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Richardson Operating Company
1700 Lincoln #1700
Denver, Colorado
80302
Attn: Mr. David B. Richardson, President.

RE: W. Gallegos Area
Sec. 12, T29N, R13W

Dear Mr. Richardson,

I have completed the geological evaluation of the West Gallegos Area in San Juan County, New Mexico. The specific area of investigation was Section 12, T29N, R13W. The Cretaceous Basal Fruitland Coal Bed and the Upper Pictured Cliffs Sandstone are gas productive in the east-half of Section 12 and will also produce gas in the west-half of the Section. The risk for finding additional gas in this Section is extremely low, and the following is a summary of my findings:

1. **Exhibit A.** This is a stratigraphic cross-section through Section 12, T29N, R13W. As can be seen, the Basal Fruitland Coal Bed and the Upper Pictured Cliffs Sandstone are both continuous throughout the Section. The Coal averages over 20 feet in thickness, and the Sandstone ranges between 30 feet and 44 feet in thickness. In this area, well log characteristics of gas productivity from the Upper Pictured Cliffs Sandstone are noted by >14% porosity and >5 ohms deep induction resistivity. The Basal Coal is gas productive throughout this part of the San Juan Basin and usually exhibits >25% porosity and >50 ohms deep induction resistivity. These log characteristics are present throughout Section 12.

2. **Exhibit B.** This is an isopach map of the Basal Fruitland Coal Bed. As can be seen, the Coal ranges between 15 feet and 25 feet in thickness and averages over 20 feet in thickness in Section 12. Wells that are gas productive from the Coal are denoted with triangles.

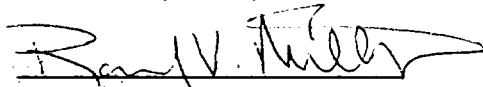
3. **Exhibit C.** This map is an isopach of porous Upper Pictured Cliffs Sandstone. The Sandstone ranges between 30 feet and 44 feet in thickness in Section 12. Wells that are gas productive from this interval are denoted with circles.

p.2, R.V. Miller, W. Gallegos Area, 4/4/95.

In summary, the risk for establishing gas production from the Basal Fruitland Coal Bed and the Upper Pictured Cliffs Sandstone in the west-half of Section 12, T29N, R13W, is extremely low. Wells drilled and completed in these zones should be similar to the two Richardson Operating Company wells producing gas in the east-half of the Section.

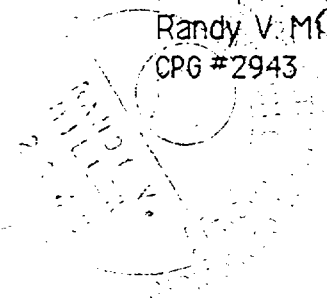
I hope that this investigation will prove useful in your evaluation of this area, and if additional input is needed, please don't hesitate to call me.

Yours Very Truly,

A handwritten signature in black ink, appearing to read "Randy V. Miller", with a long horizontal flourish extending to the right.

Randy V. Miller

CPG #2943

A faint, circular stamp or seal is visible in the lower-left quadrant of the page, partially overlapping the signature and the typed name. It contains some illegible text and a central emblem.



LTR



Job separation sheet

AFE Comparison
4/6/95

NW/4-Section 12-T29N-R13W				
San Juan County, NM				
ROPCO Fee 12-4 PC				
vs.				
Amoco Burnham Gas Com /A/ PC				
	Exhibit 1		Exhibit 2	
	Richardson AFE		Richardson Actual	
			Exhibit 3	
			Amoco AFE	
A.	Land		*ROPCO Fed 12-1 PC located SE/4-Sec 12-T29N-R13W	
	-- survey and permits	A1 1500.00	A1 2256.00	A1 7000.00
	-- location			A2 5000.00
	-- damages	A3 1500.00	A2 2500.00	
	-- title opinion / Land	A2 1500.00		
	-- restore location	A5 1500.00		
	-- gravel	A6 1000.00		
	-- division order	A7 1000.00		
	-- dirt work	A4 3000.00	A3 1233.00	
	Sub Total	\$ 11,000.00	\$ 5,989.00	\$ 12,000.00
B.	Drilling			
	-- drilling rig	B1 16000.00	B1 16780.00	B1 36000.00
	-- fluids			B2 7000.00
	-- daywork			B3 2160.00
	-- BOP rental	B2 750.00	B2 1366.00	
	-- pit lining	B3 1500.00		
	Sub Total	\$ 18,250.00	\$ 18,146.00	\$ 45,160.00
C.	Casing			
	-- surface string	C1 1200.00	C1 1786.00	C1 8500.00
	-- casing head	C2 750.00		C2 1500.00
	-- cement surface	C3 1500.00	C2 1171.00	
	-- casing crew	C4 1000.00		
	-- production string	C5 6400.00	C3 7587.00	
	-- cement longstring	C9 4000.00	C7 3071.00	
	-- logging	C7 4000.00	C5 3163.00	
	-- engineering / geo.	C8 1500.00	C6 5328.00	
	-- trucking	C6 2000.00	C4 984.00	
	Sub Total	\$ 22,350.00	\$ 23,090.00	\$ 10,000.00
D.	Down Hole Completion			
	-- perforating	D2 1500.00	D1 2118.00	
	-- stimulation	D4 24000.00	D2 21192.00	D1 43000.00
	-- logs	D1 2000.00	Sec D1	
	-- tubing	D3 2400.00		D2 4600.00
	-- tool rental	D5 2000.00	D3 593.00	
	-- completion fluids	D6 2000.00	D4 111.00	
	Sub Total	\$ 33,900.00	\$ 24,014.00	\$ 47,600.00
E.	Completion Rig			
	-- rig time	E3 7500.00	E3 4251.00	
	-- daywork			E2 2100.00
	-- well head	E2 4000.00	E2 6731.00	E1 1000.00
	-- rig anchors	E1 600.00	E1 475.00	
	-- frac tank rental	E4 1000.00	E4 189.00	
	-- flowback	E5 2000.00		
	Sub Total	\$ 15,100.00	\$ 11,646.00	\$ *3,100.00 *Amoco number unrealistic
F.	Final Completion			
	-- production facility			F1 *20000.00 *Amoco AFE=\$50,000; compression @ \$30,000 is omitted
	-- trucking	F1 3000.00	F1 5680.00	
	-- El Paso hook-up	F7 13000.00	F6 13000.00	
	-- battery installation	F2 4000.00	F2 2989.00	
	-- engineering	F3 3000.00	F3 2695.00	
	-- treator	F4 5000.00	F4 4440.00	
	-- flowline	F5 5000.00	F8 *5000.00	*ROPCO 12-1 PC actual, as originally produced; does not include subsequent lines to offsite central compression
	-- tank and fittings	F6 4000.00	F5 4675.00	
	-- fence	F8 2000.00	F7 1908.00	
	Sub Total	\$ 39,000.00	\$ 40,387.00	\$ 20,000.00
G.	Contingencies			
	-- drilling	G1 3367.00		G2 12000.00
	-- completion	G2 9150.00		G3 16000.00
	-- "other"			G1 20400.00
	Sub Total	\$ 12,517.00	\$ -	\$ 48,400.00
	Total	\$ 152,117.00	\$ 123,272.00	\$ *186,260.00 *Amoco AFE=\$216,260; compression @ \$30,000 is omitted

BEFORE THE
OIL CONSERVATION DIVISION
Case No.11247 Exhibit No. 15
Submitted By:
Richardson Operating Company
Hearing Date: April 20, 1995

RICHARDSON OPERATING COMPANY
AUTHORITY FOR EXPEDITURES

Date: 3/6/95
Objective Formation: Pictured Cliffs

[illegible]

Accounting Basis: Accrual Closed+Unclosed DRILLING AFE

AFE STATUS REPORT

Well: NM-007-010 ROPCO FED. PC #12-1

	TOTAL EXPENDITURE TO DATE	AFE AMOUNTS	AMOUNTS OVER/UNDER AFE
Drilling Costs:			
Survey & Permits	2,256.68 A1	0.00	-2,256.68
Title Opinion & Land Costs	0.00	0.00	0.00
Site Damages	2,500.00 A2	0.00	-2,500.00
Drilling	16,780.19 B1	0.00	-16,780.19
SOP Rental	1,366.59 B2	0.00	-1,366.59
Dirt Work	1,233.43 A3	0.00	-1,233.43
Pit Lining	0.00	0.00	0.00
Surface Casing	1,786.15 C1	0.00	-1,786.15
Casing Head	0.00	0.00	0.00
Cement Surface	1,171.98 C2	0.00	-1,171.98
Power Tongs	0.00	0.00	0.00
Casing	7,587.85 C3	0.00	-7,587.85
Trucking	984.75 C4	0.00	-984.75
Logs	3,163.04 C5	0.00	-3,163.04
Engineering	5,213.11 C6	0.00	-5,213.11
Cement Longstring	3,071.90 C7	0.00	-3,071.90
Travel Expense	0.00	0.00	0.00
Geology	115.74 C6	0.00	-115.74
Roustabouting	0.00	0.00	0.00
TOTAL DRILLING COSTS	47,231.41	0.00	-47,231.41
Completion Costs:			
Rig Anchors	475.31 E1	0.00	-475.31
Logs & Perf	2,118.75 D1	0.00	-2,118.75
Wellhead & Fittings	6,731.80 E2	0.00	-6,731.80
Tubing	0.00	0.00	0.00
Stimulation	21,192.82 D2	0.00	-21,192.82
Tool Rental	593.25 D3	0.00	-593.25
Trucking	5,680.10 F1	0.00	-5,680.10
Battery Installation	90.00 F2	0.00	-90.00
Restore Location	0.00	0.00	0.00
Engineering	2,695.55 F3	0.00	-2,695.55
Treater	4,440.93 F4	0.00	-4,440.93
Flowline	5,000 0.00 F8	0.00	0.00
Compressor Fittings	0.00	0.00	0.00
Tank & Fittings	4,675.90 F5	0.00	-4,675.90
Compressor Installation	0.00 376.61	0.00	-376.61
Pumping Unit	0.00	0.00	0.00
Gravel	0.00	0.00	0.00
Workover Rig	4,251.17 E3	0.00	-4,251.17
Completion Fluids	111.64 D4	0.00	-111.64
El Paso	13,000.00 F6	0.00	-13,000.00
Division Order	0.00	0.00	0.00
Frac Tank Rental	189.74 E4	0.00	-189.74
Flowback	0.00	0.00	0.00
Fence Location	1,908.25 F7	0.00	-1,908.25

Actual prior to central offsite compression

Compression omitted from comparison

Accounting Basis:Accrual Closed+UnClosed DRILLING AFE
AFE STATUS REPORT

Well:NM-007-010 ROPCO FED. PC #12-1

Exhibit 2

	TOTAL EXPENDITURE TO DATE	AFE AMOUNTS	AMOUNTS OVER/UNDER AFE
Roustabouting	2,899.21 F2	0.00	-2,899.21
TOTAL COMPLETION COSTS	71,431.03	0.00	-71,431.03
TOTAL DRILLING COSTS	118,662.44	0.00	-118,662.44
		+ 5,000	
		- 376	
		123,286	

Flowline
Compressor Installation

Drilling Authorization

Property - Burnham Gas Com /A/, Well# 1

SAN JUAN County, NEW MEXICO

Operating Field -

Amoco Production Company

Property FLAC - 189552

Well FLAC -
Well Type - Gas

Operator: AMOCO PRODUCTION COMPANY
API#:

Operations Center: SAN JUAN OC
AMOCO's Interest: 0.8338000

LPN#: 687773---
Contract#: 000000

Targets - Total Depth: 1581

Horizon
PC

Reg. Field

Target Depth
1288

Completion: Single

? NW/4
FNL

Surface Location: 1450' FSZ x 1520' FWL sec. 12 - T29N - R13W

Bottom Hole Location: Same

Cost Summary (Development)

Drilling Intangibles

	Gross Dry Hole	Gross Completion
Drilling Cost:	\$36,000	\$36,000 B1
Day Work:	\$2,160 B3	\$4,260 E2 = \$2100
Location:	\$5,000	\$5,000 A2
Survey:	\$5,000	\$7,000 A1
Mud:	\$7,000	\$7,000 B2
Stimulation:	\$0	\$43,000 D1
Other:	\$13,000	\$20,400 G1

Total Intangible: \$68,160 \$122,660

Well Equipment - Tangibles

Casing:	\$8,500	\$8,500 C1
Tubing:	\$0	\$4,600 D2
Wellhead:	\$1,500 C2	\$2,500 E1 = \$1000
Other:	\$0	\$0

Total Tangible: \$10,000 \$15,600

Contingency: \$12,000 G2 \$28,000 G3 = \$16,000

Associated Production Facility: \$50,000 F1 = \$20,000

Direct Production Facility: \$0

Total This Request: \$90,160 \$216,260

Previous Estimate: \$0 \$0

Total to Date Estimate: \$90,160 \$216,260

- 30,000 compressor
\$186,260

Notice to Non-Operator: Cost shown on this form are estimates only. Non-Operators should not consider these estimates as establishing any limit on the monies which will be required to perform the proposed operation.

Non-Operator: X

By: _____

Date: _____

Contacts:

Technical
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