Submit to Appropriate District Office State Lease — 6 copies Fee Lease — 5 copies

State of New Mexico Energy, Minerals and Natural Resources Department

Form C-101 Revised 1-1-89

DISTRICT I P.O. Box 1980, Hobbs, NM 88240 OIL CONSERVATION DIVISION

P.O. Box 2088

API NO. (assigned by OCD on New Wells)

	C	anta Ea Naw Marica	87504 2088	30	-031-	20933 .	
DISTRICT II P.O. Drawer DD, Arlesia, NM 88210 Santa Fe, New Mexico 87504-2088					5. Indicate Type of Lease STATE FEE X		
DISTRICT III 1000 Rio Brazos Rd., Azte	c, NM 87410			6. State Oil	6. State Oil & Gas Lease No.		
I .	TION FOR PERMIT T	O DRILL, DEEPEN, C	OR PLUG BACK				
la. Type of Work:				7. Lease Na	7. Lease Name or Unit Agreement Name		
b. Type of Well:	L X RE-ENTER	DEEPEN	PLUG BACK				
MEIT X MEIT OUT, OUT,	OTHER	SINGLE ZONE	MULTIPLE	East H	East Hospah		
2. Name of Operator				8. Well No.	8. Well No.		
	x Gas Corporatio	on		1 .	1 (70)		
3. Address of Operator				9. Pool nam	9. Pool name or Wildcat		
P.O.Box 840,	Farmington, Nev	Wildca	Wildcat / A C. C.H.				
4. Well Location Unit Letter	G : 1700 Feet F	.650 Feet	From The H	Last Li	ne		
Section 1	.4 Towns	hip 17N Rai	nge 8W	NMPM Мс	Kinley	County	
<i>\}}}}</i>							\mathbb{Z}
		10. Proposed Depth		11. Formation		12. Rotary or C.T.	
		2700 f		Dakota		Rotary	_
13. Elevations (Show whether DF, RT, GR, etc.) 14. Kind & Status Plug. Bond 15. Drilling Contractor Not chosen					16. Approx. Date Work will start		
nationwide Not chosen				en	July, 1991		
17.	PR	OPOSED CASING AN	ID CEMENT PRO	OGRAM			
SIZE OF HOLE SIZE OF CASING		WEIGHT PER FOOT	SETTING DEPT			EST. TOP	
9-1/4"			100 ft	. 5	0 sx	Surface	
6-1/4"	4-1/2"	10.5 lb/ft	2700 ft	. 30	0 sx	Surface	
	1	1		1			

Propose to drill a vertical well into the Cretaceous Dakota. If productive, will set 4-1/2" casing thru and cement in place. Additional details are attached.

RECEIVE D

OIL CON. DIV.

SPUD NOTICE MUST BE SUBMITTED
WITHIN 10 DAYS.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposed is true and complete to the best of my knowledge and belief.

SIGNATURE

TYPE OR FRINT NAME

SPUD NOTICE MUST BE SUBMITTED
WITHIN 10 DAYS.

In ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposed new productive zone and proposed new productive zone, give data on present productive zone and proposed new productive zone. In the proposed new productive zone and proposed new productive zone.

TITLE

Operations Manager

DATE

7/02/91

TYPE OR FRINT NAME

TELEPHONE NO.

UNLESS DRILLING IS COMMENCED.

APPROVAL EXPIRES.

DEPUTY OIL & GAS INSPECTOR, DIST. #3

_JUL 08 1991

CONDITIONS OF APPROVAL, IF ANY:

Submit to Appropriate District Office State Lease - 4 copies Fee Lease - 3 copies

State of New Mexico Energy, Minerals and Natural Resources Department

Form C-102 Revised 1-1-89

Well No.

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT II P.O. Drawer DD, Artesia, NM \$8210

DISTRICT | P.O. Box 1980, Hobbs, NM 88240

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

Loase

All Distances must be from the outer boundaries of the section

Distriction of 16. Cas Corporation East Hospah County North Township Actual Foreign Location of Well: North Inse and 1500 See from the Producing Foreign Food of Feet from the County Producing Foreign L Quilled the acreage dedicated to the well, outline each and identify the ownership thereof (broth as to working interest and royalty). 1. Uniform than one leans of different ownership is dedicated to the well, where the site of the well, where the interest of all owners been consolidated by communication, force-pooling, one Township is dedicated to the well which have actually been consolidated (by communication, interest and royalty). 1. If more than one leans of different ownership is dedicated to the well, have the interest of all owners been consolidated by communication, universities, force-pooling, one Township is the owners and true descriptions which have actually been consolidated (by communication, interest and royalty). 1. If more the analysis of the owners and true descriptions which have actually been consolidated (by communication, interest and royalty). 1. If more the constanct of the distinction is the seed of the well interest have been consolidated (by communication, unitication, force-pooling, or otherwise) or until a societal distinction in the seed of the well interest in the well incention shows the seed of the seed of the well interest in the well incention shows the seed of	Operator				Lease				Well No.	
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MERRION OIL & GAS CORPORATION

DRILLING TECHNICAL PROGRAM

ATTACHMENT TO FORM C-101

EAST HOSPAH NO. 1 1700' FNL & 1650' FEL Section 14, T17N, R8W McKinley County, New Mexico

1. <u>SUMMARY INFORMATION</u> Attached

2. <u>PROJECT OVERVIEW:</u> Attached

3. <u>DETAILED OPERATIONS PLAN</u>: Attached

4. <u>ESTIMATED FORMATION TOPS</u> Attached

5. WELL CONTROL SYSTEM

- A. Proposed blowout preventer system is series 600 double ram with choke and kill manifold.
- B. Minimum required working pressure rating for BOP stack is 2000 psi.
- C. BOP pressure testing will be conducted at time of installation and prior to drillout of surface casing shoe. The BOP's will be activated at minimum on each trip for a bit and recorded in driller's log.

6. DRILLING MUD PROGRAM

- A. Surface hole will be drilled with fresh water gel system, lime added to provide viscosity as needed.
- B. 6-1/4" hole will be drilled into the Dakota utilizing a low solids, non-dispersed gel-water mud system. Additives such a starch, cmc, soda ash and others will be used to control mud characteristics as necessary.

Lost circulation materials will be stored on location, as necessary, for use in restoring lost circulation.

INTERVAL	MUD SYSTEM	WEIGHT _#/GAL	VISCOSITY SEC/QT	WATER LOSS CC
Vert 0 - 100'	GEL-LIME	9.0	35 - 45	NA
Vert 100'-2700'±	GEL-WTR ND	8.4-9.0	28 - 45	≤ 12

C. Mud trip monitoring will be done visually.

7. HAZARDS

- A. No abnormal pressure is anticipated. However, 2M BOPs will be used under surface casing to total depth.
- B. Lost circulation is not expected. However, lost circulation materials will be stocked on location.
- C. No H₂S is expected to be encountered. However, should H₂S be found during drilling, detection and warning equipment will be installed.
- D. Unintentional hole deviation is not expected to be a problem. Single shot surveys giving hole inclination will be run a minimum of every 500 feet.

8. LOGGING AND TESTING

- A. An IES Induction Log will be run from TD to surface. A Compensated Density Log will be run to cover zones of interest.
- B. Drill stem tests may be run to test the Dakota and Gallup formations.
- C. No core is anticipated.
- D. Plans call for using a mud logging unit during drilling.

I. SUMMARY INFORMATION

Well Name : East Hospah No. 1

Surface Location : 1700'fnl & 1650'fel (SWNE)

Sec 14, T17N, R8W

McKinley Co., NewMexico

Elevations : 6,910' RKB

6,905' GL

Total Depth : 2,700' MD RKB

Well Objective : Gallup Sandstone...Primary

Dakota Sand...Secondary

Rigs

Drilling : Unknown

Completion : Ram Rig No. 1

Estimated Rig Arrivals

Drilling : Summer, 1991 Completion : Summer, 1991

Estimated Time on Well

Build Access & Location : 2 days
Drill Vertical : 7.5 days
Completion : 7 days

II. PROJECT OVERVIEW

The project objective is to drill the East Hospah No. 1 well to develop the Gallup & Dakota formations on a seismically delineated structure.

Plans call for drilling a vertical 6 1/4" hole to a depth of 2,600' or below the top of the Dakota formation. The Dakota may be drill stem tested if drilling and mudlog shows warrant. Finally, the well will continue to TD at 2,700'RKB, and open hole surveys will be run. If the Gallup or Dakota is productive, 4 1/2" casing will be run to total depth and cemented in place. Once the 4 1/2" casing is set, the drilling rig will be released.

A completion rig will move on, clean out the well. The pay interval will be perforated and fracture stimulated if necessary. The well will be tested to clean up, then the required production equipment will be run in the well.

III. THE PROSPECT

The East Hospah Gallup prospect is located in Sec. 14, T17N, R8W, McKinley County, New Mexico.

The primary objective is the Cretaceous Gallup with a secondary objective in the Cretaceous Dakota. To test both objectives it would require a well be drilled to 2,700'.

IV. DETAILED OPERATIONS PLAN

A. WELL DRILLING

1. General Remarks

The well drilling phase will be conducted by drilling with conventional mud to total depth. A drillstem test of the Dakota formation may be conducted prior to drilling the necessary rathole, after which logs will be run and 4 1/2" casing will be cemented in place.

2. Formation Tops

Formation	Depth-MD	AMSL	
Menefee sand	Surface	+6,917'	
Mancos shale	367'	+6,550'	
Gallup massive	1,435'	+5,482'	
Greenhorn lime	2,190'	+4,727'	
Dakota sand	2,545'	+4,372'	
Total Depth	2,700'	+4,217'	

3. Hazards

No unusual drilling hazards are anticipated in this area.

4. Casing & Hole Program

<u>Interval</u>	Hole Size	Csg OD	Wt lb/ft	<u>Grade</u>
I) Surf- 100'	9 3/4"	7"	23	J-55
II) 100-TD	6 1/4"	4 1/2"	10.5	J-55

5. Procedure

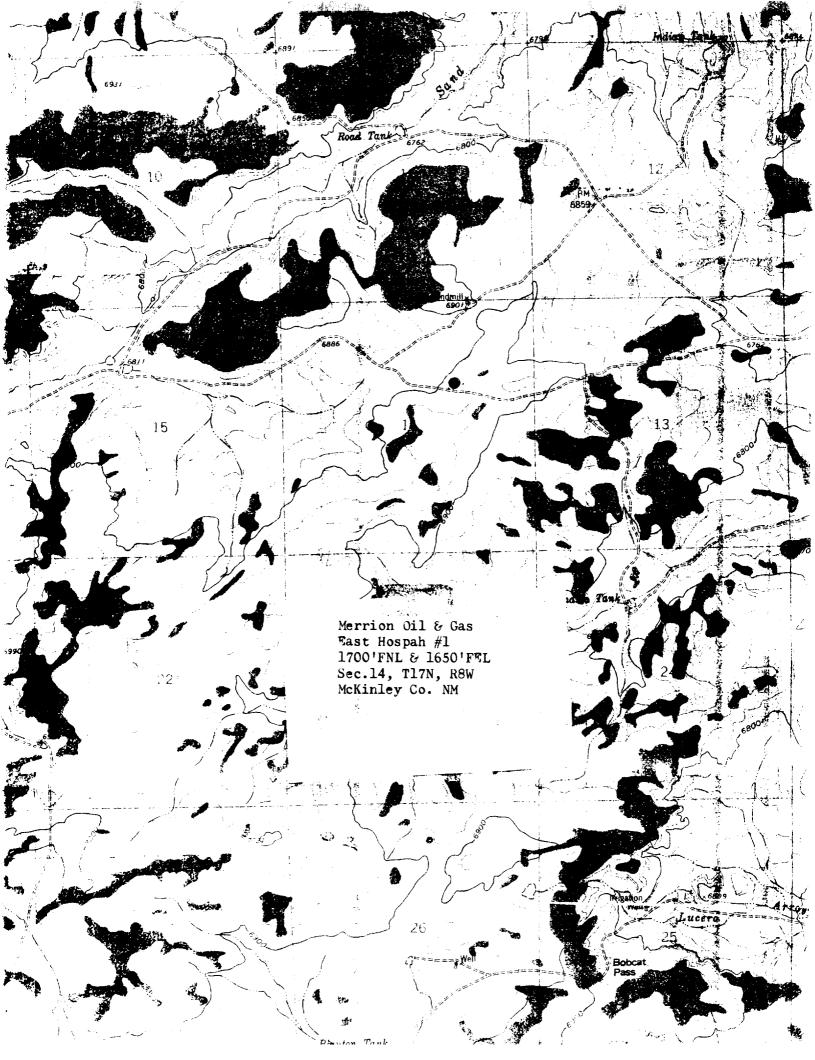
- 1. Blade existing access. Build small location, line reserve pit if required.
- 2. MIRU Drilling rig.
- 3. Spud 9 3/4" hole. Drill to 100'KB. Condition hole. Take a survey.
- Run 6 Jts of 7" 23lb/ft J-55 casing to 100'KB. Cement in place with 50 sx class "G", 1% CaCl₂ (TOC @ surface w/ 100% excess in gage hole).
 WOCT 10 hours, nipple up BOPs. Pressure test to 600 psi for 30 min after 8 hours WOCT.
- 5. Drill out with 6 1/4" bit, DCs and remaining drill string assembly. circulating fluid is non-dispersed gel base fluid with fluid loss control < 12cc.
- 6. Run SS surveys on bit trips minimum every 500 ft. If rate of build is 1° per 100 ft or more, run SS surveys minimum of 100 ft intervals.
- 7. RU mud logging unit out from under surface to provide hydrocarbon measurement and sample descriptions.
- 8. Stop drilling ~ 2,600'KB, if Dakota DST warranted.
- 9. Run DST test of Entrada if desired as follows:

10-15 Min	Initial Flow Period
60 Minute	Initial Shut-in Period
60 Minute	Final Flow Period
120 Minute	Final Shut-in Period

POH with DST string.

- 10. RIH, drill to TD @ ~2,700'KB. Condition for logs. POH.
- 13. Run OH IES Induction and Formation Density surveys. RD loggers.
- 14. Deliver 4 1/2" 10.51b/ft J-55 casing to location. Tally and drift all casing upon arrival. Clean all pins and collars with diesel and wire brush.
- 15. Pickup 4 1/2" casing shoe. Make it up to one 4 1/2" shoe joint. Install one casing centralizer on the shoe jt. Set assembly in the slips.
- 16. Pick up a self fill or equivalent float collar and make it up to the shoe joint.
- 17. RIH w/ 4 1/2" 10.5lb casing, place centralizers on every other collar. Use total 6 centralizers.
- 18. Circulate last joint down. Circulate minimum 1 full circulation prior to cementing.
- 19. RU cementers and cement while reciprocating 4 1/2"" csg slowly. Pump 300sx class 'G', 2% gel, yield 1.22 cuft/sx (366 cuft). Actual cement volumes will be adjusted using hole caliper log to bring cement to surface.
- 20. Bump plug. Release pressure.

- 21. Set casing in the slips as cemented. Cut off and place a protective cover over the casing stub.22. Release drilling rig.



Merrion Oil & Gas Corp. East Hospah #1 1700'FNL & 1650'FEL Sec.14, T17N, R8W McKinley Co. NM

