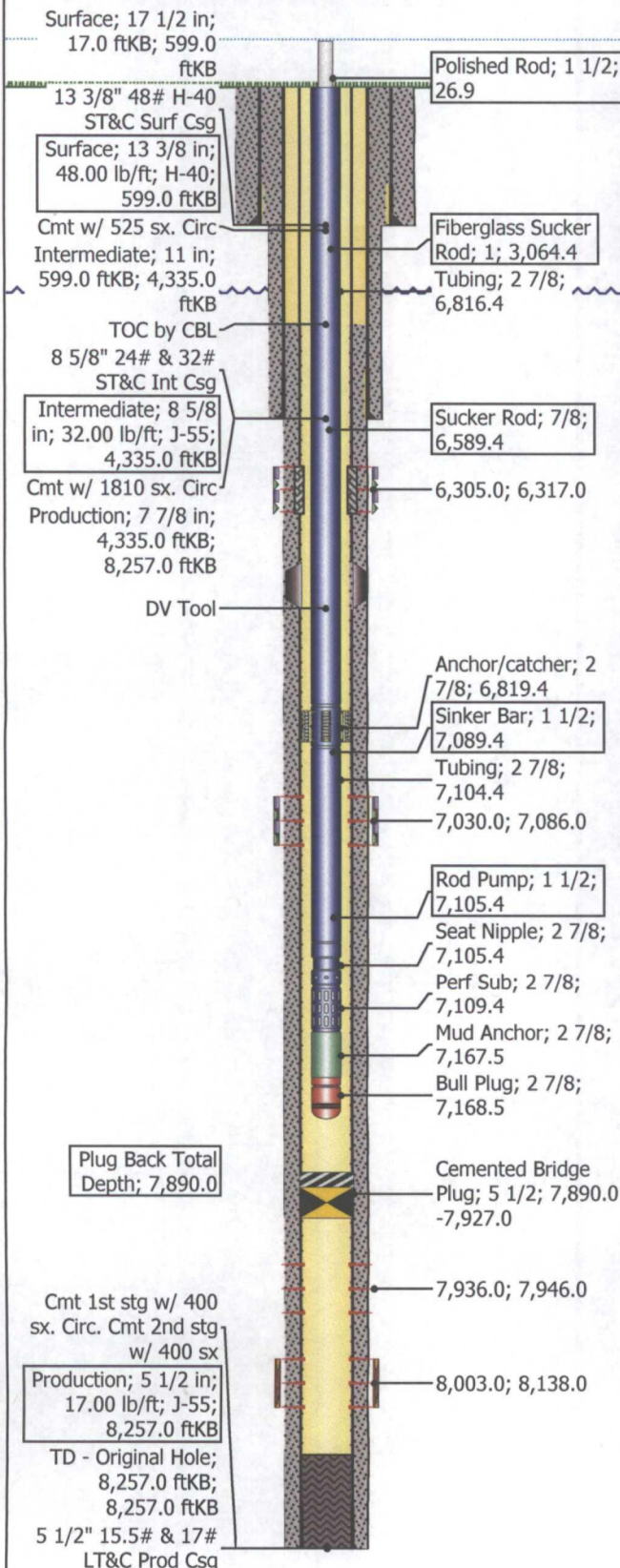
RIG RELEASE: 7/10/2003

FIRST SALES:

Current Status: PRODUCING

Original Hole, 3/26/2012 8:00:31 AM

Vertical schematic (actual)



## Casing String: Intermediate

Set Depth (ftKB)		Wellbore			Set Tension (kips)	
4,335.0		Original Hole				
Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top (ftKB)	Btm (ftKB)
Casing Joints	8 5/8	7.921	32.00	J-55	17.0	4,334.0
Float Shoe	8 5/8				4,334.0	4,335.0

## Casing String: Production

Set Depth (ftKB)			Wellbore			Set Tension (kips)	
8,257.0			Original Hole				
Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top (ftKB)	Btm (ftKB)	
Casing Joints	5 1/2	4.892	17.00	J-55	17.0	6,497.0	
DV Tool	5 1/2				6,497.0	6,500.0	
Casing Joints	5 1/2	4.892	17.00	J-55	6,500.0	8,256.0	
Float Shoe	5 1/2				8,256.0	8,257.0	

## Cement

Description: Intermediate Casing Cement

17.0-4,335.0

Top of Cement (ftKB): 17.0 Top Measurement Method:

Fluid	Amount (sacks)	Class	Dens (lb/gal)	Vol Pumped (bbl)	Yield (ft³/sack)
	1,810				

Description: Production Casing Cement

6,500.0-8,257.0

Top of Cement (ftKB): 6,500.0 Top Measurement Method:

Fluid	Amount (sacks)	Class	Dens (lb/gal)	Vol Pumped (bbl)	Yield (ft³/sack)
	400				

4,180.0-6,500.0

Top of Cement (ftKB): 4,180.0 Top Measurement Method: Cement Bond Log

Fluid	Amount (sacks)	Class	Dens (lb/gal)	Vol Pumped (bbl)	Yield (ft³/sack)
	400				

Description: Cement Squeeze

6,305.0-6,317.0

Top of Cement (ftKB): 6,305.0 Top Measurement Method:

Fluid	Amount (sacks)	Class	Dens (lb/gal)	Vol Pumped (bbl)	Yield (ft³/sack)
	150				

## Perforations

Date	Zone/Formation	Top (ftKB)	Btm (ftKB)	Shot Dens (shot s/ft)	Phasing (°)
10/19/1995		6,305.0	6,317.0	2.0	
7/11/2003		7,030.0	7,086.0	1.0	
6/16/1994		7,936.0	7,946.0	3.0	
12/7/1993		8,003.0	8,138.0		

## Tubing String: Tubing - Production

Set Depth (ftKB)		Wellbore				Pull Date		
7,168.5		Original Hole						
Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Thread	Top (ftKB)	Btm (ftKB)	Len (ft)
Tubing	2 7/8					17.0	6,816.4	6,799.38
Anchor/catcher	2 7/8					6,816.4	6,819.4	3.00



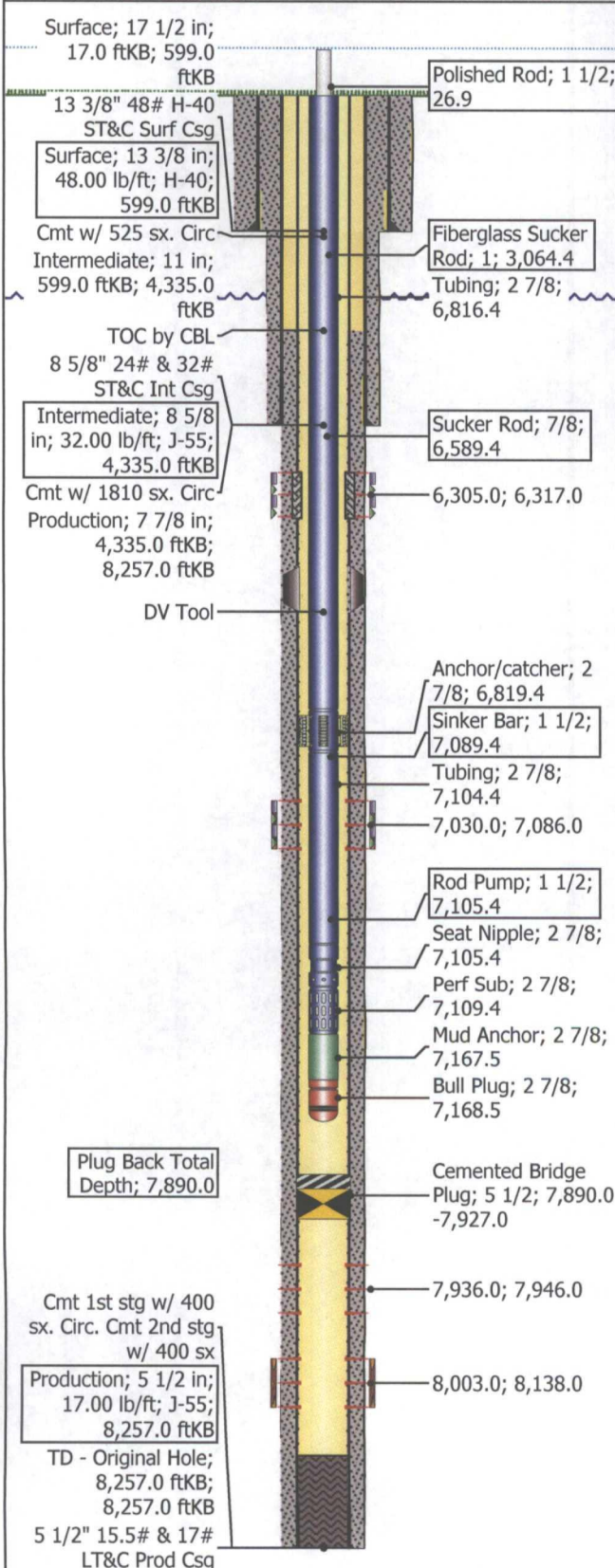
# Current Wellbore Schematic

WELL (PN): LOTOS FEDERAL 4 (890478)  
 FIELD OFFICE: CON - CONCHO RESOURCES  
 FIELD: W SAND DUNES DELAWARE  
 STATE / COUNTY: NEW MEXICO / EDDY  
 LOCATION: SEC 9-24S-31E, 2310 FSL & 2310 FEL  
 ROUTE: HOB-NM-ROUTE 19- KENNY HUGHES  
 ELEVATION: GL: 3,452.8 KB: 3,469.8 KB Height: 17.0  
 DEPTHS: TD: 8,257.0

**Chesapeake**  
 ENERGY  
 API #: 3001527593  
 Serial #:  
 SPUD DATE: 11/4/1993  
 RIG RELEASE: 7/10/2003  
 FIRST SALES:  
 Current Status: PRODUCING

Original Hole, 3/26/2012 8:00:32 AM

Vertical schematic (actual)



Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Thread	Top (ftKB)	Btm (ftKB)	Len (ft)
Tubing	2 7/8					6,819.4	7,104.4	284.99
Seat Nipple	2 7/8					7,104.4	7,105.4	1.00
Perf Sub	2 7/8					7,105.4	7,109.4	4.00
Mud Anchor	2 7/8					7,109.4	7,167.5	58.15
Bull Plug	2 7/8					7,167.5	7,168.5	1.00

## Rods: Rod - Conventional

Set Depth (ftKB)		Wellbore				Pull Date			
7,105.4		Original Hole							
Item Des	OD (in)	Grade	Make	Model	Guide s/Rod	Top (ftKB)	Btm (ftKB)	Len (ft)	Top Coupling
Polished Rod	1 1/2					0.9	26.9	26.00	
Fiberglass Sucker Rod	1					26.9	3,064.4	3,037.50	
Sucker Rod	7/8					3,064.4	6,589.4	3,525.00	
Sinker Bar	1 1/2					6,589.4	7,089.4	500.00	
Rod Pump	1 1/2					7,089.4	7,105.4	16.00	

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-101  
Revised August 1, 2011

Permit

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

<sup>1</sup> Operator Name and Address Chesapeake Operating, Inc. P.O. Box 18496 Oklahoma City, OK 73154		<sup>2</sup> OGRID Number 147179
		<sup>3</sup> API Number 30-015-27008
<sup>4</sup> Property Code 300049	<sup>5</sup> Property Name CACTUS 16 STATE	<sup>6</sup> Well No. 1

<sup>7</sup> Surface Location

U/L - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
C	16	24S	31E		330'	NORTH	2310'	WEST	EDDY

<sup>8</sup> Pool Information

SWD; DELAWARE	
---------------	--

Additional Well Information

<sup>9</sup> Work Type E	<sup>10</sup> Well Type S	<sup>11</sup> Cable/Rotary R	<sup>12</sup> Lease Type S	<sup>13</sup> Ground Level Elevation 3492'
<sup>14</sup> Multiple No	<sup>15</sup> Proposed Depth 5910'-PB	<sup>16</sup> Formation DELAWARE	<sup>17</sup> Contractor TBD	<sup>18</sup> Spud Date
Depth to Ground water No Record		Distance from nearest fresh water well >2 Miles		Distance to nearest surface water 10.9 miles

<sup>19</sup> Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/lb	Setting Depth	Sacks of Cement	Estimated TOC
	17 1/2"	13 3/8"	54#	626'	470 sxs	0'
	12 1/4"	8 5/8"	24# & 32#	4250'	1450 sxs	0'
	7 7/8"	5 1/2"	17#	8354'	250 sxs	6820'

Casing/Cement Program: Additional Comments

Please find our intent to convert to this well to SWD. Attached is procedure to convert, actual and proposed well bore diagram, NMOC's C-102, maps, and (CLEZ) C-144 pit permit. SWD order is required to inject any fluids.

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer

I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that the drilling pit will be constructed according to: NMOC's guidelines <input type="checkbox"/> , a general permit <input checked="" type="checkbox"/> , or an (attached) alternative OCD-approved plan <input type="checkbox"/> .		OIL CONSERVATION DIVISION	
Printed name: Bryan Arrant <i>Bryan Arrant</i>			
Title: Regulatory Specialist II		Approved Date:	Expiration Date:
E-mail Address: bryan.arrant@chk.com			
Date: 04/06/2012	Phone: (405)935-3782	Conditions of Approval Attached	

**CACTUS 16 STATE 1**

Unit C of Section 16, T-24-S R-31-E  
330' FNL & 2310' FWL, NMPM  
Eddy County, NM  
API# 30-015-27008

**Cactus R/C Procedure - Convert to SWD**

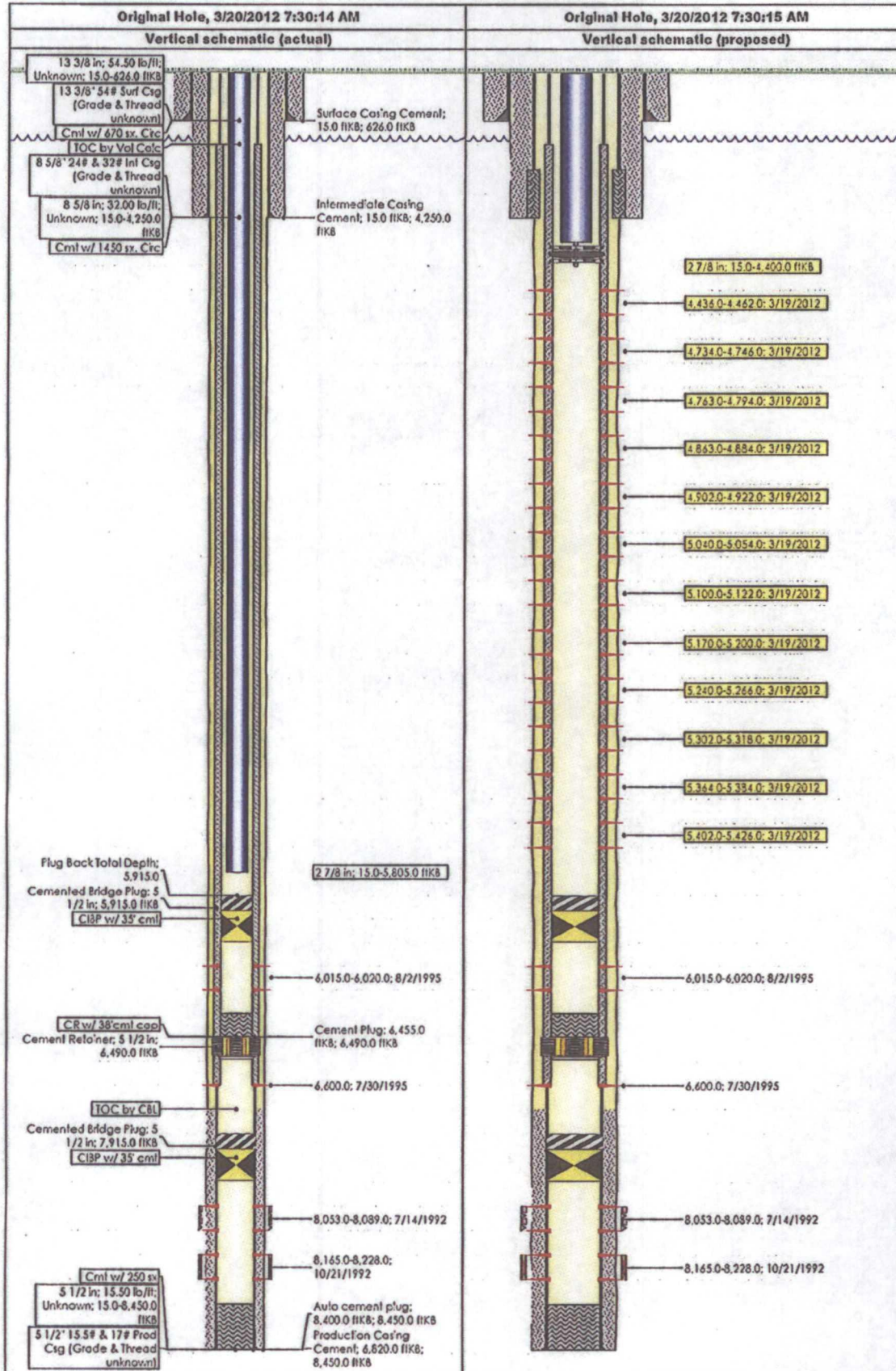
1. RU pump truck. Load hole and pressure up to test casing integrity.
2. RU WL. Run CBL from 5950' (CIBP) to 4150' or the TOC. RD WL.
3. RU PU. Squeeze to ensure cement is a minimum of 100' into the 8-5/8" casing at 4250'.
4. TIH w/ bit to drill out cement and clean-up wellbore down to 5950' (CIBP). TOH.
5. Perforate and acidize Bell/Cherry Canyon. Proposed perforation intervals are below.
  - 4436'-62'
  - 4734'-46'
  - 4763'-94'
  - 4863'-84'
  - 4902'-22'
  - 5040'-54'
  - 5100'-22'
  - 5170'-200'
  - 5240'-66'
  - 5302'-18'
  - 5364'-84'
  - 5402'-26'
6. TIH w/ injection tubing and packer. Set packer within 100' of top perforation.
7. Load backside and run MIT. Begin injection.



# Current Wellbore Schematic

WELL (PN): CACTUS 16 STATE 1 (890839)  
 FIELD OFFICE: HOBBS  
 FIELD: WILDCAT BRUSHY CANYON  
 STATE / COUNTY: NEW MEXICO / EDDY  
 LOCATION: SEC 16-24S-31E, 330 FNL & 2310 FWL  
 ROUTE: HOB-NM-ROUTE 19- KENNY HUGHES  
 ELEVATION: GL: 3,492.0 KB: 3,507.0 KB Height: 15.0  
 DEPTHS: TD: 8,450.0

Chesapeake  
 API #: 3001527008  
 Serial #:  
 SPUD DATE: 6/17/1992  
 RIG RELEASE:  
 FIRST SALES:  
 Current Status: T/A



**DISTRICT I**

1025 N. French Dr., Hobbs, NM 88240

Phone (505) 593-8101 Fax: (505) 593-0720

**DISTRICT II**

811 S. First St., Artesia, NM 88210

Phone (505) 748-1233 Fax: (505) 748-0720

**DISTRICT III**

1000 Rio Brazos Rd., Aztec, NM 87410

Phone (505) 334-8170 Fax: (505) 334-8170

**DISTRICT IV**

1220 S. St. Francis Dr., Santa Fe, NM 87505

Phone (505) 478-3420 Fax: (505) 478-3422

State of New Mexico  
Energy, Minerals and Natural Resources Department**OIL CONSERVATION DIVISION**1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate  
District Office**WELL LOCATION AND ACREAGE DEDICATION PLAT**☐ AMENDED REPORT

API Number <b>30-015-27008</b>	Pool Code <b>96100</b>	Pool Name <b>SWD; DELAWARE</b>
Property Code <b>300049</b>	Property Name <b>CACTUS 16 STATE</b>	Well Number <b>1H</b>
OGRI No. <b>147179</b>	Operator Name <b>CHESAPEAKE OPERATING CO.</b>	Elevation <b>3502'</b>

**Surface Location**

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>C</b>	<b>16</b>	<b>24 S</b>	<b>31 E</b>		<b>330</b>	<b>NORTH</b>	<b>2310</b>	<b>WEST</b>	<b>EDDY</b>

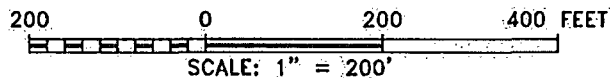
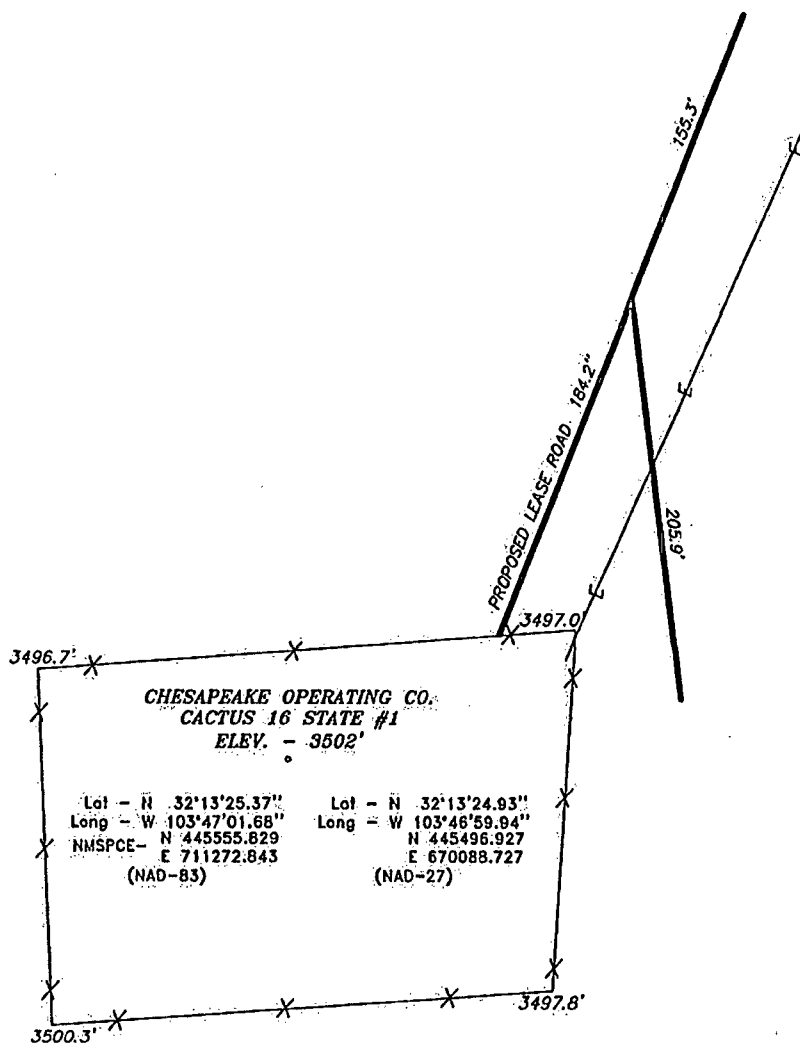
**Bottom Hole Location If Different From Surface**

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.	<b>SWD Order Pending</b>					

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<b>SURFACE LOCATION</b> Lat - N 32°13'25.37" Long - W 103°47'01.68" NMSPCE - N 445555.829 E 711272.843 (NAD-83) Lat - N 32°13'24.93" Long - W 103°46'59.94" NMSPCE - N 445496.927 E 670088.727 (NAD-27)	<b>OPERATOR CERTIFICATION</b> I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature:  Date: <b>04/06/2012</b> Printed Name: <b>Bryan Arrant</b> Email Address: <b>bryan.arrant@chk.com</b>
	<b>SURVEYOR CERTIFICATION</b> I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.	
	Date Surveyed: _____ Signature & Seal of Professional Surveyor: _____ W.O. _____	Certificate No. <b>Gary L. Jones 7977</b> <b>26444</b>
	<b>BASIN SURVEYS</b>	<b>26444</b>

SECTION 16, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF BUCK JACKSON AND LEASE ROAD, GO NORTHWEST ON LEASE ROAD FOR 0.6 MILES THEN GO SOUTH 0.3 MILES THEN NORTHWEST 0.2 MILES THEN GO SOUTHERLY 2.6 MILES TO WELL PAD AND PROPOSED LEASE ROAD.

**CHESAPEAKE OPERATING CO.**

REF: CACTUS 16 STATE #1/ WELL PAD TOPO.

THE CACTUS 16 STATE #1 LOCATED 330'

FROM THE NORTH LINE AND 2310' FROM THE WEST LINE OF

SECTION 16, TOWNSHIP 24 SOUTH, RANGE 31 EAST,

N.M.P.M., EDDY COUNTY, NEW MEXICO.

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 26444

Drawn By: J. GOAD

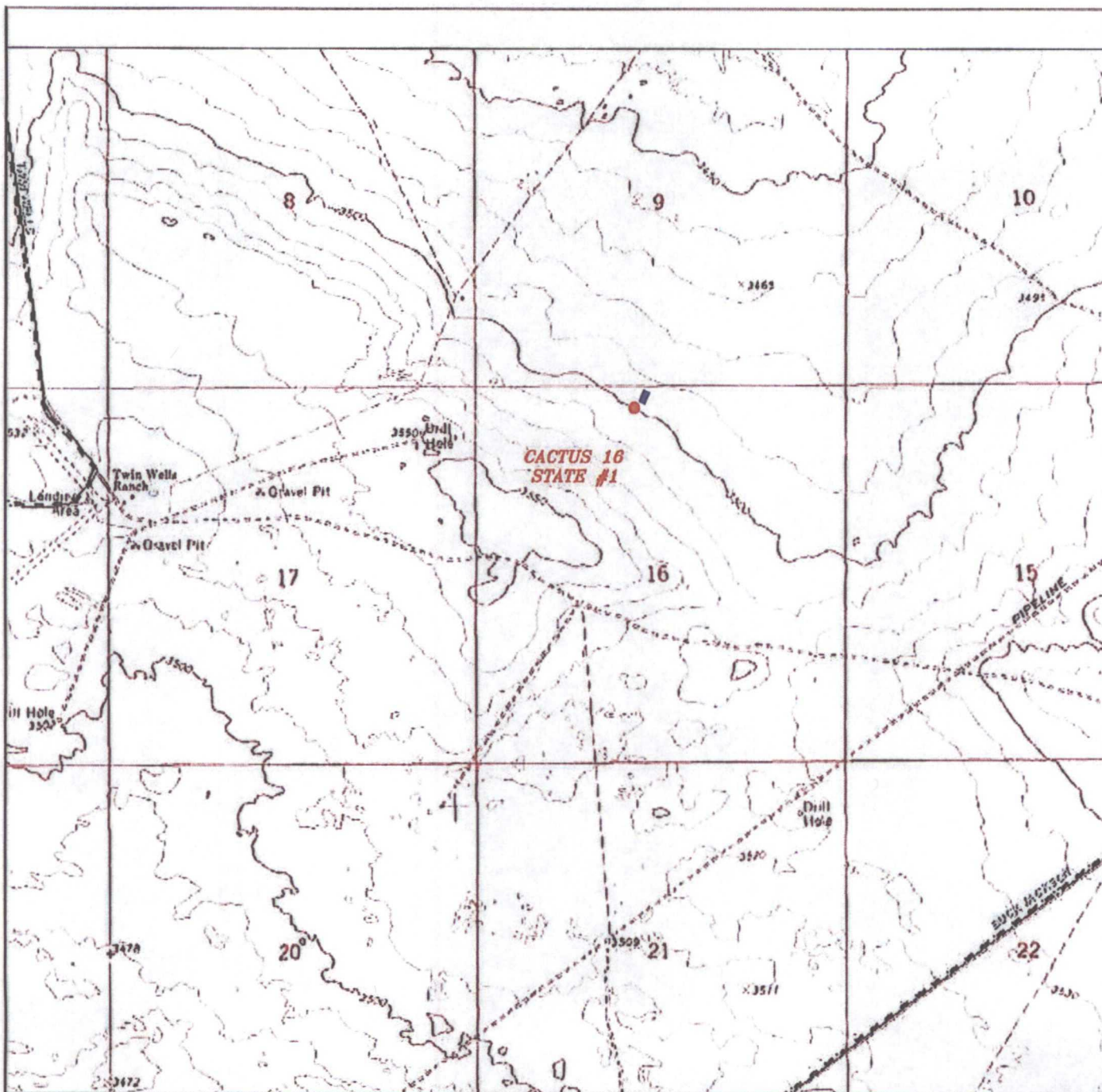
Date: 4-4-2012

Disk: JG - 26444WELL

Survey Date: 3-26-12

Sheet 1 of 1 Sheets





### CACTUS 16 STATE #1

Located 330' FNL and 2310' FWL  
 Section 16, Township 24 South, Range 31 East,  
 N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (575) 393-7316 - Office  
 (575) 392-2206 - Fax  
[basinsurveys.com](http://basinsurveys.com)

W.O. Number: JG - 26444

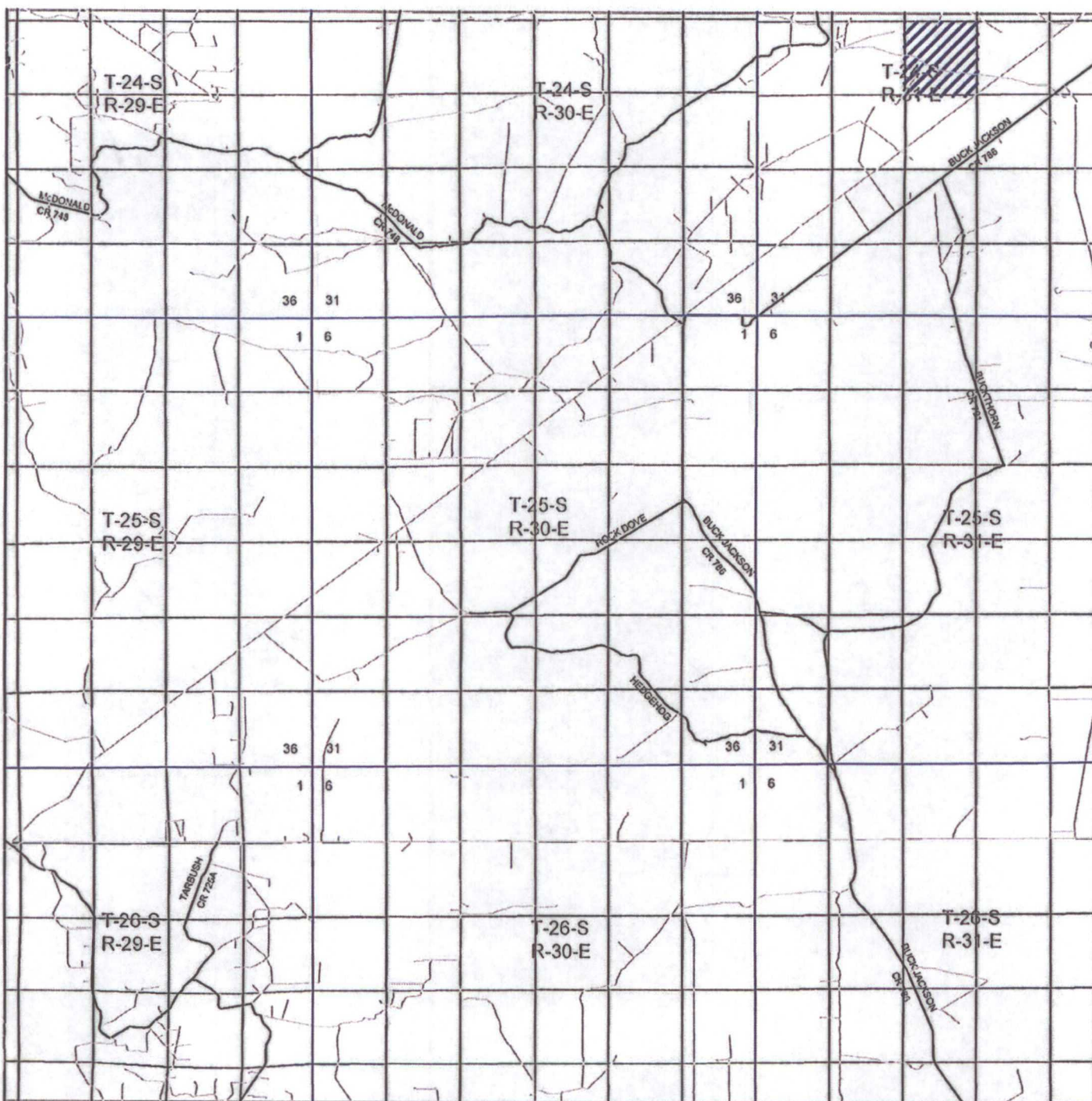
Survey Date: 3-26-2012

Scale: 1" = 2000'

Date: 4-4-2012

CHESAPEAKE  
 OPERATING CO.





### CACTUS 16 STATE #1

Located 330' FNL and 2310' FWL

Section 16, Township 24 South, Range 31 East,  
N.M.P.M., Eddy County, New Mexico.

**basin**  
**surveys**

focused on excellence  
in the oilfield

P.O. Box 1786  
1120 N. West County Rd.  
Hobbs, New Mexico 88241  
(575) 393-7316 - Office  
(575) 392-2206 - Fax  
basinsurveys.com

W.O. Number: JG - 26444

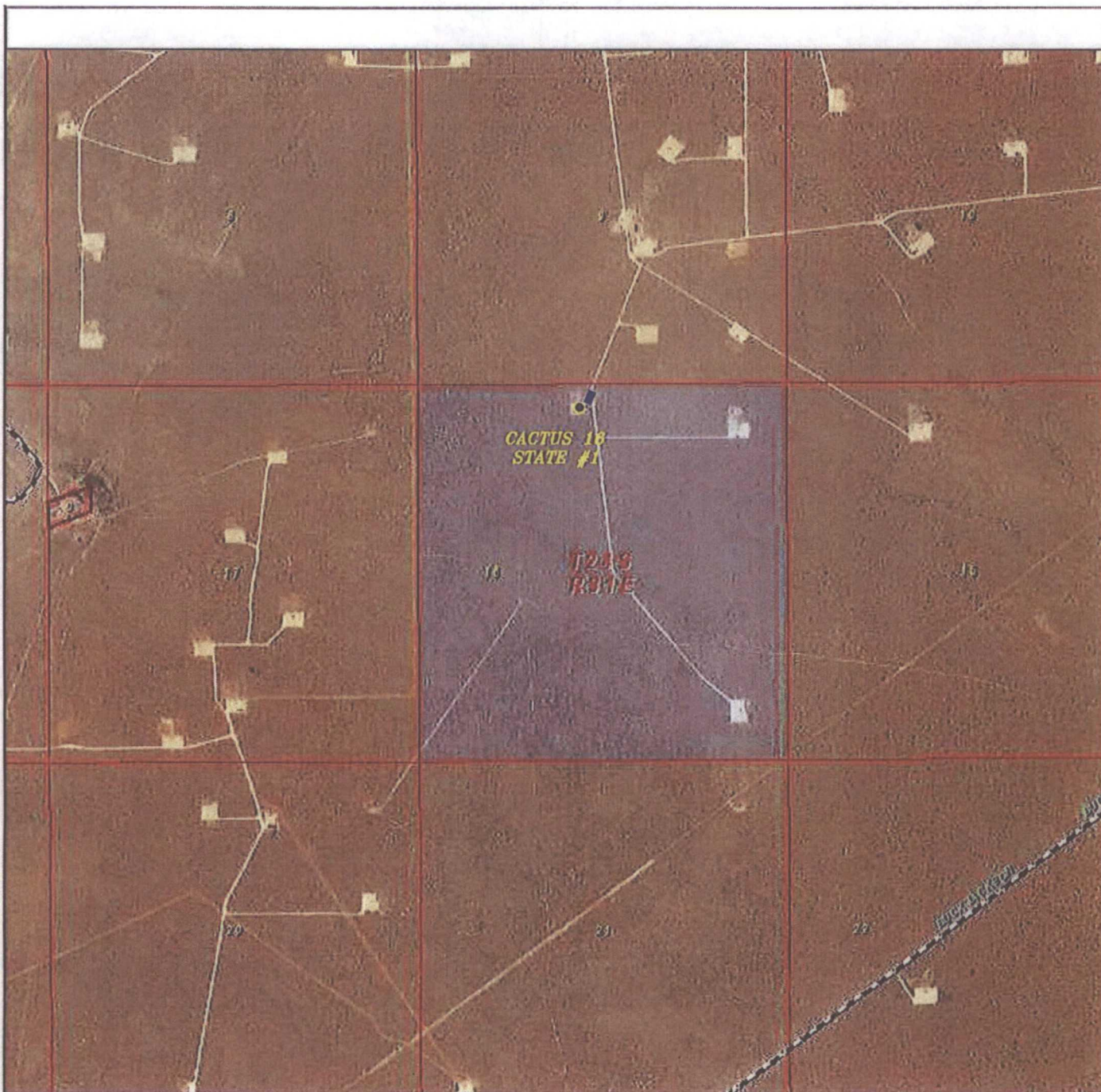
Survey Date: 3-26-2012

Scale: 1" = 2 Miles

Date: 4-4-2012

**CHESAPEAKE**  
**OPERATING CO.**





### CACTUS 16 STATE #1

Located 330' FNL and 2310' FWL  
 Section 16, Township 24 South, Range 31 East,  
 N.M.P.M., Eddy County, New Mexico.



focused on excellence  
 in the oilfield

P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (575) 393-7316 - Office  
 (575) 392-2206 - Fax  
[basinsurveys.com](http://basinsurveys.com)

W.O. Number: JG - 26444

Scale: 1" = 2000'

YELLOW TINT - USA LAND  
 BLUE TINT - STATE LAND  
 NATURAL COLOR - FEE LAND



CHESAPEAKE  
 OPERATING CO.

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-144 CLEZ  
Revised August 1, 2011

For closed-loop systems that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, submit to the appropriate NMOC District Office.

**Closed-Loop System Permit or Closure Plan Application**

*(that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)*

Type of action: ☒ Permit ☐ Closure

*Instructions: Please submit one application (Form C-144 CLEZ) per individual closed-loop system request. For any application request other than for a closed-loop system that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, please submit a Form C-144.*

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1. Operator: Chesapeake Operating, Inc. OGRID #: 147179  
Address: P.O. Box 18496 Oklahoma City, OK 73154  
Facility or well name: CACTUS 16 STATE 1  
API Number: 30-015-27008 OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr C Section 16 Township 24 S Range 31 E County: EDDY  
Center of Proposed Design: Latitude 32.223660 Longitude -103.78334 NAD: ☒ 1927 ☐ 1983  
Surface Owner: ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment

2. ☒ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC  
Operation: ☐ Drilling a new well ☒ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent) ☐ P&A  
☒ Above Ground Steel Tanks or ☐ Haul-off Bins

3. **Signs:** Subsection C of 19.15.17.11 NMAC  
☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers  
☒ Signed in compliance with 19.15.16.8 NMAC

4. **Closed-loop Systems Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC  
*Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.*  
☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC  
☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC  
☒ Closure Plan (Please complete Box 5) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC  
☐ Previously Approved Design (attach copy of design) API Number: \_\_\_\_\_  
☐ Previously Approved Operating and Maintenance Plan API Number: \_\_\_\_\_

5. **Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:** (19.15.17.13.D NMAC)  
*Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.*

Disposal Facility Name: CRI Disposal Facility Permit Number: NM-01-0006  
Disposal Facility Name: SUNDANCE DISPOSAL Disposal Facility Permit Number: NM-01-0003

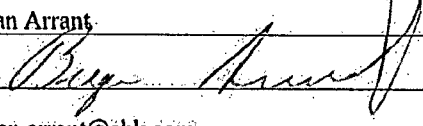
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future service and operations?  
☐ Yes (If yes, please provide the information below) ☒ No

*Required for impacted areas which will not be used for future service and operations:*

- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC  
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

6. **Operator Application Certification:**

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Bryan Arrant Title: Regulatory Specialist II  
Signature:  Date: 04/06/2012  
e-mail address: bryan.arrant@chk.com Telephone: (405)935-3782

7. **OCD Approval:** ☐ Permit Application (including closure plan) ☐ Closure Plan (only)

OCD Representative Signature: \_\_\_\_\_ Approval Date: \_\_\_\_\_

Title: \_\_\_\_\_ OCD Permit Number: \_\_\_\_\_

8. **Closure Report (required within 60 days of closure completion):** Subsection K of 19.15.17.13 NMAC

*Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.*

☐ Closure Completion Date: \_\_\_\_\_

9. **Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:**

*Instructions: Please identify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.*

Disposal Facility Name: \_\_\_\_\_ Disposal Facility Permit Number: \_\_\_\_\_

Disposal Facility Name: \_\_\_\_\_ Disposal Facility Permit Number: \_\_\_\_\_

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

*Required for impacted areas which will not be used for future service and operations:*

☐ Site Reclamation (Photo Documentation)

☐ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

10. **Operator Closure Certification:**

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

e-mail address: \_\_\_\_\_ Telephone: \_\_\_\_\_



**CACTUS 16 STATE 1**

Unit C of Section 16, T-24-S R-31-E  
330' FNL & 2310' FWL, NMPM  
Eddy County, NM  
API# 30-015-27008

**Cactus R/C Procedure - Convert to SWD**

1. RU pump truck. Load hole and pressure up to test casing integrity.
2. RU WL. Run CBL from 5950' (CIBP) to 4150' or the TOC. RD WL.
3. RU PU. Squeeze to ensure cement is a minimum of 100' into the 8-5/8" casing at 4250'.
4. TIH w/ bit to drill out cement and clean-up wellbore down to 5950' (CIBP). TOH.
5. Perforate and acidize Bell/Cherry Canyon. Proposed perforation intervals are below.
  - 4436'-62'
  - 4734'-46'
  - 4763'-94'
  - 4863'-84'
  - 4902'-22'
  - 5040'-54'
  - 5100'-22'
  - 5170'-200'
  - 5240'-66'
  - 5302'-18'
  - 5364'-84'
  - 5402'-26'
6. TIH w/ injection tubing and packer. Set packer within 100' of top perforation.
7. Load backside and run MIT. Begin injection.

**Item IX**





## New Mexico Office of the State Engineer Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)  
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

**Basin/County Search:**

**Basin:** Carlsbad

**County:** Eddy

**UTM/NAD83 Radius Search (in meters):**

**Easting (X):** 641603

**Northing (Y):** 3565873

**Radius:** 3520

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.

3/6/12 10:28 AM

WATER COLUMN/ AVERAGE  
DEPTH TO WATER

# Item XI

# **Item XIII**

## **Proof of Notice**

**Cactus 16 State 1**  
**Unit C, of Section 16, T-24-D R-31-E**  
**Eddy Co., NM**  
**API# 30-015-27008**

Surface Owner:  
State of New Mexico Land Office  
310 Old Santa Fe Trail  
Santa Fe, NM 87501

Grazing Lessee:  
J R Engineering & Construction  
PO Box 487  
Carlsbad, NM

Leasehold Operators within ½ mile of proposed injection well:

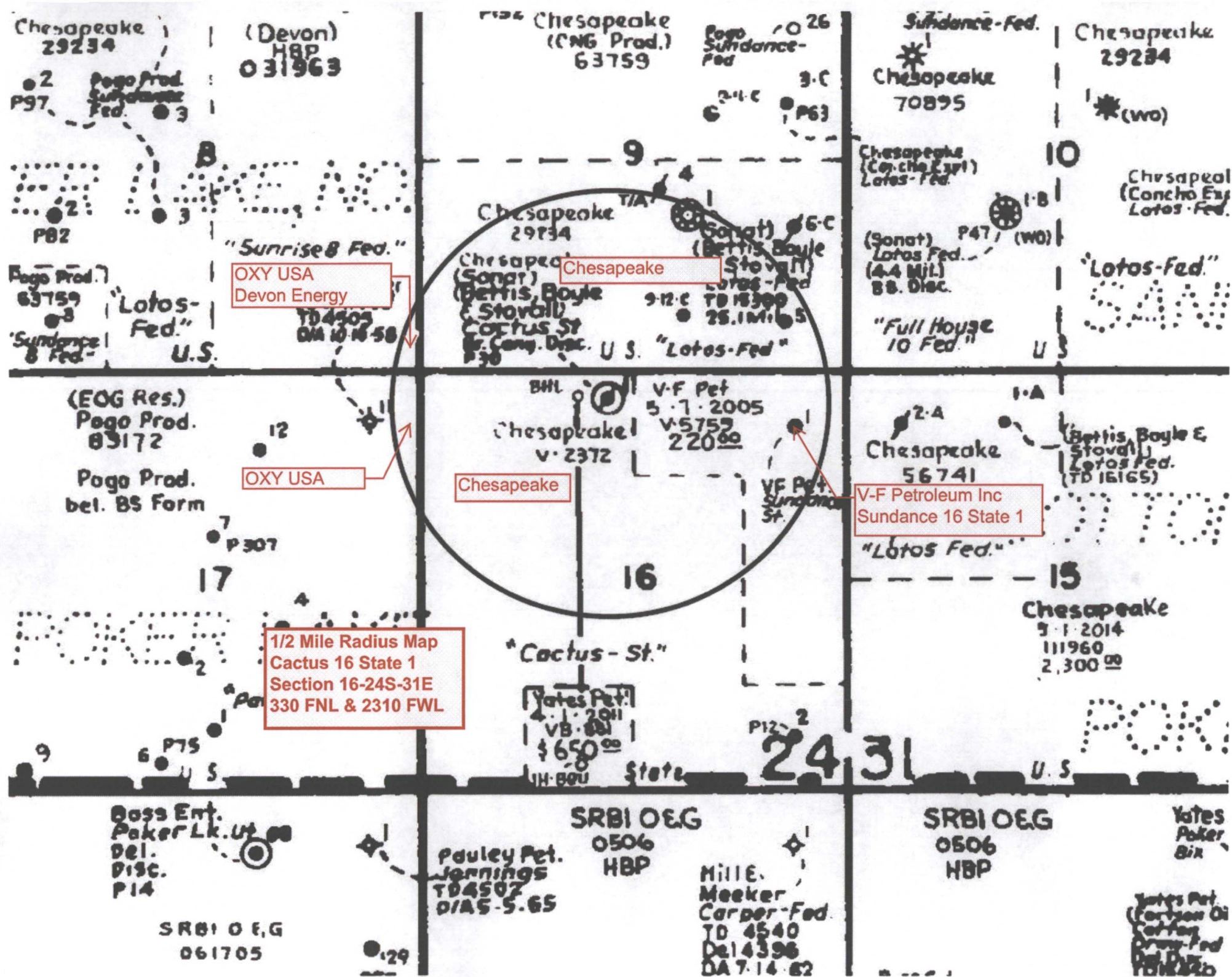
N/2 NE/4, SE/4 NE/4 Section 16-24S-31E  
V-F Petroleum Inc.  
PO Box 1889  
Midland, TX 79702

SE/4 SE/4 Section 8-24S-31E  
OXY USA Inc  
PO Box 4294  
Houston, TX 77210

Devon Energy Production Company LP  
20 N. Broadway #1500  
Oklahoma City, OK 73102

NE/4 NE/4 Section 17-24S-31E  
OXY USA Inc  
PO Box 4294  
Houston, TX 77210

**Map showing offset leasehold operators, affidavit of publication, and  
copies of certified return receipts  
that were mailed follow this page.**





# Affidavit of Publication

NO.

22078

STATE OF NEW MEXICO

County of Eddy:

Danny Scott

being duly sworn, says that he is the

Publisher

of the Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached

## Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/days on the same

day as follows:

First Publication

March 28, 2012

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Subscribed and sworn to before me this

28th day of

March

2012



OFFICIAL SEAL

Latisha Romine

NOTARY PUBLIC-STATE OF NEW MEXICO

My commission expires: 5/12/2015

Latisha Romine

Latisha Romine

Notary Public, Eddy County, New Mexico

# Copy of Publication:

## LEGAL NOTICE

Chesapeake Operating, Inc. intends to convert the following well to disposal: CAC-TUS 16 STATE 1. This well is located in Unit C of Section 16, Township 24 South, Range 31 East, 330' FNL & 2310' FWL, Eddy County, NM and is located approximately 19 miles east-southeast of Loving, NM. The formation to be disposed is into the Bell and Cherry Canyon sands of the Delaware Mountain Group through perforations 4436'-5426'.

The average disposal rate is expected to be 3000 BWPD with a maximum disposal rate of 5000 BWPD.

The injection pressure is expected to be 500 psig with a maximum pressure to be 887 psig.

Question or objections can be addressed to Chesapeake Operating, Inc. 6100 N. Western Ave., Oklahoma City, OK 73118 or call Bryan Arrant

at: 405-935-3872. Any interested party that have objections or request a hearing

must be filed within 15 days of this notice to the Oil Conservation Division, 1220

South St. Francis Drive, Santa Fe, NM 87505

Published in the Artesia Daily Press, Artesia, N.M., March 28, 2012. Legal No 22078.

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or PO Box No. 20 N. Broadway #1500  
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Oklahoma City, OK 73120

PS Form 3800, August 2006 See Reverse for Instructions

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or PO Box No. P.O. Box 4294  
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PS Form 3800, August 2006 See Reverse for Instructions

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or PO Box No. 310 Old Santa Fe Trail  
City, State, ZIP+4  
Santa Fe, NM 87501

PS Form 3800, August 2006 See Reverse for Instructions



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Total Postage & Fees \$	
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Street, Apt. No., or PO Box No. <u>P.O. Box 487</u>	
City, State, ZIP+4 <u>Carlsbad, NM 88220</u>	
PS Form 3800, August 2006 See Reverse for Instructions	



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Total Postage & Fees \$	
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Street, Apt. No., or PO Box No. <u>P.O. Box 1889</u>	
City, State, ZIP+4 <u>Midland, TX 79702</u>	
PS Form 3800, August 2006 See Reverse for Instructions	



Regulatory Department

April 13, 2012

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

J R Engineering & Construction  
P.O. Box 487  
Carlsbad, NM

Re: Application for administrative approval to dispose of the salt water in the  
CACTUS 16 STATE 1 well  
Located in Unit C, of Section 16, T-24-S R-31-E  
330' FNL & 2310' FWL, NMPM  
Eddy Co., New Mexico

To Whom It May Concern:

Please find a copy of the C-108 application for Chesapeake Operating, Inc. for salt water disposal.

This application is being provided to you as proof of notice upon which the subject well is located as you are identified as a grazing lessee. If you object to this application, your objection must be filed in writing with the Oil Conservation Division which is located at 1220 South Saint Francis Dr., Santa Fe, NM. 87505 within 15 days of the date of this letter.

If there are no objections, the Division may approve this application.  
Please call or email me if I can answer and questions or concerns you may have.

Sincerely,

A handwritten signature in black ink, appearing to read "Bryan Arrant".

Bryan Arrant  
Regulatory Specialist II

405.935.3782  
bryan.arrant@chk.com





Regulatory Department

April 13, 2012

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

V-F Petroleum, Inc.  
P.O. Box 1889  
Midland, TX 79702

Re: Application for administrative approval to dispose of the salt water in the  
CACTUS 16 STATE 1 well.  
Located in Unit C, of Section 16, T-24-S R-31-E  
330' FNL & 2310' FWL, NMPM  
Eddy Co., New Mexico

To Whom It May Concern:

Please find a copy of the C-108 application for Chesapeake Operating, Inc. for salt water disposal.

This application is being provided to you as proof of notice upon which the subject well is located as you are identified as an offset operator. If you object to this application, your objection must be filed in writing with the Oil Conservation Division which is located at 1220 South Saint Francis Dr., Santa Fe, NM. 87505 within 15 days of the date of this letter.

If there are no objections, the Division may approve this application.  
Please call or email me if I can answer and questions or concerns you may have.

Sincerely,

Bryan Arrant  
Regulatory Specialist II

405.935.3782  
bryan.arrant@chk.com



Regulatory Department

April 13, 2012

CERTIFIED MAIL  
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OXY USA Inc.  
P.O. Box 4294  
Houston, TX 77210

Re: Application for administrative approval to dispose of the salt water in the  
CACTUS 16 STATE 1 well.  
Located in Unit C, of Section 16, T-24-S R-31-E  
330'FNL & 2310' FWL, NMPM  
Eddy Co., New Mexico

To Whom It May Concern:

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This application is being provided to you as proof of notice upon which the subject well is located as you are identified as an offset operator. If you object to this application, your objection must be filed in writing with the Oil Conservation Division which is located at 1220 South Saint Francis Dr., Santa Fe, NM. 87505 within 15 days of the date of this letter.

If there are no objections, the Division may approve this application.  
Please call or email me if I can answer and questions or concerns you may have.

Sincerely,

Bryan Arrant  
Regulatory Specialist II

405.935.3782  
bryan.arrant@chk.com



Regulatory Department

April 13, 2012

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Devon Energy Production Company, LP  
20 N. Broadway #1500  
Oklahoma City, OK 73102

Re: Application for administrative approval to dispose of the salt water in the  
CACTUS 16 STATE 1 well.  
Located in Unit C, of Section 16, T-24-S R-31-E  
330' FNL & 2310' FWL, NMPM  
Eddy Co., New Mexico

To Whom It May Concern:

Please find a copy of the C-108 application for Chesapeake Operating, Inc. for salt water disposal.

This application is being provided to you as proof of notice upon which the subject well is located as you are identified as an offset operator. If you object to this application, your objection must be filed in writing with the Oil Conservation Division which is located at 1220 South Saint Francis Dr., Santa Fe, NM. 87505 within 15 days of the date of this letter.

If there are no objections, the Division may approve this application.  
Please call or email me if I can answer and questions or concerns you may have.

Sincerely,

Bryan Arant  
Regulatory Specialist II

405.935.3782  
bryan.arrant@chk.com



Regulatory Department

April 13, 2012

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RETURN RECEIPT REQUESTED

State of New Mexico Land Office  
310 Old Santa Fe Trail  
Santa Fe, NM 87501

Re: Application for administrative approval to dispose of the salt water in the  
CACTUS 16 STATE 1 well.  
Located in Unit C, of Section 16, T-24-S R-31-E  
330' FNL & 2310' FWL, NMPM  
Eddy Co., New Mexico

To Whom It May Concern:

Please find a copy of the C-108 application for Chesapeake Operating, Inc. for salt water disposal.

This application is being provided to you as proof of notice upon which the subject well is located as you are identified as an offset operator. If you object to this application, your objection must be filed in writing with the Oil Conservation Division which is located at 1220 South Saint Francis Dr., Santa Fe, NM. 87505 within 15 days of the date of this letter.

If there are no objections, the Division may approve this application.  
Please call or email me if I can answer and questions or concerns you may have.

Sincerely,

Bryan Arant  
Regulatory Specialist II

405.935.3782  
bryan.arrant@chk.com



**Jones, William V., EMNRD**

---

**From:** Bryan Arrant [bryan.arrant@chk.com]  
**Sent:** Friday, April 27, 2012 11:55 AM  
**To:** Jones, William V., EMNRD  
**Subject:** CACTUS 16 STATE 1 (C-108 3001527008; Certified Mail)  
**Attachments:** 20120427123222482.pdf; 20120427124034124.pdf

Will,  
At this time we have not received back the certified return receipts, green cards I sent the C-108s on 4/14/2012.

I need to see if the query I ran through USPS.COM will be acceptable? Maybe they just haven't cycled back yet.

The other attachment is a letter from the SLO acknowledging they received the C-108.

Thanks,  
*Bryan Arrant*  
Regulatory Specialist II  
Chesapeake Energy Corporation  
Office: (405) 935-3782  
Mobile: (903) 263-8984  
Fax: (405) 849-3782  
E-mail: [bryan.arrant@chk.com](mailto:bryan.arrant@chk.com)

---

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70103090000016527745		Delivered	April 16, 2012, 4:13 am	HOUSTON, TX 77210	Certified Mail™
<a href="#">Hide Details</a>		Notice Left	April 16, 2012, 3:41 am	HOUSTON, TX 77210	
70103090000016527738		Delivered	April 16, 2012, 10:24 am	OKLAHOMA CITY, OK 73102	Certified Mail™
<a href="#">Hide Details</a>		Arrival at Unit	April 16, 2012, 10:18 am	OKLAHOMA CITY, OK 73102	
		Processed through USPS Sort Facility	April 14, 2012, 6:09 am	OKLAHOMA CITY, OK 73107	
70103090000016527762		Delivered	April 17, 2012, 11:08 am	MIDLAND, TX 79702	Certified Mail™
<a href="#">Hide Details</a>		Notice Left	April 17, 2012, 4:02 am	MIDLAND, TX 79702	
		Depart USPS Sort Facility	April 16, 2012	MIDLAND, TX 79711	
		Processed through USPS Sort Facility	April 15, 2012, 10:41 pm	MIDLAND, TX 79711	
70103090000016527776		Delivered	April 17, 2012, 12:24 pm	CARLSBAD, NM 88220	Certified Mail™
<a href="#">Hide Details</a>		Notice Left	April 16, 2012, 9:36 am	CARLSBAD, NM 88220	
		Arrival at Unit	April 16, 2012, 7:32 am	CARLSBAD, NM 88220	
		Processed through USPS Sort Facility	April 15, 2012, 7:04 pm	ALBUQUERQUE, NM 87101	

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PS Form 3800, January 2005 PSN 7530-01-000-9000 See reverse for instructions

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Street, Apt. No., or PO Box No. P.O. Box 1889	
City, State, ZIP+4 Midland, TX 79702	
PS Form 3800, August 2008	



890839

Ray Powell, M.S., D.V.M.  
COMMISSIONER

*State of New Mexico*  
*Commissioner of Public Lands*

310 OLD SANTA FE TRAIL  
P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148

COMMISSIONER'S OFFICE

Phone (505) 827-5760

Fax (505) 827-5766

www.nmstatelands.org

April 18, 2012

Bryan Arrant  
Chesapeake Operating, Inc.  
P.O. Box 18496  
Oklahoma City, OK 73154-0496

RECEIVED

APR 20 2012

MAILROOM 2

**Re: Cactus 16 State #1**

Dear Mr. Arrant:

I have received the notice for the application to inject that Chesapeake Operating, Inc. has filed with the New Mexico Oil Conservation Division. The land the well is to be located on is part of oil and gas lease V0-2372-4 held by Chesapeake Operating, Inc. This oil and gas lease includes the NW¼, N½SW¼, SW¼SW¼, SW¼NE¼, W½SE¼, and SE¼SE¼ (440.00 ac.) of Section 16, Township 24 South, Range 31 East, Eddy County. Under the terms of the oil and gas lease, Chesapeake Operating, Inc. is allowed to dispose of salt water from production wells located on this lease into salt water disposal wells also located on this lease without the need for a Salt Water Disposal Easement from the New Mexico State Land Office. However, should Chesapeake Operating, Inc. dispose of salt water from other Chesapeake Operating, Inc. oil & gas leases, or accept salt water from a third party, you will need to submit an application for a salt water disposal easement, and any pipeline, power line, or road right of way easements. For your convenience, I have enclosed a salt water disposal easement application pack should one be needed.

If you have any questions, I may be reached at (505) 827-5773.

Sincerely,

Nick Jaramillo, Management Analyst  
Rights of Way and Water Resources Bureau

Enclosures

### **Additional information:**

- Geological formation tops
- Permit: Copy of application to re-enter.  
Submitted to NMOCD's District II Office.



## **Geological Formation Tops**

**CACTUS 16 STATE 1  
Unit C of Section 16, T-24-S R-31-E  
330' FNL & 2310' FWL, NMPM  
Eddy County, NM  
API# 30-015-27008**

Rustler	569'
Salado	920'
Base of Salt	4250'
Lamar Limestone	4383'
Bell Canyon	4412'
Cherry Canyon	5300'
Brushy Canyon	6890'
Bone Spring	8255'

There are no records of any fresh water wells within the AOR.

**Jones, William V., EMNRD**

---

**From:** David\_Stewart@oxy.com  
**Sent:** Monday, May 07, 2012 1:34 PM  
**To:** Jones, William V., EMNRD  
**Cc:** bryan.arrant@chk.com  
**Subject:** FW: Cactus 16 State #1 - API 3001527008 - C-108 SWD Application - Sec 16 T24S R31E Eddy Cty NM

Will, OXY has reviewed Chesapeake's C-108 application on the Cactus 16 State #1, API No. 30-015-27008 and has no problem with the application and will not protest. If you need any additional information, please let me know.

Thanks,  
David Stewart  
Regulatory Advisor  
OXY Permian  
W-432-685-5717  
C-432-634-5688  
F-432-685-5742

---

**From:** Erickson, Richard J  
**Sent:** Monday, May 07, 2012 2:25 PM  
**To:** Stewart, David  
**Subject:** RE: Cactus 16 State #1 - API 3001527008 - C-108 SWD Application - Sec 16 T24S R31E Eddy Cty NM

That is correct. Oxy has no problems with the SWD proposal and will not protest.

**Richard Erickson**  
Sr. Geological Advisor  
Office: 713.985.6912  
[Richard\\_Erickson@oxy.com](mailto:Richard_Erickson@oxy.com)

---

**From:** Stewart, David  
**Sent:** Monday, May 07, 2012 2:23 PM  
**To:** Hood, Ken; Erickson, Richard J; Lawrence, Peter; Lisigurski, Omar; Gerrard, Bruce A  
**Subject:** RE: Cactus 16 State #1 - API 3001527008 - C-108 SWD Application - Sec 16 T24S R31E Eddy Cty NM

Just to confirm, we do not have any problems with this SWD application and will not protest?

Thanks, David S.  
W-432-685-5717  
C-432-634-5688  
F-432-685-5742

---

**From:** Hood, Ken  
**Sent:** Thursday, May 03, 2012 11:04 AM  
**To:** Erickson, Richard J; Lawrence, Peter; Lisigurski, Omar; Gerrard, Bruce A; Stewart, David  
**Subject:** RE: Cactus 16 State #1 - API 3001527008 - C-108 SWD Application - Sec 16 T24S R31E Eddy Cty NM

Thanks for taking a look Richard.

Best Regards,

**Ken Hood**

OXY USA Inc. / Occidental Permian Ltd. OXY USA WTP LP  
Production Engineer - SENM RMT  
5 Greenway Plaza Suite 110  
Houston TX 77210-4294  
713-366-5883 Office  
713-670-4597 Mobile

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**From:** Erickson, Richard J  
**Sent:** Thursday, May 03, 2012 10:41 AM  
**To:** Lawrence, Peter; Lisigurski, Omar; Gerrard, Bruce A; Hood, Ken; Stewart, David  
**Subject:** RE: Cactus 16 State #1 - API 3001527008 - C-108 SWD Application - Sec 16 T24S R31E Eddy Cty NM

Chesapeake's proposed water disposal well is about 3 miles east of our proposed Nimitz well. Oxy has acreage next to this proposed SWD, but the closest well in which we might have an interest is about a half mile east of the SWD. Chesapeake will be disposing into a zone above the oil reservoirs. I see no problem with Chesapeake's proposed SWD.

**Richard Erickson**  
Sr. Geological Advisor  
Office: 713.985.6912  
[Richard\\_Erickson@oxy.com](mailto:Richard_Erickson@oxy.com)

---

**From:** Lawrence, Peter  
**Sent:** Wednesday, May 02, 2012 3:01 PM  
**To:** Lisigurski, Omar; Gerrard, Bruce A; Erickson, Richard J  
**Subject:** FW: Cactus 16 State #1 - API 3001527008 - C-108 SWD Application - Sec 16 T24S R31E Eddy Cty NM

Omar/Bruce/Rick,

Looks like this SWD application falls into y'all's area.

Thanks

Pete Lawrence  
Office (713) 215-7644  
Cell: (832) 613-7511

---

**From:** Stewart, David  
**Sent:** Wednesday, May 02, 2012 1:28 PM  
**To:** Lawrence, Peter; Hood, Ken; Day, Joseph F; Andel, Derek; Kalyanaraman, Nishanth; Murcia, Ivonne Maritza; Havins, Donna  
**Cc:** Bryan Arrant; Jones, William  
**Subject:** RE: Cactus 16 State #1 - API 3001527008 - C-108 SWD Application - Sec 16 T24S R31E Eddy Cty NM

I hadn't seen the application and am not sure if anybody in Houston has seen it and reviewed, if you have, please let me know. If not, will you review the attached C-108 SWD application from Chesapeake on the Cactus 16 State #1 located in Sec 16 T24S R31E, Eddy, NM and let us know if anybody has any problems or concerns. If you have any questions you can contact Bryan Arrant w/ Chesapeake @ 405-935-3782. I appreciate the help.

Thanks, David S.  
W-432-685-5717  
C-432-634-5688  
F-432-685-5742

---

**From:** Bryan Arrant [<mailto:bryan.arrant@chk.com>]  
**Sent:** Wednesday, May 02, 2012 10:03 AM  
**To:** Stewart, David  
**Subject:** FW: CACTUS 16 STATE 1 (API# 3001527008; C-108 Application)

David,

I sent a C-108 application to your Houston office, however the certified mailing came back there was no signature.



I need to confirm if the C-108 application was received @ 4/16/2012? If not I'll send out a new copy of the application today to both the Houston and Midland offices.

Please find the attached.

Thank you,  
*Bryan Arrant*  
Regulatory Specialist II  
Chesapeake Energy Corporation  
Office: (405) 935-3782  
Mobile: (903) 263-8984  
Fax: (405) 849-3782  
E-mail: [bryan.arrant@chk.com](mailto:bryan.arrant@chk.com)

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# Injection Permit Checklist (11/15/2010)

WFX \_\_\_\_\_ PMX \_\_\_\_\_ SWD 1330 Permit Date 5/1/12 UIC Qtr (A)(M)(J)

# Wells 1 Well Name(s): Cochise State #1

API Num: 30-0 15-27008 Spud Date: 6/7/92 New/Old: N (UIC primacy March 7, 1982)

Footages 330 FNL/2310 FWL Unit C Sec 16 Tsp 24S Rge 31E County EDDIE

General Location: 8 mi SOUTH of WIPP

Operator: Chesapeake Operating, INC Contact Bruce Coffman / Bryan Christ

OGRID: 147179 RULE 5.9 Compliance (Wells) 4/749 (Finan Assur) OK IS 5.9 OK? OK

Well File Reviewed \_\_\_\_\_ Current Status: \_\_\_\_\_

Planned Work to Well: Will Run CBL, Raise CMT

Diagrams: Before Conversion ☒ After Conversion ☒ Elogs in Imaging File: \_\_\_\_\_

Well Details:	Sizes		Setting Depths	Stage Tool	Cement Sx or Cf	Determination Method
	Hole.....	Pipe				
New ___ Existing ___ Surface	17 1/2	13 3/8	626'		470 SX	CIRC
New ___ Existing ___ Interm	12 1/4	8 7/8	4250'		1450 SX	CIRC
New ___ Existing ___ LongSt	7 7/8	5 1/2	1'		250 SX	6820 CBL
New ___ Existing ___ Liner			(orig TO 8450)			
New ___ Existing ___ OpenHole			(PBD 5915)			

Depths/Formations: \_\_\_\_\_ (Poker Lake area)

	Depths, Ft.	Formation	Tops?
Formation(s) Above	4383	Lamar	<input checked="" type="checkbox"/>
	4412	Bell C.	<input checked="" type="checkbox"/>
Injection TOP:	4436	Bell C.	Max. PSI 888
Injection BOTTOM:	5426	Cherry C.	OpenHole _____ Perfs <input checked="" type="checkbox"/>
	5300	Cherry C.	Tubing Size 2 3/8
Formation(s) Below	6890	Burley C.	Packer Depth 4336'

Capitan Reef? (Potash? Noticed?) [WHP? Noticed?] Salado Top/Bot 920-430' Cliff House? \_\_\_\_\_

Fresh Water: Depths: \_\_\_\_\_ Formation \_\_\_\_\_ Wells? NONE Analysis: None Affirmative Statement ☒

Disposal Fluid Analysis? ☒ Sources: Del / B.S.

Disposal Interval: Analysis? ☒ Production Potential/Testing: Regionally Not Productive

Notice: Newspaper Date 3/28/12 Surface Owner SLC Mineral Owner(s) 4/13/12

RULE 26.7(A) Affected Persons: DEVON / ORY / WFF / J.R. Engr. (4/13/12)

AOR: Maps? ☒ Well List? ☒ Producing in Interval? No Wellbore Diagrams? \_\_\_\_\_

.....Active Wells 4 Repairs? 0 Which Wells? \_\_\_\_\_

.....P&A Wells 0 Repairs? 0 Which Wells? \_\_\_\_\_

Issues: \_\_\_\_\_ Request Sent \_\_\_\_\_ Reply: \_\_\_\_\_