			n PTK-UI
" L		1.311/ SUSPENS	E ENGINEER //// LOGGED IN 2/// APP NO. //0.3232324
			ABOVE THIS LINE FOR DIVISION USE ONLY 26 FOR FOR STAR
		I	NEW MEXICO OIL CONSERVATION DIVISION - Engineering Bureau - RECEIVED OCD
			1220 South St. Francis Drive, Santa Fe, NM 87505
			ADMINISTRATIVE APPLICATION CHECKLIST 30-075-38388
	т		ANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS
		cation Acronyms	WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE
		[DHC-Dowr [PC-Po	ndard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication] hole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling] ol 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-Quai	ified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]
	[1]	TYPE OF AP [A]	PLICATION - Check Those Which Apply for [A] Location - Spacing Unit - Simultaneous Dedication NSL NSP SD
		Check [B]	One Only for [B] or [C] 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]	NOTIFICATI [A]	ON REQUIRED TO: - Check Those Which Apply, or Does Not Apply 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.

STAN WAGNER

Print or Type Name

Signature Wayn

REGULATORY ANALYST

1/27/2011 Date

e-mail Address

Title

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

APPLICATION FOR	AUTHORIZATION TO INJECT
ALL DICATION FOR	AUTIONIZATION TO INSECT

	ATTLICATION FOR AUTHORIZATION TO INJECT
I.	PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage Application qualifies for administrative approval? X Yes No
П.	OPERATOR: EOG Resources, Inc.
	ADDRESS: P.O. Box 2267 Midland, Texas 79702
	CONTACT PARTY: <u>Stan Wagner</u> PHONE: <u>432-686-3689</u>
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:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, 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.
	Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
	NAME:
	SIGNATURE: DATE: DATE:
*	E-MAIL ADDRESS: 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:

Side 1		INJECTION	INJECTION WELL DATA SHEET			• •
OPERATOR: EO	EOG Resources, Inc.	ces, Inc.				•
WELL NAME & NUMBER:		Elk Wallow 11 State 5				I
WELL LOCATION:	1600	FEL	Sec	11, T25S,	R29E	
	FOOTAC	FOOTAGE LOCATION UN	UNIT LETTER SI	SECTION	TOWNSHIP RANGE	GE
WELLBO Bit Size: 17-1/2"	WELLBORE SCHEMATIC	MATIC		<u>WELL CONSTH</u> Surface Casing	WELL CONSTRUCTION DATA Surface Casing	
			Hole Size: 17-1/2"		Casing Size: 13-3/8"	
.3/8", 54.5#, J-55, STC 0' - 625'			Cemented with: 525 sx C1a	Class C sx.	or	ĥ
			Top of Cement: Surface		Method Determined: Circulation	ation
				Intermediate Casing	<u>c Casing</u>	
Bit Size: 12-1/4"		4-1/2" 11.60# L-80 EUE PC Inj. Tbg 9-5/8" NP / PC Permanent Injection Pkr © 3,150'	Hole Size: 12-1/4"		Casing Size: 9-5/8"	
3-5/8", 40#, J-55, LTC 0' - 3,200'	X		Cemented with: 750 sx C1a	Class C sx.	or	ft ³
		Beil Canyon 3,275' – 4,100'	Top of Cement: Surface		Method Determined: Circulation	ation
				Production Casing	Casing	
		Cherry Canyon 4,100' – 4,800'				
	NIC	Cement Plug 4,800' - 6,500'	Hole Size:		Casing Size:	
		Cut & Recover 4-1/2" Casing @ ±5,500'	Cemented with:	SX.	or	ft ³
TOC @ ~6,000'			Top of Cement:		Method Determined:	
	\langle	4-1/2" CIBP @ ±0,500°	Total Depth: 8000'			
				Injection Interval	nterval	
÷.			3200'	feet	to 4800'	
Used 4-1/2" 11.60# L-80 BTC 0' − 8,000′			(Perforat	ed or Open Ho	(Perforated or Open Hole; indicate which)	
a	PTD ~8,000'					

	INJECTION WELL DATA SHEET
Tul	Tubing Size: 4-1/2" 11.6# L-80 Lining Material: Plastic Coated
$\mathbf{T}_{\mathbf{y}}$	Type of Packer: 9-5/8" Plastic Coated / Nickel Plated Injection Packer
Pa	Packer Setting Depth: 3150'
Oť	Other Type of Tubing/Casing Seal (if applicable):
	Additional Data
<u> </u>	Is this a new well drilled for injection? X Yes No
	If no, for what purpose was the well originally drilled?
5.	Name of the Injection Formation: Delaware
ω.	Name of Field or Pool (if applicable): Corral Canyon; Delaware, West
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
5.	Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
	Delaware - Lower Cherry Canyon : 5225 - 5275'
	Bone Spring - (Avalon / Leonard Shale) : 7150 - 7300'
	Morrow: 13600 - 13700'

• '

Side 2

APPLICATION FOR AUTHORIZATION TO INJECT ELK WALLOW 11 STATE 5

VII. PROPOSED OPERATION

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- (1) Proposed Average Daily Rate and Volume: 7000 BWIPD Proposed Maximum Daily Rate and Volume: 10000 BWIPD
- (2) Open or Closed System: Closed
- (3) Proposed Average Injection Surface Pressure: 500 psi Proposed Maximum Injection Surface Pressure: 1000 psi Note: Original Delaware formation BHP 9500 psi.
- (4) Produced Bone Spring Formation Water (see attached analysis)
- (5) N/A

VIII. GEOLOGIC DATA ON INJECTION ZONE

Injection Zone: Delaware Sandstone **Perfs** 3200' – 4800' Lithologic Detail: Fine grain sandstone Geological Name: Delaware Mountain Group (Guadalupian) Thickness: Delaware – 3730' Depth: Top of Delaware at 3200' Underground Sources of Drinking Water:

Fresh water sources in the immediate area have been encountered in aquifers above 250'. These aquifers are found in the Pliocene age Ogallala and Pleistocene age alluvial sediments and consist for the most part of alternating calcareous silt, fine sand and clay. There are no other sources of fresh water underlying the injection interval.

- IX. PROPOSED STIMULATION None at this time
- X. LOGGING AND TESTING DATA ON INJECTION WELL Logs will be submitted upon completion of drilling operations.

XI. CHEMICAL ANALYSIS OF WATER FROM FRESH WATER WELLS WITHIN ONE MILE OF THE INJECTION WELL A review of the State Engineers records shows 2 fresh water wells within one mile of the injection well.

- XII. Available geologic and engineering data has been examined and no evidence has been found of open faults or any other hydrologic connection between the injection zone and any underground source of drinking water.
- XIII. See attached "Proof of Notice".

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Surface Owner: State of New Mexico Commissioner of Public Lands 310 Old Santa Fe Trail Santa Fe, New Mexico 87504-1148

Operators within a ¹/₂ mile radius of the proposed injector:

Lime Rock Resources A, L.P. 1111 Bagby Street, Ste. 4600 Houston, TX 77002

Jones, William V., EMNRD

From: Sent: To: Subject: Jones, William V., EMNRD Friday, January 07, 2011 10:00 AM 'Stan_Wagner@eogresources.com' RE: Elk Wallow 11 State #5 Monitor / SWD

Stan: Thanks for sending...

Happy New Year

Will Jones New Mexico Oil Conservation Division Images Contacts

From: <u>Stan_Wagner@eogresources.com</u> [mailto:Stan_Wagner@eogresources.com]
Sent: Friday, January 07, 2011 9:36 AM
To: Jones, William V., EMNRD
Subject: Fw: Elk Wallow 11 State #5 Monitor / SWD

Will, see the attached so you won't waste a lot of time on this application. We will be resubmitting in the near future.

Thanks,

Stan

----- Forwarded by Stan Wagner/EOGResources on 01/07/2011 10:33 AM -----

From: Ron Willett/EOGResources Date: 01/07/2011 10:28 AM Subject: Elk Wallow 11 State #5 Monitor / SWD

160

I spoke with Brent Sonnier, with Oxy this morning, and informed him of our intent to move the Elk Wallow #5 Monitor / SWD location south to 1900' FSL & 1000' FEL. The new location will be outside of the 1/2mile radius of the OXY Delaware producer, Coral Fly State #1. Brent indicated that they wouldn't protest the new proposed location. Thanks, Donny and Charlie, for your help.

Ron M. Willett | EOG Resources, Inc. | Completions Engineering Advisor | 432-686-3775 (Office) | Cell Phone: 1-432-230-2135; ron_willett@eogresources.com

"THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL(S) TO WHICH IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS PROPRIETARY, CONFIDENTIAL AND/OR OTHERWISE PROTECTED FROM PUBLIC OR OTHER DISCLOSURE UNDER APPLICABLE LAW. If the reader of this message is not the intended recipient, or an agent responsible for delivering the message to the intended recipient, you are hereby notified that any review by your or other persons, any dissemination by you to other persons or any copying of this communication is strictly prohibited. If you have

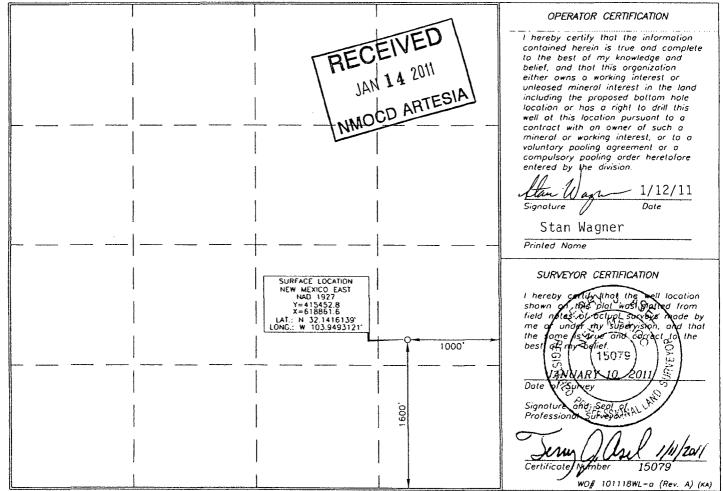
Submit 3 Copies To Appropriate District State of New Me Office Fnergy Minerals and Natu			Form C-103
Office Energy, Minerals and Natu District I 1625 N. French Dr., Hobbs, NM 87240	ral Resources	WELL API NO.	June 19, 2008
District II OIL CONSERVATION	N DIVISION	30-015- 2	
1301 W. Grand Ave., Artesia, NM 88210 District III		5. Indicate Type of Lease	
1000 Rio Brazos Rd., Aztec, NM 87410 Santa Fe, NM 8 District IV	7505		FEE
1220 S. St. Francis Dr., Santa Fe, NM 87505		6. State Oil & Gas Lease	No.
SUNDRY NOTICES AND REPORTS ON WEL (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN (DIFFERENT RESERVOIR, USE "APPLICATION FOR PERMIT" (FORM C-10	OR PLUG BACK TO A	7. Lease Name or Unit Ag	greement Name:
PROPOSALS.)		Elk Wallow 11 State	
1. Type of Well: Oil Well Gas Well Other swo		8. Well Number 5	
2. Name of Operator		9. OGRID Number	
EOG Resources, Inc.	<u></u>	7377	
3. Address of Operator		10. Pool name or Wildcat	
P.O. Box 2267 Midland, TX 79702		Pierce Crossing; Bone	s Spring, East
Unit Letter I feet from the Son	ith line and	1000 feet from the	Eastline
Section 11 Township 255	Range 29E	NMPM Cou	nty Eddy
11. Elevation (Show whether			
12. Check Appropriate Box to Indicate	Nature of Notice	Report or Other Data	
12. Check Appropriate Dox to Indicate		Report, or Other Data	
NOTICE OF INTENTION TO:	SUB	SEQUENT REPORT	OF:
PERFORM REMEDIAL WORK 🔲 PLUG AND ABANDON 🗌	REMEDIAL WORK	ALTI	ERING CASING
TEMPORARILY ABANDON 🔲 CHANGE PLANS 🔀	COMMENCE DRILL		
PULL OR ALTER CASING MULTIPLE COMPL	CASING/CEMENT J	ОВ	
	· .	<u>.</u>	
OTHER:	OTHER:	•	
 Describe proposed or completed operations. (Clearly state all per of starting any proposed work). SEE RULE 1103. For Multiple or recompletion. 			
·			,
EOG Resources, Inc. requests the approved APD surf 1600' FSL & 1000' FEL, U/L I, Sec 11, T255, R29E		oved to the following]	location:
1000 F3L & 1000 FELL, 0/11 L, Sec 11, 1233, 7235	Easy Councy 141.	REC	CEIVED
C-102 attached.			
		JAP	V 1 4 2011
		NMOC	D ARTESIA
Spud Date: Rig Relea	ase Date:		
I hereby certify that the information above is true and complete to the	best of my knowledge	e and belief	
SIGNATURE than Wagn TIT	LERegulato	ory Analyst DATE	1/12/11
Type or print name_Stan WagnerE-n	nail address:	PHON	IE <u>432-686-3689</u>
For State Use Only	~		
APPROVED BY TI	ile	DATE_DATE	1/21/2011
Conditions of Approval (if any):/		U	.n.
			NY

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Rd., Aztec, NM 87410 District IN	OIL CONSERVA 1220 South S	al Resources Department TION DIVISION t. Francis Dr.	Submit to App	Form C-102 vised October 12, 2005 propriate District Office State Leose- 4 Copies Fee Leose- 3 Copies
1220 S. St. Francis Dr., Santa Fe, NM 87505	Santa Fe, WELL LOCATION AND AC	REAGE DEDICATION PLAT	\boxtimes	AMENDED REPORT
30-015- 34344	Pool Code 96473		Nome one Sprinc	. East -

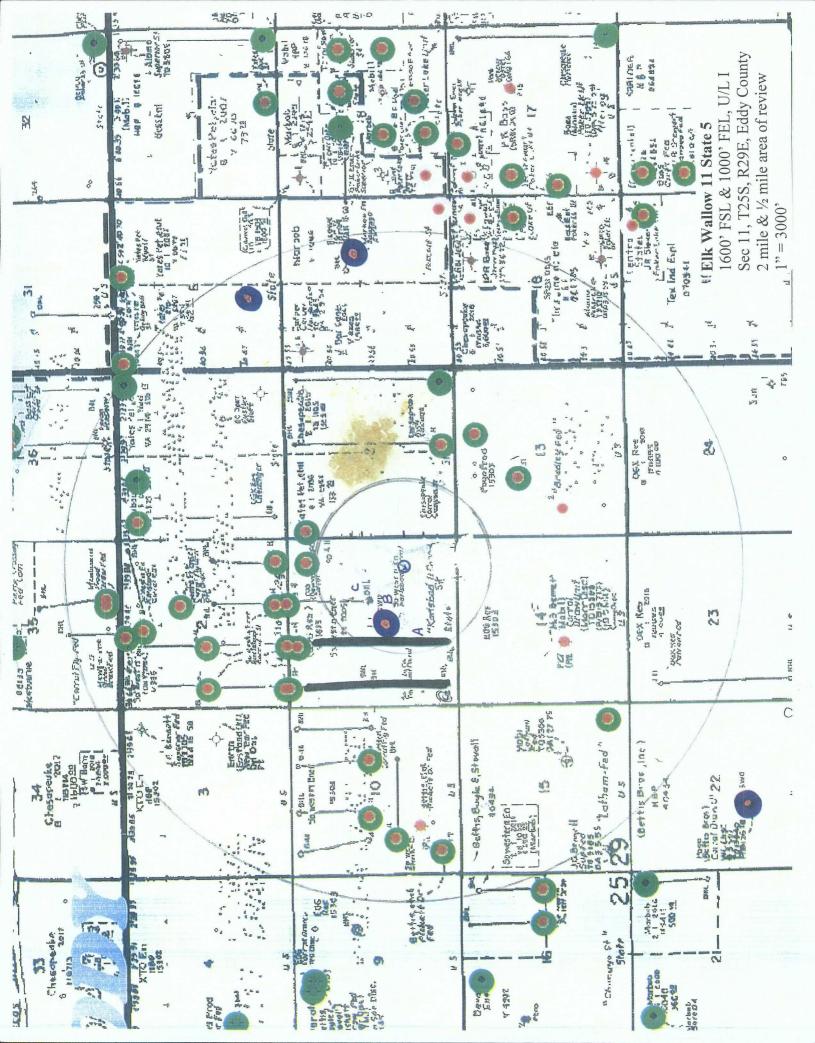
4 s

30-015	- 7	566	96473 -		Pierce	Crossing	; Bone Sp	ring,	East	
Pro	perty Cod	e	····	Propert	/ Nome				W	ell Number
38036	-	l	ELK	WALLO W	"11" STA	TE 🖉				5 -
00	RID No.		·····	Operato	r Nome	······				Elevation
7377	/		EOG	RESOU	RCES, IN	C.<			3	8110.9'
· · · · · · · · · · · · · · · · · · ·				Surface	e Location					
UL or lot no.	Section	Township	Range	Lot le	In Feet from the	North/South line	Feet from the	East/Wes	it line	County
I 11 25 SOUTH 29 EAST, N.M.P.M. 1600' SOUTH 1000' E										EDDY
	A		Bottom Hole	Location	If Differen	it From Sur	face			.
UL or lot no.	Section	Township	Ronge	Lot le	in Feet from the	North/South line	Feel from the	Eost/Wes	t line	County
				•						
Dedicated SWD	Acres	Joint or Infill	Consolidation Code Orde	er No.		1	<u></u>			1

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.



NA



EOG Resources, Inc 1/2 Mile Area of Review Application for Authorization to Inject Elk Wallow 11 State 5

							Surface	surface Casing		Productio	Production Casing	
Operator	Lease/Well	Status	/ Location	Spud Date	TMD		Depth	Cement	Size	Depth	Cement	Producing Perforations
A. EOG	Elk Wallow 11 State 2H	Oil Producer	il Producer Sec 11, T25S, R29E 6/1	ø	/13/2010 11873' 13-3/8"	1	650'	650' 635 sx Class C 7"	7" & 5-1/2"	11870'	7" & 5-1/2" 11870' 1750 sx Class H	7800' - 11695'
B. Lime Rock	Karlsbad Corral SWD 1	∢	Active SWD ¹ Sec 11, T25S, R29E	1/31/2007	4000'	9-5/8"	766'	550 sx Class C	5-1/2"	3993'	1020 sx Class C	3652' - 3921'
C. Lime Rock	Karlsbad Corral 11 State 3H	Oil Producer	Oil Producer Sec 11, T25S, R29E	2/8/2006	8685'		775'	500 sx Class C	5-1/2"	8685'	850 sx H, 1300 sx C	5926' - 8510'
		-										

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Louly Aok well

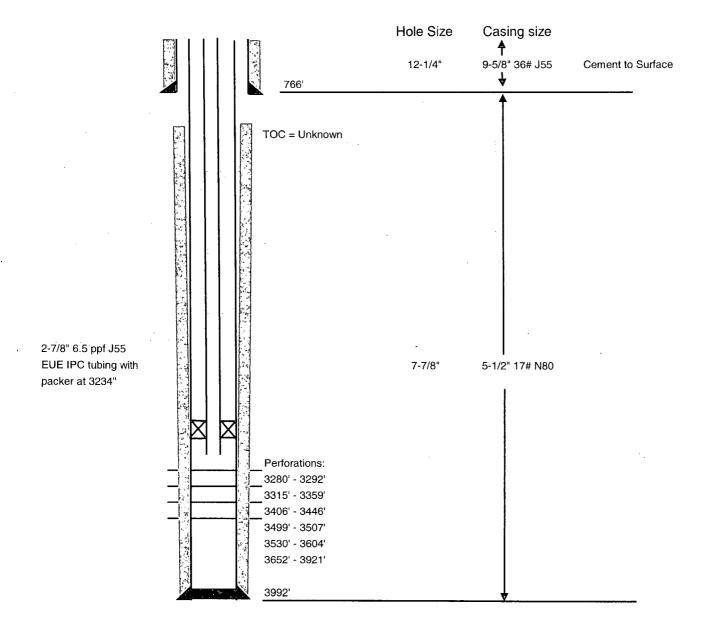
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	(gqq) TOJ NOITAUJAVƏ	N/A		liper	Neutron / Ca	/ ଧ9 ୁ		MA Pe	-СИГ-ГДТ		J-JSM-A DDM Lo	ายн-ยอ	\ Sino2 (вно	R. Soza 7/27/2010
	(F) TSH8	86					117							140	
	aum	ΕM			enin8					1	MBW				Drlg Eng: Date:
	(bdd) WM	8.4 9.0	10.0				10.2	8.4					0 .0		Drlg E Date:
	HOLE SIZE	"2\1-71			12-1/4 _"						¤⊅/E-8				-
	Elk Wallow 11 State #2H Wildcat (Bone Spring) Field Lea County, New Mexico	20" Conductor © 58' Current Provinci © 56'	20* Conductor (© .58) Surface Casing @ 650 13:30° 54.54 55 BTC Connet (85 58 x 10 pt. 13:30° 54.54 55 BTC Connet (85 58 x 10 pt. 13:30° 54.54 55 BTC Connet (85 58 x 10 pt. 13:30° 54.54 55 BTC Connet (85 58 x 10 pt. 13:30° 54.54 55 BTC Connet (85 58 x 10 pt. 13:30° 54.54 55 BTC Connet (85 58 x 10 pt. Dur Tool (6) 3.145 Dur Tool (7) 2005 Pps 210 Vpl (7) Dinor (7) Ppl (7) Dinor (7)								112	310 sx Class H + 1.5% CD-32 + 0.05% R-3 + 5% 7" 26# HCP-110 LTC, 0'- 6,708' Salt + 0.005 pps Static Free Carona Hige M + 650 sx Class "H" + 30% FL-52A + .30% Act-301 + 30% SAlt + 20% Salt + 20\% Salt	pps LChOH +25 pps Callo Flake + .005 pps Static Free + .005 GPS FP-6L (11.8 ppg. 2.337 yield). Talin w .1000 Callo SC class **** Fa65% FL22A + 20% CD- port =covc callo +covc callo +covc CD-	Static Fields - 1.05 GPTS FP-BL (14.2 ppg, 1.278 yield). Circ 83 sx cement to surface.	
	OGRID: API: 30-025-37589 AFI: 104504 AFI: 104504 AFI: 104504 104:04 12:00 hrs FPR: 7/25/2010 @ 12:00 hrs FIG: McVay #4													Pilot Hole TD @ 8,000'	
0	25-3758 504 13/10 @ /2010 @ ay #4							inninni i	mmmm.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				•	
0	OGRID: API: 30-02 AFE: 104 SPUD: 6/' FRR: 7/25 RIG: McV														
	API AFI SPI FRI FRI FRI			Salt		HHHHKK	******	1111	जानमन्त्र	HPAR			1000	3	
	ГІТНОГОĞY														
	MARKERS (KB)	Rustler - 565'	T / Salado - 1285'		B / Salado - 2935' Lamar - 3135' Bell Canyon - 3165'	Cherry Canyon - 4040'	Cherry Canyon Mkr - 5105' Rushu (Canvon - 2201'	U. Brushy Mkr - 5620'	-	. Brushy Mkr - 6675'	Bone Spring Lime - 6930' Leonard A Pay - 7245' Leonard B Pay - 7495'	st Bone Spring Sand - 7835'	2nd Bone Spring Carb - 8170'	PTD - ~8,300'	
)	(ţ;) DEbLH	1,000' R		2,000	3,000' B	4,000' C	5,000 ¹		6,000'	- L		a 000'	1	-000'6	

Elk Wallow 11 State #2H Drilling Recap.xls

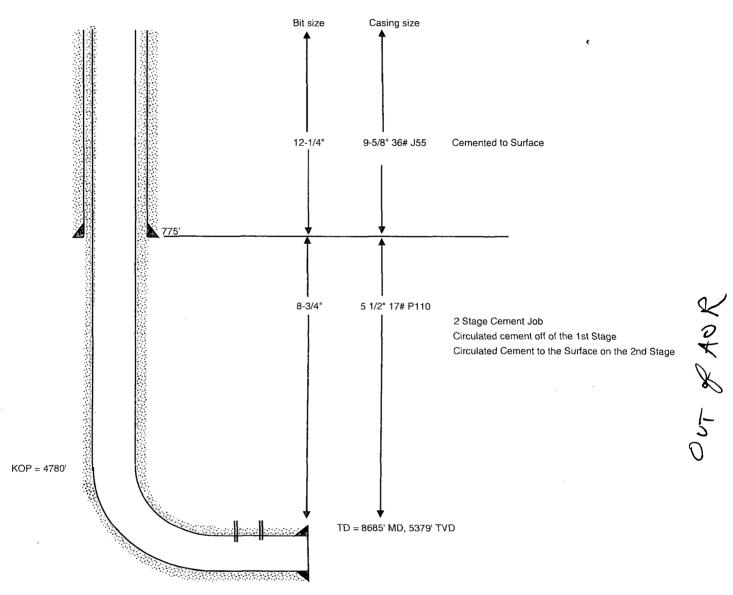
Karlsbad Corral #1 SWD 2222' FSL, 2641' FEL Section 11, T25S, R29E Edddy County, New Mexico API No. 30-015-35341



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11/10/2010

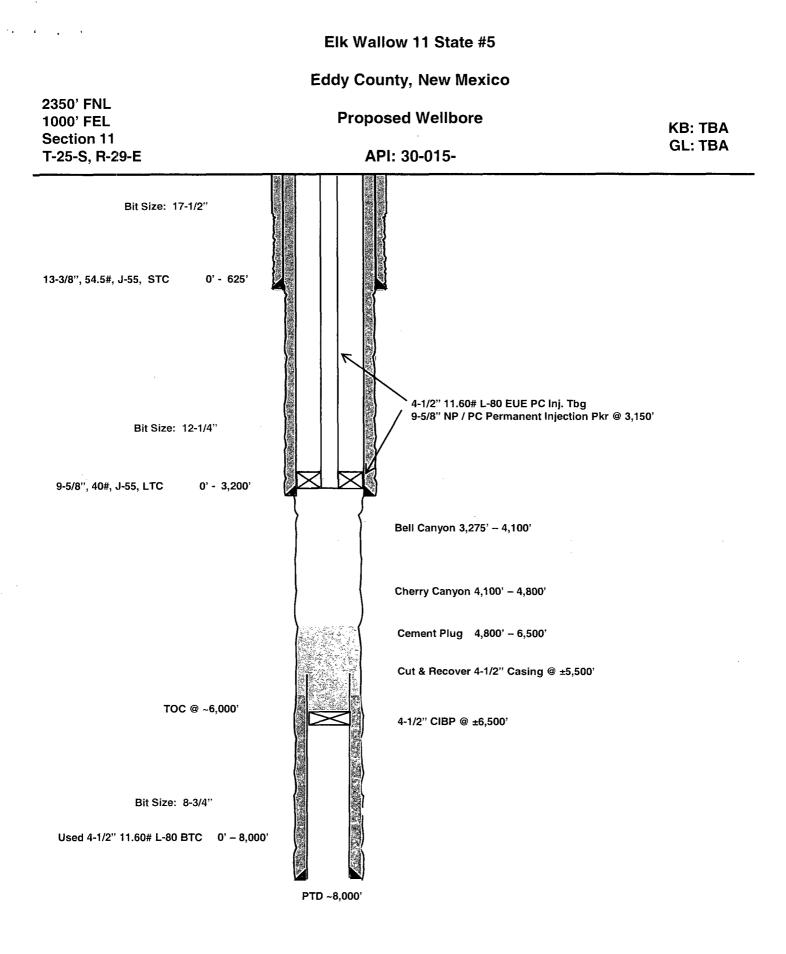
Karlsbad Corral 11 #3H 10' FNL, 1980' FEL Section 11, T25S, R29E Eddy County, New Mexico API 30-015-34449



Perforations = 5926' - 8510'

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

		(quarte	ers ai	re 1=	NW 2:	=NE 3:	=SW 4	4=SE)					
		(quarte	ers ai	re sm	allest	to larg	est)	(NAD83 UTN	(NAD83 UTM in meters)				
	Sub		Q	QC	1					Depth D	epth Wa	ter	
POD Number	basin Use	County	64	16 4	Sec	Tws	Rng	ı X	Ŷ	Well W	aterColu	IMN	
RA 07162 EXP2	DOM	ED	1	3 1	10	25S	29E	596214	3557222*	55	40	15	
								Aver	age Depth to	Water:	40 feet		
									Minimum	Depth:	40 feet		
									Maximum	Depth:	40 feet		
Record Count: 1				~~~ ~~~ ~~				*** **** **** **** **** ****				****	
Basin/County Search	<u>:</u>												
County: Eddy													
PLSS Search:													

Section(s): 10

Township: 25S

Range: 29E

*UTM location was derived from PLSS - see Help

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.



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

			(quarte	ers a	re 1	1=N	1W 2=	=NE 3	=SW 4	4=SE)			
			(quarte	ers a	re s	sma	allest	to larg	jest)	(NAD83 UTI	/ in meters)		(In feet)
	Sub			Q	Q	Q						Depth	Depth Water
POD Number	basir	ı Use	County	64	16	4	Sec	Tws	Rng	j X		000000000000000000000000000000000000000	WaterColumn
C 02459	С	PRO	ED	4	4	1	02	25S	29E	598422	3558663*	150	
										Aver	age Depth to	Water	:
											Minimum	n Depth	:
											Maximum	I Depth	:
Record Count: 1						w. ww.	···· ··· ··	n 1000, 1000, 100	n an cur u				. 1000° 10000, 1000, 10000, 10000, 10000, 10000
Basin/County Search	<u>ı:</u>												
County: Eddy													

PLSS Search:

Section(s): 2

Township: 25S

Range: 29E

*UTM location was derived from PLSS - see Help

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.

<u>Open Hole Log Analysis Wo</u>	ole L	0 <u>9</u> A	nalys		rksheet						Richard I. Freeman Freeman Consulting Service Niuliand, TX/79705
Company:	EOG	EOG Resources, Inc.	es, Inc.			Well:	Elk Wallow	Mo			432-685-3799
Field:	SWD Analysis	ıalysis				County: Eddy	Eddy			New Mexico	
Depth	Rw	Υ	B	% Porosity	Sonic Ø	BVW	% SW	Lithology	Cross Over		Remarks
3200' - 3300'	.045	1.00	4.0	20.0%		11.	53%	\propto			
3300' - 3400'	.045	1.00	1.5	20.0%		.17	87%				
3400' - 3500'	.045	1.00	3.0	13.0%		.12	94%				
3500' - 3600'	.045	1.00	5.0	14.0%		60 [.]	68%				
3700' - 3800'	.045	1.00	3.0	15.0%		.12	82%			0	
3800' - 3900'	.045	1.00	3.0	17.0%		.12	72%			~	
3900' - 4000'	.045	1.00	10.0	14.0%		.07	48%	7		6	
4000' - 4100'	.045	1.00	5.0	15.0%		60.	63%				
4100' - 4200'	.045	1.00	5.0	16.0%		60.	59%				
4200' - 4300'	.045	1.00	3.0	14.0%		.12	87%				
4300' - 4400'	.045	1.00	1.5	17.0%		.17	102%				
4400' - 4500'	.045	1.00	4.0	14.0%		÷.	76%				
4500' - 4600'	.045	1.00	3.0	16.0%		.12	77%				
4600' - 4700'	.045	1.00	6.0	10.0%		60.	87 ⁵ %				
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1 of 2

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Company:	EOG F	EOG Resources, Inc.	es, Inc.		Well:		Elk Wallow	Ň			432-685-3799
	SWD Analysis	alysis			Cor	County: Eddy	ddy			New Mexico	Treeman4/@msn.com
Depth	Å	А	Ŧ	% Porosity Son	Sonic Φ BV	BVW	% Sw I	Lithology	Cross Over		Remarks
3200' - 3300'	.045	1.00	4.0	20.0%	 	F.	53%				
3300' - 3400'	.045	1.00	1.5	20.0%		.17	87%				
3400' - 3500'	.045	1.00	3.0	13.0%		.12	94%				
3500' - 3600'	.045	1.00	5.0	14.0%		60.	68%				
3700' - 3800'	.045	1.00	3.0	15.0%		.12	82%				
3800' - 3900'	.045	1.00	3.0	17.0%		.12	72%				
3900' - 4000'	.045	1.00	10.0	14.0%		.07	48%				
4000' - 4100'	.045	1.00	5.0	15.0%		60.	63%				
4100' - 4200'	.045	1.00	5.0	16.0%		60.	59%				
4200' - 4300'	.045	1.00	3.0	14.0%		.12	87%				
4300' - 4400'	.045	1.00	1.5	17.0%		.17	102%				
4400' - 4500'	.045	1.00	4.0	14.0%		.	76%				
4500' - 4600'	.045	1.00	3.0	16.0%	:	.12	77%	:			
4600' - 4700'	.045	1.00	6.0	10.0%		60.	87%				

1 of 2

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LABORATORIES IN ODESSA, GIDDINGS & STACY DAM Billing Address: P.O. BOX 69210 • ODESSA, TEXAS 79769-0210 Shipping Address: 2800 WESTOVER STREET . ODESSA, TEXAS 79764 PHONE (432) 337-4744

MR. HECTOR SERNA	FAX (432) 337-8781
EOG RESOURCES	
P.O. BOX 3229	
CARLSBAD, NEW MEXICO 88220	
SAMPLE SOURCE: ELK WALLOW 11 S	TATE COM #1-H

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FAX (432) 337-8781 ANALYSIS COMPLETED: 09-23-2010 SAMPLE RECEIVED: 09-23-2010 LAB NUMBER: 6901

DISSOLVED SOLIDS:

CATIONS :	MBQ/L	mg/L	
SODIUM(Na+)	2443.18	56193	
CALCIUM (Ca++)	76.00	1520	
MAGNESIUM(Mg++)	52.00	634	
NIONS :		• •	
CHLORIDE(Cl-)	2498.00	88679	
SULFATE(SO4=)	19.15	919	
CARBONATE(CO3=)	0.00	Ö	
BICARBOHATE(HCO3-)	54.03	3296	
HYDROXIDE(OH-)	0.00	0	
TOTAL DISSOLVED SOLIDS:		151241	

TOTAL DISSOLVED SOLIDS:

OTHER PROPERTIES:

PH SPEC. GRAV. COMDUCTIVITY © 77 °F	6.80 1.10 283700 µмно5/см	P-ALEALINITY (AS CACO3) M-ALEALINITY (AS CACO3) CALCIUM HARDNESS (AS CACO3) MAGNESIUM HARDNESS (AS CACO3)	0 mg/L 2702 mg/L 3800 mg/L 2600 mg/L
H25	0 mg/L	TOTAL HARDNESS (AS CaCO3)	6400 mg/L
CO2	493 mg/L		. *
Iron	33.00 mg/L		·

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Mobile Analytical Laboratories, Inc.

LABORATORIES IN ODESSA, GIDDINGS & STACY DAM Billing Address: P.O. BOX 69210 • ODESSA, TEXAS 79769-0210 Shipping Address: 2800 WESTOVER STREET • ODESSA, TEXAS 79764 PHONE (432) 337-4744 FAX (432) 337-8781

MR. HECTOR SERNA FAX (432) 337-87 EOG RESOURCES P.O. BOX 3229 CARLSBAD, NEW MEXICO 88220 SAMPLE SOURCE: ELK WALLOW 11 STATE COM 1-H

ANALYSIS COMPLETED: 10-16-2010 SAMPLE RECEIVED: 10-15-2010 LAB NUMBER: 7051

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DISSOLVED SOLIDS:

CATIONS 8	MEQ/L	mg/L
SODIUM(Na+)	2438.46	56085
CALCIUM(Ca++)	64.00	1280
MAGNESIUM(Mg++)	22.00	268

ANIONS:

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CHLORIDE (Cl-)	2468.00	87614
SULFATE(SO4=)	19.27	925
CARBONATE(CO3=)	0.00	0
BICARBONATE(HCO3-)	37.19	2269
HYDROXIDE(OH-)	0.00	0
TOTAL DISSOLVED SOLIDS:	ં એ સ્ વે લ્લ	148441

OTHER PROPERTIES:

PH SPEC. GRAV. CONDUCTIVITY @ 77 °F	6.22 1.09 287300 µыноs/см	P-ALKALINITY (AS CaCO3) N-ALKALINITY (AS CaCO3) CALCIUM HARDNESS (AS CaCO3)	0 mg/L 1860 mg/L 3200 mg/L
H2S	omg∕L	MAGNESIUN HARDNESS (AS CaCO3) TOTAL HARDNESS (AS CaCO3)	1100 mg/L 4300 mg/L
CO2 IRON	669 mg/L 130.00 mg/L		

. Mobile Analytical Laboratories, Inc.

LABORATORIES IN ODESSA, GIDDINGS & STACY DAM Billing Address: P.O. BOX 69210 • ODESSA, TEXAS 79769-0210 Shipping Address: 2800 WESTOVER STREET • ODESSA, TEXAS 79764 PHONE (432) 337-4744 FAX (432) 337-8781

MR. HECTOR SERNA EOG RESOURCES P.O. BOX 3229 CARLSBAD, NEW MEXICO 88220

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ANALYSIS COMPLETED: 10-08-2010 SAMPLE RECEIVED: 10-07-2010 LAB NUMBER: 6996

SAMPLE SOURCE: ELK WALLOW 11 STATE 1-H

	DISSOLVED SOLIDS:	
CATIONS :	mrg/l	mg/L
SODIUM(Na+)	2550.41	58659
CALCIUM (Ca++)	72.00	1440
MAGNESIUN(Mg++)	64.00	781
ANIONS :		
CHLORIDE(Cl-)	2620.00	93010
Sulfate(SO4=)	19.15	919
CARBONATE(CO3=)	0.00	0
BICARBONATE_(HCO3-)	47.26	2883
HYDROXIDE(OH-)	0.00	0
TOTAL DISSOLVED SOLIDS:		157692

OTHER PROPERTIES:

PH SPEC. GRAV. Conductivity © 77 °F	6.51 1.10 294600 μMHOS/CM	P-ALKALINITY (AS CaCO3) M-ALKALINITY (AS CaCO3) CALCIUM HARDNESS (AS CaCO3)	0 mg/L 2363 mg/L 3600 mg/L
H2S	0 mg/L	MAGNESIUM HARDNESS (AS CaCO3) TOTAL HARDNESS (AS CaCO3)	3200 mg/L 6800 mg/L
CO3 IRON	615 mg/L 60.00 mg/L		

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LABORATORIES IN ODESSA, GIDDINGS & STACY DAM Billing Address: P.O. BOX 69210 • ODESSA, TEXAS 79769-0210 Shipping Address: 2800 WESTOVER STREET • ODESSA, TEXAS 79764 PHONE (432) 337-4744

FAX (432) 337-8781

MR. HECTOR SERNA EOG RESOURCES P.O. BOX 3229 CARLSBAD, NEW MEXICO 88220

ANALYSIS COMPLETED: 10-22-2010 SAMPLE RECEIVED: 10-22-2010 LAB NUMBER: 7111

SAMPLE SOURCE: ELK WALLOW 11 STATE COM #2-H

DISSOLVED SOLIDS:

CATIONS:	MEQ/L	mg/L
SODIUM(Na+)	2947.70	67797
CALCIUM(Ca++)	80.00	1600
MAGNESIUM(Mg++)	36.00	439

ANIONS :

		106000
CHLORIDE(Cl-)	2986.00	106003
SULFATE(SO4=)	18.90	907
CARBONATE(CO3=)	0.00	0
BICARBONATE(HCO3-)	58.80	3587
HYDROXIDE (OH-)	0.00	0
TOTAL DISSOLVED SOLIDS:	a and a second	180333

OTHER PROPERTIES:

PH SPEC. GRAV.	6.32 1.11	P-ALKALINITY (AS CaCO3)	0 mg/L
CONDUCTIVITY	344600 μMHOS/CM	M-ALKALINITY (AS CACO3)	2940 mg/L
@ 77 °F		CALCIUM HARDNESS (AS CaCO3)	4000 mg/L
		MAGNESIUM HARDNESS (AS CaCO3)	1800 mg/L
H2S	0 mg/L	TOTAL HARDNESS (AS CaCO3)	5800 mg/L
C02	669 mg/L		
IRON	130.00 mg/L		

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Mobile Analytical Laboratories, Inc.

LABORATORIES IN ODESSA, GIDDINGS & STACY DAM Billing Address: P.O. BOX 69210 • ODESSA, TEXAS 79769-0210 Shipping Address: 2800 WESTOVER STREET • ODESSA, TEXAS 79764 PHONE (432) 337-4744 FAX (432) 337-8781

MR. HECTOR SERNA EOG RESOURCES P.O. BOX 3229 CARLSBAD, NEW MEXICO 88220

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ANALYSIS COMPLETED: 10-16-2010 SAMPLE RECEIVED: 10-15-2010 LAB NUMBER: 7053

SAMPLE SOURCE: ELK WALLOW 11 STATE COM 2-H

DISSOLVED SOLIDS:

CATIONS :	meq/l	mg/L
SODIUM(Na+)	2856.14	65691
CALCIUM(Ca++)	84.00	1680
MAGNESIUM(Mg++)	42.00	512

ANIONS:

CHLORIDH(Cl-)	2896.00	102808
SULFATE(SO4=)	23.02	1105
CARBOHATE(CO3=)	0.00	0
BICARBONATE(HCO3-)	63.12	3850
HYDROXIDE(OH-)	0.00	0
TOTAL DISSOLVED SOLIDS:	. े भार सं ग्रे ज	175646

OTHER PROPERTIES:

pH SPEC. GRAV. CONDUCTIVITY & 77 °F	6.28 1.10 316700 μΜΗΟS/CM	P-ALKALINITY (AS CaCO3) M-ALKALINITY (AS CaCO3) CALCIUM HARDNESS (AS CaCO3) MAGNESIUM HARDNESS (AS CaCO3)	0 mg/L 3156 mg/L 4200 mg/L 2100 mg/L
H2S	0 mg/L	TOTAL HARDNESS (AS CRCO3)	6300 mg/L
CO2 IRON	898 mg/L 200.00 mg/L		

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LABORATORIES IN ODESSA, GIDDINGS & STACY DAM Billing Address: P.O. BOX 69210 . ODESSA, TEXAS 79769-0210 Shipping Address: 2800 WESTOVER STREET . ODESSA, TEXAS 79764 PHONE (432) 337-4744 FAX (432) 337-8781

MR. HECTOR SERNA EOG RESOURCES P.O. BOX 3229 CARLSBAD, NEW MEXICO 88220

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ANALYSIS COMPLETED: 10-08-2010 SAMPLE RECEIVED: 10-07-2010 LAB NUMBER: 6998

SAMPLE SOURCE: ELK WALLOW 11 STATE 2-H

	DISSOLVED SOLIDS:	
CATIONS:	MEQ/L	mg/L
SODIUM(Na+)	2421.95	55705
CALCIUM (Ca++)	96.00	1920
MAGNESIUM(Mg++)	22.00	268
ANIONS:		- -
CHLORIDE (C1-)	2480.00	88040
SULFATE(SO4=)	2.35	113
CARBONATE(CO3=)	0.00	. 0
BICARBONATE(HCO3-)	57.60	3514
HYDROXIDE(OH-)	0.00	0
TOTAL DISSOLVED SOLIDS:		149560

OTHER PROPERTIES:

pH	6.33	P-ALKALINITY (AS CaCO3)	0 mg/I
SPEC. GRAV. Conductivity 0 77 °F	1.10 281400 μmHOS/CM	M-ALKALINITY (AS CACO3) CALCIUM HARDNESS (AB CaCO3)	2880 mg/I 4800 mg/I
	0 mg/L	MAGNESIUM HARDNESS (AS CaCO3)	1100 mg/I
H2 S C02	634 mg/L	TOTAL HARDNESS (AS CaCO3)	5900 mg/1
IRON	103.00 mg/L		

- ALLIBURTON

PERMAIN BASIN OPERATIONS LABORATORY WATER ANALYSIS REPORT HOBBS, NEW MEXICO

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Well	AL	West	We/1
Meth-	TE Ø	WEST	V -//

REPORT ' W DATE DISTRICT H

W09-019 March 30, 2009 Hobbs, NM

SUBMITTED BY

COMPANY

WELL			EPTH			FORMA			
SAMPLE									
Sample Temp.	70	°F			°F		°F		°F
RESISTIVITY	3.36								
SPECIFIC GR.	1.001								
рН —	7.83								
CALCIUM -	500	mpl			mpl		mpl	· ·	 mpl
MAGNESIUM	300	mpl			mpl		mpl		mpl
CHLORIDE	279	mpl			mpl		mpl		mpl
SULFATES	<100	mpl			mpl		mpi		mpl
BICARBONATES	823	mpl			mpl		mpl		mpl
SOLUBLE IRON	0	mpl			mpl		mpl		mpl
KCL									
Sodium		mpl		0	mpl	0	mpl	0	mpl
TDS		mpl		0	mpl	0	mpl	0	mpl
OIL GRAVITY	@	°F		@	°F	@	°F	@	°F
REMARKS									

REMARKS

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management: it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Co.

MPL = Milligrams per litter Resitivity measured in: Ohm/m2/m

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ANALYST: John Eubank

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HALLIBURTON

PERMAIN BASIN OPERATIONS LABORATORY WATER ANALYSIS REPORT HOBBS, NEW MEXICO

OMPANY	EOG	REPORT	W10-045	
	Well # 2 (East Well	DATE DISTRICT	April 1, 2010 Hobbs	
		,		

SUBMITTED BY Mike Huber

С

WELL <u>Elk W</u> COUNTY	/allup	DEPTH FIELD			FORMA ⁻ SOURCI		<u></u>	
TANK	<u> </u>			·····				
SAMPLE								
			·······		· · · · · · · · · · · · · · · · · · ·			
Sample Temp.	75	°F		°F		°F		°F
RESISTIVITY	0.125							
SPECIFIC GR.	1.001							
pН	7.96							
CALCIUM	110	mpl		mpl		mpl		mpl
MAGNESIUM	66	mpl		mpl		mpl		 mpl
CHLORIDE	378	mpl		mpl		mpl		mpi
SULFATES	Light	mpl		mpl		mpl		mpl
BICARBONATES	61	mpl		mpl		mpl		mpl
SOLUBLE IRON	0	mpl		mpl		mpl		mpl
KCL	N							
Sodium		mpl		mpl		mpl		mpi
TDS		mpl		mpl		mpl		mpl
OIL GRAVITY	@	°F	@	°F	@	°F	@	°F
REMARKS			····					

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MPL = Milligrams per liter Resitivity measured in: Ohm/m2/m 1

ANALYST: MB/MA/RK

Response to email dated 2/23/2011 regarding -Disposal application from EOG Resources, Inc.: Elk Wallow 11 State #5-30-015-38388 Bell and Cherry Canyon Open Hole 3200 to 4800 feet

Question A; Answer

Based on my geological review of the available logs in this vicinity it is my opinion that none of the Upper Bell Canyon Sands (3200'-4000' in #1 Karlsbad Corral SWD) in the area of the proposed EOGR, #5 Elk Wallow 11 State are capable of oil & gas production. The first productive sand will be encountered at +5300' in the Lower Cherry Canyon of the Delaware

The EOGR, #2H Elk Wallow 11 State (1st well on x-section) is 3050' northwest & 9' up dip at the top of the Delaware, to the Southwestern, #1 Karlsbad Corral SWD (3rd well on x-section). This 1st well had no oil shows while drilling from 3200' to 3300' or 3900' to 4000'. The first oil show occurring in this well is at 5320' which is the top of the locally productive Lower Cherry Canyon Sand. Please note that the 1st well lost returns after penetrating this sand which facilitated the need to set intermediate casing. Neither of the 1st or 3rd wells ran a resistivity log for water saturation calculations.

The Oxy, #1 Corral Fly '11' State (2nd well on x-section) is 3150' northeast & 11' up dip at the top of the Delaware, to the Southwestern, #1 Karlsbad Corral SWD. This 2nd well is completed from 5364-5373' in the Lower Cherry Canyon, which has good densityneutron crossover with a water saturation around 50%; it has produced 34.63 Mbo, 1956 Mcfg & 62.65 Mbw since 1/1996. The Upper Delaware sands (3200'-4000') calculate in excess of 60% water saturation in this well.

The Oxy, #1 Bradley '13' Federal (4th well on x-section) is 6200' southeast & 49' down dip at the top of the Delaware, to the Southwestern, #1 Karlsbad Corral SWD. This 4th well has a resistivity log for water saturation calculations as well as a mudlog. The Uppermost Delaware Sands in this 4th well (3300'-3400') have no density-neutron crossover, calculate in excess of 50% water saturation and had only a trace of florescence in the mudlog samples. This sand is nonproductive. The closest production from the Uppermost Bell Canyon Sand (3200-3300') is 1.5 miles to the east & 170' down dip in S8-9-17-18-19-21/T20S/R30E. In this 4th well there are no other shows in the Bell Canyon; with the first show of consequence at 4445' in the Cherry Canyon Sands. This sand has good florescence, a trace of oil cut, with no density-neutron crossover & a 60% water saturation; this zone is nonproductive. Deeper in this well there are shows at 5212'-5245' which were drill stem tested with a sampler recovery of 40 cc oil. 1800 cc water. Additional good shows are at 5305'-5330', this sand drill stem tested a recovery of 200' oil, 100' oil & water, & 73' water. The 5305-5330' sand has vet to be produced and the well is currently completed in the Upper Brushy Canyon Sands at 5616'-5700' & has produced 75.86 Mbo & 199.44 Mbw since 5/1997. These sands exhibited some florescence & cut with a report of oil on pits by the mudlog, with water saturations around 60% & some density-neutron crossover.

Question C; Answer

The logging program for the #5 Elk Wallow 11 State:

Quad-Combo; T.D. (8000') - Casing (3200'). Density, Neutron, Gamma Ray, Caliper, PE, Laterolog & Sonic.

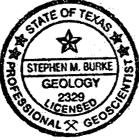
Cased Hole; Casing (3200') - Surface; Neutron & Gamma Ray.

After we run open hole logs EOGR will further evaluate the well for potentially productive Delaware Sands.

Happin M. Binke

Stephen Burke EOG - Geological Advisor **Midland Division**





Affidavit of Publication	Copy of Publication:
STATE OF NEW MEXICO	EOG Resources, Inc., P.O. Box 2267, Midland, TX 79702, will file form C-108 (Application for Authorization To Inject) with the New Mexico Oil
County of Eddy:	Conservation Division seeking administrative approval for water injection wells.
Walter L. Green Walter L. Green	The Elk Wallow 11 State 5 is located 1600' FSL & 1000' FEL, Section 11, Township 25 South, Range 29 East, Eddy County, New Mexico. Injection water will be sourced from area wells producing from the Bone
being duly sworn, says that he is the Publisher	Spring formation. The injection water will be injected into the Delaware Sand formation at a depth of 3200'- 4800', a maximum surface pressure of 1000 psi, and a maximum rate of 10000 BWPD.
of the Artesia Daily Press, a daily newspaper of general	All interested parties opposing the action must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis
circulation, published in English at Artesia, said county	Dr., Santa Fe, New Mexico 87505 within 15 days. Additional information may be obtained by contacting Stan Wagner at P.O. Box 2267, Midland, TX 79702, or 432-686-3600.
and state, and that the hereto attached	Published in the Artesia Daily Press, Artesia, N.M., January 13, 2011. Legal No. 21515.
Legal Notice	aolo odł hactto of hactorial IB.
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 January 13, 2011	
Second Publication	
Third Publication	
Fourth Publication	
Fifth Publication	
Subscribed and sworn to before me this	
13th day of January 2011 OFFICIAL SEAL Danny Scott NOTARY PUBLIC STATE OF NEW MELOCO My commission explanation 3/18/2014 My commission explanation 4/2014 Danny Scott	
Notary Public, Eddy County, New Mexico	

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EOG Resources, Inc. 4000 North Big Spring, Suite 500 Midland, TX 79705 (915) 686-3600

January 17, 2011

<u>CERTIFIED MAIL</u> RETURN RECEIPT REQUESTED

Lime Rock Resources A, L.P. 1111 Bagby Street, Ste. 4600 Houston, TX 77002

> Re: Application of EOG Resources, Inc. for administrative approval of Elk Wallow 11 State No.5 – Eddy County, New Mexico. Application for a Water Disposal Injection well

Ladies and Gentlemen:

Enclosed please find a copy of the application of EOG Resources, Inc. (Oil Conservation Division Form C-108) in the above-referenced matter for approval of a Water Disposal Injection Well: the Elk Wallow 11 State No. 5 is located 1600 feet from the South line and 1000 feet from the East line of Section 11, Township 25 South, Range 29 East, NMPM, Eddy County, New Mexico. EOG proposes to re-inject water produced from the Bone Spring formation into the Delaware Sand formation at a measured depth of 3200 feet to 4800 feet. This injection will occur with a maximum injection pressure of 1000 psi and a maximum injection rate of 10000 barrels of water per day as fully described in the application.

This application is provided to you as the lessee of record for offset lands within a ½ mile radius of the subject well. If you object to this application your objection must be filed in writing with the Santa Fe Office of the Oil Conservation Division located at 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505 within 15 days of the date of this letter. If there is no objection, the Division Director may approve this application.

Sincerely,

EOG RESOURCES, INC.

Atan Wagner

Stan Wagner Regulatory Analyst

SENDER: COMPLETE THIS SECTION COMPLETE THIS SECTION ON DELIVERY
 Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits.
1. Article Addressed to: D. Is delivery address different from item 1? D Yes 1. Article Addressed to: If YES, enter delivery address below: D No
Lime Rock Resources A, L.P.
1111 Bagby Street, Ste. 4600 Houston, TX 77002 3. Service Type Certified Mail Registered Return Receipt for Merchandise Insured Mail Insured Mail
4. Restricted Delivery? (Extra Fee)
2. Article Number 7009 3410 0000 0960 9031 (Transfer from service label)
PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

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EOG Resources, Inc. 4000 North Big Spring, Suite 500 Midland, TX 79705 (915) 686-3600

January 17, 2011

CERTIFIED MAIL RETURN RECEIPT REQUESTED

State of New Mexico 310 Old Santa Fe Trail Santa Fe, NM 87504

> Re: Application of EOG Resources, Inc. for administrative approval of Elk Wallow 11 State 5 – Eddy County, New Mexico. Application for a Water Disposal Injection well

Ladies and Gentlemen:

Enclosed please find a copy of the application of EOG Resources, Inc. (Oil Conservation Division Form C-108) in the above-referenced matter for approval of a Water Disposal Injection Well: the Elk Wallow 11 State No. 5 located 1600 feet from the South line and 1000 feet from the East line of Section 11, Township 25 South, Range 29 East, NMPM, Eddy County, New Mexico. EOG proposes to re-inject water produced from the Bone Spring formation into the Delaware Sand formation at a measured depth of 3200 feet to 4800 feet. This injection will occur with a maximum injection pressure of 1000 psi and a maximum injection rate of 10000 barrels of water per day as fully described in the application.

This application is provided to you as owner of the surface of the land upon which the subject well is located. If you object to this application your objection must be filed in writing with the Santa Fe Office of the Oil Conservation Division located at 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505 within 15 days of the date of this letter. If there is no objection, the Division Director may approve this application.

Sincerely,

EOG RESOURCES, INC.

Stan Wagn

Stan Wagner Regulatory Analyst

	SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
	Commissioner of Fublic Lands	A. Signature A. Signature A. Signature A. Addressee B. Received by (<i>Printed Name</i>) C. Date of Delivery D. Is delivery address different from item 1? Yes If YES, enter delivery address below: No Yes 2011
:	310 Old Santa Fe Trail Santa Fe, New Mexico 87504-11485	3. Service-Type Certified Mail Express Mall Registered Return Receipt for Merchandise Insured Mall C.O.D. K. Restricted Delivery? (Extra Fee) Yes
:		

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EOG Resources, Inc. 4000 North Big Spring, Suite 500 Midland, TX 79705 (915) 686-3600

March 9, 2011

CERTIFIED MAIL RETURN RECEIPT REQUESTED

OXY Y-1 5 Greenway Plaza, Suite 110 Houston, TX 77046-0521

> Re: Application of EOG Resources, Inc. for administrative approval of Elk Wallow 11 State 5 – Eddy County, New Mexico. Application for a Water Disposal Injection well

Ladies and Gentlemen:

Enclosed please find a copy of the application of EOG Resources, Inc. (Oil Conservation Division Form C-108) in the above-referenced matter for approval of a Water Disposal Injection Well: the Elk Wallow 11 State No. 5 located 1600 feet from the South line and 1000 feet from the East line of Section 11, Township 25 South, Range 29 East, NMPM, Eddy County, New Mexico. EOG proposes to re-inject water produced from the Bone Spring formation into the Delaware Sand formation at a measured depth of 3200 feet to 4800 feet. This injection will occur with a maximum injection pressure of 1000 psi and a maximum injection rate of 10000 barrels of water per day as fully described in the application.

This application is provided to you as a mineral owner within the proximity of the subject well. If you object to this application your objection must be filed in writing with the Santa Fe Office of the Oil Conservation Division located at 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505 within 15 days of the date of this letter. If there is no objection, the Division Director may approve this application.

Sincerely,

EOG RESOURCES, INC.

Stan Way

Stan Wagner Regulatory Analyst

 SENDER: COMPUTE THIS SECTION Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the maliplece, or on the front if space permits. 	COMPLETE THISISECTIONION DELIVERY A. Signature X	
 Article Addressed to: OXY Y-1 5 Greenway Plaza, Suite 110 	If YES, enter delivery address below: No 3. Service Type	
Houston, TX 77046-0521	Certified Mail Express Mail Registered Insured Mail C.O.D.	ilse
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2. 6	Registered Return Receipt for Merchand Insured Mall C.O.D.	dise

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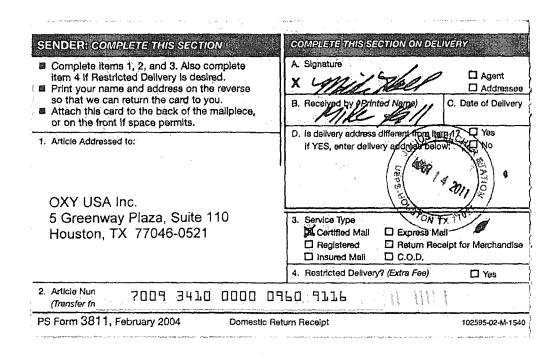
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March 9, 2011

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Yates Petroleum Corporation 105 S. Fourth St. Artesia, New Mexico 88210

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Stan Wagner Regulatory Analyst

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY		
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EOG Resources, Inc. 4000 North Big Spring, Suite 500 Midland, TX 79705 (915) 686-3600

March 9, 2011

<u>CERTIFIED MAIL</u> <u>RETURN RECEIPT REQUESTED</u>

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EOG Resources, Inc. 4000 North Big Spring, Suita 500 Midland, TX 79705 (915) 686-3600

March 9, 2011

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Myco Industries, Inc. 105 S. Fourth St. Artesia, New Mexico 88210

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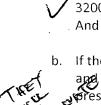
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From:	Jones, William V., EMNRD
Sent:	Wednesday, February 23, 2011 5:35 PM
Το:	'Stan_Wagner@eogresources.com'
Cc:	Ezeanyim, Richard, EMNRD; Reeves, Jacqueta, EMNRD
Subject:	Disposal application from EOG Resources, Inc.: Elk Wallow 11 State #5 30-015-38388 Bell
-	and Cherry Canyon Open Hole 3200 to 4800 feet.

Hello Stan:

I reviewed this today and only have a couple questions:



. I am aware the Karlsbad Korral SWD well is already permitted for disposal from 3200 to 4000 feet, but would you please ask your geologist or engineer to send some more evaluation (with signature) of the interval from 3200 to 3300 and from 3900 to 4000 feet. Do these two intervals have any potential for recovery of oil or gas? And if not, why not?

b. If these intervals are questionably productive, we would ask EOG to retain the casing through these intervals and cement it, then perforate and fracture if needed. The Karlsbad Corral well already had to have an injection of essure increase, so it may be this Delaware is a bit tight and to your advantage to set pipe, so you can focus a stimulation to increase disposal rate. That question should be posed to your engineers.

. What logs do you plan to run on this well?

d. With this application we only see that Lime Rock and the State Land Office were provided notice.

Would you please ask your Landman to let me know who controls (the lessees or if no lessee, the mineral owner) the minerals in the Delaware formation in the following areas:

- a. Unit letter D of Section 13
- b. Unit Letters A and B of Section 14
- c. W/2 of W/2 of Section 12 (Except for Unit Letter D)
- d. E/2 of Section 11 (Except for Unit Letters A and B)
- e. Unit Letters F, K, and N of Section 11
- f. (Or divide the circular AOR in to defined, commonly owned tracts and list the owners of each tract).

If any of those named were not provided notice, please do so and send a copy of the notice number or notice receipt.

Thank You in advance,

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



From:	Stan_Wagner@eogresources.com
Sent:	Wednesday, March 09, 2011 10:08 AM
То:	Jones, William V., EMNRD
Subject:	Re: Disposal application from EOG Resources, Inc.: Elk Wallow 11 State #5 30-015-38388
-	Bell and Cherry Canyon Open Hole 3200 to 4800 feet.

Will, just an update on where we are on this permit. After the land review of the additional area you requested, I am noticing Yates, Abo, Myco, and Oxy. I will send the green cards ASAP. Geology is working the answer to your other questions and should have that ready shortly.

Thanks,

Stan

^{**} "Jones, William V., EMNRD" ---02/23/2011 06:35:03 PM---Hello Stan: I reviewed this today and only have a couple questions:

From: "Jones, William V., EMNRD" <<u>William.V.Jones@state.nm.us</u>>

To: "Stan_Wagner@eogresources.com" <Stan_Wagner@eogresources.com>

Cc: "Ezeanyim, Richard, EMNRD" <<u>richard.ezeanyim@state.nm.us</u>>, "Reeves, Jacqueta, EMNRD" <<u>Jacqueta.Reeves@state.nm.us</u>> Date: 02/23/2011 06:35 PM

Subject: Disposal application from EOG Resources, Inc.: Elk Wallow 11 State #5 30-015-38388 Bell and Cherry Canyon Open Hole 3200 to 4800 feet.

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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



From:	Stan_Wagner@eogresources.com
Sent:	Monday, March 21, 2011 8:07 AM
То:	Jones, William V., EMNRD
Subject:	Elk Wallow 11 State 5 SWD - Additional Notice
Attachments:	Scan001.PDF

Good Morning Will,

Attached is the additional notice and certified receipts that you requested be sent for our Elk Wallow 11 State 5 SWD permit application. This well is intended to be drilled as a frac monitor well and then converted to SWD. However, we do not want to drill a throwaway wellbore, and it is scheduled to be drilled the middle of April. So, the question is, barring a protest, is OCD reasonably sure that the well will be permitted for SWD. I don't need the signed order, just a reasonable assurance when you feel comfortable with the well, that I can take to operations for planning.

Thanks,

Stan Wagner EOG Resources - Midland Division

(See attached file: Scan001.PDF)

From: Sent:	Stan_Wagner@eogresources.com Thursday, March 10, 2011 2:42 PM
То:	Jones, William V., EMNRD
Subject:	Fw: Disposal application from EOG Resources, Inc.: Elk Wallow 11 State #5 30-015-38388 Bell and Cherry Canyon Open Hole 3200 to 4800 feet.
Attachments:	ElkWallowQuestionsJAY.docx; ElkWallow5BaseMap1.pdf; ElkWallow5DlwrA.A'.pdf

Will, attached is the geological response to your questions. Additional notice has been sent as we discussed yesterday. Please let me know if you need anything else.

Thanks, Stan ----- Forwarded by Stan Wagner/EOGResources on 03/10/2011 03:39 PM -----

From: Mike Burke/EOGResources To: Stan Wagner/EOGResources@EOGResources Cc: Jay Siebens/EOGResources@EOGResources, Donny Glanton/EOGResources@EOGResources, Doug Hurlbut/EOGResources@EOGResources Date: 03/10/2011 02:54 PM Subject: Fw: Disposal application from EOG Resources, Inc.: Elk Wallow 11 State #5 30-015-38388 Bell and Cherry Canyon Open Hole 3200 to 4800 feet.

Stan, attached are the documents I have prepared to answer Questions 1 & 2. The map & cross-section support the word document. Let Mr. Jones know he can contact me below if he has questions or needs additional material or explanation.

(See attached file: ElkWallowQuestionsJAY.docx)(See attached file: ElkWallow5BaseMap1.pdf)(See attached file: ElkWallow5DlwrA.A'.pdf)

Thanks,

Mile BURKE

Mike Burke Geological Advisor EOG Resources, Inc. Midland Division 4000 N Big Spring St., Ste. 500 Midland, TX 79705

EOG Resources, Inc. P.O. Box 2276 Midland, TX 79702

Of.#; 432-686-3626

Mb.#; 432-770-4882 Hm.#; 432-689-4877 Fax#; 432-686-3686 LogFax#; 432-686-3768

mike_burke@eogresources.com

----- Forwarded by Mike Burke/EOGResources on 03/10/2011 02:38 PM -----

From: Jay Siebens/EOGResources To: Mike Burke/EOGResources@EOGResources Date: 02/28/2011 11:37 AM Subject: Fw: Disposal application from EOG Resources, Inc.: Elk Wallow 11 State #5 30-015-38388 Bell and Cherry Canyon Open Hole 3200 to 4800 feet.

Mike

One more thing for you to chase down.

Below are some questions raised by the NMOCD regarding our Elk Wallow #5 SWD permit. Would you please evaluate questions - (a), (b) & (c).

As soon as we can get this resolved given an April 12, 2011 spud date.

Thanks

Jay

----- Forwarded by Jay Siebens/EOGResources on 02/28/2011 11:30 AM -----

From: Stan Wagner/EOGResources To: Jay Siebens/EOGResources@EOGResources Cc: Travis Lain/EOGResources@EOGRESOURCES, Doug Hurlbut/EOGResources@EOGResources, Charlie Aupied/EOGResources@EOGRESOURCES, Steve Munsell/EOGResources@EOGRESOURCES, Ron Willett/EOGResources@EOGResources Date: 02/25/2011 08:33 AM Subject: Fw: Disposal application from EOG Resources, Inc.: Elk Wallow 11 State #5 30-015-38388 Bell and Cherry Canyon Open Hole 3200 to 4800 feet.

Jay / Doug,

Will you provide me with the requested information so that I may forward it on to OCD. Thanks. ----- Forwarded by Stan Wagner/EOGResources on 02/25/2011 08:19 AM -----

From: "Jones, William V., EMNRD" <William.V.Jones@state.nm.us> To: "Stan_Wagner@eogresources.com" <Stan_Wagner@eogresources.com> Cc: "Ezeanyim, Richard, EMNRD" <richard.ezeanyim@state.nm.us>, "Reeves, Jacqueta, EMNRD" <Jacqueta.Reeves@state.nm.us> Date: 02/23/2011 06:35 PM Subject: Disposal application from EOG Resources, Inc.: Elk Wallow 11 State #5 30-015-38388 Bell and Cherry Canyon Open Hole 3200 to 4800 feet.

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Thank You in advance,

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



From: Sent: To: Cc: Subject: Jereme_Robinson@oxy.com Wednesday, March 23, 2011 2:06 PM stan_wagner@eogresources.com Jones, William V., EMNRD; Brent_Sonnier@oxy.com Elk Wallow 11 State #5

Stan:

Per our conversation on the phone today please accept this email as a conformation as well as information to EOG for the following:

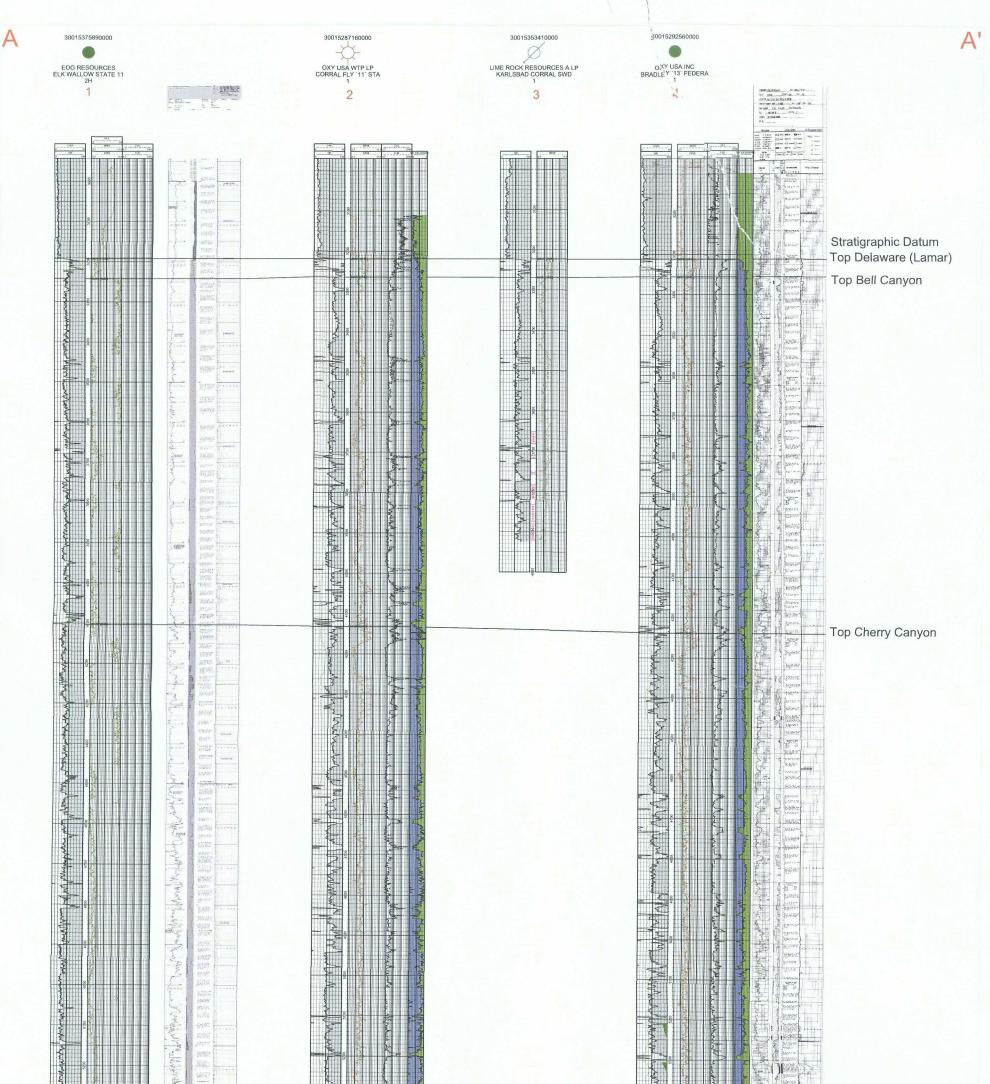
OXY will not protest the C-108/SWD for the subject well in lieu of: EOG allowing OXY 90-days from 3/28/2011 to squeeze cement behind pipe to recomplete and test the Delaware formation.

OXY's concern was the mechanical integrity of the casing in an existing well at or around 3000' away without cement behind pipe in EOG's proposed injection interval. OXY would feel most comfortable to be afforded time (90days) by EOG to squeeze cement behind pipe in that interval to avoid possible future environmental issues and/or costly repairs. This request is made in good faith and as a precautionary measure.

If anyone at EOG Resources should have any questions, concerns, or comments to this email you may contact myself at the information provided below or Brent Sonnier at 713-366-5654

Regards,

Jereme W. Robinson Regulatory Analyst OXY USA Inc. OXY USA WTP LP 5 Greenway Plaza, Suite 110 Houston, TX 77046 Ofc: 713.366.5360 Fax: 713.985.1965 jereme robinson@oxy.com



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Top Brushy Canyon

5/2010) UIC Qtr WALLOW 11 STate #5 Spud Date: New/Old: (UIC primacy March 7, 1982) Unit I Sec 11 Tsp 255 Rge 29E County EDDY FEL STon Wagner FNC Contact ٥ (۲ U IS <u>5.9 OK</u>? OK 20 pliance (Wells) (Finan Assur) NOT DRILLED w Well: LOFS KЮ Diagrams: Before Conversion Elogs in Imaging File After Conversion Słage Determination Sizes Setting Cement Well Details: Hole.....Pipe Depths Tool Sx or Cf Method 13318 New Existing Surface 7 Yz. 25 525 CIRC 1274 a⁵8 New_Existing_Interm 200 750 CIRC 834 Pulled PIPE New_Existing __LongSt New_Existing_Liner 83/4 4800 New KExisting __ OpenHole 3200. See SWD Depths/Formations: Depths, Ft. Formation Tops? 3200 Del ~~105P 275 BallC Formation(s) Above 200 640 Det Max. PSI OpenHole Perfs Injection TOP: Tubing Size 4/2-Packer Depth 4800 3150 Injection BOTTOM: Formation(s) Below Salado Top/Bot 1285- 2935 -Capitan Reef2 (Ching Formation OG allal Analysis Affirmative Statement Fresh Water: Depths: 0-250 B.S **Disposal Fluid** Analysis? Sources: 7 SwD EXISTING Production Potential/Testing Disposal Interval: Analysis? 121 Notice: Newspaper Date 1/3/11 Surface Owner S.L.O Mineral Owner(s) ABORSE RULE 26.7(A) Affected Persons: me Rock AOR: Maps? Well List? Producing in Interval? Wellbore Diagrams? Repairs? O WhichWells? ...Active Wells ...P&A Wells O Repairs? O Which Wells? Sot & Ty Plus @ 4800 Issues: AOR Request Sent Reply 11/15/2010/10:43 AM Page 1 of 1 SWD_Checklist.xls/List