

J.K. EDWARDS
CHACO #4
SEV 1 T26N R13W

05/10/95

BEFORE EXAMINER CATANACH

OIL CONSERVATION DIVISION

M/W EXHIBIT NO. 39

CASE NO. 11994

CHACO #4, 05/11/95, L309648

Gas & Water Analyses



2030 Afton Place
Farmington, N.M. 87401
(505) 325-6622

Analysis No. PEN80023
Cust. No. 60000-10065

WELL/LEASE INFORMATION

Company	: PENDRAGON ENERGY PARTNRS	Source	:
Well Name	: CHACO 4	Pressure	: 90 PSIG
County	: SAN JUAN	Sample Temp.	: N/A DEG.F
State	: NM	Well Flowing	: YES
Location	: 07D-26N-12W	Date Sampled	: 02/11/98
Fld/Formation	:	Sampled By	: BOB DURBIN
Cust.Stn.No.	: 90-044	Foreman/Engr	:

Remarks: SAMPLED AT 12:50
LEASE: SF-080238A

ANALYSIS

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR.*
NITROGEN	0.432	0.0000	0.00	0.0042
CO2	0.928	0.0000	0.00	0.0141
METHANE	97.050	0.0000	982.44	0.5376
ETHANE	1.550	0.4146	27.49	0.0161
PROPANE	0.021	0.0058	0.53	0.0003
I-BUTANE	0.005	0.0016	0.16	0.0001
N-BUTANE	0.005	0.0016	0.16	0.0001
I-PENTANE	0.002	0.0007	0.08	0.0000
N-PENTANE	0.000	0.0000	0.00	0.0000
HEXANES	0.007	0.0031	0.36	0.0002
TOTAL	100.000	0.4274	1011.23	0.5726

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

** @ 14.730 & 60 DEG. F

COMPRESSIBILITY FACTOR	(1/2)	1.0021
BTU/CU.FT. (DRY) CORRECTED FOR	(1/2)	1013.3
BTU/CU.FT. (WET) CORRECTED FOR	(1/2)	995.7
REAL SPECIFIC GRAVITY		0.5736

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

CYLINDER #	: 036
CYLINDER PRESSURE	: 87 PSIG
DATE RUN	: 02/12/98
ANALYSIS RUN BY	: CHELLE DURBIN



PENDRAGON ENERGY PARTNERS
WELL ANALYSIS COMPARISON

LEASE : CHACO 4
STN. NO. : 90-044

02/12/1998
60000-10065

DATE 02/11/98 02/03/98 03/20/97
RUN NR. PEN80023 PEN80019 PEN70013

NITROGEN 0.432 0.445 0.748
CO2 0.928 0.989 0.850
METHANE 97.050 96.963 96.976
ETHANE 1.550 1.521 1.359
PROPANE 0.021 0.036 0.024
I-BUTANE 0.005 0.009 0.006
N-BUTANE 0.005 0.009 0.006
ISOPENTANE 0.002 0.004 0.003
NEOPENTANE 0.000 0.002 0.000
HEXANES 0.007 0.022 0.018

TU 1013.3 1013.5 1010.1
GPM 0.4274 0.4343 0.3857
SP. GRAV. 0.5736 0.5748 0.5737



2030 Afton Place
Farmington, N.M. 87401
(505) 325-6622

Analysis No. PEN80019
Cust. No. 60000-10065

WELL/LEASE INFORMATION

Company	: PENDRAGON ENERGY PRTNRS	Source	: WELLHEAD-TBG
Well Name	: CHACO 4	Pressure	: 54 PSIG
County	: SAN JUAN	Sample Temp.	: 59 DEG.F
State	: NM	Well Flowing	: YES
Location	:	Date Sampled	: 02/03/98
Fld/Formation	: PICTURED CLIFFS	Sampled By	: MIKE WAGONER
Cust.Stn.No.	: 90-044	Foreman/Engr	:

Remarks: REMOVED 1/3 CUP OF WATER FROM CYLINDER

ANALYSIS

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR.*
NITROGEN	0.445	0.0000	0.00	0.0043
CO2	0.989	0.0000	0.00	0.0150
METHANE	96.963	0.0000	981.56	0.5371
ETHANE	1.521	0.4069	26.98	0.0158
PROPANE	0.036	0.0099	0.91	0.0005
I-BUTANE	0.009	0.0029	0.29	0.0002
N-BUTANE	0.009	0.0028	0.29	0.0002
I-PENTANE	0.004	0.0015	0.16	0.0001
N-PENTANE	0.002	0.0007	0.08	0.0000
HEXANES	0.022	0.0096	1.13	0.0007
TOTAL	100.000	0.4343	1011.40	0.5738

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

** @ 14.730 & 60 DEG. F

COMPRESSIBILITY FACTOR	(1/Z)	1.0021
BTU/CU.FT. (DRY) CORRECTED FOR	(1/Z)	1013.5
BTU/CU.FT. (WET) CORRECTED FOR	(1/Z)	995.9
REAL SPECIFIC GRAVITY		0.5748

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

CYLINDER #	: KO 84
CYLINDER PRESSURE	: 42 PSIG
DATE RUN	: 02/05/98
ANALYSIS RUN BY	: DAVE MARTIN



PENDRAGON ENERGY PARTNERS
WELL ANALYSIS COMPARISON

LEASE : CHACO 4
STN.NO. : 90-044

WELLHEAD-TBG

02/06/1998
60000-10065

DATE	02/03/98	03/20/97
RUN NR.	PEN80019	PEN70013

NITROGEN	0.445	0.748
CO2	0.989	0.850
METHANE	96.963	96.976
ETHANE	1.521	1.369
PROPANE	0.036	0.024
I-BUTANE	0.009	0.006
N-BUTANE	0.009	0.006
I-PENTANE	0.004	0.003
N-PENTANE	0.002	0.000
HEXANES	0.022	0.018
BBL	1013.5	1010.1
GPM	0.4343	0.3857
SP.GRAV.	0.5748	0.5737

CO.CD 23 EL PASO NATURAL GAS
CUSTOMER ACCOUNTING SERVICES DEPARTMENT
VOLUME CALCULATION DIVISION
POST OFFICE BOX 1492
EL PASO, TEXAS 79978

CONTACTS:
EL PASO FIELD SERVICES
(713) 757-5953
EL PASO MAINLINE
(915) 496-2595

DATE 12/08/97

CHROMATOGRAPHIC GAS ANALYSIS REPORT

MAILEE
05380

PENDRAGON ENERGY PARTNERS INC
SUITE 750
621-17TH STREET
DENVER, CO 80293-9999

RECEIVED

DEC 11 1997

PENDRAGON ENERGY
PARTNERS, INC.

METER NUMBER 90044 - CHACO #4
OPERATOR 0580 - PENDRAGON ENERGY PARTNERS INC.

ANALYSIS DATE 11/08/97
SAMPLE DATE 11/05/97
EFFECTIVE DATE 12/01/97
EFFECTIVE FOR 6 MONTHS

TYPE CODE 2 - ACTUAL
H2S GRAINS 0
LOCATION F - FARM BECK

COMPONENTS	NORMALIZED MOL %	GPM
CO2	1.28	.000
H2S	.00	.000
N2	.32	.000
METHANE	86.81	.000
ETHANE	6.66	1.782
PROPANE	2.81	.774
ISO-BUTANE	.49	.160
NORM-BUTANE	.72	.227
ISO-PENTANE	.23	.084
NORM-PENTANE	.18	.065
HEXANE PLUS	.50	.218
	100.00	3.310

SPECIFIC GRAVITY .668

MIXTURE HEATING VALUE
(BTU @ 14.73 DRY) 1153

RATIO OF SPECIFIC HEATS .000

NO TEST SECURED FOR H2S CONTENT



RECEIVED

(505) 325-6622

APR - 3 1997

PENDRAGON ENERGY
PARTNERS, INC.Analysis No. PEN70013
Cust. No. 60000-10065

WELL/LEASE INFORMATION

Company : PENDRAGON ENERGY PRTRNS Source :
Well Name : CHACO 4 Pressure : 42 PSIG
County : SAN JUAN Sample Temp. : 73 DEG.F
State : NM Well Flowing : YES
Location : Date Sampled : 03/20/97
Fld/Formation : Sampled By : MIKE WAGONER
Cust.Stn.No. : 90-044 Foreman/Engr :

Remarks:

ANALYSIS

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR.*
NITROGEN	0.748	0.0000	0.00	0.0072
CO2	0.850	0.0000	0.00	0.0129
METHANE	96.976	0.0000	981.69	0.5372
ETHANE	1.369	0.3662	24.28	0.0142
PROPANE	0.024	0.0066	0.61	0.0004
I-BUTANE	0.006	0.0020	0.20	0.0001
N-BUTANE	0.006	0.0019	0.20	0.0001
I-PENTANE	0.003	0.0011	0.12	0.0001
N-PENTANE	0.000	0.0000	0.00	0.0000
HEXANES	0.018	0.0079	0.93	0.0006
TOTAL	100.000	0.3857	1008.01	0.5727

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

** @ 14.730 & 60 DEG. F

COMPRESSIBILITY FACTOR (1/Z) 1.0021
BTU/CU.FT. (DRY) CORRECTED FOR (1/Z) 1010.1
BTU/CU.FT. (WET) CORRECTED FOR (1/Z) 992.6
REAL SPECIFIC GRAVITY 0.5737

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

CYLINDER # : KFL102
CYLINDER PRESSURE : 36 PSIG
DATE RUN : 03/25/97
ANALYSIS RUN BY : DAVE MARTIN

corrected

New Well
5-26-77

6 DRY MODE METER CHACO-#4-NEW

1977

COMPONENT	MOL%	GPM	SP. GR.	BTU
N2	0.33	0.000	0.003	0.
CH4	90.17	0.000	0.499	912.
C2	5.16	0.000	0.054	91.
CO2	0.37	0.000	0.006	0.
C3	2.31	0.635	0.035	58.
IC4	0.50	0.162	0.010	16.
NC4	0.56	0.176	0.011	18.
IC5	0.22	0.081	0.006	9.
NC5	0.12	0.042	0.003	5.
CS+	0.27	0.120	0.009	14.
	100.00	1.218	0.636	1128.

BASE MOL% 100.24

EL PASO NATURAL GAS COMPANY
VOLUME ACCOUNTING DEPARTMENT
MEASUREMENT DIVISION
POST OFFICE BOX 1492
EL PASO, TEXAS 79978
PHONE: (915) 541-2595
CHROMATOGRAPHIC GAS ANALYSIS REPORT

DATE 8/09/96

MAILEE
05380

PENDRAGON ENERGY PARTNERS INC
SUITE 750
621-17TH STREET
DENVER, CO 80293-9999

METER NUMBER 90044 - CHACO #4
OPERATOR 0580 - PENDRAGON ENERGY PARTNERS INC.

ANALYSIS DATE 3/22/96 TYPE CODE 2 - ACTUAL
SAMPLE DATE 3/19/96 H2S GRAINS 0
EFFECTIVE DATE 7/01/96 LOCATION D - DANIELS FM
EFFECTIVE FOR 6 MONTHS

COMPONENTS	NORMALIZED MOL %	GPM
CO2	1.53	.000
H2S	.00	.000
N2	.90	.000
METHANE	89.34	.000
ETHANE	5.59	1.495
PROPANE	1.43	.394
ISO-BUTANE	.32	.105
NORM-BUTANE	.37	.117
ISO-PENTANE	.15	.055
NORM-PENTANE	.10	.036
HEXANE PLUS	.27	.118
	100.00	2.320

SPECIFIC GRAVITY .637
MIXTURE HEATING VALUE
(BTU @ 14.73 DRY) 1089
RATIO OF SPECIFIC HEATS .000
NO TEST SECURED FOR H2S CONTENT

**Production
Data**

Production Date:

Well Report

RECEIVED

FEB - 6 1998

Date: 1/98
 Oper: PENDRAGON ENERGY PARTNERS
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 100
 Plate: 1.500
 Hrs On: _____
 Hrs Off: _____

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	48					287	
2	48					285	
3	49					279	
4	48					278	
5	47			6		276	
6	52					267	
7	49	52	81	8		269	
8	50					269	
9	51			7		268	
10	49					270	
11	48					271	
12	48					273	
13	48					272	
14	55			6		263	
15	51					266	
16	49					27	
17	48					271	
18	49					274	
19	49	51	81	8		274	
20	62					233	
21	48	48	81	6		278	
22	49					278	
23	50			5		276	
24	50					273	
25	49					276	
26	48			7		277	
27	51			8		274	
28	52	53	80	7		264	
29	52					258	
30	53					256	
31	52					253	

Total MCFD: 8135

Additional Remarks:

Well Report

RECEIVED

JAN - 8 1998

**PENDRAGON ENERGY
PARTNERS, INC.**

Date: 12/97

Coeff: 13.56

Oper: PENDRAGON ENERGY PARTNERS

Range: 100

Spring: 100

Well: Chaco #4

Plate: 1.500

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	45					315	
2	47					310	
3	48	50	84	9		307	
4	48			9		303	Light heater
5	43			9		339	
6	48					299	
7	46					291	
8	45					291	
9	52					286	
10	50			7		289	
11	48					290	
12	47	47	74	10		291	
13	47					287	
14	46					289	
15	50					285	
16	49					288	
17	48			9		288	
18	52					280	
19	50					279	
20	50					278	
21	49					278	
22	63	78	86	3		252	
23	48					285	
24	48			10		280	
25	55					273	
26	57					289	
27	47					289	
28	44					292	
29	47			8		286	
30	50					284	
31	49	50	83	6		317	

Total MCFD:

9010

Additional Remarks:

Well Report

RECEIVED

Date: 11/97
 Oper: PENDRAGON ENERGY PARTNERS
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 100
 Plate: 1.500
 Hrs On: _____
 Hrs Off: _____

DFC - 4 1997
 PENDRAGON ENERGY
 PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	46					347	
2	46					346	
3	60	74	87	5		310	
4	41					347	
5	42			12		338	
6	42					342	
7	44					340	
8	44					339	
9	47					335	
10	50	52	83	7		333	
11	54					326	
12	44			11		337	
13	45					335	
14	47					333	
15	47					333	
16	46					332	
17	50			8		330	
18	45					332	
19	45			9		330	
20	44					330	
21	44					323	
22	44					319	
23	47					316	
24	48	50	79	8		315	Blow drip
25	45					317	
26	45					317	
27	44					318	
28	45					319	
29	47					317	
30	61					282	
31						0	

Total MCFD: 9838

Additional Remarks:

Well Report

Date: 10/97
 Oper: PENDRAGON ENERGY PARTNERS
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 100
 Plate: 1.500
 Hrs On: _____
 Hrs Off: _____

RECEIVED
 NOV - 5 1997
 PENDRAGON ENERGY
 PARTNERS INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	52					342	
2	48			12		344	
3	49					344	
4	46					346	
5	48					342	
6	44					347	
7	54	68	87	7		331	
8	51					343	
9	54			9		342	
10	51					344	
11	51					344	
12	50					344	
13	48					344	
14	48					342	
15	47					337	
16	48	50	75	10		338	
17	45					340	
18	49					336	
19	44					341	
20	45	45	85	12		340	
21	52					332	
22	54	57	85	8		335	
23	53					331	
24	59					324	
25	48					339	
26	46					339	
27	45					341	
28	40	43	84	11		345	
29	45					340	
30	62			8		303	
31	46			10		364	

Total MCFD: 10524

Additional Remarks:

Lease Number NMSF080238A
Agreement Number _____
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
or
Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report period 0 9 9 7 (mmyy) (See reverse of form for instructions)

Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
Operator Well Number									
300 32241000S1	7NWNW	28N	12W	PGW	30		10531		
4 CHACO									
300452241100S1	1SESE	28N	13W	PGW	30		10022		
5 CHACO									
300 12359300S1	1NWNW	28N	13W	PGW					
2J CHACO LTD				65%					
300452513400S1	1NESW	28N	13W	PGW	30		36		
1J CHACO LTD									

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
• On hand, Start of Month	_____	XXXXXXXXXXXX	XXXXXXXXXXXX
• Produced	_____	20589	_____
• Sealed	_____	20589	XXXXXXXXXXXX
• Spilled or Lost	_____	XXXXXXXXXXXX	XXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXX	_____	XXXXXXXXXXXX
• Used on or for Benefit of Lease	_____	_____	XXXXXXXXXXXX
• Injected	XXXXXXXXXXXX	_____	XXXXXXXXXXXX
• Gas Transferred	_____	_____	_____
Plant Number/Name	_____	_____	_____
• Surface Pits	XXXXXXXXXXXX	XXXXXXXXXXXX	_____
• Other	_____	_____	_____
Identify	_____	_____	_____
• On hand, End of Month	_____	XXXXXXXXXXXX	XXXXXXXXXXXX
• API Gravity/BTU Content	_____	1050	XXXXXXXXXXXX

COMMENTS

Robert Bomar 915-684-4407

Bomar Consulting Service

415 W. Wall St., Suite 1000

Midland, Texas 79701-4436

CONTACT NAME

ADDRESS

AUTHORIZING SIGNATURE

AUTHORIZING NAME (type or print)

PHONE NUMBER ()

EXT.

DATE 11/13/97 (mmddyy)

PAGE 1 OF

Well Report

RECEIVED

Date: 9/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 100
 Plate: 1.500
 Hrs On:
 Hrs Off:

OCT - 8 1997
PENDRAGON ENERGY PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	43					366	
2	45					362	
3	48			11		359	
4	46	56	94	12		358	
5	47					357	
6	45					359	
7	46					358	
8	45					355	
9	49					355	
10	97					313	
11	60					344	
12	51					358	
13	49					358	
14	48					357	
15	50					354	
16	52	56	87	10		352	
17	51					350	
18	53			8		352	
19	52					353	
20	53					351	
21	56					344	
22	52	56	86	8		353	
23	51					351	
24	50			11		350	
25	52					359	
26	50			10		344	
27	51					347	
28	49					348	
29	52					343	
30	50			10		344	
31						0	

Total MCFD: 10554

Additional Remarks:

Lease Number MMSF080238A
 Agreement Number _____
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
 or Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report

Period 0 8 9 7 (mmyy)

(See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
004 2241000S1 CHACO	7NNW	28N	12W	PGW	31		12154		
004 2241100S1 CHACO	1SESE	28N	13W	PGW	31		11245		
004 2359300S1 CHACO LTD	1NWN	28N	13W	PGW GSI					
004 2513400S1 CHACO LTD	1NESW	28N	13W	PGW GSI					

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
• On hand, Start of Month	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Produced	23399	23399	XXXXXXXXXXXX
• Sold	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Spilled or Lost	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Used on or for Benefit of Lease	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Irregular	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Gas Transferred	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Plant Number/Name	XXXXXXXXXXXX	XXXXXXXXXXXX	
• Surface Pits	XXXXXXXXXXXX	XXXXXXXXXXXX	
• Other			
Identify			
• On hand, End of Month	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• A. Gravity/BTU Content	1039	XXXXXXXXXXXX	XXXXXXXXXXXX

COMMENTS

Robert Bomar 915-684-4407
 Bomar Consulting Service
 110 N. Marienfeld, Suite 450
 Midland, Texas 79701-4412

CONTACT NAME

ADDRESS

PHONE NUMBER () EXT.

AUTHORIZING SIGNATURE

DATE 101597 (mmddyy)

AUTHORIZING NAME (type or print)

PAGE 1 OF

Well Engineering & Production Well Report

RECEIVED

Date: 8/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 250
 Plate: 1.500
 Hrs On: _____
 Hrs Off: _____

SEP - 8 1997
 PENDRAGON ENERGY
 PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	87					445	
2	80					457	
3	73					451	
4	71			12		431	
5	74					415	
6	71			10		418	
7	66					412	
8	65			14		421	
9	50					416	
10	50					408	
11	50					403	
12	49	60	97	14		399	
13	52					392	
14	53			12		389	
15	57					379	
16	55					378	
17	54					376	
18	51			10		378	
19	62					353	
20	59	62	97	10		361	
21	56					362	
22	49	59	97	6		376	
23	60					359	
24	50					382	
25	48					381	
26	52					374	
27	51	62	97	11		374	
28	48			14		366	
29	53					368	
30	47					367	
31	47					364	

Total MCFD: 12155

Additional Remarks:

Lease Number NMSF080238A

Agreement Number _____

Field Name _____

Unit Name _____

Participating Area Name _____

County SAN JUAN State NMOperator PENDRAGON ENERGY PARTNERS, INC K0835☐ Amended Report Federal ☒or
Indian ☐The following is a correct report of operations and production (including status of all unplugged wells) for the report
period 0 7 9 7 (mmyy) (See reverse of form for instructions)

API Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
3 452241000S1	7NNW	28N	12W	PGW	31		8879		
4 CHACO									
300452241100S1	1SESE	28N	13W	PGW	31		8859		
5 CHACO									
3 452359300S1	1NWN	28N	13W	PGW	31		65		
20 CHACO LTD									
300452513400S1	1NESW	26N	13W	PGW	31		58		
1 CHACO LTD									

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
On hand, Start of Month	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Produced	17861	17861	XXXXXXXXXXXX
• Sold	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Spilled or Lost	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Used on or for Benefit of Lease	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Injected	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Gas Transferred	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Plant Number/Name	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Surface Pits	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Other	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Identify	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• On hand, End of Month	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
API Gravity/BTU Content	1034	XXXXXXXXXXXX	XXXXXXXXXXXX

COMMENTS _____

CONTACT NAME Robert Bomar 915-684-4407

PHONE NUMBER () EXT. _____

ADDRESS Bomar Consulting Service110 N. Mariensfeld, Suite 450AUTHORIZING SIGNATURE Midland, Texas 79701-4412DATE 091497 (mmddyy)

AUTHORIZING NAME (type or print) _____

PAGE 1 OF

**

Well Report

Date: 7/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 250
 Plate: 1.500
 Hrs On:
 Hrs Off:

RECEIVED

AUG - 8 1997

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	50					351	
2	72			6		320	
3	47					353	
4	45					358	
5	45					363	
6	45					361	
7	45	53	93	13		357	
8	46					362	
9	59			9		355	
10	45					353	
11	45					351	
12	44					350	
13	43					350	
14	61			8		331	
15	60	66	94	9		332	
16	60			8		333	
17	56					336	
18	61					328	
19	46					354	
20	57					338	
21	46					361	
22	51	86	96	6		347	
23	45			11		382	
24						30	close well in
25						0	
26						0	
27						0	
28						0	
29						0	
30	82	136	136			370	open well
31	82					468	

Total MCFD: 8894

Additional Remarks:

Lease Number NMSFO80238A
 Agreement Number _____
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report

Federal ☒
 or
 Indian ☐

—The following is a correct report of operations and production (including status of all unplugged wells) for the report period 0 8 9 7 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
300 52241000S1 4 HACO	7NWNW	28N	12W	PGW	30	—	10265		
300452241100S1 5 HACO	1SESE	28N	13W	PGW	30		10950		
300 52358300S1 2J CHACO LTD	1NWNW	28N	13W	PGW	30		62		
300452513400S1 1J CHACO LTD	1NESW	28N	13W	PGW	30		73		

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
• Hand, Start of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• Produced	_____	21350	_____
• Sold	_____	21350	XXXXXXXXXXXXX
• Filled or Lost	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
• Used on or for Benefit of Lease	_____	_____	XXXXXXXXXXXXX
• Injected	_____	_____	_____
• Gas Transferred	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
Plant Number/Name _____	_____	_____	_____
• Surface Pits	XXXXXXXXXXXXX	XXXXXXXXXXXXX	_____
• Other	_____	_____	_____
Identify _____	_____	_____	_____
• Hand, End of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• Gravity/BTU Content	_____	1034	XXXXXXXXXXXXX

COMMENTS

Robert Bomar 915-684-4407
 CONTACT NAME Bomar Consulting Service
 ADDRESS 110 N. Marienfeld, Suite 450
Midland, Texas 79701-4412

TELEPHONE NUMBER () EXT. _____

AUTHORIZING SIGNATURE Robert Bomar DATE 081497 (mmddyy)

AUTHORIZING NAME (type or print) _____

PAGE 1 OF **

Well Report

Date: 6/97

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #4

Coeff: 13.56

Range: 100

Spring: 250

Plate: 1.500

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	48					350	
2	43			11		356	
3	43					354	
4	43			14		355	Blow drip
5	43	53	95			355	
6	43					355	
7	42					356	
8	41					358	EPNG replaced meter
9	51					355	run settlement tests
10	46			10		350	
11	48			10		357	
12	49	57	95			348	Blow drip - clean &
13	48			12		348	adjust dump
14	47					348	
15	47					348	
16	69			7		343	
17	57					335	
18	46	55	95	11		351	
19	49					344	
20	70					270	
21	43					367	
22	38					369	
23	39					367	
24	41			13		364	
25	41	55	93	10		362	
26	43					361	
27	43					360	
28	42					360	
29	42					360	
30	43				14.0	360	
31						0	

Total MCFD: 10566

Additional Remarks:

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JUL 23 1997
PENDRAGON ENERGY
PARTNERS, INC.

Lease Number NMSF080238A
 Agreement Number _____
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC KO835

☐ Amended Report

Federal ☒
 or
 Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report

period 0 5 9 7 (mmyy)

(See reverse of form for instructions)

API Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
Operator Well Number									
30X 52241000S1	7NWNW	26N	12W	PGW	31		11197		
4 CHACO									
30X 52241100S1	1SESE	26N	13W	PGW	31		11561		
5 CHACO									
30X 52359300S1	1NWNW	26N	13W	PGW	31		115		
2J CHACO LTD									
30X 52513400S1	1NESW	26N	13W	PGW	31		118		
1J CHACO LTD									

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLS)	Gas (MCF)	Water (BBLS)
• In hand, Start of Month	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Produced	22991	22991	XXXXXXXXXXXX
• sold	22991	XXXXXXXXXXXX	XXXXXXXXXXXX
• spilled or Lost	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Used on or for Benefit of Lease	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Injected	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Gas Transferred	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Plant Number/Name	XXXXXXXXXXXX	XXXXXXXXXXXX	
• Surface Pits	XXXXXXXXXXXX	XXXXXXXXXXXX	
• Other			
Identify			
• In hand, End of Month	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• API Gravity/BTU Content	1034	XXXXXXXXXXXX	XXXXXXXXXXXX

COMMENTS

CONTACT NAME _____ PHONE NUMBER () _____ EXT. _____

ADDRESS _____

AUTHORIZING SIGNATURE _____ DATE _____ (mmddyy)

AUTHORIZING NAME (type or print) _____ PAGE 1 OF **

Well Report

Date: 5/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 250
 Plate: 1.500
 Hrs On: _____
 Hrs Off: _____

RECEIVED

JUN - 9 1997

PENDRAGON ENERGY
 PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	47					371	
2	50			12		373	
3	42					376	
4	46					373	
5	43					374	
6	45					368	
7	76	87	93	7		355	
8	73					360	
9	41					360	
10	40					361	
11	42					360	
12	42			12		358	
13	43					358	
14	52			11		360	
15	45					366	
16	43					366	
17	41					365	
18	40					364	
19	41					360	
20	42			13		360	call EP meter scrambl
21	42		93			361	
22	44					358	
23	42					359	
24	40					361	
25	40					361	
26	39					362	
27	39	54	93	14		359	
28	43			12		358	blow drip
29	41			15		359	
30	42			14		358	
31	43					356	

Total MCFD: 11240

Additional Remarks:

Lease Number NMSF080238A
 Agreement Number _____
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
 or
 Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report
 period 0 4 9 7 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
0452241000S1 CHACO	7NWNW	28N	12W	PGW	30		10867		
0452241100S1 CHACO	1SESE	28N	13W	PGW	30		11168		
0452359300S1 CHACO LTD	1NWNW	28N	13W	PGW	30		101		
0452513400S1 CHACO LTD	1NESW	28N	13W	PGW	30		120		

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
• On hand, Start of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• Produced	_____	22256	_____
• Sold	_____	22256	XXXXXXXXXXXXX
• Spilled or Lost	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
• Used on or for Benefit of Lease	_____	_____	XXXXXXXXXXXXX
• Injected	_____	_____	_____
• Gas Transferred	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
Plant Number/Name _____	_____	_____	_____
• Surface Pits	XXXXXXXXXXXXX	XXXXXXXXXXXXX	_____
• Other	_____	_____	_____
Identify _____	_____	_____	_____
• On hand, End of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• API Gravity/BTU Content	_____	1047	XXXXXXXXXXXXX

COMMENTS _____

Robert Bomar 915-684-4407
 CONTACT NAME Bomar Consulting Service PHONE NUMBER () EXT. _____
 ADDRESS 110 N. Marienfeld, Suite 450
 Midland, Texas 79701-4412
 AUTHORIZING SIGNATURE _____ DATE _____ (mmddyy)
 AUTHORIZING NAME (type or print) _____ PAGE 1 OF **

Well Report

Date: 4/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 250
 Plate: 1.500
 Hrs On: _____
 Hrs Off: _____

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MAY - 5 1997

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	41					365	
2	43	51	80	12		364	
3	41					364	
4	39			14		366	
5	42					364	
6	41					365	
7	41			11		364	
8	43			11		362	
9	44	53	96	13		361	
10	47					357	
11	48			10		362	
12	43					362	
13	42					362	
14	44			12		361	
15	42					361	
16	46			12		360	
17	43					360	
18	43	54	89	12		359	
19	44					359	
20	43					359	
21	44			12		358	
22	44					360	
23	44			12		360	
24	45					358	
25	42					360	
26	50					353	
27	50					366	
28	44			14		372	
29	42	53	94	13		374	
30	42			13		374	
31						0	

Total MCFD: 10872

Additional Remarks:

Lease Number NMSF080238A
Agreement Number _____
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
or
Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report
period 0 3 9 7 (mmyy) (See reverse of form for instructions)

Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
Operator Well Number									
300 2241000S1	7NWNW	26N	12W	PGW	31		11658		
4 IACO									
300452241100S1	1SESE	26N	13W	PGW	31		11234		
5 IACO									
300 2359300S1	1NWNW	26N	13W	PGW	31		90		
2J CHACO LTD									
300 2513400S1	1NESW	26N	13W	PGW	31		3		
1J CHACO LTD									

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
• In hand, Start of Month		XXXXXXXXXXXX	XXXXXXXXXXXX
• Produced		22985	
• Sold		22985	XXXXXXXXXXXX
• Billed or Lost		XXXXXXXXXXXX	XXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXX		XXXXXXXXXXXX
• Used on or for Benefit of Lease			XXXXXXXXXXXX
• Rejected	XXXXXXXXXXXX		XXXXXXXXXXXX
• Gas Transferred			
Plant Number/Name	XXXXXXXXXXXX	XXXXXXXXXXXX	
• Surface Pits			
• Other			
Identify			
• In hand, End of Month		XXXXXXXXXXXX	XXXXXXXXXXXX
• PI Gravity/BTU Content		1047	XXXXXXXXXXXX

COMMENTS

CONTACT NAME Robert Bomar 915-684-4407
Bomar Consulting Service PHONE NUMBER () EXT.
ADDRESS 110 N. Marienfeld, Suite 450
Midland, Texas 79701-4412
AUTHORIZING SIGNATURE _____ DATE _____ (mmddyy)

AUTHORIZING NAME (type or print) _____ PAGE 1 OF **

Well Report

Date: 3/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 250
 Plate: 1.500
 Hrs On: _____
 Hrs Off: _____

RECEIVED

APR - 3 1997

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	43					364	
2	42					364	
3	44					363	
4	43					364	
5	44	54	93	13		364	Exchange dump valve
6	43					367	Light heater
7	45			11		361	
8	46					359	
9	46					359	
10	47			13		358	
11	46					359	
12	39	49	85	13		366	
13	39					370	
14	39			14		370	
15	39					373	
16	39					371	
17	41			12		370	
18	40					370	
19	40	50	93	11		370	
20	40					367	
21	44					307	Cows closed valve
22	40					368	Remove handle
23	40					368	
24	68			10		342	
25	48					363	
26	43	51	95	13		366	
27	44			15		363	
28	43					364	
29	43					364	
30	44					362	
31	41			13		369	

Total MCFD:

11245

Additional Remarks:

Lease Number NMSF080238A
 Agreement Number _____
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
 or
 Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report
 period 0 2 9 7 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
30 152241000S1 4 CHACO	7NNW	26N	12W	PGW	28		10457		
300452241100S1 5 CHACO	1SESE	26N	13W	PGW	28		10426		
30 152359300S1 2J CHACO LTD	1NWN	26N	13W	PGW	28		87		
300452513400S1 1J CHACO LTD	1NESW	26N	13W	PGW GSE					

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
On hand, Start of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
Produced	_____	20970	_____
Sold	_____	20970	XXXXXXXXXXXXX
Spilled or Lost	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
Used on or for Benefit of Lease	_____	_____	XXXXXXXXXXXXX
Injected	_____	_____	_____
Gas Transferred	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
Plant Number/Name _____	XXXXXXXXXXXXX	XXXXXXXXXXXXX	_____
Surface Pits	_____	_____	_____
Other	_____	_____	_____
Identify _____	_____	_____	_____
On hand, End of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
API Gravity/BTU Content	_____	1048	XXXXXXXXXXXXX

COMMENTS _____

CONTACT NAME

ADDRESS

Robert Bomar 915-684-4407
 Bomar Consulting Service
 110 N. Marienfeld, Suite 450
 Midland, Texas 79701-4412

PHONE NUMBER () EXT. _____

AUTHORIZING SIGNATURE _____

DATE _____ (mmddyy)

AUTHORIZING NAME (type or print) _____

PAGE 1 OF **

Well Report

Date: 2/97

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #4

Coeff: 13.56

Range: 100

Spring: 250

Plate: 1.500

Hrs On:

Hrs Off:

RECEIVED

MAR - 6 1997

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	37					375	
2	36					385	
3	38	40	87	13		384	
4	36			16		382	
5	79			7		359	
6	48			16		380	
7	36					382	
8	36					379	
9	35					379	
10	35			16		379	
11	36	39	86	16		378	
12	35					377	
13	32					382	
14	31			17		379	
15	35					376	
16	42					368	
17	37					374	
18	40					371	
19	49			10		368	
20	40	43	83	14		368	
21	44			14		365	
22	40					368	
23	38					371	
24	40			15		371	
25	43					367	
26	47	47	90	14		361	
27	43			13		364	
28	42			13		368	
29						0	
30						0	
31						0	

Total MCFD: 10460

Additional Remarks:

Lease Number NMSF080238A
Agreement Number _____
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report
Federal ☒
or
Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report
period 0 1 9 7 (mmyy) (See reverse of form for instructions)

API Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
Operator Well Number									
300452241000S1	7NWNW	28N	12W	PGW	31		11635		
4 CHACO									
300452241100S1	1SESE	28N	13W	PGW	31		1170		
5 CHACO									
300452359300S1	1NWNE	28N	13W	PGW	31		257		
21 CHACO LTD									
300452513400S1	1NESW	28N	13W	PGW					
11 CHACO LTD				GS					

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
On hand, Start of Month		XXXXXXXXXXXXX	XXXXXXXXXXXXX
Produced		23062	
Sold		23062	XXXXXXXXXXXXX
Spilled or Lost		XXXXXXXXXXXXX	XXXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXXX		XXXXXXXXXXXXX
Used on or for Benefit of Lease			XXXXXXXXXXXXX
Injected	XXXXXXXXXXXXX		XXXXXXXXXXXXX
Gas Transferred			
Plant Number/Name			
Surface Plots	XXXXXXXXXXXXX	XXXXXXXXXXXXX	
Other			
Identify			
On hand, End of Month		XXXXXXXXXXXXX	XXXXXXXXXXXXX
API Gravity/BTU Content		1048	XXXXXXXXXXXXX

COMMENTS _____

CONTACT NAME Robert Bomar 915-684-4407
Bomar Consulting Service
ADDRESS 110 N. Marienfeld, Suite 450
Midland, Texas 79701-4412

PHONE NUMBER () _____ EXT. _____

AUTHORIZING SIGNATURE _____ DATE _____ (mmddyy)

AUTHORIZING NAME (type or print) _____ PAGE 1 OF ..

Well Report

Date: 1/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 250
 Plate: 1.500
 Hrs On: _____
 Hrs Off: _____

RECEIVED

FEB 10 1997

Meter #90-044

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	56					372	
2	45					378	
3	46					377	
4	45					377	
5	45					377	
6	45					378	
7	61		104			358	
8	50					375	
9	44					377	
10	61					366	Watts meter will not
11	44					377	pull up Dots
12	46					367	
13	35					380	
14	34					383	
15	34					383	
16	33					386	
17	36			16		389	
18	34					384	
19	36					381	
20	34					383	
21	36			17		381	
22	40			14		376	
23	38		93			373	Watts meter will not
24	37					375	pull Data
25	37					376	
26	39					373	
27	48			11		367	
28	36					375	
29	35					376	
30	38			15		354	
31	40	44	90	14		366	

Total MCFD: 11640

Additional Remarks:

Lease Number NMSF080238A
 Agreement Number _____
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
 or Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report
 period 1 2 9 6 (mmyy) (See reverse of form for instructions)

API Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
Operator Well Number									
10452241000S1	7NWNW	26N	12W	PGW	31		12240		
4 CHACO									
300452241100S1	1SESE	26N	13W	PGW	31		11277		
CHACO									
10452359300S1	1NWNE	26N	13W	PGW	31		47		
2J CHACO LTD									
10452513400S1	1NESW	26N	13W	PGW GSI					
CHACO LTD									

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
• On hand, Start of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• Produced	_____	23564	_____
• Sold	_____	23564	XXXXXXXXXXXXX
• Spilled or Lost	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
• Used on or for Benefit of Lease	_____	_____	XXXXXXXXXXXXX
• Injected	_____	_____	_____
• Gas Transferred	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
Plant Number/Name _____	XXXXXXXXXXXXX	XXXXXXXXXXXXX	_____
• Surface Pits	_____	_____	_____
• Other	_____	_____	_____
Identify _____	_____	_____	_____
• On hand, End of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• API Gravity/BTU Content	_____	1049	XXXXXXXXXXXXX

COMMENTS

Robert Bomar 915-684-4407
 CONTACT NAME Bomar Consulting Service
 110 N. Marienfeld, Suite 450
 ADDRESS Midland, Texas 79701-4412
 AUTHORIZING SIGNATURE [Signature] DATE 02/29/97 (mmddyy)
 AUTHORIZING NAME (type or print) _____

Well Report

Date: 12/96

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #4

Coeff: 13.56

Range: 100

Spring: 250

Plate: 1.500

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	33					392	
2	31					399	
3	32					403	
4	34					403	
5	37		94			405	
6	34					400	
7	35					399	
8	36					398	
9	38					395	
10	37		99			399	
11	38					401	
12	38					396	
13	37					400	
14	37					395	
15	35					398	
16	36					397	
17	38					396	
18	37					404	
19	30		98			442	
20	34					413	
21	36					399	
22	39					392	
23	38					388	
24	41					386	
25	38					385	
26	40					382	
27	39		97			382	
28	40					391	
29	41					391	
30	45					384	
31	41					396	

Total MCFD: 12311

Additional Remarks:

Lease Number NMSF080238A
 Agreement Number _____
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
 or
 Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report

period 1 1 9 8 (mmyy) (See reverse of form for instructions)

API Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
Operator Well Number									
30 52241000S1	7NNW	26N	12W	PGW	30		11703		
4 HACO									
300452241100S1	1SESE	26N	13W	PGW	30		11139		
5 HACO									
30 52359300S1	1NWN	26N	13W	PGW	30		410		
2J CHACO LTD									
300452513400S1	1NESW	26N	13W	PGW GSI					
1J CHACO LTD									

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLS)	Gas (MCF)	Water (BBLS)
• Hand, Start of Month	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Produced	23252	23252	XXXXXXXXXXXX
• Sold	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Filled or Lost	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Used on or for Benefit of Lease	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Injected	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• C's Transferred	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Plant Number/Name	XXXXXXXXXXXX	XXXXXXXXXXXX	
• Surface Pits	XXXXXXXXXXXX	XXXXXXXXXXXX	
• C'er			
Identify			
• Hand, End of Month	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Gravity/BTU Content	1050	XXXXXXXXXXXX	XXXXXXXXXXXX

COMMENTS

Robert Bomar 915-684-4407

CONTACT NAME

Bomar Consulting Service

PHONE NUMBER ()

EXT.

ADDRESS

110 N. Marienfeld, Suite 450
Midland, Texas 79701-4412

AUTHORIZING SIGNATURE

DATE 01/14/97 (mmddyy)

AUTHORIZING NAME (type or print)

PAGE 1 OF

**

Well Report

Date: 11/96

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #4

Coeff: 13.56

Range: 100

Spring: 250

Plate: 1.500

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	32					399	
2	35					398	
3	31					401	
4	32					400	
5	34		96			394	
6	40					392	
7	33					395	
8	33					397	
9	32					398	
10	31					400	
11	34		98			404	
12	37					389	
13	34					392	
14	37					389	
15	35					390	
16	35					390	
17	36					388	
18	37					387	
19	88	102	115			372	
20	37					384	
21	40					381	
22	43					380	
23	36					387	
24	36					388	
25	33					441	
26	42					381	
27	35					386	
28	35					387	
29	33					387	
30	32					392	
31						0	

Total MCFD:

11769

Additional Remarks:

Lease Number NMSF080238A
Agreement Number _____
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
or
Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report
period 1 0 9 6 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
<u>0452241000S1</u> <u>CHACO</u>	<u>7NNW</u>	<u>26N</u>	<u>12W</u>	<u>PGW</u>	<u>31</u>		<u>11844</u>		
<u>300452241100S1</u> <u>E CHACO</u>	<u>1SESE</u>	<u>26N</u>	<u>13W</u>	<u>PGW</u>	<u>31</u>		<u>11300</u>		
<u>0452359300S1</u> <u>CHACO LTD</u>	<u>1NWNE</u>	<u>26N</u>	<u>13W</u>	<u>PGW</u> <u>GSI</u>					
<u>300452513400S1</u> <u>CHACO LTD</u>	<u>1NESW</u>	<u>26N</u>	<u>13W</u>	<u>PGW</u> <u>GSI</u>					

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
On hand, Start of Month		XXXXXXXXXXXXX	XXXXXXXXXXXXX
Produced		<u>23144</u>	
Sold		<u>23144</u>	XXXXXXXXXXXXX
Spilled or Lost		XXXXXXXXXXXXX	XXXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXXX		XXXXXXXXXXXXX
Used on or for Benefit of Lease			XXXXXXXXXXXXX
Injected			
Gas Transferred	XXXXXXXXXXXXX		XXXXXXXXXXXXX
Plant Number/Name			
Surface Pits	XXXXXXXXXXXXX	XXXXXXXXXXXXX	
Other			
Identify			
On hand, End of Month		XXXXXXXXXXXXX	XXXXXXXXXXXXX
API Gravity/BTU Content		<u>1045</u>	XXXXXXXXXXXXX

COMMENTS _____

CONTACT NAME Robert Bomar 915-684-4407
Bomar Consulting Service
110 N. Marienfeld, Suite 450
ADDRESS Midland, Texas 79701-4412

PHONE NUMBER () _____ EXT. _____

AUTHORIZING SIGNATURE _____ DATE _____ (mmddyy)

AUTHORIZING NAME (type or print) _____

PAGE 1 OF **

Well Report

Date: 10/96

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #4

Coeff: 13.56

Range: 100

Spring: 250

Plate: 1.500

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	30					429	
2	33					426	
3	50					404	
4	40					409	
5	48					401	
6	48					399	
7	44	51	110			404	
8	49					409	
9	46					416	
10	33					418	approx. 12 BPD
11	32					419	
12	33					416	
13	42					401	
14						388	
15	38					397	SI @ 4 pm - EPNG
16	31					147	
17						0	
18	27	141	144			302	On @ 1800 hrs.
19	34					448	
20	32					415	
21	32					410	
22	30					404	
23	36					404	
24	33					404	
25	37					400	
26	40					397	
27	38					397	
28	36					398	21 BPD
29	48	50	114			387	
30						0	
31						0	

Total MCFD: 11049

Additional Remarks:

Lease Number NMSF080238A
 Agreement Number _____
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC K0835
☐ Amended Report. Federal ☒
 or Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report
 period 0 9 9 8 (mmyy) (See reverse of form for instructions)

API Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
Operator Well Number									
00452241000S1 CHACO	7NWNW	26N	12W	PGW	30		10756		
300452241100S1 CHACO	1SESE	26N	13W	PGW	30		10301		
00452359300S1 2J CHACO LTD	1NWNW	26N	13W	PGW GSI					
300452513400S1 J CHACO LTD	1NESW	26N	13W	PGW GSI					

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
• On hand, Start of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• Produced	_____	21057	_____
• Sold	_____	21057	XXXXXXXXXXXXX
• Spilled or Lost	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
• Used on or for Benefit of Lease	_____	_____	XXXXXXXXXXXXX
• Injected	_____	_____	_____
• Gas Transferred	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
Plant Number/Name _____	_____	_____	_____
• Surface Pits	XXXXXXXXXXXXX	XXXXXXXXXXXXX	_____
• Other	_____	_____	_____
Identify _____	_____	_____	_____
• On hand, End of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
• API Gravity/BTU Content	_____	1038	XXXXXXXXXXXXX

COMMENTS _____

CONTACT NAME _____ PHONE NUMBER () _____ EXT. _____

ADDRESS _____

AUTHORIZING SIGNATURE _____ DATE _____ (mmddyy)

AUTHORIZING NAME (type or print) _____ PAGE 1 OF **

Walsh Engineering & Production Well Report

Date: 9/96
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 250
 Plate: 1.500
 Hrs On: _____
 Hrs Off: _____

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	40					423	
2	31					431	
3	33					433	
4	40					428	
5	73					407	
6	32					425	
7	27		109			428	Shut well in
8						0	
9						0	
10						0	
11						0	
12						0	
13			135			0	Well on
14						0	
15	41					548	
16	44					488	
17	41					477	
18	52					448	
19	30					452	
20	31					454	
21	29					451	
22	27		108			451	
23	30					444	
24	28					441	
25	32					439	
26	31					444	
27	40					429	
28	30					435	
29	31					432	
30	31		107			430	
31						0	

Total MCFD:

10234

Additional Remarks:

Lease Number NMSF080238A
 Agreement Number _____
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC K0835
☐ Amended Report Federal ☒
 or Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report period 0 8 9 6 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
3 1452241000S1 4 CHACO	7NWNW	26N	12W	PGW	31		11236		
300452241100S1 5 CHACO	1SESE	26N	13W	PGW	31		12697		
3 1452359300S1 2J CHACO LTD	1NWNE	26N	13W	PGW	31		71		
300452513400S1 1 CHACO LTD	1NESW	26N	13W	PGW GSI					

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
On hand, Start of Month		XXXXXXXXXXXXX	XXXXXXXXXXXXX
• Produced		24004	
Sold		24004	XXXXXXXXXXXXX
Spilled or Lost		XXXXXXXXXXXXX	XXXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXXX		XXXXXXXXXXXXX
• Used on or for Benefit of Lease			XXXXXXXXXXXXX
njected			
• Gas Transferred	XXXXXXXXXXXXX		XXXXXXXXXXXXX
Plant Number/Name			
Surface Pits	XXXXXXXXXXXXX	XXXXXXXXXXXXX	
Other			
Identify			
On hand, End of Month		XXXXXXXXXXXXX	XXXXXXXXXXXXX
API Gravity/BTU Content		1039	XXXXXXXXXXXXX

COMMENTS _____

CONTACT NAME Robert Bomar PHONE NUMBER (915) 684-4407 EXT. _____

ADDRESS 110 N. Marienfeld, #450 Midland, TX 79701

AUTHORIZING SIGNATURE _____ DATE 10 1 196 (mmddyy)

AUTHORIZING NAME (type or print) _____ PAGE 1 OF **

Well Report

Date: 8/96
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 250
 Plate: 1.500
 Hrs On: _____
 Hrs Off: _____

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	39					430	
2	44					422	
3	38					426	
4	30					432	
5	57					396	
6	88		111			381	
7	90					205	
8	52					366	
9	32					423	
10	41					419	
11	31					428	
12	37					424	
13	82					391	
14	41					421	
15	71					402	
16	50					417	
17	45					422	
18	45					424	
19	62					408	
20	44					421	
21	42					424	
22	42		96			428	
23	118					269	
24	60					473	
25	41					486	
26	42					467	
27	44		102			436	
28	42					432	
29	42					436	
30	43					432	
31	44					435	

Total MCFD: 12776

Additional Remarks:

Lease Number NMSF080238A
Agreement Number _____
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
or
Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report period 0 7 9 8 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
300452241000S1 4 CHACO	7NWNW	28N	12W	PGW	31		12418		
300452241100S1 5 CHACO	1SESE	28N	13W	PGW	31		10922		
300452359300S1 21 CHACO LTD	1NWNW	28N	13W	PGW GSI					
300452513400S1 10 CHACO LTD	1NESW	28N	13W	PGW GSI					

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
On hand, Start of Month	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Produced	23345	23345	XXXXXXXXXXXXXX
Sold	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Spilled or Lost	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Used on or for Benefit of Lease	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Injected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Gas Transferred	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Plant Number/Name	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	
Surface Pits	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	
Other			
Identify			
On hand, End of Month	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
API Gravity/BTU Content	1039	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX

COMMENTS _____

CONTACT NAME Robert Bomar 915-684-4407
Bomar Consulting Service ONE NUMBER () EXT. _____
ADDRESS 110 N. Marienfeld, Suite 450
Midland, Texas 79701-4412
AUTHORIZING SIGNATURE _____ DATE 0 7 9 8 (mmdyy)

Well Report

Date: 7/96

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #4

Coeff: 13.56

Range: 100

Spring: 250

Plate: 1.500

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	40					440	
2	50					431	
3	58					423	
4	40					441	
5	40					439	
6	40					436	
7	43					435	
8	46					432	
9	37		109			434	
10	65					220	
11	50					305	
12	33					398	
13	58					410	
14	80					391	
15	44					429	
16	34					438	
17	34					433	
18	31		111			434	
19	33					442	
20	40					437	
21	30					440	
22	52					429	
23	60		114			417	
24	50					311	
25	67					411	
26	63					418	
27	63					418	
28	30					380	
29	35					440	
30	37					442	
31	43		111			422	

Total MCFD:

12776

Additional Remarks:

Lease Number NMSF080238A
Agreement Number _____
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
or
Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report
period 01/01/98 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
3C 152241000S1 4 CHACO	7NNW	28N	12W	PGW	30		12194		
300452241100S1 5 CHACO	1SESE	28N	13W	PGW	30		10318		
3C 152359300S1 2U CHACO LTD	1NWN	28N	13W	PGW	30		119		
300452513400S1 1U CHACO LTD	1NESW	28N	13W	PGW GSI					

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLS)	Gas (MCF)	Water (BBLS)
On hand, Start of Month		XXXXXXXXXXXXX	XXXXXXXXXXXXX
Produced		22631	
Sold		22631	XXXXXXXXXXXXX
Spilled or Lost		XXXXXXXXXXXXX	XXXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXXX		XXXXXXXXXXXXX
Used on or for Benefit of Lease			XXXXXXXXXXXXX
Injected			
Gas Transferred	XXXXXXXXXXXXX		XXXXXXXXXXXXX
Plant Number/Name			
Surface Pits	XXXXXXXXXXXXX	XXXXXXXXXXXXX	
Other			
Identify			
On hand, End of Month		XXXXXXXXXXXXX	XXXXXXXXXXXXX
API Gravity/BTU Content		1040	XXXXXXXXXXXXX

COMMENTS _____
Robert Bomar 915-684-4407
Bomar Consulting Service
CONTACT NAME 110 N. Marienfeld, Suite 450 PHONE NUMBER () EXT. _____
Midland, Texas 79701-4412
ADDRESS _____

AUTHORIZING SIGNATURE _____ DATE 01/01/98 (mmddyy)
AUTHORIZING NAME (type or print) _____ PAGE 1 OF **

Well Report

Date: 6/96

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #4

Coeff: 13.56

Range: 100

Spring: 100

Plate: 1.500

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1	43					419	
2	41					421	
3	46					418	
4	63					401	
5	43					418	
6	43					441	
7	45					417	
8	46					418	
9	43					419	
10	53					409	
11	93					367	
12	87		107			329	
13	88					373	
14	65					398	
15	65					413	
16	72					427	
17	74					440	
18	46					448	
19	41					392	
20	50		108			292	DUMP HUNG OPEN
21	42					435	
22	42					439	
23	54					425	
24	48					415	
25	75					364	
26	45		114			406	
27	43					422	
28	46					428	
29	44					443	
30	48					444	
31						0	

Total MCFD: 12281

Additional Remarks:

Lease Number NMSF080238A
Agreement Number _____
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
or
Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report
period 0 5 9 8 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
30 152241000S1 4 CHACO	7NWNW	28N	12W	PGW	31		12489		
300452241100S1 5 CHACO	1SESE	28N	13W	PGW	31		10411		
30 152359300S1 2J CHACO LTD	1NWNE	28N	13W	PGW	31		113		
300452513400S1 1J CHACO LTD	1NESW	28N	13W	PGW GSI					

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLS)	Gas (MCF)	Water (BBLS)
On hand, Start of Month		XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Produced		23013	
Sold		23013	XXXXXXXXXXXXXX
Spilled or Lost		XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXXXX		XXXXXXXXXXXXXX
Used on or for Benefit of Lease			XXXXXXXXXXXXXX
Injected			
Gas Transferred	XXXXXXXXXXXXXX		XXXXXXXXXXXXXX
Plant Number/Name	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	
Surface Pits			
Other			
Identify			
On hand, End of Month		XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
API Gravity/BTU Content		1040	XXXXXXXXXXXXXX

COMMENTS _____
Robert Bomar 915-684-4407
Bomar Consulting Service
CONTACT NAME 110 N. Marienfeld, Suite 450 PHONE NUMBER () EXT. _____
Midland, Texas 79701-4412
ADDRESS _____

AUTHORIZING SIGNATURE _____ DATE (mmddyy)
AUTHORIZING NAME (type or print) ALAN B. NICOL PAGE 1 OF 2

Well Report

Date: 5/96

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #4

Coeff: 13.56

Range: 100

Spring: 100

Plate: 1.500

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				4.0	7.5	407	
2				3.8	7.8	402	
3				3.8	7.8	402	
4				4.2	7.5	427	
5	57					388	
6	57					423	
7	53					426	
8	56					427	
9	58		111			435	
10	55					424	
11	68					413	
12	92					393	
13	69					411	
14	71					405	
15	61		109			388	4247 TOTAL MSCF
16	107					358	
17	78					441	
18	42					429	
19	43					424	
20	41					427	
21	69					403	
22	93		118			410	
23	90					410	
24	74					419	
25	51					417	
26	46					421	
27	50					415	
28	75					372	
29	58					429	
30	58					429	
31	58					429	

Total MCFD: 12804

Additional Remarks:

5/5/96 - EL PASO INSTALLED WATTS EFM ON WELL

Lease Number NMSF080238A
Agreement Number _____
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENORAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
or Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report period 0 4 9 8 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
3C 152241000S1 4 CHACO	7NWNW	26N	12W	PGW	30		12762		
300452241100S1 5 CHACO	1SESE	26N	13W	PGW	30		10402		
3C 152359300S1 2U CHACO LTD	1NWNE	26N	13W	PGW	30		108		
300452513400S1 1U CHACO LTD	1NESW	26N	13W	PGW			0		

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
On hand, Start of Month	_____	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Produced	_____	73272	_____
Sold	_____	23272	XXXXXXXXXXXXXX
Spilled or Lost	_____	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXXXX	_____	XXXXXXXXXXXXXX
Used on or for Benefit of Lease	_____	_____	XXXXXXXXXXXXXX
Injected	_____	_____	_____
Gas Transferred	XXXXXXXXXXXXXX	_____	XXXXXXXXXXXXXX
Plant Number/Name <u>1</u> <u>1</u> <u>1</u> <u>1</u>	_____	_____	_____
Surface Pits	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	_____
Other	_____	_____	_____
Identify _____	_____	_____	_____
On hand, End of Month	_____	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
API Gravity/BTU Content	_____	1040	XXXXXXXXXXXXXX

COMMENTS _____
Robert Bomar 915-684-4407
Bomar Consulting Service
CONTACT NAME 110 N. Marienfeld, Suite 450 PHONE NUMBER () EXT. _____
Midland, Texas 79701-4412
ADDRESS _____

AUTHORIZING SIGNATURE _____ DATE 1 1 1 1 1 1 (mmddyy)
AUTHORIZING NAME (type or print) ALAN B. NICOL PAGE 1 OF **

Water Engineering & Production Well Report

Date: <u>4/96</u>	Coeff: <u>13.56</u>
Oper: <u>Pendragon Energy Partners, Inc.</u>	Range: <u>100</u>
Well: <u>Chaco #4</u>	Spring: <u>199</u>
	Plate: <u>1.5</u>
	Hrs On: <u> </u>
	Hrs Off: <u> </u>

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				4.1	7.2	400	
2				4.1	7.1	395	
3				4.1	7.1	395	
4				4.1	7.2	400	
5				4.1	7.2	400	
6				4.1	7.2	400	
7				4.1	7.2	400	
8				4.1	7.2	400	
9				4.1	7.2	400	
10				4.1	7.2	400	
11				4.1	7.4	411	
12				3.7	8.0	401	
13				4.1	7.2	400	
14				4.2	7.1	404	
15	37	0	111	4.2	7.0	399	
16				4.2	7.0	399	
17				4.1	7.3	406	
18				4.0	7.5	407	
19				4.0	7.4	401	
20				3.4	8.5	392	
21				3.1	9.6	404	
22				3.0	9.8	399	
23				3.0	9.8	399	
24	54		115	3.3	8.7	388	
25				3.1	9.0	375	
26				3.9	7.7	407	
27				3.8	7.7	397	
28				4.0	7.5	407	
29				4.0	7.5	407	
30				4.0	7.5	407	
31						0	

Total MCFD: 12005

Additional Remarks:

Lease Number NMSF080238A
 Agreement Number _____
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report

Federal ☒
 or
 Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report period 0 | 3 | 9 | 8 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
300452241000S1 4 CHACO	7NWN	28N	12W	PGW	31		13373		
300452241100S1 5 CHACO	1SESE	28N	13W	PGW	31		10999		
300452358300S1 20 CHACO LTD	1NWN	28N	13W	PGW	31		394		
300452513400S1 10 CHACO LTD	1NESW	28N	13W	PGW	0		0		

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
On hand, Start of Month	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Produced	24766	24766	XXXXXXXXXXXXXX
Sold	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Spilled or Lost	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Used on or for Benefit of Lease	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Injected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Gas Transferred	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Plant Number/Name	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Surface Pits	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Other	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Identify	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
On hand, End of Month	1050	1050	XXXXXXXXXXXXXX
API Gravity/BTU Content	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX

COMMENTS

Robert Bomar 915-684-4407
 Bomar Consulting Service

CONTACT NAME 110 N. Marienfeld, Suite 450
Midland, Texas 79701-4412

ADDRESS

PHONE NUMBER () EXT.

AUTHORIZING SIGNATURE DATE (mmddyy)

AUTHORIZING NAME (type or print) ALAN B. NICOL

PAGE 1 OF

**

Well Report

Date: <u>3/98</u>	Coeff.: <u>13.56</u>
Operator: <u>Pendragon Energy Partners, Inc.</u>	Range: <u>100</u>
Well: <u>Chaco #4</u>	Spring: <u>100</u>
	Plate: <u>1.5</u>
	Hrs On: <u> </u>
	Hrs Off: <u> </u>

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				3.0	9.0	366	
2				4.0	7.6	412	
3				4.0	7.2	391	
4				4.0	7.3	396	
5				4.0	7.3	396	
6	41	41	103	4.0	7.3	393	
7				3.6	7.9	366	
8				4.2	7.2	410	
9				4.2	7.2	410	
10				4.3	7.1	414	
11				4.3	7.0	408	
12				4.3	7.0	406	
13			104	4.2	7.0	399	
14				4.3	7.0	406	
15				4.3	7.0	406	
16				4.3	7.0	412	
17				4.3	7.0	406	
18				4.3	7.0	406	
19				4.3	7.0	402	
20				4.3	7.0	406	
21			107	3.3	7.8	349	
22				2.6	9.6	346	
23				4.0	9.0	488	
24				3.0	7.0	475	
25				5.0	7.1	481	
26				4.6	7.2	439	
27				4.4	7.2	430	
28				4.4	7.1	424	
29	36		101	4.4	7.1	424	
30				4.4	7.1	424	
31				4.4	7.1	424	

Total MCFD: 12754

Additional Remarks:

Lease Number NMSF080238A
 Agreement Number _____
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC

☐ Amended Report K0835 Federal ☒
 or Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report-

Period 0 | 2 | 9 | 8 (mmyy) (See reverse of form for instructions)

API Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
Operator Well Number									
30C 32241000S1	7NNW	26N	12W	PGW	29		12690		
1 CHACO									
300452241100S1	1SESE	26N	13W	PGW	29		10356		
1 CHACO									
300 32359300S1	1NWNE	26N	13W	PGW	29		98		
2J CHACO LTD									
300452513400S1	1NESW	26N	13W	PGW	29		0		
1 CHACO LTD									

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
On hand, Start of Month	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Produced	23144	23144	XXXXXXXXXXXX
Sold	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Spilled or Lost	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Used on or for Benefit of Lease	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Injected	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Gas Transferred	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Plant Number/Name	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Surface Pits	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Other	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
Identify	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
On hand, End of Month	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
API Gravity/BTU Content	1051	XXXXXXXXXXXX	XXXXXXXXXXXX

COMMENTS

Robert Bomar 915-684-4407

Bomar Consulting Service

CONTACT NAME 110 N. Marienfeld, Suite 450 : NUMBER () EXT.

Midland, Texas 79701-4412

ADDRESS

AUTHORIZING SIGNATURE DATE (mmddyy)

AUTHORIZING NAME (type or print) ALAN B NICOL

PAGE 1 OF

**

Well Engineering & Production Well Report

Date: 2/96

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #4

Coeff: 13.56

Range: 100

Spring: 100

Plate: 1.5

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				4.5	6.8	415	
2				4.5	6.8	415	
3				4.5	6.8	415	
4				4.5	6.8	415	
5				4.5	6.8	415	
6				4.4	6.8	406	
7				4.4	6.8	406	
8				4.4	6.8	406	
9	36	36	108	4.2	6.9	393	
10				4.5	6.7	409	
11				4.5	6.7	409	
12				4.5	6.7	409	
13				4.5	6.7	409	
14	35	35	106	4.5	6.7	409	
15				4.5	6.8	415	
16				4.5	6.8	415	
17				4.5	6.8	415	
18				4.5	6.8	415	
19				4.2	7.0	399	
20				4.4	6.8	406	
21				3.0	8.5	346	
22	78			2.4	9.5	309	
23				3.0	9.8	399	
24				5.4	7.4	542	
25				4.7	7.3	465	
26				4.6	7.3	455	
27				4.4	7.4	442	
28				4.3	7.2	420	
29	40		109	4.3	7.2	420	
30						0	
31						0	

Total MCFD: 11990

Additional Remarks:

Waters Engineering & Production Well Report

Date: 1/96
 Oper: J. K. Edwards Associates Inc.
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 100
 Plate: 1.5
 Hrs On: _____
 Hrs Off: _____

<u>Pressure</u>				<u>Meter</u>			Remarks
Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	
1				4.4	6.9	412	
2				4.4	6.9	412	
3				4.4	6.9	412	
4				4.4	6.9	412	
5				4.4	6.9	412	
6				4.4	6.9	412	
7				4.4	6.9	412	
8				4.4	6.9	412	
9				4.3	7.0	408	
10	37		108	4.3	7.0	408	BLOW LOCATION
11				4.3	7.0	408	DRIP
12				4.3	7.0	408	
13				4.4	7.0	418	
14				4.5	7.0	427	
15				4.5	7.0	427	
16	37		106	4.5	7.0	427	
17				4.5	7.0	427	
18				4.5	7.0	427	
19				4.6	6.9	430	
20				4.6	6.9	430	
21				4.7	6.9	440	
22				4.7	6.9	440	
23				4.7	6.9	440	
24			108	4.7	7.1	452	BLOW LOCATION
25				4.2	7.4	421	DRIP
26				4.2	7.4	421	
27				4.1	8.1	450	
28				4.9	6.4	425	
29				4.9	6.7	445	
30				4.6	6.9	430	
31	33		108	4.5	6.7	409	
Total MCFD:						13115	

Additional Remarks:

Well Report

Date: 12/95

Oper: J. K. Edwards Associates Inc.

Well: Chaco #4

Coeff: 13.56

Range: 100

Spring: 100

Plate: 1.500

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				4.2	7.5	427	
2				4.2	7.5	427	
3				4.3	7.3	426	
4				4.3	7.2	420	
5				4.3	7.1	414	
6				4.4	7.1	424	
7	38	38	108	4.4	7.1	424	
8				4.4	7.1	424	
9				4.4	7.1	424	
10				4.4	7.1	424	
11				4.4	7.1	424	
12	35	36	108	4.4	7.1	424	
13				4.4	7.1	424	
14				4.4	7.1	424	
15				4.4	7.1	424	
16				4.0	7.5	407	
17				4.0	7.5	407	
18	44	44	109	4.0	7.5	407	
19				4.0	7.5	407	
20				4.0	7.5	407	
21				4.0	7.5	407	
22				3.9	7.7	407	
23				3.9	7.7	407	
24				4.0	7.5	407	
25				4.0	7.4	401	
26				4.4	7.0	418	
27				4.4	7.0	418	
28				4.4	7.0	418	
29	37			4.4	7.0	418	
30				4.4	7.0	418	
31				4.4	7.0	418	

Total MCFD: 12919

Additional Remarks:

Well Report

Date: 11/95
 Oper: J. K. Edwards Associates Inc.
 Well: Chaco #4

Coeff: 13.56
 Range: 100
 Spring: 100
 Plate: 1.5
 Hrs On: _____
 Hrs Off: _____

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				4.1	7.5	417	
2				4.2	7.4	421	
3				4.3	7.3	426	
4				3.4	8.0	369	
5				3.5	8.0	380	
6				4.3	7.2	420	
7	43		108	4.1	7.4	411	LIGHT HEATER
8				4.1	7.4	411	
9				4.1	7.4	411	
10				4.5	7.2	439	
11				4.5	7.0	427	
12				4.5	7.0	427	
13				4.4	7.2	430	
14	43		108	4.2	7.4	421	
15				4.2	7.4	421	
16				4.2	7.4	421	
17				4.4	7.2	430	
18				4.4	7.2	430	
19				4.4	7.2	430	
20				4.1	7.4	411	
21	37	0	108	4.5	7.0	427	
22				4.5	7.0	427	
23				4.5	7.0	427	
24				4.3	7.2	420	
25				4.5	7.0	427	
26				4.5	7.0	427	
27				4.5	7.0	427	DUMP CONTROL
28				4.5	7.1	433	SUPPLY GAS PLUG
29	40	0	107	4.5	7.2	439	
30				4.2	7.4	421	
31						0	

Total MCFD: 12631

Additional Remarks:

Walsn Engineering & Production Well Report

Date: 10/95
 Oper: J. K. Edwards Associates Inc.
 Well: Chaco #4

Coeff: 13.55
 Range: 100
 Spring: 100
 Plate: 1.500
 Hrs On:
 Hrs Off:

Pressure				Meter			Remarks
Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	
1				3.2	9.5	412	
2				3.2	9.0	391	
3				3.2	9.0	391	
4	67			3.2	8.9	386	EL PASO SHUT IN
5				0.0	0.0	0	
6				0.0	0.0	0	
7				0.0	0.0	0	
8				0.0	0.0	0	
9				0.0	0.0	0	
10				0.0	0.0	0	
11		162	162	5.0	7.0	475	WELL ON 11 35 am
12				5.4	9.3	661	
13				6.3	7.6	666	
14				5.5	7.6	567	
15				4.0	9.3	504	
16				5.0	7.9	536	
17				4.4	7.7	459	
18				4.5	7.5	456	
19	38	33	107	4.6	7.1	443	
20				4.7	6.9	440	
21				4.6	6.8	443	
22				4.7	6.9	440	
23				4.6	7.1	443	
24				4.6	7.1	443	
25		58	110	4.0	8.0	434	
26				4.2	7.6	433	
27				4.2	7.6	433	
28				4.4	7.4	442	
29				4.4	7.4	442	
30				4.3	7.7	449	
31	57		111	4.1	8.4	467	
Total MCFD:						11675	

Additional Remarks:

Walsh Engineering & Production Well Report

10 / 1995 12:18:09 PM P.6

Date: 9/95

Coeff: 13.56

Operator: J. K. EDWARDS ASSOCIATES INC

Range: 100

Spring: 100

Well No: Chaco #4

Plate: 1.5

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				4.3	7.7	449	
2				4.3	7.7	449	
3				4.5	7.6	464	
4				4.2	7.7	439	
5				4	7.9	428	
6		43	105	4.7	7.4	472	
7				4.4	7.7	459	
8				4	8	434	
9				4	8.3	450	
10				4.1	8.1	450	
11				4.1	8	445	
12				3.8	8.2	423	
13	47	47	107	4.4	7.4	442	
14				4.4	7.4	442	
15				4.4	7.5	447	
16				4.4	7.5	447	
17				4.4	7.5	447	
18				4.4	7.5	447	
19	43	43	104	4.6	7.4	462	
20				4.6	7.3	455	
21				4.5	7.5	458	
22				4.5	7.3	445	
23				4.5	7.5	458	
24				4.3	7.6	443	
25				4.6	7.3	455	
26				4.4	7.5	447	
27	57	57	106	4	8.3	450	
28				4	8.3	450	
29				4	8.3	450	
30				4	8.3	450	
31						0	

Total MCFD: 13459

Additional Remarks:

WALSH ENGINEERING & PRODUCTION

WELL REPORT

DATE: AUGUST 1995

OPERATOR: J. K. EDWARDS ASSOCIATES

WELL NAME: Chaco #4

CO-EFF: 13.56
 RANGE: 100
 SPRING: 100
 PLATE: 1.500
 HRS ON OFF

PRESSURE

METER

DATE	LINE	TUBING	CASING	DIFF.	STAT.	MCF	REMARKS
1				4.6	7.4	461	
2				4.3	7.7	449	
3				4.4	7.7	459	
4				3.6	9.4	459	
5				4.0	8.3	450	
6				4.0	8.4	456	
7				4.2	8.2	467	
8	64		114	4.3	8.7	507	
9				4.9	8.5	564	
10				5.0	8.4	569	
11				5.1	8.3	374	EL PASO SHUT IN 4:00 PM
12				0.0	4.0		
13				0.0	4.0		
14				0.0	4.0		
15		153	153	0.0	4.0		well on at 4:00 PM
16				6.5	7.2	634	
17				6.2	7.2	605	
18				4.6	8.0	499	
19				4.0	8.4	456	
20				4.8	7.5	488	
21				4.0	8.2	448	
22				4.0	8.2	448	
23	47			4.5	7.7	470	
24				4.0	8.3	450	
25				3.5	8.9	422	
26				3.8	8.4	432	
27				3.7	8.3	416	
28				3.8	9.0	463	
29				4.3	7.9	460	
30	50		109	4.0	7.9	428	
31				4.0	7.9	428	

13033

WALSH ENGINEERING & PRODUCTION

WELL REPORT

DATE: JUNE 1995

OPERATOR: J. K. EDWARDS ASSOCIATES

WELL NAME: Chaco #4

CO-EFF: 13.56

RANGE: 100

SPRING: 100

PLATE: 1.500

HRS ON OFF

PRESSURE

METER

DATE	LINE	TUBING	CASING	DIFF.	STAT.	MCF	REMARKS
1				3.6	8.0	390	
2				6.0	6.0	428	
3				4.4	7.8	465	
4				4.4	7.7	459	
5	44	45	114	4.4	7.5	447	
6				4.4	7.5	447	
7				4.3	7.5	437	
8				4.2	7.9	429	
9				4.8	6.9	449	
10				4.8	6.9	449	
11				4.8	6.9	449	
12				4.8	6.9	449	
13	36	36	109	4.8	6.9	449	
14				4.8	6.9	449	
15				4.6	7.1	443	
16				4.9	6.8	452	
17				4.8	6.8	451	
18				5.0	6.8	461	
19				5.0	6.8	461	
20	34	34	106	5.0	6.8	461	
21				5.0	6.7	476	
22				5.0	6.7	476	
23				5.0	6.7	476	
24				5.0	6.7	476	
25				5.0	6.7	476	
26				5.0	6.7	476	
27	59	59	111	4.0	8.4	456	
28				4.0	8.4	456	
29				4.0	8.4	456	
30				4.0	8.4	456	
31				4.0	8.4	456	

13,308

WALSH ENGINEERING & PRODUCTION

WELL REPORT

DATE: MAY 1995

OPERATOR: J. K. EDWARDS ASSOCIATES

WELL NAME: Chaco #4

CO-EFF: 13.56

RANGE: 100

SPRING: 100

PLATE: 1.500

HRS ON OFF

PRESSURE				METER			REMARKS
DATE	LINE	TUBING	CASING	DIFF.	STAT.	MCF	
1							WELL IS SHUT IN
2		147	147				
3							
4							
5							
6							
7							
8							
9							
10							
11							ROL
12							ROL
13							ROL
14							
15		143	143				Shut In
16							
17		143	143				Shut In
18							
19							
20							
21							
22		145	145				Open tubing to pit
23		91	131				Open tubing valve more
24		72	124				5 BW/d
25							well blowing to pit
26							well blowing to pit
27							well blowing to pit
28							well blowing to pit
29							well blowing to pit
30	44	50/44	118	4.5	7.5	457	start selling gas 10 BW/d
31	44	44	117	4.3	7.5	437	20 BW/d
TOTAL						894	

5/13 move separator from Chaco 1J location to the Chaco 4 location

5/19 El Paso set test meter. Tie in blow line

5/22 91# tubing 131# casing 5 BW/d Est 80 MCF/d Open tubing holding 65# tubing - pressure - started lifting H2O in 2 minutes - will try to hold a 35# to 45# back pressure on well.

5/24 lower flowing tubing pressure from 72# to 51#. First gas at 110 to 120 MCF/d

5/30 El Paso removed downstream baffle

WALSH ENGINEERING & PRODUCTION

WELL REPORT

DATE: APRIL 1995

OPERATOR: J. K. EDWARDS ASSOCIATES

WELL NAME: Chaco #4

CO-EFF: _____

RANGE: _____

SPRING: _____

PLATE: _____

HRS ON OFF

PRESSURE

METER

DATE	LINE	TUBING	CASING	DIFF.	STAT.	MCF	REMARKS
1							WELL IS SHUT IN
2							
3		147	147				
4							
5							
6							
7							
8							
9							
10							
11		147	147				
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30		147	147				
31							

WALSH ENGINEERING & PRODUCTION

WELL REPORT

DATE: MARCH 1995

OPERATOR: J. K. EDWARDS ASSOCIATES

WELL NAME: Chaco #4

CO-EFF: _____

RANGE: _____

SPRING: _____

PLATE: _____

HRS ON OFF

DATE	PRESSURE			METER			REMARKS
	LINE	TUBING	CASING	DIFF.	STAT.	MCF	
1							
2							
3							Well Blowing
4							Well Blowing
5							
6							
7			17				Shut well in
8							
9							
10							
11							
12							
13							
14							
15		64	64				
16							
17							
18							
19							
20							
21		146	146				5268.4 well is off
22							
23							
24							
25							
26							
27							
28							
29		147	147				
30							
31							Well is off.

3/7 10 MCF/d 10-20 BW/d

3/9 the well in - manifold casing/tubing

WALSH ENGINEERING & PRODUCTION

WELL REPORT

DATE: FEBRUARY 1996

OPERATOR: J. K. EDWARDS ASSOCIATES

WELL NAME: Chaco #4

CO-EFF: _____

RANGE: _____

SPRING: _____

PLATE: _____

HRS ON _____ OFF _____

PRESSURE

METER

DATE	LINE	TUBING	CASING	DIFF.	STAT.	MCF	REMARKS
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24		140	140				ST waiting on SPRNG test
25							
26							
27							
28		140	140				
29							
30							
31							

DWIGHTS ENERGY DATA, INC
MERRION OIL & GAS CORP
CHACO

UN DATE: 02/25/93
Published 1/93
(#251,045,26N12W07D00FP)

*** GAS TEST INFORMATION ***

TEST DATE	CUM TO TEST	WHSIP	BHP	BHP/Z	T POTENTIAL	WH FLOW	BBLS/DAY WATER	BBLS/DAY COND
780828	15725	197			2	213	75	
790505	68828	162			2	206	43	
810505	143961	102			2	85	60	
830705	179005	97			2	55	32	
830705	179005	97			2	55	32	

From West



WALSH

ENGINEERING & PRODUCTION CORP.

Petroleum Engineering Consulting
Lease Management
Contract Pumping

7415 East Main
Farmington, New Mexico 87402
(505) 327-4892

October 29, 1996

H2O Rates	10/29/96	Two Tests		
Chaco #4	1st test	12:24 PM	8 min to fill	5 gallons= 21 BW/d
	2nd Test	12:38 PM	8 min to fill	5 gallons= 21 BW/d
Chaco #5	1st test	12:54 PM	8 min to fill	5 gallons= 21 BW/d
	2nd test	1:08 PM	8 min to fill	5 gallons= 20 BW/d

WELL DELIVERABILITY TEST REPORT FOR 19 83

POOL NAME WAW	POOL SLOPE n=.85	FORMATION Pictured Cliffs	COUNTY San Juan
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COMPANY Merrion Oil & Gas Corporation			WELL NAME AND NUMBER Chaco #4		
UNIT LETTER D	SECTION 7	TOWNSHIP 26N	RANGE 12W	PURCHASING PIPELINE El Paso Natural Gas Company	
ASIDE O.D. - INCHES 2.875	CASING I.D. - INCHES 2.441	SET AT DEPTH - FEET 1163	TUBING O.D. - INCHES 1.315	TUBING I.D. - INCHES 1.049	TOP - TUBING PERF. - FEET 1285
GAS PAY ZONE FROM 1163 TO 1189		WELL PRODUCING THRU CASING TUBING XX		GAS GRAVITY .643	GRAVITY x LENGTH 826
DATE OF FLOW TEST FROM 6/20 TO 6/28			DATE SHUT-IN PRESSURE MEASURED 7/5/83		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWI) 57	(b) Flowing Tubing Pressure (DWI) 53	(c) Flowing Meter Pressure (DWI) 50	(d) Flow Chart Static Reading 52	(e) Meter Error (Item c - Item d) -2	(f) Friction Loss (a - c) or (b - c) 3	(g) Average Meter Pressure (Integr.) 34
(j) Corrected Meter Pressure (k + e) 32	(l) Avg. Wellhead Press. $P_t = (h + f)$ 35	(i) Shut-in Casing Pressure (DWI) 97	(k) Shut-in Tubing Pressure (DWI) 95	(l) $P_c =$ Higher value of (j) or (k) 97	(m) Del. Pressure $P_d =$ 80 % P_c 78	(n) Separator or Dehydrator Pr. (DWI) for critical flow only

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D 56	Quotient of $\frac{\text{Item c}}{\text{Item d}}$.9615	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$.9806	Corrected Volume Q = 55 MCF/D
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WORKING PRESSURE CALCULATION

$(1 - e^{-x})$.059	$(P_c Q_m)^2 (1000)$ 7684	$R^2 = (1 - e^{-x}) (P_c Q_m)^2 (1000)$ 453	P_t^2 1225	$P_w^2 = P_t^2 + R^2$ 1678	$P_w = \sqrt{P_w^2}$ 41
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DELIVERABILITY CALCULATION

$P = Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n = 55$	$\left[\frac{3325}{7728} \right]^n = .4303$	$= .4883$	$= 27$ MCF/D
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REMARKS:

SUMMARY

Item h	32	Feet
P_c	97	Feet
Q	55	MCF/D
P_w	41	Feet
P_d	78	Feet
D	27	MCF/D

Company	Merrion Oil & Gas Corporation
By	Timothy L. Marilatt
Title	Measurement Technician
Witnessed By	Rick Dean
Company	Merrion Oil & Gas Corporation

WELL DELIVERABILITY TEST REPORT FOR 19 81

WELL NAME WAW Fr/Pic. Cliffs	WELL SLOPE n=.85	FORMATION Pictured Cliffs	COUNTY San Juan
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COMPANY Merrion & Bayless			WELL NAME AND NUMBER Chaco #4		
UNIT LETTER D	SECTION 7	TOWNSHIP 26N	RANGE 12W	PURCHASING PIPELINE El Paso Natural Gas Co.	
CASING O.D. - INCHES	CASING I.D. - INCHES	DEPT AT DEPTH - FEET	TUBING O.D. - INCHES 1.315	TUBING I.D. - INCHES 1.049	TOP - TUBING PLUG - FEET 1285
GAS PAY ZONE FROM 1163 TO 1189		WELL PRODUCING THRU CASING TUBING XX		GAS GRAVITY .639	GRAVITY & LENGTH 821
DATE OF FLOW TEST FROM 4/20/81 TO 4/28/81			DATE SHUT-IN PRESSURE MEASURED 5/5/81		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWI) 62	(b) Flowing Tubing Pressure (DWI) 51	(c) Flowing Meter Pressure (DWI) 48	(d) Flow Chart Static Reading 48	(e) Meter Error (Item c - Item d) 0	(f) Friction Loss (a - c) or (b - c) 3	(g) Average Meter Pressure (Integr.) 47
(h) Corrected Meter Pressure (g + e) 47	(i) Avg. Wellhead Press. $P_c = (h + f)$ 50	(j) Shut-in Casing Pressure (DWI) 102	(k) Shut-in Tubing Pressure (DWI) 102	(l) $P_c =$ Higher value of (j) or (k) 102	(m) Del. Pressure $P_d = \frac{80}{82} \times P_c$	(n) Separator or Dehydrator Pr. (DWI) for critical flow only

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D 85	Quotient of $\frac{\text{Item c}}{\text{Item d}}$ 1	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$ 1	Corrected Volume Q = 85 MCF/D
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WORKING PRESSURE CALCULATION

$(1 - e^{-x})$.057	$(P_c Q_m)^2 (1000)$ 18353	$R^2 = (1 - e^{-x}) (P_c Q_m)^2 (1000)$ 1046	P_i^2 2500	$P_w^2 = P_i^2 + R^2$ 3546	$P_w = \sqrt{P_w^2}$ 60
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DELIVERABILITY CALCULATION

$Q = Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n =$ 85	$\left[\frac{3680}{7476} \right]^n =$.4922	$= \frac{.5475}{1} =$ 47 MCF/D
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REMARKS:

SUMMARY

Item h	47	Paia
P_c	102	Paia
Q	85	MCF/D
P_w	60	Paia
P_d	82	Paia
D	47	MCF/D

Company Merrion & Bayless
By John Anderson
Title Field Foreman
Witnessed By Tim Merilatt
Company Merrion & Bayless

ANNUAL AND BIENNIAL DELIVERABILITY TEST VOLUMES

MERRION & BAYLESS
BOX 507
FARMINGTON NEW MEXICO 87401

IN ACCORDANCE WITH ORDER R-333-F-2 OF THE NEW MEXICO OIL CONSERVATION
COMMISSION, THESE TEST VOLUMES ARE PROVIDED FOR TEST FLOW PERIOD
INDICATED.

TEST GROUP
CODE

TEST FLOW PERIOD
START END

11-15

04-20-81

04-28-81

METER CODE	WELL NAME	GRAV	PRES PSIG	TEST HRS	VOLUME MCF
85-757-01	CHACO #11 ✓	.639	29	192	587
90-044-01	CHACO #4 ✓	.639	35	192	680
93-011-01	DA ON PAH #1 ✓	.571	26	192	988
93-166-01	CHACO LIMITED #2 ✓	.597	27	192	171

PLEASE DIRECT ANY INQUIRIES TO:

EL PASO NATURAL GAS CO.
WELL TEST ENGINEERING DEPT.
P. O. BOX 990
FARMINGTON, NEW MEXICO 87401

WELL DELIVERABILITY TEST REPORT FOR 19 80

WELL NAME	POOL DEPTH	FORMATION	COUNTY
WAW Fr./Pic. Cliff	n = .85	Pictured Cliffs	San Juan

COMPANY			WELL NAME AND NUMBER		
Merrion & Bayless			Chaco #4		
UNIT LETTER	SECTION	TOWNSHIP	RANGE	PURCHASING PIPELINE	
D	7	26N	12W	El Paso Natural Gas Co.	
CASING O.D. - INCHES	CASING I.D. - INCHES	DET AT DEPTH - FEET	TUBING O.D. - INCHES	TUBING I.D. - INCHES	TOP - TUBING PERF. - FEET
2-7/8	2-1/2	1163	1.315	1.049	1285
CAS PAY LURE		WELL PRODUCING THRU		CAS GRAVITY	GRAVITY & LENGTH
FROM 1163 TO 1189		CASING TUBING X		.650	835
DATE OF FLOW TEST			DATE SHUT-IN PRESSURE MEASURED		
FROM 6/6/80 TO 6/14/80			6/21/80		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWI)	(b) Flowing Tubing Pressure (DWI)	(c) Flowing Meter Pressure (DWI)	(d) Flow Chart Static Reading	(e) Meter Error (Item c - Item d)	(f) Friction Loss (a - c) or (b - c)	(g) Average Meter Pressure (Integr.)
107	50	50	49	1	30	47
(h) Corrected Meter Pressure (g + e)	(i) Avg. Wellhead Press. $P_i = (h + g)$	(j) Shut-in Casing Pressure (DWI)	(k) Shut-in Tubing Pressure (DWI)	(l) $P_c =$ higher value of (j) or (k)	(m) Del. Pressure $P_d = \frac{80}{106} \% P_c$	(n) Separator or Dehydrator Pr. (DWI) for critical flow only
48	48	132	127	132		

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D	Quotient of $\frac{\text{Item c}}{\text{Item d}}$	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$	Corrected Volume
120	1.02	1.01	Q = 121 MCF/D

WORKING PRESSURE CALCULATION

$(1 - e^{-x})$	$(P_c Q_m)^2 (1000)$	$R^2 = (1 - e^{-x}) (P_c Q_m)^2 (1000)$	P_i^2	$P_w^2 = P_i^2 + R^2$	$P_w = \sqrt{P_w^2}$
0.214 .659	37190 37126	424 2194	2304 2401	4498 2025	53 45

DELIVERABILITY CALCULATION

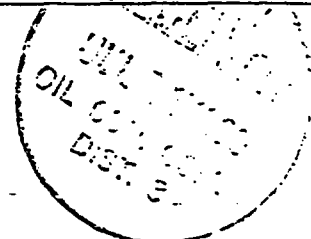
$Q = \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n = 121$	$\left[\frac{6188}{\frac{14399}{12421}} \right]^n = \frac{.5346}{.4021} = \frac{65}{50} \text{ MCF/D}$
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REMARKS:

SUMMARY

Item b	48	Pa
	132	Pa
P_c	121	MCF/D
Q	53	Pa
P_w	106	Pa
P_d	56	MCF/D
D		

Company	Merrion & Bayless
By	John Anderson
Title	Field Foreman
Witnessed By	Bob Harris
Company	Fizz's Pumping Service



WELL LOG VARIABILITY TEST REPORT FOR 1979

Form C122-A
Revised 1-1-77

POOL NAME VAV Fruitland PC	POOL SLURP n=0.85	FORMATION Pictured Cliffs	COUNTY San Juan
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COMPANY Merrion & Bayless			WELL NAME AND NUMBER Chaco #4		
UNIT LETTER D	SECTION 7	TOWNSHIP 26N	RANGE 12W	PURCHASING PIPELINE El Paso Natural Gas	
PIPE O.D. - INCHES 2-7/8"	CASING I.D. - INCHES 2-1/2"	SET AT DEPTH - FEET 1163	TUBING O.D. - INCHES none	TUBING I.D. - INCHES n/a	TOP - TUBING PERF. - FEET n/a
GAS PAY ZONE FROM 1163 TO 1189		WELL PRODUCING THRU CASING X TUBING		GAS GRAVITY .639	GRAVITY X LENGTH 743
DATE OF FLOW TEST FROM 8-21-79 TO 8-29-79			DATE SHUT-IN PRESSURE MEASURED 9-5-79		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWI)	(b) Flowing Tubing Pressure (DWI)	(c) Flowing Meter Pressure (DWI)	(d) Flow Chart Static Reading	(e) Meter Error (Item c - Item d)	(f) Friction Loss (a - c) or (b - c)	(g) Average Meter Pressure (Integer)
57	N/A	56	55	1	1	17
(h) Corrected Meter Pressure (g + e)	(i) Avg. Wellhead Press. $P_i = (h + f)$	(j) Shut-in Casing Pressure (DWI)	(k) Shut-in Tubing Pressure (DWI)	(l) $P_c =$ higher value of (j) or (k)	(m) Del. Pressure $P_d =$ 80 % P_c	(n) $P_w =$ higher value of (i) or (l) minus P_d for critical flow
48	49	147	N/A	147	118	

FLOW RATE CORRECTION (METER ERRORS)

Integrated Volume - MCF/D	Quotient of $\frac{\text{Item c}}{\text{Item d}}$	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$	Corrected Volume
106	1.018	1.009	Q = 107 MCF/D

WORKING PRESSURE CALCULATION

$(1 - e^{-R})$	$(F_c Q_m)^2 (1000)$	$R^2 = (1 - e^{-R}) (F_c Q_m)^2 (1000)$	P_i^2	$P_w^2 = P_i^2 + R$	$P_w = \sqrt{P_w^2}$
.0106	353	3.7	2401	2405	

DELIVERABILITY CALCULATION

$Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n = 107$	$\left(\frac{1.85}{19.208} \right)^n (4.001) = 4.599$	49 MCF/D
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REMARKS:

SUMMARY

Item h 48
 P_c 147
 Q 107 MCF/D
 P_w 49 psi
 P_d 118 psi
 D 49

Company Merrion & Bayless
 By [Signature]
 Title Production Engineer
 Executed By Bob [Signature]
 Company Pizzol

NEW MEXICO OIL CONSERVATION COMMISSION

WELL DELIVERABILITY TEST REPORT FOR 19 79

Form OCCC-A
Revised 1-1-68

WELL NAME	POOL BLOCK	FORMATION	COUNTY
WAW Fruitland PC	R# 0.85	Fruitland Pictured Cliffs	San Juan

OWNER			WELL NAME AND NUMBER		
Merrion & Bayless			Chaco #4		
UNIT LETTER	SECTION	TOWNSHIP	RANGE	SURVEYING PIPELINE	
D	7	26N	12W	El Paso Natural Gas Co.	
DEPTH OF Casing - FEET	CASING I.D. - INCHES	FEET AT PLUG - FEET	DEPTH OF Casing - FEET	TUBING I.D. - INCHES	TUBING LENGTH - FEET
2.875	2.441	1294	none		
Casing Line		WELL PACKAGING - TUBING		GRAVITY & LENGTH	
1163 to 1189		Casing XX		0.640 744	
DATE OF FLOW TEST			DATE SHUT-IN PRESSURE MEASURED		
FROM 04-20-79 TO 04-28-79			05-05-79		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWI)	(b) Flowing Tubing Pressure (DWI)	(c) Flowing Meter Pressure (DWI)	(d) Flow Chart Static Reading	(e) Meter Error (Item c - Item d)	(f) Friction Loss (a - c) or (b - c)	(g) Average Meter Pressure (Integr.)
44	-	35	35	0	9	33
(h) Corrected Meter Pressure (g + e)	(i) Avg. Wellhead Press. $P_c = (b + 0)$	(j) Shut-in Casing Pressure (DWI)	(k) Shut-in Tubing Pressure (DWI)	(l) $P_c =$ Higher value of (i) or (k)	(m) Del. Pressure $P_d = \frac{80}{130} P_c$	(n) Separator or Dehydrator Pr. (DWI) for critical flow only
33	42	162	-	162		

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D	Quotient of $\frac{\text{Item c}}{\text{Item d}}$	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$	Corrected Volume
206	1	1	Q = 206 MCF/D

WORKING PRESSURE CALCULATION

$(1 - e^{-x})$	$(F_c Q_m)^2 (1000)$	$R^2 = (1 - e^{-x}) (F_c Q_m)^2 (1000)$	P_t^2	$P_w^2 = P_t^2 + R^2$	$P_w = \sqrt{P_w^2}$
.0541	1308	71	1764	1835	43

DELIVERABILITY CALCULATION

$D = Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n$	206	$\left[\frac{9344}{24395} \right]^n \left(.3830 \right)^n$	.4423	91 MCF/D
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REMARKS:

SUMMARY

Item b	33	Psia
P_c	162	Psia
Q	206	MCF/D
P_w	43	Psia
P_d	130	Psia
D	91	MCF/D

Company Merrion & Bayless
By [Signature]
Title Engineer
Witnessed By Mike Ellsaesser
Company Fizz's Pumping Service

WELL DELIVERABILITY TEST REPORT FOR J 78

Form C122-A
Revised 1-1-66

POOL NAME WAW	POOL SLOPE n = 0.85	FORMATION Picture Cliffs	COUNTY San Juan
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COMPANY Merrion & Bayless			WELL NAME AND NUMBER Chaco #4		
UNIT LETTER D	SECTION 7	TOWNSHIP 26N	RANGE 12W	PURCHASING PIPELINE El Paso Natural Gas Co.	
CASING O.D. - INCHES 2.875	CASING I.D. - INCHES 2.441	SET AT DEPTH - FEET 1294	TUBING O.D. - INCHES None	TUBING I.D. - INCHES	TOP - TUBING PERF. - FEET
GAS PAY ZONE FROM 1163 TO 1189		WELL PRODUCING THRU CASING XX TUBING		GAS GRAVITY 0.65	GRAVITY X LENGTH 76 755
DATE OF FLOW TEST FROM 8-14-78 TO 8-22-78			DATE SHUT-IN PRESSURE MEASURED 8-28-78		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWt)	(b) Flowing Tubing Pressure (DWt)	(c) Flowing Meter Pressure (DWt)	(d) Flow Chart Static Reading	(e) Meter Error (Item c - Item d)	(f) Friction Loss (a - c) or (b - c)	(g) Average Meter Pressure (Integr.)
79	None	79	79	0	0	75
(h) Corrected Meter Pressure (g + e)	(i) Avg. Wellhead Press. $P_t = (h + f)$	(j) Shut-in Casing Pressure (DWt)	(k) Shut-in Tubing Pressure (DWt)	(l) P_c = higher value of (j) or (k)	(m) Del. Pressure $P_d = \frac{80}{\%P_c}$	(n) Separator or Dehydrator Pr. (DWt) for critical flow only
75	75	197	None	197	158	

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D	Quotient of $\frac{\text{Item c}}{\text{Item d}}$	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$	Corrected Volume
213	1.00	1.00	Q = 213 MCF/D

WORKING PRESSURE CALCULATION

$(1 - e^{-n})$ 0.0541	$(P_c Q_m)^2 (1000)$ 1398	$R^2 = (1 - e^{-n}) (P_c Q_m)^2 (1000)$ 76	P_t^2 5625	$P_w^2 = P_t^2 + R^2$ 5699 5701	$P_w = \sqrt{P_w^2}$ 75 76
--------------------------	------------------------------	---	-----------------	---------------------------------------	----------------------------------

DELIVERABILITY CALCULATION

$$D = Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n = 213 \left[\frac{13,845 - 158^2}{13,845 - 5701^2} \right]^{0.85} = 213 \left[\frac{13,845 - 25,316}{13,845 - 32,497,401} \right]^{0.85} = 213 \left[\frac{-11,471}{-18,652,556} \right]^{0.85} = 213 (0.615)^{0.85} = 102 \text{ MCF/D}$$

REMARKS:

SUMMARY

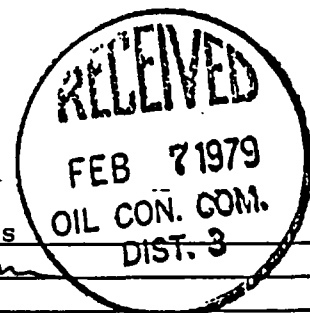
Item h	75	Psia
P_c	197	Psia
Q	213	MCF/D
P_w	76	Psia
P_d	158	Psia
D	102	MCF/D

Company Merrion & Bayless

By *Steve J. ...*
Title Engineer

Witnessed By Merle Ellsaesser

Company Fizz's Pumping Service



Type Test ☐ Initial ☐ Annual ☒ Special				Test Date 5-16-77	
Company Merrion & Bayless			Connection New Well		
Pool NIIP			Formation Pictured Cliffs		Unit
Completion Date May 2, 1977		Total Depth 1300'	Plug Back TD 1268'	Elevation 5176'	Form or Lease Name Chaco
Csq. Size 2.875	Wt. 6.5 lb.	d 2.441	Set At 1294'	Perforations: From 1163' To 1189'	Well No. 4
Thq. Size none	Wt.	d	Set At	Perforations: From To	Unit Sec. Twp. Rge. NW/NW 7 26 12
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Tubingless completion				Packer Set At none	County San Juan
Producing Thru Casing		Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. - P _a 12.0	State New Mexico
L	H	G _a	% CO ₂	% N ₂	% H ₂ S Prover Meter Run Taps
		.60			2"

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI									244		SIP
1.	2" x 3/32"			230		60°			230		2 hr.
2.	2" x 1/8"			219		60°			219		2 hr.
3.	2" x 3/16"			191		60°			191		2 hr.
4.	2" x 1/4"			153		60°			163		2 hr.
5.	2" x 1/4"			149		60°			162		12 hr.

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	0.1410		242	1.000	1.291	1.021	45
2	0.2648		231	1.000	1.291	1.021	81
3	0.6082		203	1.000	1.291	1.016	162
4	1.087		165	1.000	1.291	1.016	235
5	1.087		161	1.000	1.291	1.015	229

NO.	P _t	Temp. °R	T _f	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1.					A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2.					Specific Gravity Separator Gas _____ X X X X X X X X
3.					Specific Gravity Flowing Fluid _____ X X X X X
4.					Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
5.					Critical Temperature _____ R _____ R

P _c 256	P _c ² 65536			
NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²
1		242	58564	6972
2		231	53361	12175
3		203	41209	24327
4		165	27225	38311
5		161	25921	39615

(1) $\frac{P_c^2}{P_c^2 - P_w^2} =$ _____

ACF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n =$ _____

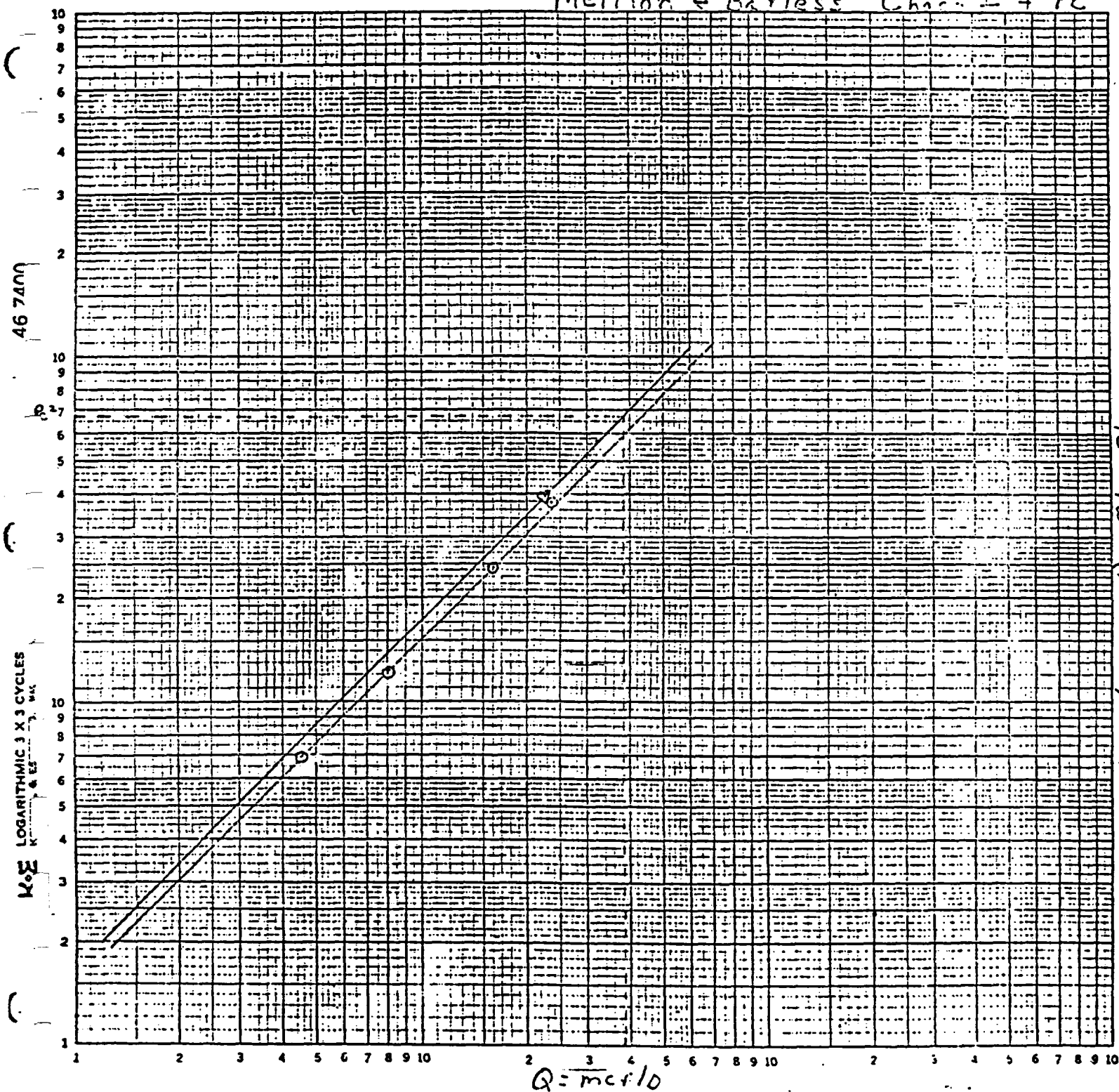
(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n =$ _____

Absolute Open Flow 385 Mcfd @ 15.025	Angle of Slope @ 44.5°	Slope, n .98
--------------------------------------	------------------------	--------------

Remarks: Well produced dry gas throughout test.

Approved By Commission:	Conducted By: Fred S. Hamrick	Calculated By: Fred S. Hamrick	Checked By: <i>Steven S. Dunn</i> Steven S. Dunn, Engi
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Merrin + Bayless Chart 4 Pc



SUGGESTED FIELD DATA SHEET (Not Required To Fill)						
Type Test ☐ Initial ☐ Annual ☒ Special Test Date 5-16-77					Lease No. or Serial No.	
Company Merrion & Bayless Center Well New Well					Allottee	
Field		Reservoir		Location		Unit
Completion Date		Total Depth		Plug back TD		Elevation
Csg. Size		Wt.	d	Set At	Perforations: From	To
Tub. Size		Wt.	d	Set At	Perforations: From	To
Type Completion (Describe)						Packer Set At
Producing This		Reservoir Temp. F		Mean Annual Temp. F		Baro. Press. - P _a
L		H		C _g		% CO ₂
						% H ₂
						% H ₂ S
State New Mexico						Prover
						Meter Run
						Taps

[illegible]

www

12000

1000

[illegible]

Logs

BIRDWELL

Gamma-Ray Density

COMPANY MERRION & BAYLESS

WELL _____ **CHACO #4**

FIELD NIIP - PICTURED CLIFFS

COUNTY SAN JUAN STATE NEW MEXICO

LOCATION: 790' FNL, 790' FWL

OTHER SERVICES
IES

SEC. 7 TWP. 26N RGE. 12W

PERMANENT DATUM GROUND LEVEL, ELEV. 5991'

ELEV. K.B. N/A

LOG MEASURED FROM GL 0 Ft. Above Perm. Datum

D.F. N/A

DRILLING MEASURED FROM GROUND LEVEL

G.L. 5991'

DATE	26 APR. 77
------	------------

RUN NO.	ONE
---------	-----

TYPE LOG	GR-FDL
----------	--------

DEPTH - DRILLER	1300'
-----------------	-------

DEPTH - LOGGER	1278'
----------------	-------

BTM. LOG. INTER.	1274'
------------------	-------

TOP LOG. INTER.	SURFACE
-----------------	---------

TYPE FLUID IN HOLE	WATER-GEL
--------------------	-----------

SALINITY PPM CL	N/A
-----------------	-----

DENSITY LB./GAL	N/A
-----------------	-----

LEVEL	100'
-------	------

MAX.REC.TEMP.—°F	84°
------------------	-----

OPER. RIG TIME	2 HOURS
----------------	---------

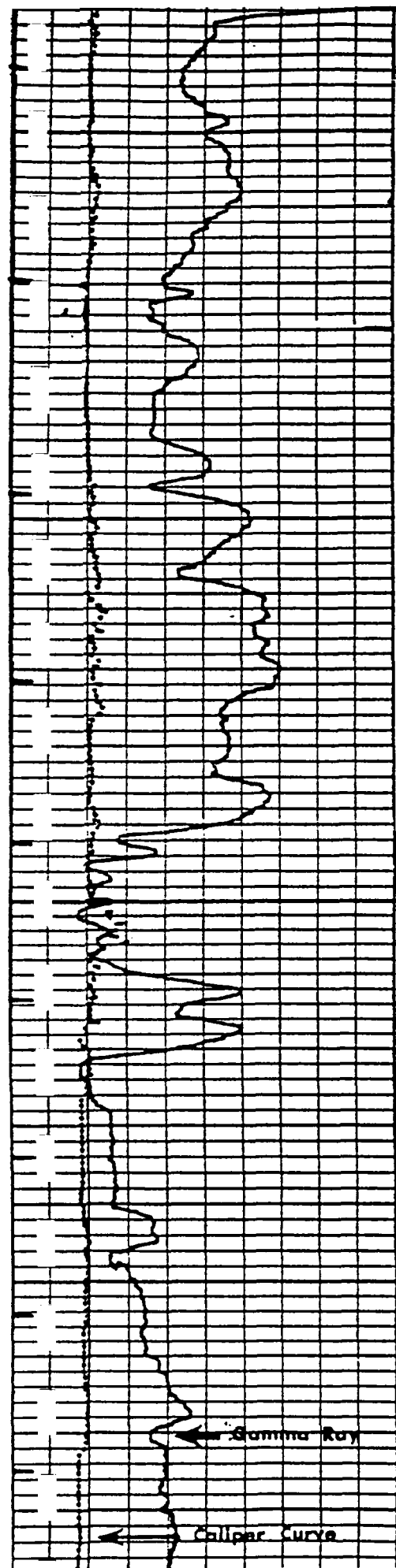
RECORDED BY	MARTIN
-------------	--------

WITNESSED BY	MR. DUNN
--------------	----------

LOCATION	FARMINGTON
----------	------------

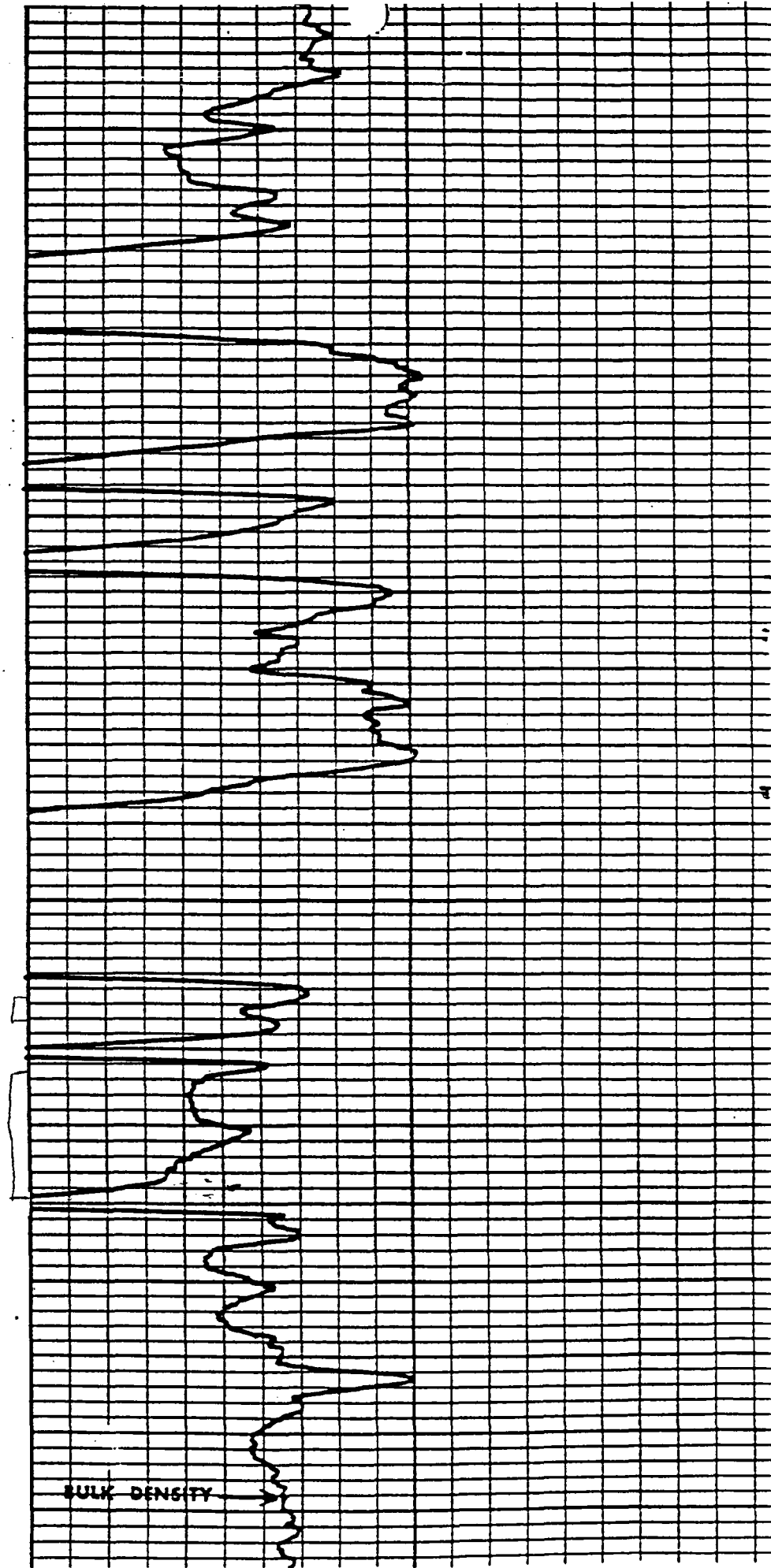
RUN	BORE HOLE RECORD	CASING RECORD
-----	------------------	---------------

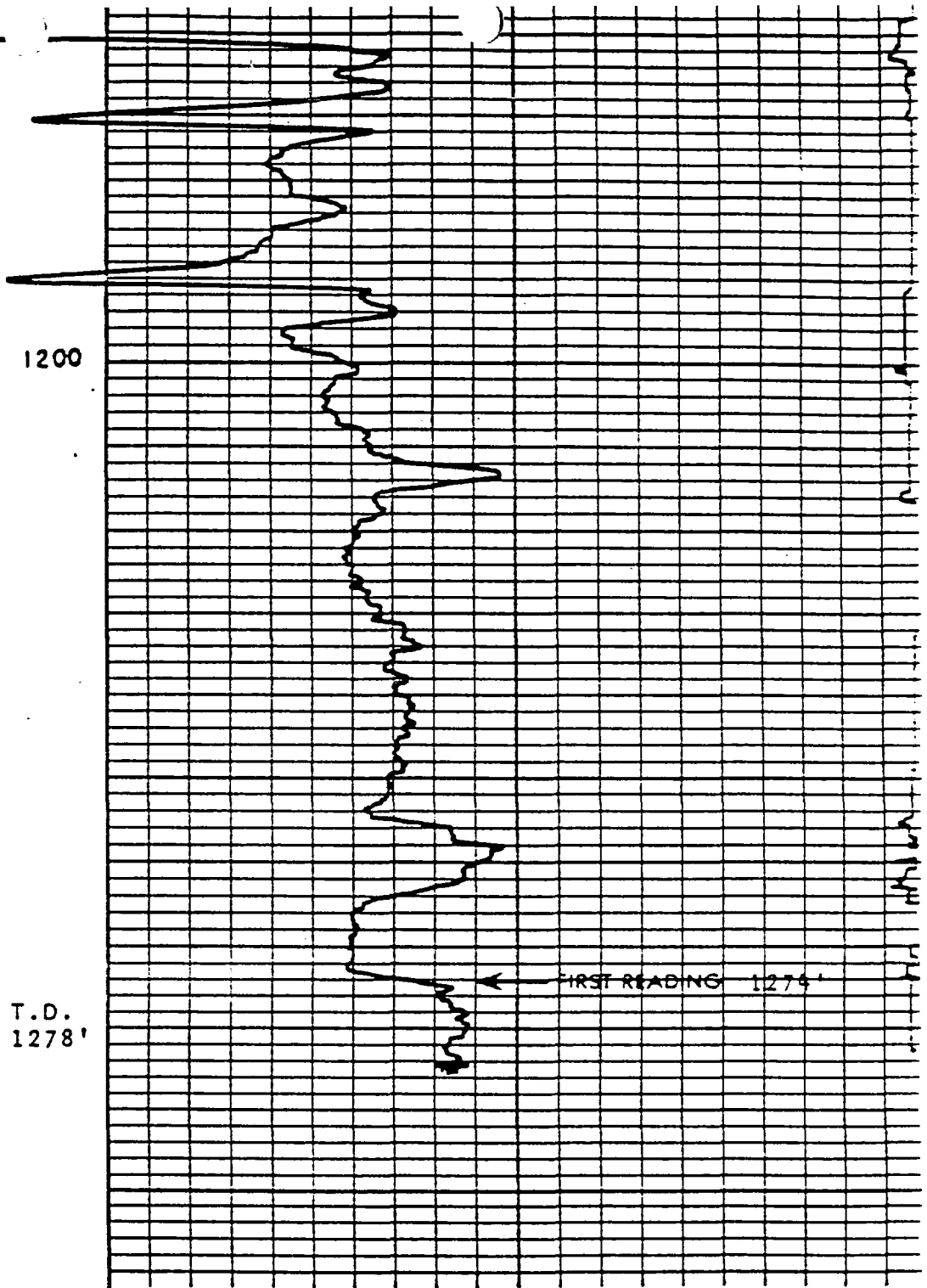
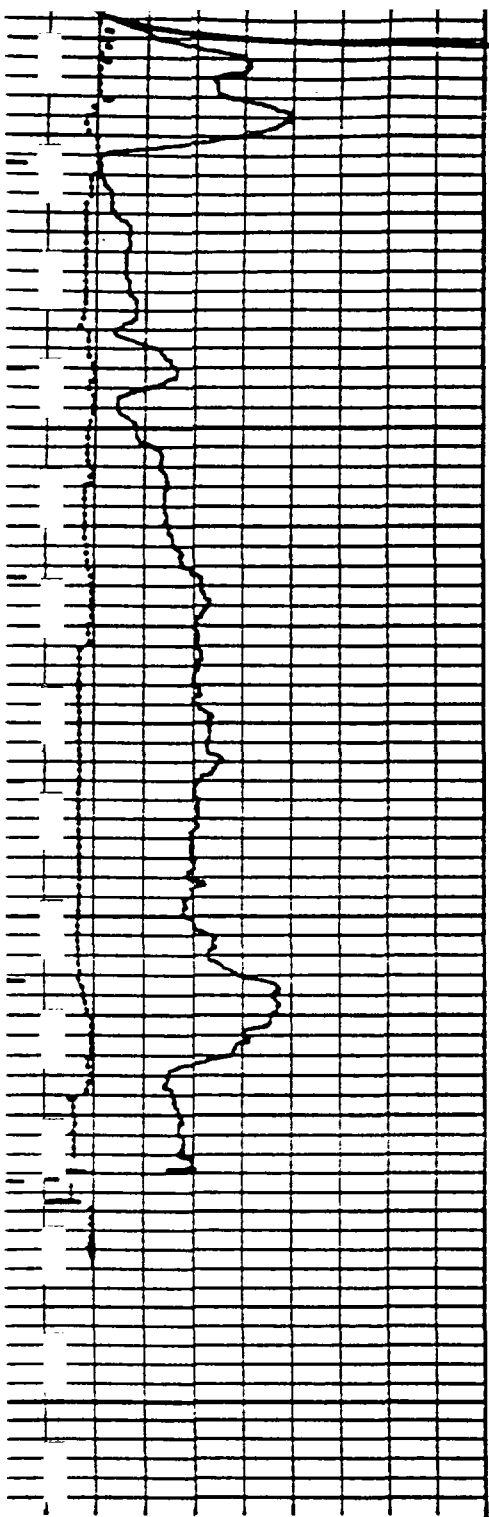
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
ONE	4-3/4"	40'	1300'	5-1/2	N/A	SURFACE	40'



1100

1200





1200

T.D.
1278'

FIRST READING 1274'

CALIPER

INCHES 0
PROXIMITY INDEX

3" 8" 13"

0 100 200
GAMMA RAY
API UNITS

DEPTH

2.0 2.5 3.0
BULK DENSITY
GRAMS/CC

MARKERS



BIRDWELL

Induction Electric Log

COMPANY MERRION & BAYLESS

WELL CHACO #4

FIELD NIIP - PICTURED CLIFFS

COUNTY SAN JUAN STATE NEW MEXICO

LOCATION: 790' FNL, 790' FWL

OTHER SERVICES:

GR-FDL

SEC. 7 TWP. 26N RGE. 12W

PERMANENT DATUM GROUND LEVEL, ELEV. 5991'

ELEV. K.B. N/A

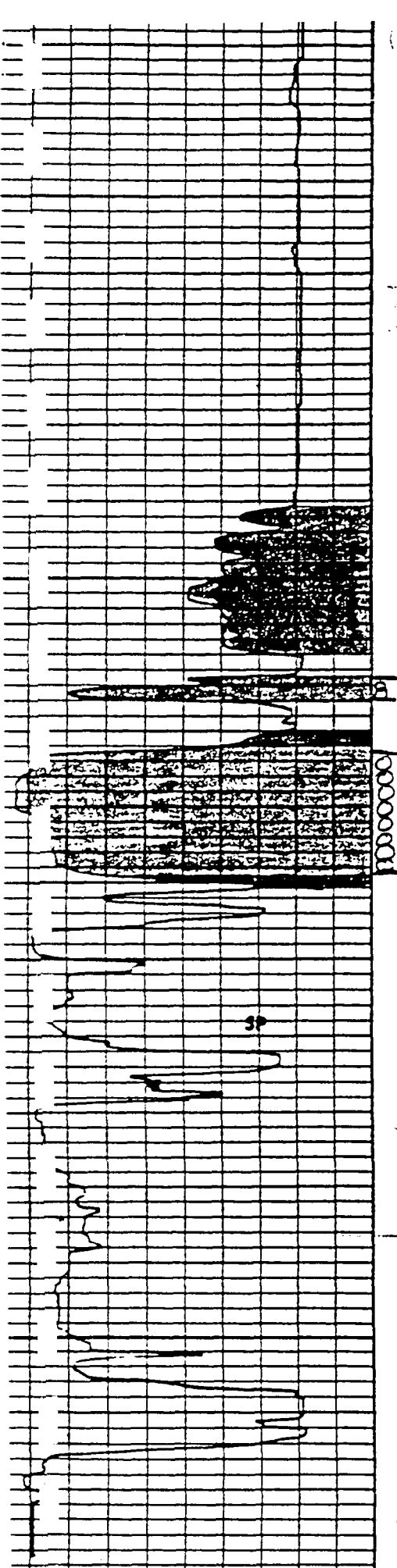
LOG MEASURED FROM GL 0 FT. ABOVE PERM. DATUM

D.F. N/A

DRILLING MEASURED FROM GROUND LEVEL

G.L. 5991'

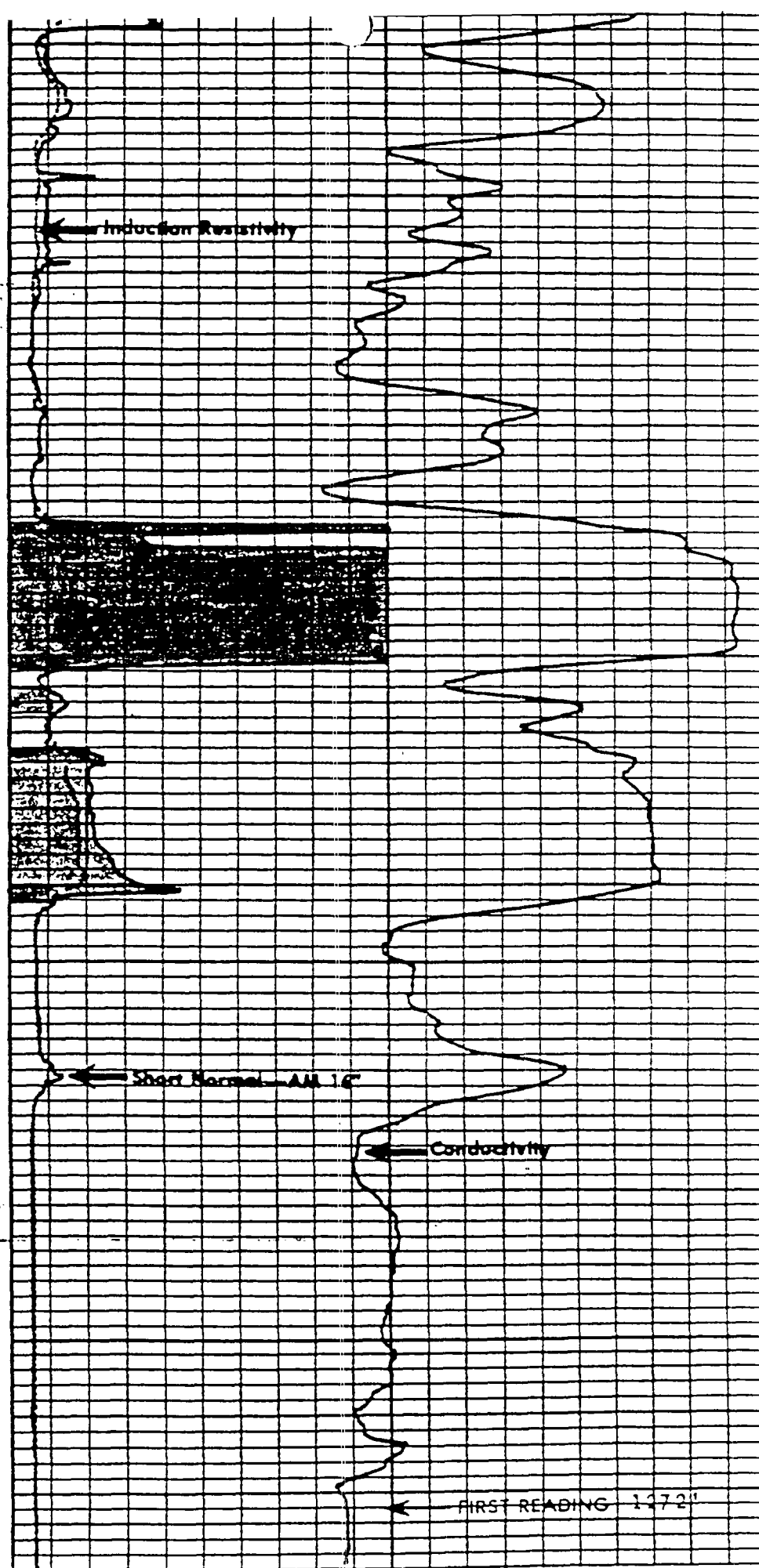
DATE	26 APR. 77				
RUN NO.	ONE				
DEPTH-DRILLER	1300'				
DEPTH-LOGGER	1278'				
BTM. LOG INTER.	1272'				
TOP LOG INTER.	50'				
CASING-DRILLER	5-1/2@ 40				
CASING-LOGGER	40				
BIT SIZE	4-3/4"				
TYPE FLUID IN HOLE	WATER GEL				
LIQUID LEVEL					
DENS.	VISC.	N/A			
pH	FLUID LOSS	12 ml	ml	ml	ml
SOURCE OF SAMPLE	PIT				
R _m @ MEAS.TEMP.	5.8 @ 62 °F	@ °F	@ °F	@ °F	@ °F
R _{mf} @ MEAS.TEMP.	5.2 @ 64 °F	@ °F	@ °F	@ °F	@ °F
R _{mc} @ MEAS.TEMP.	1.6 @ 72 °F	@ °F	@ °F	@ °F	@ °F
SOURCE R _{mf} R _{mc}	PRESS				
R _m @ B.H.T.	4.3 @ 84 °F	@ °F	@ °F	@ °F	@ °F
TIME SINCE CIRC.	12 HOURS				
MAX. REC. TEMP.	84 °F	°F	°F	°F	°F
EQUIP. LOCATION	3005 FARMINGTON				
RECORDED BY	MARTIN				
WITNESSED BY	MR. DUNN				



1100

1200

T.D.
1278'

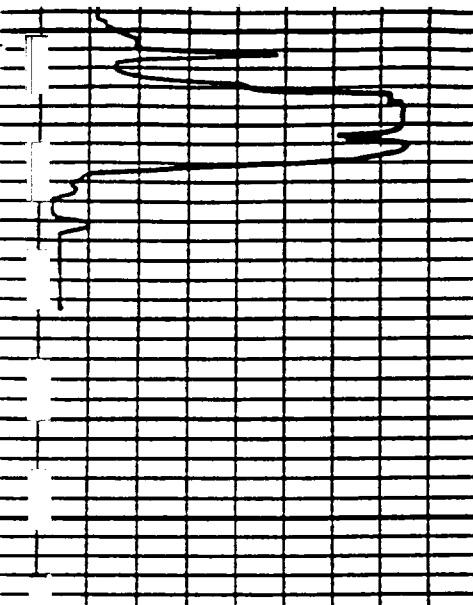


Induction Resistivity

Short Normal - All 16'

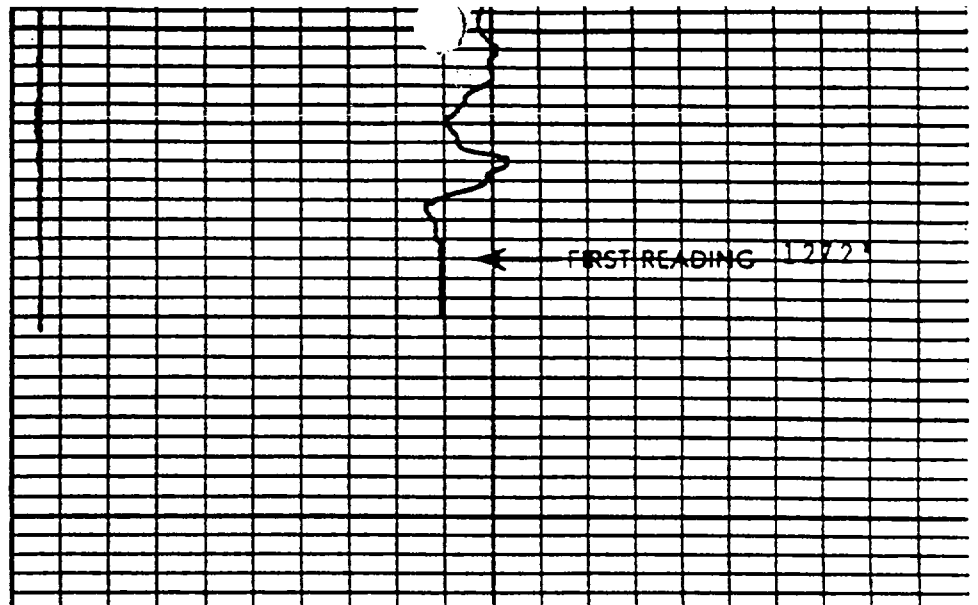
Conductivity

FIRST READING 1272'



T.D.
1278'

10
-|+
+| -

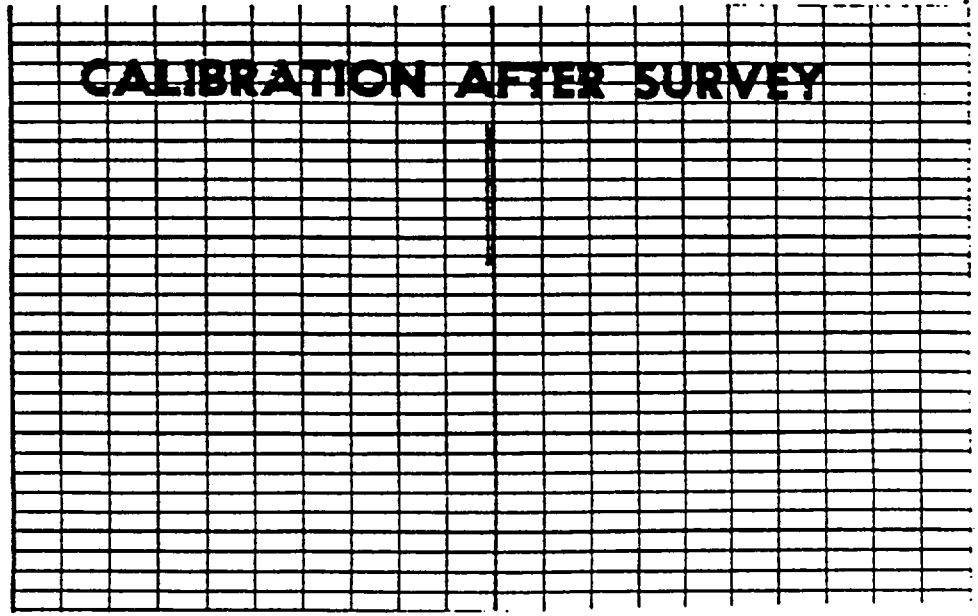
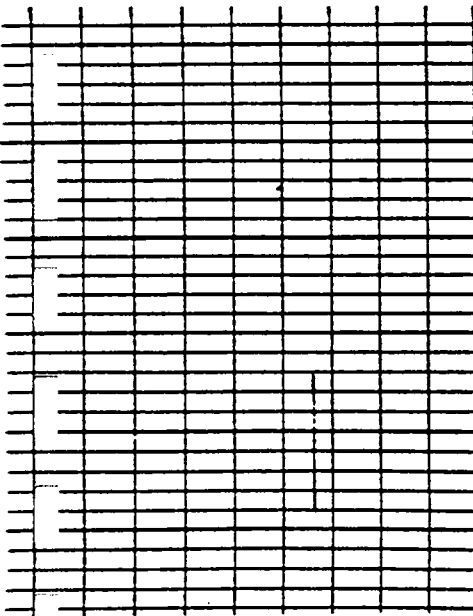


FIRST READING 1272'

0	100	
0	1000	
40" INDUCTION RESISTIVITY		
0	100	200
0	1000	
16" NORMAL		INDUCTION 6 COIL 40"

SPONTANEOUS-POTENTIAL MILLIVOLTS	DEPTH	RESISTIVITY OHMS M ² /M	CONDUCTIVITY MILLIMHOS/M = $\frac{1000}{\text{OHMS M}^2/\text{M}}$
-------------------------------------	-------	---------------------------------------	---

CALIBRATION DATA



CALIBRATION AFTER SURVEY

Fracturing Information

PostFrac
Treatment Study

BJ SERVICES

POSTFRAC TREATMENT SUMMARY

J.K. EDWARDS (WALSH ENG.)
CHACO #4
SEC.1, T26N, R13W
SAN JUAN COUNTY, NM
FRUITLAND COAL FORMATION

MAY 10, 1995
FARMINGTON, NM
(505) 327-6222

1995 STIMULATION SERVICES

DATE: May 10, 1995

J.K. Edwards (Walsh Eng.)
1331 17th St.
Denver, Co 80202

Re: Treatment Summary
Chaco #4
Sec. 1, T26N, R13W
San Juan County, NM
Fruitland Coal Formation

This Treatment Summary contains information that was gathered through The Western Company's real time data acquisition system. The stimulation treatment on the above referenced well was performed by our Farmington District.

The information presented consists of the well data, proposed vs actual treatment, treatment graphs, and treatment data.

Thank you for giving us the opportunity to evaluate this treatment. If you have any questions or comments, please call me at (505) 327-6222.

Sincerely,


Loren L. Dieder
District Engineer

TABLE OF CONTENTS

SECTION	1	WELL DATA
SECTION	2	PROPOSED VS ACTUAL TREATMENT
SECTION	3	TREATMENT GRAPHS
SECTION	4	TREATMENT DATA
SECTION	5	PROCEDURE AND MISCELLANEOUS

SECTION 1

WELL DATA

WELL DATA

Operator:	J.K. Edwards (Walsh Eng.)
Well:	Chaco #4
Formation:	Fruitland Coal
Location:	Sec.1, T26N, R13W
Perforated Interval:	1,163' - 1,189'
Depth to Middle Perforation:	1,176'
Number of Perforations:	120
Perforation Size:	.37"
Tubing/Casing:	2 7/8" 6.5#
Frac Gradient:	1.00 PSI/FT
Bottom Hole Fracture Pressure:	1,176 PSI
Bottom Hole Temperature:	90 DEG. F.
Net Fracture Height:	26' (Estimated)

SECTION 2

PROPOSED VS ACTUAL
TREATMENT

PROPOSED TREATMENT

TREATING CONDUCTOR: 2 7/8" 6.5# TUBING

INJECTION RATE: 25 BPM

EXPECTED SURFACE TREATING PRESSURE: 1,732 PSI (Average on pad)

FLUID VOLUMES:

TREATING FLUID VOLUME: 30,000 GALLONS 70Q FOAM

FLUSH FLUID VOLUME: 220 GALLONS 70Q FOAM

PROPPANT:

35,000 POUNDS 20/40 MESH ARIZONA

ADDITIVES PER 1000 GALLONS:

TREATING\FLUSH FLUID:

20.0	LB	J-4	GELLING AGENT
0.38	LB	FRAC-CIDE 20	BACTERIACIDE
5.00	GL	FRAC-FOAM 1	FOAMING AGENT
1.00	LB	B-11	GEL BREAKER
3.00	LB	P-4	PH CONTROL

PROPOSED TREATMENT SCHEDULE

No. **	Volume *****	Fluid *****	Proppant *****
1	7,650	70Q FOAM	0.00 ppg. PAD
2	5,000	70Q FOAM	0.50 ppg. 20/40
3	6,700	70Q FOAM	1.00 ppg. 20/40
4	7,950	70Q FOAM	2.00 ppg. 20/40
5	3,300	70Q FOAM	3.00 ppg. 20/40
6	220	70Q FOAM	0.00 ppg. FLUSH

ACTUAL TREATMENT

TREATING CONDUCTOR: 2 7/8" 6.5# TUBING

INJECTION RATE: 26 BPM

SURFACE TREATING PRESSURE: 1,250 psi (Average)

FLUID VOLUMES:

TREATING FLUID VOLUME: 30,600 GALLONS 70Q FOAM

FLUSH FLUID VOLUME: 250 GALLONS 20# J-4

PROPPANT:

35,000 POUNDS 20/40 MESH ARIZONA

ADDITIVES PER 1000 GALLONS:

TREATING FLUID:

20.0	LB	J-4	GELLING AGENT
0.38	LB	FRAC-CIDE 20	BACTERIACIDE
5.00	GL	FRAC-FOAM 1	FOAMING AGENT
1.00	LB	B-11	GEL BREAKER
3.00	LB	P-4	PH CONTROL

ACTUAL TREATMENT SCHEDULE

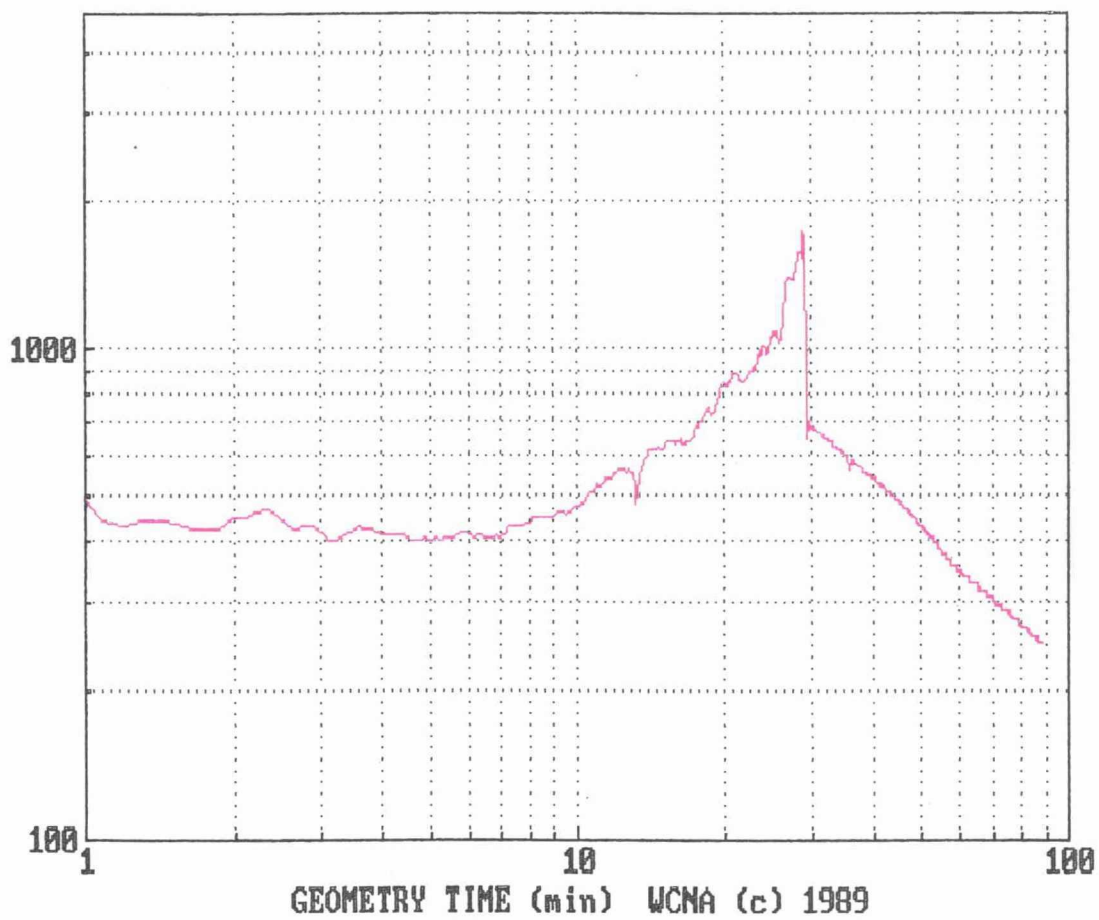
No. **	Volume *****	Fluid *****	Proppant *****
1	7,650	70Q FOAM	0.00 ppg. PAD
2	5,000	70Q FOAM	0.50 ppg. 20/40
3	6,700	70Q FOAM	1.00 ppg. 20/40
4	7,950	70Q FOAM	2.00 ppg. 20/40
5	3,300	70Q FOAM	3.00 ppg. 20/40
6	250	20# J-4	0.00 ppg. FLUSH

SECTION 3

TREATMENT GRAPHS

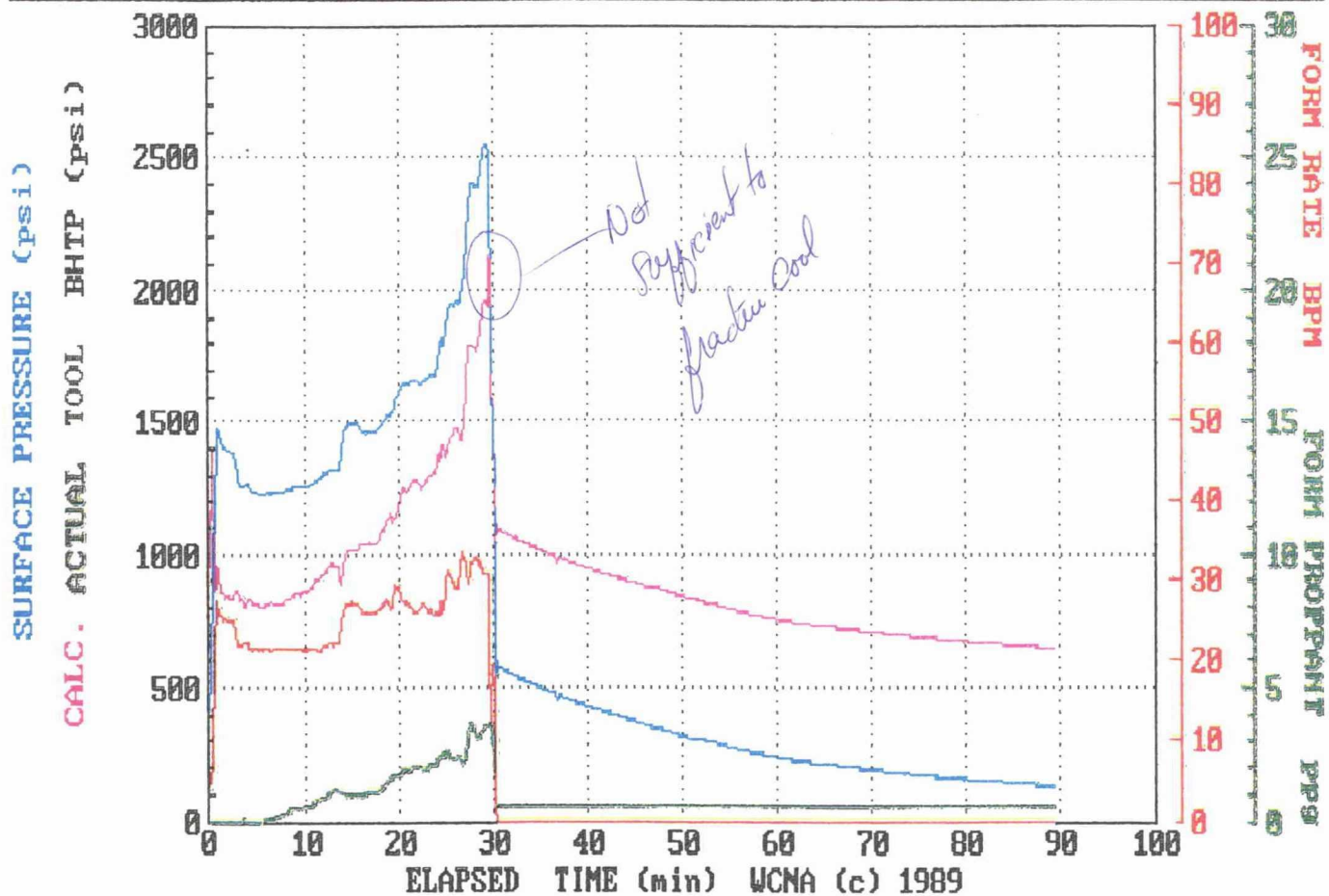
J.K. EDWARDS (WALSH ENG.) CHACO #4 FRUITLAND COAL FOAM FRAC 5-10-95

CALC. ACTUAL TOOL NET PRESSURE (psi)



GEOMETRY TIME (min) WCNA (c) 1989

J.K. EDWARDS (WALSH ENG.) CHACO #4 FRUITLAND COAL FOAM FRAC 5-10-95



SECTION 4

TREATMENT DATA



The Western Company

Treatment Report

Page 1 of 1

Date 5-10-1995 District Farmington F. Receipt 311928 Operator J.K. Edwards
 Lease Chaco Well No. 4 Field Basin Location Sec. 1, T26N, R13W
 County San Juan State New Mexico Stage Number 1 This Zone ☐ This Well ☒

WELL DATA

OG ☐ NG ☒ NO ☐ OO ☐ WD ☐ IW ☐ Misc. ☐ Depth TD/PB _____ Formation Fruitland Coal

Tubing Size 2 7/8" Wt. 6.5# Set at: _____ Type Packer N/A Set at N/A

Casing Size N/A Wt. _____ Set From _____ To _____ Liner Size N/A Wt. _____

Liner Set From _____ To _____ Open Hole: Size N/A From _____ To _____

Casing Perforation: Size .3713.440 Holes Per Foot 2 Intervals 1,163' - 1,189' 120 Holes

Previous Treatment N/A Prior Production N/A

TREATMENT DATA

Pad Used: Yes ☒ No ☐ Pad Type 70Q Foam

Treat. Fluid Type: Foam ☒ Water ☐ Acid ☐ Oil ☐ Vol. 30,850 Gal.

Base Fluid type 20# J-4 2%KCL Base Fluid Vol. 9,198 Gal.

Foam Qual. 70 % Mitchell ☒ Slurry ☐ Surface ☐ Downhole ☐ Total Prop Qty. 36,000 Lbs.

Prop Type: Sand ☒ WP-1 ☐ WP-3 ☐ Baux. ☐ Other _____

Prop Mesh Sizes, Types and Quantities 20/40 ARIZONA 35,000#

Hole Loaded With H2O Treat Via: Tubing ☒ Casing ☐ Anul. ☐ Tubing & Anul. ☐

Ball Sealers: N/A In _____ Stages of _____

Types and Number of Pumps Used 2 Pacemaker 1000's/ 3 N2 Pumps

Auxiliary Materials 6# FRAC-CIDE 20/ 200# J-4/ 11# B-11/ 55 G. FRAC-FOAM IF

PROCEDURE SUMMARY

PUMP: 7,650 G. PAD 70Q/ 5,000 G. 5# 20/40 AR/ 6,700 G. 1# 20/40

7,950 G. 2#/ 3,300 G. 3#/ 250 G. 20# GEL FLUSH

LIQUID/GAS PUMPED AND CAPACITIES IN BHLS.

Tubing Cap. 6.7

Casing Cap. N/A

Annular Cap. N/A

Open Hole Cap. N/A

Fluid to Load N/A

Pad Volume 55

Treating Fluid 199

Flush 6

Over Flush N/A

Fluid to Recover 219

Total N2 199,000

Total CO2 N/A

Time AM/PM	Treating Press.-Psi		Surface Slurry bbls Pumped		Slurry Rate BPM	Surface CO2 bbls Pumped		CO2 Rate BPM	Surface N2 MSCF Pumped		N2 Rate SCFM	Comments
	STP	Annulus	Stage	Total		Stage	Total		Stage	Total		Safety Meeting/Test Lines
12:09									39		6,000	START 70Q PAD
12:16	1230		55		7.5				27	39	5,500	START 5# 20/40 ARIZONA
12:22	1300		38	93	7.9				41	66	5,400	START 1# 20/40 ARIZONA
12:28	1520		55		8.3				63	107	7,200	START 2#
12:35	2280		74	222	9.6				29	170	11,600	START 3#
12:38	2700		32	260	11.5				0	190	0	START 20# GEL FLUSH
12:39	1700		6	260	20							SHUT DOWN
												5 MIN. 490
												10 MIN 430
												15 MIN 370
												60 MIN 150

Treating Pressure: Min 1230 Max. 2530 Avg. 1750 Customer Representative Paul Thompson

Inj. Rate on Treating Fluid 25-30 Rate on Flush 20 Western Representative Savage Walker

Avg. Inj. Rate 26 I.S.D.P. 600 Flush Dens. lbs/gal 8.34 Distribution NORMAL

Final Shut-in Pressure 150 In 60 Minutes

Operator's Maximum Pressure (psi) 3000

Recommendation ID# _____

Job Number

THE WESTERN COMPANY
BATCH MIXED FRAC FLUID BLENDING SCHEDULE
 (Attachment to Treatment Report)

DATE: 5-10-95	CUSTOMER: JK EDWARDS
FIELD RECEIPT NO.:	WELL INFORMATION: CHACO #4

Tank/Transport Identification	No. 28	No.	No.	No.	No.	No.	No.
Initial/Final Gauge	13,500						
Product System Trade Name	20# J-4						
Product Trade Name & Batch/Lot No. (taken directly from the drum/bag label)	Amount to be Mixed	Mixed & Initialed By	Amount to be Mixed	Mixed & Initialed By	Amount to be Mixed	Mixed & Initialed By	Mixed & Initialed By
1) Water, gal	Batch No. 13,500						
2) 20 lb/gal J-4 GUAR GEL	200	JP					
3) .38 lb/gal FRAC-CIDE 20	6	JP					
4) lb/gal P-4 BUFFER	50	JP					
5) lb/gal							
6) lb/gal							
7) lb/gal							
8) lb/gal							

THE WESTERN COMPANY
QUALITY ASSURANCE OF PROPPANT/GRAVEL
 (Attachment to Treatment Report)

DATE: 5-10-95	CUSTOMER: JK EDWARDS
FIELD RECEIPT NO.:	COMPARTMENT:
WELL INFORMATION: CHACO #4	DISTRICT PROPPANT SILO: FARMINGTON

PRODUCT DESCRIPTION: PROPPANT

Truck Number				
Trucking Company	WCNA			
Weight Slip Available? Attach all.	Yes			
Net Weight Delivered	35,000			
Nominal Size from list below	20/40 AZ			
Is the content of the Truck proper?	Color right	Yes		
	Low dust	Yes		
	Appearance right	Yes		
	No contamination	Yes		
Is the Manufacturer's Sieve Analysis proper? Attach all.	Oversize < 0.1%			
	Fines < 1.0% (2.0%+)			
	In Size > 90% (96%+)			
Sample Taken?	Yes			
Is the truck content acceptable?	Yes			

Total Weight, each size: Size 20/40 Weight 35000 lb Size Weight lb

Is total weight for each size appropriate for job requirements?

Are the above answers appropriate and sufficient as compared to job requirements?

If not appropriate, correct problem before sieve analysis. If appropriate but insufficient, do sieve analysis.

SIEVE ANALYSIS		<--- combine samples --->		<--- combine samples --->	
	Initial sample weight	35.21 gram Amount Retained		gram Amount Retained	
	Sieve Mesh 20/40	gram	%	gram	%
	16	0	0	Oversize	Oversize
	20	2.96	8.40		
	30	26.30	74.6	Total In size%	Total In size%
	35	4.58	13.0	90.9	
	40	1.16	3.29		
	50	.21	.596		
	Pan	0	0	Fines	Fines
	Total Weight, grams	35.21			
Cleanliness of	Turbidity	Pass		N/A	
Proppant/Gravel	pH	Pass		N/A	

WATER BASED FRAC FLUID QUALITY CONTROL

(Attachment to Treatment Report)

DATE: 5-10-95	OPERATOR: JK EDWARDS
FIELD RECEIPT NO.:	WELL INFORMATION: CHACO #4

I. Tank/Transport No.	28								
A. Tank/Transport Condition	FAIR								
B. Sampling Location	VALVE								
II. Water Quality	Answer all water source questions elsewhere on this form.				Date water sampled?	5-10-95	Tanks filled?		
A. Clarity, Color, Odor	CLEAR								
B. Sample Temperature, °F(°C)	68								
C. Specific Gravity	1.010								
D. Intital p.H.	7								
E. Iron II/Iron III, ppm	0 / 0	/	/	/	/	/	/	/	/
F. Reducing Agent	No								
G. Phosphate, ppm									
H. Bacteria	Attach appropriate forms from Field Procedures manual.				Date biocide added:		Before water?		
1) Aerobic ±/time	/	/	/	/	/	/	/	/	/
2) Anaerobic ±/time	/	/	/	/	/	/	/	/	/
III. Base Gel Quality (Field Blend)	Use additional copies of this form for each series of tests @ 24 hr. intervals and prior to pumping.								
A. Name of Product System Mixed	20# J-4								
B. Fish Eyes:	Visually inspect the fluid in each tank via the top hatch.								
1) Thickness of Layer	NONE								
2) Partical Size	NONE								
C. Sampling Location/Time	BLENDER	/	/	/	/	/	/	/	/
D. Sample Temperature, °F(°C)	68								
E. pH	5.0								
F. Viscosity	10								
1) Funnel Time, sec/700cc									
2) Fann Reading @ 300 rpm									
600 rpm									
G. Calculate, lb polymer/100									
H. Complex Time, sec.									
I. Appearance of Sample									
IV. Frac Fluid Quality	These measurements are made as the job is pumped.								
A. Pad, 2 lb, Flush, etc.									
B. Time Pumped									
C. Sample Temperature, °F(°C)									
D. XL time @ Blender, sec.									
E. Appearance of Sample									

THE WESTERN COMPACT OF NORTH AMERICA - N2 FOF ANALYSIS MODEL

J.K. EDWARDS (WALSH ENG.) CHACO #4 FRUITLAND COAL FOAM FRAC 5-10-95

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IMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM;
: ET      STP      BHTP  NET P  SLOPE   RATE    PROP      Cumm      Cumm      Fm Qual :
: min.    psi.     psi.   psi.         Fm bpm  Fm ppg  Wh vol   Wh Prop  mich/sly:
HMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM<

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0.1	421	889	489	0.1	4.4	0.0	1	0	0.0/ 0.0
0.2	536	1002	602	0.1	4.5	0.0	2	0	0.0/ 0.0
0.3	662	1100	700	0.1	5.9	0.0	3	0	0.0/ 0.0
0.5	833	1249	849	0.1	6.9	0.0	3	0	0.0/ 0.0
0.6	973	1389	989	0.1	6.9	0.0	4	0	0.0/ 0.0
0.6	1104	1027	627	0.1	18.5	0.0	4	0	0.0/ 0.0
0.8	1283	772	372	0.1	25.2	0.0	4	0	0.0/ 0.0
0.9	1405	856	456	0.1	25.6	0.0	7	0	61.4/61.4
1.0	1467	948	548	0.1	25.8	0.0	7	0	68.9/68.9
1.1	1463	941	541	0.1	26.2	0.0	8	0	70.7/70.7
1.2	1443	899	499	0.1	25.7	0.0	9	0	70.5/70.5
1.4	1428	870	470	0.1	25.5	0.0	10	0	70.6/70.6
1.5	1417	854	454	0.1	25.5	0.0	11	0	70.6/70.6
1.6	1409	853	453	0.1	25.3	0.0	12	0	70.5/70.5
1.7	1400	850	450	0.1	25.1	0.0	13	0	70.5/70.5
1.8	1400	842	442	-0.3	25.2	0.0	13	0	70.3/70.3
1.9	1400	835	435	-0.2	25.4	0.0	14	0	70.0/70.0
2.0	1393	841	441	0.2	25.1	0.0	15	0	70.2/70.2
2.2	1390	840	440	-0.0	25.1	0.0	16	0	70.4/70.4
2.3	1389	838	438	-0.1	25.1	0.0	17	0	70.0/70.0
2.4	1385	830	430	-0.4	25.1	0.0	18	0	70.0/70.0
2.5	1380	825	425	-0.2	25.0	0.0	19	0	70.0/70.0
2.6	1380	825	425	-0.0	25.0	0.0	19	0	70.0/70.0
2.7	1370	848	448	1.2	24.3	0.0	20	0	69.9/69.9
2.8	1352	849	449	0.1	23.8	0.0	21	0	69.9/69.9
2.9	1334	856	456	0.4	23.2	0.0	22	0	69.0/69.0
3.1	1300	868	468	0.7	22.1	0.0	23	0	68.4/68.4
3.2	1278	850	450	-1.1	21.9	0.0	24	0	67.6/67.6
3.3	1266	838	438	-0.9	21.8	0.0	24	0	65.7/65.7
3.4	1260	825	425	-0.9	21.8	0.0	24	0	65.7/65.7
3.5	1260	831	431	0.4	21.8	0.0	26	0	65.2/65.3
3.6	1260	829	429	-0.2	21.9	0.0	27	0	65.2/65.2
3.7	1260	817	417	-0.9	22.0	0.0	28	0	65.2/65.2
3.9	1260	806	406	-0.9	22.2	0.0	29	0	65.2/65.2
4.0	1262	804	404	-0.2	22.3	0.0	30	0	65.5/65.5
4.1	1269	812	412	0.7	22.4	0.0	31	0	65.8/65.8
4.2	1265	820	420	0.7	22.1	0.0	32	0	66.0/66.0
4.3	1254	832	432	1.0	21.6	0.0	32	0	65.9/65.9
4.4	1243	826	426	-0.5	21.4	0.0	33	0	65.5/65.5
4.5	1240	828	428	0.1	21.4	0.0	34	0	64.7/64.7
4.6	1233	819	419	-0.9	21.3	0.0	35	0	64.6/64.6
4.8	1230	814	414	-0.5	21.4	0.0	36	0	64.3/64.3
4.9	1230	813	413	-0.1	21.4	0.0	37	0	64.4/64.4
5.0	1230	813	413	0.1	21.4	0.0	38	0	64.3/64.3
5.1	1230	814	414	0.1	21.3	0.0	38	0	64.3/64.3
5.2	1229	812	412	-0.2	21.4	0.0	39	0	64.3/64.3
5.3	1223	805	405	-0.9	21.3	0.0	40	0	64.3/64.3
5.4	1221	801	401	-0.5	21.3	0.0	41	0	64.3/64.3
5.6	1222	802	402	0.2	21.4	0.0	42	0	64.3/64.3
5.7	1224	806	406	0.4	21.3	0.0	43	0	64.4/64.5
5.8	1222	802	402	-0.4	21.4	0.0	44	0	64.4/64.5
5.9	1226	808	408	0.8	21.4	0.0	45	0	64.5/64.5
6.0	1226	805	405	-0.5	21.4	0.0	45	0	64.4/64.5
6.1	1230	808	408	0.4	21.5	0.0	46	0	64.4/64.5

J.K. EDWARDS (WALSH ENG.) CHACO #4 FRUITLAND COAL FOAM FRAC 5-10-95

6.2	1230	806	406	-0.2	21.5	0.0	47	0	64.6/64.7
6.3	1228	810	410	0.5	21.4	0.1	48	0	64.8/64.8
6.5	1230	815	415	0.6	21.3	0.1	49	0	64.8/64.9
6.6	1229	819	419	0.6	21.3	0.1	50	0	64.7/64.8
6.7	1230	817	417	-0.2	21.3	0.1	51	100	65.0/65.2
6.8	1233	813	413	-0.6	21.5	0.1	51	100	64.9/65.1
6.9	1236	810	410	-0.3	21.7	0.1	52	100	65.1/65.3
7.0	1231	813	413	0.4	21.5	0.1	53	100	64.0/64.2
7.1	1230	811	411	-0.3	21.5	0.2	54	100	63.9/64.2
7.3	1230	810	410	-0.2	21.5	0.2	55	100	64.4/64.7
7.4	1230	811	411	0.1	21.5	0.2	56	200	64.4/64.8
7.5	1230	810	410	-0.1	21.6	0.2	57	200	64.5/64.8
7.6	1230	812	412	0.3	21.5	0.2	58	200	64.5/64.9
7.7	1230	810	410	-0.2	21.6	0.3	59	200	64.5/65.0
7.8	1231	813	413	0.4	21.6	0.3	60	300	64.6/65.1
8.0	1236	823	423	1.8	21.5	0.3	60	300	64.6/65.1
8.1	1240	831	431	1.2	21.5	0.3	61	300	64.7/65.2
8.2	1240	832	432	0.2	21.4	0.4	62	400	65.0/65.6
8.3	1241	833	433	0.2	21.5	0.4	63	400	65.1/65.8
8.4	1240	831	431	-0.3	21.5	0.4	64	400	65.2/65.9
8.5	1240	832	432	0.2	21.5	0.4	65	500	65.3/66.0
8.6	1241	834	434	0.3	21.4	0.5	66	500	65.3/66.0
8.8	1246	837	437	0.5	21.5	0.5	67	600	65.1/65.8
8.9	1250	847	447	1.7	21.5	0.4	67	600	65.3/66.0
9.0	1250	847	447	0.1	21.5	0.5	68	700	65.1/65.8
9.1	1250	847	447	0.0	21.4	0.5	69	700	65.3/66.0
9.2	1250	847	447	0.0	21.5	0.5	70	800	65.3/66.0
9.3	1250	847	447	0.0	21.5	0.4	71	800	65.3/66.0
9.4	1250	847	447	0.0	21.5	0.5	72	900	65.4/66.2
9.5	1250	847	447	-0.0	21.5	0.5	73	900	65.4/66.2
9.7	1250	848	448	0.0	21.5	0.5	74	900	65.5/66.2
9.8	1255	857	457	1.7	21.4	0.5	74	1000	65.5/66.3
9.9	1250	862	462	1.0	21.2	0.5	75	1000	65.5/66.3
10.0	1250	860	460	-0.4	21.2	0.5	76	1100	65.5/66.3
10.1	1252	858	458	-0.4	21.3	0.5	77	1100	65.2/66.0
10.2	1251	854	454	-0.8	21.4	0.6	78	1200	65.3/66.1
10.3	1254	862	462	1.6	21.3	0.6	79	1300	65.5/66.4
10.5	1257	862	462	0.0	21.4	0.6	80	1300	65.7/66.6
10.6	1260	867	467	1.0	21.4	0.6	81	1400	65.6/66.6
10.7	1261	870	470	0.6	21.4	0.6	82	1400	65.8/66.8
10.8	1269	874	474	0.7	21.5	0.6	82	1500	65.8/66.8
10.9	1270	877	477	0.7	21.6	0.7	83	1600	65.5/66.5
11.0	1270	880	480	0.6	21.5	0.7	84	1600	65.8/66.8
11.2	1271	889	489	1.7	21.4	0.7	85	1700	65.9/67.0
11.3	1279	900	500	2.1	21.4	0.8	86	1800	

17.9	1472	1050	650	1.1	26.4	1.2	140	8100	68.9/70.5
18.0	1479	1063	663	3.3	26.5	1.2	141	8200	68.9/70.5

J.K. EDWARDS (WALSH ENG.) CHACO #4 FRUITLAND COAL FOAM FRAC 5-10-95

12.4	1310	938	538	-0.1	22.0	1.0	95	2700	65.0/66.6
12.5	1311	942	542	0.9	22.0	1.0	96	2800	65.0/66.6
12.6	1317	954	554	2.3	22.1	1.1	97	2900	65.0/66.6
12.8	1317	955	555	0.2	22.1	1.1	98	3000	65.1/66.8
12.9	1318	961	561	1.2	22.1	1.1	99	3100	65.3/67.0
13.0	1320	958	558	-0.5	22.1	1.2	100	3300	65.4/67.1
13.1	1320	961	561	0.6	22.1	1.2	101	3400	65.3/67.1
13.2	1320	962	562	0.2	22.1	1.2	102	3500	65.3/67.0
13.3	1320	958	558	-0.8	22.1	1.2	103	3600	65.4/67.1
13.5	1320	959	559	0.3	22.1	1.1	104	3700	65.4/67.1
13.6	1320	955	555	-0.8	22.2	1.1	105	3800	65.2/66.8
13.7	1320	957	557	0.5	22.2	1.1	106	3900	65.2/66.9
13.8	1338	915	515	-9.6	23.0	1.1	107	4000	65.0/66.6
13.9	1382	879	479	-8.7	24.6	1.1	107	4100	65.1/66.7
14.0	1421	907	507	7.0	25.3	1.1	108	4200	66.8/68.3
14.1	1444	944	544	8.7	25.9	1.0	109	4300	69.5/70.8
14.3	1464	969	569	5.4	26.4	1.0	110	4400	70.3/71.5
14.4	1475	986	586	3.7	26.7	1.0	111	4500	70.4/71.6
14.5	1480	995	595	1.9	26.9	1.0	112	4600	70.6/71.8
14.6	1487	1008	608	2.8	27.0	1.0	113	4800	70.7/71.9
14.7	1490	1013	613	1.2	27.1	1.0	114	4900	70.7/71.9
14.8	1490	1013	613	-0.0	27.1	1.0	115	5000	70.8/72.0
14.9	1490	1018	618	0.9	27.1	1.0	116	5100	70.8/72.0
15.1	1490	1016	616	-0.3	27.1	1.0	117	5200	70.7/71.9
15.2	1490	1013	613	-0.7	27.1	1.0	118	5300	70.6/71.8
15.3	1490	1013	613	-0.1	27.1	1.0	119	5400	70.6/71.8
15.4	1490	1020	620	1.6	27.1	0.9	120	5500	70.6/71.8
15.5	1490	1013	613	-1.6	27.1	0.9	121	5600	70.6/71.8
15.6	1490	1018	618	1.0	27.1	0.9	122	5700	70.4/71.7
15.7	1490	1021	621	0.7	27.1	0.9	122	5800	70.6/71.8
15.9	1485	1030	630	2.0	26.8	0.9	123	5900	70.5/71.7
16.0	1473	1041	641	2.4	26.4	0.9	124	6000	70.4/71.7
16.1	1463	1042	642	0.3	26.1	1.0	125	6100	70.1/71.3
16.2	1460	1041	641	-0.3	26.0	1.0	126	6200	69.5/70.8
16.3	1459	1040	640	-0.2	26.0	1.0	127	6400	69.1/70.5
16.4	1459	1040	640	0.0	26.0	1.0	128	6500	69.2/70.5
16.5	1456	1034	634	-1.2	25.9	1.0	129	6600	69.2/70.6
16.6	1460	1042	642	1.7	26.0	1.0	130	6700	69.2/70.6
16.8	1460	1042	642	0.0	26.0	1.0	131	6800	69.2/70.6
16.9	1460	1043	643	0.3	26.0	1.1	132	6900	69.3/70.7
17.0	1460	1047	647	0.7	26.0	1.1	133	7000	69.3/70.7
17.1	1460	1037	637	-2.1	26.0	1.1	134	7200	69.3/70.7
17.2	1460	1036	636	-0.3	26.0	1.1	135	7300	69.5/71.0
17.3	1463	1042	64						

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18.6	1507	1100	700	2.3	27.3	1.4	146	9000	68.9/70.7
18.7	1517	1106	706	1.3	27.6	1.5	147	9100	69.1/71.0
18.8	1520	1117	717	2.4	27.5	1.5	148	9300	68.4/70.4
18.9	1520	1128	728	2.6	27.1	1.6	149	9500	68.3/70.4
19.1	1520	1130	730	0.5	27.0	1.6	150	9700	68.5/70.6
19.2	1524	1140	740	2.2	26.7	1.7	151	9800	68.3/70.5
19.3	1530	1150	750	2.3	26.5	1.7	152	10000	68.1/70.4
19.4	1530	1146	746	-0.9	26.7	1.7	154	10200	68.2/70.5
19.5	1543	1125	725	-4.8	28.0	1.7	155	10400	68.6/70.9
19.6	1565	1130	730	1.1	28.8	1.7	156	10600	68.7/71.0
19.8	1582	1131	731	0.2	29.4	1.7	157	10800	69.7/71.8
19.9	1599	1151	751	4.8	29.2	1.7	158	11000	70.0/72.1
20.0	1607	1162	762	2.6	29.1	1.7	159	11200	70.5/72.5
20.1	1617	1179	779	3.7	28.8	1.8	160	11400	71.0/73.1
20.2	1628	1199	799	4.5	28.3	1.9	161	11600	70.5/72.8
20.3	1640	1225	825	5.7	27.6	1.9	162	11800	70.1/72.5
20.4	1648	1235	835	2.1	27.5	1.9	163	12000	70.1/72.5
20.6	1650	1240	840	1.2	27.3	1.9	164	12200	70.2/72.6
20.7	1650	1245	845	1.0	27.1	1.9	165	12400	69.9/72.3
20.8	1650	1247	847	0.6	26.9	1.9	166	12600	69.9/72.3
20.9	1644	1237	837	-2.3	27.2	1.9	167	12800	70.3/72.6
21.0	1644	1237	837	0.1	27.2	1.9	168	13000	70.4/72.7
21.1	1650	1248	848	2.3	27.0	1.9	169	13200	70.2/72.6
21.2	1651	1250	850	0.4	27.0	1.9	170	13400	70.3/72.7
21.4	1656	1258	858	1.9	26.8	2.0	171	13700	70.2/72.7
21.5	1660	1267	867	2.0	26.6	2.0	172	13900	70.1/72.6
21.6	1660	1278	878	2.3	26.1	2.0	173	14100	70.0/72.5
21.7	1660	1279	879	0.2	26.1	2.0	174	14300	69.9/72.5
21.8	1660	1279	879	0.1	26.0	2.1	175	14500	69.7/72.3
21.9	1660	1278	878	-0.3	26.1	2.1	176	14700	69.7/72.3
22.0	1659	1277	877	-0.1	26.1	2.0	177	14900	69.7/72.2
22.2	1651	1264	864	-3.0	26.3	2.0	178	15100	69.8/72.3
22.3	1650	1261	861	-0.7	26.4	2.0	179	15300	69.8/72.3
22.4	1650	1248	848	-2.9	26.9	1.9	180	15500	70.0/72.4
22.5	1652	1251	851	0.7	26.9	1.9	181	15800	70.0/72.4
22.6	1655	1254	854	0.7	26.9	1.9	182	16000	70.2/72.6
22.7	1660	1259	859	1.1	27.0	1.9	183	16200	70.1/72.5
22.8	1662	1263	863	0.9	26.8	2.0	184	16400	70.0/72.5
23.0	1669	1275	875	2.8	26.5	2.0	185	16600	69.7/72.2
23.1	1670	1278	878	0.7	26.5	2.1	186	16800	69.8/72.3
23.2	1673	1288	888	2.4	26.2	2.1	187	17000	69.7/72.3
23.3	1680	1295	895	1.5	26.1	2.1	188	17300	69.6/72.3
23.4	1682	1297	897	0.4	26.1	2.2	189	17500	69.5/72.2
23.5	1680	1293	893	-0.8	26.2	2.1	190	17700	69.6/72.3
23.7	1680	1296	896	0.6	26.1	2.1	191	17900	69.6/72.2
23.8	1680	1306	906	2.3	25.8	2.1	192	18100	69.4/72.1
23.9	1681	1303	903	-0.6	25.9	2.1	193	18400	69.5/72.2
24.0	1696	1311	911	1.9	26.0	2.3	194	18600	69.5/72.4
24.1	1722	1340	940	6.5	25.9	2.4	195	18900	69.4/72.4
24.2	1746	1364	964	5.5	25.8	2.4	196	19100	69.5/72.5
24.3	1756	1381	981	3.6	25.6	2.5	197	19400	69.1/72.2
24.5	1789	1352	952	-6.3	27.6	2.4	198	19600	69.6/72.6
24.6	1821	1388	988	7.8	27.4	2.5	199	19900	69.1/72.3
24.7	1797	1407	1007	4.3	26.1	2.4	200	20100	70.7/73.6

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24.8	1795	1408	1008	0.1	26.1	2.4	201	20400	71.2/74.0
24.9	1826	1411	1011	0.7	26.9	2.5	202	20700	69.7/72.7
25.0	1844	1379	979	-7.2	28.6	2.5	203	20900	69.5/72.6
25.1	1881	1366	966	-2.8	30.3	2.6	204	21200	68.0/71.4
25.3	1908	1378	978	2.7	31.2	2.4	205	21500	70.3/73.2
25.4	1931	1413	1013	7.7	30.9	2.4	206	21800	71.6/74.3
25.5	1942	1422	1022	2.0	31.0	2.3	208	22000	71.8/74.5
25.6	1943	1430	1030	1.7	30.6	2.3	209	22300	71.8/74.5
25.7	1942	1443	1043	2.8	30.1	2.3	210	22600	72.0/74.6
25.8	1941	1455	1055	2.5	29.5	2.3	211	22800	72.1/74.7
25.9	1950	1473	1073	3.8	29.1	2.4	212	23100	71.8/74.5
26.1	1952	1470	1070	-0.7	29.2	2.4	213	23400	71.6/74.4
26.2	1960	1476	1076	1.4	29.2	2.4	214	23600	71.5/74.3
26.3	1957	1474	1074	-0.5	29.2	2.4	215	23900	71.6/74.3
26.4	1951	1456	1056	-3.7	29.8	2.3	216	24100	71.8/74.4
26.5	1961	1438	1038	-4.0	31.0	2.2	217	24400	71.6/74.1
26.6	1982	1426	1026	-2.8	32.4	2.1	218	24700	71.3/73.8
26.7	2006	1434	1034	1.8	33.0	2.2	220	24900	70.2/72.9
26.9	2033	1455	1055	4.6	33.4	2.2	221	25300	69.7/72.5
27.0	2064	1489	1089	7.5	33.0	2.3	222	25600	69.0/72.0
27.1	2108	1530	1130	8.5	32.9	2.6	223	26000	68.5/71.8
27.2	2173	1613	1213	16.8	31.4	3.0	225	26300	68.3/72.1
27.3	2236	1690	1290	14.7	30.6	3.2	226	26700	68.0/72.1
27.4	2289	1762	1362	13.2	29.5	3.6	227	27100	67.4/71.9
27.5	2324	1796	1396	5.8	29.4	3.7	229	27500	66.8/71.5
27.7	2376	1786	1386	-1.7	31.2	3.6	230	27900	67.0/71.7
27.8	2400	1795	1395	1.5	31.8	3.6	231	28300	67.2/71.7
27.9	2400	1792	1392	-0.4	32.3	3.3	232	28700	68.8/72.9
28.0	2399	1784	1384	-1.4	32.7	3.2	234	29100	69.2/73.1
28.1	2391	1777	1377	-1.3	32.8	3.2	235	29400	69.3/73.1
28.2	2391	1778	1378	0.2	32.7	3.1	236	29800	69.4/73.2
28.3	2390	1776	1376	-0.3	32.7	3.2	238	30200	69.3/73.1
28.5	2396	1797	1397	3.6	32.1	3.2	239	30600	69.1/73.0
28.6	2419	1815	1415	3.2	32.3	3.2	240	31000	68.9/72.9
28.7	2446	1848	1448	5.6	31.9	3.3	242	31400	68.7/72.8
28.8	2470	1879	1479	5.3	31.6	3.4	243	31800	68.9/73.0
28.9	2507	1909	1509	5.1	31.4	3.5	244	32200	69.0/73.2
29.0	2533	1945	1545	6.0	31.0	3.6	245	32600	68.8/73.1
29.2	2541	1959	1559	2.3	30.8	3.6	247	33000	69.2/73.5
29.3	2544	1959	1559	0.0	30.9	3.6	248	33400	69.3/73.6
29.4	2541	1957	1557	-0.3	30.8	3.6	249	33900	69.5/73.7
29.5	2532	1951	1551	-1.0	30.8	3.6	251	34300	69.5/73.7
29.6	2517								

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31.0	569	1087	687	-0.4	0.0	0.6	260	35000	0.0/ 2.7
31.1	560	1078	678	-3.7	0.0	0.6	260	35000	0.0/ 2.7
31.2	560	1078	678	-0.0	0.0	0.6	260	35000	0.0/ 2.7
31.3	560	1078	678	-0.0	0.0	0.6	260	35000	0.0/ 2.7
31.4	560	1078	678	-0.0	0.0	0.6	260	35000	0.0/ 2.7
31.5	558	1076	676	-0.8	0.0	0.6	260	35000	0.0/ 2.7
31.6	552	1070	670	-2.5	0.0	0.6	260	35000	0.0/ 2.7
31.7	550	1068	668	-0.9	0.0	0.6	260	35000	0.0/ 2.7
31.8	550	1068	668	-0.0	0.0	0.6	260	35000	0.0/ 2.7
32.0	550	1068	668	-0.0	0.0	0.6	260	35000	0.0/ 2.7
32.1	548	1066	666	-0.9	0.0	0.6	260	35000	0.0/ 2.7
32.2	540	1058	658	-3.5	0.0	0.6	260	35000	0.0/ 2.7
32.3	540	1058	658	-0.0	0.0	0.6	260	35000	0.0/ 2.7
32.4	540	1058	658	-0.0	0.0	0.6	260	35000	0.0/ 2.7
32.5	540	1058	658	-0.0	0.0	0.6	260	35000	0.0/ 2.7
32.6	540	1058	658	-0.0	0.0	0.6	260	35000	0.0/ 2.7
32.7	535	1053	653	-2.1	0.0	0.6	260	35000	0.0/ 2.7
32.9	532	1050	650	-1.4	0.0	0.6	260	35000	0.0/ 2.7
33.0	530	1048	648	-0.8	0.0	0.6	260	35000	0.0/ 2.7
33.1	530	1048	648	-0.0	0.0	0.6	260	35000	0.0/ 2.7
33.2	530	1048	648	-0.0	0.0	0.6	260	35000	0.0/ 2.7
33.3	527	1045	645	-1.4	0.0	0.6	260	35000	0.0/ 2.7
33.4	520	1038	638	-3.3	0.0	0.6	260	35000	0.0/ 2.7
33.5	520	1038	638	-0.0	0.0	0.6	260	35000	0.0/ 2.7
33.6	520	1038	638	-0.0	0.0	0.6	260	35000	0.0/ 2.7
33.7	520	1038	638	-0.0	0.0	0.6	260	35000	0.0/ 2.7
33.9	520	1038	638	-0.0	0.0	0.6	260	35000	0.0/ 2.7
34.0	515	1033	633	-2.4	0.0	0.6	260	35000	0.0/ 2.7
34.1	511	1029	629	-1.9	0.0	0.6	260	35000	0.0/ 2.7
34.2	510	1028	628	-0.5	0.0	0.6	260	35000	0.0/ 2.7
34.3	510	1028	628	-0.0	0.0	0.6	260	35000	0.0/ 2.7
34.4	510	1028	628	-0.0	0.0	0.6	260	35000	0.0/ 2.7
34.5	510	1028	628	-0.0	0.0	0.6	260	35000	0.0/ 2.7
34.6	504	1022	622	-3.0	0.0	0.6	260	35000	0.0/ 2.7
34.8	501	1019	619	-1.5	0.0	0.6	260	35000	0.0/ 2.7
34.9	500	1018	618	-0.5	0.0	0.6	260	35000	0.0/ 2.7
35.0	500	1018	618	-0.0	0.0	0.6	260	35000	0.0/ 2.7
35.1	499	1017	617	-0.5	0.0	0.6	260	35000	0.0/ 2.7
35.2	495	1013	613	-2.1	0.0	0.6	260	35000	0.0/ 2.7
35.3	490	1008	608	-2.6	0.0	0.6	260	35000	0.0/ 2.7
35.4	490	1008	608	-0.0	0.0	0.6	260	35000	0.0/ 2.7
35.5	490	1008	608	-0.0	0.0	0.6	260	35000	0.0/ 2.7
35.6	490	1008	608	-0.0	0.0	0.6	260	35000	0.0/ 2.7
35.8	489	1007	607	-0.5	0.0	0.6	260	35000	0.0/ 2.7

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37.2	470	988	588	-0.0	0.0	0.6	260	35000	0.0/ 2.7
37.3	469	987	587	-0.6	0.0	0.6	260	35000	0.0/ 2.7
37.4	463	981	581	-3.4	0.0	0.6	260	35000	0.0/ 2.7
37.5	460	978	578	-1.7	0.0	0.6	260	35000	0.0/ 2.7
37.6	460	978	578	-0.0	0.0	0.6	260	35000	0.0/ 2.7
37.7	460	978	578	-0.0	0.0	0.6	260	35000	0.0/ 2.7
37.8	460	978	578	-0.0	0.0	0.6	260	35000	0.0/ 2.7
37.9	460	978	578	-0.0	0.0	0.6	260	35000	0.0/ 2.7
38.1	452	970	570	-4.8	0.0	0.6	260	35000	0.0/ 2.7
38.2	452	970	570	-0.0	0.0	0.6	260	35000	0.0/ 2.7
38.3	451	969	569	-0.6	0.0	0.6	260	35000	0.0/ 2.7
38.4	450	968	568	-0.6	0.0	0.6	260	35000	0.0/ 2.7
38.5	450	968	568	-0.0	0.0	0.6	260	35000	0.0/ 2.7
38.6	450	968	568	-0.0	0.0	0.6	260	35000	0.0/ 2.7
38.7	448	966	566	-1.2	0.0	0.6	260	35000	0.0/ 2.7
38.8	444	962	562	-2.5	0.0	0.6	260	35000	0.0/ 2.7
38.9	440	958	558	-2.5	0.0	0.6	260	35000	0.0/ 2.7
39.1	440	958	558	-0.0	0.0	0.6	260	35000	0.0/ 2.7
39.2	440	958	558	-0.0	0.0	0.6	260	35000	0.0/ 2.7
39.3	440	958	558	-0.0	0.0	0.6	260	35000	0.0/ 2.7
39.4	440	958	558	-0.0	0.0	0.6	260	35000	0.0/ 2.7
39.5	440	958	558	-0.0	0.0	0.6	260	35000	0.0/ 2.7
39.6	436	954	554	-2.6	0.0	0.6	260	35000	0.0/ 2.7
39.7	431	949	549	-3.2	0.0	0.6	260	35000	0.0/ 2.7
39.8	430	948	548	-0.6	0.0	0.6	260	35000	0.0/ 2.7
39.9	430	948	548	-0.0	0.0	0.6	260	35000	0.0/ 2.7
40.1	430	948	548	-0.0	0.0	0.6	260	35000	0.0/ 2.7
40.2	430	948	548	-0.0	0.0	0.6	260	35000	0.0/ 2.7
40.3	429	947	547	-0.7	0.0	0.6	260	35000	0.0/ 2.7
40.4	427	945	545	-1.3	0.0	0.6	260	35000	0.0/ 2.7
40.5	423	941	541	-2.7	0.0	0.6	260	35000	0.0/ 2.7
40.6	420	938	538	-2.0	0.0	0.6	260	35000	0.0/ 2.7
40.7	420	938	538	-0.0	0.0	0.6	260	35000	0.0/ 2.7
40.8	420	938	538	-0.0	0.0	0.6	260	35000	0.0/ 2.7
41.0	420	938	538	-0.0	0.0	0.6	260	35000	0.0/ 2.7
41.1	420	938	538	-0.0	0.0	0.6	260	35000	0.0/ 2.7
41.2	420	938	538	-0.0	0.0	0.6	260	35000	0.0/ 2.7
41.3	418	936	536	-1.4	0.0	0.6	260	35000	0.0/ 2.7
41.4	417	935	535	-0.7	0.0	0.6	260	35000	0.0/ 2.7
41.5	410	928	528	-4.9	0.0	0.6	260	35000	0.0/ 2.7
41.6	410	928	528	-0.0	0.0	0.6	260	35000	0.0/ 2.7
41.7	410	928	528	-0.0	0.0	0.6	260	35000	0.0/ 2.7
41.8	410	928	528	-0.0	0.0	0.6	260	35000	0.0/ 2.7
42.0	410	928	528	-0.0	0.0	0.6	260	35000	0.0/ 2.7</

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49.2	330	848	448	-0.0	0.0	0.6	260	35000	0.0/	2.7
49.3	330	848	448	-0.0	0.0	0.6	260	35000	0.0/	2.7
49.4	329	847	447	-1.0	0.0	0.6	260	35000	0.0/	2.7
49.6	325	843	443	-4.0	0.0	0.6	260	35000	0.0/	2.7
49.7	320	838	438	-5.0	0.0	0.6	260	35000	0.0/	2.7
49.8	320	838	438	-0.0	0.0	0.6	260	35000	0.0/	2.7
49.9	320	838	438	-0.0	0.0	0.6	260	35000	0.0/	2.7
50.0	320	838	438	-0.0	0.0	0.6	260	35000	0.0/	2.7
50.1	320	838	438	-0.0	0.0	0.6	260	35000	0.0/	2.7
50.2	320	838	438	-0.0	0.0	0.6	260	35000	0.0/	2.7
50.3	320	838	438	-0.0	0.0	0.6	260	35000	0.0/	2.7
50.4	313	831	431	-8.9	0.0	0.6	260	35000	0.0/	2.7
50.5	311	829	429	-2.6	0.0	0.6	260	35000	0.0/	2.7
50.7	310	828	428	-0.5	0.0	0.6	260	35000	0.0/	2.7
50.8	310	828	428	-0.0	0.0	0.6	260	35000	0.0/	2.7
50.9	310	828	428	-0.0	0.0	0.6	260	35000	0.0/	2.7
51.0	310	828	428	-0.0	0.0	0.6	260	35000	0.0/	2.7
51.1	310	828	428	-0.0	0.0	0.6	260	35000	0.0/	2.7
51.3	310	828	428	-0.0	0.0	0.6	260	35000	0.0/	2.7
51.4	310	828	428	-0.0	0.0	0.6	260	35000	0.0/	2.7
51.5	308	826	426	-2.2	0.0	0.6	260	35000	0.0/	2.7
51.6	309	827	427	1.1	0.0	0.6	260	35000	0.0/	2.7
51.7	309	827	427	-0.0	0.0	0.6	260	35000	0.0/	2.7
51.8	303	821	421	-6.3	0.0	0.6	260	35000	0.0/	2.7
51.9	301	819	419	-2.2	0.0	0.6	260	35000	0.0/	2.7
52.0	300	818	418	-1.1	0.0	0.6	260	35000	0.0/	2.7
52.2	300	818	418	-0.0	0.0	0.6	260	35000	0.0/	2.7
52.3	300	818	418	-0.0	0.0	0.6	260	35000	0.0/	2.7
52.4	300	818	418	-0.0	0.0	0.6	260	35000	0.0/	2.7
52.5	297	815	415	-3.4	0.0	0.6	260	35000	0.0/	2.7
52.6	293	811	411	-4.6	0.0	0.6	260	35000	0.0/	2.7
52.7	296	814	414	3.4	0.0	0.6	260	35000	0.0/	2.7
52.8	294	812	412	-2.3	0.0	0.6	260	35000	0.0/	2.7
52.9	290	808	408	-4.6	0.0	0.6	260	35000	0.0/	2.7
53.0	290	808	408	-0.0	0.0	0.6	260	35000	0.0/	2.7
53.2	290	808	408	-0.0	0.0	0.6	260	35000	0.0/	2.7
53.3	290	808	408	-0.0	0.0	0.6	260	35000	0.0/	2.7
53.4	290	808	408	-0.0	0.0	0.6	260	35000	0.0/	2.7
53.5	290	808	408	-0.0	0.0	0.6	260	35000	0.0/	2.7
53.6	290	808	408	-0.0	0.0	0.6	260	35000	0.0/	2.7
53.7	288	806	406	-2.4	0.0	0.6	260	35000	0.0/	2.7
53.8	285	803	403	-3.6	0.0	0.6	260	35000	0.0/	2.7
53.9	280	798	398	-6.0	0.0	0.6	2			

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61.3	230	748	348	-0.0	0.0	0.6	260	35000	0.0/ 2.7
61.4	229	747	347	-1.6	0.0	0.6	260	35000	0.0/ 2.7
61.5	226	744	344	-4.8	0.0	0.6	260	35000	0.0/ 2.7
61.6	225	743	343	-1.6	0.0	0.6	260	35000	0.0/ 2.7
61.8	220	738	338	-8.2	0.0	0.6	260	35000	0.0/ 2.7
61.9	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
62.0	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
62.1	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
62.2	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
62.3	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
62.4	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
62.5	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
62.6	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
62.8	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
62.9	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
63.0	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
63.1	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
63.2	220	738	338	-0.0	0.0	0.6	260	35000	0.0/ 2.7
63.3	219	737	337	-1.7	0.0	0.6	260	35000	0.0/ 2.7
63.4	219	737	337	-0.0	0.0	0.6	260	35000	0.0/ 2.7
63.5	216	734	334	-5.1	0.0	0.6	260	35000	0.0/ 2.7
63.6	210	728	328	-10.4	0.0	0.6	260	35000	0.0/ 2.7
63.8	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
63.9	212	730	330	3.5	0.0	0.6	260	35000	0.0/ 2.7
64.0	210	728	328	-3.5	0.0	0.6	260	35000	0.0/ 2.7
64.1	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
64.2	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
64.3	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
64.4	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
64.5	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
64.6	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
64.8	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
64.9	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
65.0	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
65.1	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
65.2	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
65.3	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
65.4	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
65.6	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
65.7	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
65.8	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
65.9	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
66.0	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7
66.1	210	728	328	-0.0	0.0	0.6	260	35000	0.0/ 2.7

Keywords:

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J.K. EDWARDS (WALSH ENG.) CHACO #4 FRUITLAND COAL FOAM FRAC 5-10-95

85.4	140	658	258	-0.0	0.0	0.6	260	35000	0.0/ 2.7
85.5	140	658	258	-0.0	0.0	0.6	260	35000	0.0/ 2.7
85.6	140	658	258	-0.0	0.0	0.6	260	35000	0.0/ 2.7
85.7	140	658	258	-0.0	0.0	0.6	260	35000	0.0/ 2.7
85.8	140	658	258	-0.0	0.0	0.6	260	35000	0.0/ 2.7
86.0	138	656	256	-6.0	0.0	0.6	260	35000	0.0/ 2.7
86.1	139	657	257	3.0	0.0	0.6	260	35000	0.0/ 2.7
86.2	140	658	258	3.0	0.0	0.6	260	35000	0.0/ 2.7
86.3	139	657	257	-3.0	0.0	0.6	260	35000	0.0/ 2.7
86.4	140	658	258	3.0	0.0	0.6	260	35000	0.0/ 2.7
86.5	137	655	255	-8.1	0.0	0.6	260	35000	0.0/ 2.7
86.6	135	653	253	-6.3	0.0	0.6	260	35000	0.0/ 2.7
86.8	140	658	258	15.3	0.0	0.6	260	35000	0.0/ 2.7
86.9	139	657	257	-3.0	0.0	0.6	260	35000	0.0/ 2.7
87.0	138	656	256	-3.0	0.0	0.6	260	35000	0.0/ 2.7
87.1	137	655	255	-3.1	0.0	0.6	260	35000	0.0/ 2.7
87.2	139	657	257	6.1	0.0	0.6	260	35000	0.0/ 2.7
87.3	132	650	250	-21.6	0.0	0.6	260	35000	0.0/ 2.7
87.4	134	652	252	6.3	0.0	0.6	260	35000	0.0/ 2.7
87.5	135	653	253	3.0	0.0	0.6	260	35000	0.0/ 2.7
87.6	132	650	250	-9.4	0.0	0.6	260	35000	0.0/ 2.7
87.8	133	651	251	3.1	0.0	0.6	260	35000	0.0/ 2.7
87.9	132	650	250	-3.1	0.0	0.6	260	35000	0.0/ 2.7
88.0	130	648	248	-6.3	0.0	0.6	260	35000	0.0/ 2.7
88.1	130	648	248	-0.0	0.0	0.6	260	35000	0.0/ 2.7
88.2	130	648	248	-0.0	0.0	0.6	260	35000	0.0/ 2.7
88.3	130	648	248	-0.0	0.0	0.6	260	35000	0.0/ 2.7
88.4	130	648	248	-0.0	0.0	0.6	260	35000	0.0/ 2.7
88.5	131	649	249	3.2	0.0	0.6	260	35000	0.0/ 2.7
88.6	130	648	248	-3.2	0.0	0.6	260	35000	0.0/ 2.7
88.8	130	648	248	-0.0	0.0	0.6	260	35000	0.0/ 2.7
88.9	130	648	248	-0.0	0.0	0.6	260	35000	0.0/ 2.7
89.0	130	648	248	-0.0	0.0	0.6	260	35000	0.0/ 2.7
89.1	130	648	248	-0.0	0.0	0.6	260	35000	0.0/ 2.7
89.2	130	648	248	-0.0	0.0	0.6	260	35000	0.0/ 2.7

SECTION 5

PROCEDURE AND
MISCELLANEOUS

J.K. EDWARDS (WALSH ENG.)

CHACO #4

NIP PICTURED CLIFFS FIELD

SEC.01,T26N,R13W

SAN JUAN COUNTY, NM

FRUITLAND COAL FORMATION



The Western Company

STIMULATION RECOMMENDATION

PREPARED FOR

**MR. PAUL THOMPSON
WALSH ENGINEERING**

**SERVICE POINT
FARMINGTON, NM
(505) 327-6222**

**PREPARED BY
MIKE MCNEESE
TECH REP II
FARMINGTON**

MAY 5, 1995

FM050312

**SALES REPRESENTATIVE
BILLIE FERRELL
SR. SALES**

THE WESTERN COMPANY

OPERATOR: J.K. EDWARDS (WALSH ENG.)
WELL: CHACO #4
FORMATION: FRUITLAND COAL

WELL DATA

Net Pay	18 ft
Depth to Middle Perforation	1,100 ft
Tubing	2 7/8", 6.5#
	2 7/8" SLIM HOLE
Fracture Gradient	1.00 psi/ft
Bottom Hole Frac Pressure	1,100 psi
Bottom Hole Temperature	100 deg F
Perforated Interval	APPROX. 1100'
	APPROX. 54 HOLES
	CHECK W/ CO. MAN ON
	ACTUAL PERFS.

THE WESTERN COMPANYTreatment Requirements for: CHACO #4

FRAC/FLUSH: 30,820 GALLONS 70Q N2 FOAM-20

Pumped Volumes:

9,244 Gallons 20# J-4

Mixed Volumes:

10,244 Gallons 20# J-4

Containing per 1000 Gallons:

0.38 Pounds FRAC-CIDE 20, BACTERIACIDE

20.00 Pounds J-4, GELLING AGENT

3.00 Pounds P-4, PH CONTROL

1.00 Pounds B-11, GEL BREAKER

5.00 Gallons FRAC-FOAM 1, FOAMING AGENT

THE MIXED VOL. CONTAINS 1,000 GAL. FOR TANK BOTTOM.
LOWER PH = 4.0-4.5 WITH P-4 AS NEEDED. MAX STP IS 3,000 PSI.

PROPPANTS: 35,000 Pounds 20/40 MESH ARIZONA

THE WESTERN COMPANY
NITROGEN FOAM PUMPING SCHEDULE

OPERATOR	J.K. EDWARDS (WALSH ENG.)
WELL	CHACO #4
FIELD	NIIP PICTURED CLIFFS
LOCATION	SEC. 01, T26N, R13W
COUNTY, STATE	SAN JUAN, NM
FORMATION	FRUITLAND COAL
PREPARED BY	MIKE MCNEESE
DATE	MAY 5, 1995

WELL AND RESERVOIR PARAMETERS

Depth (mid perforation)	1100 ft
Bottom Hole Frac Pressure	1100 psi
Bottom Hole Static Temperature	100 deg F

TREATMENT PARAMETERS

Treating Conductor I.D.	2.441 in
Fluid Specific Gravity	1.010
Gel Temperature in Tanks	60 deg F
Temperature of N2 at surface	100 deg F
Foam Injection Rate	25.0 bpm
Total Slurry Treatment Volume	32407 gal

Foam Quality and Injection Rate are held constant downhole.

CALCULATED TEMPERATURES

	Low	High
Foam at Surface	62 deg F	62 deg F
Foam at Perfs	77 deg F	77 deg F

Average Formation Pumping Temperature 95 deg F

THE WESTERN COMPANY

NITROGEN FOAM PUMPING SCHEDULE

PROCEDURE

STAGE	DOWNHOLE FOAM VOLUME (GALS)	DOWNHOLE FOAM QUALITY	DOWNHOLE FOAM RATE (BPM)	PROPPANT				CLEAN GEL VOLUME (BBLs)	N2 VOLUME (MSCF)
				CONC. LB/GAL	MESH	TYPE	(LBS)		
1	7650	70.0	25.0	0.00			0	54.6	50.07
2	5000	70.0	25.0	0.50	20/40	SAND	2500	35.7	32.73
3	6700	70.0	25.0	1.00	20/40	SAND	6700	47.9	43.85
4	7950	70.0	25.0	2.00	20/40	SAND	15900	56.8	52.04
5	3300	70.0	25.0	3.00	20/40	SAND	9900	23.6	21.60
FLUSH	220	70.0	25.0	0.00	FLUSH		0	1.6	1.44
	30820						35000	220.1	201.72

TREATMENT SCHEDULE

STAGE	PROPPANT CONC. (LB/GAL)		CLEAN GEL RATE (BPM)	BLEND SLURRY RATE (BPM)	SLURRY VOLUME (WITHOUT N2)			N2 RATE SCFM	PROP RATE LB/MIN	STAGE PUMP TIME HH:MM:SS
	PERF.	BLNDR			(BBLs)	(CUM.)	ON PERFS			
1	0.00	00.0	7.50	7.50	54.6	55	2	6872	0	00:07:17
2	0.50	1.67	7.33	7.89	38.4	93	56	6720	513	00:04:52
3	1.00	3.33	7.17	8.26	55.1	148	95	6574	1004	00:06:40
4	2.00	6.67	6.88	8.96	74.0	222	150	6301	1925	00:08:15
5	3.00	10.00	6.60	9.60	34.3	256	224	6050	2773	00:03:34
FLUSH	0.00	00.0	7.50	7.50	1.6	258	258	6873	0	00:00:12
TOTAL PUMP TIME:										00:30:51

THE WESTERN COMPANY
FOAM PRESSURE/VOLUME ANALYSIS

OPERATOR	J.K. EDWARDS (WALSH ENG.)
WELL	CHACO #4
FIELD	NIIP PICTURED CLIFFS
LOCATION	SEC.01,T26N,R13W
COUNTY, STATE	SAN JUAN, NM
FORMATION	FRUITLAND COAL
PREPARED BY	MIKE MCNEESE
DATE	MAY 5, 1995

INPUT PARAMETERS

Treatment via	2 7/8", 6.5 lb pipe
Number of Perforations	54
Perforation Diameter	0.500 in
Total Treatment Volume	30600 gals
Flush Volume	267 gals
Bottom Hole Frac Pressure	1100 psi
Foam Injection Rate	25.0 bpm
Foam Quality	70.0 percent
Temperature of N2 at Surface	100 deg F
Design Formation Temperature	95 deg F
Specific Gravity of Base Fluid	1.01
Well Depth	1100 ft
I.D. of Treating Conductor	2.441 in
Friction Pressure	750 psi/1000 ft

PREDICTED PRESSURES

Fluid Rate	7.5 bpm
Perforation Pressure Drop	3.0 psi
Foam Friction Pressure	825 psi
Surface Treating Pressure	1732 psi
ISDP with Nitrogen	1062 psi
ISDP with Foam	965 psi
Nitrogen Rate	6883 scfm

VOLUME REQUIREMENTS

	USING NITROGEN AS FLUSH		USING FOAM AS FLUSH	
	NITROGEN SCF	FLUID GALS	NITROGEN SCF	FLUID GALS
TREATMENT	200599	9180	200599	9180
FLUSH	2444	0	1663	80
TOTALS	203043	9180	202263	9260

THE WESTERN COMPANY**COST ESTIMATE****CHACO #4 - FRUITLAND COAL FRAC**

QTY	UNIT	PRODUCT DESCRIPTION	UNIT PRICE	GROSS AMOUNT	DISC (%)	NET AMOUNT
10	LBS	B-11, GEL BREAKER	12.75	127.50	35.0	82.88
6	LBS	FRAC-CIDE 20, BACTERIACIDE	37.00	222.00	35.0	144.30
47	GAL	FRAC-FOAM 1, FOAMING AGENT	26.95	1,266.65	35.0	823.32
200	LBS	J-4, GELLING AGENT	4.85	970.00	35.0	630.50
50	LBS	P-4, PH CONTROL	3.05	152.50	35.0	99.13
40	MILES	CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT	1.80	72.00	35.0	46.80
3511	GAL	PROP CONC PUMP CHG(FOAM) 0 TO 4 PPG	0.04	140.44	35.0	91.29
2386	GAL	PROP CONC PUMP CHG(FOAM)6.1-9 PPG	0.19	453.34	35.0	294.67
991	GAL	PROP CONC PUMP CHG(FOAM)9.1-12 PPG	0.25	247.75	35.0	161.04
350	CWT	20/40 MESH ARIZONA	7.54	2,639.00	35.0	1,715.35
350	T-M	DELIVERY CHARGE, 20 MILES	1.00	350.00	35.0	227.50
1	UNIT	MASTER MIXER 0 TO 10 BPM (GAS)	995.00	995.00	35.0	646.75
340	HHP	FRAC PUMP (GAS) (8 BPM, 1732 PSI)	6.05	2,057.00	35.0	1,337.05
40	MILES	LIGHT EQUIPMENT 2 VEH. 20 MILES	1.80	72.00	35.0	46.80
140	MILES	HEAVY EQUIPMENT 7 VEH. 20 MILES	2.95	413.00	35.0	268.45
1	UNIT	BLENDING CHARGE 1 HRS	500.00	500.00	35.0	325.00
1	EACH	DENSIOMETER	575.00	575.00	35.0	373.75
1	USE	LIQUID ADD PUMP	750.00	750.00	35.0	487.50
1	EACH	TREATMENT MONITORING VAN (T.M.V.)	1,965.00	1,965.00	0.0	1,965.00
500	C-SCF	NITROGEN	1.89	945.00	35.0	614.25
1517	C-SCF	NITROGEN > 50000 SCF	1.84	2,791.65	35.0	1,814.57
20	MILES	LIGHT EQUIPMENT 1 VEH. 20 MILES	1.80	36.00	35.0	23.40
60	MILES	HEAVY EQUIPMENT 3 VEH. 20 MILES	2.95	177.00	35.0	115.05
2	UNIT	NITROGEN PUMPING 0-4000 SCFM	1,110.00	2,220.00	35.0	1,443.00
1	EACH	N2 TARGET FLOWMETER	290.00	290.00	35.0	188.50
1	EACH	SERVICE CHARGE, VALVE ON N2	390.00	390.00	35.0	253.50
TOTALS:				\$20,817.83		\$14,219.34

THE TECHNICAL DATA CONTAINED IN THIS PROPOSAL IS BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF WRITING AND IS SUBJECT TO FURTHER ANALYSIS AND TESTING. THE PRICING DATA CONTAINED IN THIS PROPOSAL ARE ESTIMATES ONLY AND MAY VARY DEPENDING ON THE WORK ACTUALLY PERFORMED. PRICING DOES NOT INCLUDE FEDERAL, STATE AND LOCAL TAXES OR ROYALTIES.

THIS QUOTATION IS BASED ON THE WESTERN COMPANY BEING AWARDED THE WORK ON A FIRST CALL BASIS AND WITHIN THIRTY (30) DAYS OF THE PROPOSAL DATE. THESE PRICES WILL BE SUBJECT TO REVIEW IF THE WORK IS DONE AFTER THIRTY (30) DAYS FROM THE PROPOSAL DATE, OR ON A SECOND OR THIRD CALL BASIS.

CUSTOMER WILL BE CHARGED FOR ALL 'SPECIAL PROPPANTS' DELIVERED TO LOCATION, WHETHER THEY ARE PUMPED OR NOT. ALL PROPPANTS OTHER THAN STANDARD GRADE FRAC SAND ARE CONSIDERED 'SPECIAL PROPPANTS'.

THE WESTERN COMPANY

COST ESTIMATE

CHACO #4 - FRUITLAND COAL FRAC

QTY	UNIT	PRODUCT DESCRIPTION	NET AMOUNT
10	LBS	B-11, GEL BREAKER	82.88
6	LBS	FRAC-CIDE 20, BACTERIACIDE	144.30
47	GAL	FRAC-FOAM 1, FOAMING AGENT	823.32
200	LBS	J-4, GELLING AGENT	630.50
50	LBS	P-4, PH CONTROL	99.13
40	MILES	CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT V	46.80
3511	GAL	PROP CONC PUMP CHG(FOAM) 0 TO 4 PPG	91.29
2386	GAL	PROP CONC PUMP CHG(FOAM)6.1-9 PPG	294.67
991	GAL	PROP CONC PUMP CHG(FOAM)9.1-12 PPG	161.04
350	CWT	20/40 MESH ARIZONA	1,715.35
350	T-M	DELIVERY CHARGE, 20 MILES	227.50
1	UNIT	MASTER MIXER 0 TO 10 BPM (GAS)	646.75
340	HHP	FRAC PUMP (GAS) (8 BPM, 1732 PSI)	1,337.05
40	MILES	LIGHT EQUIPMENT 2 VEH. 20 MILES	46.80
140	MILES	HEAVY EQUIPMENT 7 VEH. 20 MILES	268.45
1	UNIT	BLENDING CHARGE 1 HRS	325.00
1	EACH	DENSIOMETER	373.75
1	USE	LIQUID ADD PUMP	487.50
1	EACH	TREATMENT MONITORING VAN (T.M.V.)	1,965.00
500	C-SCF	NITROGEN	614.25
1517	C-SCF	NITROGEN > 50000 SCF	1,814.57
20	MILES	LIGHT EQUIPMENT 1 VEH. 20 MILES	23.40
60	MILES	HEAVY EQUIPMENT 3 VEH. 20 MILES	115.05
2	UNIT	NITROGEN PUMPING 0-4000 SCFM	1,443.00
1	EACH	N2 TARGET FLOWMETER	188.50
1	EACH	SERVICE CHARGE, VALVE ON N2	253.50
TOTALS:			\$14,219.34

THE TECHNICAL DATA CONTAINED IN THIS PROPOSAL IS BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF WRITING AND IS SUBJECT TO FURTHER ANALYSIS AND TESTING. THE PRICING DATA CONTAINED IN THIS PROPOSAL ARE ESTIMATES ONLY AND MAY VARY DEPENDING ON THE WORK ACTUALLY PERFORMED. PRICING DOES NOT INCLUDE FEDERAL, STATE AND LOCAL TAXES OR ROYALTIES.

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PRODUCT DESCRIPTIONS

B-11 (Gel Breaker)

A solid enzyme breaker designed for use in neutral or slightly acidic pH fracturing fluids to sufficiently reduce the gel viscosity allowing for clean-up of the treatment system. B-11 is used primarily at low temperatures below 120 Degrees Fahrenheit.

FRAC-CIDE 20 (Bactericide)

An extremely effective biocide for the inhibitory control of aerobic and anaerobic (sulfate-reducing) bacteria in well treatment fluids. It is packaged as a dry powder for safety and easy of handling in all weather conditions.

FRAC FOAM-1 (Foaming Agent)

An amphoteric (cationic and anionic) surfactant used as a foaming agent for water and acid-base fracturing fluids.

J-4 (Gelling Agent)

A guar gum gelling agent blended with a buffering system. It is used in gelled water, gelled acid and crosslinked water-base fluids. The polymer residue is 6% to 9% by weight.

P-4 (pH Control)

A granular sulfamic acid used to lower the pH of various water-base fracturing fluids.

THE WESTERN COMPANY
FIELD RECEIPT WORKSHEET

CHACO #4 - FRUITLAND COAL FRAC

PRODUCT CODE	QUANTITY	UNIT	PRODUCT DESCRIPTION	UNIT PRICE
H0936	10	LBS	B-11, GEL BREAKER	12.75
H0356	6	LBS	FRAC-CIDE 20, BACTERIACIDE	37.00
H2186	47	GAL	FRAC-FOAM 1, FOAMING AGENT	26.95
H0846	200	LBS	J-4, GELLING AGENT	4.85
H1096	50	LBS	P-4, PH CONTROL	3.05
J7416	40	MILES	CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT	1.80
J4606B	3,511	GAL	PROP CONC PUMP CHG(FOAM) 0 TO 4 PPG	0.04
J4626B	2,386	GAL	PROP CONC PUMP CHG(FOAM)6.1-9 PPG	0.19
J4636B	991	GAL	PROP CONC PUMP CHG(FOAM)9.1-12 PPG	0.25
NOTPR	350	CWT	20/40 MESH ARIZONA	7.54
J4016	350	T-M	DELIVERY CHARGE, 20 MILES	1.00
F3016B	1	UNIT	MASTER MIXER 0 TO 10 BPM (GAS)	995.00
F2016B	340	HHP	FRAC PUMP (GAS) (8 BPM, 1732 PSI)	6.05
J3916	40	MILES	LIGHT EQUIPMENT 2 VEH. 20 MILES	1.80
J3906	140	MILES	HEAVY EQUIPMENT 7 VEH. 20 MILES	2.95
J2186	1	UNIT	BLENDING CHARGE 1 HRS	500.00
J3216	1	EACH	DENSIOMETER	575.00
J0556	1	USE	LIQUID ADD PUMP	750.00
J3006	1	EACH	TREATMENT MONITORING VAN (T.M.V.)	1965.00
N023E	500	C-SCF	NITROGEN	1.89
N003E	1,517	C-SCF	NITROGEN > 50000 SCF	1.84
J3916	20	MILES	LIGHT EQUIPMENT 1 VEH. 20 MILES	1.80
J3906	60	MILES	HEAVY EQUIPMENT 3 VEH. 20 MILES	2.95
N2006	2	UNIT	NITROGEN PUMPING 0-4000 SCFM	1110.00
N1686	1	EACH	N2 TARGET FLOWMETER	290.00
H4456	1	EACH	SERVICE CHARGE, VALVE ON N2	390.00

MAY 05 '05 06:14 EDWARDS ASSOCIATES

SELECT OFFICE SERVICES

3838270408

P.1
P.05J. K. EDWARDS ASSOCIATES
Chaco #4 & #5

if required. The preferred method is to frac through casing.

8. Frac as follows using 70% quality foam at 20 to 22 BPM, using 39,100 pounds 20/40 proppant and 240 barrels of 20 pound linear gel with bactericide, breakers and ph control, 165,000 SCF Nitrogen and surfactant.

STAGE	VOLUME		FLUID TYPE	PROPPANT		STAGE
	FOAM	GEL		PPG	TYPE	
PAD	8,300	2,500	0.7	0		0
2	5,000	1,500	0.7	0.5	20/40	2,500
3	6,700	2,000	0.7	1	20/40	6,700
4	10,000	3,000	0.7	2	20/40	20,000
5	3,300	1,000	0.7	3	20/40	9,900
FLUSH	260	78	0.7	0		
TOTAL	33,560	10,078				39,100

NOTES:

- Well should be empty at start of fracture treatment.
- These should be no pause between breakdown and pumping.
- No separate break down.
- No balls.
- Use 400 psi closure for Nolte plot.
- If Nolte plot slope is +1.5, increase rate immediately to 28 BPM.
- Flush to perfs or slightly under displace.
- Maintain pressure monitoring for at least 60 minutes after shut down.
- Rig down frac van.
- Start flow-back immediately and slowly.

If you need to talk, Cyndy can locate me. Cheers!!!

Paul -
Here's the procedure
modified as follows:
1. 25 BPM

2. 35,000 # 20/40

Post-It Fax Note 7671		Date 5-5	# of pages 1
To Paul Thompson	From Keith Edwards		
Co/Dept	Co.		
Phone #	Phone #		
Fax #	Fax #		

Post-It brand fax transmittal memo 7671		# of pages
To Mike	From Paul Thompson	
Co.	Co. WATP	



The Western Company of North America

REMIT TO: P.O. BOX 911543
DALLAS, TX 75391-1543

J. K. EDWARDS ASSOCIATES, INC.
1401 17TH STREET, SUITE 1400
DENVER CO 80202

FEDERAL I.D. NO. C 75-0763484

INVOICE NO. 472041	OUR RECEIPT NO. 311928	DATE 05/10/95
27340	1314	YOUR ORDER NO.

SERVICES FROM OUR STATION AT FARMINGTON STIMULATI	OUR ENGINEER SAVAGE	SIGNED FOR YOU BY PAUL THOMPSON
FOR SERVING WELL NAME CHACO #4	COUNTY SAN JUAN	STATE NM 30

PRODUCT CODE	DESCRIPTION	UNIT OF MEASURE	QUANTITY	LIST PRICE/UNIT	GROSS AMOUNT	PERCENT DISC.	NET AMOUNT
H0936	B-11. GEL BREAKER	LB	10.0	12.750	127.50	35.00	82.88
H0356	FRAC-CIDE 20	LB	6.0	37.000	222.00	35.00	144.30
H2186	FRAC FOAM-1	GAL	55.0	26.950	1482.25	35.00	963.46
H0846	J-4, LOW RESIDUE GUAR GUM	LB	200.0	4.850	970.00	35.00	630.50
H1096	P-4, PH CONTROL	LB	50.0	3.050	152.50	35.00	99.13
J7416	DEL CHARGE, 1.5 TON UNITS & SMALLER	MILE	20.0	1.800	36.00	35.00	23.40
J4606B	PROPPANT CONCENTRATION CHG/.1-4 LBS	GAL	3500.0	.040	140.00	35.00	91.00
J4626B	PROPPANT CONCENTRATION CHG/6-9 LBS	GAL	2400.0	.190	456.00	35.00	296.40
J4636B	PROPPANT CONCENTRATION CHG/9-12 LBS	GAL	990.0	.250	247.50	35.00	160.88
E333E	SAND, STD BLK. 20/40, FARMINGTON, NM	CWT	350.0	7.540	2639.00	35.00	1,715.35
J4016	BULK MATERIAL DELIVERY, DRY	TONMI	350.0	1.000	350.00	35.00	227.50
F3016B	MASTER MIXER, 0 - 10 BPM	4HRS	1.0	995.000	995.00	35.00	646.75
F2016B	FRAC PUMP, 0 - 5000 PSI	4HRS	463.2	6.050	2802.36	35.00	1,821.53
J3916	MILEAGE, AUTO/PICK-UP/TREATING VAN	MILE	20.0	1.800	36.00	35.00	23.40
J3906	MILEAGE, HEAVY VEHICLE, PER UNIT	MILE	100.0	2.950	295.00	35.00	191.75
J2186	MISCELLANEOUS BLENDING CHARGE	HOURL	1.0	500.000	500.00	35.00	325.00
J3216	FLUID DENSIMETER	JOB	1.0	575.000	575.00	35.00	373.75
J0556	LIQUID ADDITIVE PUMP	JOB	1.0	750.000	750.00	35.00	487.50
J3006	TREATMENT MONITORING VAN	JOB	1.0	1965.000	1965.00	.00	1,965.00
E333E	SAND, STD BLK. 20/40, FARMINGTON, NM	CWT	39.0	7.540	294.06	35.00	191.14
	SUB TOTAL				15035.17		10,460.62
98447	NEW MEXICO SALES TAX 4.5%						470.74
98438	NEW MEXICO, SAN JUAN SALES TAX .25%						26.16
98449	NEW MEX., FARMINGTON SALES TAX 1.188%						124.26

PAY THIS AMOUNT



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FARMINGTON STIMULATI	SAVAGE	PAUL THOMPSON
FOR SERVICING WELL NAME		STATE
CHACO #4	SAN JUAN	NM 30

FEDERAL I.D. NO. C 75-0763484

PRODUCT CODE	DESCRIPTION	UNIT OF MEASURE	QUANTITY	LIST PRICE/UNIT	GROSS AMOUNT	PERCENT DISC.	NET AMOUNT

TERMS: NET 30 DAYS

DATE: 1213 1999-06-08

PAY THIS AMOUNT

11,037.76

05/10/95
Treatment Report