

# Legend

## WILLIAMS 10-ACRE DENSITY ORDERS

- Order 510-14, 510-30, 510-31, 440-30
- Orders 510-12, 470-14, 440-20, 440-38
- Orders 510-9, 470-12, 440-25, 130-40
- Orders 510-8, 470-11, 440-23, 130-33, 490-03
- Orders 510-6, 470-6, 440-22, 130-37
- Orders 510-17, 130-04
- Orders 510-20, 440-31, 130-00, 470-17, 490-05

## DUNCAN 10-ACRE DENSITY ORDERS

- Orders 510-13, 470-15, 130-02

## BILL BARRETT CORP 10-ACRE DENSITY ORDERS

- Orders 101-6, 101-8, 101-10

## POC 10-ACRE DENSITY ORDERS

- Orders 510-11, 510-18, 510-21

## LARME 10-ACRE DENSITY ORDERS

- Orders 420-4, 100-23, 510-29, 100-24, 380-2, 520-1

## ANTERO 10-ACRE DENSITY ORDERS

- Orders 101-13 to 101-21, 101-24 to 101-27, 101-34
- Orders 520-2, 101-38, 101-40, 101-41, 101-42, 101-43

## NOBLE 10-ACRE DENSITY ORDERS

- Orders 130-45, 130-51, 130-05
- Orders 510-19, 130-08, 130-01, 510-02

## OKY 10-ACRE DENSITY ORDERS

- Orders 510-15, 510-20

## PRESCO 10-ACRE DENSITY ORDERS

- Order 130-03

## PETROGULF 10-ACRE DENSITY ORDERS

- Order 130-47

## CHEVRON 10-ACRE DENSITY ORDERS

- Orders 510-24, 510-27

## BERRY 10-ACRE DENSITY ORDERS

- Order 510-25

## DOLPHIN 10-ACRE DENSITY ORDERS

- Order 101-23

## WINDSOR 10-ACRE DENSITY ORDERS

- Order 101-30, 101-35

Areas with Williams Field Orders under 20-Acre Density Spacing

Areas with Williams Field and/or Mesa Verde Orders not under 10-Acre or 20-Acre Density Spacing

Note: Spaced lands are mapped to the nearest upper quarter section or lot.

## DOWNHOLE 10-ACRE DENSITY LANDS, GARFIELD & MESA COUNTIES, COLORADO (As of January 8, 2007)

EXHIBIT B

Cause No. 139; Docket No.

Garfield County – Rulison Field

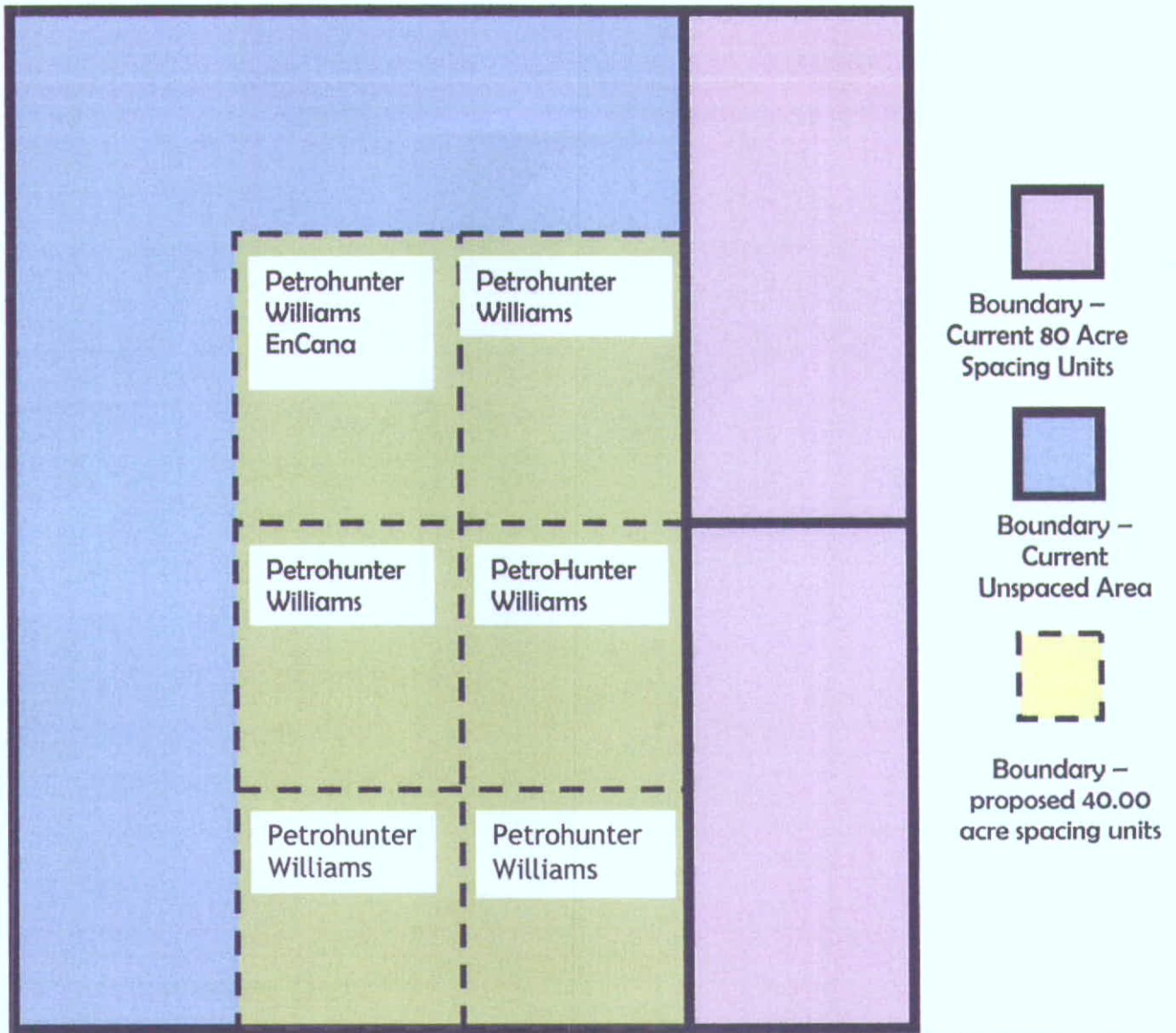
10 acre density map

PetroHunter  
ENERGY CORPORATION

#139-80



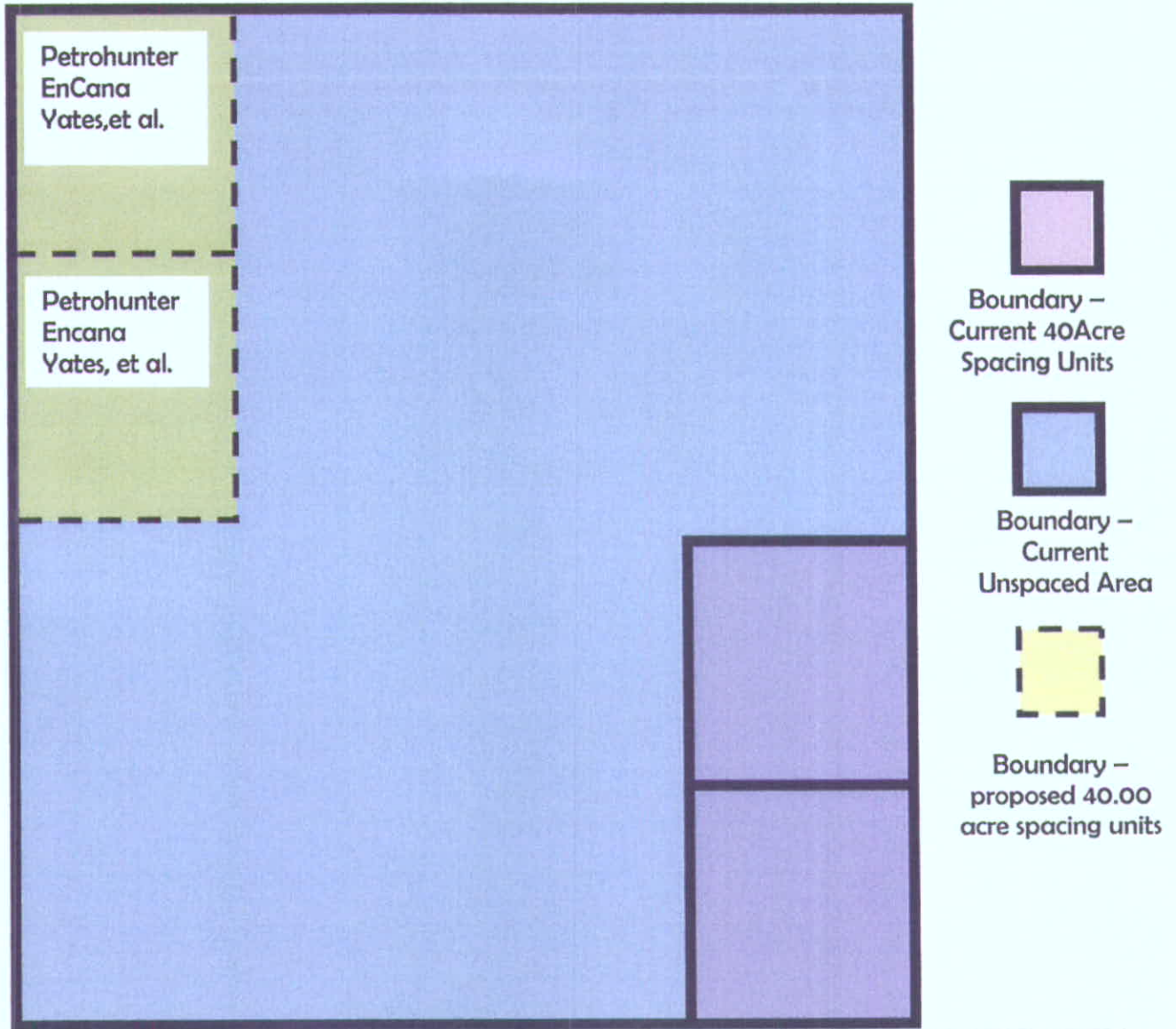
**Land Plat**  
Township 7 South, Range 96 West, 6<sup>th</sup> P.M.  
Section 34: SE/4NW/4, SW/4NE/4, E/2SW/4, W/2SE/4  
Garfield County, Colorado



Leasehold Ownership – Williams Fork Formation



**Land Plat**  
Township 8 South, Range 96 West, 6<sup>th</sup> P.M.  
Section 4:, W/2NW/4  
Garfield County, Colorado

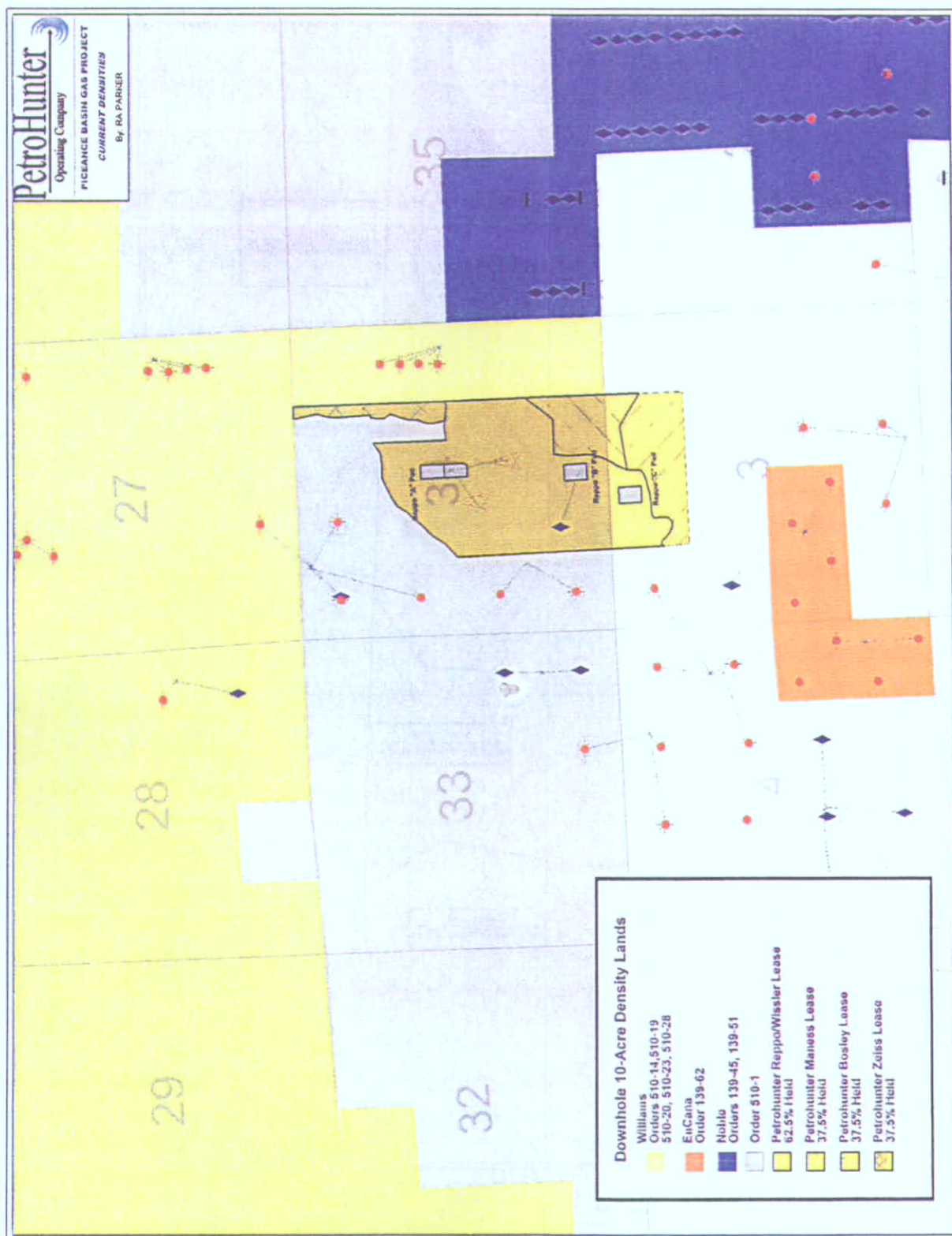


Leasehold Ownership – Williams Fork Formation



Exhibit "B"  
Docket# 0708-SP-25

# EXISTING SPACING ORDER MAP

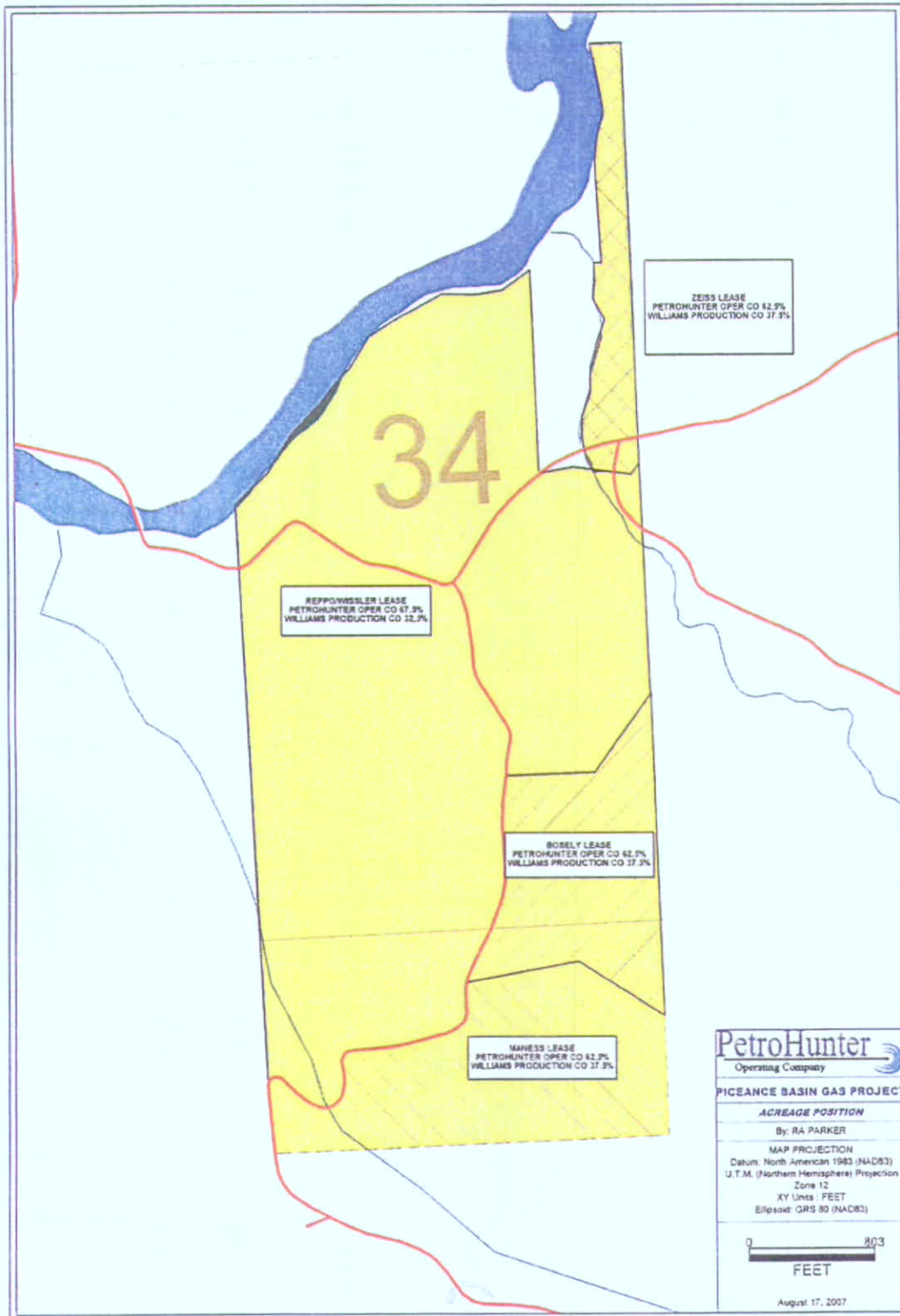


## EXHIBIT B

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## LAND MAP



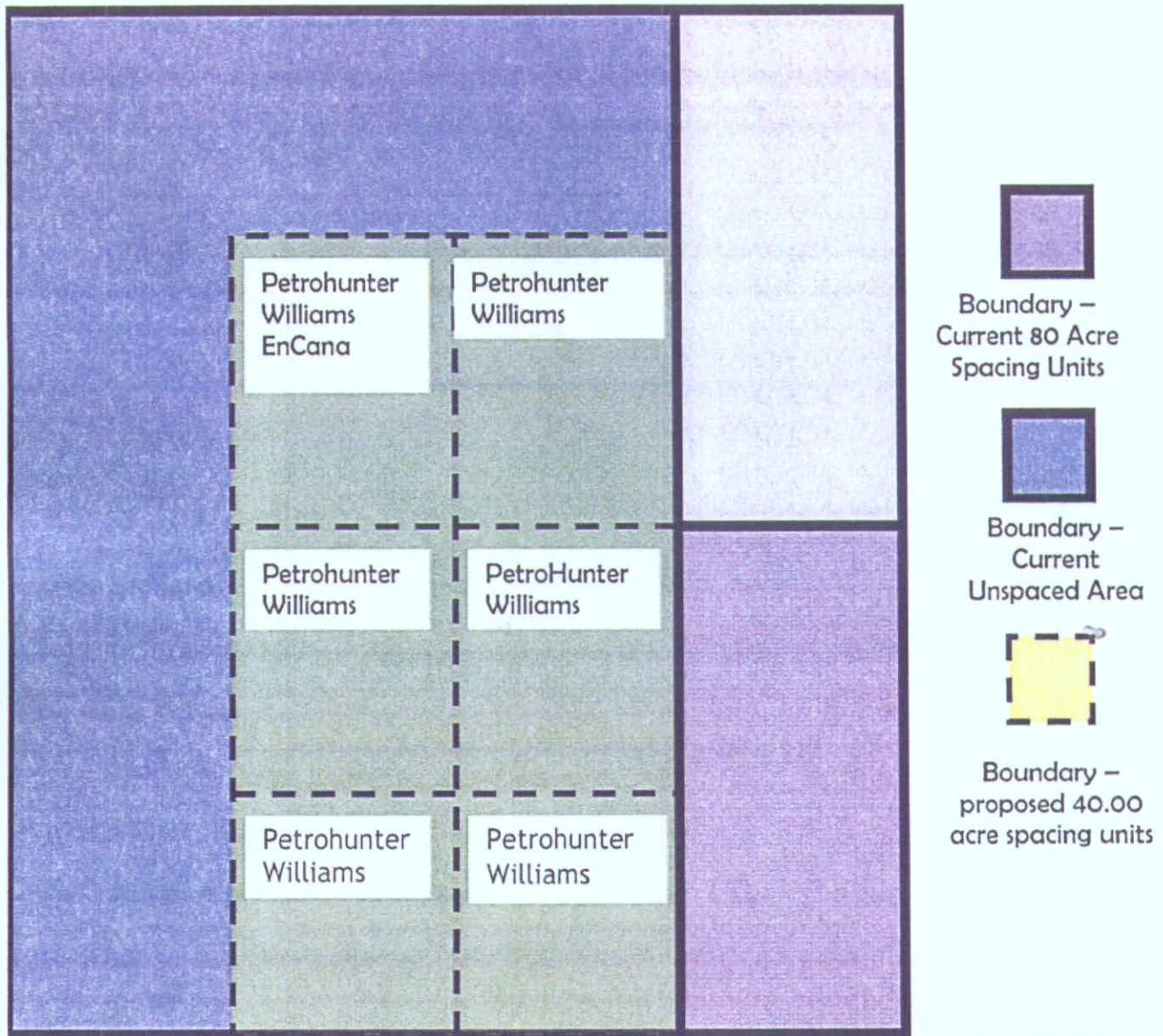
## EXHIBIT C

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

### Land Plat

Township 7 South, Range 96 West, 6<sup>th</sup> P.M.  
Section 34: SE/4NW/4, SW/4NE/4, E/2SW/4, W/2SE/4  
Garfield County, Colorado



Leasehold Ownership – Williams Fork Formation



Exhibit "B"  
Docket# 0708-SP-25

EXHIBIT D

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

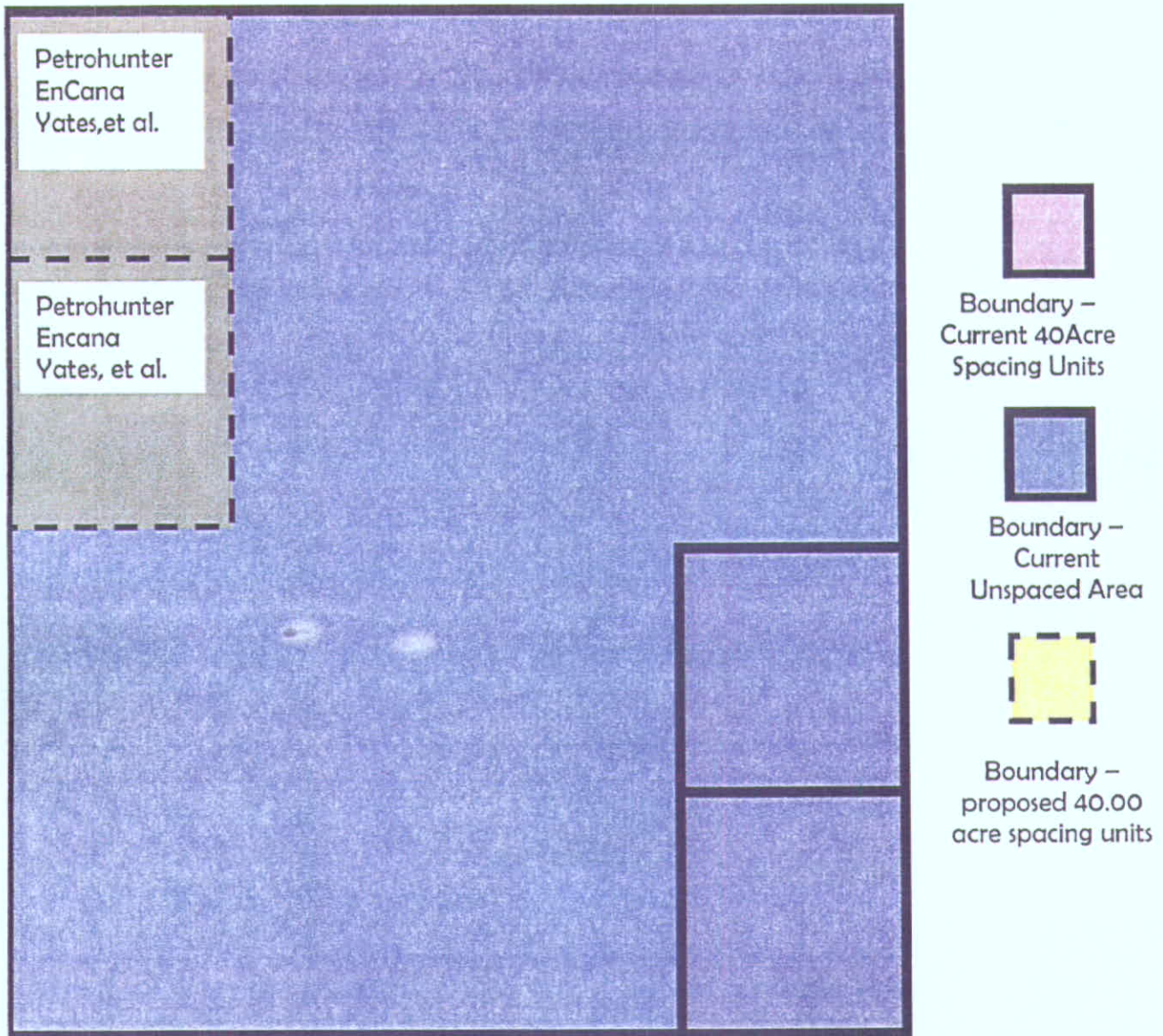
CAUSE NO. 139  
DOCKET NO 0708-SP-25

Land Plat

Township 8 South, Range 96 West, 6<sup>th</sup> P.M.

Section 4:, W/2NW/4

Garfield County, Colorado



Leasehold Ownership – Williams Fork Formation

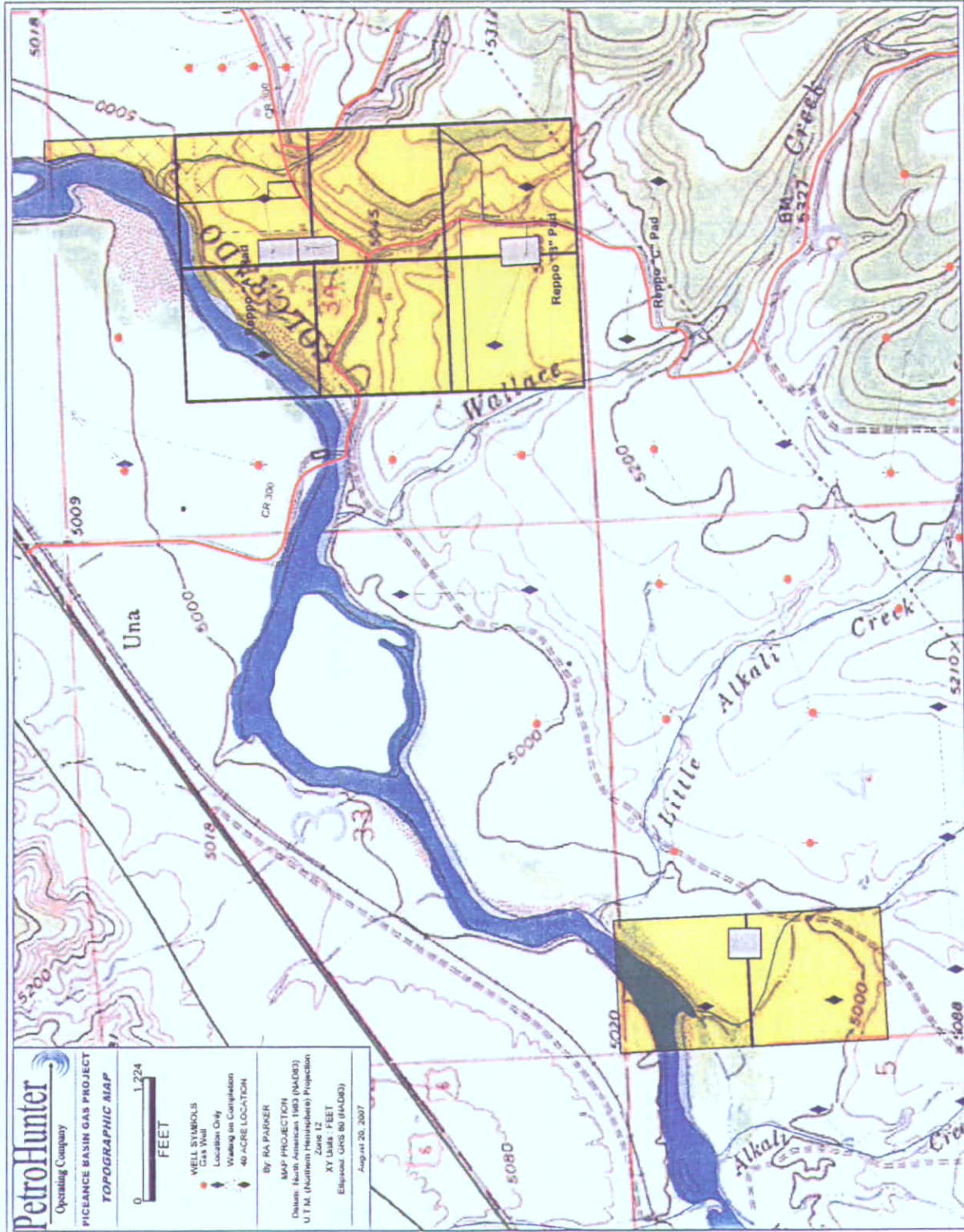


Exhibit "B"  
Docket# 0708-SP-25

# EXHIBIT E

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD  
TOPOGRAPHIC MAP

CAUSE NO. 139  
DOCKET NO 0708-SP-25



## PICEANCE BASIN MAP

*Stephen P. Cunella and Douglas B. Ostby*

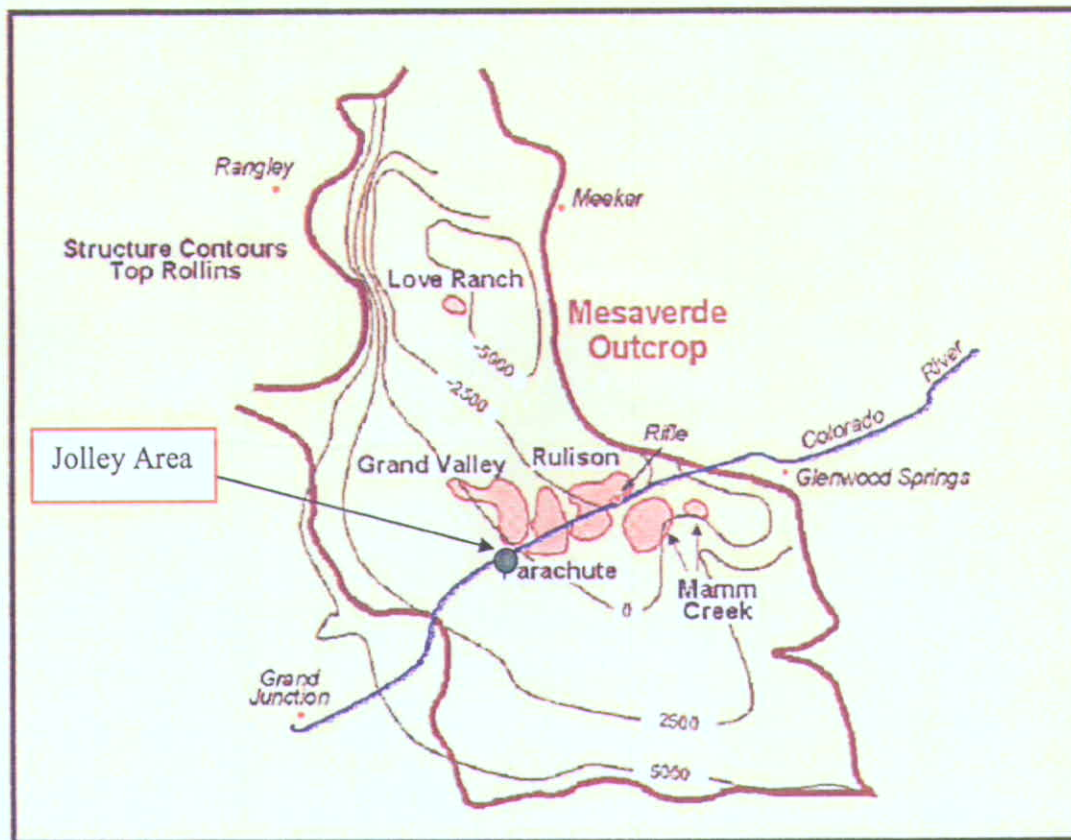


Figure 2. Map of Piceance Basin showing location of gas fields producing from Williams Fork basin-centered gas reservoirs. Structure contours on top of Rollins Sandstone. Modified from Johnson (1989).

Corcoran and Cozzette regressions are each made up of at least two regressive cycles that exhibit relatively little stratigraphic rise, as indicated by the relatively consistent thickness between the two units (Fig. 6). The trend of the Rollins shoreline was north-northeast to south-southwest based on the top Cozzette to top Rollins isopach trend (Fig. 8) and this single regressive cycle shows pronounced stratigraphic rise (Fig. 6). The nature of the regressions of the Corcoran and Cozzette differs significantly from that of the Rollins. The style of the regressions indicates a change from low to high accommodation between the time of the Corcoran and Cozzette regressions and that of the Rollins regression. The regional cross sections of Hettlinger and Kirschbaum (2002) and Johnson (1989) show a similar style of these regressions. The change from low to high accommodation and the shift of shoreline orientation from northeast to north-northeast suggests a possible tectonically influenced shift in basin subsidence. It

is possible that the change in the nature of the Corcoran-Cozzette and Rollins regressions is related to the initial stages of the Laramide orogeny. The beginning of Laramide tectonism in the Piceance Basin traditionally has been thought to occur near the end of Williams Fork deposition (Johnson, 1989).

Also evident on Figure 6 is the presence of regressive marine cycles above the Rollins east of Rulison Field. These marine tongues are present east of a dramatic stratigraphic rise of the Rollins between the wells on Figure 6 located in Sec. 36, T6S, R94W and Sec. 34, T6S, R93W. Seismic data show that this stratigraphic rise is closely related to faulting (Fig. 7). The stratigraphic rise may be caused by increased accommodation due to more rapid subsidence on the east side of the fault. This dramatic stratigraphic rise extends to the south as shown on Figure 8.

The Cameo coal zone of the Williams Fork Formation overlies the Rollins and was deposited in paludal environments

# EXHIBIT G

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## PICEANCE BASIN SCHEMATIC CROSS SECTION

*Stephen P. Cumella and Douglas B. Ostby*

### Piceance Basin-Centered Gas Model - Maximum Burial (approx. 15,000 ft)

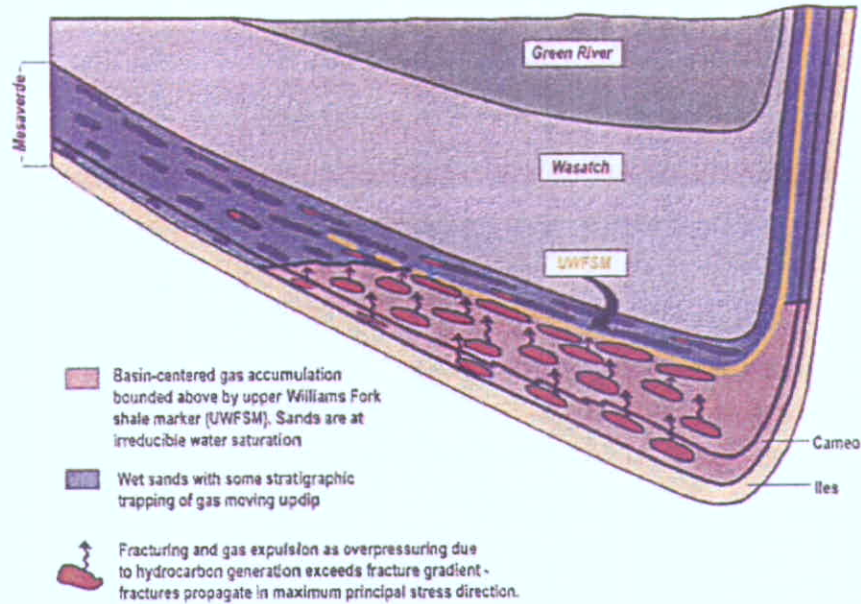


Figure 25. Basin-centered gas model for the Piceance Basin during maximum burial. Line of cross section shown on Figure 26.

### Piceance Basin-Centered Gas Model - Present Day

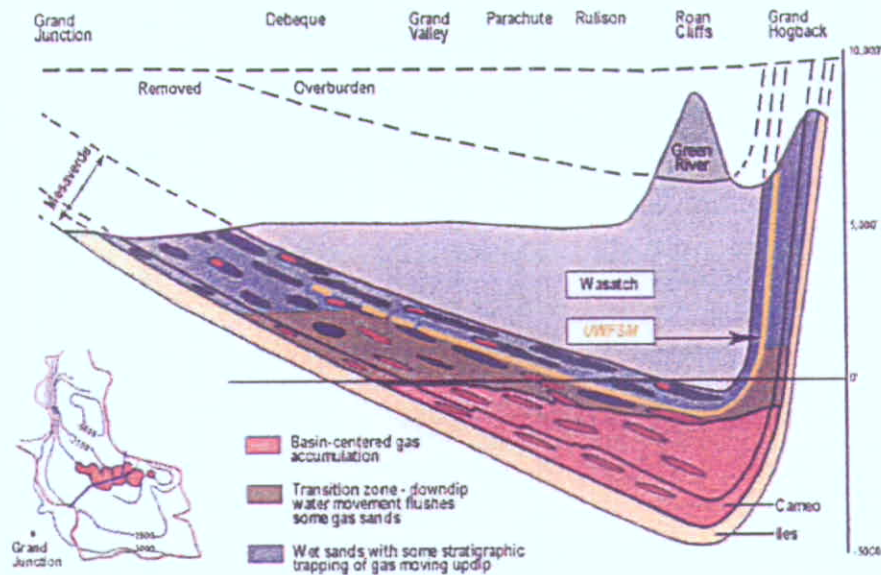


Figure 26. Basin-centered gas model for the Piceance Basin for present day. Line of cross section shown on inset map.

EXHIBIT H

TYPE LOG

Stephen P. Camella

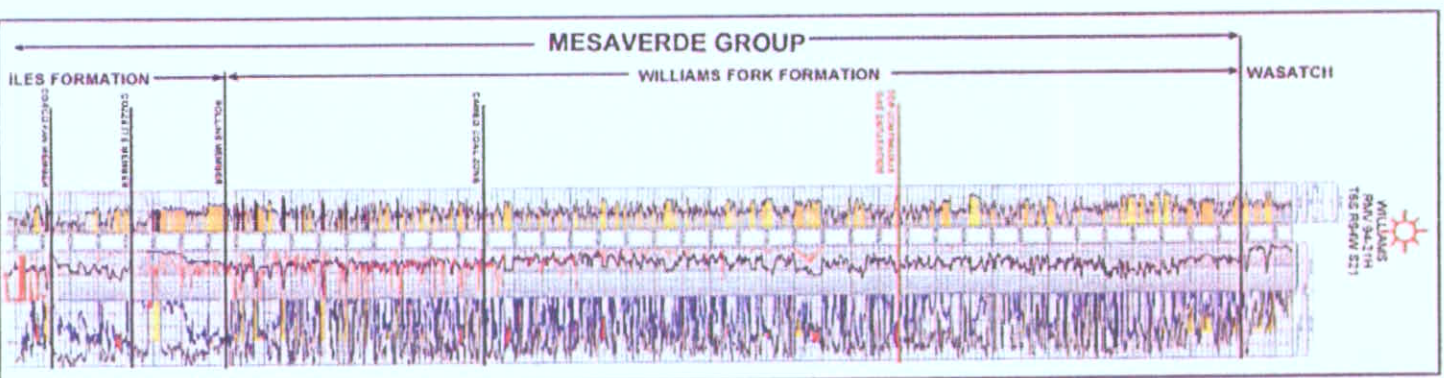


Figure 1. Type log for the Mesaverde Group in the Grand Valley, Parashure, and Rulison areas.

## FLUVIAL SYSTEM REPRESENTATION

*Stephen P. Cumella and Douglas B. Ostby*

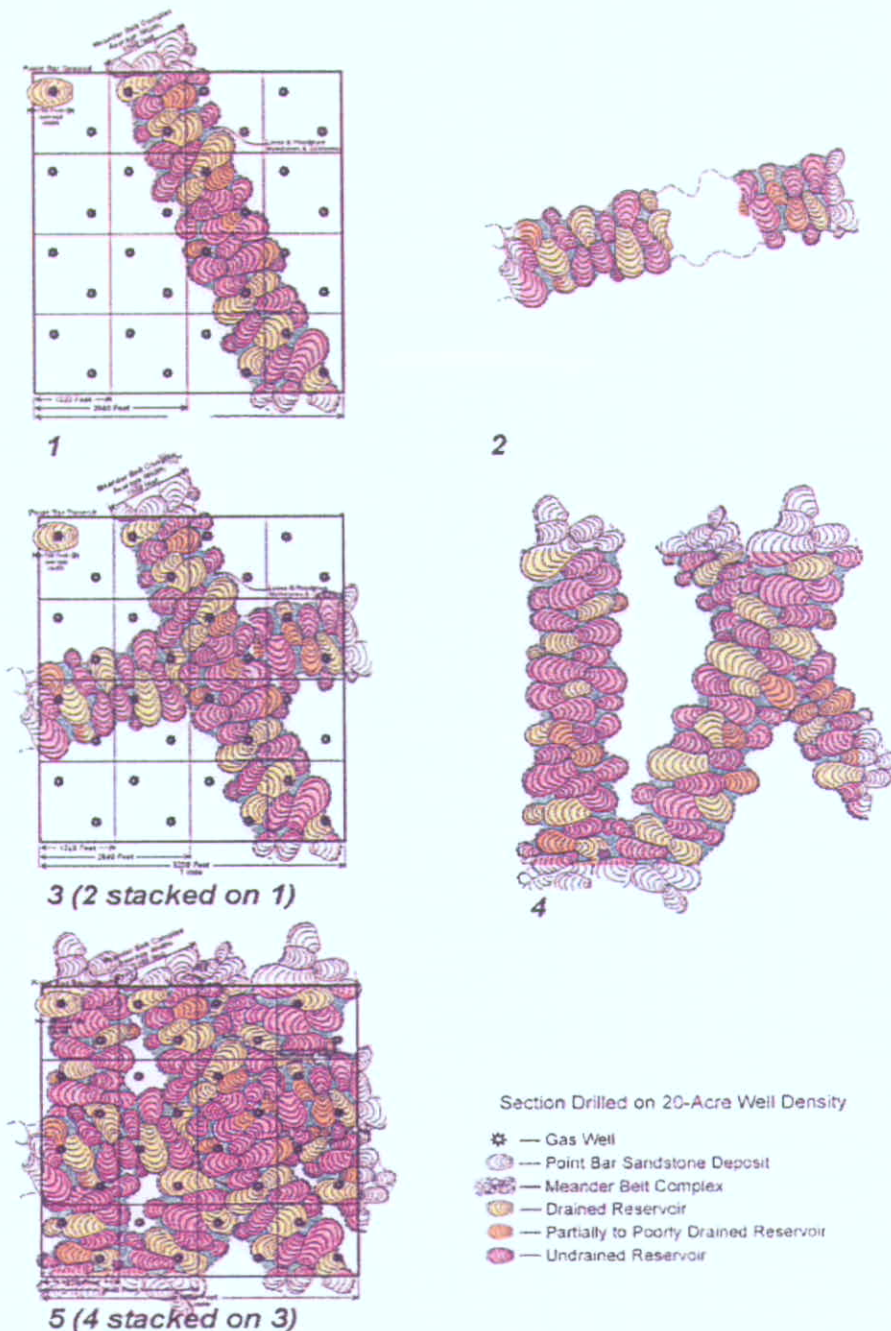


Figure 28. Stacking of hypothetical Williams Fork meanderbelt sandstone reservoirs showing the need for 10-acre density. Figure originally done by Terry Barrett.

# EXHIBIT J

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## Net Pay Sandstone Comparison

DOE 1-M-18 (sec 18, 6S 94W)

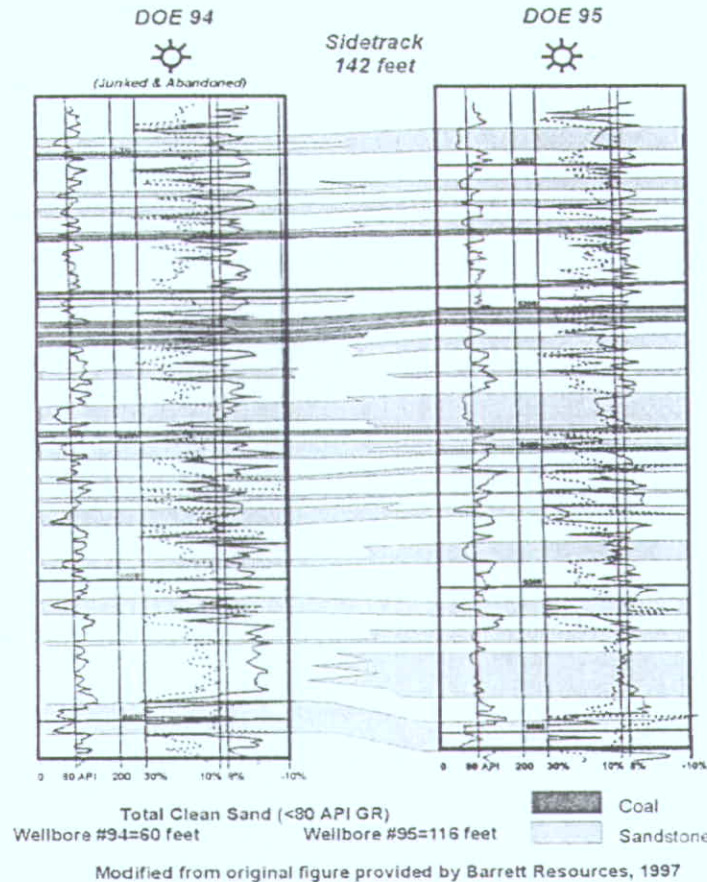


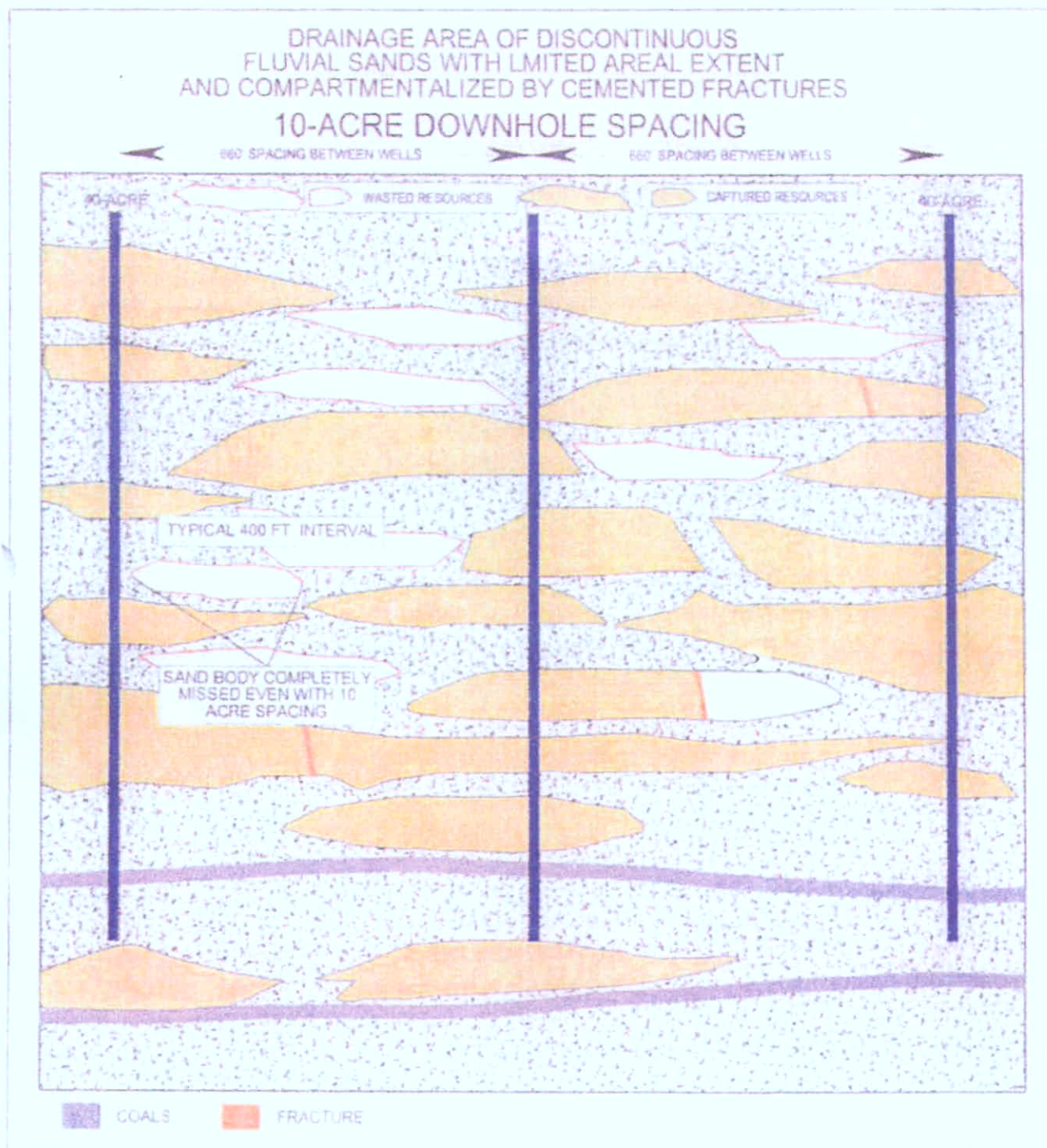
Figure 2: Comparison of net pay sandstone for the DOE 1-M-18 wellbore and sidetrack recompletion (Sec 18, T8S, 94W). Total clean sand, defined by gamma ray <90 API units, shows a tremendous difference between the original logged wellbore and the sidetrack recompletion. There is only 142 feet difference in bottomhole location between the two wells. This underscores the difficulty in predicting reservoir thickness in advance of drilling. From Hoak and Klawitter, 1997.

## EXHIBIT L

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

### WASTED RESOURCE AT 10 ACRE SPACING

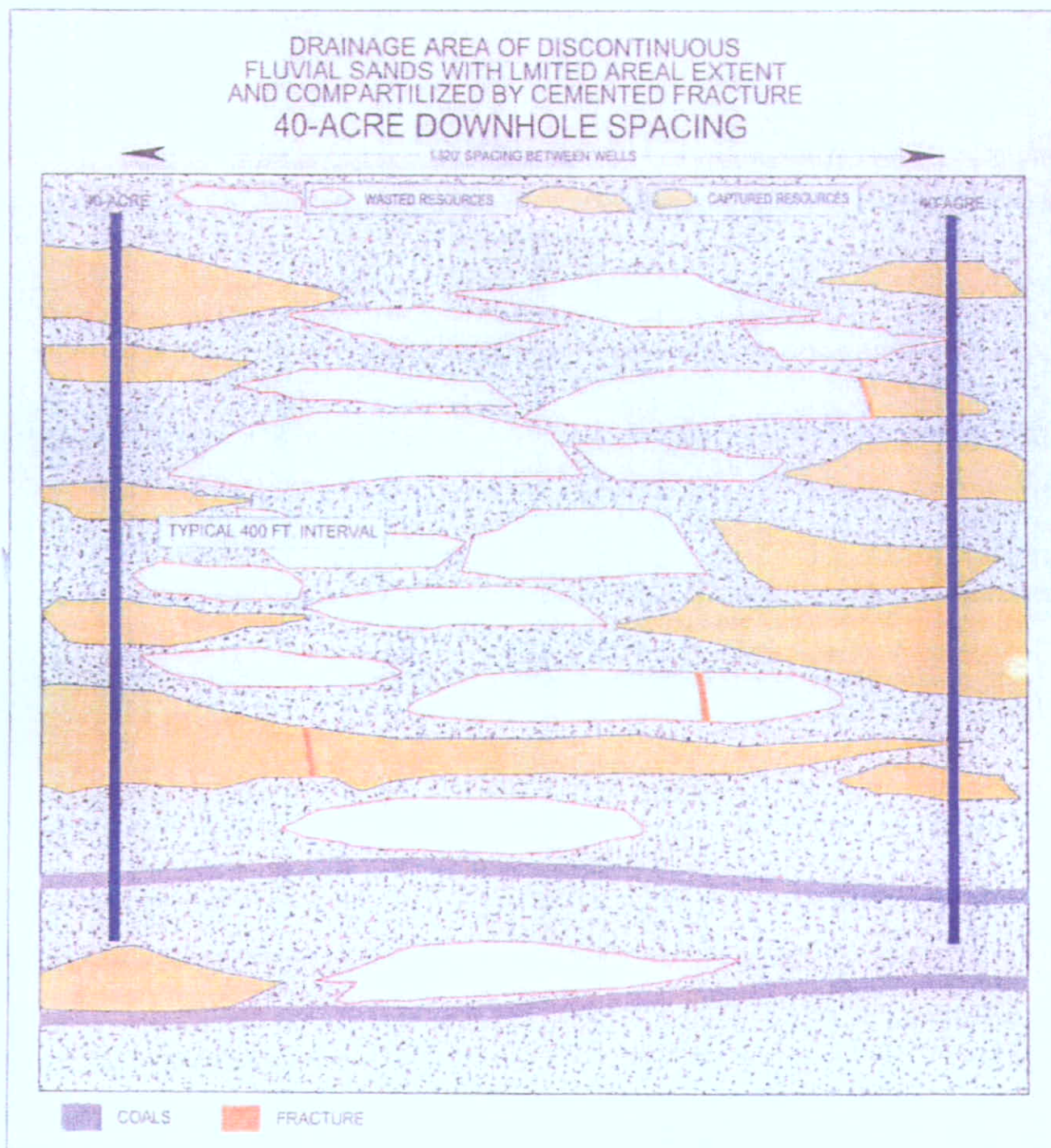


# EXHIBIT K

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## WASTED RESOURCE ON 40-ACRE SPACING



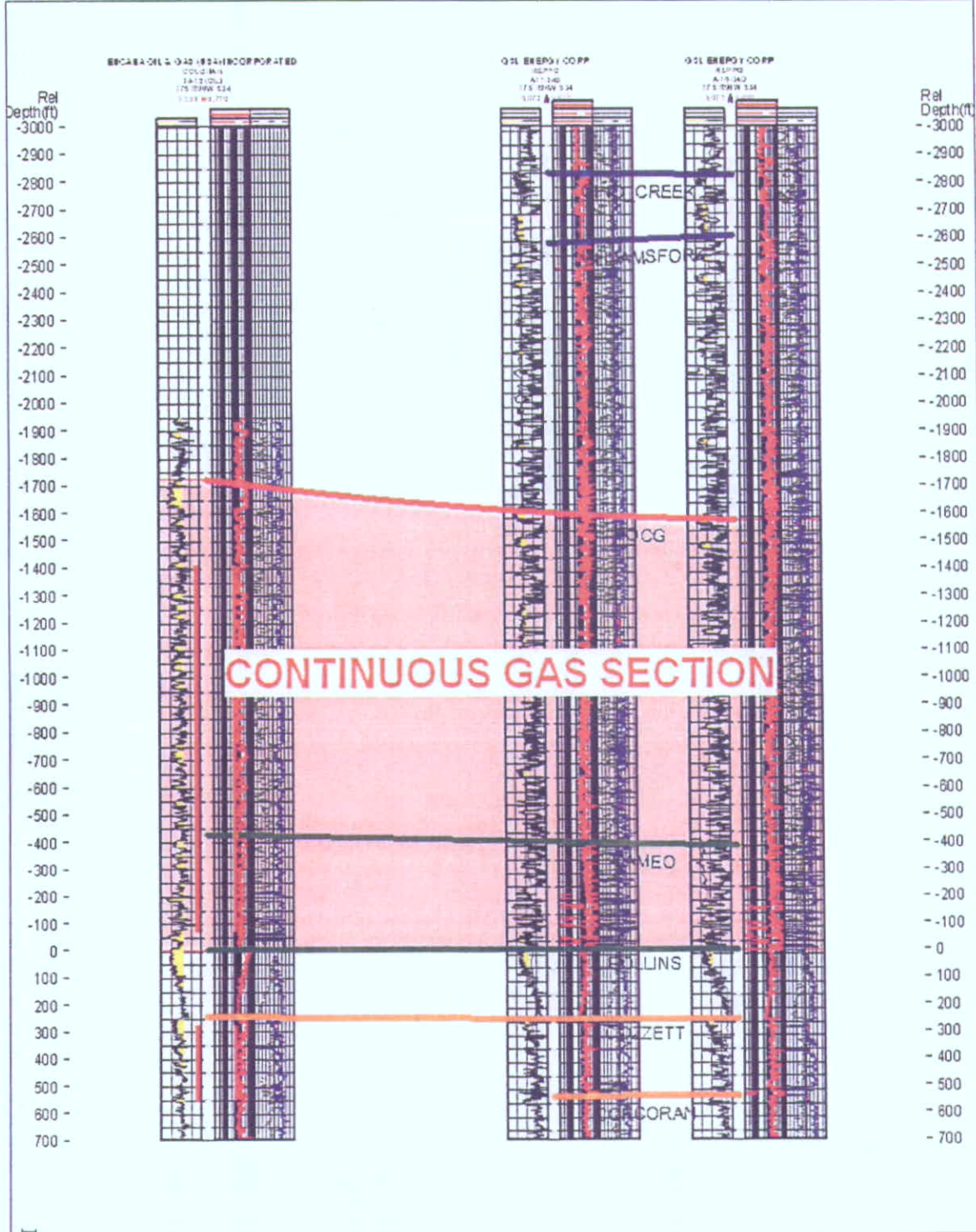
# EXHIBIT M

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## LOG CROSS SECTION OF RECENT ADJACENT WELLS

Rifle Creek Area



CAUSE NO. 139  
DOCKET NO 0708-SP-25

**PetroHunter**  
Operating Company

**PICEANCE BASIN GAS PROJECT**  
**HEPPO AND JOLLEY ACRES**  
**ROLLINS MEMBER**  
**STRUCTURE MAP**

0 2,044  
FEET

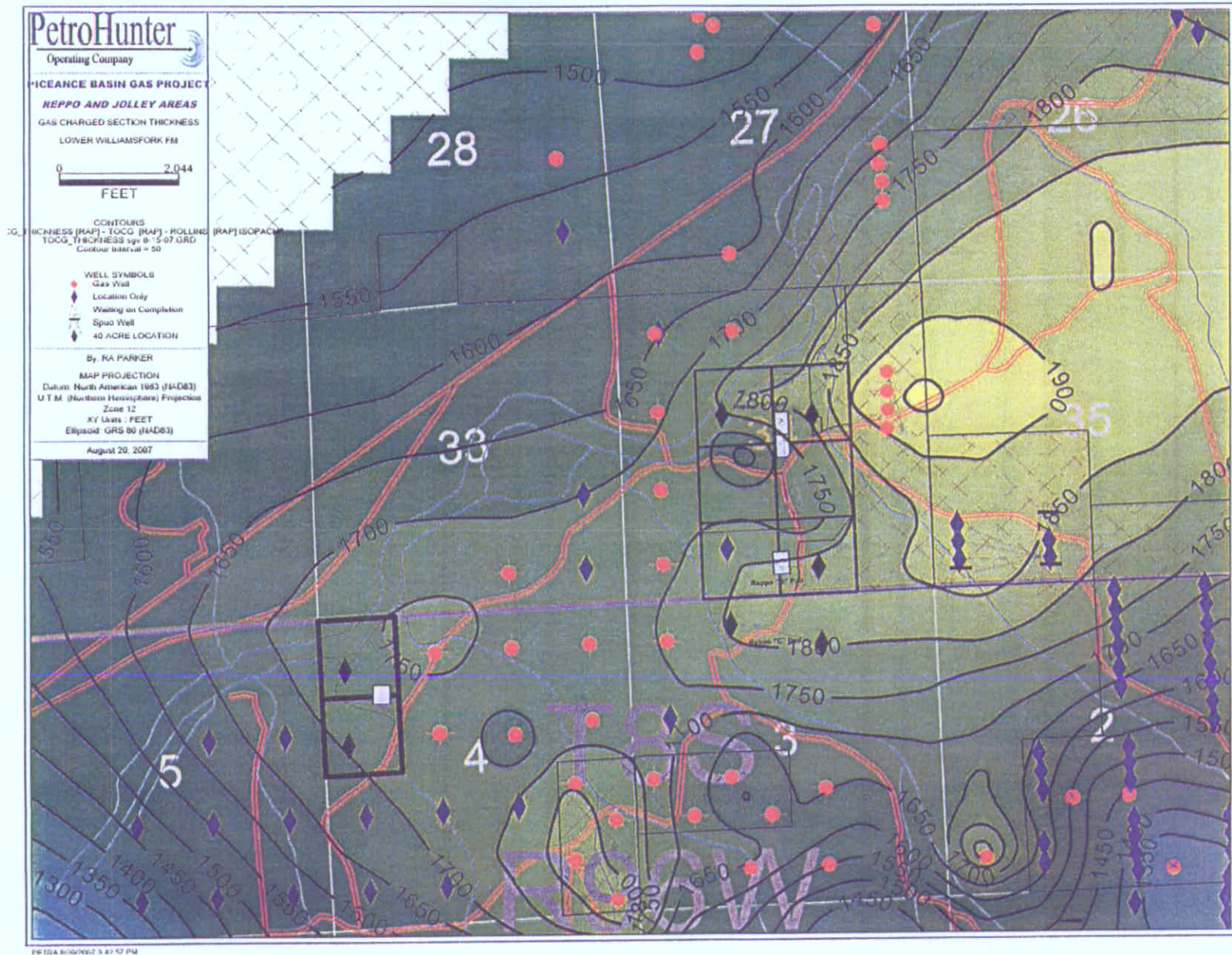
**CONTOURS**  
PMTOPS - ROLLINS (BAP) top relief  
ROLLINS elevation is 814.37 GRID  
Contour interval = 20

**WELL SYMBOLS**  
 • Gas Well  
 ♦ Location Clay  
 ○ Waiting on Completion  
 ○ Spec Well  
 ○ 40 ACRE LOCATION

By RA PARKER  
 MSP PROJECTION  
 Datum: North American 1983 (NAD83)  
 U.T.M. (North American Projection)  
 Zone 12  
 XY Units - FEET  
 Ellipsoid - GRS 80 (NAD83)

August 20, 2007

## ISOPACH MAP



# EXHIBIT P

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## FRACTURE MEASUREMENTS

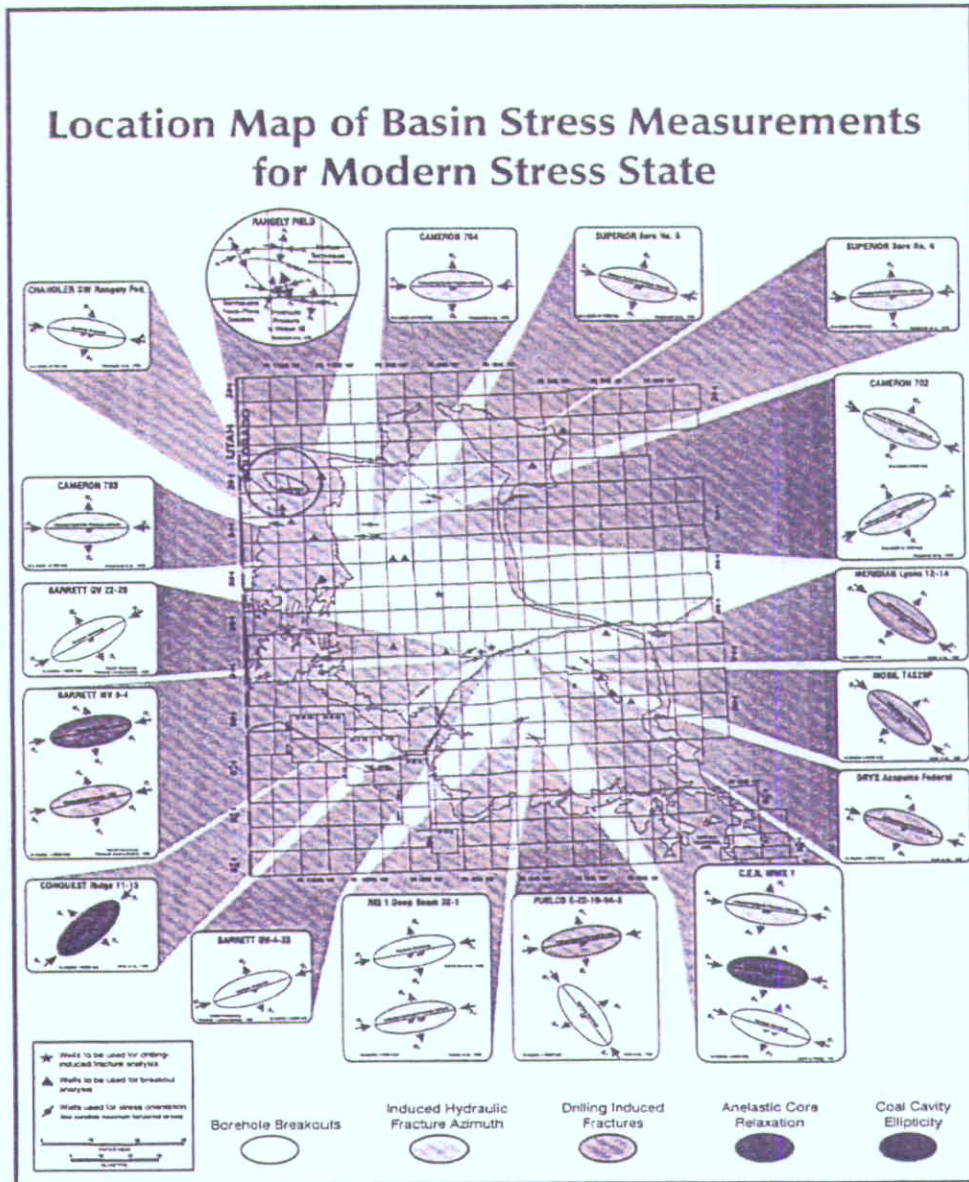


Figure 41: Location map showing modern stress measurements throughout the basin. Modified after Hoak, 1995.

# EXHIBIT Q

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## LINEAR FEATURES

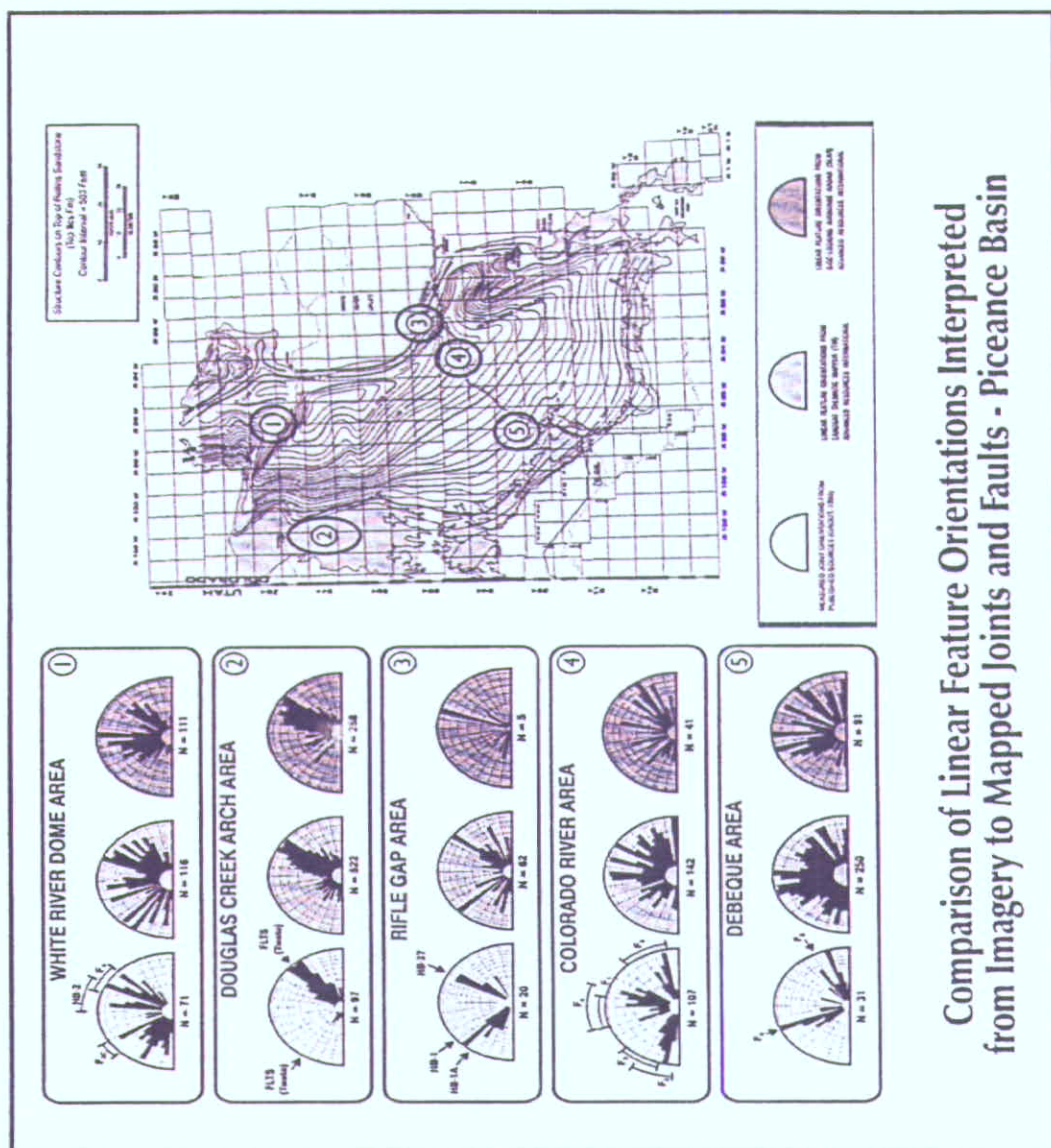


Figure 48a: Comparison of Linear Features Analysis Based on LANDSAT TM Imagery Interpretation with Field-Based Surficial Outcrop Mapping. From Hoak and Klawitter, 1995.

# EXHIBIT R

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## FRACTURE LOCATIONS

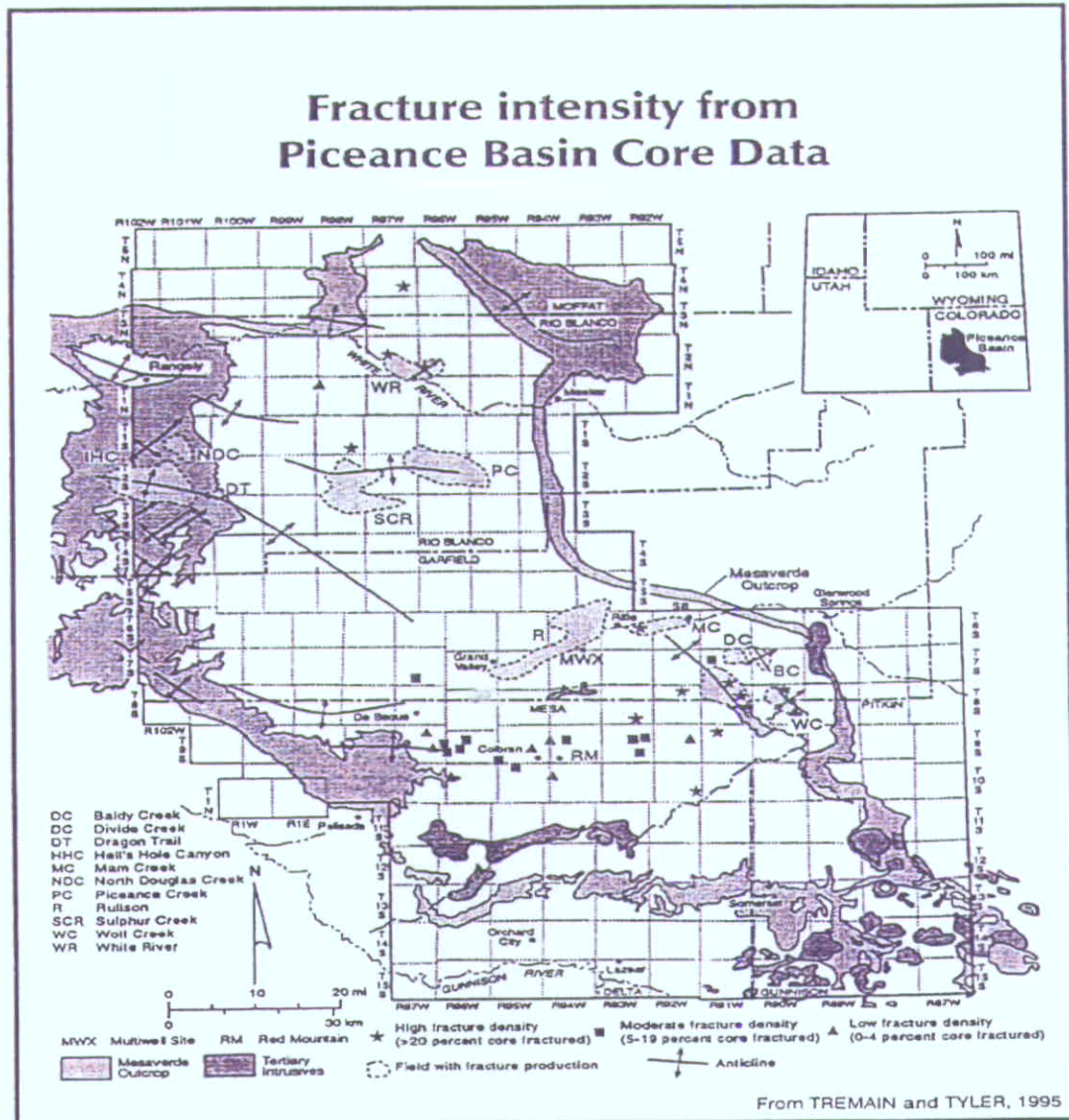


Figure 51: Regional fracture intensity from core data. Modified after Tremain and Tyler, 1995. Note that MWX and SHCT are not considered highly fractured wells.

# EXHIBIT S

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## FRACTURE DIRECTIONS FROM BOREHOLE IMAGE LOGS

*Stephen P. Ciarella and Douglas B. Ostby*

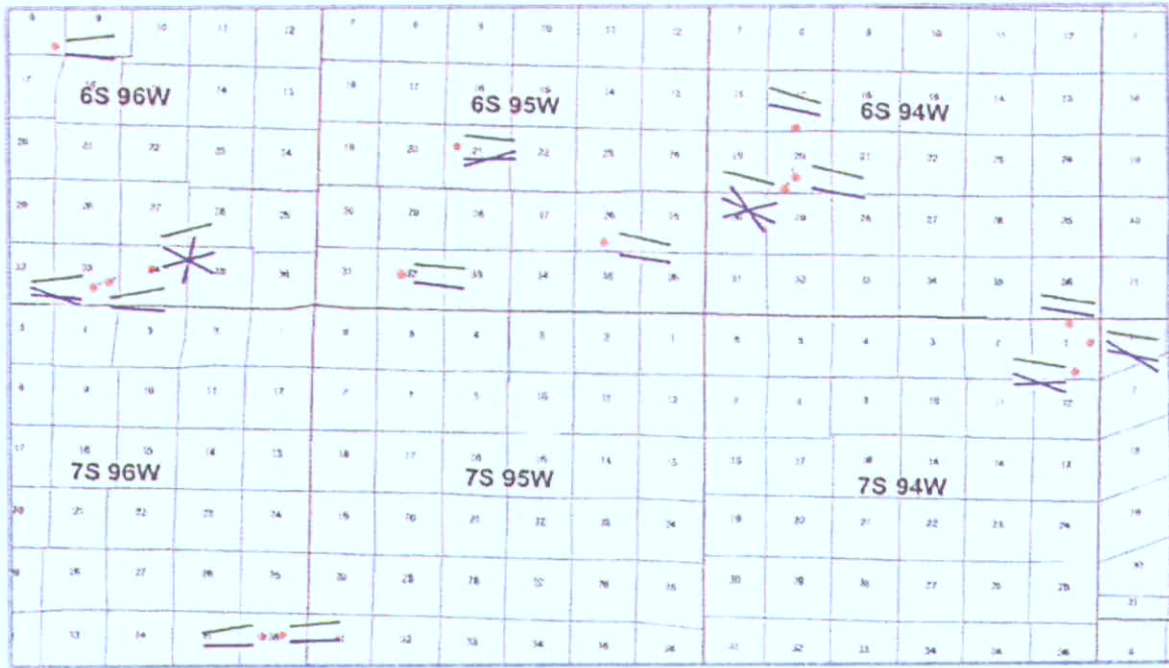


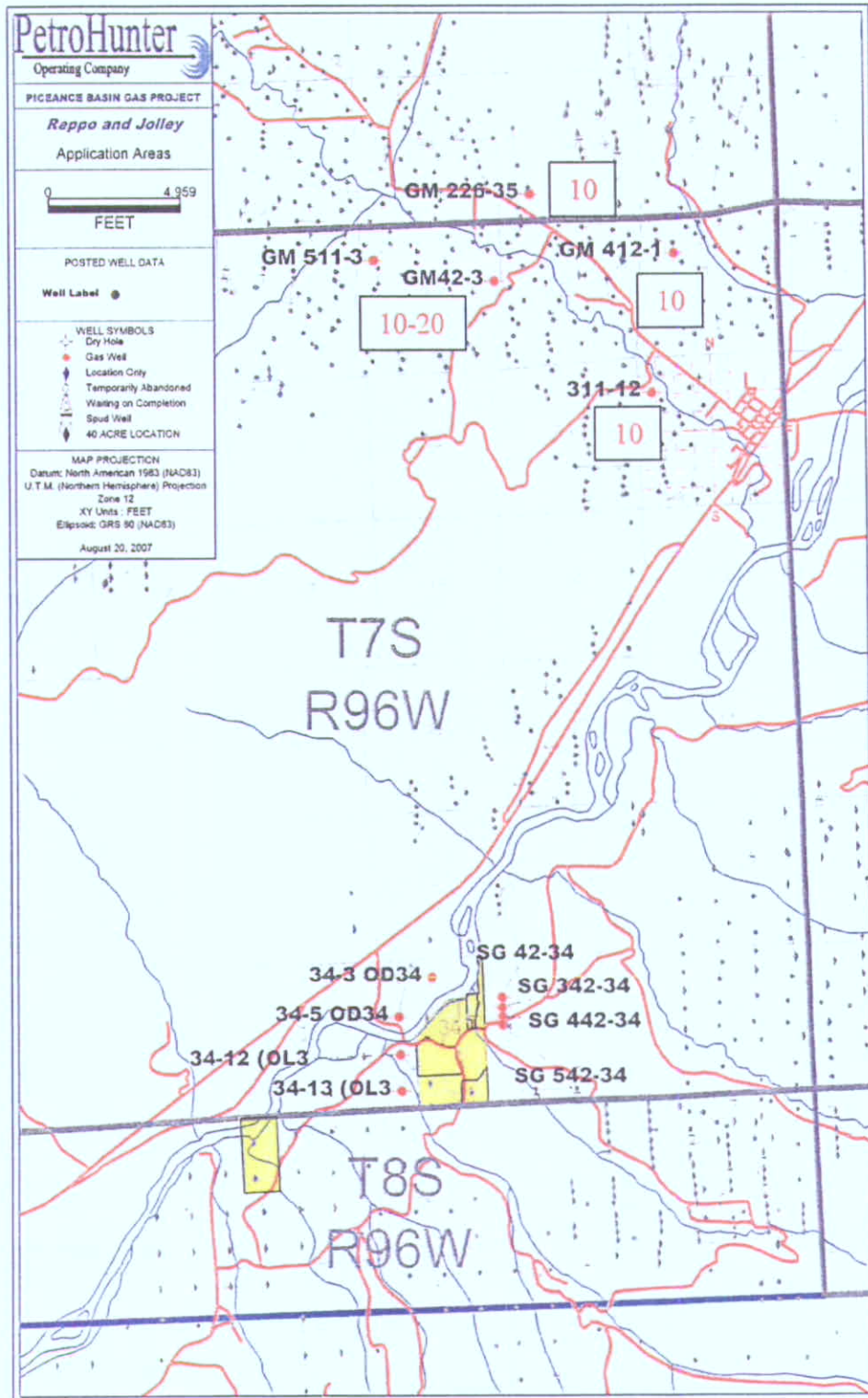
Figure 23. Induced and natural fracture orientations as interpreted from borehole image logs. Induced fracture orientations in green, natural fracture directions in blue. If more than one set of natural fractures was identified, they are plotted. Wells with borehole images are posted on map.

# EXHIBIT T

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## WELL LOCATION MAP - PRODUCTION ANALYSIS

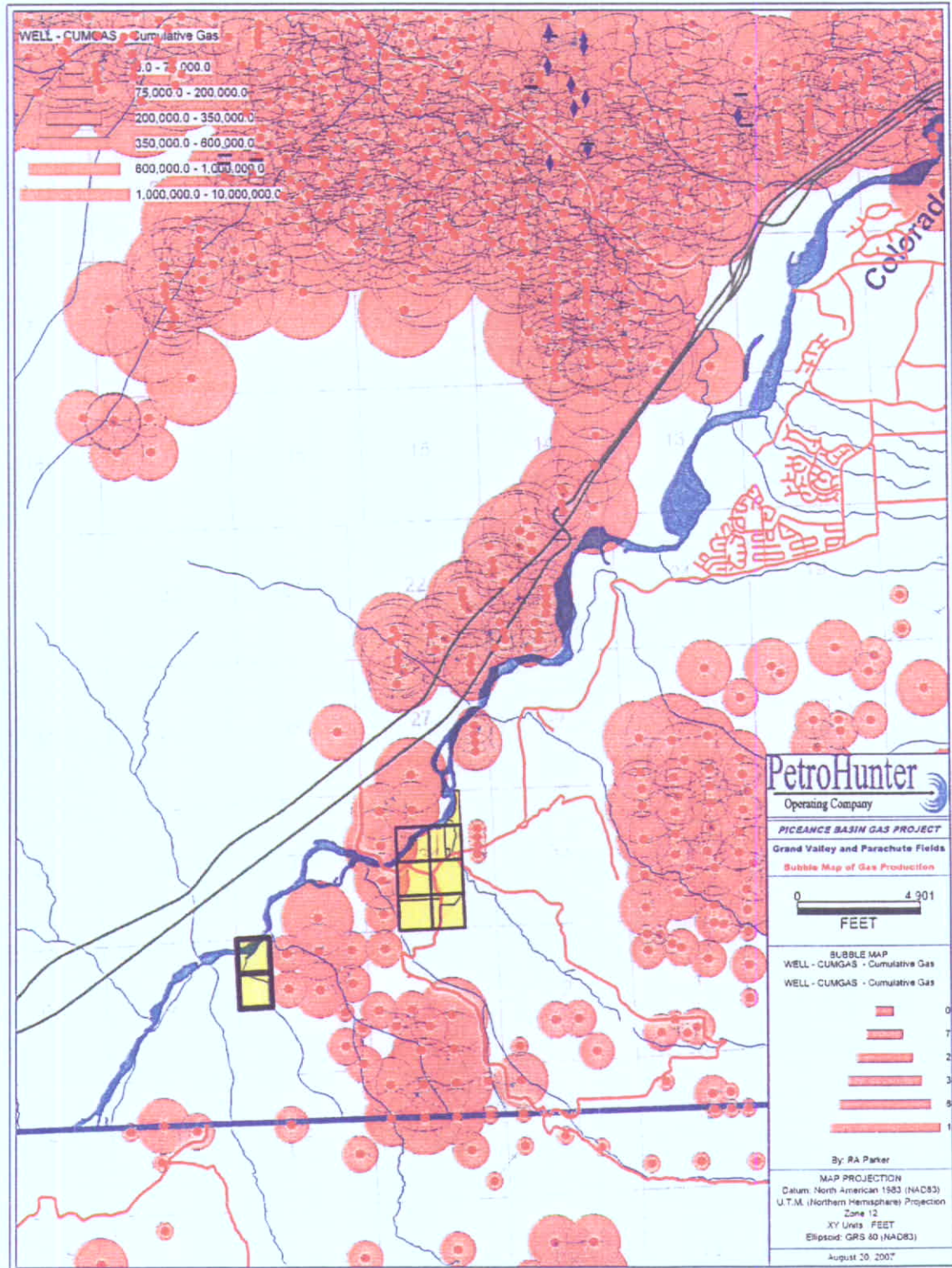


# EXHIBIT U

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## Grand Valley Bubble Map of Gas Production



# EXHIBIT V

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## Wells Used in Analysis

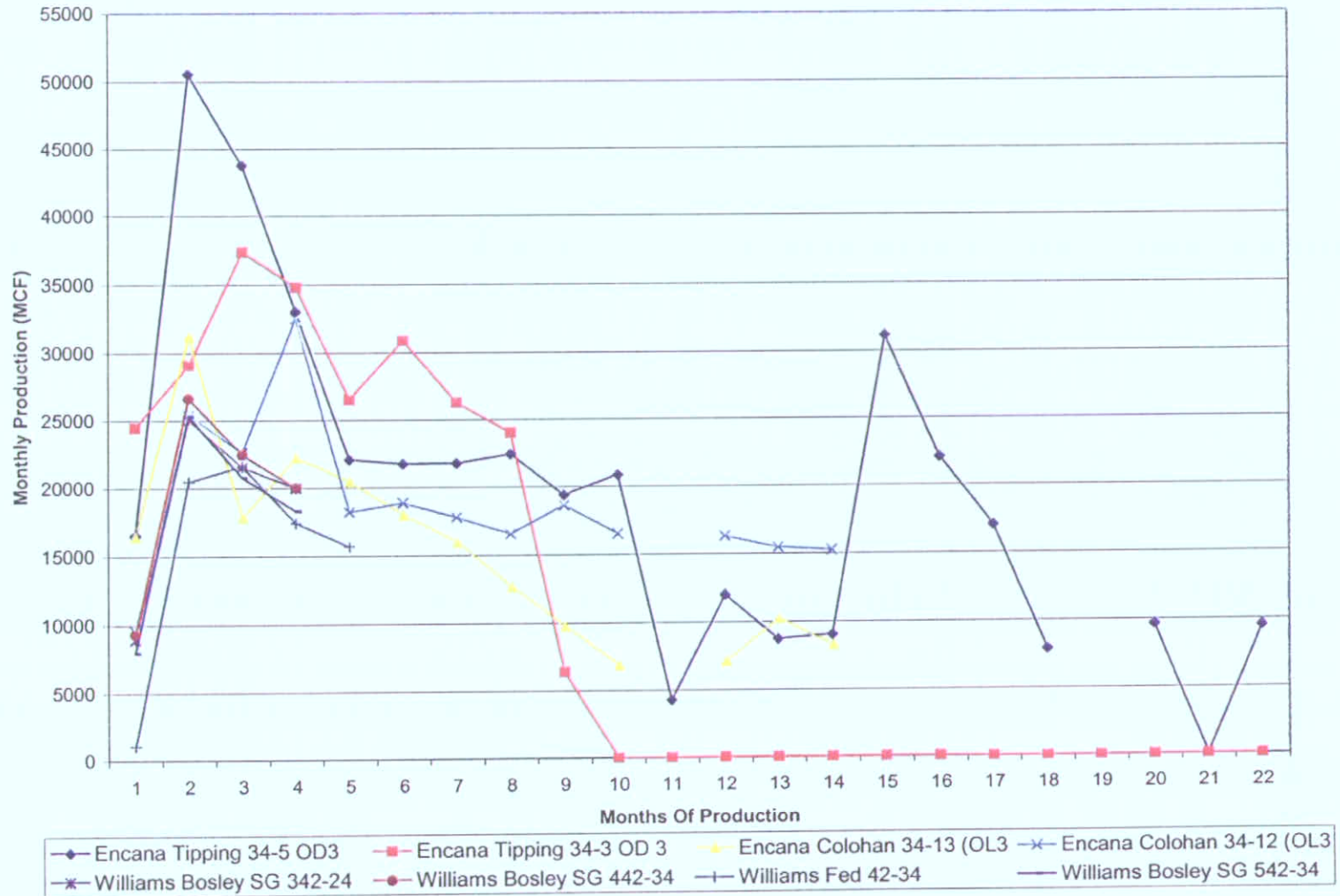
UWI (APINum)	Well Name	Well Number	Operator	Prod Fm	Township	Range	Section	Spacing	Total Depth
<b>GRAND VALLEY AREA</b>									
5045071020000 UNOCAL		GM42-3	WILLIAMS PRODUCTION RMT COMPANY	WILLIAMSFORK/CAME	7S	96W	3	20	6280
5045075990000 AMERICAN SODA		GM 226-35	WILLIAMS PRODUCTION RMT COMPANY	WILLIAMSFORK/CAME	6S	96W	35	10	6538
5045090270000 GM		311-12	WILLIAMS PRODUCTION RMT COMPANY	WILLIAMSFORK/CAME	7S	96W	12	20	6192
5045099750000 FEDERAL		GM 511-3	WILLIAMS PRODUCTION RMT COMPANY	WILLIAMSFORK/CAME	7S	96W	3	10	6530
5045104830000 WILLIAMS		GM 412-1	WILLIAMS PRODUCTION RMT COMPANY	WILLIAMSFORK/CAME	7S	96W	1	10	6788
<b>REPPA AREA</b>									
5045104030000 TIPPING		34-3 OD34	ENCANA OIL & GAS (USA) INCORPORATED	WILLIAMSFORK	7S	96W	34	40	5500
5045104060000 TIPPING		34-5 OD34	ENCANA OIL & GAS (USA) INCORPORATED	WILLIAMSFORK	7S	96W	34	40	6113
5045117580000 COLOHAN		34-13 (OL3	ENCANA OIL & GAS (USA) INCORPORATED	CORCORAN	7S	96W	34	40	5759
5045117650000 COLOHAN		34-12 (OL3	ENCANA OIL & GAS (USA) INCORPORATED	WILLIAMSFORK	7S	96W	34	40	5710
5045120120000 FEDERAL		SG 42-34	WILLIAMS PRODUCTION RMT COMPANY	WILLIAMSFORK/CAME	7S	96W	34	10	5305
5045120180000 BOSELY		SG 442-34	WILLIAMS PRODUCTION RMT COMPANY	WILLIAMSFORK/CAME	7S	96W	34	10	5160
5045120190000 BOSELY		SG 342-34	WILLIAMS PRODUCTION RMT COMPANY	WILLIAMSFORK/CAME	7S	96W	34	10	5146
5045126230000 BOSELY		SG 542-34	WILLIAMS PRODUCTION RMT COMPANY	WILLIAMSFORK/CAME	7S	96W	34	10	5068

# EXHIBIT W

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

Reppo Area 40 and 10 acre wells

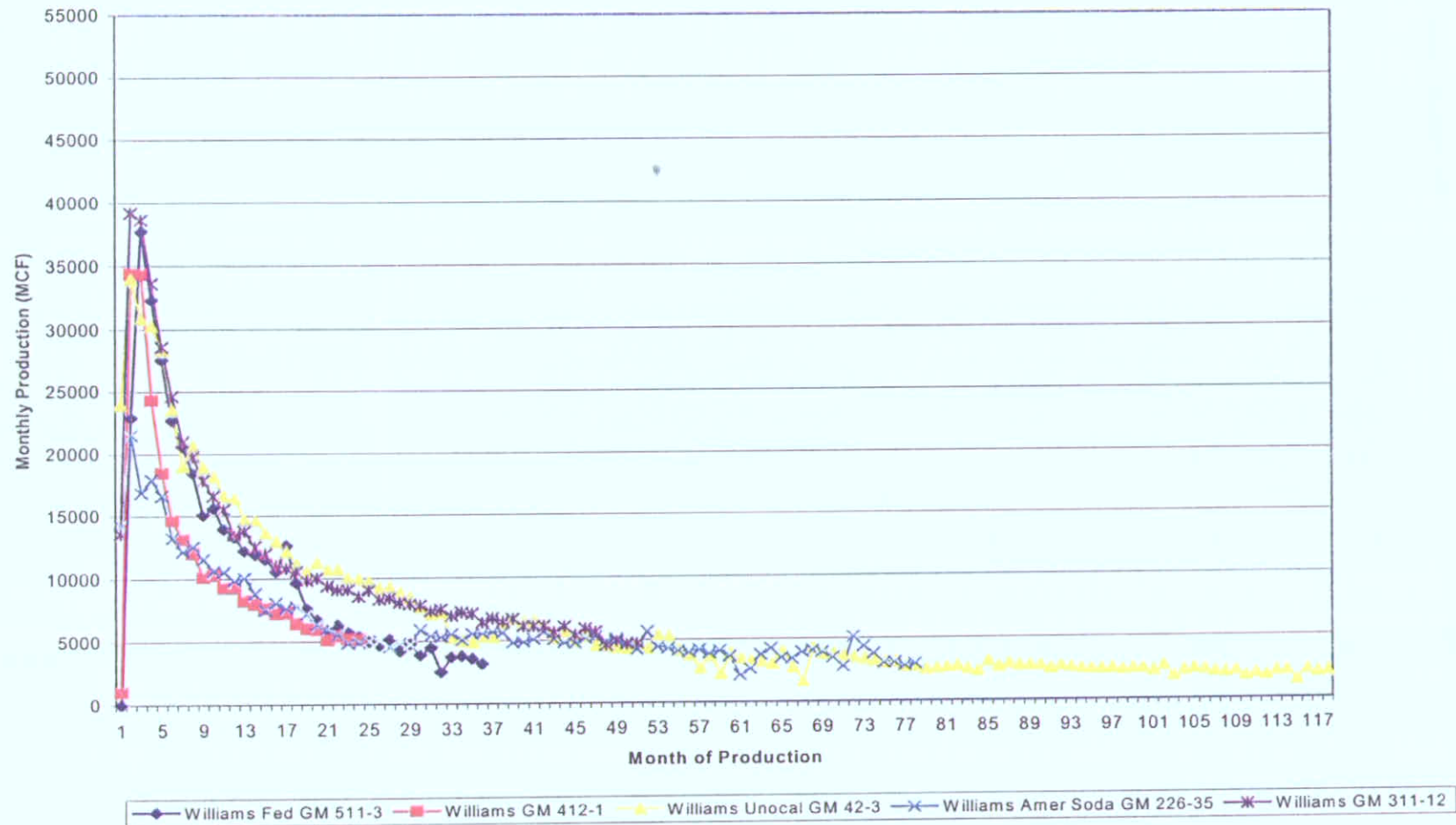


# EXHIBIT X

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## Grand Valley wells 10-20 acre

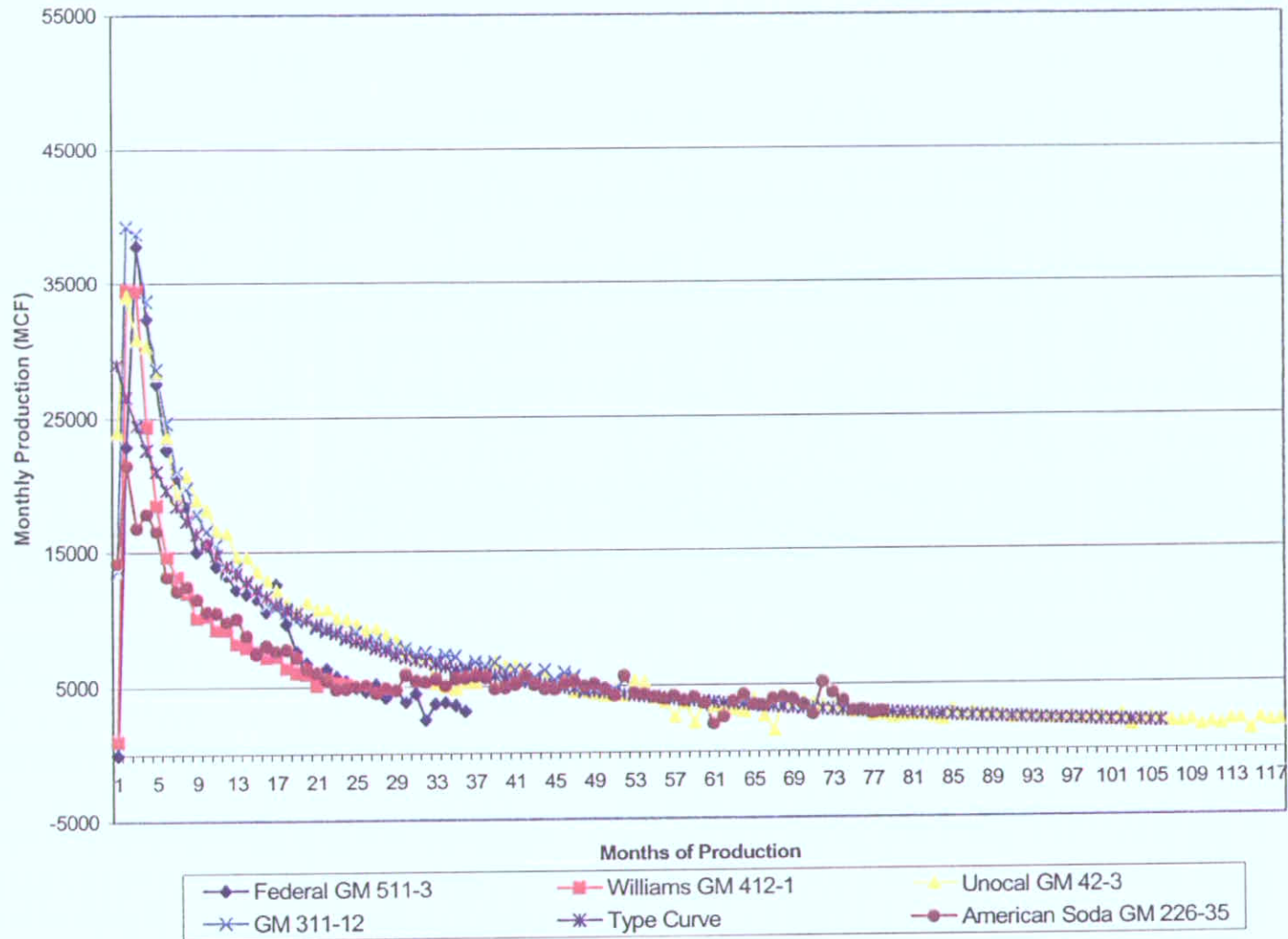


# EXHIBIT Y

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## Grand Valley Wells with Type Curve

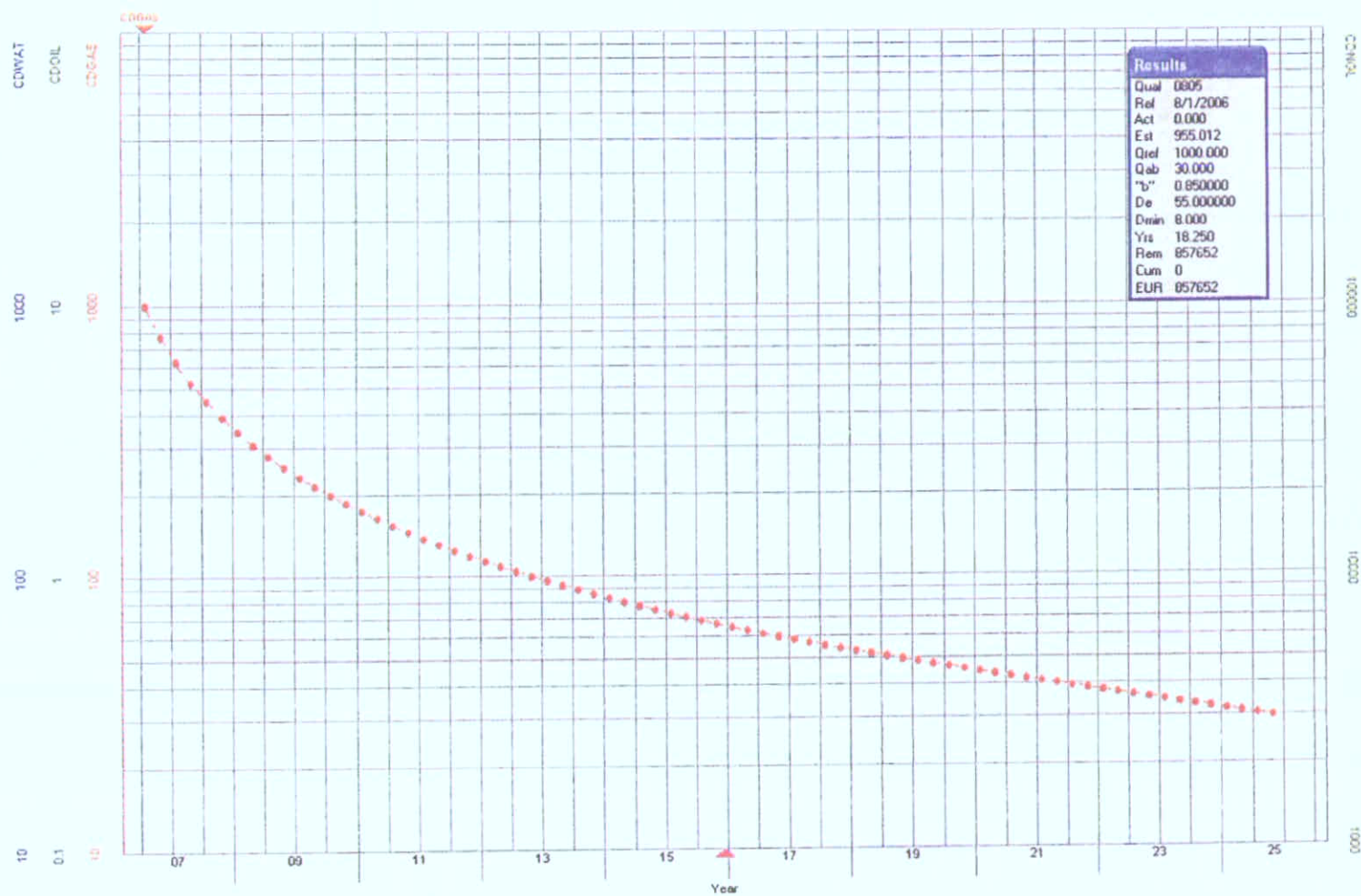


APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

## EXHIBIT Z

CAUSE NO. 139  
DOCKET NO 0708-SP-25

### PRODUCTION FORECAST FOR ECONOMICS



## EXHIBIT AA

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

### TYPICAL WILLIAMS FORK ECONOMIC ANALYSIS

Initial Producing Rate	1000 MCFD
Initial Decline Rate	Hyperbolic 55% $b=.85$
Decline Rate to end of Primary	Exponential 8%
Economic Limit Rate	30
Gas Reserves (gross)	858 MMCF
Producing Life	18.25 years
Royalty Production	171.6 MMCF
Well Depth	5200 Ft
Well Cost	\$2,000,000
Working Interest	100%
Royalty and ORR Interest	20%
Net Revenue Interest	80%
Operating Expenses	\$1500 per month
Gas Price (net)	\$6.81 per MCF
Condensate Price (net)	\$60.45 per Bbl
Cond. Yield	0.5 Bbl/MMCF
Payout (undiscounted)	2.12 years
ROR BFIT	38.4%

# EXHIBIT BB

APPLICANT: PETROHUNTER OPERATING, LLC  
GARFIELD COUNTY/UN-NAMED FIELD

CAUSE NO. 139  
DOCKET NO 0708-SP-25

## Aries Results-Type Curve

WELL: Jolly  
FIELD: SOUTH GRAND VALLEY  
RESERVOIR: WILLIAMS FORK  
OPERATOR: GSL  
RESERVE CLASS: 3POS BUND 3

DATE : 03/07/2006  
TIME : 15:54:09  
DBS : NWA HES-PM  
SETTINGS : 0805  
SCENARIO : 0805

### RESERVES AND ECONOMICS

AS OF DATE: 08/2006

--END-- MO-YEAR	GROSS OIL PRODUCTION ---MMBLS---	GROSS GAS PRODUCTION ---MMCF---	NET OIL PRODUCTION ---MMBLS---	NET GAS PRODUCTION ---MMCF---	NET OIL PRICE ---\$/BBL---	NET GAS PRICE ---\$/MCF---	NET OIL SALES ---M\$---	NET GAS SALES ---M\$---	TOTAL NET SALES ---M\$---
12-2006	0.062	123.947	0.050	99.157	60.450	6.810	2.997	675.261	678.258
12-2007	0.089	177.625	0.071	142.100	60.450	6.810	4.295	967.704	971.999
12-2008	0.054	107.250	0.043	85.800	60.450	6.810	2.593	584.298	586.891
12-2009	0.038	75.621	0.030	60.497	60.450	6.810	1.829	411.981	413.810
12-2010	0.029	57.826	0.023	46.261	60.450	6.810	1.398	315.036	316.434
12-2011	0.023	46.499	0.019	37.199	60.450	6.810	1.124	253.325	254.449
12-2012	0.019	38.695	0.015	30.956	60.450	6.810	0.936	210.811	211.747
12-2013	0.017	33.014	0.013	26.411	60.450	6.810	0.798	179.862	180.660
12-2014	0.014	28.706	0.011	22.965	60.450	6.810	0.694	156.391	157.085
12-2015	0.013	25.335	0.010	20.258	60.450	6.810	0.613	138.025	138.637
12-2016	0.011	22.630	0.009	18.104	60.450	6.810	0.547	123.289	123.836
12-2017	0.010	20.415	0.008	16.332	60.450	6.810	0.494	111.222	111.716
12-2018	0.009	18.571	0.007	14.857	60.450	6.810	0.449	101.173	101.622
12-2019	0.009	17.028	0.007	13.622	60.450	6.810	0.412	92.766	93.178
12-2020	0.008	15.681	0.006	12.545	60.450	6.810	0.379	85.432	85.812
S TOT	2.404	808.843	0.324	647.074	60.450	6.810	19.558	4406.576	4426.134
AFTER	0.025	49.337	0.020	39.469	60.450	6.810	1.193	268.787	269.980
TOTAL	0.429	858.180	0.343	686.544	60.450	6.810	20.751	4675.363	4696.114
--END-- MO-YEAR	AD VALOREM TAX ---M\$---	PRODUCTION TAX ---M\$---	DIRECT OPER EXPENSE ---M\$---	INTEREST PAID ---M\$---	CAPITAL REPAYMENT ---M\$---	EQUITY INVESTMENT ---M\$---	FUTURE NET CASHFLOW ---M\$---	CUMULATIVE CASHFLOW ---M\$---	CUM. DISC. CASHFLOW ---M\$---
12-2006	0.000	7.325	7.537	0.000	0.000	2000.000	-1336.604	-1336.604	-1349.911
12-2007	0.000	10.499	18.472	0.000	0.000	0.000	943.029	-393.575	-487.873
12-2008	0.000	6.338	19.026	0.000	0.000	0.000	561.526	167.951	-26.276
12-2009	0.000	4.469	19.597	0.000	0.000	0.000	389.744	557.695	262.105
12-2010	0.000	3.417	20.185	0.000	0.000	0.000	292.831	850.526	457.207
12-2011	0.000	2.748	20.791	0.000	0.000	0.000	230.910	1081.436	595.762
12-2012	0.000	2.287	21.414	0.000	0.000	0.000	188.046	1269.482	697.391
12-2013	0.000	1.951	22.057	0.000	0.000	0.000	156.652	1426.134	773.651
12-2014	0.000	1.697	22.719	0.000	0.000	0.000	132.670	1558.804	831.829
12-2015	0.000	1.497	23.400	0.000	0.000	0.000	113.740	1672.544	876.759
12-2016	0.000	1.337	24.102	0.000	0.000	0.000	98.396	1770.940	911.774
12-2017	0.000	1.207	24.825	0.000	0.000	0.000	85.634	1856.624	939.242
12-2018	0.000	1.098	25.570	0.000	0.000	0.000	74.955	1931.579	960.899
12-2019	0.000	1.006	26.337	0.000	0.000	0.000	65.834	1997.413	978.016
12-2020	0.000	0.927	27.127	0.000	0.000	0.000	57.758	2055.171	991.555
S TOT	0.000	47.802	323.161	0.000	0.000	2000.000	2055.171	2055.171	991.555
AFTER	0.000	2.916	111.743	0.000	0.000	0.000	155.321	2210.492	1020.586
TOTAL	0.000	50.718	434.904	0.000	0.000	2000.000	2210.492	2210.492	1020.586
OIL		GAS		P.W. %		P.W., M\$			
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GROSS WELLS	0.0	1.0	LIFE, YRS.	18.25	5.00	1541.050			
GROSS ULT., MB & MMF	0.429	858.180	DISCOUNT %	11.00	10.00	1092.807			
GROSS CUM., MB & MMF	0.000	0.000	UNDISCOUNTED PAYOUT, YRS.	2.12	15.00	773.186			
GROSS RES., MB & MMF	0.429	858.180	DISCOUNTED PAYOUT, YRS.	2.51	20.00	533.534			
NET RES., MB & MMF	0.343	686.544	UNDISCOUNTED NET/INVEST.	2.11	25.00	346.563			
NET REVENUE, M\$	20.751	4675.363	DISCOUNTED NET/INVEST.	1.51	30.00	196.036			
INITIAL PRICE, \$	60.450	6.810	RATE-OF-RETURN, PCT.	38.43	40.00	-32.391			
INITIAL N.I., PCT.	80.000	80.000	INITIAL W.I., PCT.	100.000	60.00	-329.217			
					80.00	-516.678			
					100.00	-648.087			