6. If Indian, Allottee or Tribe Name

UNITED STATES DEPARTMENT OF THE INTERIOR Hobbs, NM 88240 BUREAU OF LAND MANAGEMENT

5. Lease Serial No. NM-02127B

APPLICATION	FOR	DERMIT	TO DRIL	LO	PEFNTER	

ÖlüM-	Andre Mary	<u> </u>	er geraal versal	was a second frame		
la. Type of Work: DRILL, REENTER				7. If Unit or CA Agre	ement, Na	ame and No.
Ib. Type of Well: Oil Well Gas Well Other	☐ Sing!	le Zone 🔲 Multip	ole Zone	8. Lease Name and We Lea Feeeral U		<i>34342</i> Well #21
2. Name of Operator			,	9. API Well No.		
Samson Resources 20165				30.025-		
3a. Address	3b. Phone No. (i	include area code)		10. Field and Pool, or		
Samson Plaza-Two W. 2nd St. Tulsa, OK 74103	(918) 591-18	22		LeaiPenn (Bas)		040
4. Location of Well (Report location clearly and in accordance with a	ny State requiren	nents. *)		11. Sec., T., R., M., or	Blk. and	Survey or Area
At surface 660' FNL & 660' FWL Com	SN dat	22 91271	25			
At proposed prod. zone same	> ''			Sec. 12-T20S-R341	Ξ	
14. Distance in miles and direction from nearest town or post office*				12. County or Parish-		13. State
50 miles northeast of Carlsbad, NM				Lea		NM
15. Distance from proposed* location to nearest	16. No. of Acre	es in lease	17. Spacing	Unit dedicated to this v	vell	
property or lease line, ft. (Also to nearest drig, unit line, if any)	480)	160	242526272820	3/	~
18. Distance from proposed location*	19. Proposed I	Depth	20. BLM/9	fM Bond No. on file	18 / E	
to nearest well, drilling, completed, applied for, on this lease, N. 3,6301	13,5	5001	NM-20		ا ا .	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) .3,670 GL		ate date work will st /15/05	art* O	23. Estimated duration	n 234	
	24. Attachi			AN CONTROLLED	WATE	R BASIN
The following, completed in accordance with the requirements of Onshor	e Oil and Gas Or	der No.1, shall be att	ached to this	(Gym:	8/	
•				unless creered by an	97 - 9. 4 0 1	
1. Well plat certified by a registered surveyor.		4. Hond to cover the litem 20 above).	e operations	uniess covered by an	existing t	song on the (see
2. A Drilling Plan.	l anda tha	5. Operator certific	ation.			
3. A Surface Use Plan (if the location is on National Forest System SUPO shall be filed with the appropriate Forest Service Office).	rands, the	6. Such other site s authorized office		ormation and/or plans a	is may be	required by the
25. Signature	Name (I	rinted/Typed)			Date	
Many of A	:	ge R. Smith			7	/1/05
Title Title	; 0801	go . t. Ommu			'	· ···- · · · · · · · · · · · · · · · ·
Agent for Samson Resources						
Approved by (Signature)	Name (Printed/Typed)		~ ~	Date OCT	1 0 1005
/s/ Joe G. Lara		24 7	/s/ Joe	G. Lara	: UCI	1 8 2005
/s/ Joe VI. Lata				OFFI	OF	

Till ACTING FIELD MANAGER

Office CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. APPROVAL FOR 1 YEAR Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*(Instructions on reverse)

Lease Responsibility Statement: Samson Resources Co. accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof.

George R. Smith, agent

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS **ATTACHED**

Form 3160-5

UNITED STATES

FORM APPROVED

,	DEPARTMENT OF THE INTERIOR		OMB No. 1004-0135 Expires November 30, 2000
	BUREAU OF LAND MANAGEMENT		Serial No.
SUNDR	RY NOTICES AND REPORTS ON WE	LLS NM-02	
abandoned w	his form for proposals to drill or to re ell. Use Form 3160-3 (APD) for such pr	oposals.	ian, Allottee or Tribe Name
SUBMIT IN TR	RIPLICATE - Other instructions on r	everse side 7. If Uni	it or CA/Agreement, Name and/or No.
1. Type of Well ☐ Oil Well ☐ Gas Well ☐	Other	8 Well	Name and No.
2. Name of Operator	_ one		deral Unit, Well #21
Samson Resources Co.		9. API 1	Well No.
3a. Address	3b. Phone No		0.025.37525
Samson Plaza Two W. 2nd St.		022	d and Pool, or Exploratory Area
4. Location of Well (Footage, Sec.,	, T. R., M., or Survey Description)		enn Morrow nty or Parish, State
660' FNL & 660' FWL, Sec. 12-	T20S-R34E (current location)	!	
		· · · · · · · · · · · · · · · · · · ·	ew Mexico
	PPROPRIATE BOX(ES) TO INDICATE		OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	Acidize Deepen	Production (Start/Resume)	Water Shut-Off
✓ Notice of Intent	☐ Alter Casing ☐ Fracture Tr		Well Integrity
Subsequent Report	Casing Repair New Const		Other move location
Final Abandonment Notice	☐ Change Plans ☐ Plug and A☐ Convert to Injection ☐ Plug Back	bandon	
	ed Operation (clearly state all pertinent details, incl		de la constitución de la constit
samson Resources plans to move 12-T20S-R34E. This move was surface of the well pad has been	volved operations. If the operation results in a multinal Abandonment Notices shall be filed only after y for final inspection.) ve the above captioned well from the original is requested by Don Peterson for BLM in order a archaeologically cleared by Archaeological Stached survey plat. The pits will remain to the	all requirements, including reclamation, have location of 660' FNL & 660' FWL to 810 to move farther away from a Wildlife Warvey Consultants and their report was s	ove been completed, and the operator has O' FNL & 810' FWL Sec. Vatering Station. This additional submitted to the appropriate agencies
	•		
14. I hereby certify that the forego	ing is true and correct		
Name (PrintedlTyped)		Title Agent for Samson Resources	
George R. Smith	- 1	Agent for Samson Resources	
Signature Dear	ik. Smitty	Date September 27, 2005	
Alteria	THIS SPACE FOR FEDERA	AL OR STATE OFFICE USE	ACTING
Approved by (Signature)	/s/ Joe G. Lara	Name (Printed/Typed) /s/ Joe G. Lat	······································
Conditions of approval, if any, ar certify that the applicant holds le which would entitle the applicant to	re attached. Approval of this notice does not warn egal or equitable title to those rights in the subject o conduct operations thereon.	rant or CARLSBAD FIELD	OFFICE Date OCT 18 2005

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

State of New Mexico

DISTRICT I 1625 N. PRENCH DR., BOBBS, NM 88240

Energy, Minerals and Natural Resources Department

DISTRICT II 1801 W. GRAND AVENUR, ARTESIA, NM 68210

OIL CONSERVATION DIVISION 1220 SOUTH ST. FRANCIS DR.

Form C-102 Revised JUNE 10, 2003 Submit to Appropriate District Office State Lease — 4 Copies Fee Lease — 3 Copies

DISTRICT III

Santa Fe, New Mexico 87505 1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV 1220 S. ST. FRANCIS DR., SANTA PE, NW 87505	WELL LOCATION AND	ACREAGE DEDICATION PLAT	□ AMENDED REPORT
API Number	Pool Code	Pool Nam	e a \
30.025.37525	80040	Lea Penn ()	Jas)
Property Code	Prop	erty Name	Well Number
34342	LEA FED	ERAL UNIT	21
OGRID No.	Opera	itor Name	Elevation
20165	SAMSON	RESOURCES	3671'
	0 4		

Surface Location

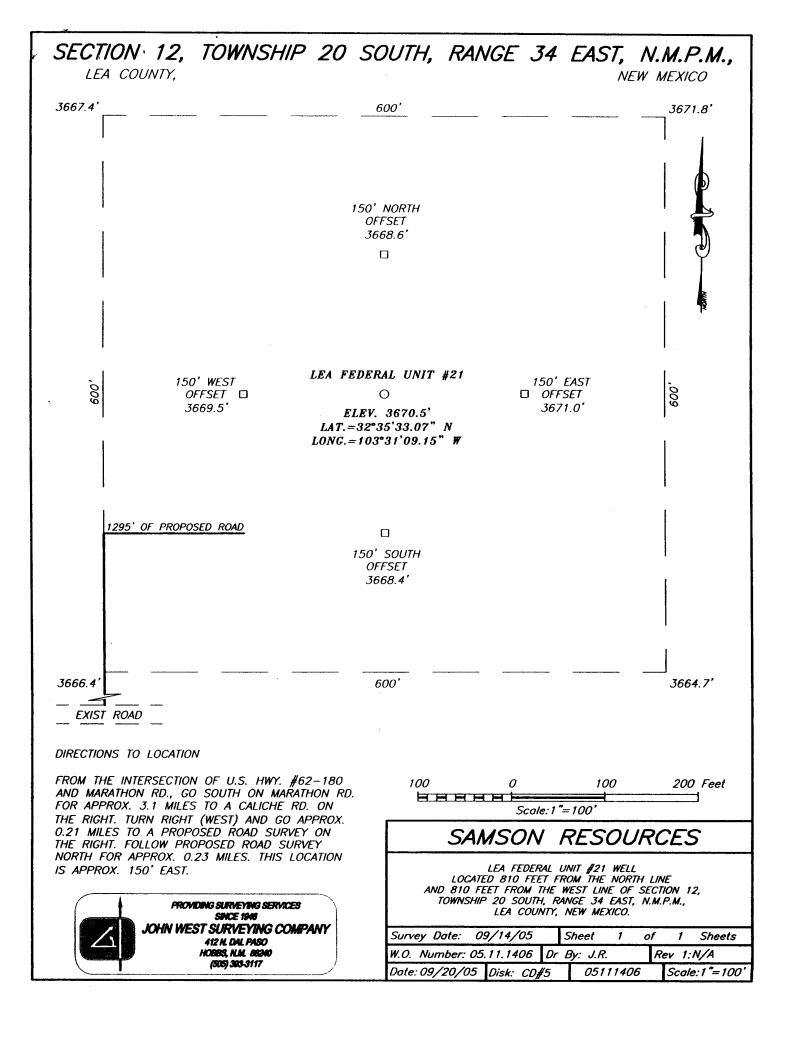
D 12 20-S 34-E 810 NORTH 810	WEST	LEA	

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres	Joint o	r Infill Co	nsolidation (Code Or	der No.				
160									

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED

OR A NON-STANDARD UNIT HAS BEEN APPROV	VED BY THE DIVISION
3667.4' \(\overline{\pi} \) 3671.8' \(\overline{\pi} \) \(\	OPERATOR CERTIFICATION I hereby certify the the information contained herein is true and complete to the best of my knowledge and betief. Signature George R. Smith Printed Name
NM-02127B ***********************************	Agent Title 9/27/05 Date SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my beltef.
LAT.=32°35'33.07" N LONG.=103°31'09.15" W	SEPTEMBER 14, 2005 Date Surveyed JR Signatura & Seal bis Professional Surveyor 1 95.11.1406 Certainate No. CARY Effect 12841



State of New Mexico

DISTRICT I 1625 N. FRENCH DR., EGBBS, NM 86240

Snergy, Minerals and Natural Resources Department

DISTRICT II

1301 V. GRAND AVENUR, ARTESIA, NM 88210

DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410

Property Code

OGRID No.

20165

OIL CONSERVATION DIVISION 1220 SOUTH ST. FRANCIS DR. Santa Fe, New Mexico 87505

Form C-102 Revised JUNE 10, 2003 Submit to Appropriate District Office

State Lease - 4 Copies Fee Lease - 3 Copies

DISTRICT IV WELL LOCATION AND ACREAGE DEDICATION PLAT 1220 S. ST. PRANCES DR., SANTA PE, NM 87505 Pool Code API Number Pool Name 80040 Lea Penn

□ | AMENDED REPORT Well Number 21 Elevation

3670

SAMSON RESOURCES Surface Location

Property Name

LEA FEDERAL UNIT

Operator Name

UL or 1	ot No.	Section	Township	Range	Lot\ ldn	Feet from the	North/South line	Feet	from the	East/West line	County
[)	12	20-S	34-E		660	NORTH		660	WEST	LEA

Bottom Hole Location If Different From Surface

UL	or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Peet from the	East/West line	County
De	edicated Acres	Joint o	r Infill	Consolidation (Code Ore	er No.				
	160(320)									

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED

	PROVED BY THE DIVISION
3668.1'	OPERATOR CERTIFICATION I hereby certify the the information contained herein is true and complete to the best of my knowledge and bettef. Signature George R. Smith Printed Name Agent Title July 1, 2005 Date SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief. MAY 24, 2005 Date Surveys Market Surveyor NET TO Signature of Seal Surveyor ME

APPLICATION FOR DRILLING

SAMSON RESOURCES

Lea Federal Unit, Well No. 21 660' FNL & 660' FWL, Sec. 12-T20S-R34E

Lea County, New Mexico Lease No.: NM-02127B (Development Well)

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Samson Resources submits the following items of pertinent information in accordance with BLM requirements:

- 1. The geologic surface formation is recent Permian with quaternary alluvium and other surficial deposits.
- 2. The estimated tops of geologic markers are as follows:

Rustler	1,670'	Bone Spring	8,195'
Top of Salt	1,710'	2 nd Bone Spring	10,040'
Base of salt	3,160'	3 rd Bone Spring	10,740'
Yates	3,600'	Wolfcamp	10,995'
Capitan Reef	3,860'	Strawn	12,050
Queen	4,860'	Atoka.	12,295'
Delaware	5,600'	Morrow	12,830'
		Barnett Shale	13,210'
		T.D.	13,310'

3. The estimated depths at which water, oil or gas formations are anticipated to be encountered:

Water: Surface water between 100' - 300'.

Oil: Possible in the Delaware 5600'- 6000'.

Gas: Possible in the Atoka below 12,295' and Morrow 12,830'.

4. Proposed Casing Program:

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	54.5#	J-55	BT&C	0" - 1,695'	Circ. 1660 sx. "C" to surface
12 1/4"	9 5/8"	40.0#	N-80	BT&C	0' - 5,600'	Circ. 1430 sx "C" & "H"
8 3/4"	5 1/2"	20.0#	P110	LT&C	0' - 13,310'	1300 sx Zoneseal & 425 sx Super H TOC
						5,500'.

5. Minimum Specifications for Pressure Control Equipment:

A NU 13 5/8" 10M Double Gate BOP over single w/13 5/8" 5M Hydril annular preventer will be installed on the 13 3/8" before drilling 12 1/4" and 8 3/4" holes and operated as a 5000 psi system. Will perform a 3M test on the casing and BOP before drilling 12.1/4" hole and a 5M test before drilling the 8 3/4" hole.

6.	MUD PROGRAM:		MUD WEIGHT	VIS.	W/L CONTROL		
	0' - 1,695':	Fresh water mud:	8.4 - 9.2 ppg	28 - 29	No W/L control		
	1,695' - 5,600':	Brine mud:	10.0 - 10.4 ppg	. 26 - 29	No W/L control		
		Fresh water if lost circulation encountered.					
	5,600' - 12,100':	Cut brine:	9.8 - 10.0 ppg	26 – 29	No W/L control		
	12,100' - 13,310':	Cut brine/XCD polymer:	10.5 - 11.5 ppg	29 - 42	W/L control $< 10 cc +/-$		

7. Auxiliary Equipment: Blowout Preventer, flow sensors and stabbing valve.

SAMSON RESOURCES

Lea Federal Unit, Well No. 21 Page 2

8. Testing, Logging, and Coring Program:

Drill Stem Tests: None unless conditions warrant. Logging: 5,600' to T.D.: CNL-DNL w/GR-Cal.

5,600' to Surface: CNL-GR

Coring: Rotary sidewall if dictated by logs.

9. No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered the proposed mud program will be modified to increase the mud weight. Estimated evacuated BHP = 5856 psi and surface pressure of 2928 psi with a temperature of 193°.

10. H₂S: None expected. None in existing wells in close vicinity, but the Mud Log Unit will be cautioned to use a gas trap to detect H₂S and if any is detected the mud weight will be increased along with H₂S inhibitors sufficient to control the gas.

11. Anticipated starting date: August 15, 2005.

Anticipated completion of drilling operations: Approximately 6 weeks.

MULTI POINT SURFACE USE AND OPERATIONS PLAN

SAMSON RESOURCES

Lea Federal Unit, Well No. 21 660' FNL & 660' FWL, Sec. 12-R20S-R34E Lea County, New Mexico Lease No.: NM-02127B (Development Well)

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities and operations plan, to be followed in rehabilitating the surface environmental effects associated with the operations.

1. EXISTING ROADS:

- A. Exhibit "A" is a portion of a USGS/BLM Topo map showing the location of the proposed well as staked. The well site location is approximately 50 road miles northeast of Carlsbad, New Mexico. Traveling east from Carlsbad there will be approximately 49.3 miles of paved highway and 1 mile of gravel ranch/oilfield road.
- B. Directions: Travel east from Carlsbad, NM on U.S. Highway 62/180 for approximately 46 miles to Marathon Road. Turn south on Marathon Road for 3.3 miles. Turn west at a Read & Stevens and a Samson sign, crossing a cattle guard, and continue west for .2 mile. The proposed access road will start on the north (right) side of the road and will run north for 1294 feet to the southwest corner of the proposed well site.

2. PLANNED ACCESS ROAD:

- A. Length and Width: The proposed access road is approximately 1294 feet in length and 12 foot in width. The access road is color coded in red on Exhibit "A".
- B. Construction: The proposed access road will be constructed by grading and topping with compacted caliche and will be properly drained.
- C. Turnouts: There will be one turnout increasing the width to 20 feet for passing.
- D. Culverts: None required.
- E. Cuts and Fills: Some minor cuts on small dunes as approaching location.
- F. Gates, Cattle guards: None required.
- G. Off Lease R/W: None required.

3. LOCATION OF EXISTING WELLS:

A. Existing wells within a two-mile radius are shown on Exhibit "C".

SAMSON RESOURCES Lea Federal Unit, Well No. 21 Page 2

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. Samson Resources has production facilities in the unit at this time.
- B. If the well proves to be commercial, the necessary production facilities, gas production-process equipment, and tank battery, if required, will be installed on the drilling pad. A 3" steel 1100 psi flow line will be buried parallel to the access road back to the to a new gas line being installed by Samson.

5. LOCATION AND TYPE OF WATER SUPPLY:

A. It is planned to drill the proposed well with fresh water that will be obtained from private or commercial sources and will be transported over the existing and proposed access roads.

6. SOURCE OF CONSTRUCTION MATERIALS:

A. Caliche for the access road and well site pad will be obtained on location, if available, or from an approved private pit located in the NE4SE4 of Sec. 35-T20S-R34E. No surface materials will be disturbed except those necessary for actual grading and construction of the drill site and access road.

7. METHODS OF HANDLING WASTE DISPOSAL:

- A. Drill cuttings will be disposed of in the reserve pits.
- B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
- C. All pits will be fenced with normal fencing materials to prevent livestock and wildlife from entering the area.
- D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or a separate disposal application will be submitted to the BLM for approval.
- E. Oil produced during operations will be stored in tanks until sold.
- F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- G. Trash, waste paper, garbage and junk will be contained in trash bins to prevent scattering and will be removed for deposit in an approved sanitary landfill within 30 days after finishing drilling and/or completion operations.

8. ANCILLARY FACILITIES:

A. None required.

SAMSON RESOURCES Lea Federal Unit, Well No. 21 Page 3

9. WELL SITE LAYOUT:

- A. Exhibit "D" shows the relative location and dimensions of the well pad, reserve pits, and major rig components. The pad and pit area has been staked and flagged 500' X 500'.
- B. Mat Size: 400' X 250', plus 175' X 175' mud pits. The pits will be on the north.
- B. Cut & Fill: There will be a 1.5-foot cut on the south with fill to the north.
- D. The surface will be topped with compacted caliche and the mud pits will be plastic lined.

10. PLANS FOR RESTORATION OF THE SURFACE:

- A. After completion of drilling and/or completion operations, all equipment and other material not required for operations will be removed. Pits will be filled and the location cleaned of all trash and junk to leave the well site in an aesthetically pleasing a condition as possible
- B. Any unguarded pits containing fluids will be fenced until they are filled.
- C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. All pits will be filled and leveled as soon as they are dry enough to work after abandonment.

11. OTHER INFORMATION:

- A. Topography: The proposed well site and access road is located in an area of 3 4 foot sand dunes and deflation basins, which is part of the Querecho Plains. The location has an overall southwest slope of .4% from an elevation of 3670'.
- B. Soil: The topsoil on the well site and access road is light brown colored fine sand. The soil is of the Kermit soils and Dune land series.
- C. Flora and Fauna: The vegetation at the well site is a sparse to fair grass cover of three-awn, dropseed, bluestem, muhly and other miscellaneous native grasses along with plants of mesquite, yucca, sage, shinnery oak brush, broomweed, cacti, and miscellaneous weeds and wildflowers. The wildlife consists of rabbits, coyotes, rattlesnakes, lizards, dove, quail and other wildlife typical of the semi-arid desert land.
- D. Ponds and Streams: None.
- E. Residences and Other Structures: None, but existing oil field facilities.
- F. Land Use: Cattle grazing.
- G. Surface Ownership: The proposed well site and access road are on Federal surface and minerals.
- H. There is no evidence of archaeological, historical or cultural sites in the staked area. Archaeological Survey Consultants, P.O. Box 2285, Roswell, NM 88202 is conducting an archaeological survey and their report will be submitted to the appropriate government agencies.

SAMSON RESOURCES Lea Federal Unit, Well No. 21 Page 4

12. OPERATOR'S REPRESENTATIVE:

A. The field representative responsible for assuring compliance with the approved surface use and operations plan is as follows:

Todd Wiley Samson Resources Samson Plaza-Two West Second St. Tulsa, OK 74103-3103 Office Phone: (918) 591-1531

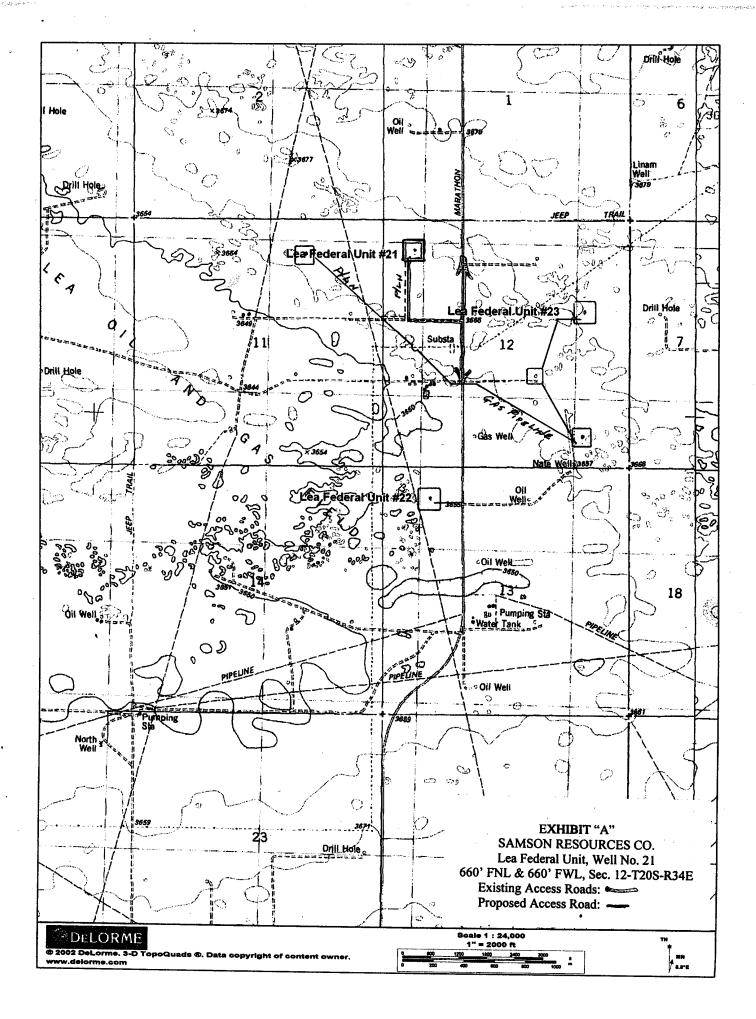
13. CERTIFICATION:

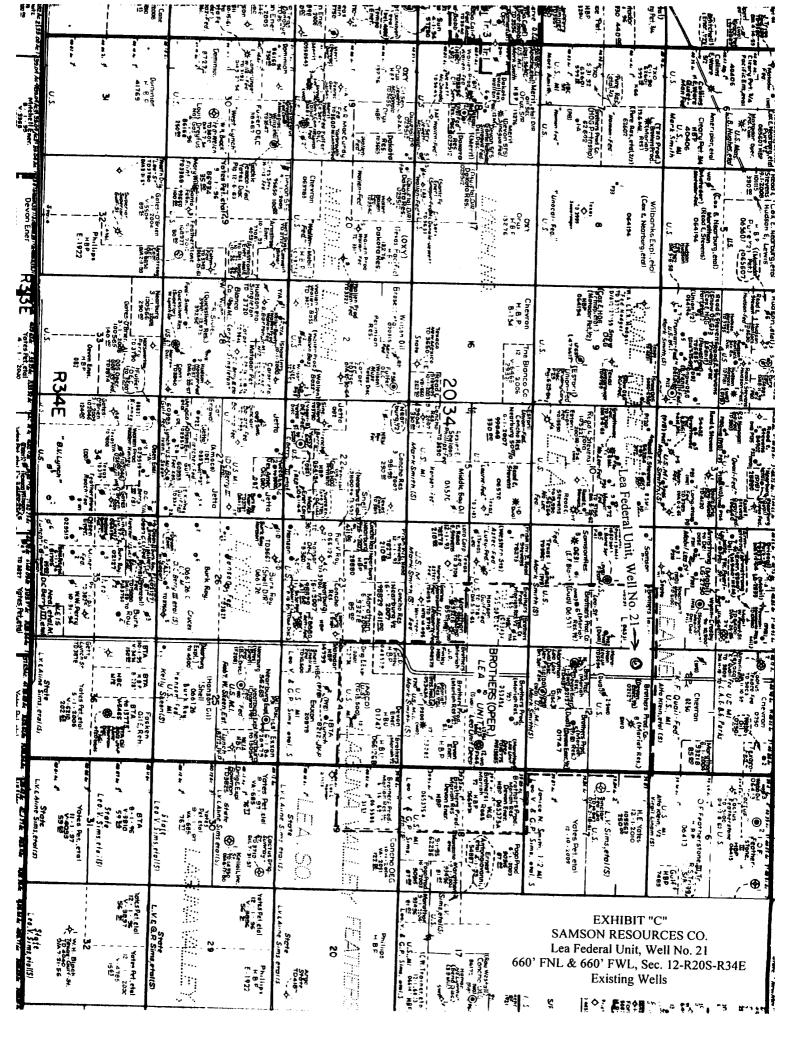
I hereby certify that I have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in the plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Samson Resources and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

July 1, 2005

George R. Smith

Agent for: Samson Resources





Patterson-UTI Drilling Company

Rig # 480

20,000'

DRAWWORKS

Gardner& Denver 1100 E (1500HP) 1 3/8" drill line (2) GE 752 elec. motors

ENGINES

3 - Caterpillars3508, 900HP w/720KW generators

DERRICK

Ideal 143", 1,000,000# hook load w/12 lines

SUBSTRUCTURE

24' height 21' vertical clear height under rotary beams

MUD PUMPS

(2) - Gardner-Denver PZ-10, 1350HP powered by (2) GE 752, 1000HP D.C. Motor

DRILL STRING

5900' 1950 E 5" 3400' 1950 5" X95 1550' 2560 5" X95 1900' 1950 S 5"

BLOWOUT PREVENTERS

(1) Shaffer 13 5/8" 10,000 psi SL double ram w/H2S trim w/ (4) 4" outlets; (1) Shaffer 13 5/8" 10,000 psi single ram w/H2S trim w/(2) 4" outlets (1) 13 5/8" 5000 psi Shaffer annular

MUD SYSTEM

3 pits, 1600 bbl capacity w/high and low pressure mixing capability, Harrisburg 10 cone desilter, Harrisburg 2 cone desander, 2 FSI linear motion shale shakers.

COMMUNICATIONS

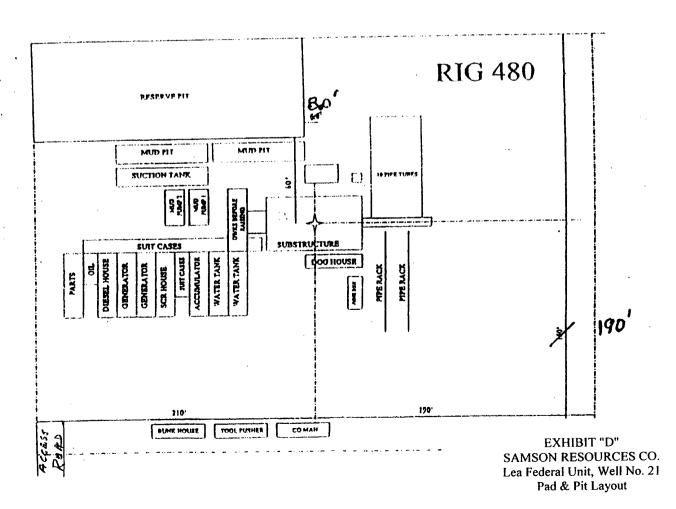
24 hour direct cellular telephone

OTHER EQUIPMENT

Blocks. Gardner-Denver 550 ton 6 sheaves 1 3/8" line

Hook. Joy 500 ton hook
Swivel. Garner-Denver SW400, 400 tons
Rolary Table. Gardner-Denver 27 1/2", 250 tons
@ 100 rpm 500 tons static
Electrical Power.

Fresh Water Storage. Housing. (2) 500 bbl



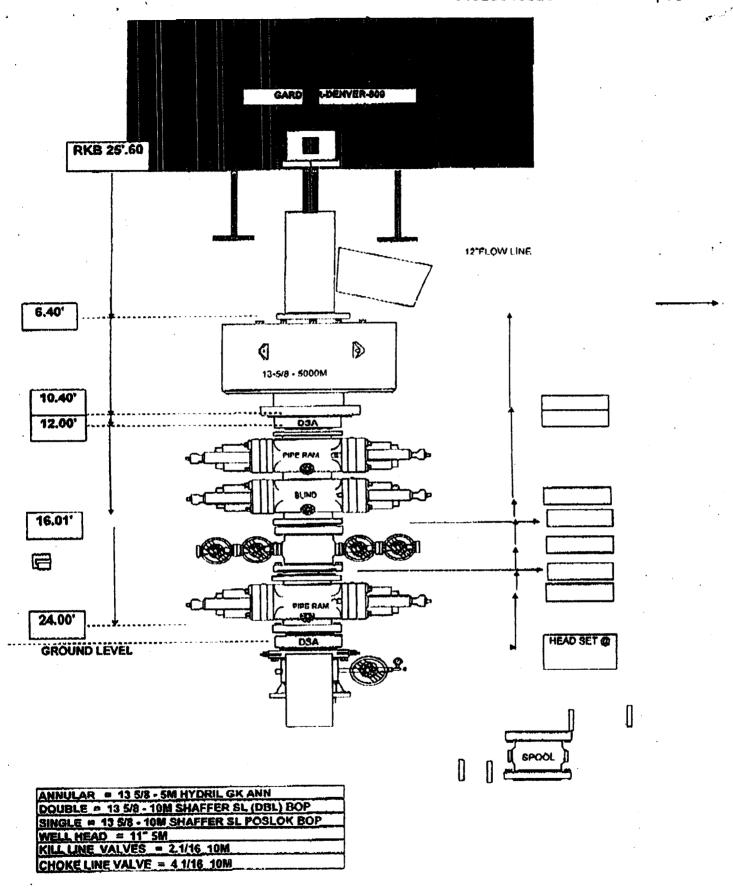


EXHIBIT "E"

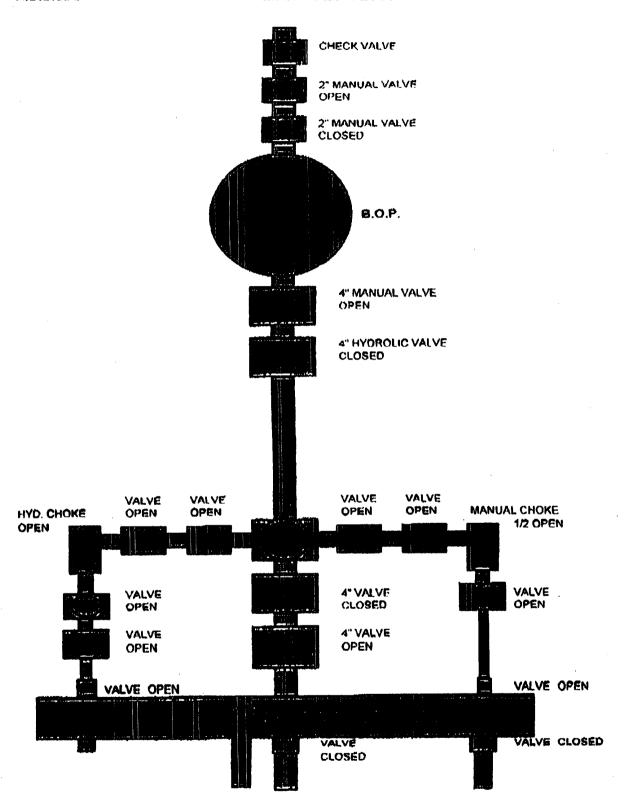
SAMSON RESOURCES CO.

Lea Federal Unit, Well No. 21

BOP Specifications

N.D.U.S.A.

MANIFOLD SETUP



SPECIAL DRILLING STIPULATIONS

THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

Operator's	s Name <u>Samson Resou</u>	irces We	il Nan	ne & No	. Lea Fed	ieral Unit	C D	2.4	_	
	810 FNL & _	<u>810 FW</u> 1						34	_E.	
Lease No.	. <u>NM-02127-B</u>		Cou	inty	Lea		State I	New Me	exico	
drill is con be familia EACH PE	ial stipulations check nonditioned upon compliant with the General Rec ERMITTEE HAS THE E 43 CRF 3165.3 AND	ance with such stip puirements, a copy RIGHT OF ADM	oulation of wh	ons in ad nich is av	dition to to tailable fr	the Gener om a Bur	ral Requ reau of 1	iiremen Land M	its. The pel lanagemen	rmittee should t office.
This perm shorter.	nit is valid for a period	of one year from t	he dat	e of app	roval or u	intil lease	expirat	tion or t	ermination	n whichever is
I. S	SPECIAL ENVIRONM	MENT REQUIRE	MENT	`S						
	er Prairie Chicken (stip Simon Swale (stips atta) Flood) Other	plain (stij	os attache	ed)			
II.	ON LEASE - SURFAC	CE REQUIREMEN	NTS P	RIOR T	O DRILL	ING				
	BLM will monitor confice (505) 393-3612, a							Office a	t (505) 234	4-5972 ()
(X)Roa	ds and the drill pad for	r this well must be	surfac	ced with	6	inches of	compa	cted cal	iche.	
available	opsoil and vegetation en for resurfacing of the d atelyinches in d on.	listurbed area after	r comp	oletion o	f the drill	ing opera	tion. T	opsoil o	on the subj	ect location is
() Other										
III.	WELL COMPLETION	N REQUIREMEN'	TS							
	mmunlitization Agreentive date of the agreen				ated to the	e well mu	ist be fil	led for a	approval w	ith the BLM.
will be re the origin	face Restoration: If the duced to a slope of 3:1 all contours of the surreducator (set at depth of	or less. All areas ounding terrain, ar	of the	pad not soil mus	t necessar t be re-dis	y for proc stributed a	duction and re-s	must be	e re-contou with a drill	ared to resemble equipped with
Side (eed Mixture 1 (Loamy Oats Grama (<i>Bouteloud</i> Dropseed (<i>Sporobolus</i>	a curtipendula) 5.0)	Sand I	X) B. So Dropseed Sand L Bristlegra	(<i>Sporobo</i> ovegrass	lus crpt (Erago	tandrus stis tric) 1.0 hodes) 1.0)
	eed Mixture 3 (Shallov pats Grama (<i>Boute curt</i>			-) D. See Alkali Ving Saltl	Sacaton (Sporob	ollud a	iroides)	1.0
() OTH	ER SEE ATTACHE	D SEED MIXTUI	RE							
	should be done either la spring to take advanta					15, before	e freeze	up, or e	early as po	ssible the
() Other										

RESERVE PIT CONSTRUCTION STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6 mil plastic.

Mineral material extracted during construction of the reserve pit may be used for development of the pad and access road as needed. Removal of any additional material on location must be purchased from BLM.

<u>Reclamation</u>: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support track equipment. The pit liner is NOT TO BE RUPTURED to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit area must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

- (1) Lined as specified above and
- (2) A borrow/caliche/gravel pit can be constructed immediately adjacent to the reserve pit and it capable of containing all reserve pit contents. The mineral material removed in the process can be used for pad and access road construction. However, a material sales contract must be purchased from the BLM prior to removal of the material.

Reclamation of the reserve pit consists of bulldozing all reserve pit contents and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be recontoured, all trash removed, and reseeded as specified in this permit.

CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to processed by BLM.

TRASH PIT STIPS

All trash, junk, and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

PRAIRIE CHICKENS

No surface use is allowed during the following time periods; unless otherwise specified, this stipulation does not apply to operation and maintenance of production facilities.

On the following lands: All of Section 12 T. 20 S., R. 34 E.

For the purpose of: Protecting Prairie Chickens:

Drilling for oil and gas, and 3-D geophysical exploration operations will not be allowed in Lesser Prairie Chicken Habitat during the period of March 15 through June 15, each year. 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 a.m. and 9:00 a.m. The 3:00 a.m. and 9:00 a.m. restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during the period. Additionally, no new drilling will be allowed within up to 200 meters of leks know 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 feet from the source of the noise.

Bureau of Land Management Carlsbad Field Office SENM-S-22 December 1997

CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Samson Resources
Well Name & No: Lea Federal Unit No.021

Location: Surface 10 660' FNL & 660' FWL, Sec. 12, T. 20 S. R. 34 E.

Lease: NMNM 0212 B

Lea County, New Mexico

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell, NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties; the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

- A. Spudding
- B. Cementing casing: 13 % inch; 9 % inch; 5 ½ inch.
- C. BOP Tests
- 2. A Hydrogen Sulfide (H2S) Drilling Plan is not required for this wellbore. The mud logging unit shall be equipped with a gas alarm system. The operator shall confirm that all rig personnel are trained as to H2S safety awareness including the warning signs of H2S presence which may be present from the Yates or Delaware formations found at 3600 ft or deeper.
- 3. 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.
- 4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.
- 5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

II. CASING:

- 1. The 13 % inch shall be set at 1695 Feet with cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.
- 2. The minimum required fill of cement behind the 9 % inch Intermediate casing is to circulate to surface.
- 3. The minimum required fill of cement behind the 5 ½ inch Production casing is to Tie Back to the 9 % inch casing by at least 200 ft.

III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 13 ½ inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

- 2. <u>Minimum working pressure</u> of the blowout preventer and related equipment (BOPE) shall be a <u>2 M</u> rated system. A minimum <u>5M rated BOPE</u> shall be in operations prior to drilling below the <u>9 % inch</u> casing shoe.
- 3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the test.
- -The test shall be done by an independent service company
- -The results of the test shall be reported to the appropriate BLM office.
- -Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures.
- -Use of drilling mud for testing is not permitted since it can mask small leaks.
- -Testing must be done in safe workman-like manner. Hard line connections shall be required.
- -Both low pressure and high pressure testing of BOPE is required.

IV. DRILLING FLUID

1. Brine water is planned as the main medium of drilling fluid below the 13 % casing shoe to a casing depth of 5600 ft. However, if lost circulation occurs in this 12 ½ inch hole section, the operator or driller is required to call the Hobbs BLM Office (505) 393-3612 to witness conversion to fresh water fluid going in the hole. The fresh water medium must be maintained throughout the 12 ½ inch hole to a setting depth of approximately 5600 feet.

BLM Serial Number: NM-02127-B

Company Reference: Samson Resources Well No. & Name: Lea Federal Unit #21

STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS CARLSBAD FIELD OFFICE

A copy of the grant and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder/grantee/permittee shall hereafter be identified as the holder in these stipulations. The Authorized Officer is the person who approves the Application for Permit to Drill (APD) and/or Right-of-Way (ROW).

GENERAL REQUIREMENTS

- A. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
- B. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
- C. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et. seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

- D. If, during any phase of the construction, operation, maintenance, or termination of the road, any oil or other pollutant should be discharged, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil of other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting there from, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.
- E. The holder shall minimize disturbance to existing fences and other improvements on public domain surface. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times.

The holder will make a documented good-faith effort to contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence.

F. The Holder shall ensure that the entire right-of-way, including the driving surface, ditching and drainage control structures, road verges and any construction sites or zones, will be kept free of the following plant species: Malta starthistle, African rue, Scotch thistle and salt cedar.

Holder agrees to comply with the following stipulations:

ROAD WIDTH AND GRADE

The road will have a driving surface of 14 feet (all roads shall have a minimum driving surface of 12 feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be 30 feet.

/__/ Those segments of road where grade is in excess of 10% for more than 300 feet shall be designed by a professional engineer.

2. CROWNING AND DITCHING

Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure 1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2% (i.e., 1" crown on a 12' wide road).

	— / Ditching will be rec attached map or as st	uired on both sides of the roadway as shown on the aked in the field.
//	Flat-blading is autho	rized on segment(s) delineated on the attached map.
3.	DRAINAGE	

Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

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

SPACING INTERVAL FOR TURNOUT DITCHES

Percent slope	Spacing interval		
0% - 4%	400' - 150'		
4% - 6%	250' - 125'		
6% - 8%	200' - 100'		
8% - 10%	150' - 75'		

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at

x_/ 400 foot intervals.
foot intervals.

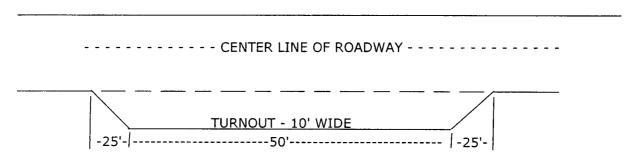
- B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).
- C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

Example: 4% slope: spacing interval = 400 + 100 = 200 feet

4

4. TURNOUTS

Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



STANDARD TURNOUT - PLAN VIEW

SURFACING

Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of six inches with caliche material. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

A sales contract for the removal of mineral materials (caliche, sand, gravel, fill dirt, etc.) from an authorized pit, site, or on location must be obtained from the BLM prior to using any such mineral material from public lands. Contact the BLM solid minerals staff for the various options to purchase mineral material.

6. CATTLEGUARDS

Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

MAINTENANCE

The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

8. PUBLIC ACCESS

Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

9. CULTURAL RESOURCES

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the authorized officer. The holder 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 will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.

10. SPECIAL STIPULATIONS: LPC STIPS.

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico **Energy Minerals and Natural Resources**

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

Form C-144 March 12, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Gra	<u>de Tank Registration or Closur</u>	<u>·e</u>			
	k covered by a "general plan"? Yes No r below-grade tank X Closure of a pit or below-grad				
Type of action. Registration of a pit of	r below-grade tank. A Closure of a pit of below-grad	c talk			
Operator: Samson Resources (Brad Hargrove)	perator: Samson Resources (Brad Hargrove) Telephone: (918) 591-1939 e-mail address:				
Address: Samson Plaza Two W. Second St. Tulsa, OK 74103					
Facility or well name: Lea Federal Unit, Well #21	U/L or Qtr/Qtr NW4NW4Sec 12_T_20S	_R34E			
County: Eddy Jell Latitude 32'35'34.55" NLo	ngitude 103'31'10.91"_W NAD: 1927 X 1983	☐ Surface Owner Federal X State Private ☐			
Indian □ 30 - 025 - 375	525				
Pit	Below-grade tank				
Type: Drilling X Production Disposal	Volume:bbl Type of fluid:				
Workover ☐ Emergency ☐	Construction material:				
Lined X Unlined	Double-walled, with leak detection? Yes If no	t, explain why not.			
Liner type: Synthetic X Thickness 12 mil Clay Volume 10,000_bbl+					
Doubt to ground units (units of distance Counts of City	Less than 50 feet	(20 points)			
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	50 feet or more, but less than 100 feet	(10 points)			
water elevation of ground water.)	100 feet or more	(0 points)			
Wellhead protection area: (Less than 200 feet from a private domestic	Yes	(20 points)			
water source, or less than 1000 feet from all other water sources.)	No	(0 points)			
	Less than 200 feet	(20 points)			
Distance to surface water: (horizontal distance to all wetlands, playas,	200 feet or more, but less than 1000 feet	(10 points)			
irrigation canals, ditches, and perennial and ephemeral watercourses.)	1000 feet or more	(O points)			
	Ranking Score (Total Points)	-0-			
If this is a pit closure: (1) attach a diagram of the facility showing the pit's	relationship to other equipment and tanks. (2) Indica	ite disposal location:			
onsite offsite from If offsite, name of facility	(3) Attach a general description of remedial acti	on taken including remediation start date and			
end date. (4) Groundwater encountered: No 🗌 Yes 🔲 If yes, show depth	below ground surfaceft. and attach sa	ample results. (5) Attach soil sample results and			
a diagram of sample locations and excavations.					
I hereby certify that the information above is true and complete to the best of been/will be constructed or closed according to NMOCD guideline (X, a g Date: July 1, 2005	my knowledge and belief. I further certify that the general permit [], or an (attached) alternative OC	above-described pit or below-grade tank has D-approved plan □.			
Printed Name/Title_George R. Smith, agentSignature_Bource & Smith,					
Your certification and NMOCD approval of this application/closure does not otherwise endanger public health or the environment. Nor does it relieve the regulations.	relieve the operator of liability should the contents of	the pit or tank contaminate ground water or			
Approval: Date: OCT 2 4 2005 PETROLEUM ENGINEER Printed Name/Title					
Printed Name/Title	Signature Signature				
	_ Orginature				