

DATE IN 6/25/97	SUSPENSE 7/15/97	ENGINEER DC	LOGGED KN	TYPE DHC
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
 [DD-Directional Drilling] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

1632

1] TYPE OF APPLICATION - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Directional Drilling
☐ NSL ☐ NSP ☐ DD ☐ SD

Check One Only for [B] and [C]

- [B] Commingling - Storage - Measurement
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

JUN 25 1997
 CONSERVATION DIVISION

2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply

- [A] ☒ Working, Royalty or Overriding Royalty Interest Owners
- [B] ☒ Offset Operators, Leaseholders or Surface Owner
- [C] ☐ Application is One Which Requires Published Legal Notice
- [D] ☒ Notification and/or Concurrent Approval by BLM or SLO
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F] ☐ Waivers are Attached

3] INFORMATION / DATA SUBMITTED IS COMPLETE - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, I, ORRI) is common. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Reggy Bradfield

Print or Type Name

Signature

Regulatory/Compliance Administrator

Title

Date

6/24/97

BURLINGTON RESOURCES

SAN JUAN DIVISION

June 24, 1997

SENT FEDERAL EXPRESS

Mr. William LeMay
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: Mangum #5E
860'FNL, 825'FEL, Section 29, T-29-N, R-11-W
30-045-23672

Dear Mr. LeMay:

This is a request for administrative approval for downhole commingling the Otero Chacra and Basin Dakota in the subject well.

To comply with the New Mexico Oil Conservation Division rules, Burlington Resources Oil & Gas Company is submitting the following for your approval of this commingling:

1. Form C107A - Application for Downhole Commingling;
2. C-102 plat for each zone showing its spacing unit and acreage dedication;
3. Production curves for Chacra and Dakota;
4. Notification list of offset operators;
5. Shut in wellhead pressure and calculated down hole pressure of surrounding wells;
6. Nine-section plats for the Chacra and Dakota.

If you are a working, overriding or royalty interest owner in either of the above described pools, you are being notified of this application as a requirement of the New Mexico Oil Conservation Division Rule #303C. Burlington, as operator, believes this application will be in the best interest of all owners. If you have no objection to this commingling application, you do not have to respond to this notification. Upon establishment of production from this well, you will receive your proportionate share of revenues from the pool in which you own an interest according to the proposed allocation formula.

The Division Director may approve the proposed commingling within 20 days after the receipt of this application, in the absence of valid objection from any offset operator or any interest owner, where ownership is not common in the zones to be commingled.

We will consult with the Supervisor of the Aztec District Office of the New Mexico Oil Conservation Division to establish an allocation formula.

Please let me know if you require additional data.

Sincerely,



Peggy Bradfield

Regulatory/Compliance Administrator

xc: Bureau of Land Management - hand delivered

DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II

811 South First St., Artesia, NM 88210-2835

DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87410-1693

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-6429Form C-107-A
New 3-12-96

APPROVAL PROCESS :

☒ Administrative ☐ Hearing

APPLICATION FOR DOWNHOLE COMMINGLING

EXISTING WELLBORE

☒ YES ☐ NO

BURLINGTON RESOURCES OIL & GAS COMPANY

PO Box 4289, Farmington, NM 87499

Operator

Address

MANGUM

5E

Unit A, Sec. 29, T29N, R11W

San Juan County

Lease

Well No.

Unit Ltr. - Sec - Twp - Rge

County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 14538 Property Code 7282 API NO30-045-23672 Federal , State (and/or) Fee X

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Otero Chacra - 82329		Dakota - 71599
2. Top and Bottom of Pay Section (Perforations)	2541' -2645'		5999' - 6123'
3. Type of production (Oil or Gas)	Gas		Gas
4. Method of Production (Flowing or Artificial Lift)	Flowing		Flowing
5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated or Measured Original	(Current) a. 263 Psia @ 2593'	a.	a. 286 Psia @ 6061'
	(Original) b. 723 Psia @ 2593'	b.	b. 1209 Psia @ 6061'
6. Oil Gravity (°API) or Gas BTU Content	1152		1231
7. Producing or Shut-In?	Producing		Producing
Production Marginal? (yes or no)	Yes		Yes
* If Shut-In and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data * If Producing, give data and oil/gas/water water of recent test (within 60 days)	Date: Rates: Date: 6/13/97 Rates: 69 MCFD	Date: Rates: Date: Rates:	Date: Rates: Date: 6/13/97 Rates: 152 MCFD
8. Fixed Percentage Allocation Formula -% for each zone (total of %'s to equal 100%)	Oil: Gas: supplied upon completion	Oil: Gas: % %	Oil: Gas: supplied upon completion

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.
10. Are all working, overriding, and royalty interests identical in all commingled zones? ☐ Yes ☒ No
If not, have all working, overriding, and royalty interests been notified by certified mail? ☒ Yes ☐ No
Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No
11. Will cross-flow occur? ☐ Yes ☒ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. ☐ Yes ☐ No (If No, attach explanation)
12. Are all produced fluids from all commingled zones compatible with each other? ☒ Yes ☐ No
13. Will the value of production be decreased by commingling? ☐ Yes ☒ No (If Yes, attach explanation)
14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☐ Yes ☐ No
15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). _____
16. ATTACHMENTS:
* C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
* Production curve for each zone for at least one year. (If not available, attach explanation.)
* For zones with no production history, estimated production rates and supporting data.
* Data to support allocation method or formula.
* Notification list of all offset operators.
* Notification list of working, overriding, and royalty interests for uncommon interest cases.
* Any additional statements, data, or documents required to support commingling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

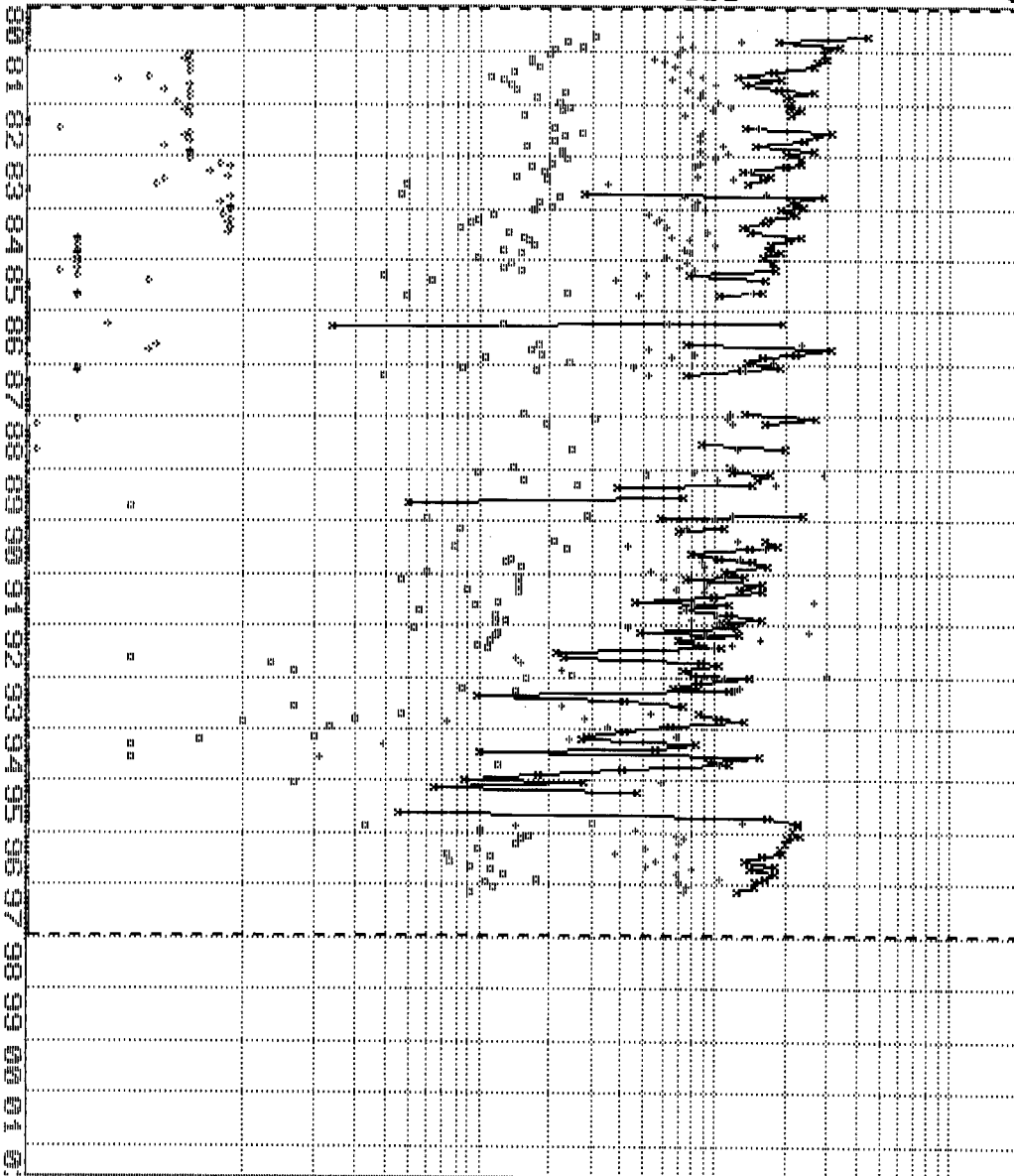
SIGNATURE Kevin L. Midkiff TITLE Operations Engineer DATE 06-23-97

TYPE OR PRINT NAME Kevin L. Midkiff TELEPHONE NO. (505) 326-9700

* WATER
 * OIL/GAS
 100 * OIL
 * GAS

1 10 100
 0.1 1 10
 0.1 1 10
 1 10 100

MANUM 1 SE 1 46233-DAKOTA



Prop 163 *

● * GAS Mcf/d
 ○ * OIL Bbl/d
 ○ * OIL/GAS
 ○ * WATER Bbls/d
 RateTime
 Semi Log

Major = GAS

WELL LOCATION AND ACREAGE DEDICATION PLAT

Supersedes Form
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Southland Royalty Company			Lease Mangum		Well No. #5E
Unit Letter A	Section 29	Township 29N	Range 11W	County San Juan	

Actual Footage Location of Well:

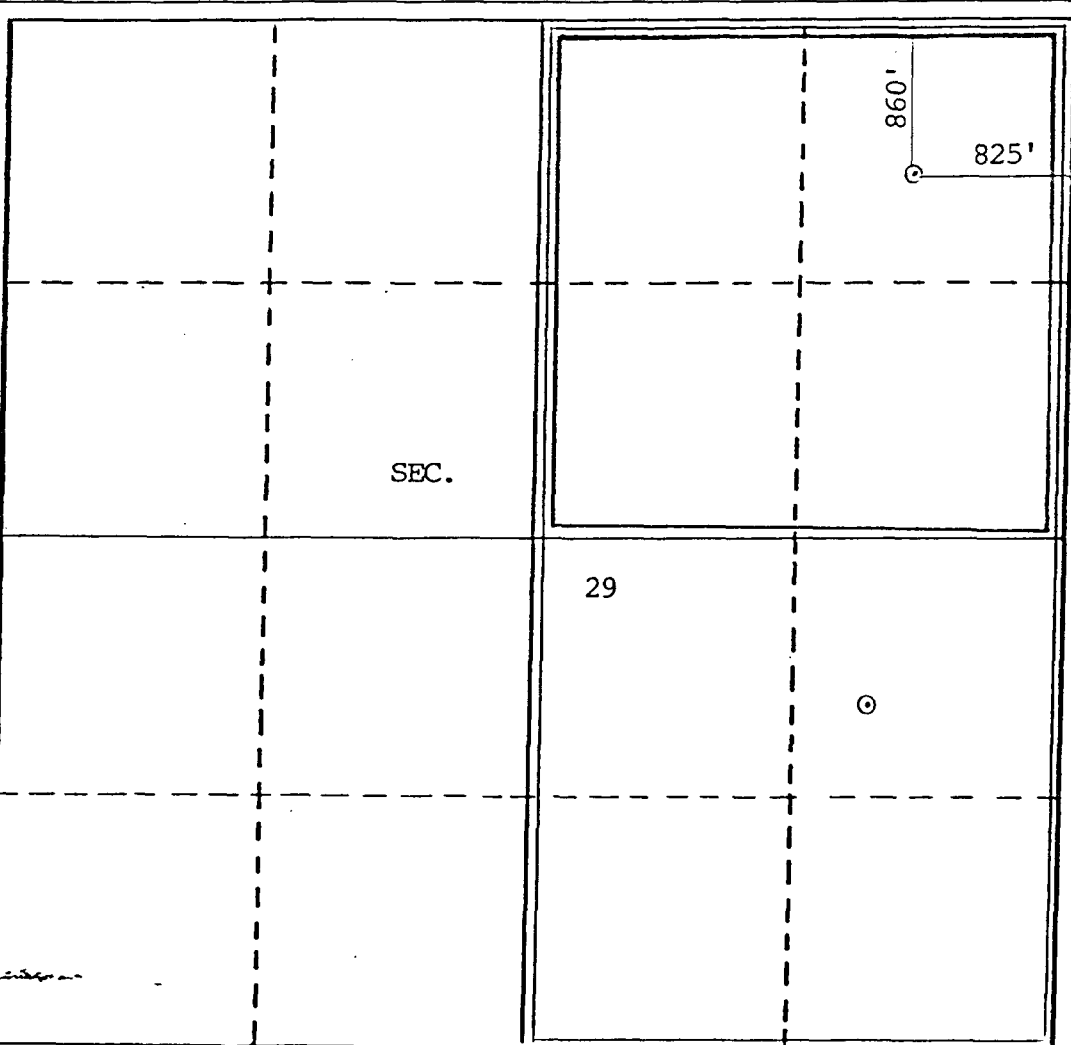
860' feet from the North line and		825' feet from the East line	
Ground Level Elev: 5399'	Producing Formation Dakota-Chacra	Pool Basin - Undesignated <i>Other</i>	Dedicated Acreage: 320 <i>4/60</i> Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

R. E. Fielder

Name
Robert E. Fielder

Position
District Engineer

Company
Southland Royalty Company

Date
July 25, 1980

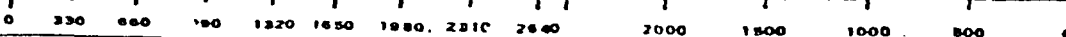
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

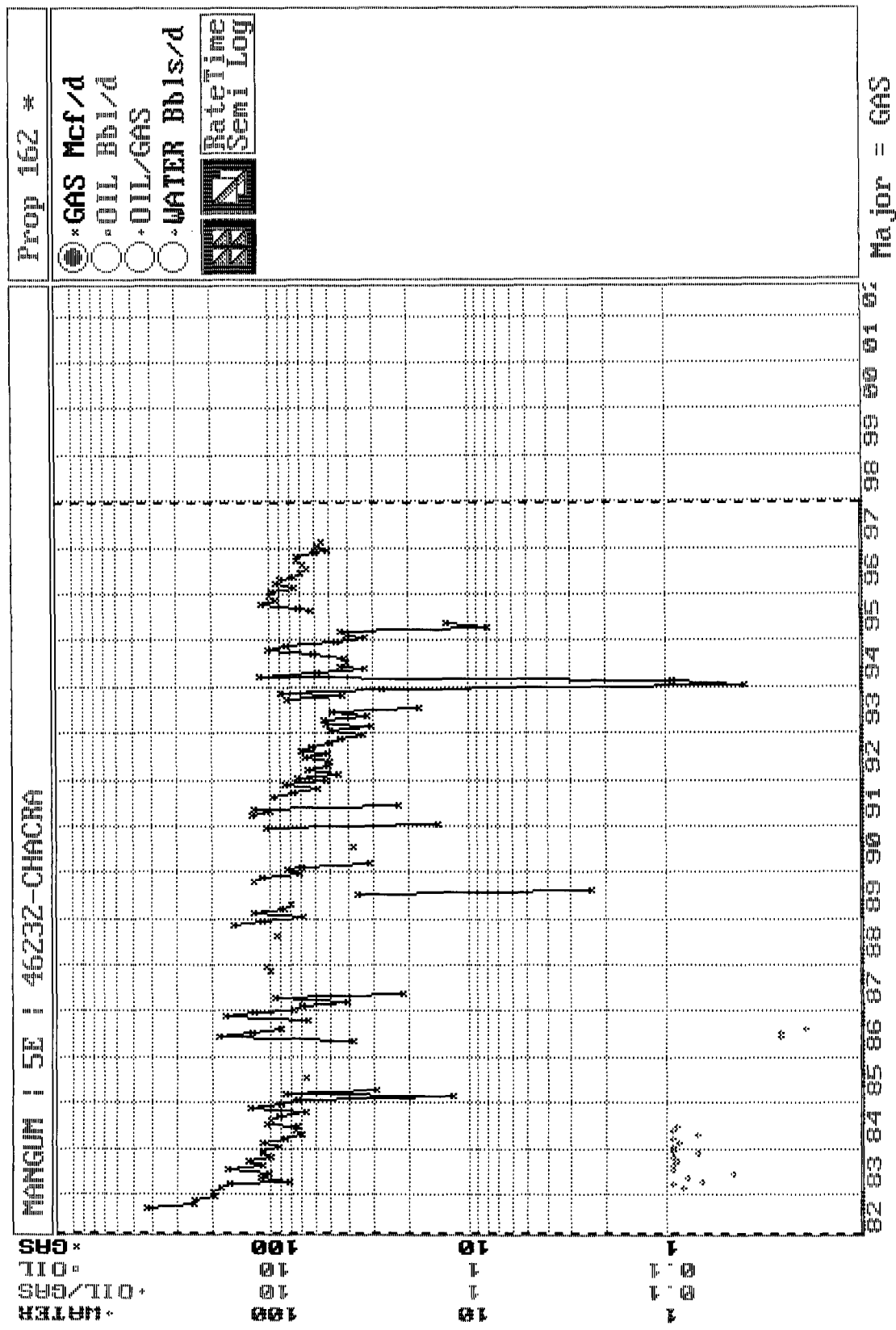
Date Surveyed
August 7, 1979

Registered Professional Engineer
and/or Land Surveyor

FRED B. KERR

Certificate No.
3950



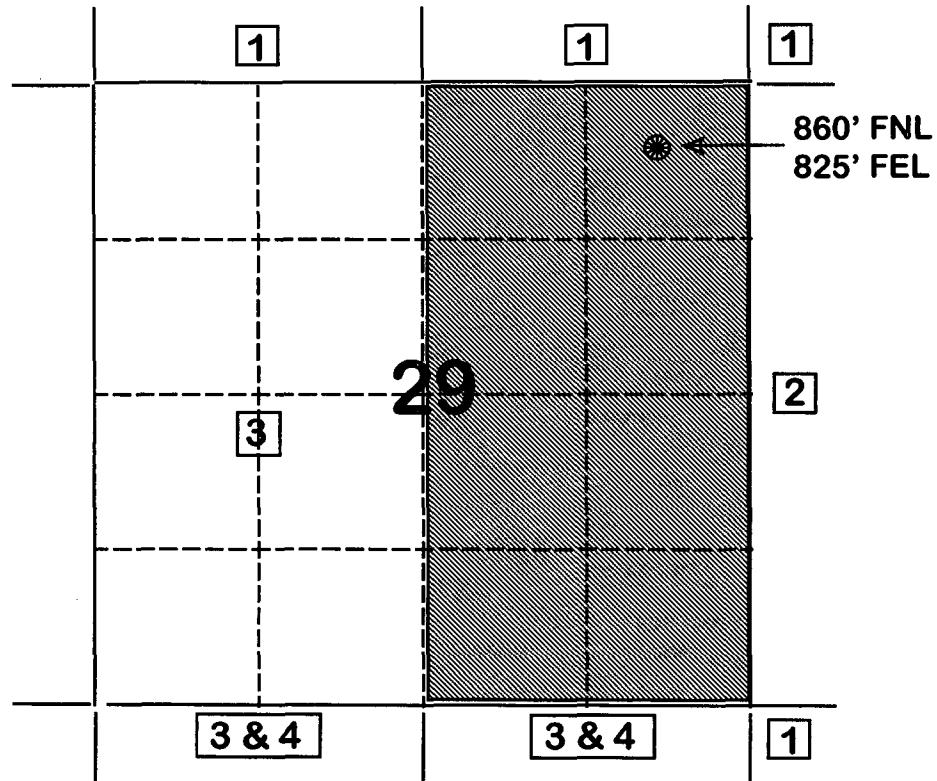


BURLINGTON RESOURCES OIL AND GAS COMPANY

**Mangum #5E
OFFSET OPERATOR \ OWNER PLAT**

Chacra (NE/4)/Dakota (E/2) Formations Commingle Well

Township 29 North, Range 11 West



- 1) Burlington Resources Oil and Gas Company
- 2) Amoco Production Company
Attn: Bruce Zimney
P.O. Box 800
Denver, CO 80201
- 3) Conoco Inc.
10 Desta Drive, Suite 100W
Midland, TX 79705
- 4) David H. Arrington Oil & Gas Inc.
P.O. Box 2071
Midland, TX 79702

MANGUM 5E
Bottom Hole Pressures
Flowing and Static BHP
Cullender and Smith Method
Version 1.0 3/13/94

Chacra		Dakota	
<u>CH-Current</u>		<u>DK-Current</u>	
GAS GRAVITY	0.665	GAS GRAVITY	0.73
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.51	%N2	0.4
%CO2	0.19	%CO2	1.26
%H2S	0	%H2S	0
DIAMETER (IN)	5.5	DIAMETER (IN)	1.9
DEPTH (FT)	2593	DEPTH (FT)	6061
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	106	BOTTOMHOLE TEMPERATURE (DEG F)	170
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	248	SURFACE PRESSURE (PSIA)	246
BOTTOMHOLE PRESSURE (PSIA)	263.9	BOTTOMHOLE PRESSURE (PSIA)	286.1
<u>CH-Original</u>		<u>DK-Original</u>	
GAS GRAVITY	0.665	GAS GRAVITY	0.73
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.51	%N2	0.4
%CO2	0.19	%CO2	1.26
%H2S	0	%H2S	0
DIAMETER (IN)	5.5	DIAMETER (IN)	1.9
DEPTH (FT)	2593	DEPTH (FT)	6061
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	106	BOTTOMHOLE TEMPERATURE (DEG F)	170
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	676	SURFACE PRESSURE (PSIA)	1017
BOTTOMHOLE PRESSURE (PSIA)	723.0	BOTTOMHOLE PRESSURE (PSIA)	1209.0

Organize Data ScreenGraph Economics Report Plot Utility Quit
 Editing: MANGUM | 5E | 46232-1 Property No.: 162
 Table(T): TEST/M,P,H,T,Z,C,A,O,D,1,2,3,B,U,S Rec: 1/5/1048
 Item: 2/3/33 Name: DATE Type: Date Len: 8/27/203

CHACRA

--DATE--	---CUM_GAS--	M SIWHP
	Mcf	Psi
10/15/82	20656	676.0
03/31/83	50652	570.0
04/03/84	89777	572.0
07/08/93	256884	562.0
04/16/97	333080	248.0

F1=Help F3=PrvProp F5=PrvTbl F7=InsRcd F9=Utils Alt+TableLtr=Change Table
 F2=Jump F4=NxtProp F6=NxtTbl F8=DelRcd F10=Exit Shift+<- ->=Fast Tbl R & L

Organize Data ScreenGraph Economics Report Plot Utility Quit
 Editing: MANGUM | 5E | 46233-1 Property No.: 163
 Table(T): TEST/M,P,H,T,Z,C,A,O,D,1,2,3,B,U,S Rec: 1/11/1048
 Item: 2/3/33 Name: DATE Type: Date Len: 8/27/203

DAKOTA

--DATE--	---CUM_GAS--	M SIWHP
	Mcf	Psi
06/28/80	0	1017.0
10/23/80	19063	803.0
09/23/81	97621	740.0
10/23/82	171393	673.0
03/31/83	205639	636.0
09/10/85	344995	637.0
08/17/88	416900	606.0
08/07/90	474080	572.0
03/29/92	541502	526.0
07/06/93	581665	536.0
04/16/97	712110	246.0

F1=Help F3=PrvProp F5=PrvTbl F7=InsRcd F9=Utils Alt+TableLtr=Change Table
 F2=Jump F4=NxtProp F6=NxtTbl F8=DelRcd F10=Exit Shift+<- ->=Fast Tbl R & L

FDG055M4 S004
START OF DATA
DP NO: 46232_
MANGUM
S

WELL PRODUCTION 8/8'S VOLUME

06/17/97 15:27:36

CHACRA

DATE: 970615 (YYMMDD FORMAT)
5E SCROLL FORWARD BY DATE: _

E	DATE	HOURS	-OIL PROD-	-GAS PROD-	-WATER PROD-
L	PRODUCED	ON	(BOPD BOPM)	(MCFD MCFM)	(BWPD BWPM)
-	06/15/97	24.0	0.00 0.00	62 960	0.00 0.00
-	06/14/97	24.0	0.00 0.00	69 898	0.00 0.00
-	06/13/97	24.0	0.00 0.00	69 829	0.00 0.00
-	06/12/97	24.0	0.00 0.00	69 760	0.00 0.00
-	06/11/97	24.0	0.00 0.00	69 691	0.00 0.00
-	06/10/97	24.0	0.00 0.00	67 622	0.00 0.00
-	06/09/97	24.0	0.00 0.00	67 555	0.00 0.00
-	06/08/97	24.0	0.00 0.00	61 488	0.00 0.00
-	06/07/97	24.0	0.00 0.00	61 427	0.00 0.00
-	06/06/97	24.0	0.00 0.00	61 366	0.00 0.00
-	06/05/97	24.0	0.00 0.00	61 305	0.00 0.00

ENTER I UNDER SEL FOR MAINTENANCE

PF12=MAIN MENU PF6=NRI PF10=BROWSE MENU PF11=INQ/UPDATE MENU
B MY JOB ENTER=BACKWARDS PF24=HELP
LU #6

FDG055M4 S004
START OF DATA
DP NO: 46233_
MANGUM
S

WELL PRODUCTION 8/8'S VOLUME

06/17/97 15:27:43

DAKOTA

DATE: 970615 (YYMMDD FORMAT)
5E SCROLL FORWARD BY DATE: _

E	DATE	HOURS	-OIL PROD-	-GAS PROD-	-WATER PROD-
L	PRODUCED	ON	(BOPD BOPM)	(MCFD MCFM)	(BWPD BWPM)
-	06/15/97	24.0	0.65 9.75	49 1133	0.00 0.00
-	06/14/97	24.0	0.65 9.10	99 1084	0.00 0.00
-	06/13/97	24.0	0.65 8.45	152 985	0.00 0.00
-	06/12/97	24.0	0.65 7.80	176 833	0.00 0.00
-	06/11/97	24.0	0.65 7.15	65 657	0.00 0.00
-	06/10/97	24.0	0.65 6.50	158 592	0.00 0.00
-	06/09/97	24.0	0.65 5.85	176 434	0.00 0.00
-	06/08/97	24.0	0.65 5.20	15 258	0.00 0.00
-	06/07/97	24.0	0.65 4.55	15 243	0.00 0.00
-	06/06/97	24.0	0.65 3.90	15 228	0.00 0.00
-	06/05/97	24.0	0.65 3.25	15 213	0.00 0.00

ENTER I UNDER SEL FOR MAINTENANCE

PF12=MAIN MENU PF6=NRI PF10=BROWSE MENU PF11=INQ/UPDATE MENU
B MY JOB ENTER=BACKWARDS PF24=HELP
LU #6

Mangum #5E
DP#46232

WELL ID	BA NAME	INT TYPE
46232	BILLIE JEAN FAVERINO	RI
46232	CHRISTMANN MINERAL CO	ORRI
46232	DONALD L & MYRNA J MANGUM JT	RI
46232	DOROTHY LEE PORTER	RI
46232	FAYON P WAFLE	RI
46232	GLENN FAVERINO	RI
46232	HERD PARTNERS LTD	ORRI
46232	IMOGENE ZAPORA	RI
46232	JACK D THORNTON	RI
46232	JACK MARKHAM	ORRI
46232	JOHN CHRISTOPHER FAVERINO	RI
46232	JOHN SADLER	RI
46232	KATHERINE BENNETT	RI
46232	KERR-MCGEE CORPORATION	ORRI
46232	LOUIS T FAVERINO	RI
46232	MARGARET SUE ALBITRE	RI
46232	MARQUERITE HUDDLESTON WALKER	RI
46232	MARTHA SADLER	RI
46232	MINERALS MANAGEMENT SERVICE	RI
46232	MRS BERCHAL RINGO	RI
46232	NORMAN PORTER	RI
46232	PATRICIA J ENOS	RI
46232	ROBERT FAVERINO	RI
46232	RUTH M MCLEMORE	RI
46232	STEPHEN WOODROW MCLEMORE	RI
46232	TED VERNON MCLEMORE	RI
46232	WALLACE DEAN AND MADALYNN LEMA	RI

MANGUM #5E
DP# 46233
RI, ORRI OWNERS

WELL ID	BA NAME	INT TYPE
46233	BILLIE JEAN FAVERINO	RI
46233	CHRISTMANN MINERAL CO	RI
46233	DONALD MANGUM	RI
46233	DOROTHY LEE PORTER	RI
46233	FAYON P WAFLE	RI
46233	GLENN FAVERINO	RI
46233	HERD PARTNERS LTD	RI
46233	IMOGENE ZAPORA	RI
46233	JACK D THORNTON	RI
46233	JACK MARKHAM	RI
46233	JOHN CHRISTOPHER FAVERINO	RI
46233	JOHN SADLER	RI
46233	KATHERINE BENNETT	RI
46233	KERR-MCGEE CORPORATION	ORRI
46233	LOUIS T FAVERINO	RI
46233	MARGARET SUE ALBITRE	RI
46233	MARQUERITE HUDDLESTON WALKER	RI
46233	MARTHA SADLER	RI
46233	MINERALS MANAGEMENT SERVICE	RI
46233	MRS BERCHAL RINGO	RI
46233	NORMAN PORTER	RI
46233	PATRICIA J ENOS	RI
46233	ROBERT E LAUTH	RI
46233	ROBERT FAVERINO	RI
46233	RUTH M MCLEMORE	RI
46233	STEPHEN WOODROW MCLEMORE	RI
46233	T C MORAN & CO	RI
46233	T H C COMPANY A PARTNERSHIP	RI
46233	TED VERNON MCLEMORE	RI
46233	WALLACE DEAN AND MADALYNN LEMA	RI