Form 3160-3 (July 1992)

## UNITED STATES DEPARTMENT OF THE INTERIOR

SUBMIT IN TRIPLICATE\*

(Other instructions on reverse side)

FORM APPROVED OMB NO. 1004-0136 Expires: February 28, 1995

DEEPEN DELTO WORK  THE OFFICE OF WORK  DEEPEN DEEPEN DELTO WORK  TO THE DEEPEN DETENDING OF THE DEEPEN		5. LEASE DESIGNATION AND AFRIAL NO. 5
DEPEN DEPEN DEPEN DEPEND DEPEND DATE OF THE SHOOT SHAREST TOWN ON POPE OF THE SHOOT SHARES TOWN ON POPE OF THE SHOOT SHAREST TOWN ON POPE OF THE SHARE	APPLICATION FOR PERMIT TO DRILL OR DEEPEN	6. IF INDIAN, ALLOTTER OR TRIBE
2. MANUEL OF OPERATIONS  A. COCCURRENCE OF MATTER AND DESCRIPTION FROM THE ACTIONS  A. COCCURRENCE OF WELL (Report Joint ton clearly and its accordance with any State regetfered to the Action of the	DRILL DEEPEN DEEPEN SINGLE ON MULTIPLE SINGLE	S SARMOR I BASS NAME WELL NO
10. LOCATION OF WELL (Report Insertion clerity and to revordance with any Strate reported for the Annual Control of the Contro	ichardson Operating Co. 1921 (505) 564-3100	9. API WELL NO.
4. DECAPOND OF WELL (Report location clearly and in accordance with any state regeffendate).  At surface  At proposed prod. sone  Same  14. DISTANCE IN MILES AND DISECTION FROM PREAEST TOWN OR POST OFFICE.  15. DISTANCE FOR PROPUSED.  16. DISTANCE FOR PROPUSED.  17. POOR PROPUSED.  18. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUSED.  10. DISTANCE FOR PROPUSED.  10. DISTANCE FOR PROPUSED.  10. DISTANCE FOR PROPUSED.  11. MO. OF ACCESS AND SOURCE.  12. SENT OLUMN, F.  13. SOURCE FOR PROPUSED.  14. DISTANCE IN MILES AND DISECTION FROM PREAEST TOWN OR POST OFFICE.  15. DISTANCE FOR PROPUSED.  16. DISTANCE FOR PROPUSED.  17. MO. OF ACCESS AND SOURCE.  18. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUSED.  10. DISTANCE FOR PROPUSED.  10. DISTANCE FOR PROPUSED.  11. MO. OF ACCESS AND SOURCE.  12. SENT OLUMN, F.  13. BOOK PROPUSED.  14. DO. OF ACCESS AND SOURCE.  15. DISTANCE FOR PROPUSED.  15. DISTANCE FOR PROPUSED.  16. DISTANCE FOR PROPUSED.  16. DISTANCE FOR PROPUSED.  17. MO. OF ACCESS AND SOURCE.  18. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUSED.  10. DISTANCE FOR PROPUSED.  10. DISTANCE FOR PROPUSED.  11. DISTANCE FOR PROPUSED.  12. DISTANCE FOR PROPUSED.  13. DISTANCE FOR PROPUSED.  13. DISTANCE FOR PROPUSED.  15. DISTANCE FOR PROPUSED.  16. DISTANCE FOR PROPUSED.  17. DISTANCE FOR PROPUSED.  18. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUSED.  19. DISTANCE FOR PROPUS		10
At proposed prod. sone  14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OF FORT OFFICE*  air mile SW of Farmington  15. DISTANCE PROPOSED TEROPERO*  LOCATION TO NEAREST SET.  (Table to nevered office until Hoe. If may)  746'  18. DISTANCE PROPOSED CANTON TO NEAREST SET.  (Table to nevered office until Hoe. If may)  746'  19. PROPOSED CASING AND CEMENTING PROORAM  10. DISTANCE PROPOSED LOCATION*  10. STANCE PROPOSED CASING AND CEMENTING PROGRAM  11. PROPOSED CASING AND CEMENTING PROGRAM  12. APPROX. DATE WORK WILL BEAST  5,370' ungraded  23.  PROPOSED CASING AND CEMENTING PROGRAM  13. DISTANCE PROPOSED CASING AND CEMENTING PROGRAM  24. APPROX. DATE WORK WILL BEAST  6-1/4"  K-55 4-1/2"  10.5 1,400'  26. CLIPATIONS (Show whether DF, RT, GR, etc.)  37. PROPOSED CASING AND CEMENTING PROGRAM  27. PROPOSED CASING AND CEMENTING PROGRAM  28. APPROX. DATE WORK WILL BEAST  6-1/4"  K-55 4-1/2"  10.5 1,400'  28. APPROX. DATE WORK WILL BEAST  6-1/4"  K-55 4-1/2"  10.5 1,400'  28. APPROX. DATE WORK WILL BEAST  6-1/4"  ACCINECATION OF AND WILL BEAST  9. BOLL BEAST  QUANTITY OF CRABAT  ROTATION OF ACERS AND COLOR AND WILL BEAST  9. BOLL BEAST  ROTATION OF ACERS AND COLOR AND WILL BEAST  19. BOLL BEAST  10. BOL	4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.")	West Kutz PC
air mile SW of Farmington    Displace from Proposed Propo		AND SURVEY OR AREA
air mile SW of Farmington    16. % - OF ACRES IN LEASE   17. NO. OF ACRES ARRESTED TO THIS WELL   18. DEFEATOR TO SEASE TO THIS WELL   19. TO THIS WELL   20. ROTAT OB CABLE FOR SET IN THIS WELL   19. TO THIS WELL   20. ROTAT OB CABLE FOR SET IN THIS WELL   19. TO THIS WELL   19.	14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE.	12. COUNTY OF PARISH 13. STATELIAM
TO SALEST	air mile SW of Farmington	Sali Juaii NM
5.370' ungraded  22. APPROX. DATE WOLL WILL WEARY  8-15-02  23.  PROPOSED CASING AND CEMENTING PROGRAM  8-3/4" K-55 7" 20 120' -36 cu. ft. & to surface  6-1/4" K-55 7" 20 120' -36 cu. ft. & to surface  6-1/4" K-55 4-1/2" 10.5 1,400' -280 cu. ft. & to surface  Vell name & number changed from 3-16-02 Notice of Staking ("RPC 19 #4")  o correspond with Richardson's new nomenclature ("F-RPC 19 #4").  Archaeology report LAC 2002-15a filed 7-18-02 by LaPlata.  Dail LING DEPARTIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED received with and appeal pursuant to 43 CFR 3165.3 procedura review pursuant to 43 CFR 3165.4 and appeal pursuant to 43 CFR 3165.4 Title & CC: BLM, OCD (via BLM), Richardson in the subject to the control of the proposal is to deepen directionally, give perfinent data on subsurface locators and measured and true vertical depths. Give blowout preventer program, if any.  Consultant (505) 466-8120 7-21-02  TITLE  APPROVAL DATE  ACTING  AUG 2 9 2002	LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any)  18. DISTANCE FROM PROPOSED LOCATION*  TO NEAREST WELL DRILLING COMPLETED  20. ROT	THIS WELL  SE4 157.76  TARY OR CABLE FOOLS
SIZE OF NOLE GRADE, SIZE OF NOLE GRADE, SIZE OF NOLE GRADE, SIZE OF NOLE ROOT SIZE OF		22. APPROX. DATE WORK WILL START*
SIZE OF ROLE  STATE OF ROLE  SASING AND CEMENT THE PROOF  8-3/4"  K-55 7"  20  120'  -36 cu. ft. & to surface  6-1/4"  K-55 4-1/2"  10.5  1,400'  SETTING DEPTH  QUANTITY OF CEMENT  280 cu. ft. & to surface  Well name & number changed from 3-16-02 Notice of Staking ("RPC 19 #4")  o correspond with Richardson's new nomenclature ("F-RPC 19 #4").  Archaeology report LAC 2002-15a filed 7-18-02 by LaPlata.  On site with Roger Herrera.  DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO CONSULANCE WITH ATTACHED  TO CONSULANCE WITH ATTACHED  TO CONSULANCE WITH ATTACHED  ADDRESS OF Profession and proposed new productive zone. If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill on the subject lease which would entitle the applicant to conduct operations the conditions of APPROVAL IP ANY.  APPRINT NO.  APPRINT NO.  APPRINT NO.  APPRINT LATE  APPRINT		8-15-02
8-3/4" K-55 7" 20 120' —36 cu. ft. & to surface 6-1/4" K-55 4-1/2" 10.5 1,400' —280 cu. ft. & to surface Well name & number changed from 3-16-02 Notice of Staking ("RPC 19 #4") o correspond with Richardson's new nomenclature ("F-RPC 19 #4"). Archaeology report LAC 2002-15a filed 7-18-02 by LaPlata.  On site with Roger Herrera.  DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO DOMP JANCE WITH ATTACHED "GENERAL REDUIREMENTS".  This action is subject to technical and proceeding and appeal pursuant to 43 CFR 3165.4 and appeal pursuant to 43 CFR 3165.4  CC: BLM, OCD (via BLM), Richardsor cerebro directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.  CONSUltant (505) 466-8120 7-21-02  THERMIT NO.  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 the CONDITIONS OF APPROVAL IP ANY:  ACTING  ACTI	23. PROPOSED CASING AND CEMENTING PROGRAM	
Well name & number changed from 3-16-02 Notice of Staking ("RPC 19 #4") or correspond with Richardson's new nomenclature ("F-RPC 19 #4").  Archaeology report LAC 2002-15a filed 7-18-02 by LaPlata.  DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COLUMNIA AUTHORIZED ARE SUBJECT TO COLUMNIA MUTH ATTACHED Toke With ATTAC	SIZE OF HOLE GRADE, SIZE OF CASING WEIGHT PER FOOT SETTING DEPTH	QUANTITY OF CEMENT
Vell name & number changed from 3-16-02 Notice of Staking ("RPC 19 #4") of correspond with Richardson's new nomenclature ("F-RPC 19 #4").  Archaeology report LAC 2002-15a filed 7-18-02 by LaPlata.  DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED TO A STAND TO A S		
correspond with Richardson's new nomenclature ("F-RPC 19 #4").  In chaeology report LAC 2002-15a filed 7-18-02 by LaPlata.  In site with Roger Herrera.  DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPULANCE WITH ATTACHED This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 procedural review pursuant to 43 CFR 3165.4 and appeal pursuant to 43 CFR 3165.3 procedural review pursuant to 43 CFR 3165.4 and appeal pursuant to 43 CFR 3165.3 procedural review pursuant to 43 CFR 3165.4 and appeal pursuant to 43 CFR 3165.3 procedural review pursuant to 43 CFR 3165.4 and appeal pursuant to 43 CFR 3165.3 procedural review pursuant to 43 CFR 3165.4 and appeal pursuant to 43 CFR 3165.3 procedural review pursuant to 43 CFR 3165.4 procedural review pursuant to 43 CFR 3165.3 proce	6-1/4" K-55 4-1/2" 10.5 1,400'	≈280 cu. ft. & to surface
TITLE	Archaeology report LAC 2002-15a filed 7-18-02 by LaPl On site with Roger Herrera.	9
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 the CONDITIONS OF APPROVAL, IF ANY:  ACTING  ACTING  APPROVAL DATE  APPROVAL DATE	**GENERAL REQUIREMENTS*.  **GENERAL REQUIREMENTS*.  **GENERAL REQUIREMENTS*.  CC: BI  IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: It proposal is to deepen, give data on present productive zone and proposed deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer programments and measured and true vertical depths.	LM, OCD (via BLM), Richardson and new productive zone. If proposal is to drill o ann, if any.
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 the CONDITIONS OF APPROVAL, IF ANY:  ACTING  ACTING  DATE	**GENERAL REQUIREMENTS*.  CC: BI IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: I proposal is to deepen, give data on present productive zone and propodeepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer programment of the proposal is to deepen, give data on present productive zone and propodeepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer programment of the procedural pursuant to 43 CPH 3103.	LM, OCD (via BLM), Richardson and if any.  8120  7-21-02
CONDITIONS OF APPROVAL, IF ANY:  ACTING  AUG 2 9 2002	**GENERAL REQUIREMENTS*.  CC: BI  IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: It proposal is to deepen, give data on present productive zone and propode deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer programment (505) 466-  TITLE  (This space for Federal or State office use)	LM, OCD (via BLM), Richardson and if any.  8120  DATE
ACTING BASE	SUBJECT TO COMPLIANCE WITH ATTACHED  "GENERAL REQUIREMENTS".  CC: BI  IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: I proposal is to deepen, give data on present productive zone and prope deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer progressions and measured and true vertical depths. TITLE  (This space for Federal or State office use)  PERMIT NO	LM, OCD (via BLM), Richardson osed new productive zone. If proposal is to drill of any, if any.  7-21-02
	SUBJECT TO COMPLIANCE WITH ATTACHED  "GENERAL REQUIREMENTS".  CC: BI  IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and propodeepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer programmer of the subject lease which conditions of Approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which conditions of Approval, IF ANY:	LM, OCD (via BLM), Richardson and its to drill of am, if any.  The modern the applicant to conduct operations the applicant to conduct ope

# State of New Mexico Energy. Minerals & Mining Resources Department OIL CONSERVATION DIVISION 2040 South Pacheco Santa Fe. NM 87505

MENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number Pool Code		Pool Code	Pool Name	
30045	31152	79680	WEST KUTZ PICTURED CL	IFFS
Property Code		Proper	ty Name	Well Number
30492		• RPC	C 19	• 4
QGRID No.		Operat	tor Name	<b>Bevation</b>
019219		RICHARDSON OPE	RATING COMPANY	5370

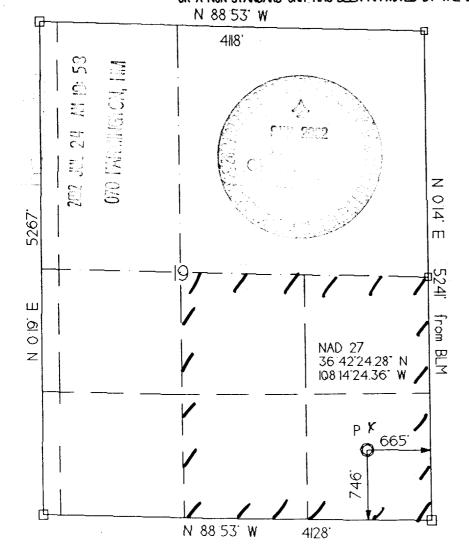
Surface Location County Rga. Feet from> North/South Feet from> East/West UL or Lot Sec Тър. Lot kin. P SAN JUAN 746 SOUTH 665 **EAST** 19 29 N. 13 W.

Bottom Hole Location If Different From Surface

UL or Lot Sec. Tsp. Rgs. Lat Idn. Feet from> North/South Feet from> East/West County

Dedication Joint? Consolidation Order No.

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



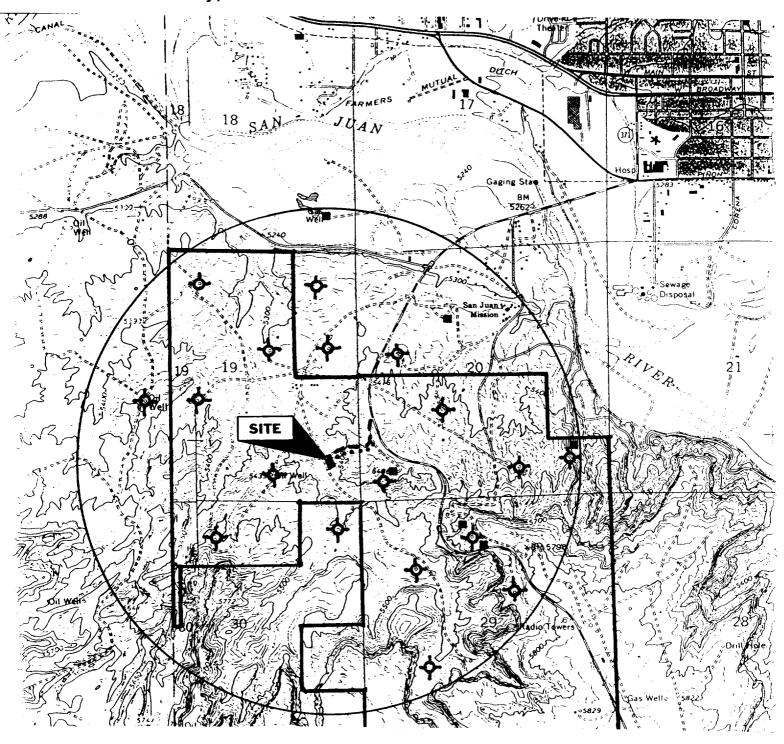
OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge, and belef. Signature Printed Name BRIAN WOOD Title CONSULTANT Date IIII Y 21 2002 SURVEYOR CERTIFICATION I hereby certify that the well location on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey JUNE 1200 Professional CAEL 134

Richardson Operating Co.

F-RPC 19 #4

746' FSL & 665' FEL

Sec. 19, T. 29 N., R. 13 W. San Juan County, New Mexico PAGE 11



PROPOSED WELL:

**EXISTING WELL:** 

PIPELINE ROUTE:

**EXISTING ROAD:** 

P & A WELL:

LEASE:



Richardson Operating Co.

F-RPC 19 #4

746' FSL & 665' FEL

Sec. 19, T. 29 N., R. 13 W.

San Juan County, New Mexico

### **Drilling Program**

#### 1. ESTIMATED FORMATION TOPS

Formation Name	GL Depth	KB Depth	<u>Elevation</u>
Kirtland Shale	000'	5'	+5,370'
Fruitland Fm	535'	540'	+4,835'
Pictured Cliffs Ss	1,075'	1,080'	+4,295'
Total Depth (TD)*	1,400'	1,405'	+4,086'

<sup>\*</sup> all elevations reflect the ungraded ground level of 5,370'

#### 2. NOTABLE ZONES

Gas ZonesWater ZonesCoal ZonesFruitlandFruitlandFruitland

Pictured Cliffs

Water zones will be protected with casing, cement, and weighted mud. Fresh water encountered during drilling will be recorded by depth, cased, and cemented. Oil and gas shows will be tested for commercial potential based on the well site geologist's recommendations.

#### 3. PRESSURE CONTROL

The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. (A typical 2,000 psi model is on PAGE 3.) Double ram or annular system with a rotating head will be used. All ram preventers and related equipment will be hydraulically tested at nipple up and after any use under pressure to 1000 psi.



PAGE 1

Richardson Operating Co. F-RPC 19 #4 746' FSL & 665' FEL Sec. 19, T. 29 N., R. 13 W. San Juan County, New Mexico

Blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi. Maximum expected pressure is  $\approx$ 415 psi.

#### 4. CASING & CEMENT

Hole Size	<u>O. D.</u>	Weight (lb/ft)	<u>Grade</u>	<u>Age</u>	<b>GL Setting Depth</b>
8-3/4"	7"	20	K-55	New	120'
6-1/4"	4-1/2"	10.5	K-55	New	1,400'

Surface casing will be cemented to surface with  $\approx 36$  cu. ft. ( $\approx 30$  sacks) Class B + 2% CaCl<sub>2</sub>. Volume is based on 100% excess, yield of 1.18 cu. ft./sk, and slurry weight of 15.6 PPG. W.O.C. = 12 hours. Pressure test surface casing to 600 psi for 30 minutes.

Production casing hole will first be cleaned of rock chips by circulating at least 150% of hole volume with mud to the surface. Forty barrels of fresh water will next be circulated. Lead with  $\approx 170$  cubic feet ( $\approx 83$  sacks) of Class B with 2% metasilicate (yield = 2.06 cubic feet per sack, slurry weight = 12.5 pounds per gallon). Tail with  $\approx 110$  cubic feet ( $\approx 93$  sacks) of Class B with 2% CaCl<sub>2</sub> (yield = 1.18 cubic feet per sack, slurry weight = 15.6 pounds per gallon). Total cement volume is  $\approx 280$  cubic feet based on 75% excess and circulating to surface.

Production casing will have 4-1/2" cement guide shoe and self fill float collar. Float will be placed one joint above the shoe. Seven centralizers will be spaced on every other joint starting above the shoe. Seven turbolizers will be placed on every other joint starting from the top of the well.

