QCD-ARTESIA

AUG 27 2008 OCD-ARTESIA

ATS-08-197 Ex-08-1156

Form 3160-3 (February 2005) G

SECRETARY'S POTASH

FORM APPROVED OMB No 1004-0137 Expires March 31, 2007

UNITED STATES	SECRETARTS	LOTTO	Expires Mait	n 31, 2007		
DEPARTMENT OF THE II BUREAU OF LAND MANA	NTERIOR	-	 Lease Serial No. NM 01159 			
APPLICATION FOR PERMIT TO I	6 If Indian, Allotee or Tribe Name					
la Type of work DRILL REENTE	7 If Unit or CA Agreem	ent, Name and No				
lb. Type of Well	Single Zone Multi	ple Zone	8 Lease Name and Wel	26//		
Name of Operator EOG Resources, Inc.	77		9 API Well No. 30-015- 36 4	-80		
3a Address P.O. Box 2267 Midland, TX 79702	3b Phone No. (include area code) 432-686-3642		10 Field and Pool, or Exp Sand Tank; Bond	oloratory		
4. Location of Well (Report location clearly and in accordance with any At surface 1785' FNL & 365' FWL (U/L E) At proposed prod zone 1750' FNL & 330' FEL (U/L H)	v State requirements *)		11 Sec, T. R M or Blk Section 10, T18S	and Survey or Area -R30E, N.M.P.M.		
14. Distance in miles and direction from nearest town or post office ^b Approx 5.5 miles SE from Loco Hills, NM			12 County or Parish Eddy	13 State		
Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any)	16 No of acres in Icase 640	17 Spacin	ing Unit dedicated to this well			
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 695'	19 Proposed Depth 8313' TVD; 12,549' TMD	20. BLM/E NM23	BIA Bond No on file			
Elevations (Show whether DF, KDB, RT, GL, etc.) GL 3,505	22. Approximate date work will sta 08/20/2008	nrt*	23 Estimated duration 30 days			
	24. Attachments					
The following, completed in accordance with the requirements of Onshoro	e Oil and Gas Order No.1, must be a	ttached to thi	s form.			
 Well plat certified by a registered surveyor A Drilling Plan. A Surface Use Plan (if the location is on National Forest System I SUPO must be filed with the appropriate Forest Service Office) 	ltem 20 above). Lands, the 5 Operator certification.	cation	ormation and/or plans as m	·		
25 Signature Jrn J. Milt	Name (Printed/Typed) Donny G. Glanton		Date 06/06/2008			
Fitle Sr. Lease Operations ROW Representative						
Approved by (Signar) Linda S.C. Rundell	Name (Printed Typed) Linda	S.C. R	undell D	AUG 2 5 2008		
STATE DIRECTOR	Office NM S					
Application approval does not warrant or certify that the applicant holds conduct operations thereon Conditions of approval, if any, are attached	s legal or equitable title to those righ	nts in the sub	ject lease which would entr VAL FOR TWO	tle the applicant to YEARS		
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a cri- States any false, fictitious or fraudulent statements or representations as to	ime for any person knowingly and o any matter within its jurisdiction	willfully to m	nake to any department or a	igency of the United		

*(Instructions on page 2)

Capitan Controlled Water Basin

SEE ATTACHED FOR CONDITIONS OF APPROVAL

NOTE: NEW PIT RULE
19-15-17 NMAC PART 17
A form C-144 must be approved before starting drilling operations.

District |

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 IV

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

API Number

State of New Mexico

Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised October 12, 2005

☐ AMENDED REPORT

Submit to Appropriate District Office

Pool Name

State Lease- 4 Copies

Fee Lease-3 Copies

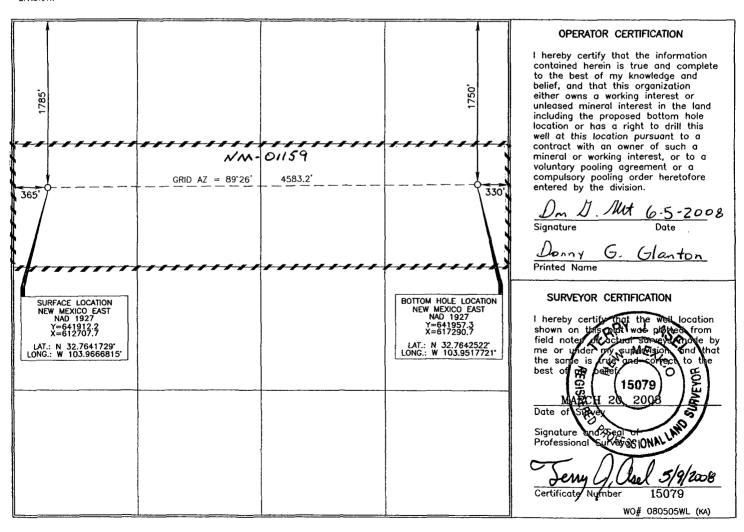
WELL LOCATION AND ACREAGE DEDICATION PLAT

Pool Code

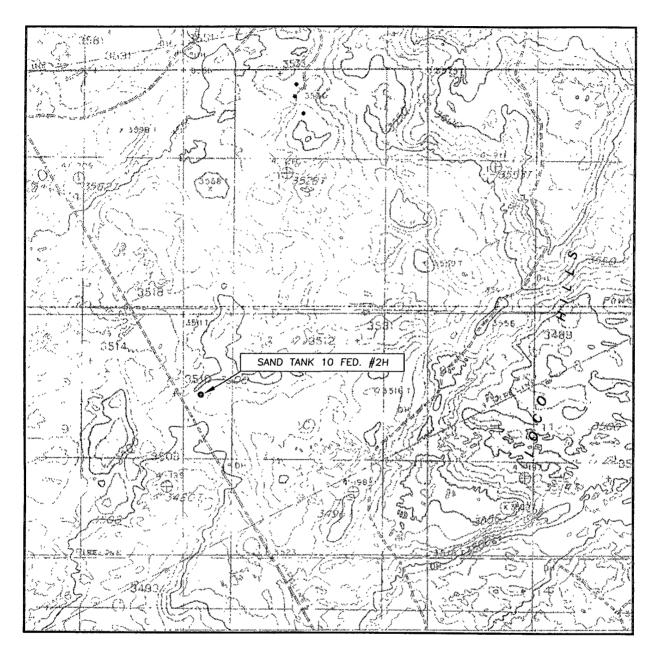
30-015- 96832						Sand T	ak; Bo	ne Spri	ng		
Proper	rty Cod	е	Property Name SAND TANK 10 FED.							Well Number 2H	
OGRID No.					perator	erator Name Elevat					
737	フ.			EOG ŘE	SOUF	CES INC	1 '•			3505.1'	
				Sur	face	Location					
L or lot no. Se	ection	Township	Ro	inge	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
E	10	18 SOUTH	30 EAST,	N. M. P. M.		1785'	NORTH	365'	WEST	EDDY	
					ــــــــــــــــــــــــــــــــــــــ		L	l			

Bottom Hole Location If Different From Surface UL or lot no. Section Township Lot Idn Feet from the North/South line Feet from the East/West line County Н 10 18 SOUTH 30 EAST, N.M.P.M. NORTH 1750 330' EAST **EDDY Dedicated Acres** Joint or Infill Consolidation Code Order No. 160

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.



LOCATION VERIFICATION MAP



Detail Section 1

SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'

SEC. 10 TWP. 18-S RGE. 30-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1785' FNL & 365' FWL

ELEVATION 3505.1'

OPERATOR EOG RESOURCES INC.

LEASE SAND TANK 10 FED. #2H

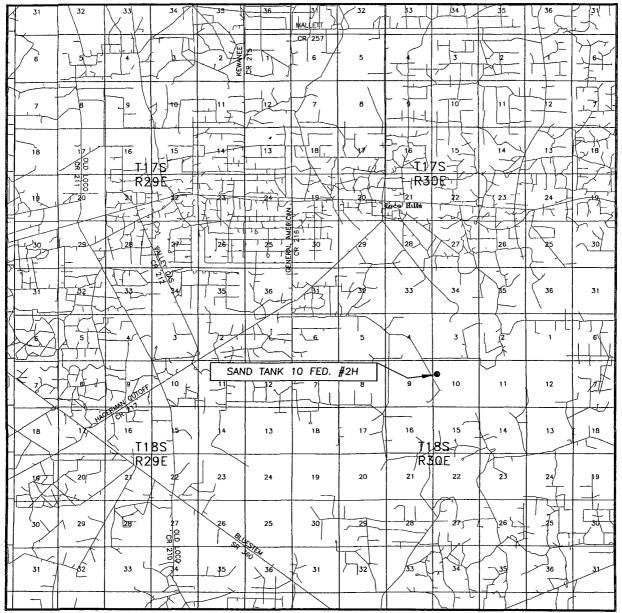
U.S.G.S. TOPOGRAPHIC MAP

LOCO HILLS, N.M.

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 10 TWP. 18-S RGE. 30-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1785' FNL & 365' FWL

ELEVATION 3505.1'

OPERATOR EOG RESOURCES INC.

LEASE SAND TANK 10 FED. #2H

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR HOBBS, NEW MEXICO - 575-393-9146



DIRECTIONS BEGINNING IN LOCO HILLS AT THE INTERSECTION OF U.S. HWY. #82 AND EDDY COUNTY ROAD #217 (HAGERMAN CUTOFF ROAD), GO SOUTH SOUTHWEST ON EDDY CO. ROAD #217 FOR 3.0 MILES, TURN LEFT ON EDDY COUNTY ROAD #216 (GENERAL AMERICAN ROAD) AND GO SOUTH FOR 0.3 MILES, TURN LEFT ON LEASE ROAD AND GO EAST SOUTHEAST FOR 3.6 MILES TO PROPOSED ROAD, TURN LEFT AND GO NORTHEAST 220 FEET TO LOCATION.

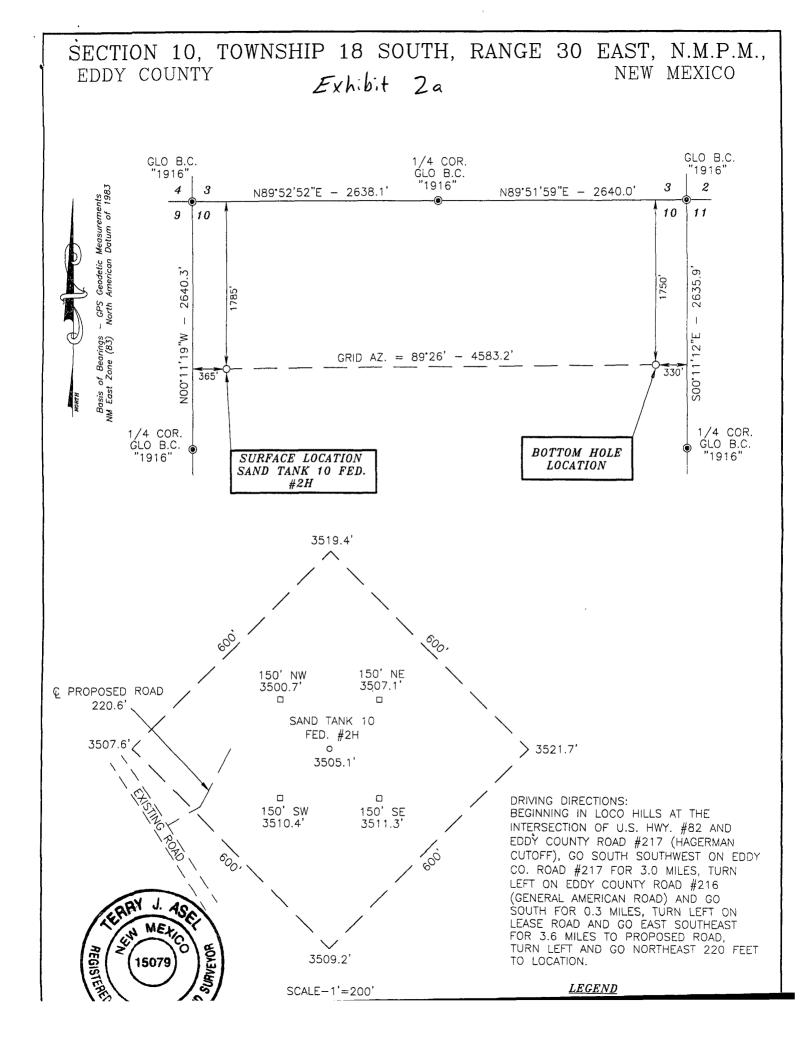


EXHIBIT 3	
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5 BHL: 1750' FNL : 330' FEL 54	91 91 AROL AD STUTY AND Percent of Study of Stud
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Permit Information:

Well Name: Sand Tank 10 Fed #2H

Location:

SL BHL 1785' FNL & 365' FWL, Section 10, T-18-S, R-30-E, Eddy Co., N.M.

1750' FNL & 330' FEL, Section 10, T-18-S, R-30-E, Eddy Co., N.M.

Casing Program:

Casing	Setting Depth	Hole Size	Casing Size	Casing Weight	Casing Grade	Desired TOC
Surface	385'	14-3/4"	11-3/4"	42#	H-40	Surface
Intermediate	3,300'	11"	8-5/8"	32#	J-55	Surface
Production	12,549'	7-7/8"	5 1/2"	17#	N-80	Surface

Cement Program:

Depth	No.	Slurries:
	Sacks	
385'	500	Premium Plus C + 0.005 pps Static Free + 2% CaCl2 + 0.25 pps CelloFlake + 0.005 gps FP-6L
3,300'	555	Lead: 50:50 Poz C + 0.005 pps Static Free + 5% NaCl + 0.25 pps CelloFlake + 5 pps LCM-1 + 0.005 gps FP-6L + 10% Bentonite
	200	Tail: Premium Plus C + 0.005 pps Static Free + 1% CaCl2 + 0.25 pps CelloFlake + 0.005 gps FP-6L
12,549'	750	Lead: 50:50 Poz C + 0.005 pps Static Free + 5% NaCl + 0.25 pps CelloFlake + 5 pps LCM-1 + 0.005 gps FP-6L + 10% Bentonite
	750	Tail: 50:50 Poz H + 2% Bentonite + 0.005 gps FP-6L + 0.005 pps Static Free + 5% NaCl + 0.1% R-3 + 0.2% CD-32 + 0.3% FL-52A

Mud Program:

Depth	Туре	Weight (ppg)	Viscosity	Water Loss
0 – 385'	Fresh - Gel	8.6-8.8	28-34	N/c
385' – 3,300'	Brine	10.0-10.2	28-34	N/c
3,300' – 7,000'	Fresh Water	8.4 – 8.6	28-34	N/c
7,000' – 7,500'	Cut Brine	8.8-9.6	28-34	N/c
7,500' – 8,300'	Cut Brine	8.8-9.6	28-34	10-15
7,688' – 12,549'	Cut Brine/	8.8-9.6	40-45	10-25
	Polymer (Lateral)			

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	360'
San Andres	3,710°
1 st Bone Spring	7,010'
2 nd Bone Spring	7,740'

3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

0-250'	Fresh Water
3,710'	Oil
7,010'	Oil
7,740'	Oil
	3,710° 7,010°

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 11.75" casing at 385' and circulating cement back to surface.

4. CASING PROGRAM-NEW

							Conapse	Burst	1 ension
							<u>Design</u>	<u>Design</u>	<u>Design</u>
	Hole	<u>Interval</u>						Factor	
See COA	14.750"	0-385390	11.75"	42#	H-40	ST&C	6.36	1.96	6.32
3 CC	11.00"	0-3,300	8.625"	32#	J-55	LT&C	1.70	1.94	4.01
	7.875"	0-12,549	5.5"	17#	N-80	LT&C	1.52	1.09	2.25

Cementing Program:

11.75" Surface Casing: Cement to surface, 500 sx Premium Plus C + 0.005 pps

Static Free + 2% CaCl2 + 0.25 pps CelloFlake + 0.005

gps FP-6L, 14.8 ppg, 1.35 yield

8.625" Intermediate Casing: Cement to surface, Lead: 555 sx 50:50 Poz C + 0.005

> pps Static Free + 5% NaCl + 0.25 pps CelloFlake + 5 pps LCM-1 + 0.005 gps FP-6L + 10% Bentonite, 11.8

ppg, 2.45 yield

Tail: 200 sx Prem Plus C + 0.25 pps CelloFlake + 0.005 FP-6L + 1% CaCl₂, 14.8 ppg, 1.34 yield

5.50" Production Casing: Cement to 2,700', Lead: 750 sx 50:50 Poz C + 0.005

pps Static Free + 5% NaCl + 0.25 pps CelloFlake + 5 pps LCM-1 + 0.005 gps FP-6L + 10% Bentonite, 11.8

ppg, 2.29 yield

Tail: 750 sx 50:50 Poz H + 2% Bentonite + 0.005 gps FP-6L + 0.005 pps Static Free + 5% NaCl + 0.1% R-3 + 0.2% CD-32 + 0.3% FL-52A, 14.2 ppg, 1.30 yield

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

(SEE EXHIBIT #1)

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram-type (5000 psi WP) preventer and an annular preventer (5000-psi WP). Units will be hydraulically operated and the ram-type will be equipped with blind rams on top and drill pipe rams on bottom. All BOP's and accessory equipment will be tested in accordance with Onshore Oil & Gas order No. 2. for a 2M system prior to drilling out of the surface casing shoe and while drilling the intermediate section. Before drilling out of the intermediate casing, the ram- type BOP and accessory equipment will be tested to 5000/ 250 psig and the annulur preventer to 3500/ 250 psig.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

Hydraulically operated choke will not be installed prior to the setting and cementing of the intermediate casing string, but will be installed prior to drilling out of the intermediate casing shoe.

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

The well will be drilled to TD with a combination of brine, cut brine, and polymer mud system. The applicable depths and properties of this system are as follows:

Wt Viscosity Waterloss

			Wt	V iscosity	waterioss
	<u>Depth</u>	<u>Type</u>	<u>(PPG)</u>	(sec)	<u>(cc)</u>
ONA	0-385 390	Fresh – Gel	8.6-8.8	28-34	N/c
see COA	385°-3,300° 3,300°-7,000°	Brine	10.0-10.2	28-34	N/c
390	3,300'-7,000'	Fresh water	8.4-8.6	28-34	N/c
	7,000'-7,500'	Cut Brine	8.8-9.6	28-34	N/c
	7,500'-8,300'	Cut Brine	8.8-9.6	28-34	10-15
	7,688'-12,549'	Polymer (Lateral)	8.8-9.6	40-45	10-25

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite at all times.

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

- (A) A kelly cock will be kept in the drill string at all times.
- (B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

8. LOGGING, TESTING AND CORING PROGRAM:

Electric logging will consist of GR-Dual Laterlog and GR-Compensated Density-Neutron from TD to intermediate casing with a GR- Compensated Neutron run from intermediate casing to surface and optional Sonic from TD to intermediate casing.

Possible sidewall cores based on shows. Possible FMI.

9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:

The estimated bottom hole temperature (BHT) at TD is 165 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 3500 psig. No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. No major loss circulation zones have been reported in offsetting wells.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

The drilling operation should be finished in approximately one month. If the well is productive, an additional 30-60 days will be required for completion and testing before a decision is made to install permanent facilities.

ATTACHMENT TO EXHIBIT #1

- 1. Wear ring to be properly installed in head.
- 2. Blow out preventer and all fittings must be in good condition, 5000 psi W.P. minimum. Exhibit #1.
- 3. All fittings to be flanged
- 4. Safety valve must be available on rig floor at all times with proper connections, valve to be full bore 5000 psi W.P. minimum.
- 5. All choke and fill lines to be securely anchored especially ends of choke lines.
- 6. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
- 7. Kelly cock on kelly.
- 8. Extension wrenches and hand wheels to be properly installed.
- 9. Blow out preventer control to be located as close to driller's position as feasible.
- 10. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation, and meet all API specifications.

•	+N/-S +E/-\ 0.00 0.0		Ground Level Easting 612707.70	La		ngitude .054 W	Slot
			SECTION	DETAILS			
	4 8429.18 512548.62	88.00 89.43 81 88.01 89.44 81 88.01 89.44 83	TVD +N/-S 0.00 0.00 88.00 0.00 70.00 4.63 70.02 4.63 12.99 45.10 13.00 45.10	+E/-W 0.00 0.00 465.44 465.87 4582.63 4583.01	DLeg TFacea 0.00 0.00 0.00 0.00 11.88 89.43 3.00 31.89 0.00 0.00 3.86HL (5674.528#	0.00 0.00 465.46 465.90 4582.85	
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Planning Report

EDM Database:

Project:

Company:

Midland - New Mexico Sand Tank (Bone Spring) Sand Tank 10 Fed #2H

Site: Well Sand Tank 10 Fed #2H Wellbore: Sand Tank 10 Fed #2H

Original Plan

Local Co-ordinate Reference:

Well Sand Tank 10 Fed #2H WELL @ 3524 10ft (Original Well Elev)

TVD Reference: MD Reference:

North Reference: Grid

Survey Calculation Method: Minimum Curvature

Project Sand Tank (Bone Spring), Eddy County, NM

Map System: US State Plane 1927 (Exact solution)

NAD 1927 (NADCON CONUS) Geo Datum:

Map Zone: New Mexico East 3001

System Datum:

Site* Sand Tank 10 Fed #2H

Site Position:

Мар

Northing:

641,912.20ft

Latitude:

32° 45' 51.022 N Longitude: 103° 58' 0.054 W

Mean Sea Level

WELL @ 3524.10ft (Original Well Elev)

Easting: 612,707,70ft From:

0.00 ft Slot Radius: **Grid Convergence:** 0.20 ? **Position Uncertainty:**

Well Sand Tank 10 Fed #2H

Well Position +N/-S

+E/-W

0.00 ft

0.00 ft

Northing: Easting:

641.912 20 ft

Latitude: 612.707 70 ft Longitude:

32° 45' 51.022 N 103° 58' 0.054 W

Wellhead Elevation: 3,505 10ft **Position Uncertainty** 0 00 ft **Ground Level:**

Wellbore Sand Tank 10 Fed #2H

 Model Name IGRF2000 12/31/2004

Design/

Audit Notes:

Version:

Phase:

PROTOTYPE

Tie On Depth:

0 00

Vertical Section: Depth From (TVD) +N/-S +E/-W Direction (ft) 8,313.00 0 00 89.44

Plan Sections	Mil	Januaria	and the second second	in an interpretation of the second	infraktorikhadisiakhikani tambihili adami			to the wife to the contract of		and the state of t	Ė
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(ft)	$\mathcal{L}(?)$	(?)	(ft)	±(ft)	(ft)	(?/100ft)	(?/100ft) (?/100ft)	*(?)	Target	3
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8,429 18	88.01	89.44	8,170.02	4.63	465 87	3 00	2 55	1.59	31.89		Ì
12,548.62	88.01	89.44	8,312.99	45.10	4,582.63	0.00	0.00	0.00	0 00		
12,549 00	88.00	89.44	8,313.00	45 10	4,583.01	3 00	-2 89	0 81	164 28 BHI	L (ST 10 #2H)	

Planning Report

Database EDM
Company Midlar
Project: Sand
Site Sand
Well: Sand
Wellbore Sand
Design: Origin Midland - New Mexico Sand Tank (Bone Spring) Sand Tank 10 Fed #2H Sand Tank 10 Fed #2H

Sand Tank 10 Fed #2H

Original Plan

MD Reference: North Reference:

Survey Calculation Method:

Commences of months for the second se

WELL @ 3524.10ft (Original Well Elev) WELL @ 3524 10ft (Original Well Elev)

Grid

Minimum Curvature

Planned Survey	a Carlo and an interpretation of the Carlo and the Carlo a	THE STATE OF THE S	the circumstation in the circu			i saita da Ciri.	Radional Carlotter (1)		
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Planning Report

Database

Company:
Rroject:
Site:
Well:
Wellbore:
Design: Midland - New Mexico Sand Tank (Bone Spring) Sand Tank 10 Fed #2H

Sand Tank 10 Fed #2H Sand Tank 10 Fed #2H

Original Plan

Local Co-ordinate Reference:

TVD Reference: MD Reference:

Survey Calculation Method:

Well Sand Tank 10 Fed #2H

WELL @ 3524.10ft (Original Well Elev) WELL @ 3524 10ft (Original Well Elev)

Grid

Minimum Curvature

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Planning Report

EDM

Database: Company: Project: Midland - New Mexico Sand Tank (Bone Spring) Site: Sand Tank 10 Fed #2H Sand Tank 10 Fed #2H

Well Wellbore: Design: Sand Tank 10 Fed #2H Original Plan

Local Coordinate Reference: Well Sand Tank 10 Fed #2H

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

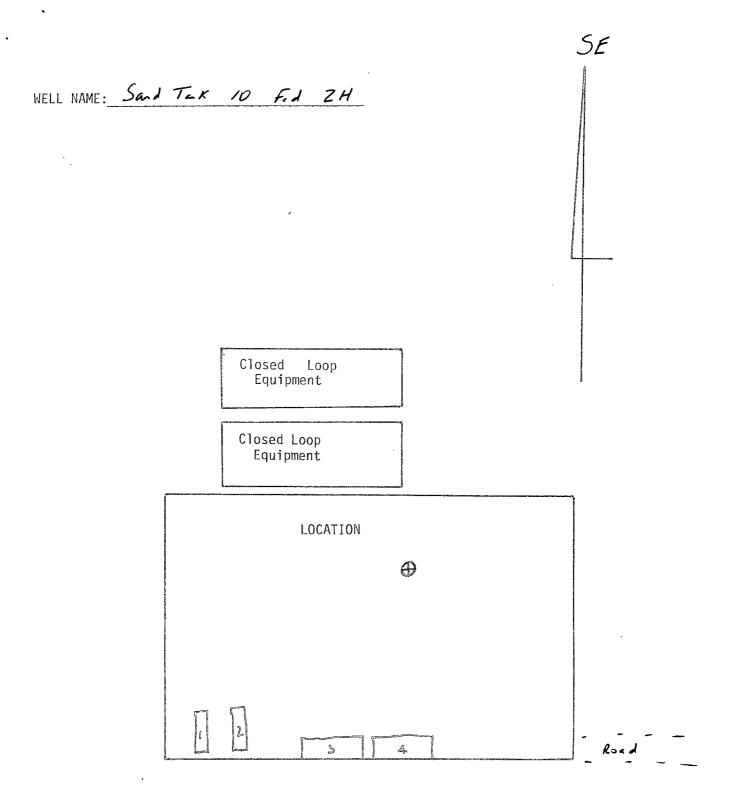
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Not to Scale



Items 1-4: Drilling Trailers

"NOT TO SCALE"

SE WELL NAME: Sand Tank 10 Fol 2H CLOSED LOOP EQUIPMENT Closed Loop EQUIPMENT

- 1. Separator 3. Oil Tax

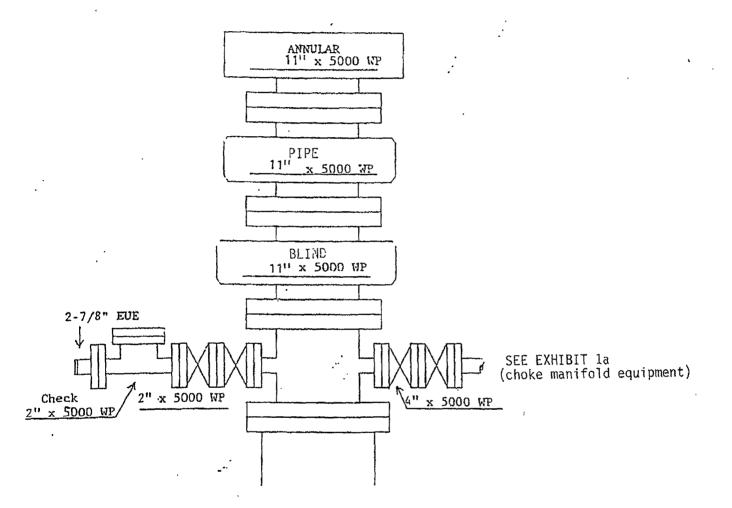
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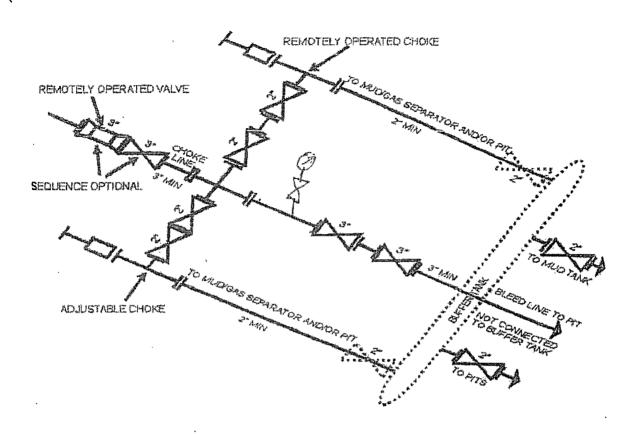
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Road

- 2. Heater
- 4. Water Tank

Sand Tank 10 Fed 24





5M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY

Although not required for any of the choke manifold systems, buffer tanks are sometimes installed downstream of the choke assemblies for the purpose of manifolding the bleed lines together. When buffer tanks are employed, valves shall be installed upstream to isolate a failure or malifunction without interrupting flow control. Though not shown on 2M, 3M, 10M, OR 15M drawings, it would also be applicable to those situations.

[54 FR 39528, Sept. 27, 1989]

SURFACE USE PLAN OF OPERATION

SHL: 1785' FNL & 365' FWL, Unit E, Section 10, T18S-R30E, N.M.P.M., Eddy, NM BHL: 1750' FNL & 330' FEL, Unit H, Section 10, T18S-R30E, N.M.P.M., Eddy, NM

1. EXISTING ROADS:

- a. The well site and elevation plat for the proposed well are reflected on the well site layout; Form C-102. The well was staked by Terry Asel, RPL 15079.
- b. All roads into the location are depicted on Exhibit 2 & 2a.
- c. <u>Directions to Locations:</u> Beginning in Loco Hills, NM, From Jct. of Hwy 82 & Co. Road 217, Go Southwest on CR 217 for 3 miles, turn left on CR 216 and go south for 0.3 miles, turn left on lease road and go east southeast for 3.6 miles to proposed road, turn left and go north east 220 feet to location.

2. NEW OR RECONSTRUCTED ACCESS ROAD:

- a. The well site layout, Exhibit 2a shows the layout. The proposed access road begins on existing lease road and trends NE for 220.6 feet. (See 1c above for driving directions).
- b. The maximum width of the road will be 15'. It will be crowned and made of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent soil erosion.
- c. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 1%.

No cattleguards, gates or fence cuts will be required. No turnouts are planned.

3. LOCATION OF EXISTING WELLS:

Exhibit #3 shows all existing wells within a one-mile radius of this well.

4. LOCATION OF EXISTING AND/OR PROPOSED PRODUCTION FACILITIES:

- a. In the event the well is found to be productive, the Sand Tank 10 Fed 2H battery would be utilized and the necessary production equipment will be installed at the well site. See Production Facilities Layout diagram.
- b. As a proposed oil well, we will contact Central Valley Electric Coop to provide electrical service to the well.
- c. All flow lines will adhere to API standards.
- d. Refer to b above.
- e. If the well is commercially productive, rehabilitation plans are as follows:

i. If the well is deemed commercially productive, the catch tank area will be restored as described in 10a within 120 days subsequent to the completion date. Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.

5. LOCATION AND TYPE OF WATER SUPPLY:

This location will be drilled using a combination of water mud systems (outlined in the drilling program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using existing and proposed roads shown in Exhibit 2 & 2a. On occasion, water will be obtained from existing water wells. In these cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If poly pipeline is used to transport fresh water to the location, proper authorization will be secured by the contractor.

6. CONSTRUCTION MATERIALS

All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. All roads will be constructed of rolled and compacted caliche. Will use BLM recommended use of extra caliche from other locations close by roads, if available.

7. METHODS OF HANDLING WASTE MATERIALS

- a. Drill cuttings will be disposed of in a steel cuttings bin (catch tanks) on the drilling pad (behind the steel mud tanks). The bin & cuttings will be hauled to an
 - approved cuttings dumpsite (i.e.: CRI or Gandy Marley). At the site, the cuttings will be removed from the bin & the bin will be returned to the drilling site for reuse.
- b. All trash, junk, and other waste material will be contained in trash cages or trash bins to prevent scattering. When a job is completed, all contents will be removed and disposed of in an approved landfill.
- c. The supplier, including broken sacks, will pick up salts remaining after completion of well.
- d. If necessary, a porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
- e. Remaining drilling fluids will be hauled off by transports to a state approved disposal site. Water produced during completion will be put in storage tanks & then disposed of in a state approved disposal. Oil and condensate produced will be put in a storage tank and sold.

- f. Disposal of fluids to be transported by the following companies:
 - i. RGB TRUCKING
 - ii. LOBO TRUCKING
 - iii. I & W TRUCKING
 - iv. CRANE HOT OIL & TRANSPORT
 - v. JWS
 - vi. QUALITY TRUCKING

8. ANCILLARY FACILITIES:

a. No airstrip, campsite, or other facilities will be built.

9. WELL SITE LAYOUT:

- a. Exhibit 4 shows the proposed well site layout with dimensions of the pad layout.
- b. Exhibit 5 shows proposed location of reserve and sump pits and living facilities.
- c. Mud pits in the active circulating system will be steel pits and the catch tanks will be steel tanks set in shallow sumps behind the steel circulating tanks & the sumps will be lined with polyethylene lining in case of spillage. After the well has been drilled & the drilling equipment has been removed the polyethylene liner will be removed & reused or disposed of properly.
- d. The area where the catch tanks are placed will be reclaimed and seeded per BLM requirements.

10. PLANS FOR SURFACE RECLAMATION:

- a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The catch tank area will be broken out and leveled after drying to a condition where these are feasible. The original topsoil will again be returned to the pad and contoured, as close as possible, to the original topography.
- b. The polyethylene lining will be hauled away in order to return the location and road to their pristine nature. All pits will be filled and the location leveled, weather permitting, within 120 days after abandonment.
- c. The location and road will be rehabilitated as recommended by the BLM.

d. If the well is deemed commercially productive, the catch tank area will be restored as described in 10(a) within 120 days subsequent to the completion date. Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.

11. SURFACE OWNERSHIP

The surface is owned by the Bureau of Land Management (BLM). The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas. The proposed road routes and surface location will be restored as directed by the BLM.

12. OTHER INFORMATION:

- a. The area surrounding the well is grassland. The topsoil is sandy in nature. The vegetation is moderately sparse with native prairie grass, cactus and shinnery oak. No wildlife was observed but it is likely that deer, rabbits, coyotes, birds and rodents transverse the area.
- b. There are not dwellings within 2 miles of location.
- c. There is no permanent or live water within 1 miles of the location.
- d. EOG will participate in the Permian Basin Memorandum of Agreement (MOA) signed by SHPO and the ACHP to use as an option for archaeological clearance.

13. BOND COVERAGE:

a. Bond Coverage is Nationwide; Bond No. NM 2308

COMPANY REPRESENTATIVES:

Representatives responsible for ensuring compliance of the surface use plan are listed below:

Permitting & Land

Mr. Donny G. Glanton Senior Lease Operations ROW Representative EOG Resources, Inc. P.O. Box 2267 Midland, TX 79702 (432) 686-3642 Office (432) 770-0602 Cell

Drilling

Operations

Mr. Jason LaGrega	Mr. Howard Kemp
Division Drilling Engineer	Production Manager
EOG Resources, Inc.	EOG Resources, Inc
P.O. Box 2267	P.O. Box 2267
Midland, TX 79702	Midland, TX 79702
(432) 686-3633 Office	(432) 686-3704 Office
(432) 894-1217 Cell	(432) 634-1001 Cell

OPERATOR CERTIFICATION

I certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal Laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true, and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this <u>5th</u> day of <u>June</u> 2008.

Name: Donny G. Glanton

Position: Sr. Lease Operations ROW Representative

Address: P.O. Box 2267 Midland, TX 79705

Telephone: <u>432-686-3642</u>

Email: donny glanton@eogresources.com

Signed: Ju J. ///

PECOS DISTRICT CONDITIONS OF APPROVAL

Г	OPERATOR'S NAME:	EOG Resources, Inc.		
	LEASE NO.:	NM01159		
	WELL NAME & NO.:	Sand Tank 10 Fed. No. 2H		
	SURFACE HOLE FOOTAGE:	1785' FNL & 365' FWL		
	BOTTOM HOLE FOOTAGE	1750' FNL & 330' FEL	1	
	LOCATION:	Section 10, T. 18 S., R 30 E., NMPM	. ~	
		Eddy County, New Mexico		

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

General Provisions
Permit Expiration
Archaeology, Paleontology, and Historical Sites
Noxious Weeds
Special Requirements
Lesser Prairie Chicken
OHV Area
⊠ Construction
Notification
Topsoil
Closed Loop System
Federal Mineral Material Pits
Well Pads
Roads
🔀 Road Section Diagram
☑ Drilling
Production (Post Drilling)
Well Structures & Facilities
Pipelines
Electric Lines
☑ Interim Reclamation
Final Abandanment/Declaration

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Mitigation Measures: The mitigation measures include the Pecos District Conditions of Approval, the standard stipulations for the Lesser Prairie Chicken, the standard stipulation for permanent resource roads. The Sand Tank 10 Federal # 2H well location will have the standard stipulations for the Hackberry Lake OHV area being that it is located in the northwest corner of the SMA area.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Hack Berry Lake – OHV Area Surface Mitigation

The following mitigation will apply to minimize impacts during all phases of pipeline construction.

- 1. EOG Resources, INC. will post signs at trail and pipeline intersect locations to warn OHV users in the area of pipeline construction.
- 2. At no time will ditches remain open unless temporary barricade fence is installed to protect OHV users in the area.
- 3. All pipelines associated with this project will be buried at minimum stipulations specifications when crossing or paralleling trails.
- 4. Upon completion of pipeline construction, the company will replace the affected trail portions to the quality they were before the project's start.

Sand Tank 10 Federal # 2H: Closed Loop System V-Door Southwest

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (505) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. Closed Loop System

Sand Tank 10 Federal # 2H: Closed Loop System V-Door Southwest

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (505) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

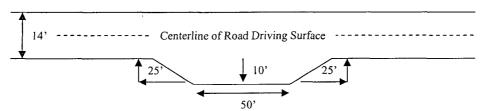
Ditching

Ditching shall be required on both sides of the road.

Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

Standard Turnout - Plan View

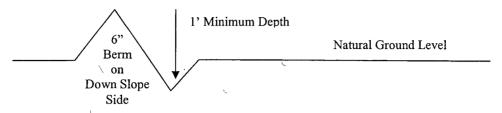


Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope:
$$\frac{400'}{4\%} + 100' = 200'$$
 lead-off ditch interval

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

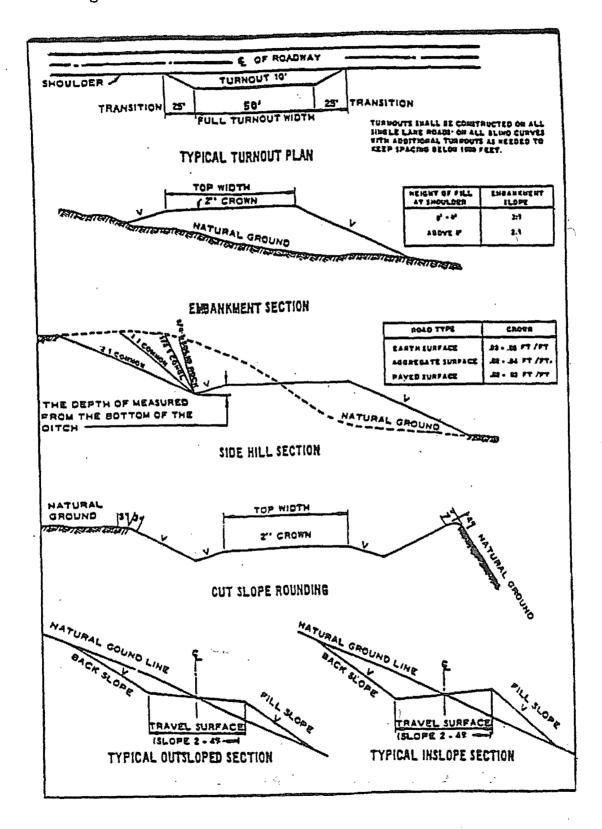
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer:

Figure 1 - Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests
 - Eddy County
 Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822
- 1. Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. It has been reported in Sections 1, 3, 4, and 11. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.
- 2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
- 3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Secretary's Potash Possible H2O flows in the Salado & Grayburg

- 1. The 11-3/4 inch surface casing shall be set at approximately 390 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. Fresh water gel shall be used in drilling to setting depth.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement).
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
- 2. The minimum required fill of cement behind the <u>8-5/8</u> inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a-d above.

 Intermediate casing shall be set just above the top of the San Andres dolomite at approximately 3300 feet making sure the casing is set deep enough into the Artesia Group as the top of the San Andres may be as deep as 3450 feet.

Centralizers required on horizontal leg, must be type for horizontal service and minimum of one every other joint.

- 3. The minimum required fill of cement behind the $\underline{5-1/2}$ inch production casing is:
 - Cement should tie-back at least 500 feet into previous casing string.

 Operator shall provide method of verification.
- 4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
- 2. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. The tests shall be done by an independent service company.
 - b. The results of the test shall be reported to the appropriate BLM office.
 - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
 - d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

LB 7/10/08

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color Shale Green, Munsell Soil Color Chart # 5Y 4/2

- B. PIPELINES
- C. ELECTRIC LINES

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

The operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

BLM Serial #: Company Reference: Well Name and Number:

Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be <u>no</u> primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species		<u>lb/acre</u>	
Pla	ins Bristleg	rass	5lbs/A
Sar	nd Bluestem	1	5lbs/A
Litt	le Bluesten	1	3lbs/A
Big	Bluestem		6lbs/A
Pla	ins Coreops	sis	2lbs/A
San	d Dropseed	l ·	1lbs/A

^{**}Four-winged Saltbush 5lbs/A

Pounds of seed x percent purity x percent germination = pounds pure live seed (Insert Seed Mixture Here)

^{*} This can be used around well pads and other areas where caliche cannot be removed.

^{*}Pounds of pure live seed:

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.