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Ref.: 3381.15608

June 7, 2005

Mr. Mark Gustafson, Director
Triangle Petroleum Corporation
1600, 144 Fourth Ave SW
Calgary AB T2P 3N4

Re: Gas Production from the Cadotte Zone in the Deep Basin of Alberta

Dear Mr. Gustafson

Last month your Mr. John Carlson asked that we review gas production from and reserves potential for Cadotte wells in the Deep Basin area of Alberta. Specifically, he asked that, with respect to wells producing gas from the Cadotte formation, we investigate

- Numbers of wells drilled and brought on production by year
- The performance of these wells
- The success rates of drilling in the area
- The volumes of gas discovered in and produced from the Cadotte as of April 1, 2005
- The volumes of gas that might be found in the Cadotte in the Deep Basin, and
- The ultimate potential for gas production from the Cadotte in the Deep Basin.

This letter is our report.

Summary

- The study area, called the “Deep Basin” in this report, lies in the area bounded by Township 60 Range 26W5M in the southeast and Township 72 Range 14W6M in the northwest. Gas production from the Deep Basin is prolific. In March 2005, the last month for which production figures are available, gas production averaged 1,186 MMcfd.
- For the Cadotte, 142 wells reported production and the raw gas production rate averaged 121MMcfd. Wells in the Cadotte produce gas almost exclusively. There was no oil production reported in March 2005.
- Gas production from the Cadotte in the Deep Basin has increased thirty-fold in the past ten years, from 4 to 121 MMcfd.
- The average initial production rate for a recent gas well in the Cadotte is 2.6 MMcfd. The average volume of raw gas recovered from a recent gas well in the Cadotte is 1.6 Bcf. Both volumes are raw gas, as produced, before losses due to processing and fuel.
- Gas produced from the Cadotte rarely contains hydrogen sulphide.
- The estimated chance of success in Alberta for a development well is 80%, and for an exploration well, 30%.
- The estimated volume of recoverable raw gas contained in Cadotte pools discovered to date in the Deep Basin totals about 600 Bcf. Of this volume of recoverable raw gas, about half has been produced, leaving an estimated 300 Bcf remaining to be produced.
- The estimated volume of recoverable raw gas contained in Cadotte pools that remain to be discovered in the Deep Basin totals about 530 Bcf.
- An estimated 120 Cadotte pools remain to be discovered in the Deep Basin. The undiscovered pools will hold, on average, an estimated 4 Bcf of recoverable raw gas.
- The potential for finding undiscovered Cadotte pools is distributed more or less equally over the Deep Basin.
- The estimated total volume of discovered and undiscovered recoverable raw gas remaining to be produced from the Cadotte in the Deep Basin totals about 820 Bcf.

Study Area

Called the "Deep Basin" in this report, the study area is contained within the area bounded by Township 60 Range 26 West of the Fifth Meridian in the southeast, and Township 72 Range 14 West of the Sixth Meridian in the northwest. Range 14 is the boundary between Alberta and British Columbia. A map showing the study area is included as Figure 1 in this report.

Geology of the Cadotte in the Deep Basin

An excellent account of the geology of the Cadotte in the Deep Basin is contained in the paper listed below.

Smith, David G., Sneider, Robert M. and Zorn, Carl E. "The Paleogeography of the Lower Cretaceous of Western Alberta and Northeastern British Columbia in and Adjacent to the Deep Basin of the Elmworth Area." In: Masters, John A. (ed.) "Elmworth – Case Study of a Deep Basin Gas Field." The American Association of Petroleum Geologists, Tulsa, 1984.

Oil and Gas Production in the Deep Basin

Substantial volumes of oil and gas have been produced from wells in the Deep Basin. Figure 2 in this report shows oil and gas production in the study area for the past twenty years. As of March 31, 2005, the last date for which production figures are available, cumulative production totaled

- 126 million barrels of oil
- 5,893 billion cubic feet of gas
- 132 million barrels of water and
- 0.9 million barrels of condensate.

In March 2005, 2,238 wells reported production, and production for the area as a whole averaged

- 11,186 barrels of oil per day
- 1,186 MMcf of gas per day

In the past ten years,

- Gas production has increased from about 0.7 to 1.2 Bcf per day
- Oil production has decreased from 22,000 to 11,000 barrels per day and
- The number of producing wells has increased from about 800 to 2,200.

All gas volumes listed in this report are raw, as produced from a well, before processing losses.

Oil and Gas Production from the Cadotte Zone in the Deep Basin

The volumes of oil and gas produced from the Cadotte formation in the Deep Basin are a small fraction of the total. Figure 3 shows oil and gas production from the Cadotte formation in the study area for the past twenty years. As of March 31, 2005, the last date for which production figures are available, cumulative production totaled

- 64 thousand barrels of oil, a tiny fraction of the total
- 242 billion cubic feet of gas, 4% of the total
- 0.3 million barrels of water
- 10,531 barrels of condensate, 1% of the total.

In March 2005, there was no oil production reported, and

- Gas production averaged 121 MMcf per day, 10% of the total for the Deep Basin
- 142 wells reported production, 5% of the total for the Deep Basin.

In the past ten years,

- Gas production has increased from about 4 to 121 MMcf per day
- The number of producing wells has increased from 7 to 121
- Little oil production has been reported.

After comparing the production volumes and well counts in Figures 2 and 3, it is possible to conclude that

- Wells in the Cadotte produce gas almost exclusively
- Gas production from the Cadotte is disproportionately high
- About 10% of the gas production in the Deep Basin originates from wells in the Cadotte
- The volumes of gas produced from the Cadotte have increased by a factor of thirty in the past ten years.

Prior to the year 2000, 81 wells reported production from the Cadotte. In 2000, 21 more wells began producing from this formation. In 2001, an additional 20 wells began producing from the zone. In 2002, 2003, 2004 and the first 3 months of 2005, the comparable figures were 23, 34, 27 and 8 wells. The pace of development of the Cadotte formation in the Deep Basin has quickened since 2002. An additional 92 wells have begun producing from the Cadotte since December 31, 2001, more than had begun producing prior to that date in the study area.

Performance of Wells Producing from the Cadotte in the Deep Basin

For wells producing from the Cadotte in the Deep Basin, this section reviews the

- Volumes of raw gas recoverable from the wells
- Calendar day gas rate over the first three months of continuous production
- Imputed annual exponential decline rate calculated from the recoverable volume and initial rate described above.

Figure 4 shows the initial production rate and estimates of recoverable raw gas for all Cadotte wells that have produced in the Deep Basin. There is evidence that wells brought on production since December 31, 2001 will recover smaller volumes of gas than wells brought on production before December 31, 1999. For this reason, Figures 5 and 6 have been prepared. These figures show the estimated initial production rates and volumes of recoverable raw gas for wells producing from the Cadotte that commenced production before 2000 and in 2002, 2003 and 2004. (The intent of grouping the wells in this fashion is to show the performance of recently drilled wells.) The averages for these groups of wells are shown in the following table.

Performance of Cadotte Wells in the Deep Basin			
Parameter	All Wells	Wells That Began Producing Before 2000	Wells That Began Producing in 2002, 2003, 2004
Average initial rate, first three months	2.5 MMcfd	2.5 MMcfd	2.6 MMcfd
Average Recoverable Raw Gas	2.1 Bcf	3.3 Bcf	1.6 Bcf
Imputed Exponential Decline Rate	34%	25%	46%

The "Imputed Exponential Decline Rate" is the annual exponential decline rate calculated from the average initial rate and the average recoverable raw gas for each class of wells. For example, if a well began producing at a rate of 2.6 MMcfd, and it declined in an exponential fashion, with an annual decline rate of 46% it would recover 1.6 Bcf.

From this table it is evident that:

- The initial production rate of wells completed in the Cadotte zone is about 2.5 MMcfd;
- Wells recently brought on production are expected to recover less than half the volume of gas than wells that commenced producing before 2000.

The scope of our work did not allow us to investigate any reasons for these apparent lower recoveries from recent wells.

Gas Composition

Almost all of the gas found in the Cadotte formation in the Deep Basin is sweet. The only pool shown in the EUB's records as containing hydrogen sulphide is the Latornell Cadotte B and Bluesky D commingled pool, which is shown as containing 2.0% hydrogen sulphide by volume.

Neglecting the Latornell Cadotte B & Bluesky D commingled pool, which is the only one reported as containing hydrogen sulphide, the average gas composition of Cadotte pools in the Deep Basin is:

- Methane, 91.50%
- Ethane, 4.53%
- Propane, 1.13%
- Butane, 0.42%
- Pentanes Plus, 0.37%
- Hydrogen, 0.00%
- Helium, 0.01%
- Nitrogen, 0.56%
- Carbon Dioxide, 1.48%
- Hydrogen Sulphide, 0.00%

Deep cut gas plants are very common in the Deep Basin. If the gas with this average composition were processed in a deep cut plant, the liquids yield would be 38 barrels per million cubic feet of raw gas. The shrinkage would be 10% of the input volumes.

Chances of Drilling Success in the Cadotte

With the information available in the public domain, it is very difficult to estimate the chance of success for drilling a Cadotte well in the Deep Basin. The long-term average success rate for development drilling in Alberta is 80%, while that for exploratory drilling is 30%. Our recommendation is to use these success rates in evaluating locations.

A review of wells drilled in the Deep Basin between January 1, 2000 and March 31, 2005 shows that:

- About 1400 separate wells were drilled deeply enough to test the Cadotte
- These 1400 wells produced about 2400 well events. Multiple well completions were quite common.
- The 2400 well events resulted in
 - 1200 wells being brought on production, of which about 130 produce from the Cadotte

- 53 tests of gas zones
- 315 abandoned well events and
- 762 standing well events
- about 70 miscellaneous well events such as water or waste disposal wells.

Figure 7 shows wells which have produced from the Cadotte formation in the study area. Most of these wells lie in the western half of the Deep Basin. Figure 8 shows wells that have produced from the Cadotte that began producing after December 31, 2001. The intent of this figure is to show the locations of successful wells in 2002 and subsequent years. All of the wells lie in the western part of the study area. There is a large number of wells in the southwest part of the Deep Basin. These wells produce from Cadotte pools in the Lynx and Narraway fields. The wells in Townships 66 and 67 produce from Cadotte pools in the Wapiti field.

Volumes of Recoverable Raw Gas Discovered and Remaining in the Cadotte

A review of the Alberta Energy and Utility Board's database of gas pools in Alberta shows that Cadotte gas pools holding about 600 Bcf of recoverable raw gas have been found in the Deep Basin. Figure 10 in this report is a diagram showing the townships in which gas has been discovered, and the volumes of recoverable raw gas discovered in each township. The volumes shown on this figure include the volumes of recoverable raw gas in pools where the EUB's listing shows that the Cadotte is commingled with gas from one or more other zones. For these commingled pools, where the volume of recoverable raw gas in the Cadotte could be estimated by itself it was. If it was not possible to estimate the volume of recoverable raw gas in the Cadotte directly, it was estimated by calculating the rock volume in each commingled zone, and then attributing the volume of recoverable raw gas amongst the zones on the basis of rock volume.

Of the volume of discovered recoverable raw gas, between 242 and 362 Bcf had been produced as of March 31, 2005, leaving between 237 and 357 Bcf of remaining recoverable raw gas in the discovered pools. Figure 3 in this report shows the volumes of raw gas produced from wells confirmed as producing from the Cadotte. The volume of produced gas shown in Figure 3 is 242 Bcf, which may be taken as the lower limit of raw gas production from the Cadotte. Figure 11 shows an estimate of raw gas production that includes volumes from commingled pools. To estimate this volume, the production from each commingled pool was allocated amongst its individual pools on the basis of recoverable raw gas. The volume of gas shown in Figure 11 is 362 Bcf, which may be seen as the upper limit of gas production from the Cadotte. The actual value lies between these limits. The arithmetic average of the limits, 302 Bcf, has been used as the value in calculations in this report.

The volume of undiscovered recoverable raw gas that remains to be found in Cadotte pools in the Deep Basin is estimated to be about 500 Bcf. None of this gas has been produced. It is estimated

that the undiscovered gas will be found in about 120 pools, with an average volume of recoverable raw gas of just over 4 Bcf. The volume of recoverable raw gas in the largest undiscovered pool is estimated to be 80 Bcf. The volumes of undiscovered gas have been estimated in an independent review conducted by Drummond Consulting Limited that incorporated the results of other studies of Alberta's ultimate gas potential. Drummond Consulting revises its study methodology at least annually to include the results of drilling in the province.

The volumes of discovered and undiscovered recoverable raw gas in the Cadotte may be summarized as follows.

- | | |
|---|----------------|
| • Discovered recoverable raw gas: | 598 Bcf |
| • Cumulative production to March 31, 2005: | <u>302 Bcf</u> |
| • Remaining discovered recoverable raw gas as of April 1, 2005: | 296 Bcf |
| • Estimated undiscovered recoverable raw gas: | <u>527 Bcf</u> |
| • Remaining discovered and undiscovered recoverable raw gas: | <u>823 Bcf</u> |

Of the total estimated recoverable raw gas resource in the Cadotte in the Deep Basin, half has been discovered and half of the discovered resource has been produced.

Most of the pools that remain to be found will be small. With typical pool parameters of:

- Net pay, 16 feet
- Porosity, 10%
- Gas saturation, 70%
- Pressure, 2,270 psia
- Temperature, 160° F
- Gas deviation factor, 0.87
- Recovery factor, 70%,

Using the parameters listed above, an undiscovered pool of average size, 4.3 Bcf, would extend over 640 acres. A pool with the median volume of 1.3 bcf of recoverable raw gas would extend over 250 acres. Using the average volume of recoverable raw gas for Cadotte wells brought on production between 2002 and 2004 as a guide, three wells would drain a pool of average size and one well would drain a well of median size.

Figure 9 in this report is a summary of the analysis conducted by Drummond Consulting. The estimated volumes of discovered and undiscovered recoverable raw gas, the numbers of pools, and the average pool sizes are listed at the top of the figure. For convenience they have been highlighted.

Figures 10 through 14 are entitled:

- Figure 10: Deep Basin – Cadotte Discovered Recoverable Raw Gas
- Figure 11: Deep Basin – Cadotte Recoverable Raw Gas Production
- Figure 12: Deep Basin - Cadotte Remaining Recoverable Raw Gas
- Figure 13: Deep Basin – Cadotte Undiscovered Recoverable Raw Gas
- Figure 14: Deep Basin- Cadotte Remaining Recoverable Gas Resource

The volumes shown on these figures are estimates of recoverable raw gas per township in billions of cubic feet.

The intent of these figures is to show, for the Cadotte formation in the Deep Basin, estimates of:

- discovered recoverable raw gas (Figure 10)
- cumulative recoverable raw gas production as of March 31, 2005
- remaining volumes of discovered recoverable raw gas as of April 1, 2005
- undiscovered recoverable raw gas in the Cadotte
- remaining discovered and undiscovered recoverable raw gas in the Cadotte as of April 1, 2005.

Note on Figure 10 that most gas in the Cadotte has been found between Townships 61 and 71, Ranges 8 to 13W6M. Figure 13 shows that the potential for finding new pools in the Cadotte in the Deep Basin is more or less equally distributed over the Deep Basin. The average value of undiscovered recoverable raw gas per township is about 2.7 Bcf. About 190 townships lie within the study area. With an estimated 120 undiscovered pools, on average two Cadotte pools remain to be discovered in every three townships. The majority of these pools will be smaller than a section in area.

Further Information

Feel free to call me if you have any questions about this work. My direct line is 294 5562. I appreciate your business.

Sincerely,

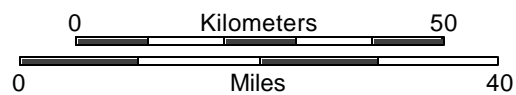
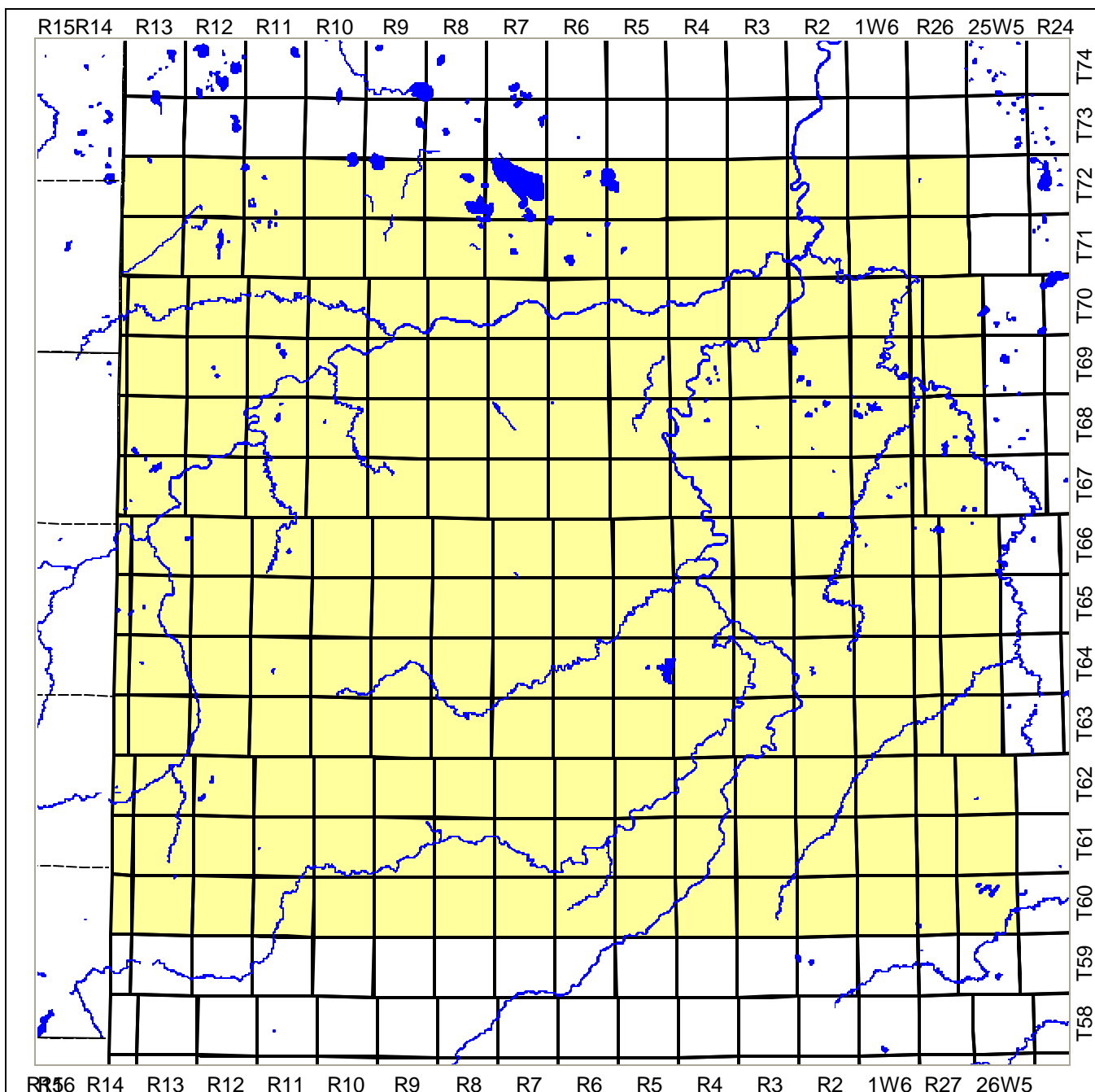
Original Signed by

Peter Sidey, P.Eng.
Associate

Original Signed by

John L. Chipperfield, P.Geol.
Vice-President, Geology

Attachment(s)
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Triangle Petroleum Corporation

FIGURE 1: DEEP BASIN, ALBERTA

Author: Sproule Associates Limited
 Project: 5608.pdp
 Map: Deep Basin
 Date: 5/16/2005

Figure 2: Deep Basin All Wells Data: Dec.1961-Mar.2005

Operator:

Field:

Zone:

Type: Gas

Group: Deep Basin All Wells

Production Cums

Oil: 126266 MSTB

Gas: 5.89258e+006 MMSCF

Water: 131952 MSTB

Cond: 856.624 MSTB

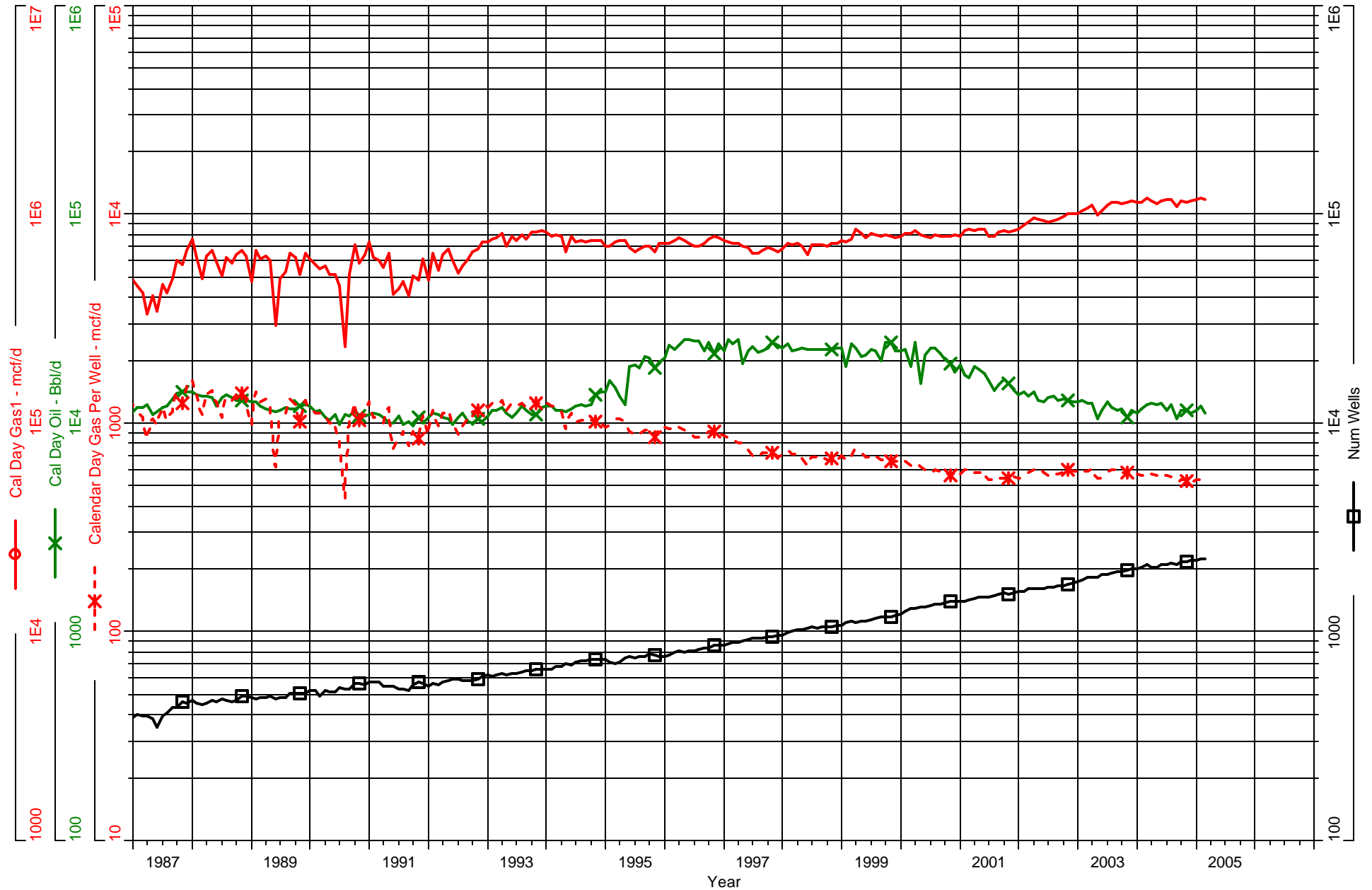


Figure 3: All Cadotte Wells in the Deep Basin Data: Jun.1972-Mar.2005

Operator:

Field:

Zone:

Type: Gas

Group: x Deep Basin Cadotte All Wells

Production Cums

Oil: 63.6562 MSTB

Gas: 242312 MMSCF

Water: 373.743 MSTB

Cond: 10.3134 MSTB

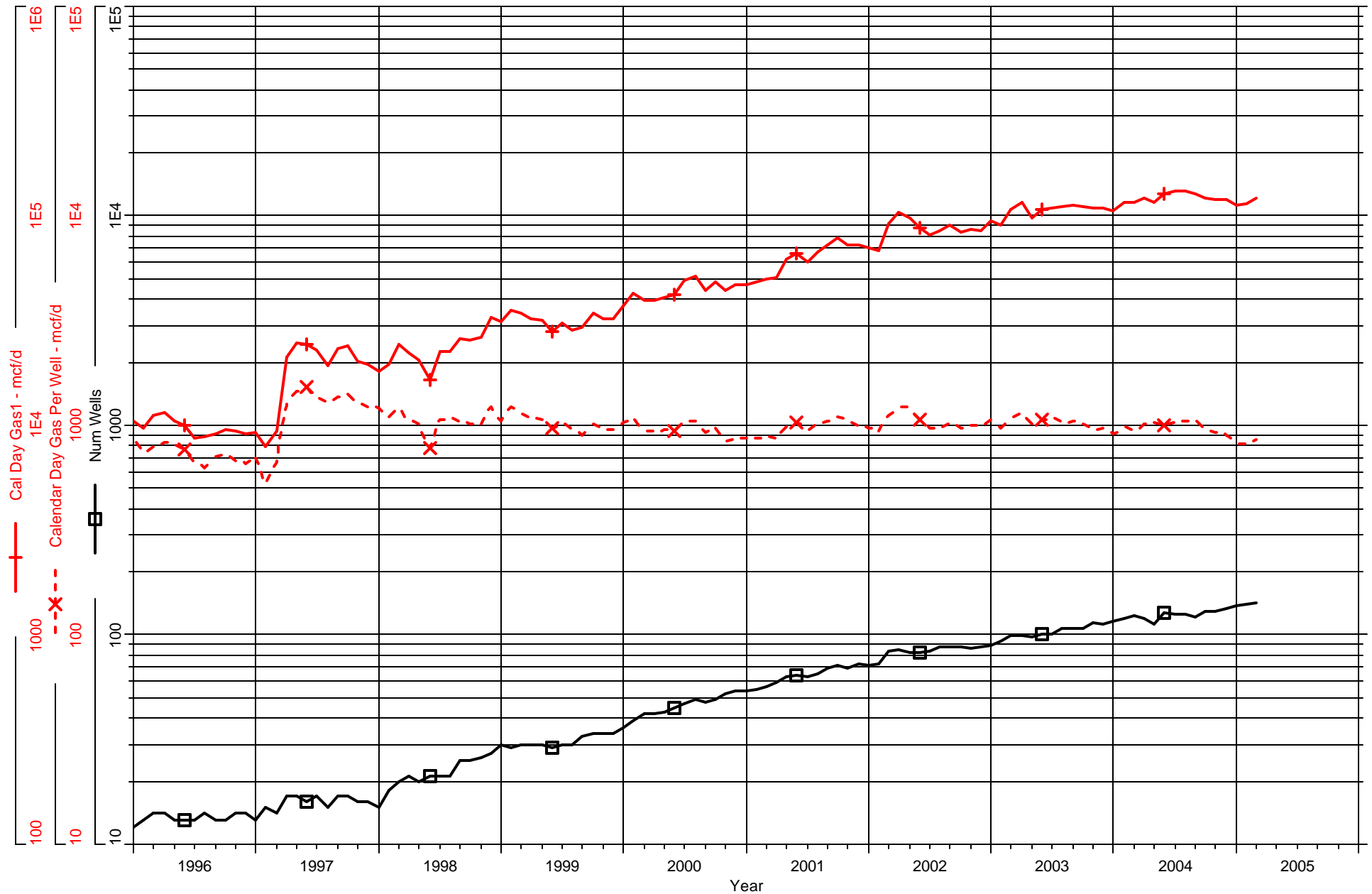


Figure 4: Estimates of Initial Production Rate and Ultimate Recoverable Raw Gas for Cadotte Wells
Average Values: Initial Rate, 2,492 Mcfd; Recoverable Raw Gas, 2,192 MMcf

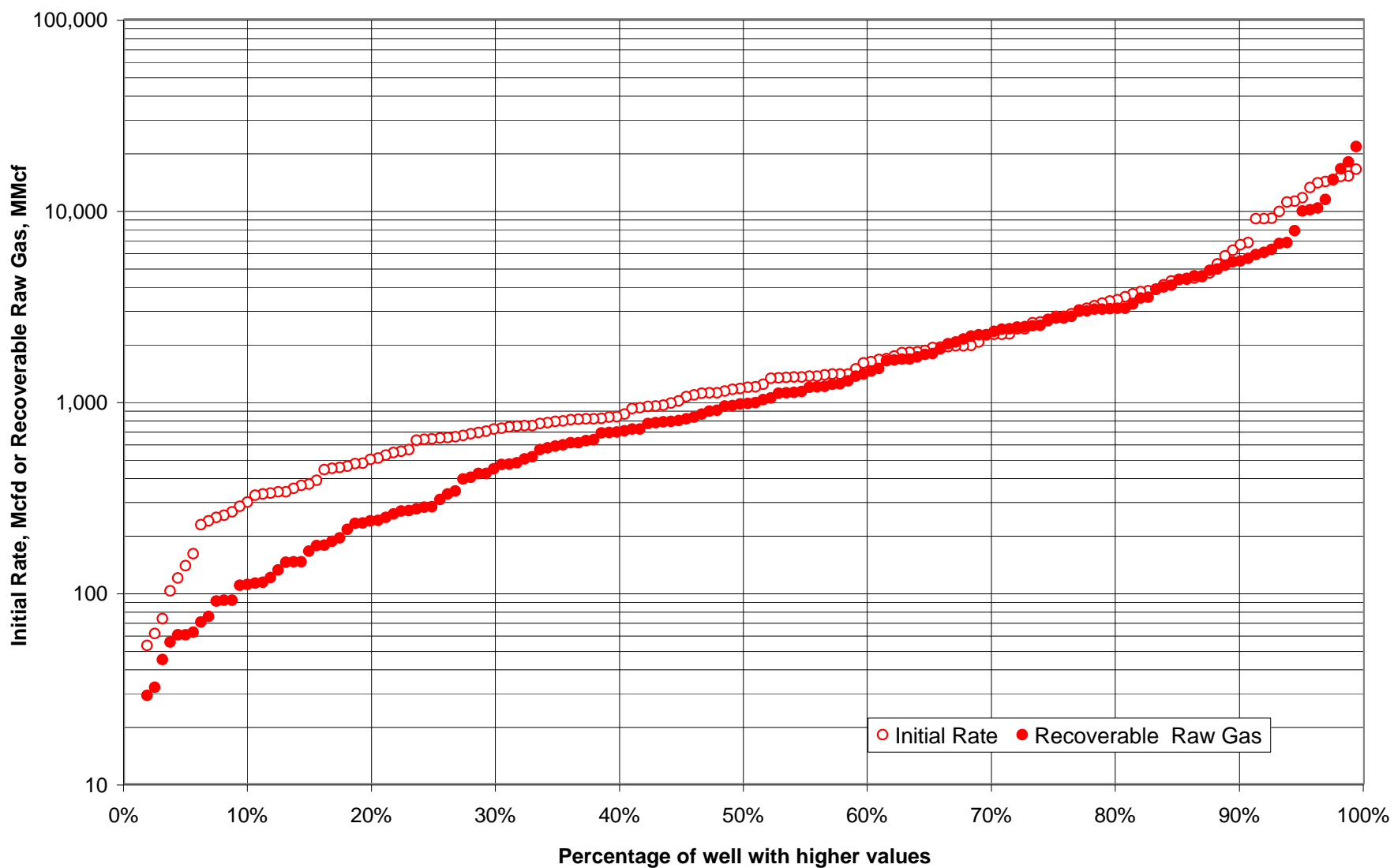


Figure 5: Estimates of Initial Raw Gas Production Rates of Cadotte Wells in the Deep Basin
Average Values: 2,510 Mcfd (Before 2000) and 2,636 Mcfd (2002 to 2004)

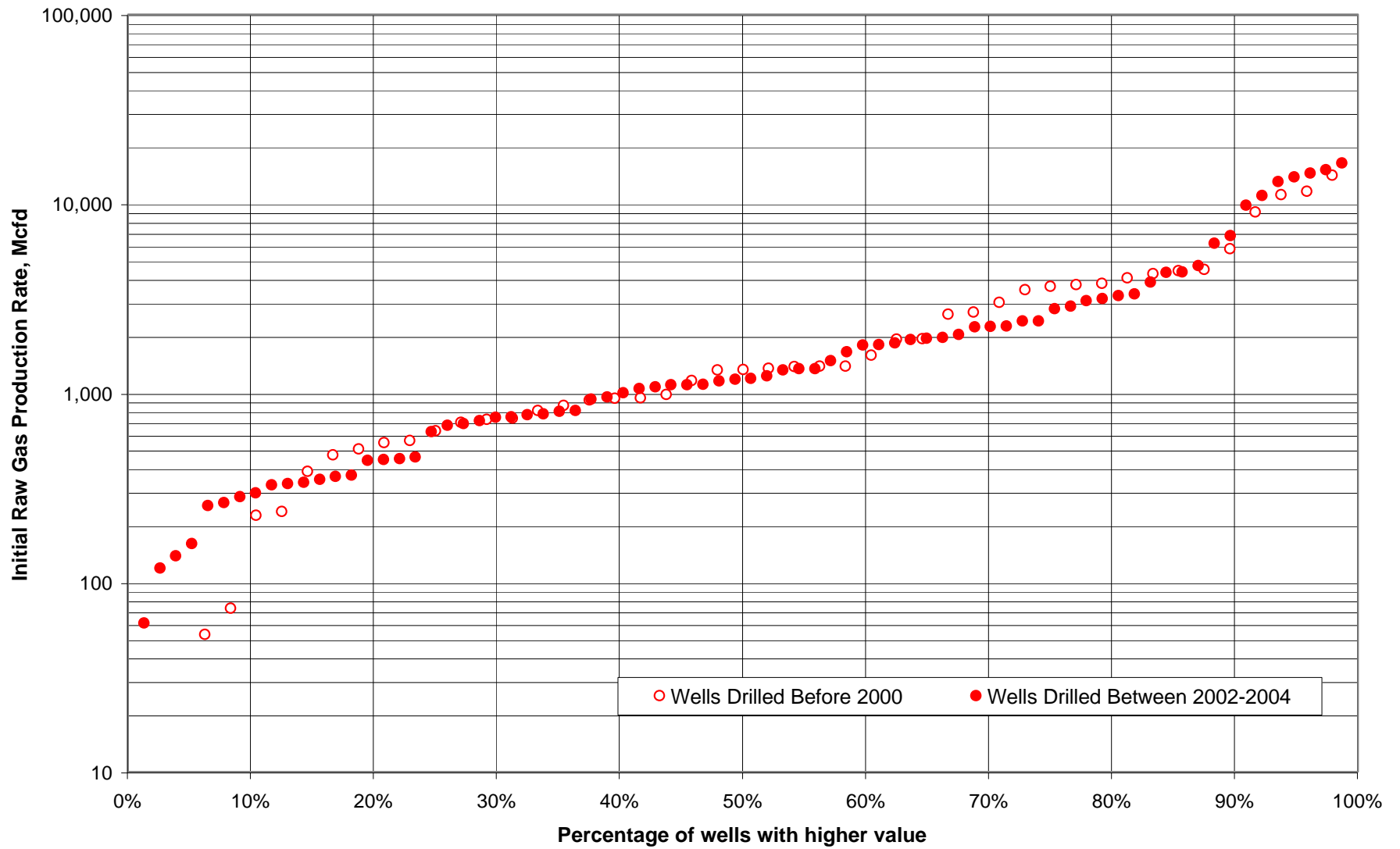
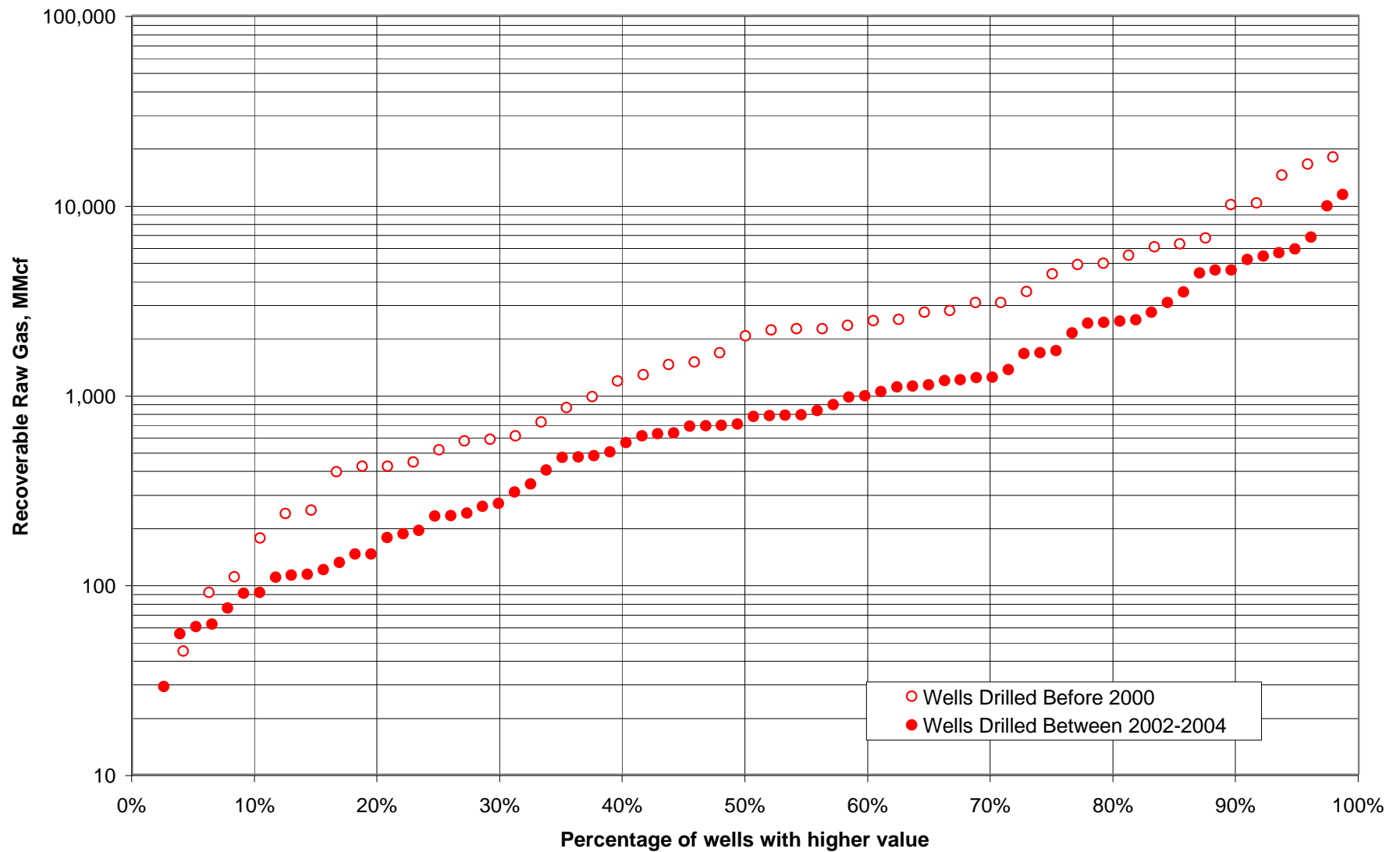
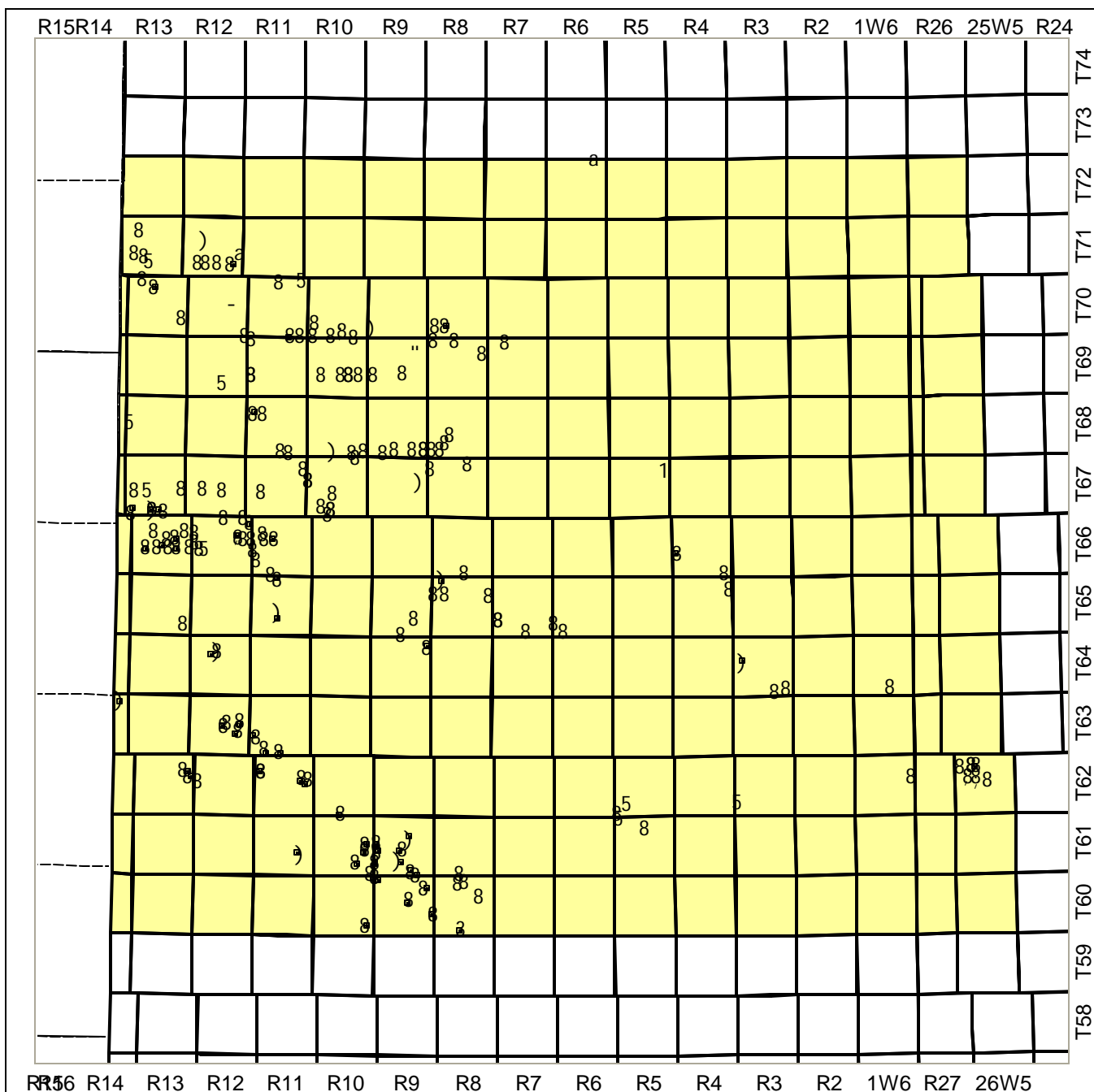


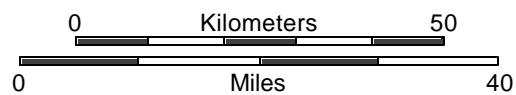
Figure 6: Estimates of Ultimate Recoverable Raw Gas from Cadotte Wells in the Deep Basin
Average Values: 3,256 MMcf (Before 2000) and 1,555 MMcf (2002 to 2004)





Well Symbols

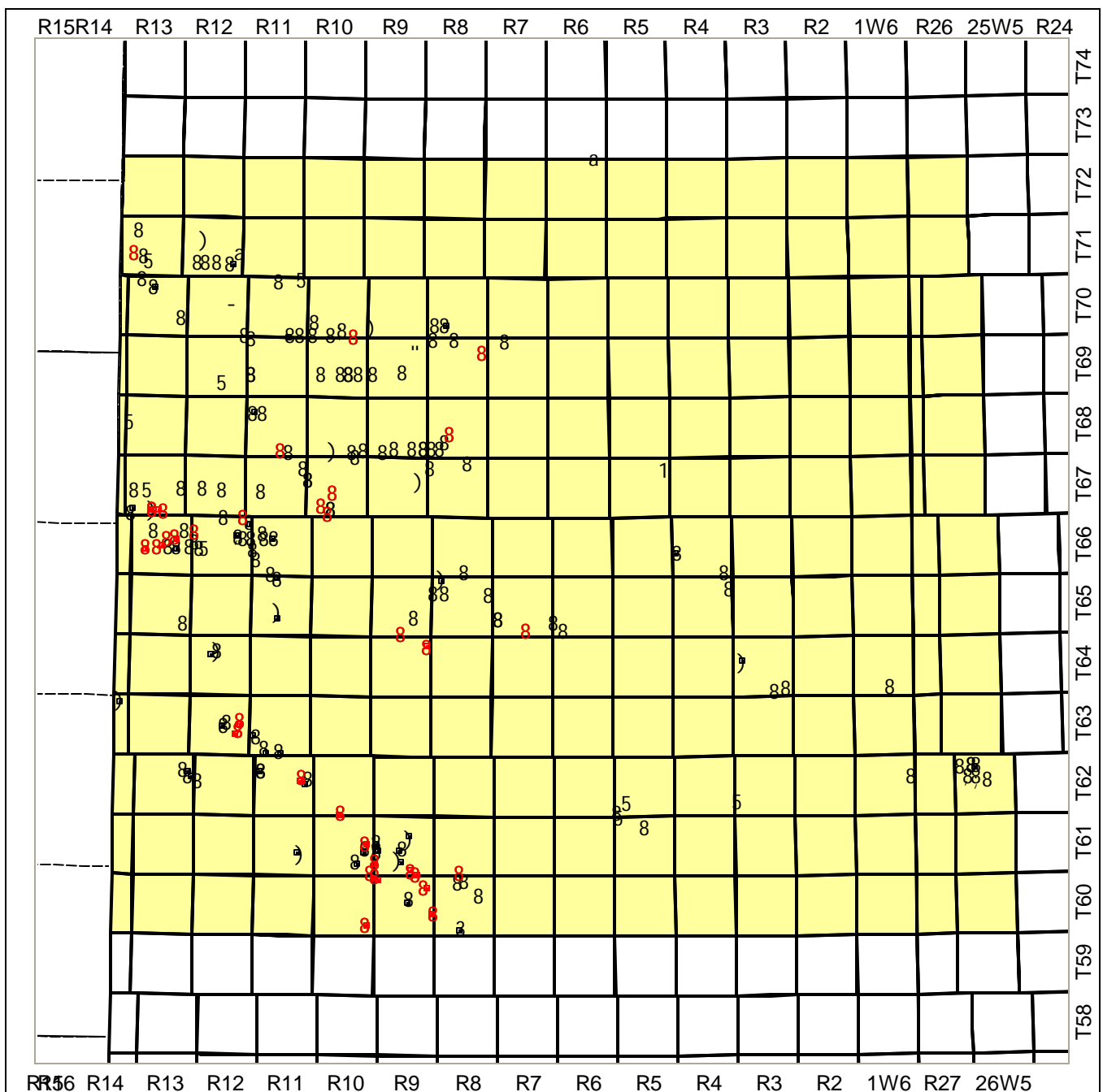
)	Location	+	Service
8	Gas Well	a	Injector
"	Oil Well	-	Suspend
#	Oil & Gas	1	Capped
%	Bitumen	3	D & A
)	Drilling	C	Abdn Oil&Gas



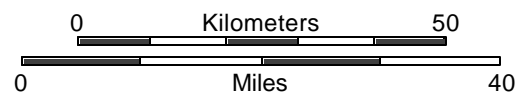
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FIGURE 7: CADOTTE WELLS

Author: Sproule Associates Limited
 Project: 15608.pdp
 Map: Deep Basin
 Date: 5/16/2005



Wells that began producing from the Cadotte after December 31, 2003 are shown in red.



Well Symbols

)	Location	+	Service
8	Gas Well	a	Injector
"	Oil Well	-	Suspend
#	Oil & Gas	1	Capped
%	Bitumen	3	D & A
C	Drilling	C	Abdn Oil&Gas

Triangle Petroleum Corporation

FIGURE 8: CADOTTE WELLS

Author: Sproule Associates Limited
 Project: 5608.pdp
 Map: Deep Basin
 Date: 5/16/2005

FIGURE 9: DEEP BASIN - CADOTTE - ULTIMATE RECOVERABLE RAW GAS

POOL SIZE DISTRIBUTION

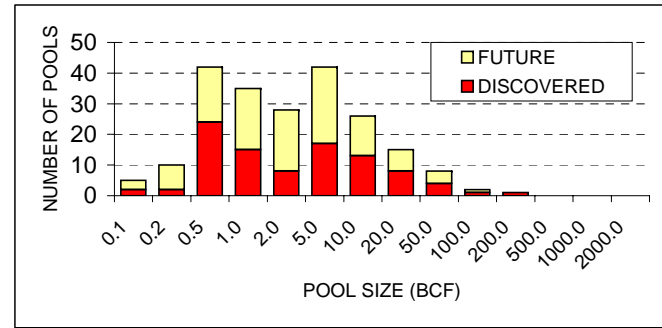
	ULTIMATE	DISCOVERED	FUTURE
GAS RESOURCES (BCF)	1,125	598	527
NUMBER OF POOLS	216	95	121
AVERAGE SIZE (BCF)	5	6	4
LARGEST POOL (BCF)	123	123	80
SMALLEST POOL (BCF)	0.00	0.00	0.02

SIZE (BCF)	ULTIMATE		DISCOVERED		FUTURE	
	NO.OF POOLS	POTENTIAL (BCF)	NO.OF POOLS	POTENTIAL (BCF)	NO.OF POOLS	POTENTIAL (BCF)
0.00						
0.01	0	0	0	0	0	0
0.02	0	0	0	0	0	0
0.05	2	0	0	0	2	0
0.1	5	0	2	0	3	0
0.2	10	1	2	0	8	1
0.5	42	15	24	9	18	6
1	35	26	15	11	20	15
2	28	39	8	10	20	29
5	42	132	17	54	25	78
10	26	186	13	95	13	91
20	15	213	8	114	7	99
50	8	252	4	125	4	128
100	2	138	1	58	1	80
200	1	123	1	123	0	0
500	0	0	0	0	0	0
1000	0	0	0	0	0	0
2000	0	0	0	0	0	0
5000	0	0	0	0	0	0
10000	0	0	0	0	0	0

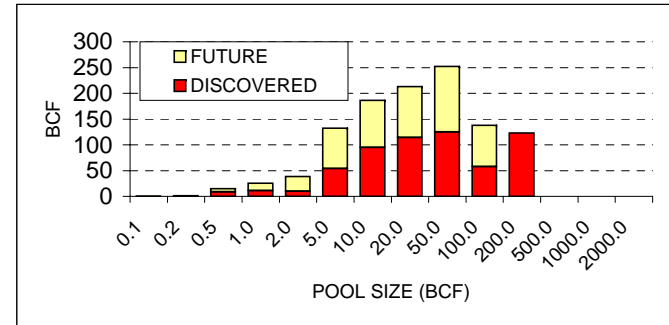
FUTURE POOLS	>5 BCF	>10 BCF	>20 BCF	>50 BCF
NUMBER	25	12	5	1
POTENTIAL (BCF)	398	306	208	80
PROBABILITY (%)	20.7%	9.9%	4.1%	0.8%
AVERAGE SIZE (BCF)	15.9	25.5	41.5	80.0

DISCOVERED POOLS	>5 BCF	>10 BCF	>20 BCF	>50 BCF
NUMBER	27	14	6	2
POTENTIAL (BCF)	515	420	305	181
PROBABILITY (%)	28.4%	14.7%	6.3%	2.1%
AVERAGE SIZE (BCF)	19.1	30.0	50.9	90.3

ULTIMATE POOL SIZE DISTRIBUTION



ULTIMATE RESOURCE DISTRIBUTION



ULTIMATE POOL RANK PLOT - TOP 20

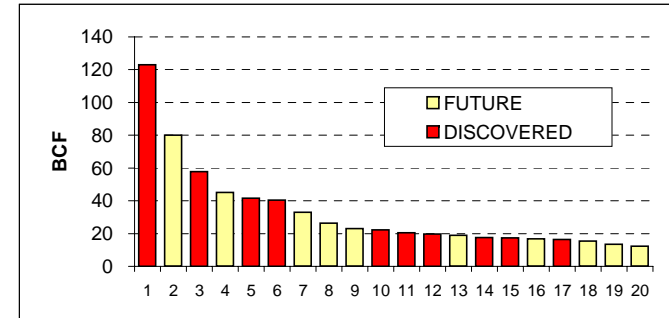


FIGURE 10: DEEP BASIN - CADOTTE DISCOVERED RECOVERABLE RAW GAS (BCF)

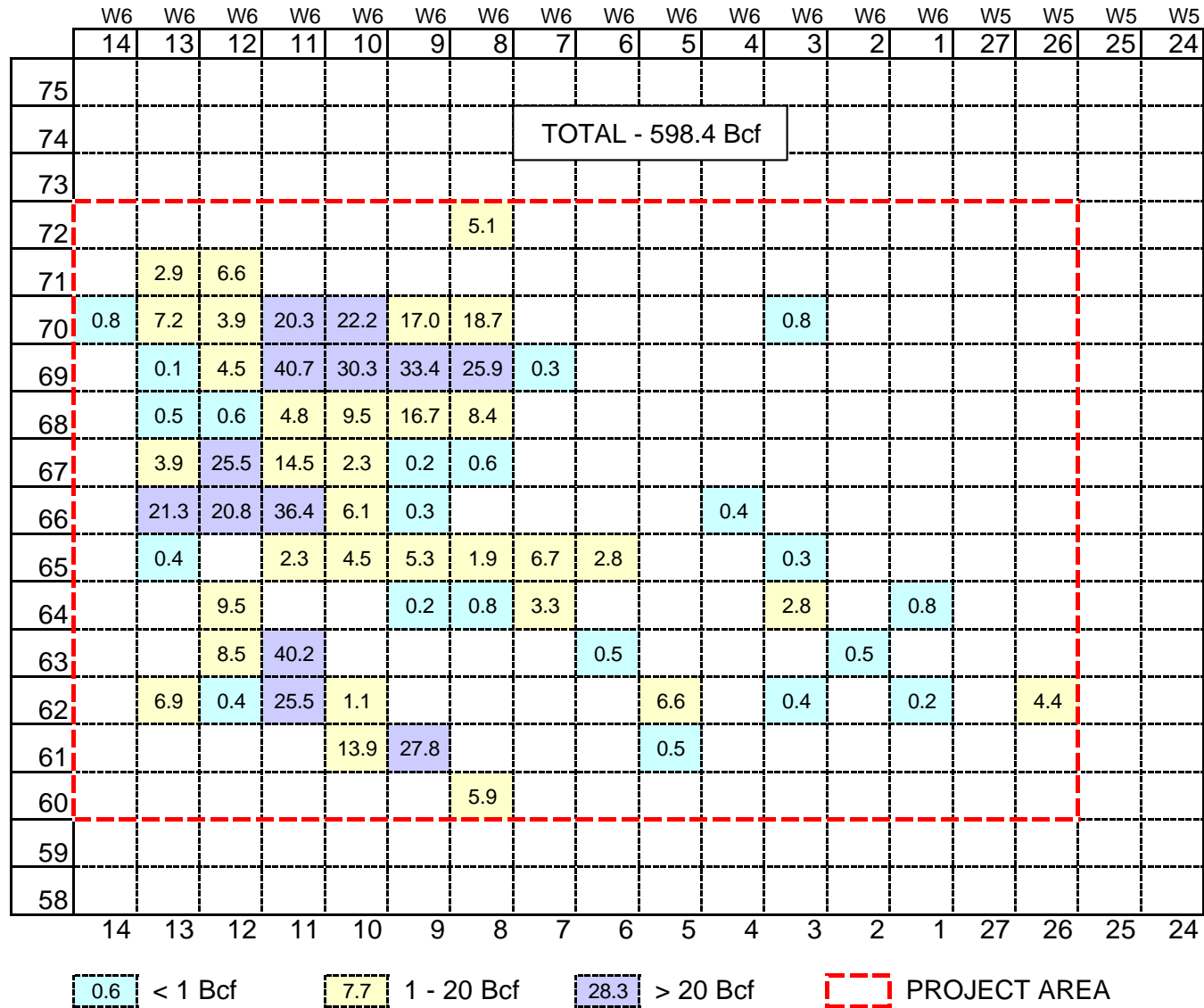


FIGURE 11: DEEP BASIN - CADOTTE RECOVERABLE RAW GAS PRODUCTION (BCF)

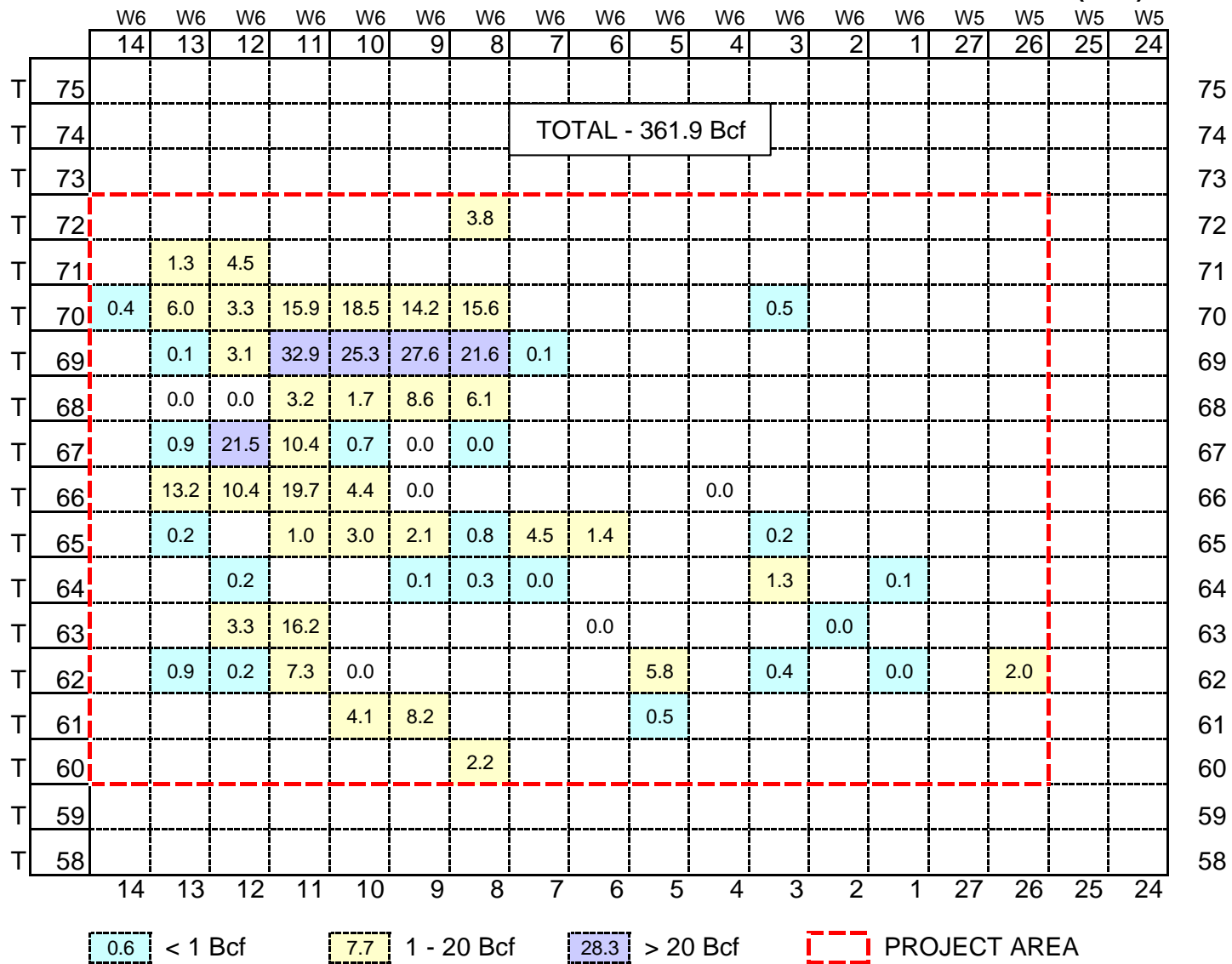


FIGURE 12: DEEP BASIN - CADOTTE REMAINING DISCOVERED RECOVERABLE RAW GAS (BCF)

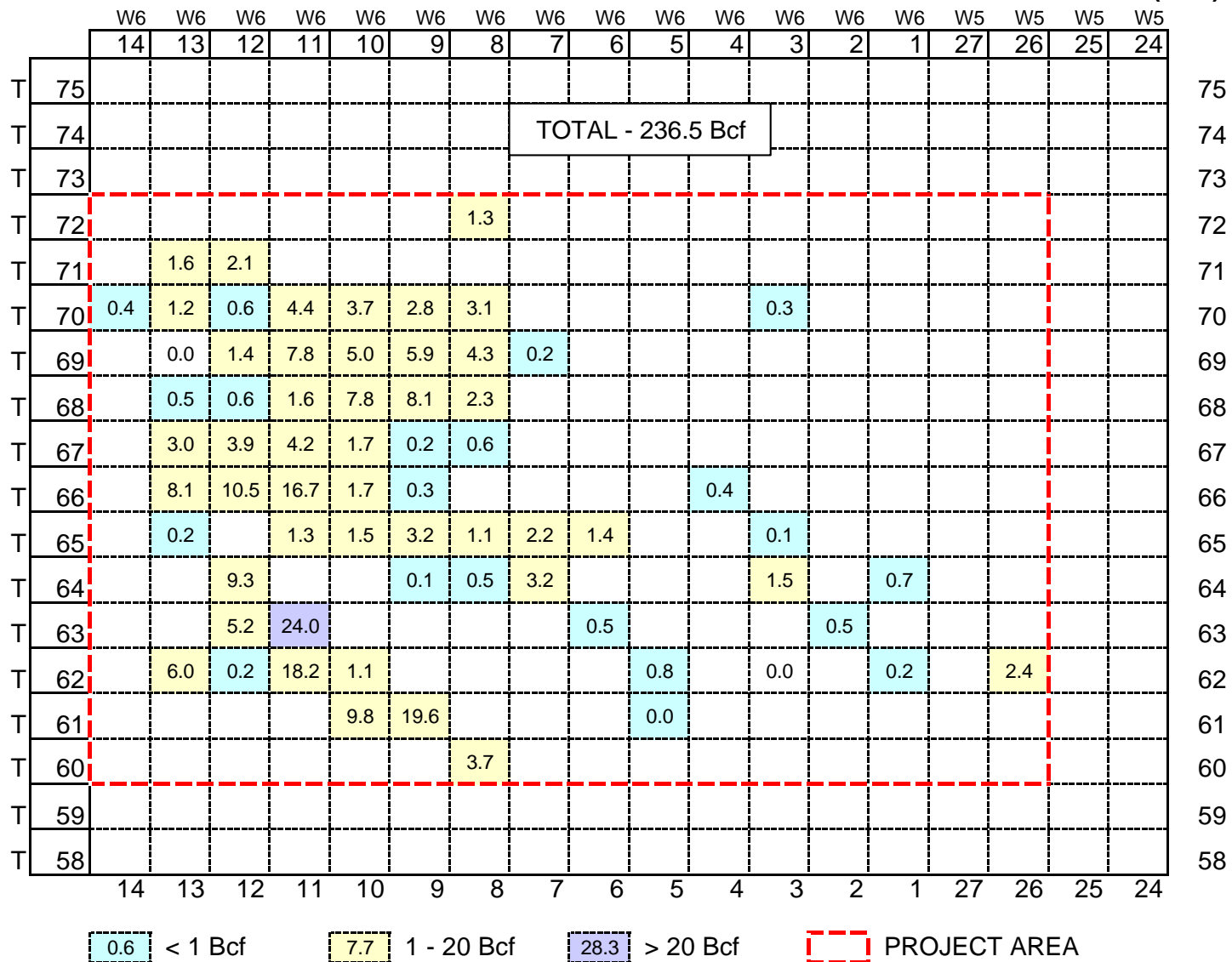


FIGURE 13: DEEP BASIN - CADOTTE UNDISCOVERED RAW RECOVERABLE GAS (BCF)

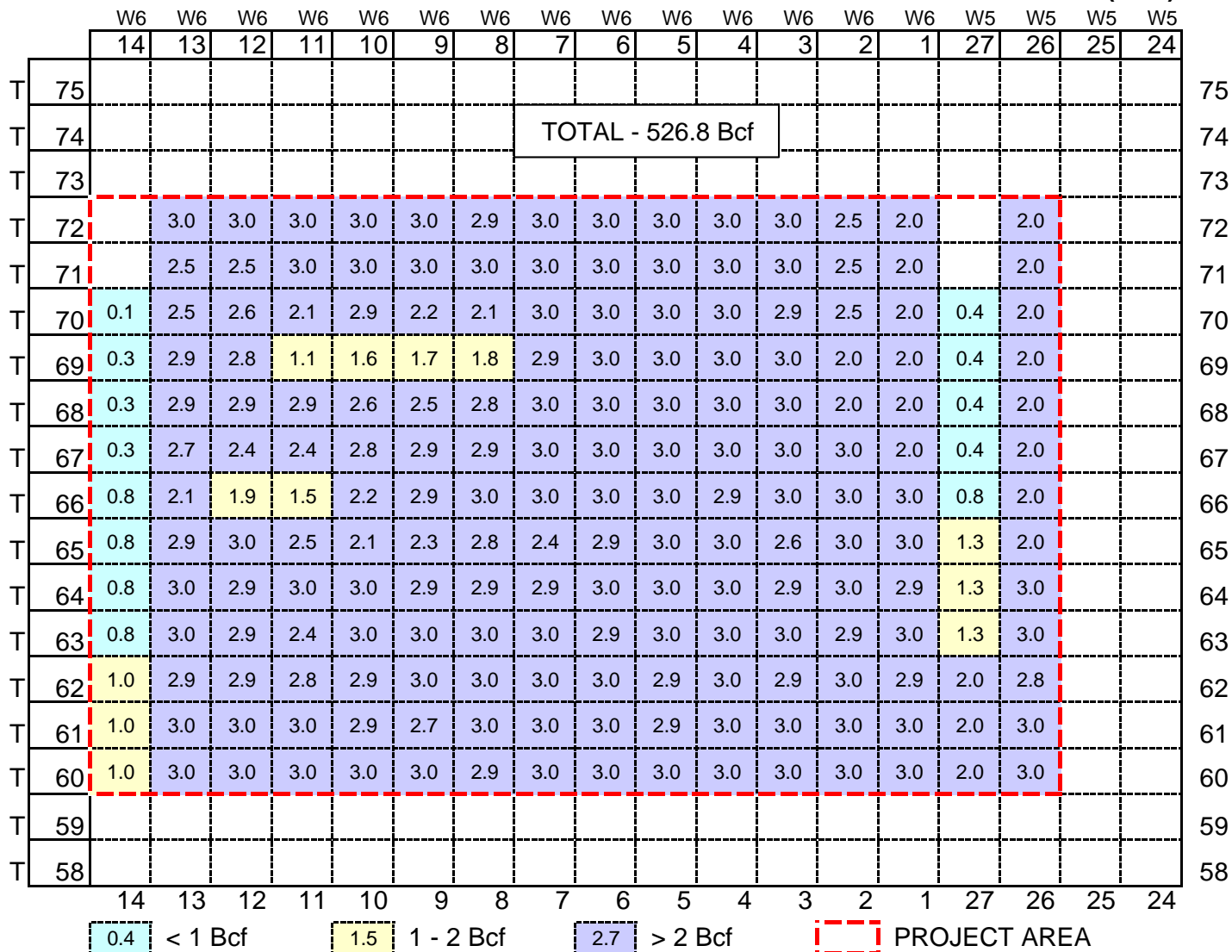


FIGURE 14: DEEP BASIN - CADOTTE REMAINING RECOVERABLE RAW GAS RESOURCE (BCF)

