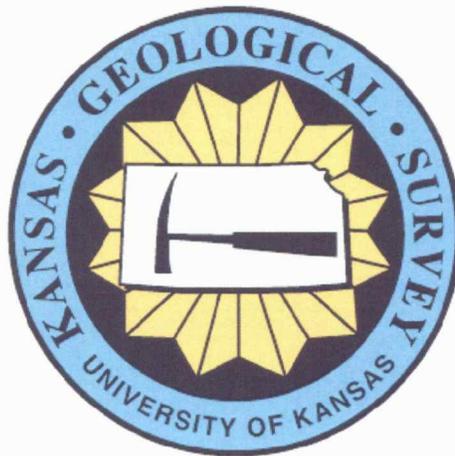


ANALYSIS OF PLEASANTON, MARMATON, AND CHEROKEE GROUP CORE
SAMPLES FOR GAS CONTENT -- OSBORN ENERGY #1-22 SMITH
(sec. 22-T.44N.-R.33W.), CASS COUNTY, MISSOURI

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SUMMARY

Fifteen three-inch diameter core samples from the Pennsylvanian Pleasanton, Marmaton, and Cherokee Groups were collected from the Osborn Energy Smith #1-22 in Sec. 22-T.44N.-R.33W. in Cass Co., MO over June 9th and 10th, 2002. The following gas contents were measured (not including residual gas), based on dry weight of the samples:

- 235' 0" to 236' 0" (South Mound Shale) (4.0 scf/ton)

- 320' 6" to 321' 6" (Lexington coal) (20.0 scf/ton)
- 321' 6" to 322' 6" (Lexington coal) (24.1 scf/ton)
- 322' 6" to 323' 6" (Lexington coal) (48.2 scf/ton)

- 370' 0" to 371' 0" (Mulky coal) (45.7 scf/ton)
- 371' 0" to 372' 0" (Mulky coal) (55.0 scf/ton)
- 372' 0" to 373' 0" (Mulky coal) (64.4 scf/ton)

- 490' 0" to 490' 6" (Croweburg coal) (49.7 scf/ton)

- 510' 0" to 511' 0" (Mineral coal) (48.2 scf/ton)

- 519' 7" to 520' 7" (Scammon coal) (98.6 scf/ton)

- 551' 0" to 552' 0" (Tebo coal) (73.0 scf/ton)
- 552' 0" to 553' 0" (Tebo coal) (105.4 scf/ton)¹

- 686' 4" to 687' 1" (upper Neutral coal) (103.1 scf/ton)
- 687' 1" to 687' 11" (upper Neutral coal) (88.8 scf/ton)
- 687' 11" to 688' 11" (upper Neutral coal) (105.1 scf/ton)

¹approximate gas content; desorption continuing

BACKGROUND

The Osborn Energy Smith #1-22 in Sec. 22-T.44N.-R.33W. (Cass Co., MO) was selected for desorption tests in association with an on-going coalbed gas research project at the Kansas Geological Survey. The samples (3-inch-diameter core) were gathered June 9th through 10th, 2002 by K. David Newell, Glen Gagnon, and Timothy R. Carr of the Kansas Geological Survey, with well site collection aided by Rex Ashlock (geologist for Osborn Energy) and Dean Seeber (consultant for Osborn Energy). Samples were obtained during wireline coring. The well was drilled a rig owned by Layne Christensen, Canada.

Bottom-hole times (i.e., the time the core sample was lifted from the bottom of the hole) and canistering times (i.e., the time the sample was placed in the desorption canister) were noted in order to determine lost gas and start of desorption. Approximate wet

weight of the sample was determined by subtraction of the weight of the empty canister from the weight of the canister with the sample in it, with compensation for formation water added to the canister. After the sample was removed from the canister, it was weighed again before air- or oven-drying, then weighed after drying. The weight loss due to drying is noted in the desorption table (Table 1).

Temperature baths for the desorption canisters were on site, with temperatures at 65 degrees F for all samples. The canistered samples were later transported to the laboratory at the Kansas Geological Survey in Lawrence, KS and desorption measurements were continued. Desorption measurements were periodically made until the canisters produced no more gas upon testing for at least two successive measurements.

DESORPTION MEASUREMENTS

The equipment and method for measuring desorption gas is that prescribed by McLennan and others (1995). The volumetric displacement apparatus is a set of connected dispensing burettes, one of which measures the gas evolved from the desorption canister. The other burette compensates for the compression that occurs when the desorbed gas displaces the water in the measuring burette. This compensation is performed by adjusting the cylinders so that their water levels are identical, then figuring the amount of gas that evolved by simply reading the difference in water level using the volumetric scale on the side of the burette.

The desorption canisters were both home-made (i.e., Brady canisters) and commercially obtained (i.e., all others). The former were made with 3"-diameter (7.5-cm) PVC pipe and plumbing materials available at hardware stores. These canisters were 15 inches (38 cm) in length and enclosed a volume of 108 cubic inches (1740 cm³). The commercial canisters were obtained from SSD, Inc. in Grand Junction, CO. The commercial canisters were approximately 12.5 inches in length (32 cm), 3 1/2 inches (9 cm) in diameter, and enclosed a volume of approximately 150 cubic inches (2450 cm³).

The desorbed gas that collected in the desorption canisters was periodically released into the volumetric displacement apparatus and measured as a function of time, temperature and atmospheric pressure.

The time and atmospheric pressure were measured in the field using a portable weather station. The atmospheric pressure was displayed in millibars on this instrument, and later correlated to atmospheric pressure (in psi) read from a pressure transducer in the Petrophysics Laboratory in the Kansas Geological Survey in Lawrence, Kansas.

A spreadsheet program written by K.D. Newell (Kansas Geological Survey) was used to convert all gas volumes to standard temperature and pressure. Conversion of gas volumes to standard temperature and pressure was by application of the perfect-gas equation, obtainable from basic college chemistry texts:

$$n = PV/RT$$

where n is moles of gas, T is degrees Kelvin (i.e., absolute temperature), V is in liters, and R is the universal gas constant, which has a numerical value depending on the units in which it is measured (for example, in the metric system $R = 0.0820$ liter atmosphere per degree mole). The number of moles of gas (i.e., the value n) is constant in a volumetric conversion, therefore the conversion equation, derived from the ideal gas equation, is:

$$(P_{stp} V_{stp}) / (RT_{stp}) = (P_{rig} V_{rig}) / (RT_{rig})$$

Customarily, standard temperature and pressure (STP) for gas volumetric measurements in the oil industry are 60 °F and 14.7 psi (see Dake, 1978, p. 13), therefore P_{stp} , V_{stp} , and T_{stp} , respectively, are pressure, volume and temperature at standard temperature and pressure, where standard temperature is degrees Rankine ($^{\circ}R = 460 + ^{\circ}F$). P_{rig} , V_{rig} , and T_{rig} , respectively, are ambient pressure, volume and temperature measurements taken at the rig site or in the desorption laboratory.

The universal gas constant R drops out as this equation is simplified and the determination of V_{stp} becomes:

$$V_{stp} = (T_{stp}/T_{rig}) (P_{rig}/P_{stp}) V_{rig}$$

The conversion calculations in the spreadsheet were carried out in the English metric system, as this is the customary measure system used in American coal and oil industry. V is therefore converted to cubic feet; P is psia; T is °R.

The desorbed gas was summed over the time period for which the coal samples evolved all of their gas. In the case of core samples from the Osborn Energy #1-6 well, the longest the sample is still evolving gas approximately 22 months after canistering.

Lost gas (i.e., the gas lost from the sample from the time it was drilled, brought to the surface, to the time it was canistered) was determined using the direct method (Kissel and others, 1975; also see McLennan and others, 1995, p. 6.1-6.14) in which the cumulative gas evolved is plotted against the square root of elapsed time. Time zero is assumed to be instant the core sample is lifted from the bottom of the hole. Characteristically, the cumulative gas evolved from the sample, when plotted against the square root of time, is linear for a short time period after the sample reaches ambient pressure conditions, therefore lost gas is determined by a line projected back to time zero. The period of linearity generally is about two hours for core samples.

LITHOLOGIC ANALYSIS

Upon removal from the canisters, the cores were washed of drilling mud, and either dried in an oven at 150 °F for 1 to 6 days, or air-dried for 2 to 3 weeks. After drying, the cores

were weighed again to obtain a dry-weight based gas content. Selected samples were sent for proximate analysis at Luman's Laboratories in Chetopa, KS, and also subjected to ashing at the Kansas Geological Survey. Density measurements were also made on each sample at the Kansas Geological Survey.

DATA PRESENTATION

Data and analyses accompanying this report are presented in the following order: 1) data tables for the desorption analyses, 2) lost-gas graphs, 3) desorption graph for all samples at a common scale.

Data Tables of the Desorption Analyses (Table 1)

These are the basic data used for lost-gas analysis and determination of total gas desorbed from the core samples. Basic temperature, volume, and barometric measurements are listed at left. Farther to the right, these are converted to standard temperature, pressure and volumes. The volumes are cumulatively summed, and converted to scf/ton based on the total weight of coal (or) dark shale in the sample. At the right of the table, the time of the measurements are listed and converted to hours (and square root of hours) since the sample was drilled.

Lost-Gas Graphs (Figures 1-15)

Gas lost prior to the canistering of the sample was estimated by extrapolation of the first few data points after the sample was canistered. The linear characteristic of the initial desorption measurements was usually lost within the first two hours after canistering, thus data are presented in the lost-gas graphs for only up to 9 hours after canistering. Lost-gas volumes derived from this analysis are incorporated in the data tables described above.

Desorption Graph (Figure 16)

This is the desorption graph (gas content per weight vs. square root of time) for all the samples.

Isotopic Analysis (Figure 17)

This figure compares the results of the isotopic and compositional analyses to other conventionally-produced gases in eastern Kansas.

Appendix 1

These are photocopies of the results of the Luman's Laboratories proximate analyses.

Appendix 2

This is a photocopy of the results of the Isotech Laboratories compositional and isotopic analysis.

RESULTS and DISCUSSION

Of the fifteen samples saved for long-term desorption measurements, the following gas contents were calculated:

- 235' 0" to 236' 0" (South Mound Shale) (4.0 scf/ton)
- 320' 6" to 321' 6" (Lexington coal) (20.0 scf/ton)
- 321' 6" to 322' 6" (Lexington coal) (24.1 scf/ton)
- 322' 6" to 323' 6" (Lexington coal) (48.2 scf/ton)
- 370' 0" to 371' 0" (Mulky coal) (45.7 scf/ton)
- 371' 0" to 372' 0" (Mulky coal) (55.0 scf/ton)
- 372' 0" to 373' 0" (Mulky coal) (64.4 scf/ton)
- 490' 0" to 490' 6" (Croweburg coal) (49.7 scf/ton)
- 510' 0" to 511' 0" (Mineral coal) (48.2 scf/ton)
- 519' 7" to 520' 7" (Scammon coal) (98.6 scf/ton)
- 551' 0" to 552' 0" (Tebo coal) (73.0 scf/ton)
- 552' 0" to 553' 0" (Tebo coal) (105.4 scf/ton)¹
- 686' 4" to 687' 1" (upper Neutral coal) (103.1 scf/ton)
- 687' 1" to 687' 11" (upper Neutral coal) (88.8 scf/ton)
- 687' 11" to 688' 11" (upper Neutral coal) (105.1 scf/ton)

¹approximate gas content; desorption continuing

Proximate analyses were made for selected coals. The core was cut down its vertical axis and half was preserved for future analyses. The proximate analyses were performed on the following samples by Luman's Laboratory (see Appendix 1):

Luman's Lab proximate analysis:

<i>unit</i>	<i>top depth</i>	<i>moisture</i>	<i>ash</i>	<i>moisture-free ash</i>
Lexington	321' 6"	3.62%	48.52%	50.34%
Mulky	370' 0"	2.62%	16.03%	16.46%
Mineral	510' 0"	2.30%	53.62%	54.88%
Tebo	551' 0"	5.45%	30.66%	32.43%
upper Neutral	687' 11"	3.78%	13.50%	14.03%

According to the BTU/lb. (dry, ash-free) determinations, all the samples can be classified as high-volatile bituminous coal.

Simple ashing of the samples at the Kansas Geological Survey was carried out in a muffle furnace in which the samples, each weighing approximately 1.5 grams, were first subjected to 110 °C heating until their weight stabilized. This first firing approximates moisture content. A second firing at 750 °C for three to four days essentially ashed the

sample. Two crucibles of sample were utilized for both the 110 °C and 750 °C firings. Each crucible was filled with approximately 1.5 grams of pulverized material (i.e., < 0.0460" sieve size). Results were accepted if the difference in weight loss for each sample was less than 2%.

KGS ashing experiments:

<i>unit</i>	<i>top depth</i>	<i>moisture</i>	<i>ash</i>	<i>moisture-free ash</i>
South Mound Sh.	235' 0"	1.15%	74.77%	75.64%
Lexington	320' 6"	1.66%	38.40%	39.05%
Lexington	321' 6"	1.15%	54.63%	55.27%
Lexington	322' 6"	0.88%	64.99%	65.57%
Mulky	370' 0"	1.27%	25.60%	25.93%
Mulky	371' 0"	1.38%	15.20%	15.41%
Mulky	372' 0"	0.48%	13.62%	13.69%
Croweburg	490' 0"	1.21%	18.17%	18.39%
Mineral	510' 0"	0.44%	14.96%	15.03%
Scammon	519' 7"	0.56%	13.55%	13.63%
Tebo	551' 0"	3.40%	11.75%	12.16%
Upper Neutral	686' 4"	2.19%	21.63%	22.11%
Upper Neutral	687' 1"	1.59%	10.47%	10.64%
Upper Neutral	687' 11"	1.93%	7.90%	8.05%

Using the equation from McLennan and others (1995):

$$G_c = G_{pc} (1 - a_d)$$

where:

G_c = gas content, scf/ton

G_{pc} = "pure coal", gas content, scf/ton

a_d = dry ash content, weight fraction

the gas content of the samples converts to:

KGS ashing experiments:

<i>unit</i>	<i>depth</i>	<i>moisture-free ash</i>	G_c	G_{pc}
South Mound Sh.	235' 0"	75.64%	4.0 scf/tn	16.2 scf/tn
Lexington	320' 6"	39.05%	20.0 scf/tn	32.8 scf/tn
Lexington	321' 6"	55.27%	24.1 scf/tn	53.9 scf/tn
Lexington	322' 6"	65.57%	48.2 scf/tn	140.0 scf/tn
Mulky	370' 0"	25.93%	45.7 scf/tn	61.7 scf/tn
Mulky	371' 0"	15.41%	55.0 scf/tn	65.0 scf/tn
Mulky	372' 0"	13.69%	64.4 scf/tn	74.6 scf/tn
Croweburg	490' 0"	18.39%	49.7 scf/tn	60.9 scf/tn
Mineral	510' 0"	15.03%	48.2 scf/tn	56.7 scf/tn
Scammon	519' 7"	13.63%	98.6 scf/tn	114.2 scf/tn
Tebo	551' 0"	12.16%	73.0 scf/tn	83.1 scf/tn

Upper Neutral	686' 4"	22.11%	103.1 scf/tn	132.4 scf/tn
Upper Neutral	687' 1"	10.64%	88.8 scf/tn	99.4 scf/tn
Upper Neutral	687' 11"	8.05%	105.1 scf/tn	114.3 scf/tn

Luman's Lab proximate analysis:

<i>unit</i>	<i>top depth</i>	<i>moisture-free ash</i>	G_c	G_{pc}
Lexington	321' 6"	50.34%	24.1 scf/ton	48.5 scf/ton
Mulky	370' 0"	16.46%	45.7 scf/ton	54.7 scf/ton
Mineral	510' 0"	54.88%	48.2 scf/ton	106.8 scf/ton
Tebo	551' 0"	32.43%	73.0 scf/ton	108.0 scf/ton
upper Neutral	687' 11"	14.03%	105.1 scf/ton	122.3 scf/ton

A series of density measurements were made on each sample. These measurements are based on the dry weight of the sample. The volumetric measure was made by weighing the water displaced out of a beaker by immersion of the sample, with 3 repetitions. The range between the maximum and minimum volume is taken to be the uncertainty in the measurement. This uncertainty is both added (+) and subtracted (-) from the average density. The beaker could only take about a 4" sample of core, so the process was repeated as many times as was necessary to test the entire sample.

KGS density measurements:

<i>unit</i>	<i>top depth</i>	<i>density (g/cc)</i>
South Mound Sh.	235' 0"	2.05 ± 0.05 g/cc
Lexington	320' 6"	1.95 ± 0.03 g/c
Lexington	321' 6"	1.60 ± 0.03 g/c
Lexington	322' 6"	1.62 ± 0.01 g/c
Mulky	370' 0"	1.27 ± 0.02 g/c
Mulky	371' 0"	1.34 ± 0.02 g/c
Mulky	372' 0"	1.28 ± 0.03 g/c
Croweburg	490' 0"	1.20 ± 0.02 g/c
Mineral	510' 0"	1.36 ± 0.03 g/c
Scammon	519' 7"	1.48 ± 0.03 g/c
Tebo	551' 0"	1.48 ± 0.03 g/c
upper Neutral	686' 4"	1.37 ± 0.03 g/c
upper Neutral	687' 1"	1.27 ± 0.03 g/c
upper Neutral	687' 11"	1.50 ± 0.10 g/c

The compositional and isotopic analysis of the Tebo and upper Neutral (combined gas samples) coal desorption gas indicates that this gas has both microbial and thermogenic components (Figure 17). Heating value for the Tebo and upper Neutral combined gas sample is 868 BTU/scf.

REFERENCES

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- Kissel, F.N., McCulloch, C.M., and Elder, C.H., 1975, The direct method of determining methane content of coals for ventilation design: U.S. Bureau of Mines, Report of Investigations, RI7767.
- McLennan, J.D., Schafer, P.S., and Pratt, T.J., 1995, A guide to determining coalbed gas content: Gas Research Institute, Chicago, IL, Reference No. GRI-94/0396, 180 p.

FIGURES and TABLES

TABLE 1. Desorption measurements for samples.

- FIGURE 1. Lost-gas graph for 235' 0" to 236' 0" (South Mound Shale)
- FIGURE 2. Lost-gas graph for 320' 6" to 321' 6" (Lexington coal)
- FIGURE 3. Lost-gas graph for 321' 6" to 322' 6" (Lexington coal)
- FIGURE 4. Lost-gas graph for 322' 6" to 323' 6" (Lexington coal)
- FIGURE 5. Lost-gas graph for 370' 0" to 371' 0" (Mulky coal)
- FIGURE 6. Lost-gas graph for 371' 0" to 372' 0" (Mulky coal)
- FIGURE 7. Lost-gas graph for 372' 0" to 373' 0" (Mulky coal)
- FIGURE 8. Lost-gas graph for 490' 0" to 490' 6" (Croweburg coal)
- FIGURE 9. Lost-gas graph for 510' 0" to 511' 0" (Mineral coal)
- FIGURE 10. Lost-gas graph for 519' 7" to 520' 7" (Scammon coal)
- FIGURE 11. Lost-gas graph for 551' 0" to 552' 0" (Tebo coal)
- FIGURE 12. Lost-gas graph for 552' 0" to 553' 0" (Tebo coal)
- FIGURE 13. Lost-gas graph for 686' 4" to 687' 1" (upper Neutral coal)
- FIGURE 14. Lost-gas graph for 687' 1" to 687' 11" (upper Neutral coal)
- FIGURE 15. Lost-gas graph for 687' 11" to 688' 11" (upper Neutral coal)

FIGURE 16. Desorption graph for all samples.

FIGURE 17. Compositional and isotopic analyses for combined Tebo and Upper Neutral sample compared to conventional gases from eastern Kansas.

APPENDIX 1. Proximate analyses performed to date by Luman's Laboratory.

APPENDIX 2. Compositional and isotopic analysis performed by Isotech Laboratories.

TABLE 1 -- Osborn Energy Smith #1-22 (sec. 22-T.44N.-R.33W., Cass Co., MO) desorption table

SAMPLE: 235' 0" to 236' 0" (South Mound Shale) in Brady #27 canister		lbs.		grams		moisture weight		est. lost gas (cc) =		TIME OF:			elapsed time (off bottom to canistering)			
dry sample weight:		5.8940 2673.49		wet sample weight:		6.0710 2753.76 2.9%		12		off bottom	at surface	in canister	10.0 minutes			
										6/9/02 18:35	6/9/02 18:37	6/9/02 18:45	0.167 hours			
RIGILAB MEASUREMENTS		CONVERSION OF RIGILAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)				CUMULATIVE VOLUMES		SCF/TON	SCF/TON	TIME SINCE			0.408248290 SQR T (hrs)			
measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SQR T hrs. (since off bottom)		
3	88	1077	0.00011	548	13.979	9.56004E-05	2.71	9.56004E-05	2.71	0.03	0.18	6/9/02 18:50	0:15:00	0:13:00	0:05:00	0.5
2	91	1077	7.1E-05	551	13.979	6.33866E-05	1.79	0.000158987	4.50	0.05	0.20	6/9/02 18:55	0:20:00	0:18:00	0:10:00	0.577350269
1	91.2	1077	3.5E-05	551.2	13.979	3.16818E-05	0.90	0.000190669	5.40	0.06	0.21	6/9/02 19:00	0:25:00	0:23:00	0:15:00	0.645497224
2	88.7	1077	7.1E-05	548.7	13.979	6.36523E-05	1.80	0.000254321	7.20	0.09	0.23	6/9/02 19:05	0:30:00	0:28:00	0:20:00	0.707106781
2	87.6	1077	7.1E-05	547.6	13.979	6.37801E-05	1.81	0.000318101	9.01	0.11	0.25	6/9/02 19:10	0:35:00	0:33:00	0:25:00	0.763762616
4	82	1077	0.00014	542	13.979	0.000128878	3.65	0.000446979	12.66	0.15	0.30	6/9/02 19:20	0:45:00	0:43:00	0:35:00	0.866025404
3	79	1077	0.00011	539	13.979	9.71967E-05	2.75	0.000544176	15.41	0.18	0.33	6/9/02 19:30	0:55:00	0:53:00	0:45:00	0.957427108
3.5	77.9	1077	0.00012	537.9	13.979	0.000113628	3.22	0.000657804	18.63	0.22	0.37	6/9/02 19:40	1:05:00	1:03:00	0:55:00	1.040833
4	78.4	1077	0.00014	538.4	13.979	0.00012974	3.67	0.000787544	22.30	0.27	0.41	6/9/02 19:50	1:15:00	1:13:00	1:05:00	1.118033989
1	78.8	1077	3.5E-05	538.8	13.979	3.24109E-05	0.92	0.000819955	23.22	0.28	0.42	6/9/02 20:00	1:25:00	1:23:00	1:15:00	1.190238071
7	76.5	1077	0.00025	536.5	13.979	0.000227849	6.45	0.001047804	29.67	0.36	0.50	6/9/02 20:20	1:45:00	1:43:00	1:35:00	1.322875656
4	75.7	1077	0.00014	535.7	13.979	0.000130394	3.69	0.001178198	33.36	0.40	0.54	6/9/02 20:40	2:05:00	2:03:00	1:55:00	1.443375673
3	75	1077	0.00011	535	13.979	9.79234E-05	2.77	0.001276121	36.14	0.43	0.58	6/9/02 21:00	2:25:00	2:23:00	2:15:00	1.554563176
3.5	74.7	1077	0.00012	534.7	13.979	0.000114308	3.24	0.001390429	39.37	0.47	0.62	6/9/02 21:20	2:45:00	2:43:00	2:35:00	1.658312395
1.5	74.7	1077	5.3E-05	534.7	13.979	4.89892E-05	1.39	0.001439419	40.76	0.49	0.63	6/9/02 21:40	3:05:00	3:03:00	2:55:00	1.755942292
25	74.7	1077	0.00088	534.7	13.979	0.000816486	23.12	0.002255905	63.88	0.77	0.91	6/10/02 1:35	7:00:00	6:58:00	6:50:00	2.645751311
2	73.9	1077	7.1E-05	533.9	13.979	6.54168E-05	1.85	0.002321321	65.73	0.79	0.93	6/10/02 2:33	7:58:00	7:56:00	7:48:00	2.825228417
8	73.2	1077	0.00028	533.2	13.979	0.000262011	7.42	0.002583332	73.15	0.88	1.02	6/10/02 4:13	9:38:00	9:36:00	9:28:00	3.103761159
5	72.9	1076	0.00018	532.9	13.968	0.000163697	4.64	0.002747028	77.79	0.93	1.08	6/10/02 6:31	11:56:00	11:54:00	11:46:00	3.454465709
14	78.4	1076	0.00049	538.4	13.968	0.000453668	12.85	0.003200697	90.63	1.09	1.23	6/10/02 10:57	16:22:00	16:20:00	16:12:00	4.045573713
31	72	1075	0.00109	532	13.953	0.001015691	28.76	0.004216388	119.39	1.43	1.57	6/10/02 18:18	23:43:00	23:41:00	23:33:00	4.869976044
0	64	1077	0	524	13.979	0	0.00	0.004216388	119.39	1.43	1.57	6/11/02 10:24	39:49:00	39:47:00	39:39:00	6.310044902
13	63	1078	0.00046	523	13.992	0.000434474	12.30	0.004650862	131.70	1.58	1.72	6/12/02 11:10	64:35:00	64:33:00	64:25:00	8.036375634
13	63.5	1080	0.00046	523.5	14.018	0.000434864	12.31	0.005085726	144.01	1.73	1.87	6/13/02 8:56	86:21:00	86:19:00	86:11:00	9.29247007
9	63.5	1081	0.00032	523.5	14.031	0.000301339	8.53	0.005387065	152.54	1.83	1.97	6/14/02 19:54	121:19:00	121:17:00	121:09:00	11.01438453
12	63	1079	0.00042	523	14.005	0.000401425	11.37	0.005788489	163.91	1.96	2.11	6/15/02 18:28	143:53:00	143:51:00	143:43:00	11.9951379
14	63	1081	0.00049	523	14.031	0.000469197	13.29	0.006257686	177.20	2.12	2.27	6/17/02 11:15	184:40:00	184:38:00	184:30:00	13.58921141
4	63.5	1081	0.00014	523.5	14.031	0.000133928	3.79	0.006391615	180.99	2.17	2.31	6/19/02 16:22	237:47:00	237:45:00	237:37:00	15.42022481
6	63.5	1089	0.00021	523.5	14.135	0.000202379	5.73	0.006593994	186.72	2.24	2.38	6/20/02 15:42	261:07:00	261:05:00	260:57:00	16.15910476
16	64	1084	0.00057	524	14.070	0.000536687	15.20	0.007130681	201.92	2.42	2.56	6/25/02 14:18	379:43:00	379:41:00	379:33:00	19.48631999
14	64	1078	0.00049	524	13.992	0.000467002	13.22	0.007597683	215.14	2.58	2.72	6/27/02 19:01	432:26:00	432:24:00	432:16:00	20.79503146
11	65	1084	0.00039	525	14.070	0.00038827	10.43	0.007965953	225.57	2.70	2.85	6/30/02 19:51	505:16:00	505:14:00	505:06:00	22.47813753
7	64.5	1086	0.00025	524.5	14.096	0.00023501	6.85	0.008200962	232.22	2.78	2.93	7/2/02 16:46	550:11:00	550:09:00	550:01:00	23.45598715
8	62.5	1086	0.00028	522.5	14.096	0.00026961	7.63	0.008470573	239.86	2.87	3.02	7/7/02 21:05	674:30:00	674:28:00	674:20:00	25.97113783
12	63	1082	0.00042	523	14.044	0.000402541	11.40	0.008873113	251.26	3.01	3.15	7/11/02 18:02	767:27:00	767:25:00	767:17:00	27.70288794
7	63	1083	0.00025	523	14.057	0.000235033	6.66	0.009108146	257.91	3.09	3.23	7/16/02 17:26	886:51:00	886:49:00	886:41:00	29.78002686
13	65	1083	0.00046	525	14.057	0.000434826	12.31	0.009542972	270.23	3.24	3.38	7/22/02 15:51	1029:16:00	1029:14:00	1029:06:00	32.08218613
11	66	1081	0.00039	526	14.031	0.000368552	10.38	0.009909524	280.61	3.36	3.51	7/29/02 15:23	1196:48:00	1196:46:00	1196:38:00	34.5947973
15	78	1087	0.00053	538	14.109	0.000491407	13.92	0.010400932	294.52	3.53	3.67	8/5/02 10:15	1359:40:00	1359:38:00	1359:30:00	36.87365817
15	80	1080	0.00053	540	14.018	0.000486435	13.77	0.010887366	308.29	3.69	3.84	8/12/02 13:07	1530:32:00	1530:30:00	1530:22:00	39.1220313
0	64	1082	0	524	14.044	0	0.00	0.010887366	308.29	3.69	3.84	8/20/02 14:56	1724:21:00	1724:19:00	1724:11:00	41.5252935
4	64	1075	0.00014	524	13.953	0.000133058	3.77	0.011020424	312.06	3.74	3.88	8/23/02 20:00	1801:25:00	1801:23:00	1801:15:00	42.44309916
3	64	1086	0.00011	524	14.096	0.000100814	2.85	0.011121239	314.92	3.77	3.92	8/26/02 10:27	1863:52:00	1863:50:00	1863:42:00	43.1725213
3	65	1087	0.00011	525	14.109	0.000100715	2.85	0.011221954	317.77	3.81	3.95	8/30/02 14:11	1963:36:00	1963:34:00	1963:26:00	44.31252645

DECANISTERED 8/30/02; sample air dried 10 days

SAMPLE: 322' 6" to 323' 6" (Lexington Coal) in canister A		lbs.		grams		moisture weight		est. lost gas (cc) =		TIME OF:			elapsed time (off bottom to canistering)			
dry sample weight:		3.9498 1791.58		wet sample weight:		4.1795 1895.79 5.5%		195		off bottom	at surface	in canister	18.0 minutes			
										6/9/02 21:54	6/9/02 21:56	6/9/02 22:12	0.300 hours			
RIGILAB MEASUREMENTS		CONVERSION OF RIGILAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)				CUMULATIVE VOLUMES		SCF/TON	SCF/TON	TIME SINCE			0.547722558 SQR T (hrs)			
measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SQR T hrs. (since off bottom)		
55	74.5	1077	0.00194	534.5	13.979	0.001796941	50.88	0.001796941	50.88	0.91	4.40	6/9/02 22:22	0:28:00	0:26:00	0:10:00	0.683130051
40	74.7	1077	0.00141	534.7	13.979	0.001306378	36.99	0.003103319	87.88	1.57	5.06	6/9/02 22:32	0:38:00	0:36:00	0:20:00	0.795822426
27	74.7	1078	0.00095	534.7	13.992	0.000882624	24.99	0.003985942	112.87	2.02	5.51	6/9/02 22:40	0:46:00	0:44:00	0:28:00	0.875595036
22	74.7	1078	0.00078	534.7	13.992	0.000719175	20.36	0.004705117	133.23	2.38	5.87	6/9/02 22:48	0:54:00	0:52:00	0:36:00	0.948683298
27	74.7	1078	0.00095	534.7	13.992	0.000882624	24.99	0.005587741	158.23	2.83	6.32	6/9/02 22:59	1:05:00	1:03:00	0:47:00	1.040833
38	68	1078	0.00134	528	13.992	0.001257974	35.62	0.006845715	193.85	3.47	6.95	6/9/02 23:18	1:24:00	1:22:00	1:06:00	1.183215957
32	64	1078	0.00113	524	13.992	0.001067433	30.23	0.007913148	224.07	4.01	7.49	6/9/02 23:38	1:44:00	1:42:00	1:26:00	1.316561177

70	64	1078	0.00247	524	13.992	0.00233501	66.12	0.010248158	290.19	5.19	8.68	6/10/02	0:46	2:52:00	2:50:00	2:34:00	1.693123347
51	62	1077	0.0018	522	13.979	0.001706155	48.31	0.011954313	338.51	6.05	9.54	6/10/02	1:42	3:48:00	3:46:00	3:30:00	1.949358869
21	64	1077	0.00074	524	13.979	0.000699853	19.82	0.012654166	358.32	6.41	9.89	6/10/02	2:08	4:14:00	4:12:00	3:58:00	2.057506582
19	63	1077	0.00067	523	13.979	0.000634411	17.96	0.013288578	376.29	6.73	10.22	6/10/02	2:34	4:40:00	4:38:00	4:22:00	2.160246899
21	63	1078	0.00074	523	13.966	0.00070054	19.84	0.013989118	396.13	7.08	10.57	6/10/02	3:09	5:15:00	5:13:00	4:57:00	2.291287847
28	63	1076	0.00099	523	13.966	0.000934054	26.45	0.014923171	422.58	7.56	11.04	6/10/02	4:03	6:09:00	6:07:00	5:51:00	2.479919354
14	63	1076	0.00049	523	13.966	0.000467027	13.22	0.015390198	435.80	7.79	11.28	6/10/02	4:27	6:33:00	6:31:00	6:15:00	2.559286778
23	62	1076	0.00081	522	13.966	0.000768728	21.77	0.016158926	457.57	8.18	11.67	6/10/02	5:38	7:44:00	7:42:00	7:26:00	2.780887149
30	63	1076	0.00106	523	13.966	0.001000772	28.34	0.017159698	485.91	8.69	12.18	6/10/02	6:21	8:27:00	8:25:00	8:09:00	2.906888371
26	63	1077	0.00092	523	13.979	0.000868142	24.58	0.01802784	510.49	9.13	12.62	6/10/02	7:33	9:39:00	9:37:00	9:21:00	3.106444913
74	63	1078	0.00261	523	13.966	0.00246857	69.90	0.02049641	580.39	10.38	13.87	6/10/02	10:59	13:05:00	13:03:00	12:47:00	3.617089069
215	72	1075	0.00759	532	13.953	0.007044311	199.47	0.027540721	779.86	13.95	17.43	6/10/02	18:05	20:11:00	20:09:00	19:53:00	4.492586486
133	64	1077	0.0047	524	13.979	0.004432403	125.51	0.031973124	905.37	16.19	19.68	6/11/02	10:26	36:32:00	36:30:00	36:14:00	6.044281044
134	63	1078	0.00473	523	13.992	0.004478423	126.81	0.036451547	1032.19	18.46	21.94	6/12/02	11:12	61:18:00	61:16:00	61:00:00	7.829431652
121	63.5	1080	0.00427	523.5	14.018	0.004047582	114.61	0.040499129	1146.80	20.51	23.99	6/13/02	8:57	83:03:00	83:01:00	82:45:00	9.113177273
120	64	1083	0.00424	524	14.057	0.004021144	113.87	0.044520569	1260.68	22.54	26.03	6/14/02	14:46	112:52:00	112:50:00	112:34:00	10.62387249
40	63.5	1081	0.00141	523.5	14.031	0.001339283	37.92	0.045859851	1298.60	23.22	26.71	6/14/02	19:58	118:04:00	118:02:00	117:46:00	10.86584884
63	63	1079	0.00222	523	14.005	0.00210748	59.68	0.047967332	1358.28	24.29	27.78	6/15/02	18:30	140:36:00	140:34:00	140:18:00	11.85748709
88	63	1081	0.00311	523	14.031	0.002949238	83.51	0.05091657	1441.79	25.78	29.27	6/17/02	11:16	181:22:00	181:20:00	181:04:00	13.46724421
91	63.5	1081	0.00321	523.5	14.031	0.003046868	86.28	0.053963438	1528.07	27.32	30.81	6/19/02	16:22	234:28:00	234:26:00	234:10:00	15.31230442
52	63.5	1089	0.00184	523.5	14.135	0.001753952	49.67	0.05571739	1577.73	28.21	31.70	6/20/02	15:43	257:49:00	257:47:00	257:31:00	16.05687047
87	63.5	1084	0.00307	523.5	14.070	0.002921024	82.71	0.058638414	1660.45	29.69	33.18	6/23/02	19:42	333:48:00	333:46:00	333:30:00	18.27019431
63	64	1084	0.00222	524	14.070	0.002113206	59.84	0.060751619	1720.29	30.76	34.25	6/25/02	14:16	376:22:00	376:20:00	376:04:00	19.40017182
65	64	1078	0.0023	524	13.992	0.002168223	61.40	0.062919843	1781.68	31.86	35.35	6/27/02	19:00	429:06:00	429:04:00	428:48:00	20.71472906
75	65	1084	0.00265	525	14.070	0.002510929	71.10	0.065430772	1852.79	33.13	36.62	6/30/02	19:54	502:00:00	501:58:00	501:42:00	22.4053565
64.5	63.5	1086	0.00138	524.5	14.096	0.001309339	37.08	0.066740111	1889.86	33.79	37.28	7/2/02	16:47	546:53:00	546:51:00	546:35:00	23.38553684
49	62.5	1086	0.00173	522.5	14.096	0.001651364	46.76	0.068391475	1936.62	34.63	38.12	7/7/02	21:06	671:12:00	671:10:00	670:54:00	25.90752786
48	63	1082	0.0017	523	14.044	0.001610164	45.59	0.070001638	1982.22	35.45	38.93	7/11/02	18:05	764:11:00	764:09:00	763:53:00	27.64386611
44	63	1083	0.00155	523	14.057	0.001477347	41.83	0.071478986	2024.05	36.19	39.68	7/16/02	17:28	883:34:00	883:32:00	883:16:00	29.72484931
45	65	1083	0.00159	525	14.057	0.001505168	42.62	0.072984154	2066.67	36.96	40.44	7/22/02	15:53	1025:59:00	1025:57:00	1025:41:00	32.03097459
52	66	1081	0.00184	526	14.031	0.001732792	49.07	0.074716946	2115.74	37.83	41.32	7/29/02	15:34	1193:40:00	1193:38:00	1193:22:00	34.54948142
83	78	1087	0.00293	538	14.109	0.002719121	77.00	0.077436067	2192.74	39.21	42.70	8/5/02	10:25	1356:31:00	1356:29:00	1356:13:00	36.83091998
93	80	1080	0.00328	540	14.018	0.003015895	85.40	0.080451962	2278.14	40.74	44.22	8/12/02	13:08	1527:14:00	1527:12:00	1526:56:00	39.07983282
25	64	1082	0.00088	524	14.044	0.000837026	23.70	0.081288988	2301.84	41.16	44.65	8/20/02	14:56	1721:02:00	1721:00:00	1720:44:00	41.48533878
15	64	1086	0.00053	524	14.096	0.000504072	14.27	0.081793061	2316.11	41.42	44.90	8/26/02	10:27	1860:33:00	1860:31:00	1860:15:00	43.13409324
20	64	1078	0.00071	524	13.992	0.000667146	18.89	0.082460206	2335.00	41.75	45.24	9/2/02	14:15	2032:21:00	2032:19:00	2032:03:00	45.0815927
11	64	1085	0.00039	524	14.083	0.000369313	10.46	0.082829519	2345.46	41.94	45.43	9/7/02	12:38	2150:44:00	2150:42:00	2150:26:00	46.37599954
13	63	1077	0.00046	523	13.979	0.000434071	12.29	0.083263559	2357.75	42.16	45.65	9/13/02	18:17	2300:23:00	2300:21:00	2300:05:00	47.96231159
22	68	1074	0.00078	528	13.940	0.000725598	20.55	0.083989188	2378.30	42.53	46.02	9/20/02	10:13	2460:19:00	2460:17:00	2460:01:00	49.60157928
9	65	1080	0.00032	525	14.018	0.0003002	8.50	0.084289388	2386.80	42.68	46.17	9/27/02	13:44	2631:50:00	2631:48:00	2631:32:00	51.30139699
39	76	1078	0.00138	536	13.992	0.001271809	36.01	0.085561196	2422.81	43.32	46.81	10/1/02	13:57	2728:03:00	2728:01:00	2727:45:00	52.23073808
11	65	1084	0.00039	525	14.070	0.00036827	10.43	0.085929466	2433.24	43.51	47.00	10/8/02	15:50	2897:56:00	2897:54:00	2897:38:00	53.83245613
4	68	1091	0.00014	528	14.161	0.000134015	3.79	0.086063481	2437.04	43.58	47.07	10/14/02	10:32	3036:38:00	3036:36:00	3036:20:00	55.10565609
6	63	1076	0.00021	523	13.966	0.000200154	5.67	0.086263636	2442.70	43.68	47.17	10/18/02	14:45	3136:51:00	3136:49:00	3136:33:00	56.00758877
9	69	1089	0.00032	529	14.135	0.000300412	8.51	0.086564048	2451.21	43.83	47.32	10/26/02	14:45	3328:51:00	3328:49:00	3328:33:00	57.69618705
7	67	1096	0.00025	527	14.226	0.000236048	6.68	0.086800096	2457.90	43.95	47.44	10/31/02	10:35	3444:41:00	3444:39:00	3444:23:00	58.6914247
21	69	1081	0.00074	529	14.031	0.000695813	19.70	0.087495909	2477.60	44.30	47.79	11/7/02	13:04	3615:10:00	3615:08:00	3614:52:00	60.12625605
14	69	1086	0.00049	529	14.096	0.000466021	13.20	0.08796193	2490.80	44.54	48.03	11/16/02	22:48	3840:54:00	3840:52:00	3840:36:00	61.97499496
10	70	1085	0.00035	530	14.083	0.000331938	9.40	0.088293868	2500.19	44.71	48.20	11/22/02	17:27	3979:33:00	3979:31:00	3979:15:00	63.08367459
-7	65	1096	-0.00025	525	14.226	-0.000236948	-6.71	0.088056921	2493.48	44.59	48.08	12/3/02	18:40	4244:46:00	4244:44:00	4244:28:00	65.15187385

DECANISTERED 12/04/2002; sample air dried 10 days

SAMPLE: 321' 6" to 322' 6" (Lexington Coal) in canister B

dry sample weight:		lbs.	grams	wet sample weight:		lbs.	grams	moisture weight	est. lost gas (cc) =	TIME OF:			elapsed time (off bottom to canistering)			
		4.8988	2222.07			5.1895	2353.94	5.6%	80	off bottom	at surface	in canister	19.0 minutes			
										6/9/02 21:54	6/9/02 21:56	6/9/02 22:13	0.317 hours			
RIG/LAB MEASUREMENTS																
measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	CUMULATIVE VOLUMES	SCF/TON	SCF/TON	TIME SINCE			SQRT hrs. (since off bottom)		
25	74.5	1077	0.00088	534.5	13.979	0.000816791	23.13	0.000816791	23.13	0.33	1.49	6/9/02 22:24	0:30:00	0:28:00	0:11:00	0.707106781
15	74.7	1078	0.00053	534.7	13.992	0.000490346	13.89	0.001307138	37.01	0.53	1.69	6/9/02 22:34	0:40:00	0:38:00	0:21:00	0.816496581
14	74.7	1078	0.00049	534.7	13.992	0.000457657	12.96	0.001764795	49.97	0.72	1.87	6/9/02 22:43	0:49:00	0:47:00	0:30:00	0.903696114
12	74.7	1078	0.00042	534.7	13.992	0.000392277	11.11	0.002157072	61.08	0.88	2.03	6/9/02 22:50	0:56:00	0:54:00	0:37:00	0.966091783
10	74.8	1078	0.00035	534.8	13.992	0.000326837	9.25	0.002483908	70.34	1.01	2.17	6/9/02 2				

9	64	1077	0.00032	524	13.979	0.000299937	8.49	0.005946174	168.38	2.43	3.58	6/10/02	2:10	4:16:00	4:14:00	3:57:00	2.065591118
5	63	1077	0.00018	523	13.979	0.00016695	4.73	0.006113124	173.10	2.50	3.65	6/10/02	2:26	4:32:00	4:30:00	4:13:00	2.12916259
10	63	1076	0.00035	523	13.966	0.000333591	9.45	0.006446715	182.55	2.63	3.79	6/10/02	3:10	5:16:00	5:14:00	4:57:00	2.29492193
12	63	1076	0.00042	523	13.966	0.000400309	11.34	0.006847024	193.89	2.80	3.95	6/10/02	4:04	6:10:00	6:08:00	5:51:00	2.483277404
11	63	1076	0.00039	523	13.966	0.00036695	10.39	0.007213973	204.28	2.95	4.10	6/10/02	4:29	6:35:00	6:33:00	6:16:00	2.56580072
24	63	1076	0.00085	523	13.966	0.000800617	22.67	0.008014591	226.95	3.27	4.43	6/10/02	6:20	8:26:00	8:24:00	8:07:00	2.904020202
54	63	1076	0.00191	523	13.966	0.001801389	51.01	0.00981598	277.96	4.01	5.16	6/10/02	11:01	13:07:00	13:05:00	12:48:00	3.621693895
137	72	1075	0.00484	532	13.953	0.0044887	127.11	0.01430468	405.06	5.84	6.99	6/10/02	18:09	20:15:00	20:13:00	19:56:00	4.5
88	64	1077	0.00311	524	13.979	0.002932718	83.05	0.017237398	488.11	7.04	8.19	6/11/02	10:34	36:40:00	36:38:00	36:21:00	6.055300708
94	63	1078	0.00332	523	13.992	0.00314158	88.96	0.020378978	577.07	8.32	9.47	6/12/02	11:13	61:19:00	61:17:00	61:00:00	7.83049594
73	63.5	1080	0.00258	523.5	14.018	0.00244193	69.15	0.022820908	646.21	9.32	10.47	6/13/02	9:00	83:06:00	83:04:00	82:47:00	9.11592014
80	63.5	1081	0.00283	523.5	14.031	0.002678565	75.85	0.025499473	722.06	10.41	11.56	6/14/02	19:59	118:05:00	118:03:00	117:46:00	10.86661554
62	63	1079	0.00219	523	14.005	0.002074028	58.73	0.027573501	780.79	11.26	12.41	6/15/02	18:32	140:38:00	140:36:00	140:19:00	11.85889258
72	63	1081	0.00254	523	14.031	0.002413013	68.33	0.029986514	849.12	12.24	13.40	6/17/02	11:19	181:25:00	181:23:00	181:06:00	13.46910044
66	63.5	1081	0.00233	523.5	14.031	0.002209816	62.57	0.032196331	911.70	13.14	14.30	6/19/02	16:24	234:30:00	234:28:00	234:11:00	15.31339283
39	63.5	1089	0.00138	523.5	14.135	0.001315464	37.25	0.033511795	948.94	13.68	14.83	6/20/02	15:45	257:51:00	257:49:00	257:32:00	16.05770843
61	63.5	1084	0.00215	523.5	14.070	0.002048074	57.99	0.035559889	1006.94	14.52	15.67	6/23/02	19:44	333:50:00	333:48:00	333:31:00	18.27110652
42	64	1084	0.00148	524	14.070	0.001408804	39.89	0.036968672	1046.83	15.09	16.25	6/25/02	14:14	376:20:00	376:18:00	376:01:00	19.3993127
45	64	1078	0.00159	524	13.992	0.001501078	42.51	0.03846975	1089.34	15.71	16.86	6/27/02	19:03	429:09:00	429:07:00	428:50:00	20.71593589
51	65	1085	0.0018	525	14.083	0.001709007	48.39	0.040178757	1137.73	16.40	17.56	6/30/02	19:56	502:02:00	502:00:00	501:43:00	22.40610036
25	64.5	1086	0.00088	524.5	14.096	0.00083932	23.77	0.041018077	1161.50	16.75	17.90	7/2/02	16:49	546:55:00	546:53:00	546:36:00	23.38624952
35	62.5	1086	0.00124	522.5	14.096	0.001179546	33.40	0.042197623	1194.90	17.23	18.38	7/7/02	21:12	671:18:00	671:16:00	670:59:00	25.90945773
35	63	1082	0.00124	523	14.044	0.001174078	33.25	0.0433717	1228.15	17.71	18.86	7/11/02	18:05	764:11:00	764:09:00	763:52:00	27.64386611
31	63	1083	0.00109	523	14.057	0.001040858	29.47	0.044412559	1257.62	18.13	19.29	7/16/02	17:28	883:34:00	883:32:00	883:15:00	29.72484931
34	65	1083	0.0012	525	14.057	0.001137238	32.20	0.045549797	1289.82	18.60	19.75	7/22/02	15:51	1025:57:00	1025:55:00	1025:38:00	32.03045426
36	66	1081	0.00127	526	14.031	0.001199625	33.97	0.046749422	1323.79	19.09	20.24	7/29/02	15:33	1193:39:00	1193:37:00	1193:20:00	34.54924022
60	78	1087	0.00212	538	14.109	0.00196653	55.66	0.048715052	1379.45	19.89	21.04	8/5/02	10:23	1356:29:00	1356:27:00	1356:10:00	36.83046746
84	80	1080	0.00226	540	14.018	0.002075454	58.77	0.050790506	1438.22	20.74	21.89	8/12/02	13:09	1527:15:00	1527:13:00	1526:56:00	39.08004606
14	64	1082	0.00049	524	14.044	0.000468735	13.27	0.051259241	1451.49	20.93	22.08	8/20/02	14:57	1721:03:00	1721:01:00	1720:44:00	41.48553965
10	64	1086	0.00035	524	14.096	0.000336048	9.52	0.051595289	1461.01	21.06	22.22	8/26/02	10:27	1860:33:00	1860:31:00	1860:14:00	43.13409324
14	64	1078	0.00049	524	13.992	0.000467002	13.22	0.052062291	1474.23	21.26	22.41	9/2/02	14:17	2032:23:00	2032:21:00	2032:04:00	45.08196239
8	64	1085	0.00028	524	14.083	0.000268591	7.61	0.052330882	1481.84	21.36	22.52	9/7/02	12:37	2150:43:00	2150:41:00	2150:24:00	46.37581985
10	63	1077	0.00035	523	13.979	0.000333901	9.45	0.052664783	1491.29	21.50	22.65	9/13/02	18:18	2300:24:00	2300:22:00	2300:05:00	47.96248534
16	68	1074	0.00057	528	13.940	0.000527708	14.94	0.053192491	1508.24	21.72	22.87	9/20/02	10:13	2460:19:00	2460:17:00	2460:00:00	49.60157928
5	65	1080	0.00018	525	14.018	0.000166778	4.72	0.053359268	1510.96	21.78	22.94	9/27/02	13:45	2631:51:00	2631:49:00	2631:32:00	51.30155943
28	76	1078	0.00099	536	13.992	0.000913093	25.86	0.054272362	1536.82	22.16	23.31	10/1/02	13:58	2728:04:00	2728:02:00	2727:45:00	52.23089762
6	65	1084	0.00021	525	14.070	0.000200874	5.69	0.054473236	1542.50	22.24	23.39	10/8/02	15:51	2897:57:00	2897:55:00	2897:38:00	53.83261093
3	68	1091	0.00011	528	14.161	0.000100511	2.85	0.054573747	1545.35	22.28	23.43	10/14/02	10:34	3036:40:00	3036:38:00	3036:21:00	55.10595854
5	63	1078	0.00018	523	13.966	0.000166795	4.72	0.054740543	1550.07	22.35	23.50	10/18/02	14:48	3136:54:00	3136:52:00	3136:35:00	56.00803514
6	69	1089	0.00021	529	14.135	0.000200275	5.67	0.054940818	1555.74	22.43	23.58	10/26/02	14:47	3328:53:00	3328:51:00	3328:34:00	57.69647592
5	67	1096	0.00018	527	14.226	0.000168606	4.77	0.055109424	1560.52	22.50	23.65	10/31/02	10:37	3444:43:00	3444:41:00	3444:24:00	58.69170867
16	69	1081	0.00057	529	14.031	0.000530143	15.01	0.055639567	1575.53	22.72	23.87	11/7/02	13:06	3615:12:00	3615:10:00	3614:53:00	60.12653324
10	69	1086	0.00035	529	14.096	0.000332872	9.43	0.055972439	1584.96	22.85	24.00	11/16/02	22:49	3840:55:00	3840:53:00	3840:36:00	61.97512942
7	70	1085	0.00025	530	14.083	0.000232357	6.58	0.056204796	1591.54	22.95	24.10	11/16/02	22:49	3840:55:00	3840:53:00	3840:36:00	61.97512942
-5	65	1096	-0.00018	525	14.226	-0.000169248	-4.79	0.056035547	1586.74	22.88	24.03	12/3/02	18:42	4244:48:00	4244:46:00	4244:29:00	65.15212967

DECANISTERED 12/04/2002; sample air dried 10 days

SAMPLE: 320' 6" to 321' 6" (Lexington Coal) in canister C

dry sample weight:		lbs.	grams	wet sample weight:		lbs.	grams	moisture weight		est. lost gas (cc) =	TIME OF:			elapsed time (off bottom to canistering)			
		4.7208	2141.31			4.8820	2214.43	3.3%		55	off bottom	at surface	in canister	0.33 hours			
											6/9/02	21:54	6/9/02	21:56	6/9/02	22:14	
											TIME SINCE			0.577350269 SQRT (hrs)			
											off bottom	at surface	in canister	SQRT hrs. (since off bottom)			
25	74.7	1077	0.00088	534.7	13.979	0.000816486	23.12	0.000816486	23.12	0.35	1.17	6/9/02	22:28	0:34:00	0:32:00	0:14:00	0.752772653
7	74.7	1078	0.00025	534.7	13.992	0.000228828	6.48	0.001045314	29.60	0.44	1.27	6/9/02	22:37	0:43:00	0:41:00	0:23:00	0.846561673
7	74.7	1078	0.00025	534.7	13.992	0.000228828	6.48	0.001274143	36.08	0.54	1.36	6/9/02	22:46	0:52:00	0:50:00	0:32:00	0.930949336
5	74.7	1078	0.00018	534.7	13.992	0.000163449	4.63	0.001437591	40.71	0.61	1.43	6/9/02	22:54	1:00:00	0:58:00	0:40:00	1
7	74.7	1078	0.00025	534.7	13.992	0.000228828	6.48	0.00166642	47.19	0.71	1.53	6/9/02	23:04	1:10:00	1:08:00	0:50:00	1.08012345
12.5	66	1078	0.00044	526	13.992	0.000415381	11.76	0.0020818	58.95	0.88	1.70	6/9/02	23:25	1:31:00	1:29:00	1:11:00	1.231530213
7	64	1078	0.00025	524	13.992	0.000233501	6.61	0.002315301	65.56	0.98	1.80	6/9/02	23:41	1:47:00	1:45:00	1:27:00	1.335415042
19	64	1077	0.00067	524	13.979	0.0006332	17.93	0.002948502	83.49	1.25	2.07	6/10/02	0:53	2:59:00	2:57:00	2:39:00	1.727232854
13	62	1077	0.00046	522	13.979	0.000434902	12.32	0.003383404	95.81	1.43	2.26	6/10/02	1:48	3:54:00	3:52:00	3:34:00	1.974841766
5	64	1077	0.00018	524	13.979	0.000166632	4.72	0.003550036	100.53	1.50	2.33	6/10/02	2:11	4:17:00	4:15:00	3:57:00	2.069621544
4	63	1077	0.00014	523	13.979	0.0001											

21	63	1076	0.00074	523	13.966	0.00070054	19.84	0.00495124	140.20	2.10	2.92	6/10/02	6:33	8:39:00	8:37:00	8:19:00	2.941088234
44	63	1076	0.00155	523	13.966	0.001467799	41.56	0.006419039	181.77	2.72	3.54	6/10/02	11:02	13:08:00	13:06:00	12:48:00	3.623994113
74	72	1075	0.00261	532	13.953	0.002424553	68.66	0.008843592	250.42	3.75	5.57	6/10/02	18:11	20:17:00	20:15:00	19:57:00	4.503702181
40	64	1077	0.00141	524	13.979	0.001333054	37.75	0.010176646	288.17	4.31	5.13	6/11/02	10:38	36:44:00	36:42:00	36:24:00	6.069803027
55	63	1078	0.00194	523	13.992	0.001838159	52.05	0.012014805	340.22	5.09	5.91	6/12/02	11:15	61:21:00	61:19:00	61:01:00	7.832624081
40	63.5	1080	0.00141	523.5	14.018	0.001338044	37.89	0.013352848	378.11	5.66	6.48	6/13/02	8:58	83:04:00	83:02:00	82:44:00	9.114091653 estimate
55	63.5	1081	0.00194	523.5	14.031	0.001841513	52.15	0.015194362	430.25	6.44	7.26	6/14/02	20:01	118:07:00	118:05:00	117:47:00	10.86814918
40	63	1079	0.00141	523	14.005	0.001338083	37.89	0.016532444	468.14	7.00	7.83	6/15/02	18:34	140:40:00	140:38:00	140:20:00	11.86029792
45	63	1081	0.00159	523	14.031	0.001508133	42.71	0.018040578	510.85	7.64	8.47	6/17/02	11:20	181:26:00	181:24:00	181:06:00	13.46971913
51	63.5	1081	0.0018	523.5	14.031	0.001707585	48.35	0.019748163	559.20	8.37	9.19	6/19/02	16:26	234:32:00	234:30:00	234:12:00	15.31448116
24	63.5	1089	0.00085	523.5	14.135	0.000809516	22.92	0.020557679	582.13	8.71	9.53	6/20/02	15:47	257:53:00	257:51:00	257:33:00	16.05874632
54	63.5	1084	0.00191	523.5	14.070	0.001813049	51.34	0.022370728	633.47	9.48	10.30	6/23/02	19:45	333:51:00	333:49:00	333:31:00	18.2715626
25	64	1084	0.00088	524	14.070	0.000838574	23.75	0.023209302	657.21	9.83	10.66	6/25/02	14:13	376:19:00	376:17:00	375:59:00	19.39888313
37	64	1079	0.00131	524	14.005	0.001235364	34.98	0.024444666	692.19	10.36	11.18	6/27/02	19:04	429:10:00	429:08:00	428:50:00	20.71633816
47	65	1085	0.00166	525	14.083	0.001574967	44.60	0.026019634	736.79	11.02	11.85	6/30/02	19:57	502:03:00	502:01:00	501:43:00	22.40647228
23	64.5	1086	0.00081	524.5	14.096	0.000772174	21.87	0.026791808	758.66	11.35	12.17	7/2/02	16:51	546:57:00	546:55:00	546:37:00	23.38696218
41	62.5	1086	0.00145	522.5	14.096	0.001381754	39.13	0.028173562	797.78	11.94	12.76	7/7/02	21:14	671:20:00	671:18:00	671:00:00	25.91010099
38	63	1082	0.00134	523	14.044	0.001274713	36.10	0.029448274	833.88	12.48	13.30	7/11/02	18:07	764:13:00	764:11:00	763:53:00	27.64446901
36	63	1083	0.00127	523	14.057	0.001208739	34.23	0.030657013	868.11	12.99	13.81	7/16/02	17:30	883:36:00	883:34:00	883:16:00	29.72541001
39	65	1083	0.00138	525	14.057	0.001304479	36.94	0.031961492	905.05	13.54	14.36	7/22/02	15:55	1026:01:00	1025:59:00	1025:41:00	32.03149492
45	66	1081	0.00159	526	14.031	0.001499532	42.46	0.033461024	947.51	14.18	15.00	7/29/02	15:32	1193:38:00	1193:36:00	1193:18:00	34.54899902
65	78	1087	0.0023	538	14.109	0.002129432	60.30	0.035590456	1007.81	15.08	15.90	8/5/02	10:23	1356:29:00	1356:27:00	1356:09:00	36.83046746
75	80	1080	0.00265	540	14.018	0.002432173	68.87	0.038022629	1076.68	16.11	16.93	8/12/02	13:10	1527:16:00	1527:14:00	1526:56:00	39.0802593
24	80	1082	0.00085	524	14.044	0.000803545	22.75	0.038826174	1099.43	16.45	17.27	8/20/02	14:58	1721:04:00	1721:02:00	1720:44:00	41.48574052
20	64	1086	0.00071	524	14.096	0.000672097	19.03	0.039498271	1118.46	16.73	17.56	8/26/02	10:27	1860:33:00	1860:31:00	1860:13:00	43.13409324
26	64	1078	0.00092	524	13.992	0.000867289	24.56	0.040365556	1143.02	17.10	17.92	9/2/02	14:18	2032:24:00	2032:22:00	2032:04:00	45.08214724
15	64	1085	0.00053	524	14.083	0.000503608	14.26	0.040869169	1157.28	17.31	18.14	9/7/02	12:35	2150:41:00	2150:39:00	2150:21:00	46.37546046
20	63	1077	0.00071	523	13.979	0.000667801	18.91	0.04153697	1176.19	17.60	18.42	9/13/02	18:20	2300:26:00	2300:24:00	2300:06:00	47.96283283
25	68	1074	0.00088	528	13.940	0.000824544	23.35	0.042361513	1199.54	17.95	18.77	9/20/02	10:16	2460:22:00	2460:20:00	2460:02:00	49.60208329
16	65	1080	0.00057	525	14.018	0.000533688	15.11	0.042895202	1214.65	18.17	19.00	9/27/02	13:47	2631:53:00	2631:51:00	2631:33:00	51.30188431
33	76	1078	0.00117	536	13.992	0.001076146	30.47	0.043971348	1245.13	18.63	19.45	10/1/02	13:59	2728:05:00	2728:03:00	2727:45:00	52.23105717
16	65	1084	0.00057	525	14.070	0.000535665	15.17	0.044507012	1260.29	18.86	19.68	10/8/02	15:52	2897:58:00	2897:56:00	2897:38:00	53.83276573
12	68	1091	0.00042	528	14.161	0.000420246	11.38	0.044909058	1271.68	19.03	19.85	10/14/02	10:35	3036:41:00	3036:39:00	3036:21:00	55.10610976
11	63	1076	0.00039	523	13.966	0.00036695	10.39	0.045276008	1282.07	19.18	20.00	10/18/02	14:49	3138:55:00	3138:53:00	3138:35:00	56.00818393
0	68	1089	0	528	14.135	0	0.00	0.045276008	1282.07	19.18	20.00	10/26/02	14:49	3328:55:00	3328:53:00	3328:35:00	57.69676479
-2	67	1096	-7.1E-05	527	14.226	-6.74424E-05	-1.91	0.045208565	1280.16	19.15	19.98	10/31/02	10:38	3444:44:00	3444:42:00	3444:24:00	58.69185066

DECANISTERED 10/31/02

SAMPLE: 372° 0' to 373° 0' (Mully Coal) in canister D

dry sample weight:		lbs.	grams	wet sample weight:		lbs.	grams	moisture weight	est. lost gas (cc) =	TIME OF:			elapsed time (off bottom to canistering)				
		2.8104	1274.77			2.9952	1358.58	6.2%	100	off bottom	at surface	in canister	18.0 minutes				
										6/9/02 23:38	6/9/02 23:40	6/9/02 23:56	0.300 hours				
RIG/LAB MEASUREMENTS				CONVERSION OF RIG/LAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)				CUMULATIVE VOLUMES		SCF/TON	SCF/TON	TIME SINCE			0.547722557		
measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SQRT hrs. (since off bottom)			
27	74.8	1078	0.00095	534.8	13.992	0.000882459	24.99	0.000882459	24.99	0.63	3.14	6/10/02	0:05	0:27:00	0:25:00	0:09:00	0.670820393
23	74.8	1078	0.00081	534.8	13.992	0.000751724	21.29	0.001634183	46.27	1.16	3.68	6/10/02	0:14	0:36:00	0:34:00	0:18:00	0.774596669
17	74.8	1078	0.0006	534.8	13.992	0.00055622	15.73	0.002189805	62.01	1.56	4.07	6/10/02	0:27	0:49:00	0:47:00	0:31:00	0.903696114
10	75	1078	0.00035	535	13.992	0.000326714	9.25	0.002516519	71.26	1.79	4.30	6/10/02	0:33	0:55:00	0:53:00	0:37:00	0.957427108
6	75	1078	0.00021	535	13.992	0.000196029	5.55	0.002712548	76.81	1.93	4.44	6/10/02	0:39	1:01:00	0:59:00	0:43:00	1.008298897
19	75	1077	0.00067	535	13.979	0.000620181	17.56	0.003332729	94.37	2.37	4.88	6/10/02	0:58	1:20:00	1:18:00	1:02:00	1.154700538
2	62	1077	7.1E-05	522	13.979	6.99081E-05	1.89	0.003399637	96.27	2.42	4.93	6/10/02	1:53	2:15:00	2:13:00	1:57:00	1.5
10	63	1077	0.00035	523	13.979	0.000333901	9.45	0.003733538	105.72	2.66	5.17	6/10/02	2:14	2:36:00	2:34:00	2:18:00	1.61245155
6	63	1077	0.00021	523	13.979	0.00020034	5.67	0.003933878	111.39	2.80	5.31	6/10/02	2:39	3:01:00	2:59:00	2:43:00	1.736855396
7	63	1076	0.00025	523	13.966	0.000233513	6.61	0.004167391	118.01	2.97	5.48	6/10/02	3:13	3:35:00	3:33:00	3:17:00	1.892969449
14	63	1076	0.00049	523	13.966	0.000467027	13.22	0.004634418	131.23	3.30	5.81	6/10/02	4:07	4:29:00	4:27:00	4:11:00	2.117388328
8	63	1076	0.00028	523	13.966	0.000266872	7.56	0.004901291	138.79	3.49	6.00	6/10/02	4:32	4:54:00	4:52:00	4:36:00	2.213594363
18	62	1076	0.00064	522	13.966	0.000601613	17.04	0.005502904	155.82	3.92	6.43	6/10/02	5:39	6:01:00	5:59:00	5:43:00	2.452889453
24	62	1077	0.00085	522	13.979	0.000802897	22.74	0.006305801	178.56	4.49	7.00	6/10/02	7:45	8:07:00	8:05:00	7:49:00	2.848976424
35	63	1077	0.00124	523	13.979	0.001168652	33.09	0.007474453	211.65	5.32	7.83	6/10/02	11:04	11:26:00	11:24:00	11:08:00	3.381321241
125	72	1075	0.00441	532	13.953	0.004095529	115.97	0.011569982	327.62	8.23	10.75	6/10/02	18:14	18:36:00	18:34:00	18:18:00	4.312771731
80	64	1077	0.00283	524	13.979	0.002666107	75.50	0.014236009	403.12	10.13	12.64	6/11/02	10:40	35:02:00	35:00:00	34:44:00	5.918896294
87	63	1078	0.00307	523	13.992	0.002907633	82.33	0.017143722	485.45	12.20	14.71	6/12/02	11:17	59:39:00	59:37:00	59:21:00	7.723341246
70	63.5	1080	0.00247	523.5	14.018	0.002341576	66.31	0.019485298	551.76	13.87	16.38	6/13/02	9:01	81:23:00	81:21:00	81:05:00	9.02127116
75	63.5																

70	63.5	1084	0.00247	523.5	14.070	0.002350249	66.55	0.032192095	911.58	22.91	25.42	6/23/02	19:48	332:10:00	332:08:00	331:52:00	18.2254401
51	64	1084	0.0018	524	14.070	0.001710699	48.44	0.033902785	960.02	24.13	26.64	6/25/02	14:11	374:33:00	374:31:00	374:15:00	19.35329429
55	64	1079	0.00194	524	14.005	0.001836353	52.00	0.035739138	1012.02	25.43	27.95	6/27/02	19:05	427:27:00	427:25:00	427:09:00	20.67486397
66	65	1085	0.00233	525	14.083	0.002211656	62.63	0.037950794	1074.64	27.01	29.52	6/30/02	19:58	500:20:00	500:18:00	500:02:00	22.36813209
36	64.5	1086	0.00127	524.5	14.096	0.001208621	34.22	0.039159414	1108.87	27.87	30.38	7/2/02	16:53	545:15:00	545:13:00	544:57:00	23.35058886
54	62.5	1086	0.00191	522.5	14.096	0.001819871	51.53	0.040979285	1160.40	29.16	31.68	7/7/02	21:15	669:37:00	669:35:00	669:19:00	25.87695242
52	63	1082	0.00184	523	14.044	0.001744344	49.39	0.042723629	1209.79	30.40	32.92	7/11/02	18:09	762:31:00	762:29:00	762:13:00	27.61370433
33	63	1082	0.00117	523	14.044	0.001106988	31.35	0.043830616	1241.14	31.19	33.71	7/13/02	20:27	812:49:00	812:47:00	812:31:00	28.50993979
31	63	1083	0.00109	523	14.057	0.001040858	29.47	0.044871475	1270.61	31.93	34.45	7/16/02	17:33	881:55:00	881:53:00	881:37:00	29.69708179
49	65	1083	0.00173	525	14.057	0.00163896	46.41	0.046510435	1317.02	33.10	35.61	7/22/02	15:56	1024:18:00	1024:16:00	1024:00:00	32.00468716
59	66	1081	0.00208	526	14.031	0.001966053	55.67	0.048476488	1372.70	34.50	37.01	7/29/02	15:32	1191:54:00	1191:52:00	1191:36:00	34.52390476
78	80	1087	0.00307	538	14.109	0.002850163	80.71	0.051326851	1453.40	36.53	39.04	8/5/02	10:21	1354:43:00	1354:41:00	1354:25:00	36.80647588
103	80	1080	0.00364	540	14.018	0.003340184	94.58	0.054666835	1547.99	38.90	41.42	8/12/02	13:11	1525:33:00	1525:31:00	1525:15:00	39.05828977
40	84	1082	0.00141	524	14.044	0.001339242	37.92	0.056006078	1585.91	39.86	42.37	8/20/02	14:58	1719:20:00	1719:18:00	1719:02:00	41.46484455
30	84	1086	0.00106	524	14.096	0.001008145	28.55	0.057014223	1614.46	40.57	43.09	8/26/02	10:28	1858:50:00	1858:48:00	1858:32:00	43.11418947
36	84	1078	0.00127	524	13.992	0.001200862	34.00	0.058215085	1648.46	41.43	43.94	9/2/02	14:18	2030:40:00	2030:38:00	2030:22:00	45.06291898
24	84	1085	0.00085	524	14.083	0.000805773	22.82	0.059020858	1671.28	42.00	44.52	9/7/02	12:33	2148:55:00	2148:53:00	2148:37:00	46.35640912
26	83	1077	0.00092	523	13.979	0.000868142	24.58	0.059889	1695.86	42.62	45.13	9/13/02	18:20	2298:42:00	2298:40:00	2298:24:00	47.94475988
33	88	1074	0.00117	528	13.940	0.001088397	30.82	0.060977397	1726.88	43.39	45.91	9/20/02	10:17	2458:39:00	2458:37:00	2458:21:00	49.58477589
24	85	1080	0.00085	525	14.018	0.000800532	22.67	0.06177793	1749.35	43.96	46.48	9/27/02	13:47	2630:09:00	2630:07:00	2629:51:00	51.28498806
46	76	1078	0.00182	536	13.992	0.001500082	42.48	0.063278012	1791.83	45.03	47.54	10/1/02	14:00	2726:22:00	2726:20:00	2726:04:00	52.2146212
20	66	1083	0.00071	526	14.057	0.000667692	18.91	0.063945703	1810.73	45.51	48.02	10/4/02	18:48	2803:10:00	2803:08:00	2802:52:00	52.94493995
21	68	1091	0.00074	528	14.161	0.00070358	19.92	0.064649283	1830.66	46.01	48.52	10/14/02	10:30	3034:52:00	3034:50:00	3034:34:00	55.08962395
16	63	1076	0.00057	523	13.966	0.000533745	15.11	0.065183028	1845.77	46.39	48.90	10/18/02	14:49	3135:11:00	3135:09:00	3134:53:00	55.99270786
22	68	1089	0.00078	528	14.135	0.000735732	20.83	0.06591876	1866.60	46.91	49.42	10/26/02	14:51	3327:13:00	3327:11:00	3326:55:00	57.68203071
17	67	1096	0.0006	527	14.226	0.000573261	16.23	0.066492021	1882.84	47.32	49.83	10/31/02	10:39	3443:01:00	3442:59:00	3442:43:00	58.67722443
30	69	1081	0.00106	529	14.031	0.000994019	28.15	0.067486039	1910.98	48.03	50.54	11/7/02	13:08	3613:30:00	3613:28:00	3613:12:00	60.11239473
28	69	1086	0.00099	529	14.096	0.000932042	26.39	0.068418081	1937.38	48.69	51.20	11/16/02	22:50	3839:12:00	3839:10:00	3838:54:00	61.96127823
21	70	1085	0.00074	530	14.083	0.00069707	19.74	0.069115151	1957.12	49.19	51.70	11/22/02	17:29	3977:51:00	3977:49:00	3977:33:00	63.07019898
7	65	1096	0.00025	525	14.226	0.000236948	6.71	0.069352099	1963.83	49.35	51.87	12/3/02	18:43	4243:05:00	4243:03:00	4242:47:00	65.13895404
20	67	1087	0.00071	527	14.109	0.000668886	18.94	0.070202985	1982.77	49.83	52.34	12/10/02	10:45	4403:07:00	4403:05:00	4402:49:00	66.35598441
29	70	1074	0.00102	530	13.940	0.000952861	26.98	0.070973846	2009.75	50.51	53.02	12/16/02	15:10	4551:32:00	4551:30:00	4551:14:00	67.46505268
14	67	1088	0.00049	527	14.122	0.000468651	13.27	0.071442497	2023.02	50.84	53.35	12/23/02	19:07	4723:29:00	4723:27:00	4723:11:00	68.72760241
25	70	1078	0.00088	530	13.992	0.000824491	23.35	0.072266988	2046.37	51.43	53.94	12/30/02	16:48	4889:10:00	4889:08:00	4888:52:00	69.92257623
7	67	1101	0.00025	527	14.291	0.000237125	6.71	0.072504114	2053.08	51.60	54.11	1/6/03	13:38	5054:00:00	5053:58:00	5053:42:00	71.09149035
16	67	1088	0.00057	527	14.122	0.000535601	15.17	0.073039715	2068.25	51.98	54.49	1/13/03	16:06	5224:28:00	5224:26:00	5224:10:00	72.28047224
11	66	1100	0.00039	528	14.278	0.000372995	10.56	0.07341271	2078.81	52.24	54.76	1/22/03	15:20	5439:42:00	5439:40:00	5439:24:00	73.75432191
18	68	1095	0.00064	528	14.213	0.000605279	17.14	0.074017989	2095.95	52.67	55.19	1/29/03	13:38	5606:00:00	5605:58:00	5605:42:00	74.87322619
20	86	1075	0.00071	526	13.953	0.000662759	18.77	0.074880749	2114.72	53.15	55.66	2/3/03	15:55	5728:17:00	5728:15:00	5727:59:00	75.68542352
11	67	1083	0.00039	527	14.057	0.000366534	10.38	0.075047282	2125.09	53.41	55.92	2/10/03	16:02	5896:24:00	5896:22:00	5896:06:00	76.7880199
9	66	1084	0.00032	526	14.070	0.000390739	8.52	0.075348021	2133.61	53.62	56.13	2/17/03	13:58	6062:20:00	6062:18:00	6062:02:00	77.86098724
4	64	1100	0.00014	524	14.278	0.000136152	3.86	0.075484173	2137.47	53.72	56.23	2/24/03	14:14	6230:36:00	6230:34:00	6230:18:00	78.93414977
21	69	1076	0.00074	529	13.966	0.000692595	19.61	0.076176768	2157.08	54.21	56.72	3/3/03	13:55	6398:17:00	6398:15:00	6397:59:00	79.98927011
13	69	1089	0.00046	529	14.135	0.000433929	12.29	0.076610697	2169.37	54.52	57.03	3/10/03	14:00	6566:22:00	6566:20:00	6566:04:00	81.0331208
22	68	1072	0.00078	528	13.914	0.000724247	20.51	0.077334944	2189.87	55.04	57.55	3/20/03	11:41	6804:03:00	6804:01:00	6803:45:00	82.48666559
13	71	1073	0.00046	531	13.927	0.000425943	12.06	0.077760887	2201.93	55.34	57.85	3/24/03	13:56	6902:16:00	6902:14:00	6902:00:00	83.08008185
11	69	1077	0.00039	529	13.979	0.000363125	10.28	0.078124012	2212.22	55.60	58.11	3/31/03	17:10	7073:32:00	7073:30:00	7073:14:00	84.10430033
5	66	1090	0.00018	526	14.148	0.000168002	4.76	0.078292014	2216.97	55.72	58.23	4/9/03	18:09	7290:31:00	7290:29:00	7290:13:00	85.38452241
16	69	1078	0.00057	529	13.992	0.000528672	14.97	0.078820686	2231.94	56.09	58.61	4/14/03	18:09	7410:31:00	7410:29:00	7410:13:00	86.08435785
7	64	1085	0.00025	524	14.083	0.000235017	6.65	0.079055703	2238.60	56.26	58.77	4/21/03	15:18	7575:40:00	7575:38:00	7575:22:00	87.03830574
4	64	1081	0.00014	524	14.031	0.0001338	3.79	0.079189503	2242.39	56.35	58.87	4/28/03	11:11	7739:33:00	7739:31:00	7739:15:00	87.97471228
12	64	1089	0.00042	524	13.875	0.000396945	11.24	0.079586449	2253.63	56.64	59.15	5/5/03	14:39	7911:01:00	7910:59:00	7910:43:00	88.94389617
4	64	1088	0.00014	524	14.122	0.000134667	3.81	0.079721116	2257.44	56.73	59.25	5/12/03	14:14	8078:36:00	8078:34:00	8078:18:00	89.88103248
3	64	1083	0.00011	524	14.057	0.000100536	2.85	0.079821852	2260.29	56.80	59.32	5/19/03	14:25	8246:47:00	8246:45:00	8246:29:00	90.81180173
13	64	1083	0.00046	524	14.057	0.000435656	12.34	0.080257308	2272.63	57.11	59.63	5/30/03	16:28	8512:50:00	8512:48:00	8512:32:00	92.26501684
10	68	1081	0.00035	528	14.031	0.000331967	9.40	0.080589275	2282.03	57.35	59.86	6/3/03	10:55	8603:17:00	8603:15:00	8602:59:00	92.75388581
5	64	1078	0.00018	524	13.992	0.000166786	4.72	0.080756061	2286.75	57.47	59.98	6/9/03	13:45	8750:07:00	8750:05:00	8749:49:00	93.54205828
2	64	1087	7.1E-05	524	14.109	6.72716E-05	1.90	0.08082									

9	71	1084	0.00032	531	14.070	0.000297907	8.44	0.08651815	2449.91	61.57	64.08	10/14/03	22:57	11807:19:00	11807:17:00	11807:01:00	108.6614774
11	77	1081	0.00039	537	14.031	0.000359044	10.17	0.086877193	2460.08	61.83	64.34	10/20/03	15:25	11943:47:00	11943:45:00	11943:29:00	109.2876175
1	66	1075	3.5E-05	526	13.953	3.3138E-05	0.94	0.086910331	2461.02	61.85	64.36	10/27/03	15:00	12111:22:00	12111:20:00	12111:04:00	110.0516545
-2	70	1080	-7.1E-05	530	14.018	-6.60817E-05	-1.87	0.08684425	2459.15	61.80	64.32	11/3/03	22:08	12286:30:00	12286:28:00	12286:12:00	110.8444857

DECANISTERED 11/03/03; sample air-dried 20 days

SAMPLE: 371' 0" to 372' 0" (Mulky Coal) in canister E

dry sample weight:	lbs.	grams	lbs.	grams	moisture weight	est. lost gas (cc) =	TIME OF:	elapsed time (off bottom to canistering)
	2.5941	1176.68	wet sample weight:	2.7092	1228.89	4.2%	off bottom	21.0 minutes
						75	6/9/02 23:38	0.350 hours
							at surface	
							in canister	

RIG/LAB MEASUREMENTS

CONVERSION OF RIG/LAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)

CUMULATIVE VOLUMES

SCF/TON

SCF/TON

TIME SINCE

5.911607978 SORT (hrs)

measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SORT hrs. (since off bottom)
10	74.8	1078	0.00035	534.8	13.992	0.000326837	9.25	0.000326837	9.25	0.25	2.29	6/10/02 0:07	0:29:00	0:27:00	0:08:00	0.695221787
15	74.8	1078	0.00053	534.8	13.992	0.000490255	13.88	0.000817091	23.14	0.63	2.67	6/10/02 0:18	0:40:00	0:38:00	0:19:00	0.816496581
13	74.8	1078	0.00046	534.8	13.992	0.000424887	12.03	0.001241979	35.17	0.96	3.00	6/10/02 0:29	0:51:00	0:49:00	0:30:00	0.921954446
7	74.8	1078	0.00025	534.8	13.992	0.000228786	6.48	0.001470764	41.65	1.13	3.18	6/10/02 0:35	0:57:00	0:55:00	0:36:00	0.974679434
6	75	1078	0.00021	535	13.992	0.000196029	5.55	0.001666793	47.20	1.29	3.33	6/10/02 0:40	1:02:00	1:00:00	0:41:00	1.016530045
18	75.2	1077	0.00064	535.2	13.979	0.000587321	16.63	0.002254114	63.83	1.74	3.78	6/10/02 1:01	1:23:00	1:21:00	1:02:00	1.176151918
21	62	1077	0.00074	522	13.979	0.000702535	19.89	0.002956648	83.72	2.28	4.32	6/10/02 1:55	2:17:00	2:15:00	1:56:00	1.511070261
8	63	1077	0.00028	523	13.979	0.00026712	7.56	0.003223769	91.29	2.49	4.53	6/10/02 2:18	2:40:00	2:38:00	2:19:00	1.632993162
5	63	1077	0.00018	523	13.979	0.00016695	4.73	0.003390719	96.01	2.61	4.66	6/10/02 2:40	3:02:00	3:00:00	2:41:00	1.74164673
7	63	1076	0.00025	523	13.966	0.000233513	6.61	0.003624232	102.63	2.79	4.84	6/10/02 3:15	3:37:00	3:35:00	3:16:00	1.901753577
9	63	1076	0.00032	523	13.966	0.000300232	8.50	0.003924464	111.13	3.03	5.07	6/10/02 4:08	4:30:00	4:28:00	4:09:00	2.121320344
5	63	1076	0.00018	523	13.966	0.000166795	4.72	0.004091259	115.85	3.15	5.20	6/10/02 4:33	4:55:00	4:53:00	4:34:00	2.217355783
27	63	1076	0.00095	523	13.966	0.000900695	25.50	0.004991954	141.36	3.85	5.89	6/10/02 6:34	6:56:00	6:54:00	6:35:00	2.633122354
40	63	1076	0.00141	523	13.966	0.001334362	37.78	0.006326316	179.14	4.88	6.92	6/10/02 11:06	11:28:00	11:26:00	11:07:00	3.386246693
112	72	1075	0.00396	532	13.953	0.003669594	103.91	0.009995911	283.05	7.71	9.75	6/10/02 18:15	18:37:00	18:35:00	18:16:00	4.314703543
51	64	1077	0.0018	524	13.979	0.001699643	48.13	0.011695554	331.18	9.02	11.06	6/11/02 10:49	35:11:00	35:09:00	34:50:00	5.93155404
67	63	1078	0.00237	523	13.992	0.002239211	63.41	0.013934765	394.59	10.74	12.79	6/12/02 11:18	59:40:00	59:38:00	59:19:00	7.724420151
43	63.5	1080	0.00152	523.5	14.018	0.001438397	40.73	0.015373162	435.32	11.85	13.89	6/13/02 9:03	81:25:00	81:23:00	81:04:00	9.023118456
62	63.5	1081	0.00219	523.5	14.031	0.002075888	58.78	0.01744905	494.10	13.45	15.49	6/14/02 20:06	116:28:00	116:26:00	116:07:00	10.79197233
40	63	1079	0.00141	523	14.005	0.001338083	37.89	0.018787133	531.99	14.48	16.53	6/15/02 18:38	139:00:00	138:58:00	138:39:00	11.78982612
49	63	1081	0.00173	523	14.031	0.00164219	46.50	0.020429322	578.49	15.75	17.79	6/17/02 11:24	179:46:00	179:44:00	179:25:00	13.40770923
55	63.5	1081	0.00194	523.5	14.031	0.001841513	52.15	0.022270836	630.64	17.17	19.21	6/19/02 16:30	232:52:00	232:50:00	232:31:00	15.25996942
25	63.5	1089	0.00088	523.5	14.135	0.000843246	23.88	0.023114082	654.52	17.82	19.86	6/20/02 15:50	256:12:00	256:10:00	255:51:00	16.00624878
88	64	1084	0.00311	524	14.070	0.002951779	83.58	0.026065861	738.10	20.10	22.14	6/25/02 14:10	374:32:00	374:30:00	374:11:00	19.3528637
54	64	1079	0.00191	524	14.005	0.001802964	51.05	0.027868826	789.15	21.49	23.53	6/27/02 19:07	427:29:00	427:27:00	427:08:00	20.67567008
58	65	1085	0.00205	525	14.083	0.001943576	55.04	0.029812402	844.19	22.98	25.03	6/30/02 20:01	500:23:00	500:21:00	500:02:00	22.36924973
27	64.5	1086	0.00095	524.5	14.096	0.000906466	25.67	0.030718868	869.86	23.68	25.73	7/2/02 16:57	545:19:00	545:17:00	544:58:00	23.35201633
46	62.5	1086	0.00162	522.5	14.096	0.00155026	43.90	0.032269128	913.76	24.88	26.92	7/7/02 21:16	669:38:00	669:36:00	669:17:00	25.87727446
46	63	1082	0.00162	523	14.044	0.001543073	43.69	0.033812201	957.45	26.07	28.11	7/11/02 18:12	762:34:00	762:32:00	762:13:00	27.61460966
43	63	1083	0.00152	523	14.057	0.001443771	40.88	0.035255973	998.33	27.18	29.22	7/16/02 17:33	881:55:00	881:53:00	881:34:00	29.69708179
47	65	1083	0.00166	525	14.057	0.001572064	44.52	0.036828037	1042.85	28.39	30.44	7/22/02 15:58	1024:20:00	1024:18:00	1023:59:00	32.00520791
56	66	1081	0.00198	526	14.031	0.001868084	52.84	0.038694121	1095.69	29.83	31.87	7/29/02 15:30	1191:52:00	1191:50:00	1191:31:00	34.523422
75	78	1087	0.00265	538	14.109	0.002457037	69.58	0.041115158	1165.27	31.73	33.77	8/5/02 10:17	1354:39:00	1354:37:00	1354:18:00	36.80557023
92	80	1080	0.00325	540	14.018	0.002983466	84.48	0.044134623	1249.75	34.03	36.07	8/12/02 13:12	1525:34:00	1525:32:00	1525:13:00	39.05850313
29	64	1082	0.00102	524	14.044	0.000970951	27.49	0.045105574	1277.24	34.78	36.82	8/20/02 14:59	1719:21:00	1719:19:00	1719:00:00	41.46504552
24	64	1086	0.00085	524	14.096	0.000806516	22.84	0.04591209	1300.08	35.40	37.44	8/26/02 10:29	1858:51:00	1858:49:00	1858:30:00	43.11438275
34	64	1078	0.00012	524	13.992	0.0001134148	32.12	0.047046238	1332.20	36.27	38.31	9/2/02 14:19	2030:41:00	2030:39:00	2030:20:00	45.0631039
18	64	1085	0.00064	524	14.083	0.00060433	17.11	0.047650568	1349.31	36.74	38.78	9/7/02 12:38	2149:00:00	2148:58:00	2148:39:00	46.35730795
24	63	1077	0.00085	523	13.979	0.000801361	22.89	0.048451929	1372.00	37.35	39.40	9/13/02 18:22	2298:44:00	2298:42:00	2298:23:00	47.9451075
32	68	1074	0.00113	528	13.940	0.001055416	29.89	0.049507345	1401.89	38.17	40.21	9/20/02 10:17	2458:39:00	2458:37:00	2458:18:00	49.58477589
28	65	1080	0.00099	525	14.018	0.000933954	26.45	0.050441299	1428.33	38.89	40.93	9/27/02 13:48	2630:10:00	2630:08:00	2629:49:00	51.28515055
43	76	1078	0.00152	536	13.992	0.001402251	39.71	0.05184355	1468.04	39.97	42.01	10/1/02 14:01	2726:23:00	2726:21:00	2726:02:00	52.21478079
11	66	1083	0.00039	526	14.057	0.00036723	10.40	0.05221078	1478.44	40.25	42.29	10/4/02 18:49	2803:11:00	2803:09:00	2802:50:00	52.94509735
67	68	1091	0.0006	528	14.161	0.000569565	16.13	0.052780345	1494.57	40.69	42.73	10/14/02 10:32	3034:54:00	3034:52:00	3034:33:00	55.08992648
16	63	1076	0.00057	523	13.966	0.000533745	15.11	0.05331409	1509.68	41.10	43.15	10/18/02 14:50	3135:12:00	3135:10:00	3134:51:00	55.99285669
20	68	1089	0.00071	528	14.135	0.000668848	18.94	0.053982937	1528.62	41.62	43.66	10/26/02 14:53	3327:15:00	3327:13:00	3326:54:00	57.68231965
13	67	1086	0.00046	527	14.226	0.000438376	12.41	0.054421313	1541.03	41.96	44.00	10/31/02 10:40	3443:02:00	3443:00:00	3442:41:00	58.67736645
32	69	1081	0.00113	529	14.031	0.001060286	30.02	0.055481599	1571.06	42.77	44.82	11/7/02 13:08	3613:30:00	3613:28:00	3613:09:00	60.11239473
25	69	1086	0.00088	529	14.096	0.00083218	23.56	0.05631378	1594.62	43.42	45.46	11/16/02 22:54	3839:16:00	3839:14:00	3838:55:00	61.9618162
20	70	1085	0.00071	530	14.083	0.000663876	18.80	0.056977656	1613.42	43.93	45.97	11/22/02 17:30	3977:52:00	3977:50:0		

0	67	1101	0	527 14.291	0	0.00	0.059723005	1691.16	46.04	48.09	1/6/03	13:39	5054:01:00	5053:59:00	5053:40:00	71.09160757
17	67	1088	0.0006	527 14.122	0.000569076	16.11	0.060292081	1707.28	46.48	48.53	1/13/03	16:06	5224:28:00	5224:26:00	5224:07:00	72.28047224
7	66	1100	0.00025	526 14.278	0.00023736	6.72	0.060529442	1714.00	46.67	48.71	1/22/03	15:23	5439:45:00	5439:43:00	5439:24:00	73.75466087
19	68	1095	0.00067	528 14.213	0.000638906	18.09	0.061168348	1732.09	47.16	49.20	1/29/03	13:40	5606:02:00	5606:00:00	5605:41:00	74.87344879
21	66	1075	0.00074	526 13.953	0.000695897	19.71	0.061864245	1751.79	47.70	49.74	2/3/03	15:56	5728:18:00	5728:16:00	5727:57:00	75.68553362
8	67	1083	0.00028	527 14.057	0.00026657	7.55	0.062130815	1759.34	47.90	49.94	2/10/03	16:03	5896:25:00	5896:23:00	5896:04:00	76.78812842
8	66	1084	0.00028	526 14.070	0.000267323	7.57	0.062398138	1766.91	48.11	50.15	2/17/03	13:59	6062:21:00	6062:19:00	6062:00:00	77.86109426
2	64	1100	7.1E-05	524 14.278	6.80781E-05	1.93	0.062466214	1768.84	48.16	50.20	2/24/03	14:15	6230:37:00	6230:35:00	6230:16:00	78.93425534
27	69	1076	0.00095	529 13.966	0.000890479	25.22	0.063356693	1794.05	48.85	50.89	3/3/03	13:55	6398:17:00	6398:15:00	6397:56:00	79.98927011
12	69	1089	0.00042	529 14.135	0.00040055	11.34	0.063757243	1805.40	49.15	51.20	3/10/03	14:00	6566:22:00	6566:20:00	6566:01:00	81.0331208
27	68	1072	0.00095	528 13.914	0.000888849	25.17	0.064646092	1830.57	49.84	51.88	3/20/03	11:42	6804:04:00	6804:02:00	6803:43:00	82.48676662
14	71	1073	0.00049	531 13.927	0.000458708	12.99	0.0651048	1843.56	50.19	52.24	3/24/03	13:56	6902:18:00	6902:16:00	6901:57:00	83.08008185
10	69	1077	0.00035	529 13.979	0.000330113	9.35	0.065434913	1852.90	50.45	52.49	3/31/03	17:12	7073:34:00	7073:32:00	7073:13:00	84.10449849
4	66	1090	0.00014	526 14.148	0.000134401	3.81	0.065569315	1856.71	50.55	52.59	4/9/03	18:10	7290:32:00	7290:30:00	7290:11:00	85.38462
20	69	1078	0.00071	529 13.992	0.00066084	18.71	0.066230155	1875.42	51.06	53.10	4/10/03	15:10	7311:32:00	7311:30:00	7311:11:00	85.50750454
5	64	1085	0.00018	524 14.083	0.000167869	4.75	0.066398024	1880.18	51.19	53.23	4/21/03	15:19	7575:41:00	7575:39:00	7575:20:00	87.03840149
3	64	1081	0.00011	524 14.031	0.00010035	2.84	0.066498374	1883.02	51.27	53.31	4/28/03	11:12	7739:34:00	7739:32:00	7739:13:00	87.974807
15	64	1069	0.00053	524 13.875	0.000496182	14.05	0.066994556	1897.07	51.65	53.69	5/5/03	14:39	7911:01:00	7910:59:00	7910:40:00	88.94389617
0	64	1088	0	524 14.122	0	0.00	0.066994556	1897.07	51.65	53.69	5/12/03	14:15	8078:37:00	8078:35:00	8078:16:00	89.8811252
1	64	1083	3.5E-05	524 14.057	3.3512E-05	0.95	0.067028068	1898.02	51.68	53.72	5/19/03	14:26	8246:48:00	8246:46:00	8246:27:00	90.81189349
12	64	1083	0.00042	524 14.057	0.000402144	11.39	0.067430212	1909.40	51.99	54.03	5/30/03	16:29	8512:51:00	8512:49:00	8512:30:00	92.26510716
10	68	1081	0.00035	528 14.031	0.000331967	9.40	0.067762179	1918.80	52.24	54.28	6/3/03	10:56	8603:18:00	8603:16:00	8602:57:00	92.75397566
5	64	1078	0.00018	524 13.992	0.000166786	4.72	0.067928966	1923.53	52.37	54.41	6/9/03	13:46	8750:08:00	8750:06:00	8749:47:00	93.54214736
0	64	1087	0	524 14.109	0	0.00	0.067928966	1923.53	52.37	54.41	6/16/03	13:26	8917:48:00	8917:46:00	8917:27:00	94.43410401
5	63	1079	0.00018	523 14.005	0.00016726	4.74	0.068096226	1928.26	52.50	54.54	6/23/03	11:12	9083:34:00	9083:32:00	9083:13:00	95.30774715
3	62	1088	0.00011	522 14.122	0.000101387	2.87	0.068197613	1931.13	52.58	54.62	6/30/03	11:11	9251:33:00	9251:31:00	9251:12:00	96.18497804
13	65	1078	0.00046	525 13.992	0.000432819	12.26	0.068630432	1943.39	52.91	54.95	7/2/03	15:12	9303:34:00	9303:32:00	9303:13:00	96.45499814

DECANISTERED 7/2/2003; sample air-dried 8 days

SAMPLE: 370' 0" to 371' 0" (Mulky Coal) in canister F

dry sample weight	lbs.		grams		wet sample weight:	lbs.		grams		moisture weight	est. lost gas (cc) =	TIME OF:				elapsed time (off bottom to canistering)						
	2.2335	1013.11				2.4125	1094.31	7.4%	60			off bottom	at surface	in canister	20.0 minutes							
													6/9/02 23:38	6/9/02 23:40	6/9/02 23:58	0.333 hours						
RIG/LAB MEASUREMENTS												CONVERSION OF RIG/LAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)				CUMULATIVE VOLUMES		SCF/TON	SCF/TON	TIME SINCE	0.577350269	SQRT (hrs)
measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SQRT hrs. (since off bottom)								
17	74.8	1078	0.0006	534.8	13.992	0.000555622	15.73	0.000555622	15.73	0.50	2.39	6/10/02 0:10	0:32:00	0:30:00	0:12:00	0.730296743						
14	74.8	1078	0.00049	534.8	13.992	0.000457571	12.96	0.001013193	28.69	0.91	2.80	6/10/02 0:21	0:43:00	0:41:00	0:23:00	0.846561673						
10	74.8	1078	0.00035	534.8	13.992	0.000326837	9.25	0.00134003	37.95	1.20	3.10	6/10/02 0:31	0:53:00	0:51:00	0:33:00	0.939858145						
7	75	1078	0.00025	535	13.992	0.0002287	6.48	0.00156873	44.42	1.40	3.30	6/10/02 0:36	0:58:00	0:56:00	0:38:00	0.98319208						
6	74.8	1078	0.00021	534.8	13.992	0.000196102	5.55	0.001764832	49.97	1.58	3.48	6/10/02 0:42	1:04:00	1:02:00	0:44:00	1.032795559						
14	75.2	1077	0.00049	535.2	13.979	0.000456805	12.94	0.002221637	62.91	1.99	3.89	6/10/02 1:03	1:25:00	1:23:00	1:05:00	1.190238071						
27	62	1077	0.00095	522	13.979	0.000903259	25.58	0.003124895	88.49	2.80	4.70	6/10/02 1:56	2:18:00	2:16:00	1:58:00	1.516575089						
5	63	1077	0.00018	523	13.979	0.00016695	4.73	0.003291846	93.21	2.95	4.85	6/10/02 2:18	2:40:00	2:38:00	2:20:00	1.632993162						
5	63	1077	0.00018	523	13.979	0.00016695	4.73	0.003458796	97.94	3.10	4.99	6/10/02 2:41	3:03:00	3:01:00	2:43:00	1.74642492						
7	63	1076	0.00025	523	13.966	0.000233513	6.61	0.003692309	104.55	3.31	5.20	6/10/02 3:16	3:38:00	3:36:00	3:18:00	1.906130461						
9	63	1076	0.00032	523	13.966	0.000300232	8.50	0.003992541	113.06	3.58	5.47	6/10/02 4:09	4:31:00	4:29:00	4:11:00	2.125245084						
5	63	1076	0.00018	523	13.966	0.000166795	4.72	0.004159336	117.78	3.72	5.62	6/10/02 4:34	4:56:00	4:54:00	4:36:00	2.221110833						
12	63	1076	0.00042	523	13.966	0.000400309	11.34	0.004559645	129.11	4.08	5.98	6/10/02 6:36	6:58:00	6:56:00	6:38:00	2.639444386						
8	63	1077	0.00028	523	13.979	0.00026712	7.56	0.004826765	136.68	4.32	6.22	6/10/02 7:35	7:57:00	7:55:00	7:37:00	2.819574436						
25	63	1077	0.00088	523	13.979	0.000834752	23.64	0.005661517	160.32	5.07	6.97	6/10/02 11:07	11:29:00	11:27:00	11:09:00	3.388706735						
83	72	1075	0.00293	532	13.953	0.002719432	77.01	0.008380949	237.32	7.50	9.40	6/10/02 18:17	18:39:00	18:37:00	18:19:00	4.318564576						
31	64	1077	0.00109	524	13.979	0.001033117	29.25	0.009414065	266.58	8.43	10.33	6/11/02 10:50	35:12:00	35:10:00	34:52:00	5.93295879						
44	63	1078	0.00155	523	13.992	0.001470527	41.64	0.010884592	308.22	9.75	11.64	6/12/02 11:19	59:41:00	59:39:00	59:21:00	7.725498905						
40	63	1080	0.00141	523	14.018	0.00133923	37.93	0.01223915	346.14	10.95	12.84	6/13/02 9:04	81:26:00	81:24:00	81:06:00	9.024041962						
43	63.5	1082	0.00152	523.5	14.044	0.001441061	40.81	0.013664975	386.95	12.24	14.13	6/14/02 20:06	116:26:00	116:26:00	116:08:00	10.79197233						
26	63	1079	0.00092	523	14.005	0.000869754	24.63	0.014534729	411.58	13.02	14.91	6/15/02 18:39	139:01:00	138:59:00	138:41:00	11.79053293						
32	63	1081	0.00113	523	14.031	0.00107245	30.37	0.015607179	441.94	13.98	15.87	6/17/02 11:25	179:47:00	179:45:00	179:27:00	13.40833074						
37	63.5	1081	0.00131	523.5	14.031	0.001238836	35.08	0.016846016	477.02	15.08	16.98	6/19/02 16:32	232:54:00	232:52:00	232:34:00	15.26106156						
17	63.5	1089	0.0006	523.5	14.135	0.000573407	16.24	0.017419423	493.26	15.60	17.50	6/20/02 15:51	256:13:00	256:11:00	255:53:00	16.0067694						
60	64	1084	0.00212	524	14.070	0.002012577	56.99	0.019432	550.25	17.40	19.30	6/25/02 14:09	374:31:00	374:29:00	374:11:00	19.35243309						
40	64	1079	0.00141	524	14.005	0.001335529	37.82	0.020767529	588.07	18.60	20.49	6/27/02 19:08	427:30:00	427:28:00	427:10:00	20.67607313						
42	65	1085	0.00148	525	14.083	0.001407417	39.85	0.022174946	627.92	19.86	21.75	6/30/02 20:01	500:23:00	500:21:00	500:03:00	22.36924973						
18	64.5	1086	0.00064	524.5	14.096	0.00060431	17.11	0.022779257	645.03	20.40	22.29	7/2/02 16:58	545:20:00	545:18:00	545:00:00							

39	66	1081	0.00138	526	14.031	0.001299594	36.80	0.028375352	803.50	25.41	27.31	7/28/02	15:29	1167:51:00	1167:49:00	1167:31:00	34.17382039
59	78	1087	0.00208	538	14.109	0.001932869	54.73	0.030308222	858.23	27.14	29.04	8/5/02	10:28	1354:50:00	1354:48:00	1354:30:00	36.80806071
65	80	1080	0.00203	540	14.018	0.002107883	59.69	0.032416105	917.92	29.03	30.92	8/12/02	13:13	1525:35:00	1525:33:00	1525:15:00	39.05871648
16	64	1082	0.00057	524	14.044	0.000535697	15.17	0.032951802	933.09	29.51	31.40	8/20/02	14:59	1719:21:00	1719:19:00	1719:01:00	41.46504552
15	64	1086	0.00053	524	14.096	0.000504072	14.27	0.033455874	947.36	29.96	31.86	8/28/02	10:29	1858:51:00	1858:49:00	1858:31:00	43.11438275
24	64	1078	0.00085	524	13.992	0.000800575	22.67	0.034256449	970.03	30.67	32.57	9/2/02	14:20	2030:42:00	2030:40:00	2030:22:00	45.06328883
12	64	1085	0.00042	524	14.083	0.000402887	11.41	0.034659336	981.44	31.04	32.93	9/7/02	12:40	2149:02:00	2149:00:00	2148:42:00	46.35766747
17	63	1077	0.00006	523	13.979	0.000567631	16.07	0.035226967	997.51	31.54	33.44	9/13/02	18:23	2298:45:00	2298:43:00	2298:25:00	47.94528131
24	68	1074	0.00085	528	13.940	0.000791562	22.41	0.036018529	1019.93	32.25	34.15	9/20/02	10:20	2458:42:00	2458:40:00	2458:22:00	49.58528007
13	65	1080	0.00046	525	14.018	0.000433622	12.28	0.036452115	1032.21	32.64	34.54	9/27/02	13:49	2630:11:00	2630:09:00	2629:51:00	51.28531304
35	76	1078	0.00124	536	13.992	0.001141367	32.32	0.037593517	1064.53	33.66	35.56	10/1/02	14:02	2726:24:00	2726:22:00	2726:04:00	52.21494039
10	65	1084	0.00035	525	14.070	0.000334791	9.48	0.037928308	1074.01	33.96	35.86	10/8/02	15:54	2896:16:00	2896:14:00	2895:56:00	53.81697378
10	68	1091	0.00035	528	14.161	0.000335038	9.49	0.038263346	1083.49	34.26	36.16	10/14/02	10:37	3034:59:00	3034:57:00	3034:39:00	55.09068282
11	63	1076	0.00039	523	13.966	0.00036695	10.39	0.038630295	1093.88	34.59	36.49	10/18/02	14:52	3135:14:00	3135:12:00	3134:54:00	55.99315434
14	68	1089	0.00049	528	14.135	0.000468193	13.26	0.039098489	1107.14	35.01	36.91	10/26/02	14:53	3327:15:00	3327:13:00	3326:55:00	57.68231965
10	67	1096	0.00035	527	14.226	0.000337212	9.55	0.039435701	1116.69	35.31	37.21	10/31/02	10:42	3443:04:00	3443:02:00	3442:44:00	58.67765049
26	69	1081	0.00092	529	14.031	0.000861483	24.39	0.040297183	1141.08	36.08	37.98	11/7/02	13:10	3613:32:00	3613:30:00	3613:12:00	60.11287199
20	69	1086	0.00071	529	14.096	0.000665744	18.85	0.040962928	1159.94	36.68	38.58	11/16/02	22:55	3839:17:00	3839:15:00	3838:57:00	61.96195069
15	70	1085	0.00053	530	14.083	0.000497907	14.10	0.041460835	1174.04	37.13	39.02	11/22/02	17:31	3977:53:00	3977:51:00	3977:33:00	63.07046324
0	65	1096	0	525	14.226	0	0.00	0.041460835	1174.04	37.13	39.02	12/3/02	18:45	4243:07:00	4243:05:00	4242:47:00	65.1392099
18	67	1087	0.00064	527	14.109	0.000601997	17.05	0.042062832	1191.08	37.67	39.56	12/10/02	10:48	4403:10:00	4403:08:00	4402:50:00	66.35636116
28	70	1074	0.00099	530	13.940	0.000920004	26.05	0.042982836	1217.13	38.49	40.39	12/16/02	15:13	4551:35:00	4551:33:00	4551:15:00	67.46542324
8	67	1088	0.00028	527	14.122	0.000267801	7.58	0.043250636	1224.72	38.73	40.63	12/23/02	19:09	4723:31:00	4723:29:00	4723:11:00	68.72784492
23	70	1078	0.00081	530	13.992	0.000758532	21.48	0.044009169	1246.20	39.41	41.31	12/30/02	16:50	4889:12:00	4889:10:00	4888:52:00	69.92281459
15	67	1101	0.00053	527	14.291	0.000508126	14.39	0.044517294	1260.58	39.86	41.76	1/6/03	13:40	5054:02:00	5054:00:00	5053:42:00	71.09172479 estimate
12	67	1088	0.00042	527	14.122	0.000401701	11.37	0.044918995	1271.96	40.22	42.12	1/13/03	16:07	5224:29:00	5224:27:00	5224:09:00	72.28058753
4	66	1100	0.00014	526	14.278	0.000135634	3.84	0.045055463	1275.80	40.34	42.24	1/22/03	15:25	5439:47:00	5439:45:00	5439:27:00	73.75488684
15	68	1095	0.00053	528	14.213	0.00050444	14.28	0.045559029	1290.08	40.80	42.69	1/29/03	13:42	5606:04:00	5606:02:00	5605:44:00	74.87387138
17	66	1075	0.00006	526	13.953	0.000563346	15.95	0.046122375	1306.04	41.30	43.20	2/3/03	15:57	5728:19:00	5728:17:00	5727:59:00	75.68564373
5	67	1083	0.00018	527	14.057	0.000166606	4.72	0.046288981	1310.75	41.45	43.35	2/10/03	14:08	5894:30:00	5894:28:00	5894:10:00	76.77564718
6	66	1083	0.00021	526	14.057	0.000200307	5.67	0.046489288	1316.43	41.63	43.53	2/17/03	14:00	6062:22:00	6062:20:00	6062:02:00	77.86120129
-1	64	1083	-3.5E-05	524	14.057	-3.3512E-05	-0.95	0.046455776	1315.48	41.60	43.50	2/24/03	14:16	6230:38:00	6230:36:00	6230:18:00	78.93436092
21	69	1083	0.00074	529	14.057	0.0006971	19.74	0.047152877	1335.22	42.22	44.12	3/3/03	13:56	6398:15:00	6398:16:00	6397:58:00	79.98937429
8	69	1083	0.00028	529	14.057	0.000265562	7.52	0.047418439	1342.74	42.46	44.36	3/10/03	14:01	6566:23:00	6566:21:00	6566:03:00	81.03322364
20	88	1083	0.00071	528	14.057	0.000665162	18.84	0.048083601	1361.57	43.06	44.95	3/20/03	11:44	6804:06:00	6804:04:00	6803:46:00	82.48696867
10	71	1083	0.00035	531	14.057	0.000330702	9.36	0.048414303	1370.94	43.35	45.25	3/24/03	13:57	6902:19:00	6902:17:00	6901:59:00	83.08018215
5	69	1083	0.00018	529	14.057	0.000165976	4.70	0.048580228	1375.64	43.50	45.40	3/31/03	17:13	7073:35:00	7073:33:00	7073:15:00	84.10459758
1	67	1083	3.5E-05	527	14.057	3.33212E-05	0.94	0.048613601	1376.58	43.53	45.43	4/9/03	18:12	7290:34:00	7290:32:00	7290:14:00	85.3848152
9	67	1083	0.00032	527	14.057	0.000299891	8.49	0.048913492	1385.07	43.80	45.70	4/11/03	16:00	7336:22:00	7336:20:00	7336:02:00	85.65259288

DECANISTERED 4/11/2003; sample air-dried 7 days

SAMPLE: 490' 0" to 490' 6" (Crowbeug Coal) in canister G

dry sample weight	lbs.	grams	wet sample weight:	lbs.	grams	moisture weight	est. lost gas (cc) =	TIME OF:	elapsed time (off bottom to canistering)							
	0.7377	334.60		0.8024	363.94	8.1%	100	off bottom	at surface	in canister	19.0 minutes					
								6/10/02 3:26	6/10/02 3:35	6/10/02 3:45	0.317 hours					
RIG/LAB MEASUREMENTS								TIME SINCE			0.562731434 SORT (hrs)					
measured cc	measured T (F)	measured P	CONVERSION OF RIG/LAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)		CUMULATIVE VOLUMES		SCF/TON	SCF/TON	TIME OF MEASURE	off bottom	at surface	in canister	SORT hrs. (since off bottom)			
			cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas							
19	73	1076	0.00067	533	13.966	0.000621931	17.61	1.69	11.26	6/10/02 3:48	0:22:00	0:13:00	0:03:00	0.605530071		
5	73.2	1076	0.00018	533.2	13.966	0.000163605	0.000785535	22.24	2.13	11.70	6/10/02 3:51	0:25:00	0:16:00	0:06:00	0.645497224	
6	73.2	1076	0.00021	533.2	13.966	0.000196325	5.56	0.000981861	27.80	2.66	12.24	6/10/02 3:53	0:27:00	0:18:00	0:08:00	0.670820393
3	73.2	1076	0.00011	533.2	13.966	9.81627E-05	2.78	0.001080023	30.58	2.93	12.50	6/10/02 3:55	0:29:00	0:20:00	0:10:00	0.695221787
2	73.2	1076	7.1E-05	533.2	13.966	6.54418E-05	1.85	0.001145465	32.44	3.11	12.68	6/10/02 3:57	0:31:00	0:22:00	0:12:00	0.718795288
3	73.2	1076	0.00011	533.2	13.966	9.81627E-05	2.78	0.001243628	35.22	3.37	12.95	6/10/02 3:59	0:33:00	0:24:00	0:14:00	0.741619849
2	73.2	1076	7.1E-05	533.2	13.966	6.54418E-05	1.85	0.00130907	37.07	3.55	13.12	6/10/02 4:01	0:35:00	0:26:00	0:16:00	0.763762616
10	73.2	1076	0.00035	533.2	13.966	0.000327209	9.27	0.001636279	46.33	4.44	14.01	6/10/02 4:11	0:45:00	0:36:00	0:26:00	0.866025404
7	73.2	1076	0.00025	533.2	13.966	0.000229046	6.49	0.001865325	52.82	5.06	14.63	6/10/02 4:16	0:50:00	0:41:00	0:31:00	0.912870929
2	73.2	1076	7.1E-05	533.2	13.966	6.54418E-05	1.85	0.001930767	54.67	5.23	14.81	6/10/02 4:20	0:54:00	0:45:00	0:35:00	0.948683298
3	72.9	1076	0.00011	532.9	13.966	9.8218E-05	2.78	0.002028985	57.45	5.50	15.08	6/10/02 4:25	0:59:00	0:50:00	0:40:00	0.991631652
5	73	1076	0.00018	533	13.966	0.000163666	4.63	0.002192651	62.09	5.94	15.52	6/10/02 4:36	1:10:00	1:01:00	0:51:00	1.08012345
5	72.9	1076	0.00018	532.9	13.966	0.000163697	4.64	0.002356347	66.72	6.39	15.96	6/10/02 4:49	1:23:00	1:14:00	1:04:00	1.176151918
6	72.7	1076	0.00021	532.7	13.966	0.00019651	5.56	0.002552857	72.29	6.92	16.50	6/10/02 5:06	1:40:00	1:31:00	1:21:00	1.290994449
10	72.5	1076	0.00035	532.5	13.966	0.000327639	9.28	0.0								

11	82.4	1075	0.00039	542.4	13.953	0.000353496	10.01	0.008832778	250.12	23.95	33.52	6/10/02	14:57	11:31:00	11:22:00	11:12:00	3.393621468
13	83.7	1075	0.00046	543.7	13.953	0.000416769	11.80	0.009249547	261.92	25.08	34.65	6/10/02	15:50	12:24:00	12:15:00	12:05:00	3.521363372
8	83.7	1075	0.00028	543.7	13.953	0.000256473	7.26	0.00950602	269.18	25.77	35.35	6/10/02	16:14	12:48:00	12:39:00	12:29:00	3.577708764
11	83.7	1074	0.00039	543.7	13.940	0.000352323	9.98	0.009858343	279.16	26.73	36.30	6/10/02	16:48	13:22:00	13:13:00	13:03:00	3.656045222
-38	64	1077	-0.00134	524	13.979	-0.001266401	-35.86	0.008591942	243.30	23.29	32.87	6/11/02	10:53	31:27:00	31:18:00	31:08:00	5.608029957
8	63	1078	0.00028	523	13.992	0.000267369	7.57	0.008859311	250.87	24.02	33.59	6/12/02	11:20	55:54:00	55:45:00	55:35:00	7.476630257
23	63.5	1080	0.00081	523.5	14.018	0.000769375	21.79	0.009628686	272.65	26.11	35.68	6/13/02	9:06	77:40:00	77:31:00	77:21:00	8.812869378
26	63.5	1082	0.00092	523.5	14.044	0.000871339	24.67	0.010500025	297.33	28.47	38.04	6/14/02	20:08	112:42:00	112:33:00	112:23:00	10.61602562
20	63	1079	0.00071	523	14.005	0.000669041	18.95	0.011169066	316.27	30.28	39.86	6/15/02	18:41	135:15:00	135:06:00	134:56:00	11.62970335
15	63	1081	0.00053	523	14.031	0.000502711	14.24	0.011671777	330.51	31.65	41.22	6/17/02	11:28	176:02:00	175:53:00	175:43:00	13.2677554
24	63.5	1081	0.00085	523.5	14.031	0.00080357	22.75	0.012475347	353.26	33.82	43.40	6/19/02	16:33	229:07:00	228:58:00	228:48:00	15.13680023
-5	63.5	1089	-0.00018	523.5	14.135	-0.000168649	-4.78	0.012306697	348.49	33.37	42.94	6/20/02	15:54	252:28:00	252:19:00	252:09:00	15.88919969
40	64	1084	0.00141	524	14.070	0.001341718	37.99	0.013648415	386.48	37.00	46.58	6/25/02	14:07	370:41:00	370:32:00	370:22:00	19.25313827
29	64	1079	0.00102	524	14.005	0.000968259	27.42	0.014616674	413.90	39.63	49.20	6/27/02	19:09	423:43:00	423:34:00	423:24:00	20.58437919
5	65	1085	0.00018	525	14.083	0.00016755	4.74	0.014784224	418.64	40.08	49.66	6/30/02	20:02	496:36:00	496:27:00	496:17:00	22.28452378

DECANISTERED 7/02/03; sample dried 5 days @ 150 deg. F (65 deg C)

SAMPLE: 510' 0" to 511' 0" (Mineral Coal) in canister H

dry sample weight	lbs.	grams	lbs.	grams	moisture weight	est. lost gas (cc) =	TIME OF:	elapsed time (off bottom to canistering)		
	2.1416	971.41	wet sample weight:	2.3683	1074.25	9.6%	off bottom	at surface	in canister	13.0 minutes
							6/10/02 4:28	6/10/02 4:32	6/10/02 4:41	0.217 hours

FIG/LAB MEASUREMENTS

measured cc	measured T (F)	measured P	CONVERSION OF FIG/LAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)				CUMULATIVE VOLUMES		SCF/TON		SCF/TON		TIME SINCE			SQRT (hrs)	
			cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	0.465474668			
26	72.9	1076	0.00092	532.9	13.966	0.000851223	24.10	0.000851223	24.10	0.79	7.06	6/10/02	4:45	0:17:00	0:13:00	0:04:00	0.532290647
14	72.9	1076	0.00049	532.9	13.966	0.000458351	12.98	0.001309573	37.08	1.22	7.49	6/10/02	4:46	0:18:00	0:14:00	0:05:00	0.547722557
14	72.9	1076	0.00049	532.9	13.966	0.000458351	12.98	0.001767924	50.06	1.65	7.92	6/10/02	4:49	0:21:00	0:17:00	0:08:00	0.591607978
12	72.9	1076	0.00042	532.9	13.966	0.000392872	11.12	0.002160796	61.19	2.02	8.28	6/10/02	4:51	0:23:00	0:19:00	0:10:00	0.619139187
8	72.9	1076	0.00028	532.9	13.966	0.000261915	7.42	0.00242271	68.60	2.26	8.53	6/10/02	4:53	0:25:00	0:21:00	0:12:00	0.645497224
9	72.7	1076	0.00032	532.7	13.966	0.000294765	8.35	0.002717475	76.95	2.54	8.80	6/10/02	4:56	0:28:00	0:24:00	0:15:00	0.683130051
17	72.7	1076	0.0006	532.7	13.966	0.000556778	15.77	0.003274252	92.72	3.06	9.32	6/10/02	5:00	0:32:00	0:28:00	0:19:00	0.730296743
9	72.7	1076	0.00032	532.7	13.966	0.000294765	8.35	0.00359017	101.06	3.33	9.60	6/10/02	5:05	0:37:00	0:33:00	0:24:00	0.785281266
9	72.7	1076	0.00032	532.7	13.966	0.000294765	8.35	0.003863782	109.41	3.61	9.87	6/10/02	5:09	0:41:00	0:37:00	0:28:00	0.826639784
12	72.5	1076	0.00042	532.5	13.966	0.000393167	11.13	0.004256949	120.54	3.98	10.24	6/10/02	5:15	0:47:00	0:43:00	0:34:00	0.885061203
27	72.5	1076	0.00095	532.5	13.966	0.000884626	25.05	0.005141574	145.59	4.80	11.07	6/10/02	5:31	1:03:00	0:59:00	0:50:00	1.024695077
19	72.5	1076	0.00067	532.5	13.966	0.000622514	17.63	0.005764089	163.22	5.38	11.65	6/10/02	5:44	1:16:00	1:12:00	1:03:00	1.125462868
11	72.3	1076	0.00039	532.3	13.966	0.000360539	10.21	0.006124627	173.43	5.72	11.99	6/10/02	5:58	1:30:00	1:26:00	1:17:00	1.224744871
18	72.5	1076	0.00064	532.5	13.966	0.000589751	16.70	0.006714378	190.13	6.27	12.54	6/10/02	6:17	1:49:00	1:45:00	1:36:00	1.347837775
67	74.5	1077	0.00237	534.5	13.979	0.002189001	61.99	0.008903379	252.11	8.31	14.58	6/10/02	7:35	3:07:00	3:03:00	2:54:00	1.765408357
50	75.4	1077	0.00177	535.4	13.979	0.001630837	46.18	0.010534216	298.29	9.84	16.10	6/10/02	8:53	4:25:00	4:21:00	4:12:00	2.101586702
85	78.8	1076	0.003	538.8	13.966	0.00275237	77.94	0.013286586	376.23	12.41	18.67	6/10/02	11:11	6:43:00	6:39:00	6:30:00	2.591653269
71	80.2	1076	0.00251	540.2	13.966	0.00229308	64.93	0.015579666	441.17	14.55	20.82	6/10/02	13:42	9:14:00	9:10:00	9:01:00	3.038840047
4	80.4	1076	0.00014	540.4	13.966	0.00012914	3.66	0.015708806	444.82	14.67	20.94	6/10/02	13:50	9:22:00	9:18:00	9:09:00	3.060501048 estimate
37	82.8	1075	0.00131	542.8	13.953	0.001188156	33.64	0.016896962	478.47	15.78	22.05	6/10/02	14:36	10:08:00	10:04:00	9:55:00	3.183289703
10	82.6	1075	0.00035	542.6	13.953	0.000321242	9.10	0.017218204	487.56	16.08	22.35	6/10/02	14:58	10:30:00	10:26:00	10:17:00	3.240370349
24	83.7	1075	0.00085	543.7	13.953	0.00076942	21.79	0.017987624	509.35	16.80	23.06	6/10/02	15:49	11:21:00	11:17:00	11:08:00	3.368976106
12	83.5	1075	0.00042	543.5	13.953	0.000384852	10.90	0.018372476	520.25	17.16	23.42	6/10/02	16:15	11:47:00	11:43:00	11:34:00	3.432686023
15	83.7	1074	0.00053	543.7	13.940	0.00048044	13.60	0.018852916	533.85	17.61	23.87	6/10/02	16:46	12:18:00	12:14:00	12:05:00	3.507135583
-15	70.5	1074	-0.00053	530.5	13.940	-0.000492395	-13.94	0.018360522	519.91	17.15	23.41	6/10/02	19:22	14:54:00	14:50:00	14:41:00	3.860051813
18	64	1077	0.00064	524	13.979	0.000599874	16.99	0.018960396	536.90	17.71	23.97	6/11/02	10:58	30:30:00	30:26:00	30:17:00	5.522680509
65	63	1078	0.0023	523	13.992	0.002172369	61.51	0.021132765	598.41	19.74	26.00	6/12/02	11:20	54:52:00	54:48:00	54:39:00	7.407203701
47	63.5	1080	0.00166	523.5	14.018	0.001572201	44.52	0.022704966	642.93	21.20	27.47	6/13/02	9:07	76:39:00	76:35:00	76:26:00	8.754998574
44	63.5	1082	0.00155	523.5	14.044	0.001474574	41.76	0.02417954	684.69	22.58	28.85	6/14/02	20:10	111:42:00	111:38:00	111:29:00	10.56882207
32	63	1079	0.00113	523	14.005	0.001070466	30.31	0.025250006	715.00	23.58	29.85	6/15/02	18:43	134:15:00	134:11:00	134:02:00	11.58663023
28	63	1081	0.00099	523	14.031	0.000938394	26.57	0.02611884	741.57	24.46	30.72	6/17/02	11:29	175:01:00	174:57:00	174:48:00	13.22938648
16	63.5	1081	0.00057	523.5	14.031	0.000535713	15.17	0.026724113	756.74	24.96	31.22	6/19/02	16:25	227:57:00	227:53:00	227:44:00	15.09801311 estimate
3	63.5	1089	0.00011	523.5	14.135	0.00010119	2.87	0.026825303	759.61	25.05	31.32	6/20/02	15:55	251:27:00	251:23:00	251:14:00	15.85717503
83	64	1085	0.00293	524	14.083	0.002786633	78.91	0.029611935	838.51	27.65	33.92	6/25/02	14:04	369:36:00	369:32:00	369:23:00	19.22498375
54	64	1079	0.00191	524	14.005	0.001802964	51.05	0.0314149	889.57	29.34	35.60	6/27/02	19:10	422:42:00	422:38:00	422:29:00	20.55966926
43	65	1085	0.00152	525	14.083	0.001440927	40.80	0.032855827	930.37	30.68	36.95	6/30/02	20:04	495:36:00	495:32:00	495:23:00	22.26207537
12	64.5	1086	0.00042	524.5	14.096	0.000402874	11.41	0.033258701	941.78	31.06	37.33	7/2/02	17:11	540:43:00	540:39:00	540:30:00	23.25331518
33	62.5	1086	0.00117	522.5	14.096	0.001112143	31.49	0.034370844	973.27	32.10	38.36	7/7/02	21:19	664:51:00	664:47:00	664:38:00	25.78468538
44	63	1082	0.00155	523	14.044	0.001475983	41.80	0.035846827	1015.07	33.48	39.74	7/11/02	18:15	757:47:00	757:43:00	757:34:00	27.52786467
31	63	1083	0.00109	523	14.057	0.001040858	29.47	0.036887686	1044.54	34.45	40.72	7/16/02	1				

-15	64	1082	-0.00053	524	14.044	-0.000502216	-14.22	0.044432432	1258.18	41.49	47.76	8/20/02	14:59	1714:31:00	1714:27:00	1714:18:00	41.40672248
-2	64	1086	-7.1E-05	524	14.096	-6.72097E-05	-1.90	0.044365223	1256.28	41.43	47.70	8/26/02	10:30	1854:02:00	1853:58:00	1853:49:00	43.05848736

DECANISTERED 8/30/02; sample dried 8 days @ 150 deg. F (65 deg C)

SAMPLE: 519' 7" to 520' 7" (Scammon Coal) in canister I

dry sample weight		lbs.	grams	wet sample weight:		moisture weight	est. lost gas (cc) =	TIME OF:			elapsed time (off bottom to canistering)					
3.7893		1718.79		4.0468		1835.59	6.4%	250	off bottom	at surface	in canister	16.0 minutes				
									6/10/02 5:04	6/10/02 5:08	6/10/02 5:20	0.267 hours				
RIG/LAB MEASUREMENTS		CONVERSION OF RIG/LAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)				CUMULATIVE VOLUMES		SCF/TON	SCF/TON	TIME SINCE			0.518397779 SORT (hrs)			
measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SORT hrs. (since off bottom)		
38	72.5	1076	0.00134	532.5	13.966	0.001245029	35.26	0.001245029	35.26	0.66	5.32	6/10/02 5:23	0:19:00	0:15:00	0:03:00	0.562731434
10	72.5	1076	0.00035	532.5	13.966	0.000327639	9.28	0.001572668	44.53	0.83	5.49	6/10/02 5:25	0:21:00	0:17:00	0:05:00	0.591607978
12	72.5	1076	0.00042	532.5	13.966	0.000393167	11.13	0.001965835	55.67	1.04	5.70	6/10/02 5:28	0:24:00	0:20:00	0:08:00	0.632455532
12	72.5	1076	0.00042	532.5	13.966	0.000393167	11.13	0.002359002	66.80	1.25	5.90	6/10/02 5:30	0:26:00	0:22:00	0:10:00	0.658280589
20	72.5	1076	0.00071	532.5	13.966	0.000655278	18.56	0.003014281	85.35	1.59	6.25	6/10/02 5:34	0:30:00	0:26:00	0:14:00	0.707106781
9	72.5	1076	0.00032	532.5	13.966	0.000294875	8.35	0.003091156	93.70	1.75	6.41	6/10/02 5:37	0:33:00	0:29:00	0:17:00	0.741619849
16	72.5	1076	0.00057	532.5	13.966	0.000524223	14.84	0.003833379	108.55	2.02	6.68	6/10/02 5:41	0:37:00	0:33:00	0:21:00	0.785281266
17	72.5	1076	0.0006	532.5	13.966	0.000556987	15.77	0.004390365	124.32	2.32	6.98	6/10/02 5:47	0:43:00	0:39:00	0:27:00	0.846561673
18	72.3	1076	0.00064	532.3	13.966	0.000589972	16.71	0.004980338	141.03	2.63	7.29	6/10/02 5:52	0:48:00	0:44:00	0:32:00	0.894427191
9	72.3	1076	0.00032	532.3	13.966	0.000294986	8.35	0.005275324	149.38	2.78	7.44	6/10/02 5:56	0:52:00	0:48:00	0:36:00	0.930949336
21	82	1076	0.00074	522	13.966	0.000701882	19.88	0.005977206	169.25	3.15	7.81	6/10/02 6:04	1:00:00	0:56:00	0:44:00	1
6	62	1076	0.00021	522	13.966	0.000200538	5.68	0.006177744	174.93	3.26	7.92	6/10/02 6:07	1:03:00	0:59:00	0:47:00	1.024695077
10	62	1076	0.00035	522	13.966	0.00033423	9.46	0.006511973	184.40	3.44	8.10	6/10/02 6:11	1:07:00	1:03:00	0:51:00	1.056724499
8	62	1076	0.00028	522	13.966	0.000267384	7.57	0.006779357	191.97	3.58	8.24	6/10/02 6:15	1:11:00	1:07:00	0:55:00	1.087811258
16	62	1076	0.00057	522	13.966	0.000534767	15.14	0.007314124	207.11	3.86	8.52	6/10/02 6:22	1:18:00	1:14:00	1:02:00	1.140175425
10	62	1076	0.00035	522	13.966	0.00033423	9.46	0.007648354	216.58	4.04	8.70	6/10/02 6:29	1:25:00	1:21:00	1:09:00	1.190238071
19	61	1076	0.00067	521	13.966	0.000636255	18.02	0.008284609	234.59	4.37	9.03	6/10/02 6:40	1:36:00	1:32:00	1:20:00	1.264911064
28	61	1077	0.00099	521	13.979	0.000938511	26.58	0.00922312	261.17	4.87	9.53	6/10/02 7:05	2:01:00	1:57:00	1:45:00	1.420093894
16	62	1077	0.00057	522	13.979	0.000535264	15.16	0.009758384	276.33	5.15	9.81	6/10/02 7:17	2:13:00	2:09:00	1:57:00	1.488847429
20	62	1077	0.00071	522	13.979	0.000669081	18.95	0.010427465	295.27	5.50	10.16	6/10/02 7:29	2:25:00	2:21:00	2:09:00	1.554563176
28	62	1077	0.00099	522	13.979	0.000936713	26.52	0.011364178	321.80	6.00	10.66	6/10/02 7:54	2:50:00	2:46:00	2:34:00	1.683250823
47	62	1077	0.00166	522	13.979	0.001572339	44.52	0.012936517	366.32	6.83	11.49	6/10/02 8:48	3:44:00	3:40:00	3:28:00	1.932183566
92	62	1076	0.00325	522	13.966	0.003074913	87.07	0.016011443	453.39	8.45	13.61	6/10/02 11:12	6:08:00	6:04:00	5:52:00	2.476556749
84	65	1076	0.00297	525	13.966	0.002791486	79.05	0.018802916	532.44	9.92	14.58	6/10/02 13:32	8:28:00	8:24:00	8:12:00	2.909753712
44	66	1075	0.00155	526	13.953	0.001458071	41.29	0.020260987	573.73	10.69	15.35	6/10/02 14:38	9:34:00	9:30:00	9:18:00	3.093002856
17	66	1075	0.0006	526	13.953	0.000563346	15.95	0.020824332	589.68	10.99	15.65	6/10/02 15:03	9:59:00	9:55:00	9:43:00	3.15964133
23	68	1075	0.00081	528	13.953	0.000759286	21.50	0.021583619	611.18	11.39	16.05	6/10/02 15:41	10:37:00	10:33:00	10:21:00	3.258322677
21	68	1075	0.00074	528	13.953	0.000693261	19.63	0.02227688	630.81	11.76	16.42	6/10/02 16:13	11:09:00	11:05:00	10:53:00	3.339161571
19	68	1074	0.00067	528	13.940	0.000626653	17.74	0.022903533	648.55	12.09	16.75	6/10/02 16:44	11:40:00	11:36:00	11:24:00	3.415650255
68	70.7	1074	0.0024	530.7	13.940	0.002231348	63.18	0.025134881	711.74	13.27	17.93	6/10/02 19:20	14:16:00	14:12:00	14:00:00	3.777124126
194	64	1077	0.00685	524	13.979	0.00646531	183.08	0.031800191	894.81	16.68	21.34	6/11/02 11:02	29:58:00	29:54:00	29:42:00	5.474181826
137	64	1077	0.00484	524	13.979	0.004565709	129.29	0.0361659	1024.10	19.09	23.75	6/11/02 21:56	40:52:00	40:48:00	40:36:00	6.392704175
124	63	1078	0.00438	523	13.992	0.004144212	117.35	0.040310112	1141.45	21.28	25.94	6/12/02 11:22	54:18:00	54:14:00	54:02:00	7.368853371
146	63.5	1080	0.00516	523.5	14.018	0.004883859	138.29	0.045193971	1279.75	23.85	28.51	6/13/02 9:08	76:04:00	76:00:00	75:48:00	8.721620645
175	63.5	1082	0.00618	523.5	14.044	0.005864781	166.07	0.051058752	1445.82	26.95	31.61	6/14/02 20:11	111:07:00	111:03:00	110:51:00	10.54118905
121	63	1079	0.00427	523	14.005	0.0040477	114.62	0.055106452	1560.44	29.09	33.75	6/15/02 18:44	133:40:00	133:36:00	133:24:00	11.56143013
139	63	1081	0.00491	523	14.031	0.004658456	131.91	0.059764909	1692.35	31.54	36.20	6/17/02 11:30	174:26:00	174:22:00	174:10:00	13.2073212
108	63	1077	0.00381	523	13.979	0.003606127	102.11	0.063371035	1794.46	33.45	38.11	6/18/02 18:21	205:17:00	205:13:00	205:01:00	14.32771208
63	63.5	1081	0.00293	523.5	14.031	0.002779011	78.69	0.066150046	1873.15	34.91	39.57	6/19/02 16:34	227:30:00	227:26:00	227:14:00	15.08310313
69	63.5	1089	0.00244	523.5	14.135	0.00232736	65.90	0.068477406	1939.06	36.14	40.80	6/20/02 15:55	250:51:00	250:47:00	250:35:00	15.83824485
79	63.5	1090	0.00279	523.5	14.148	0.002667105	75.52	0.071144511	2014.58	37.55	42.21	6/22/02 0:38	283:34:00	283:30:00	283:18:00	16.83943784
89	63.5	1084	0.00328	523.5	14.070	0.003122473	88.42	0.074266984	2103.00	39.20	43.86	6/23/02 19:49	326:45:00	326:41:00	326:29:00	18.07622748
83	64	1085	0.00314	524	14.083	0.002988076	84.61	0.077255061	2187.61	40.78	45.44	6/25/02 14:02	368:58:00	368:54:00	368:42:00	19.20850506
100	64	1079	0.00353	524	14.005	0.003338823	94.54	0.080593883	2282.16	42.54	47.20	6/27/02 19:12	422:08:00	422:04:00	421:52:00	20.54588361
125	65	1085	0.00441	525	14.083	0.004188742	118.61	0.084782626	2400.77	44.75	49.41	6/30/02 20:06	495:02:00	494:58:00	494:46:00	22.24934456
75	64.5	1086	0.00265	524.5	14.096	0.00251796	71.30	0.087300586	2472.07	46.08	50.74	7/2/02 17:11	540:07:00	540:03:00	539:51:00	23.24041021
74	62.5	1087	0.00261	522.5	14.109	0.002496193	70.68	0.089796779	2542.75	47.40	52.05	7/5/02 15:02	609:58:00	609:54:00	609:42:00	24.69750325
65	62.5	1086	0.0023	522.5	14.096	0.002190585	62.03	0.091987364	2604.78	48.55	53.21	7/7/02 21:19	664:15:00	664:11:00	663:59:00	25.77304794
89	63	1082	0.00314	523	14.044	0.002985512	84.54	0.094972875	2689.32	50.13	54.79	7/11/02 18:17	757:13:00	757:09:00	756:57:00	27.51757014
58	63	1082	0.00205	523	14.044	0.001945614	55.09	0.09691849	2744.42	51.15	55.81	7/13/02 20:21	807:17:00	807:13:00	807:01:00	28.41273189
61	63	1083	0.00215	523	14.057	0.002048141	58.00	0.098966631	2802.41	52.24	56.89	7/16/02 17:41	876:37:00	876:33:00	876:21:00	29.60771296
91	65	1083	0.00321	525	14.057	0.003043783	86.19	0.102010414	2888.60	53.84	58.50	7/22/02 16:00	1018:56:00	1018:52:00	1018:40:00	31.92073516
107	66	1081	0.00378	526	14.031	0.003565553	100.96	0.105575967	2989.57	55.72	60.38	7/28/02 15:27	1162:23:00	1162:19:00	1162:07:00	34.09374332
150	78	1087	0.0053	538	14.109	0.004914074	139.15	0.110490042	3128.72	58.32	62.98	8/5/02 10:20	1349:16:00	1349:12:00	1349:00:00	36.73236538
180	80	1080	0.0063													

31	64	1086	0.00109	524	14.096	0.00104175	29.50	0.122310774	3463.44	64.56	69.22	8/26/02	10:30	1853:26:00	1853:22:00	1853:10:00	43.05151952
56	64	1078	0.00198	524	13.992	0.001868008	52.90	0.124178782	3516.34	65.54	70.20	9/2/02	14:08	2025:04:00	2025:00:00	2024:48:00	45.00074073
36	65	1082	0.00127	525	14.044	0.001203022	34.07	0.125381804	3550.40	66.18	70.84	9/5/02	17:23	2100:19:00	2100:15:00	2100:03:00	45.82921194
21	64	1085	0.00074	524	14.083	0.000705052	19.96	0.126086856	3570.37	66.55	71.21	9/7/02	12:32	2143:28:00	2143:24:00	2143:12:00	46.29758813
44	63	1077	0.00155	523	13.979	0.001469163	41.60	0.127556019	3611.97	67.32	71.98	9/13/02	18:24	2293:20:00	2293:16:00	2293:04:00	47.88875999
32	62	1081	0.00113	522	14.031	0.001074505	30.43	0.128630523	3642.40	67.89	72.55	9/17/02	11:07	2382:03:00	2381:59:00	2381:47:00	48.8062496
40	68	1074	0.00141	528	13.940	0.00131927	37.36	0.129949793	3679.75	68.59	73.25	9/20/02	10:11	2453:07:00	2453:03:00	2452:51:00	49.52894776
20	64	1090	0.00071	524	14.148	0.000674572	19.10	0.130624365	3698.86	68.94	73.60	9/23/02	14:48	2529:44:00	2529:40:00	2529:28:00	50.29645448
30	65	1080	0.00106	525	14.018	0.001000665	28.34	0.131625031	3727.19	69.47	74.13	9/27/02	13:50	2624:46:00	2624:42:00	2624:30:00	51.23247668
66	76	1078	0.00233	536	13.992	0.002152292	60.95	0.133777322	3788.14	70.61	75.27	10/1/02	14:03	2720:59:00	2720:55:00	2720:43:00	52.16304567
47	66	1083	0.00166	526	14.057	0.001569075	44.43	0.135346398	3832.57	71.44	76.10	10/4/02	18:50	2797:46:00	2797:42:00	2797:30:00	52.893919
26	66	1086	0.00092	526	14.096	0.000870404	24.65	0.136216801	3857.22	71.90	76.56	10/8/02	13:43	2888:39:00	2888:35:00	2888:23:00	53.74616265
28	68	1091	0.00099	528	14.161	0.000938106	26.56	0.137154907	3883.78	72.39	77.05	10/14/02	10:27	3029:23:00	3029:19:00	3029:07:00	55.03983406
27	63	1076	0.00095	523	13.966	0.000900695	25.50	0.138055602	3909.28	72.87	77.53	10/18/02	14:54	3129:50:00	3129:46:00	3129:34:00	55.94491338
40	68	1089	0.00141	528	14.135	0.001337695	37.88	0.139393297	3947.16	73.57	78.23	10/26/02	14:55	3321:51:00	3321:47:00	3321:35:00	57.63549254
68	1087	0.00131	528	14.109	0.001235096	34.97	0.140628393	3982.14	74.22	78.88	10/30/02	14:14	3417:10:00	3417:06:00	3416:54:00	58.45653656	
39	70	1081	0.00138	530	14.031	0.001289786	36.52	0.141918179	4018.66	74.91	79.56	11/4/02	21:56	3544:52:00	3544:48:00	3544:36:00	59.53878288
69	1081	0.00095	529	14.031	0.000894617	25.33	0.142812795	4043.99	75.38	80.04	11/7/02	13:11	3608:07:00	3608:03:00	3607:51:00	60.06760081	
47	69	1086	0.00159	529	14.096	0.001497924	42.42	0.14431072	4086.41	76.17	80.83	11/16/02	22:57	3833:53:00	3833:49:00	3833:37:00	61.91836023
38	70	1085	0.00134	530	14.083	0.001261365	35.72	0.145572084	4122.13	76.83	81.49	11/22/02	17:32	3972:28:00	3972:24:00	3972:12:00	63.02750722
21	65	1096	0.00074	525	14.226	0.000710843	20.13	0.146282927	4142.26	77.21	81.87	12/3/02	18:46	4237:42:00	4237:38:00	4237:26:00	65.097619
33	67	1087	0.00117	527	14.109	0.001103662	31.25	0.147386589	4173.51	77.79	82.45	12/10/02	10:48	4397:44:00	4397:40:00	4397:28:00	66.31540796
46	70	1074	0.00162	530	13.940	0.001511435	42.80	0.148898024	4216.31	78.59	83.25	12/16/02	15:15	4546:11:00	4546:07:00	4545:55:00	67.42539087
27	68	1078	0.00095	528	13.992	0.000893824	25.31	0.149791848	4241.62	79.06	83.72	12/19/02	20:51	4623:47:00	4623:43:00	4623:31:00	67.99840684
14	67	1088	0.00049	527	14.122	0.000468651	13.27	0.150260499	4254.89	79.31	83.97	12/23/02	19:09	4718:05:00	4718:01:00	4717:49:00	68.68830565
48	70	1079	0.0017	530	14.005	0.001584492	44.87	0.151844991	4299.76	80.14	84.80	12/30/02	16:52	4883:48:00	4883:44:00	4883:32:00	69.88418991
17	67	1101	0.0006	527	14.291	0.000575876	16.31	0.152420867	4316.06	80.45	85.11	1/6/03	13:42	5048:38:00	5048:34:00	5048:22:00	71.05373553
28	67	1088	0.00099	527	14.122	0.000937302	26.54	0.153358168	4342.60	80.94	85.60	1/13/03	16:09	5219:05:00	5219:01:00	5218:49:00	72.24322344
23	66	1100	0.00081	526	14.278	0.000779898	22.08	0.154138067	4364.69	81.35	86.01	1/22/03	15:25	5434:21:00	5434:17:00	5434:05:00	73.71804392
31	68	1095	0.00109	528	14.213	0.001042426	29.52	0.155180492	4394.21	81.90	86.56	1/29/03	13:42	5600:38:00	5600:34:00	5600:22:00	74.83737925
32	66	1075	0.00113	526	13.953	0.001060415	30.03	0.156240908	4424.23	82.46	87.12	2/3/03	15:57	5722:53:00	5722:49:00	5722:37:00	75.64974113
19	67	1083	0.00067	527	14.057	0.000633103	17.93	0.156874011	4442.16	82.80	87.46	2/10/03	16:08	5891:04:00	5891:00:00	5890:48:00	76.7532844
66	1084	0.00064	526	14.070	0.000601477	17.03	0.157475488	4459.19	83.12	87.78	2/17/03	14:01	6056:57:00	6056:53:00	6056:41:00	77.8284094	
13	64	1100	0.00046	524	14.278	0.000442495	12.53	0.157917983	4471.72	83.35	88.01	2/24/03	14:17	6225:13:00	6225:09:00	6224:57:00	78.90004225
22	67	1086	0.00078	527	14.096	0.000735098	20.82	0.158653081	4492.54	83.74	88.40	2/28/03	9:23	6316:19:00	6316:15:00	6316:03:00	79.4752582
21	69	1076	0.00074	529	13.966	0.000692595	19.61	0.159345675	4512.15	84.10	88.76	3/3/03	13:56	6392:52:00	6392:48:00	6392:36:00	79.95540424
22	69	1089	0.00078	529	14.135	0.000734342	20.79	0.160080017	4532.94	84.49	89.15	3/10/03	14:02	6560:58:00	6560:54:00	6560:42:00	80.99979424
38	68	1072	0.00134	528	13.914	0.001250972	35.42	0.161330989	4568.37	85.15	89.81	3/20/03	11:45	6798:41:00	6798:37:00	6798:25:00	82.45412866
24	71	1073	0.00085	531	13.927	0.000786357	22.27	0.162117346	4590.63	85.57	90.23	3/24/03	13:57	6896:53:00	6896:49:00	6896:37:00	83.04747638
22	69	1077	0.00078	529	13.979	0.00072625	20.57	0.162843595	4611.20	85.95	90.61	3/31/03	17:14	7068:10:00	7068:06:00	7067:54:00	84.07238944
17	66	1090	0.0006	526	14.148	0.000571206	16.17	0.163414802	4627.37	86.25	90.91	4/9/03	18:13	7285:09:00	7285:05:00	7284:53:00	85.35309016
24	69	1078	0.00085	529	13.992	0.000793008	22.46	0.16420781	4649.83	86.67	91.33	4/14/03	15:11	7402:07:00	7402:03:00	7401:51:00	86.03555467
14	64	1084	0.00049	524	14.070	0.000469601	13.30	0.164677411	4663.13	86.92	91.58	4/21/03	15:19	7570:15:00	7570:11:00	7569:59:00	87.00718361
8	64	1081	0.00028	524	14.031	0.000267601	7.58	0.164945012	4670.70	87.06	91.72	4/28/03	11:13	7734:09:00	7734:05:00	7733:53:00	87.94401628
64	1089	0.00064	524	13.875	0.000595418	16.86	0.16554043	4687.57	87.37	92.03	5/5/03	14:39	7905:35:00	7905:31:00	7905:19:00	88.91334733	
9	64	1088	0.00032	524	14.122	0.000303	8.58	0.16584343	4696.15	87.53	92.19	5/12/03	14:16	8073:12:00	8073:08:00	8072:56:00	89.85098775
4	64	1083	0.00014	524	14.057	0.000134048	3.80	0.165977478	4699.94	87.60	92.26	5/19/03	14:27	8241:23:00	8241:19:00	8241:07:00	90.78206504
15	64	1083	0.00053	524	14.057	0.00050268	14.23	0.166480158	4714.18	87.87	92.53	5/30/03	16:30	8507:26:00	8507:22:00	8507:10:00	92.23574867
15	68	1081	0.00053	528	14.031	0.000497951	14.10	0.166978109	4728.28	88.13	92.79	6/3/03	10:57	8597:53:00	8597:49:00	8597:37:00	92.72477195
10	64	1078	0.00035	524	13.992	0.000333573	9.45	0.167311682	4737.72	88.31	92.97	6/9/03	13:47	8744:43:00	8744:39:00	8744:27:00	93.5131898
5	64	1087	0.00018	524	14.109	0.000168179	4.76	0.167479861	4742.48	88.40	93.06	6/16/03	13:27	8912:23:00	8912:19:00	8912:07:00	94.40542004
63	1079	0.00035	523	14.005	0.000334521	9.47	0.167814381	4751.96	88.57	93.23	6/23/03	11:13	9078:09:00	9078:05:00	9077:53:00	95.27932619	
9	62	1088	0.00032	522	14.122	0.000304161	8.61	0.168118543	4760.57	88.73	93.39	6/30/03	11:12	9246:08:00	9246:04:00	9245:52:00	96.15681636
24	67	1081	0.00085	527	14.031	0.000798233	22.60	0.168916776	4783.17	89.16	93.81	7/7/03	13:58	9416:54:00	9416:50:00	9416:38:00	97.04071311
37	73	1084	0.00131	533	14.070	0.001220133	34.55	0.170136908	4817.72	89.80	94.46	7/15/03	13:49	9608:45:00	9608:41:00	9608:29:00	98.0242317
29	73	1079	0.00102	533	14.005	0.000951909	26.95	0.171088817	4844.68	90.30	94.96	7/21/03	16:28	9755:24:00	9755:20:00	9755:08:00	98.76942847
22	70	1081	0.00078	530	14.031	0.000727572	20.60	0.171816389	4865.28	90.69	95.35	7/28/03	20:18	9927:14:00	9927:10:00	9926:58:00	99.63550237
13	67	1079	0.00046	527	14.005	0.000431576	12.22	0.172247965	4877.								

19	72	1084	0.00067	532	14.070	0.000627732	17.78	0.177220308	5018.30	93.54	98.20	10/14/03	22:58	11801:54:00	11801:50:00	11801:38:00	108.63655
17	77	1081	0.0006	537	14.031	0.000554886	15.71	0.177775193	5034.01	93.83	98.49	10/20/03	15:26	11938:22:00	11938:18:00	11938:06:00	109.262833
4	86	1075	0.00014	526	13.953	0.000132552	3.75	0.177907745	5037.77	93.90	98.56	10/27/03	15:00	12105:56:00	12105:52:00	12105:40:00	110.0269664
0	70	1080	0	530	14.018	0	0.00	0.177907745	5037.77	93.90	98.56	11/3/03	10:09	12269:05:00	12269:01:00	12268:49:00	110.7658943

DECANISTERED 11/3/03; sample air-dried 20 days

SAMPLE: 551' 0" to 552' 0" (Tebo Coal) in canister J

dry sample weight	lbs.	grams	wet sample weight:	3.7382	1695.61	moisture weight	3.6%	est. lost gas (cc) =	150	TIME OF:	elapsed time (off bottom to canistering)					
	3.6053	1635.33								off bottom	at surface	in canister	13.0 minutes			
										6/10/02	6/39	6/10/02	6:43	6/10/02	6:52	0.217 hours

RIG/LAB MEASUREMENTS

RIG/LAB MEASUREMENTS			CONVERSION OF RIG/LAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)				CUMULATIVE VOLUMES		SCF/TON	SCF/TON	TIME OF MEASURE	TIME SINCE			SCRT hrs. (since off bottom)	
measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas		off bottom	at surface	in canister			
47	73.8	1077	0.00166	533.8	13.979	0.001537582	43.54	0.001537582	43.54	0.85	6/10/02	6:59	0:20:00	0:16:00	0:07:00	0.577350269
9	73.8	1077	0.00032	533.8	13.979	0.000294431	8.34	0.001832012	51.88	1.02	6/10/02	7:01	0:22:00	0:18:00	0:09:00	0.605530071
8	73.8	1077	0.00028	533.8	13.979	0.000261716	7.41	0.002093728	59.29	1.16	6/10/02	7:03	0:24:00	0:20:00	0:11:00	0.632455532
21	73.8	1077	0.00074	533.8	13.979	0.000687005	19.45	0.002780733	78.74	1.54	6/10/02	7:08	0:29:00	0:25:00	0:16:00	0.695221787
13	73.8	1077	0.00046	533.8	13.979	0.000425289	12.04	0.003206021	90.78	1.78	6/10/02	7:10	0:31:00	0:27:00	0:18:00	0.718795288
19	73.8	1077	0.00067	533.8	13.979	0.000621576	17.60	0.003827597	108.39	2.12	6/10/02	7:15	0:36:00	0:32:00	0:23:00	0.774596689
24	74.1	1077	0.00085	534.1	13.979	0.000784707	22.22	0.004612304	130.61	2.56	6/10/02	7:22	0:43:00	0:39:00	0:30:00	0.846561673
10	74.1	1077	0.00035	534.1	13.979	0.000326961	9.26	0.004939265	139.86	2.74	6/10/02	7:25	0:46:00	0:42:00	0:33:00	0.875595036
40	74.7	1077	0.00141	534.7	13.979	0.001306378	36.99	0.006245643	176.86	3.46	6/10/02	7:38	0:59:00	0:55:00	0:46:00	0.991631652
8	74.7	1077	0.00028	534.7	13.979	0.000261276	7.40	0.006506918	184.25	3.61	6/10/02	7:41	1:02:00	0:58:00	0:49:00	1.016530045
20	74.7	1077	0.00071	534.7	13.979	0.000653189	18.50	0.007160107	202.75	3.97	6/10/02	7:48	1:09:00	1:05:00	0:56:00	1.072380529
9	74.7	1077	0.00032	534.7	13.979	0.000293935	8.32	0.007454042	211.07	4.14	6/10/02	7:53	1:14:00	1:10:00	1:01:00	1.110555417
16	74.7	1077	0.00057	534.7	13.979	0.000522551	14.80	0.007976593	225.87	4.42	6/10/02	8:00	1:21:00	1:17:00	1:08:00	1.161895004
40	74.7	1077	0.00141	534.7	13.979	0.001306378	36.99	0.009282971	262.86	5.15	6/10/02	8:19	1:40:00	1:36:00	1:27:00	1.290994449
127	77.7	1077	0.00448	537.7	13.979	0.004124607	116.80	0.013407578	379.66	7.44	6/10/02	9:38	2:59:00	2:55:00	2:46:00	1.727232854
124	78.8	1076	0.00438	538.8	13.966	0.004015222	113.70	0.01742228	493.36	9.67	6/10/02	11:13	4:34:00	4:30:00	4:21:00	2.136978057
145	80.1	1076	0.00512	540.1	13.966	0.004683918	132.63	0.022106718	625.99	12.26	6/10/02	13:39	7:00:00	6:56:00	6:47:00	2.845751311
55	82.4	1075	0.00194	542.4	13.953	0.001767481	50.05	0.023874199	676.04	13.24	6/10/02	14:33	7:54:00	7:50:00	7:41:00	2.810693864
26	82.6	1075	0.00092	542.6	13.953	0.000835228	23.65	0.024709427	699.69	13.71	6/10/02	15:00	8:21:00	8:17:00	8:08:00	2.889636655
43	83.7	1075	0.00152	543.7	13.953	0.001378545	39.04	0.026087972	738.73	14.47	6/10/02	15:47	9:08:00	9:04:00	8:55:00	3.022140522
26	83.5	1075	0.00092	543.5	13.953	0.000833845	23.61	0.026921817	762.34	14.93	6/10/02	16:18	9:39:00	9:35:00	9:26:00	3.106444913
25	84	1074	0.00088	544	13.940	0.000800292	22.66	0.027722109	785.00	15.38	6/10/02	16:46	10:07:00	10:03:00	9:54:00	3.180670789
67	71.8	1074	0.00237	531.8	13.940	0.002193987	62.13	0.029916096	847.13	16.60	6/10/02	19:18	12:39:00	12:35:00	12:26:00	3.556683849
166	64	1077	0.00586	524	13.979	0.005532172	156.65	0.035448268	1003.78	19.66	6/11/02	11:07	28:28:00	28:24:00	28:15:00	5.33541626
198	63	1078	0.00699	523	13.992	0.006617371	187.38	0.042065639	1191.16	23.34	6/12/02	11:23	52:44:00	52:40:00	52:31:00	7.261772052
146	63.5	1080	0.00516	523.5	14.018	0.004883859	138.29	0.046949498	1329.46	26.04	6/13/02	9:10	74:31:00	74:27:00	74:18:00	8.632303671
163	63.5	1082	0.00576	523.5	14.044	0.005462625	154.68	0.052412123	1484.14	29.08	6/14/02	20:14	109:35:00	109:31:00	109:22:00	10.46820583
102	63	1079	0.0036	523	14.005	0.003412111	96.62	0.055824234	1580.76	30.97	6/15/02	18:47	132:04:00	132:00:00	131:55:00	11.49492642
121	63	1081	0.00427	523	14.031	0.004055203	114.83	0.059879437	1695.59	33.22	6/17/02	11:32	172:53:00	172:49:00	172:40:00	13.14851069
133	63.5	1081	0.0047	523.5	14.031	0.004453114	126.10	0.064332551	1821.69	35.69	6/19/02	16:36	225:57:00	225:53:00	225:44:00	15.03163331
63	63.5	1089	0.00222	523.5	14.135	0.002124981	60.17	0.066457532	1881.86	36.87	6/20/02	15:57	249:18:00	249:14:00	249:05:00	15.78923684
68	63.5	1084	0.0024	523.5	14.070	0.002283099	64.65	0.068740631	1946.51	38.13	6/22/02	0:35	281:56:00	281:52:00	281:43:00	16.79087054
128	64	1084	0.00452	524	14.070	0.004293497	121.58	0.073034128	2068.09	40.52	6/25/02	13:59	367:20:00	367:16:00	367:07:00	19.16594202
95	64	1079	0.00335	524	14.005	0.003171882	89.82	0.076206009	2157.91	42.27	6/27/02	19:13	420:34:00	420:30:00	420:21:00	20.50772212
105	65	1085	0.00371	525	14.083	0.003518544	99.63	0.079724553	2257.54	44.23	6/30/02	20:08	493:29:00	493:25:00	493:16:00	22.21448476
53	64.5	1086	0.00187	524.5	14.096	0.001779358	50.39	0.081503911	2307.93	45.21	7/2/02	17:13	538:34:00	538:30:00	538:21:00	23.20703916
51	62.5	1087	0.0018	522.5	14.109	0.001720349	48.71	0.083224261	2356.64	46.17	7/5/02	15:03	608:24:00	608:20:00	608:11:00	24.66576575
44	62.5	1087	0.00155	522.5	14.109	0.001484223	42.03	0.084708484	2398.67	46.99	7/7/02	21:22	662:43:00	662:39:00	662:30:00	25.74328391
67	63	1082	0.00237	523	14.044	0.00224752	63.64	0.086956004	2462.31	48.24	7/11/02	18:17	755:38:00	755:34:00	755:25:00	27.48878559
39	63	1082	0.00138	523	14.044	0.001308258	37.05	0.088264262	2499.36	48.96	7/13/02	20:23	805:44:00	805:40:00	805:31:00	28.38544228
42	63	1083	0.00148	523	14.057	0.001410195	39.93	0.089674457	2539.29	49.75	7/16/02	17:43	875:04:00	875:00:00	874:51:00	29.58152577
69	65	1083	0.00244	525	14.057	0.002307924	65.35	0.091982381	2604.64	51.03	7/22/02	16:00	1017:21:00	1017:17:00	1017:08:00	31.8959245
82	66	1081	0.0029	526	14.031	0.00273248	77.37	0.094714861	2682.02	52.54	7/28/02	15:27	1160:48:00	1160:44:00	1160:35:00	34.07051511
112	78	1087	0.00396	538	14.109	0.003669176	103.90	0.098384036	2785.92	54.58	8/5/02	10:16	1347:37:00	1347:33:00	1347:24:00	36.70989876
132	80	1080	0.00466	540	14.018	0.004280625	121.21	0.102664661	2907.13	56.95	8/12/02	13:16	1518:37:00	1518:33:00	1518:24:00	38.96943247
48	64	1082	0.0017	524	14.044	0.001607091	45.51	0.104271752	2952.64	57.84	8/20/02	15:01	1712:22:00	1712:18:00	1712:09:00	41.38075237
31	64	1086	0.00109	524	14.096	0.00104175	29.50	0.105313502	2982.14	58.42	8/26/02	10:31	1851:52:00	1851:48:00	1851:39:00	43.03332042
45	64	1078	0.00159	524	13.992	0.001501078	42.51	0.106814579	3024.64	59.25	9/2/02	14:22	2023:43:00	2023:39:00	2023:30:00	44.98573848
23	64	1085	0.00081	524	14.083	0.000772199	21.87	0.107586779	3046.51	59.68	9/7/02	12:42	2142:03:00	2141:59:00	2141:50:00	46.28228603
20	63	1077	0.00071	523	13.979	0.000667801	18.91	0.10825458	3065.42	60.05	9/13/02	18:25	2291:46:00	2291:42:00	2291:33:00	47.87239984
40	68	1074	0.00141	528	13.940	0.00131927	37.36	0.10957385	3102.77	60.79	9/20/02	10:20	2451:41:00	2451:37:00	2451:28:00	49.514476
23	65	1080	0.00081	525	14.018	0.000767177	21.72	0.110341026	3124.50	61.21	9/27/02	13:51	2623:12:00	2623:08:00	2622:59:00	51.21718462
52	7															

12	68	1091	0.00042	528	14.161	0.000402046	11.38	0.113140271	3203.76	62.76	65.70	10/14/02	10:24	3027:45:00	3027:41:00	3027:32:00	55.02499432
18	63	1076	0.00064	523	13.966	0.000600463	17.00	0.113740734	3220.77	63.10	66.04	10/18/02	14:55	3128:12:00	3128:12:00	3128:03:00	55.903090976
22	68	1089	0.00078	528	14.135	0.000735732	20.83	0.114476466	3241.60	63.50	66.44	10/26/02	10:45	3320:19:00	3320:15:00	3320:06:00	57.62218901
10	67	1096	0.00035	527	14.226	0.000337212	9.55	0.114813679	3251.15	63.69	66.63	10/31/02	10:48	3436:06:00	3436:02:00	3435:53:00	58.61825654
37	69	1081	0.00131	529	14.031	0.001225956	34.72	0.116039635	3285.86	64.37	67.31	11/7/02	13:13	3606:34:00	3606:30:00	3606:21:00	60.05469729
37	69	1086	0.00131	529	14.096	0.001231627	34.88	0.117271261	3320.74	65.06	67.99	11/16/02	22:59	3832:20:00	3832:16:00	3832:07:00	61.90584248
14	68	1088	0.00049	528	14.096	0.000466904	13.22	0.117738165	3333.96	65.31	68.25	11/21/02	14:45	3944:06:00	3944:02:00	3943:53:00	62.80207003 estimate
2	65	1096	7.1E-05	525	14.226	6.76993E-05	1.92	0.117805864	3335.88	65.35	68.29	12/3/02	18:47	4236:08:00	4236:04:00	4235:55:00	65.08558468
22	67	1087	0.00078	527	14.109	0.000735775	20.83	0.118541639	3356.71	65.76	68.70	12/10/02	10:49	4396:10:00	4396:06:00	4395:57:00	66.30359467
34	70	1074	0.0012	530	13.940	0.001117148	31.63	0.119658786	3388.35	66.38	69.32	12/16/02	15:38	4544:59:00	4544:55:00	4544:46:00	67.41649155
5	87	1088	0.00018	527	14.122	0.000167375	4.74	0.119826162	3393.09	66.47	69.41	12/23/02	19:10	4716:31:00	4716:27:00	4716:18:00	68.67690053
29	70	1078	0.00102	530	13.992	0.00095641	27.08	0.120782572	3420.17	67.00	69.94	12/30/02	16:54	4882:15:00	4882:11:00	4882:02:00	69.87309926
-2	67	1101	-7.1E-05	527	14.291	-6.77501E-05	-1.92	0.120714822	3418.25	66.97	69.90	1/6/03	13:42	5047:03:00	5046:59:00	5046:50:00	71.04259286
19	67	1088	0.00067	527	14.122	0.000636026	18.01	0.121350848	3436.26	67.32	70.26	1/13/03	16:11	5217:32:00	5217:28:00	5217:19:00	72.232495
4	66	1100	0.00014	526	14.278	0.000135634	3.84	0.121486482	3440.10	67.39	70.33	1/22/03	15:27	5432:48:00	5432:44:00	5432:35:00	73.70753014
17	68	1095	0.0006	528	14.213	0.000571653	16.19	0.122058135	3456.29	67.71	70.65	1/29/03	13:45	5599:06:00	5599:02:00	5598:53:00	74.82713412
22	66	1075	0.00078	526	13.953	0.000729035	20.64	0.122787171	3476.93	68.12	71.05	2/3/03	15:59	5721:20:00	5721:16:00	5721:07:00	75.63949586
5	67	1083	0.00018	527	14.057	0.000166606	4.72	0.122953777	3481.65	68.21	71.15	2/10/03	16:10	5889:31:00	5889:27:00	5889:18:00	76.74318645
8	66	1084	0.00028	526	14.070	0.000267323	7.57	0.1232211	3489.22	68.36	71.29	2/17/03	14:02	6055:23:00	6055:19:00	6055:10:00	77.81634361
-1	64	1100	-3.5E-05	524	14.278	-3.4038E-05	-0.96	0.123187062	3488.26	68.34	71.28	2/24/03	14:17	6223:38:00	6223:34:00	6223:25:00	78.89000782
27	69	1076	0.00095	529	13.966	0.000890479	25.22	0.124077541	3513.47	68.83	71.77	3/3/03	13:57	6391:18:00	6391:14:00	6391:05:00	79.94560651
8	69	1089	0.00028	529	14.135	0.000267033	7.56	0.124344574	3521.03	68.98	71.92	3/10/03	14:02	6559:23:00	6559:19:00	6559:10:00	80.99001996
23	68	1072	0.00081	528	13.914	0.000757167	21.44	0.125101741	3542.47	69.40	72.34	3/20/03	11:45	6797:06:00	6797:02:00	6796:53:00	82.4445268
12	71	1073	0.00042	531	13.927	0.000393178	11.13	0.12549492	3553.61	69.62	72.56	3/24/03	13:58	6895:19:00	6895:15:00	6895:06:00	83.03804349
6	69	1077	0.00021	529	13.979	0.000198068	5.61	0.125692988	3559.22	69.73	72.67	3/31/03	17:15	7066:36:00	7066:32:00	7066:23:00	84.06307156
1	66	1090	3.5E-05	526	14.148	3.36004E-05	0.95	0.125726588	3560.17	69.75	72.68	4/9/03	18:14	7283:35:00	7283:31:00	7283:22:00	85.3439121
16	69	1078	0.00057	529	13.992	0.000528672	14.97	0.12625526	3575.14	70.04	72.98	4/14/03	15:14	7400:35:00	7400:31:00	7400:22:00	86.02664316
0	66	1084	0	526	14.070	0	0.00	0.12625526	3575.14	70.04	72.98	4/21/03	15:20	7568:41:00	7568:37:00	7568:28:00	86.99818006
1	64	1081	3.5E-05	524	14.031	3.34501E-05	0.95	0.12628871	3576.08	70.06	73.00	4/28/03	11:14	7732:35:00	7732:31:00	7732:22:00	87.93510865

DECANISTERED 4/28/2003; sample air-dried 20 days

SAMPLE: 552° 0' to 553° 0' (Tebu Coal) in canister 2

dry sample weight	lbs.	grams	lbs.	grams	moisture weight	est. lost gas (cc) =	TIME OF:	elapsed time (off bottom to canistering)
	3.9419	1788.00		3.9419	1788.00	0.0%	150	13.0 minutes
wet sample weight:								0.217 hours
								0.465474668 SQRT (hrs)

RIG/LAB MEASUREMENTS			CONVERSION OF RIG/LAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)				CUMULATIVE VOLUMES		SCF/TON		SCF/TON		TIME SINCE				elapsed time (off bottom to canistering)
measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SQRT hrs. (since off bottom)	
20	73.8	1077	0.00071	533.8	13.979	0.00065429	18.53	0.00065429	18.53	0.33	3.02	6/10/02 6:55	0:16:00	0:12:00	0:03:00	0.516397779	
13	73.8	1077	0.00046	533.8	13.979	0.000425289	12.04	0.001079579	30.57	0.55	3.24	6/10/02 6:57	0:18:00	0:14:00	0:05:00	0.547722557	
7	73.8	1077	0.00025	533.8	13.979	0.000229002	6.48	0.00130858	37.05	0.68	3.35	6/10/02 6:58	0:19:00	0:15:00	0:06:00	0.562731434	
1	73.8	1077	3.5E-05	533.8	13.979	3.27145E-05	0.93	0.001341295	37.98	0.68	3.37	6/10/02 6:59	0:20:00	0:16:00	0:07:00	0.577350269	
29	73.8	1077	0.00102	533.8	13.979	0.000948721	26.86	0.002290015	64.85	1.16	3.85	6/10/02 7:04	0:25:00	0:21:00	0:12:00	0.645497224	
9	73.8	1077	0.00032	533.8	13.979	0.000294431	8.34	0.002584446	73.18	1.31	4.00	6/10/02 7:06	0:27:00	0:23:00	0:14:00	0.670820393	
19	73.8	1077	0.00067	533.9	13.979	0.000621459	17.60	0.003205905	90.78	1.63	4.31	6/10/02 7:11	0:32:00	0:28:00	0:19:00	0.730296743	
13	73.8	1077	0.00046	533.8	13.979	0.000425289	12.04	0.003631194	102.82	1.84	4.53	6/10/02 7:14	0:35:00	0:31:00	0:22:00	0.763762616	
17	74.1	1077	0.0006	534.1	13.979	0.000555834	15.74	0.004187028	118.56	2.12	4.81	6/10/02 7:18	0:39:00	0:35:00	0:26:00	0.806225775	
7	74.1	1077	0.00025	534.1	13.979	0.000228873	6.48	0.004415901	125.04	2.24	4.93	6/10/02 7:21	0:42:00	0:38:00	0:29:00	0.836600227	
15	74.3	1077	0.00053	534.3	13.979	0.000490258	13.88	0.004906159	138.93	2.49	5.18	6/10/02 7:26	0:47:00	0:43:00	0:34:00	0.885061203	
6	74.3	1077	0.00021	534.3	13.979	0.000196103	5.55	0.005102262	144.48	2.59	5.28	6/10/02 7:28	0:49:00	0:45:00	0:36:00	0.903696114	
23	74.5	1077	0.00081	534.5	13.979	0.000751448	21.28	0.00585371	165.76	2.97	5.68	6/10/02 7:36	0:57:00	0:53:00	0:44:00	0.974679434	
14	74.7	1077	0.00049	534.7	13.979	0.000457232	12.95	0.006310943	178.71	3.20	5.89	6/10/02 7:42	1:03:00	0:59:00	0:50:00	1.024695077	
9	74.5	1077	0.00032	534.5	13.979	0.000294045	8.33	0.006604988	187.03	3.35	6.04	6/10/02 7:45	1:06:00	1:02:00	0:53:00	1.048808848	
9	74.7	1077	0.00032	534.7	13.979	0.000293935	8.32	0.006898923	195.35	3.50	6.19	6/10/02 7:49	1:10:00	1:06:00	0:57:00	1.08012345	
9	74.7	1077	0.00032	534.7	13.979	0.000293935	8.32	0.007192857	203.68	3.65	6.34	6/10/02 7:52	1:13:00	1:09:00	1:00:00	1.10302614	
28	62	1077	0.00099	522	13.979	0.000936713	26.52	0.00812957	230.20	4.12	6.81	6/10/02 7:57	1:18:00	1:14:00	1:05:00	1.140175425	
26	62	1077	0.00092	522	13.979	0.000869805	24.63	0.008999375	254.83	4.57	7.25	6/10/02 8:11	1:32:00	1:28:00	1:19:00	1.238278375	
50	62	1077	0.00177	522	13.979	0.001672701	47.37	0.010672076	302.20	5.41	8.10	6/10/02 8:48	2:09:00	2:05:00	1:56:00	1.46628783	
61	62	1077	0.00215	522	13.979	0.002040696	57.79	0.012712772	359.98	6.45	9.14	6/10/02 9:40	3:01:00	2:57:00	2:48:00	1.736855396	
80	62	1078	0.00283	522	13.966	0.002673837	75.71	0.015386609	435.70	7.81	10.49	6/10/02 11:16	4:37:00	4:33:00	4:24:00	2.148642983	
84	65	1076	0.00297	525	13.966	0.002791486	79.05	0.018178095	514.74	9.22	11.91	6/10/02 13:35	6:56:00	6:52:00	6:43:00	2.33122354	
40	64	1075	0.00141	524	13.953	0.001330578	37.68	0.019508673	552.42	9.90	12.59	6/10/02 14:22	7:43:00	7:39:00	7:30:00	2.777888887 estimate	
16	66	1075	0.00064	526	13.953	0.000596483	16.89	0.020105157	569.31	10.20	12.89	6/10/02 14:38	7:59:00	7:55:00	7:46:00	2.85247931	
24	66	1075	0.00085	526	13.953	0.000795311	22.52	0.020900468	591.83	10.60	13.29	6/10/02 15:04	8:25:00	8:21:00	8:12:00	2.901149198	
27	68	1075	0.00095	528	13.953	0.000891336	25.24										

211	64	1077	0.00745	524	13.979	0.007031858	199.12	0.03270261	926.03	16.59	19.28	6/11/02	11:15	28:36:00	28:32:00	28:23:00	5.347896783
120	64	1074	0.00424	524	13.940	0.003988021	112.93	0.036690631	1038.96	18.62	21.30	6/11/02	17:20	34:41:00	34:37:00	34:28:00	5.889255754
81	64	1075	0.00286	524	13.953	0.002694421	76.30	0.039385051	1115.26	19.98	22.67	6/11/02	21:50	39:11:00	39:07:00	38:58:00	6.259659203
126	63	1078	0.00445	523	13.992	0.004211054	119.24	0.043596105	1234.50	22.12	24.81	6/12/02	11:09	52:30:00	52:26:00	52:17:00	7.245688373
90	63.5	1076	0.00318	523.5	13.966	0.002999448	84.93	0.046595553	1319.43	23.64	26.33	6/12/02	18:30	59:51:00	59:47:00	59:38:00	7.738278175
111	63.5	1080	0.00392	523.5	14.018	0.003713071	105.14	0.050308624	1424.58	25.53	28.21	6/13/02	9:12	74:33:00	74:29:00	74:20:00	8.634234187
152	64	1084	0.00537	524	14.070	0.005098528	144.37	0.055407152	1568.95	28.11	30.80	6/14/02	12:39	102:00:00	101:56:00	101:47:00	10.09950494
80	63.5	1082	0.00283	523.5	14.044	0.002681043	75.92	0.058088195	1644.87	29.47	32.16	6/14/02	20:15	109:36:00	109:32:00	109:23:00	10.46900186
110	63	1079	0.00388	523	14.005	0.003679727	104.20	0.061769222	1749.07	31.34	34.03	6/15/02	18:49	132:10:00	132:06:00	131:57:00	11.496907624
144	63	1081	0.00509	523	14.031	0.004826027	136.66	0.066593949	1885.72	33.79	36.48	6/17/02	11:34	172:55:00	172:51:00	172:42:00	13.1497782
70	63	1077	0.00247	523	13.979	0.002337304	66.18	0.068931253	1951.91	34.97	37.66	6/17/02	17:07	178:28:00	178:24:00	178:15:00	13.35914169
92	63	1077	0.00325	523	13.979	0.003071886	86.99	0.072003139	2038.89	36.53	39.22	6/18/02	18:24	203:45:00	203:41:00	203:32:00	14.27410242
69	63.5	1082	0.00244	523.5	14.044	0.0023124	65.48	0.074315538	2104.37	37.71	40.39	6/19/02	9:20	218:41:00	218:37:00	218:28:00	14.78794554
45	63.5	1081	0.00159	523.5	14.031	0.001506693	42.66	0.075822231	2147.04	38.47	41.16	6/19/02	16:38	225:59:00	225:55:00	225:46:00	15.03274204
70	63.5	1089	0.00247	523.5	14.135	0.002361089	66.86	0.078183321	2213.90	39.67	42.36	6/20/02	16:00	249:21:00	249:17:00	249:08:00	15.79082012
87	63.5	1090	0.00307	523.5	14.148	0.002937192	83.17	0.081120512	2297.07	41.16	43.85	6/22/02	0:33	281:54:00	281:50:00	281:41:00	16.7898779
98	63.5	1084	0.00346	523.5	14.070	0.003290348	93.17	0.084410861	2390.24	42.83	45.52	6/23/02	19:34	324:55:00	324:51:00	324:42:00	18.02544498
75	63.5	1083	0.00285	523.5	14.057	0.002515801	71.24	0.086926661	2461.48	44.10	46.79	6/24/02	19:10	348:31:00	348:27:00	348:18:00	18.68860109
61	64	1085	0.00215	524	14.083	0.002048007	57.99	0.088974689	2519.47	45.14	47.83	6/25/02	13:53	367:14:00	367:10:00	367:01:00	19.16333304
99	64	1079	0.0035	524	14.005	0.003305435	93.60	0.092280103	2613.07	46.82	49.51	6/27/02	19:15	420:36:00	420:32:00	420:23:00	20.50853481
68	64	1080	0.0024	524	14.018	0.002272504	64.35	0.094552607	2677.42	47.97	50.66	6/28/02	17:36	442:57:00	442:53:00	442:44:00	21.04637736
99	65	1085	0.0035	525	14.083	0.003317484	93.94	0.097870091	2771.36	49.66	52.34	6/30/02	20:09	493:30:00	493:26:00	493:17:00	22.21485989
50	64.5	1086	0.00177	524.5	14.096	0.00167864	47.53	0.099548731	2818.90	50.51	53.20	7/2/02	17:15	538:36:00	538:32:00	538:23:00	23.20775732
45	63.5	1083	0.00159	523.5	14.057	0.00150948	42.74	0.101058211	2861.64	51.27	53.96	7/3/02	17:40	563:01:00	562:57:00	562:48:00	23.72797224
55	62.5	1087	0.00194	522.5	14.109	0.001855279	52.54	0.10291349	2914.17	52.22	54.90	7/5/02	15:00	608:21:00	608:17:00	608:08:00	24.66475218
62	62.5	1087	0.00219	522.5	14.109	0.002091405	59.22	0.105004895	2973.40	53.28	55.96	7/7/02	21:23	662:44:00	662:40:00	662:31:00	25.74360762
75	64	1084	0.00285	524	14.070	0.002515721	71.24	0.107520616	3044.63	54.55	57.24	7/10/02	15:53	729:14:00	729:10:00	729:01:00	27.00432064
50	63	1082	0.00177	523	14.044	0.001677254	47.49	0.10919787	3092.13	55.40	58.09	7/11/02	18:19	755:40:00	755:36:00	755:27:00	27.48939189
56	63	1082	0.00198	523	14.044	0.001878524	53.19	0.111076394	3145.32	56.36	59.04	7/13/02	20:17	805:38:00	805:34:00	805:25:00	28.38368076
52	63	1084	0.00184	523	14.070	0.001747568	49.49	0.112823982	3194.81	57.24	59.93	7/15/02	19:44	853:05:00	853:01:00	852:52:00	29.20759034
36	63	1083	0.00127	523	14.057	0.001208739	34.23	0.114032701	3229.03	57.86	60.54	7/16/02	17:44	875:05:00	875:01:00	874:52:00	29.58180747
26	63	1087	0.00092	523	14.109	0.000876202	24.81	0.114908903	3253.85	58.30	60.99	7/17/02	10:54	892:15:00	892:11:00	892:02:00	29.87055406
16	63	1083	0.00057	523	14.057	0.000537217	15.21	0.11544612	3269.06	58.57	61.26	7/17/02	17:09	898:30:00	898:26:00	898:17:00	29.97489957
29	63	1080	0.00102	523	14.018	0.000971009	27.50	0.116417129	3296.55	59.07	61.75	7/18/02	17:23	922:44:00	922:40:00	922:31:00	30.37652602
27	63.5	1081	0.00095	523.5	14.031	0.000904016	25.60	0.117321145	3322.15	59.53	62.21	7/19/02	17:36	946:57:00	946:53:00	946:44:00	30.77255271
28	63	1080	0.00099	523	14.018	0.000937526	26.55	0.118258671	3348.70	60.00	62.69	7/20/02	18:37	971:58:00	971:54:00	971:45:00	31.17637995
37	65	1083	0.00131	525	14.057	0.001237582	35.04	0.119496253	3383.74	60.63	63.32	7/22/02	16:03	1017:24:00	1017:20:00	1017:11:00	31.89670829
27	60	1089	0.00095	520	14.135	0.000916836	25.96	0.120413089	3409.71	61.09	63.78	7/23/02	14:35	1039:56:00	1039:52:00	1039:43:00	32.24799735
26	63	1086	0.00092	523	14.096	0.000875396	24.79	0.121288485	3434.49	61.54	64.23	7/24/02	15:05	1064:26:00	1064:22:00	1064:13:00	32.62565453
24	63	1079	0.00092	523	14.005	0.000869754	24.63	0.122158239	3459.12	61.98	64.67	7/25/02	15:00	1088:17:00	1088:13:00	1088:04:00	32.99015005
24	64	1077	0.00085	524	13.979	0.000799832	22.65	0.122958071	3481.77	62.39	65.07	7/26/02	15:31	1112:52:00	1112:48:00	1112:39:00	33.35965627
28	64	1075	0.00099	524	13.953	0.000931405	26.37	0.123889476	3508.15	62.86	65.55	7/27/02	17:40	1139:01:00	1138:57:00	1138:48:00	33.74932098
35	66	1081	0.00124	526	14.031	0.001166302	33.03	0.125055778	3541.17	63.45	66.14	7/29/02	15:22	1184:43:00	1184:39:00	1184:30:00	34.41971334
52	66	1079	0.00184	526	14.005	0.001729586	48.98	0.126785365	3590.15	64.33	67.02	8/1/02	15:15	1256:36:00	1256:32:00	1256:23:00	35.44855427
48	77	1085	0.0017	537	14.083	0.001572533	44.53	0.128357898	3634.68	65.13	67.81	8/3/02	13:12	1302:33:00	1302:29:00	1302:20:00	36.09085757
64	78	1087	0.00226	538	14.109	0.002096672	59.37	0.13045457	3694.05	66.19	68.88	8/5/02	10:14	1347:35:00	1347:31:00	1347:22:00	36.70944474
56	80	1086	0.00198	540	14.096	0.001826112	51.71	0.132280682	3745.76	67.12	69.80	8/6/02	15:06	1376:27:00	1376:23:00	1376:14:00	37.10053908
61	78	1088	0.00215	538	14.122	0.002000229	56.64	0.13428091	3802.40	68.13	70.82	8/8/02	15:21	1424:42:00	1424:38:00	1424:29:00	37.74519837
63	82.2	1083	0.00222	542.2	14.057	0.002040388	55.78	0.136321298	3860.17	69.17	71.85	8/10/02	15:25	1472:46:00	1472:42:00	1472:33:00	38.3766422
80	80	1080	0.00212	540	14.018	0.001945738	55.10	0.138267036	3915.27	70.15	72.84	8/12/02	13:17	1518:38:00	1518:34:00	1518:25:00	38.96964631
55	75	1081	0.00194	535	14.031	0.00180193	51.02	0.140068966	3966.30	71.07	73.76	8/14/02	11:24	1564:45:00	1564:41:00	1564:32:00	39.55692101
29	66	1085	0.00102	526	14.083	0.000969941	27.47	0.141038907	3993.76	71.56	74.25	8/16/02	11:57	1613:18:00	1613:14:00	1613:05:00	40.16590594
85	65	1082	0.00088	525	14.044	0.000835432	23.66	0.141874339	4017.42	71.98	74.67	8/19/02	15:13	1688:34:00	1688:30:00	1688:21:00	41.09217282
22	64	1082	0.00078	524	14.044	0.000736583	20.86	0.142610922	4038.28	72.36	75.04	8/21/02	11:33	1732:54:00	1732:50:00	1732:41:00	41.6281155
20	65	1082	0.00071	525	14.044	0.000668346	18.93	0.143279268	4057.20	72.70	75.38	8/23/02	9:16	1778:37:00	1778:33:00	1778:24:00	42.17364896
26	64	1086	0.00092	524	14.096	0.000873726	24.74	0.144152994	4081.94	73.14	75.83	8/26/02	10:31	1851:52:00	1851:48:00	1851:39:00	43.03332042
33	64	1088	0.00117	524	14.122	0.001111002	31.46	0.145263995	4113.40	73.70	76.39	8/30/02	9:15	1946:36:00	1946:32:00	1946:23:00	44.12029012
32	64	1078	0.00113	524	13.992	0.001067433	30.23	0.146391428	4143.63	74.24</							

29	65	1080	0.00102	525	14.018	0.00096731	27.39	0.153684141	4351.83	77.98	80.66	9/27/02	13:54	2623:15:00	2623:11:00	2623:02:00	51.21767273
52	76	1078	0.00184	536	13.992	0.001695745	48.02	0.155379886	4399.85	78.84	81.52	10/1/02	14:08	2719:29:00	2719:25:00	2719:16:00	52.14866569
43	73	1074	0.00152	533	13.940	0.001404911	39.78	0.156784797	4439.63	79.55	82.24	10/3/02	19:24	2772:45:00	2772:41:00	2772:32:00	52.66590838
16	66	1083	0.00057	526	14.057	0.000534153	15.13	0.15731895	4454.76	79.82	82.51	10/4/02	18:52	2796:13:00	2796:09:00	2796:00:00	52.879265
24	66	1085	0.00085	526	14.083	0.00080271	22.73	0.15812166	4477.49	80.23	82.91	10/8/02	13:42	2887:03:00	2886:59:00	2886:50:00	53.73127581
16	63	1084	0.00057	523	14.070	0.000537713	15.23	0.158659373	4492.72	80.50	83.19	10/10/02	18:45	2940:06:00	2940:02:00	2939:53:00	54.22268898
10	64	1081	0.00035	524	14.031	0.000334501	9.47	0.158993874	4502.19	80.67	83.36	10/11/02	17:46	2963:07:00	2963:03:00	2962:54:00	54.43451724
18	68	1091	0.00064	528	14.161	0.000603068	17.08	0.159596943	4519.27	80.98	83.66	10/14/02	10:23	3027:44:00	3027:40:00	3027:31:00	55.02484287
9	65	1086	0.00032	525	14.096	0.000301867	8.55	0.15989881	4527.81	81.13	83.82	10/15/02	19:37	3060:58:00	3060:54:00	3060:45:00	55.32600353
12	65	1085	0.00042	525	14.083	0.000402119	11.39	0.160300929	4539.20	81.33	84.02	10/17/02	9:22	3098:43:00	3098:39:00	3098:30:00	55.66611776
12	63	1076	0.00042	523	13.966	0.000400309	11.34	0.160701238	4550.54	81.54	84.22	10/18/02	14:56	3128:17:00	3128:13:00	3128:04:00	55.93105875
14	67	1085	0.00049	527	14.083	0.000467359	13.23	0.161168597	4563.77	81.77	84.46	10/21/02	11:18	3196:39:00	3196:35:00	3196:26:00	56.53892464
15	66	1093	0.00053	526	14.187	0.000505393	14.31	0.161673989	4578.08	82.03	84.72	10/23/02	16:20	3249:41:00	3249:37:00	3249:28:00	57.00599384
20	68	1089	0.00071	528	14.135	0.000668848	18.94	0.162342837	4597.02	82.37	85.06	10/26/02	14:59	3320:20:00	3320:16:00	3320:07:00	57.62233363
21	68	1082	0.00074	528	14.044	0.000697776	19.76	0.163040613	4616.78	82.72	85.41	10/29/02	22:22	3399:43:00	3399:39:00	3399:30:00	58.30708933
11	68	1087	0.00039	528	14.109	0.000367191	10.40	0.163407803	4627.18	82.91	85.60	10/30/02	14:20	3415:41:00	3415:37:00	3415:28:00	58.44384769
29	70	1081	0.00102	530	14.031	0.000959072	27.16	0.164366875	4654.33	83.40	86.08	11/4/02	21:49	3543:10:00	3543:06:00	3542:57:00	59.52450476
24	69	1081	0.00085	529	14.031	0.000795215	22.52	0.16516209	4676.85	83.80	86.49	11/7/02	13:14	3606:35:00	3606:31:00	3606:22:00	60.05483605
33	70	1081	0.00117	530	14.031	0.001091357	30.90	0.166253447	4707.76	84.35	87.04	11/13/02	18:59	3756:20:00	3756:16:00	3756:07:00	61.2889332
23	69	1086	0.00081	529	14.096	0.000765606	21.68	0.167019053	4729.44	84.74	87.43	11/16/02	23:01	3832:22:00	3832:18:00	3832:09:00	61.90611171
26	63	1076	0.00092	523	13.966	0.000867336	24.56	0.167886388	4754.00	85.18	87.87	11/21/02	14:45	3944:06:00	3944:02:00	3943:53:00	62.80207003
13	70	1085	0.00046	530	14.083	0.00043152	12.22	0.168317908	4766.21	85.40	88.09	11/22/02	17:33	3970:54:00	3970:50:00	3970:41:00	63.01507756
11	68	1093	0.00039	528	14.187	0.000369217	10.46	0.168687125	4776.67	85.59	88.28	11/25/02	18:53	4044:14:00	4044:10:00	4044:01:00	63.59428896
13	69	1092	0.00046	529	14.174	0.000435124	12.32	0.16912225	4788.99	85.81	88.50	11/27/02	18:53	4092:14:00	4092:10:00	4092:01:00	63.97056615
10	65	1096	0.00035	525	14.226	0.000338497	9.59	0.169460746	4798.58	85.98	88.67	12/3/02	18:49	4236:10:00	4236:06:00	4235:57:00	65.08584075
14	68	1088	0.00049	528	14.122	0.000467763	13.25	0.16992851	4811.82	86.22	88.90	12/6/02	14:45	4304:06:00	4304:02:00	4303:53:00	65.605664
17	67	1087	0.0006	527	14.109	0.000568553	16.10	0.170497063	4827.92	86.51	89.19	12/10/02	10:50	4396:11:00	4396:07:00	4395:58:00	66.30372036
22	69	1082	0.00078	529	14.044	0.000729621	20.66	0.171226684	4848.58	86.88	89.56	12/12/02	18:07	4451:28:00	4451:24:00	4451:15:00	66.71931255
10	68	1081	0.00035	528	14.031	0.000331967	9.40	0.171558651	4857.98	87.04	89.73	12/13/02	18:39	4478:00:00	4478:00:00	4478:00:00	66.90291473
19	70	1074	0.00087	530	13.940	0.000624288	17.68	0.17218294	4875.66	87.36	90.05	12/16/02	15:35	4544:56:00	4544:52:00	4544:43:00	67.41612072
20	68	1078	0.00071	528	13.992	0.000662092	18.75	0.172845031	4894.41	87.70	90.38	12/19/02	20:52	4622:13:00	4622:09:00	4622:00:00	67.98688599
13	67	1088	0.00046	527	14.122	0.000435176	12.32	0.173280207	4906.73	87.92	90.61	12/23/02	19:12	4716:33:00	4716:29:00	4716:20:00	68.67714321
29	70	1087	0.00102	530	13.849	0.000946651	26.81	0.174228858	4933.54	88.40	91.09	12/29/02	21:40	4863:01:00	4862:57:00	4862:48:00	69.73533299
10	70	1078	0.00035	530	13.992	0.000329797	9.34	0.174556654	4942.88	88.57	91.25	12/30/02	16:55	4882:16:00	4882:12:00	4882:03:00	69.87321852
13	68	1087	0.00046	528	14.109	0.000433952	12.29	0.174990607	4955.16	88.79	91.47	1/3/03	12:31	4973:52:00	4973:48:00	4973:39:00	70.52564545
10	67	1101	0.00035	527	14.291	0.00033875	9.59	0.175329357	4964.76	88.96	91.65	1/6/03	13:43	5047:04:00	5047:00:00	5046:51:00	71.04271016
22	68	1088	0.00078	527	14.122	0.000736452	20.85	0.176055809	4985.61	89.33	92.02	1/13/03	16:13	5217:34:00	5217:30:00	5217:21:00	72.23272573
16	67	1097	0.00057	528	14.239	0.000539009	15.26	0.176604818	5000.87	89.60	92.29	1/17/03	14:22	5311:43:00	5311:39:00	5311:30:00	72.88152487
15	67	1092	0.00053	527	14.174	0.000503972	14.27	0.17710879	5015.14	89.86	92.55	1/21/03	12:16	5405:37:00	5405:33:00	5405:24:00	73.52289893
4	66	1106	0.00014	526	14.355	0.000136374	3.86	0.177245164	5019.01	89.93	92.82	1/22/03	15:29	5432:50:00	5432:46:00	5432:37:00	73.70775626
20	68	1095	0.00071	528	14.213	0.000672533	19.04	0.177917697	5038.05	90.27	92.96	1/29/03	13:46	5599:07:00	5599:03:00	5598:54:00	74.82724548
23	66	1075	0.00081	526	13.953	0.000762173	21.58	0.17867987	5059.63	90.66	93.35	2/3/03	16:00	5721:21:00	5721:17:00	5721:08:00	75.63960603
18	67	1083	0.00064	527	14.057	0.000599782	16.98	0.179279652	5076.62	90.96	93.65	2/10/03	14:11	5887:32:00	5887:28:00	5887:19:00	76.73026348
17	66	1084	0.0006	526	14.070	0.000568062	16.09	0.179847714	5092.70	91.25	93.94	2/17/03	14:02	6055:23:00	6055:19:00	6055:10:00	77.81634361
14	64	1100	0.00049	524	14.278	0.000476533	13.49	0.180324247	5106.19	91.49	94.18	2/24/03	14:18	6223:39:00	6223:35:00	6223:26:00	78.89011345
29	69	1076	0.00102	529	13.966	0.00095644	27.06	0.181280687	5133.28	91.98	94.66	3/3/03	13:58	6391:19:00	6391:15:00	6391:06:00	79.94571075
21	69	1089	0.00074	529	14.135	0.000700962	19.85	0.181981649	5153.13	92.33	95.02	3/10/03	14:03	6559:24:00	6559:20:00	6559:11:00	80.99012285
29	71	1066	0.00102	531	13.836	0.000943982	26.73	0.182925632	5179.86	92.81	95.50	3/18/03	19:47	6757:08:00	6757:04:00	6756:55:00	82.20178425
14	68	1072	0.00049	528	13.914	0.000460885	13.05	0.183386516	5192.91	93.05	95.73	3/20/03	11:46	6797:07:00	6797:03:00	6796:54:00	82.44462788
1	70	1078	3.5E-05	530	13.992	3.29797E-05	0.93	0.183419496	5193.84	93.06	95.75	3/23/03	13:25	6870:46:00	6870:42:00	6870:33:00	82.89008787
8	71	1073	0.00028	531	13.927	0.000262119	7.42	0.183681615	5201.26	93.20	95.88	3/24/03	13:58	6895:19:00	6895:15:00	6895:06:00	83.03804349
15	69	1077	0.00053	529	13.979	0.00049517	14.02	0.184176785	5215.29	93.45	96.13	3/31/03	17:16	7066:37:00	7066:33:00	7066:24:00	84.06317069
18	70	1073	0.00064	530	13.927	0.00059088	16.73	0.184767665	5232.02	93.75	96.43	4/4/03	10:47	7156:08:00	7156:04:00	7155:55:00	84.59393201
7	66	1090	0.00025	526	14.148	0.000235203	6.66	0.185002868	5238.68	93.87	96.55	4/9/03	18:16	7283:37:00	7283:33:00	7283:24:00	85.34410739
16	69	1078	0.00057	529	13.992	0.000528672	14.97	0.18553154	5253.65	94.13	96.82	4/14/03	15:13	7400:34:00	7400:30:00	7400:21:00	86.02654629
15	68	1083	0.00053	528	14.057	0.000498872	14.13	0.186030412	5267.77	94.39	97.07	4/20/03	17:50	7547:11:00	7547:07:00	7546:58:00	86.87452638
3	66	1084	0.00011	526	14.070	0.000100246	2.84	0.186130658	5270.61	94.44	97.13	4/21/03	15:20	7568:41:00	7568:37:00	7568:28:00	86.99818006
7	64	1081	0.00025	524	14.031												

18	67	1081	0.00064	527	14.031	0.000598675	16.95	0.1897049	5371.82	96.25	98.94	7/7/03	13:59	9415:20:00	9415:16:00	9415:07:00	97.03264056
27	73	1084	0.00095	533	14.070	0.000890367	25.21	0.190595267	5397.04	96.70	99.39	7/15/03	13:49	9607:10:00	9607:06:00	9606:57:00	98.01615513
24	73	1079	0.00085	533	14.005	0.000787787	22.31	0.191383054	5419.34	97.10	99.79	7/21/03	16:29	9753:50:00	9753:46:00	9753:37:00	98.76149722
20	70	1081	0.00071	530	14.031	0.000661429	18.73	0.192044483	5438.07	97.44	100.13	7/28/03	20:19	9925:40:00	9925:36:00	9925:27:00	99.62764007
14	67	1079	0.00049	527	14.005	0.000464774	13.16	0.192509257	5451.23	97.67	100.36	8/4/03	13:40	10087:01:00	10086:57:00	10086:48:00	100.4341409
14	68	1086	0.00049	528	14.096	0.000468904	13.22	0.192976116	5464.46	97.91	100.60	8/11/03	13:50	10255:11:00	10255:07:00	10254:58:00	101.2678791
18	70	1082	0.00064	530	14.044	0.000595836	16.87	0.193571997	5481.33	98.21	100.90	8/18/03	19:55	10429:16:00	10429:12:00	10429:03:00	102.1237811
20	70	1083	0.00071	530	14.057	0.000662652	18.76	0.194234649	5500.09	98.55	101.24	8/24/03	22:42	10576:03:00	10575:59:00	10575:50:00	102.8399242
11	64	1086	0.00039	524	14.096	0.000369653	10.47	0.194604302	5510.56	98.74	101.42	9/1/03	14:43	10760:04:00	10760:00:00	10759:51:00	103.7307412
7	65	1084	0.00025	525	14.070	0.000234353	6.64	0.194838656	5517.20	98.86	101.54	9/8/03	13:59	10927:20:00	10927:16:00	10927:07:00	104.5338861
13	67	1085	0.00046	527	14.083	0.000433976	12.29	0.195272632	5529.48	99.08	101.76	9/15/03	15:09	11096:30:00	11096:26:00	11096:17:00	105.339926
17	76	1084	0.0006	536	14.070	0.000557464	15.79	0.195830096	5545.27	99.36	102.05	9/23/03	10:40	11284:01:00	11283:57:00	11283:48:00	108.2262522
7	68	1091	0.00025	528	14.161	0.000234527	6.64	0.196064822	5551.91	99.48	102.17	9/26/03	18:49	11364:10:00	11364:06:00	11363:57:00	106.8028455
14	72	1085	0.00049	532	14.083	0.000462966	13.11	0.196527588	5565.02	99.71	102.40	10/6/03	12:01	11597:22:00	11597:18:00	11597:09:00	107.6910705
14	72	1084	0.00049	532	14.070	0.00046254	13.10	0.196990128	5578.12	99.95	102.64	10/14/03	22:59	11800:20:00	11800:16:00	11800:07:00	108.6293392
14	77	1081	0.00049	537	14.031	0.000456965	12.94	0.197447093	5591.06	100.18	102.87	10/20/03	15:37	11936:58:00	11936:54:00	11936:45:00	109.2564262
6	66	1075	0.00021	526	13.953	0.000198828	5.63	0.197645921	5596.69	100.28	102.97	10/27/03	15:01	12104:22:00	12104:18:00	12104:09:00	110.0198467
4	70	1080	0.00014	530	14.018	0.000132163	3.74	0.197778084	5600.43	100.35	103.04	11/3/03	10:09	12267:30:00	12267:26:00	12267:17:00	110.7587468
9	74	1085	0.00032	534	14.083	0.000296506	8.40	0.19807459	5608.83	100.50	103.19	11/10/03	11:14	12436:35:00	12436:31:00	12436:22:00	111.5194303
15	73	1089	0.00053	533	13.875	0.000487804	13.81	0.198562394	5622.64	100.75	103.43	11/17/03	16:23	12609:44:00	12609:40:00	12609:31:00	112.2930689
8	70	1086	0.00028	530	14.096	0.000265795	7.53	0.198828189	5630.17	100.88	103.57	11/24/03	14:22	12775:43:00	12775:39:00	12775:30:00	113.0297159
9	69	1090	0.00032	529	14.148	0.000300688	8.51	0.199128877	5638.68	101.03	103.72	12/4/03	19:52	13021:13:00	13021:09:00	13021:00:00	114.1105458
6	67	1083	0.00021	527	14.057	0.000199927	5.66	0.199328805	5644.34	101.13	103.82	12/10/03	14:52	13160:13:00	13160:09:00	13160:00:00	114.7179875
5	68	1087	0.00018	528	14.109	0.000166905	4.73	0.19949571	5649.07	101.22	103.91	12/16/03	14:21	13303:42:00	13303:38:00	13303:29:00	115.3416664
6	68	1081	0.00021	528	14.031	0.000199118	5.64	0.19969489	5654.71	101.32	104.01	12/22/03	16:07	13449:28:00	13449:24:00	13449:15:00	115.9718357
8	69	1082	0.00028	529	14.044	0.000265317	7.51	0.199960207	5662.22	101.45	104.14	12/29/03	14:32	13615:53:00	13615:49:00	13615:40:00	116.6871173
2	68	1103	7.1E-05	528	14.316	6.77446E-05	1.92	0.200027951	5664.14	101.49	104.18	1/6/04	15:10	13808:31:00	13808:27:00	13808:18:00	117.509645
6	71	1093	0.00021	531	14.187	0.000200253	5.67	0.200228205	5669.81	101.59	104.28	1/12/04	11:45	13949:06:00	13949:02:00	13948:53:00	118.106308
7	68	1089	0.00025	528	14.135	0.000234097	6.63	0.200462301	5676.44	101.71	104.40	1/21/04	10:34	14163:55:00	14163:51:00	14163:42:00	119.0122543
4	68	1091	0.00014	528	14.161	0.000134015	3.79	0.200596317	5680.23	101.78	104.47	1/27/04	10:10	14307:31:00	14307:27:00	14307:18:00	119.6140321
6	71	1085	0.00021	531	14.083	0.000198788	5.63	0.200795104	5685.86	101.88	104.57	2/2/04	15:41	14457:02:00	14456:58:00	14456:49:00	120.2374041
4	69	1091	0.00014	529	14.161	0.000133762	3.79	0.200928866	5689.65	101.95	104.63	2/9/04	10:33	14619:54:00	14619:50:00	14619:41:00	120.9127785
4.5	69	1091	0.00016	529	14.161	0.000150482	4.26	0.201079348	5693.91	102.02	104.71	2/16/04	14:23	14791:44:00	14791:40:00	14791:31:00	121.6212701
7	68	1086	0.00025	528	14.096	0.000233452	6.61	0.20131328	5700.52	102.14	104.83	2/23/04	14:31	14959:52:00	14959:48:00	14959:39:00	122.3105338
6	70	1091	0.00021	530	14.161	0.000200264	5.67	0.201513064	5706.19	102.24	104.93	3/2/04	10:46	15148:07:00	15148:03:00	15147:54:00	123.0776855
6	69	1088	0.00021	529	14.122	0.000200091	5.67	0.201713155	5711.86	102.34	105.03	3/8/04	10:05	15291:26:00	15291:22:00	15291:13:00	123.6585352
8	71	1081	0.00028	531	14.031	0.000264073	7.48	0.201977229	5719.34	102.48	105.17	3/15/04	11:39	15461:00:00	15460:56:00	15460:47:00	124.3422696
5	68	1097	0.00018	528	14.239	0.00016844	4.77	0.202145669	5724.11	102.56	105.25	3/22/04	10:04	15627:25:00	15627:21:00	15627:12:00	125.0096663
5	63	1088	0.00018	523	14.122	0.000168655	4.78	0.202314324	5728.88	102.65	105.34	3/30/04	20:34	15829:55:00	15829:51:00	15829:42:00	125.8169967
5	68	1080	0.00018	528	14.018	0.00016583	4.70	0.202480154	5733.58	102.73	105.42	4/6/04	14:43	15992:04:00	15992:00:00	15991:51:00	126.4597433

SAMPLE NOT YET DECANISTERED

SAMPLE: 686' 4" to 687' 1" (Upper Neutral Coal) in canister 8

dry sample weight		lbs.	grams	wet sample weight:		lbs.	grams	moisture weight	est. lost gas (cc) =	TIME OF:			elapsed time (off bottom to canistering)		
2.9732		1348.64		3.0981		1405.26	4.0%	180	off bottom	at surface	in canister	13.0 minutes			
									6/10/02	13:36	6/10/02	13:41	6/10/02	13:49	0.217 hours
RIGLAB MEASUREMENTS		CONVERSION OF RIGLAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)				CUMULATIVE VOLUMES		SCF/TON	SCF/TON	TIME SINCE			0.465474668	SQRT (hrs)	
measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SQRT hrs. (since off bottom)	
28	80.8	1076	0.00099	540.8	13.966	0.00090331	25.58	0.00090331	25.58	6/10/02	13:50	0:14:00	0:09:00	0:01:00	0.483045892
51	80.8	1076	0.0018	540.8	13.966	0.001645315	46.59	0.002548625	72.17	6/10/02	13:59	0:23:00	0:18:00	0:10:00	0.619139187
13	64	1075	0.00046	524	13.953	0.000432438	12.25	0.002981063	84.41	6/10/02	14:19	0:43:00	0:38:00	0:30:00	0.846561673
75	66	1075	0.00265	526	13.953	0.002485348	70.38	0.00546641	154.79	6/10/02	14:42	1:06:00	1:01:00	0:53:00	1.048808848
59	66	1075	0.00208	526	13.953	0.00195514	55.36	0.007421551	210.15	6/10/02	15:05	1:29:00	1:24:00	1:16:00	1.217921727
71	68	1075	0.00251	528	13.953	0.002343884	66.37	0.009765435	276.53	6/10/02	15:44	2:08:00	2:03:00	1:55:00	1.460593487
40	68	1075	0.00141	528	13.953	0.001320498	37.39	0.011085933	313.92	6/10/02	16:08	2:32:00	2:27:00	2:19:00	1.591644852
45	68	1074	0.00145	528	13.940	0.001484178	42.03	0.012570111	355.94	6/10/02	16:38	3:02:00	2:57:00	2:49:00	1.74164673
126	70.9	1074	0.00459	530.9	13.940	0.004132999	117.03	0.01670311	472.98	6/10/02	19:14	5:38:00	5:33:00	5:25:00	2.373464416
302	64	1077	0.01067	524	13.979	0.010064555	285.00	0.026767665	757.97	6/11/02	11:20	21:44:00	21:39:00	21:31:00	4.66190233
272	63	1078	0.00961	523	13.992	0.00909053	257.41	0.035858194	1015.39	6/12/02	11:25	45:49:00	45:44:00	45:36:00	6.768800977
189	63.5	1080	0.00667	523.5	14.018	0.006322256	179.03	0.04218045	1194.41	6/13/02	9:14	67:38:00	67:33:00	67:25:00	8.223948768
201	63.5	1082	0.0071	523.5	14.044	0.00673612	190.74	0.048916571	1385.16	6/14/02	20:17	102:41:00	102:36:00	102:28:00	10.13327851
125	63	1079	0.00441	523	14.005	0.004181508	118.41	0.053098079	1503.56	6/15/02	18:52	125:16:00	125:11:00	125:03:00	11.19225923
147	63	1081	0.00519	523	14.031	0.004926569	139.50	0.058024648	1643.07	6/17/02	11:36	1			

92	63.5	1084	0.00325	523.5	14.070	0.003088898	87.47	0.07208855	2041.31	48.49	52.77	6/23/02	19:36	318:00:00	317:55:00	317:47:00	17.8325545
86	64	1084	0.00304	524	14.070	0.002884693	81.69	0.074973243	2123.00	50.43	54.71	6/25/02	13:58	360:22:00	360:17:00	360:09:00	18.98332602
100	64	1079	0.00353	524	14.005	0.003338823	94.54	0.078312066	2217.54	52.68	56.95	6/27/02	19:17	413:41:00	413:36:00	413:28:00	20.3392068
123	65	1085	0.00434	525	14.083	0.004121723	116.71	0.082433789	2334.26	55.45	59.73	6/30/02	20:12	486:36:00	486:31:00	486:23:00	22.05901176
66	64.5	1086	0.00233	524.5	14.096	0.002215805	62.74	0.084649593	2397.00	56.94	61.22	7/2/02	17:18	531:42:00	531:37:00	531:29:00	23.05882095
65	62.5	1087	0.0023	522.5	14.109	0.002192802	62.09	0.086842195	2459.09	58.42	62.69	7/5/02	15:05	601:29:00	601:24:00	601:16:00	24.52515715
55	62.5	1087	0.00194	522.5	14.109	0.001855279	52.54	0.088697474	2511.62	59.66	63.94	7/7/02	21:24	655:48:00	655:43:00	655:35:00	25.60859231
83	63	1082	0.00293	523	14.044	0.002784241	78.84	0.091481715	2590.46	61.54	65.81	7/11/02	18:20	748:44:00	748:39:00	748:31:00	27.36299204
49	63	1082	0.00173	523	14.044	0.001643709	46.54	0.093125424	2637.01	62.64	66.92	7/13/02	20:20	798:44:00	798:39:00	798:31:00	28.26187066
52	63	1083	0.00184	523	14.057	0.001745956	49.44	0.094871928	2686.45	63.82	68.09	7/16/02	17:45	868:09:00	868:04:00	867:56:00	29.46438528
86	65	1083	0.00304	525	14.057	0.002876543	81.45	0.097747923	2767.90	65.75	70.03	7/22/02	16:04	1010:28:00	1010:23:00	1010:15:00	31.78783835
97	66	1081	0.00343	526	14.031	0.003232324	91.53	0.100980247	2859.43	67.93	72.20	7/29/02	15:18	1177:42:00	1177:37:00	1177:29:00	34.31763395
132	78	1087	0.00466	538	14.109	0.004324386	122.45	0.105304632	2981.88	70.83	75.11	8/5/02	10:14	1340:38:00	1340:33:00	1340:25:00	36.61466009
164	80	1080	0.00579	540	14.018	0.005318352	150.60	0.110622984	3132.48	74.41	78.69	8/12/02	13:18	1511:42:00	1511:37:00	1511:29:00	38.88058642
69	84	1082	0.00244	524	14.044	0.002310193	65.42	0.112933177	3197.90	75.97	80.24	8/20/02	15:02	1705:26:00	1705:21:00	1705:13:00	41.29689254
49	84	1086	0.00173	524	14.096	0.001646637	46.63	0.114579814	3244.53	77.07	81.35	8/26/02	10:32	1844:56:00	1844:51:00	1844:43:00	42.95268715
60	84	1078	0.00212	524	13.992	0.002001437	56.67	0.116581251	3301.20	78.42	82.70	9/2/02	14:23	2016:47:00	2016:42:00	2016:34:00	44.9086109
27	65	1082	0.00095	525	14.044	0.000902267	25.55	0.117483518	3326.75	79.03	83.30	9/5/02	17:26	2091:50:00	2091:45:00	2091:37:00	45.73656451
15	64	1085	0.00053	524	14.083	0.000503608	14.26	0.117987126	3341.01	79.37	83.64	9/7/02	12:44	2135:08:00	2135:03:00	2134:55:00	46.207503
49	63	1077	0.00127	523	13.979	0.001202042	34.04	0.119189168	3375.05	80.17	84.45	9/13/02	18:26	2284:50:00	2284:45:00	2284:37:00	47.79993026
39	88	1074	0.00173	528	13.940	0.001616105	45.76	0.120805274	3420.81	81.26	85.54	9/20/02	10:22	2444:46:00	2444:41:00	2444:33:00	49.44458177
34	85	1080	0.0012	525	14.018	0.001134088	32.11	0.121939361	3452.93	82.02	86.30	9/27/02	13:54	2616:18:00	2616:13:00	2616:05:00	51.14978006
61	76	1078	0.00215	536	13.992	0.001989239	56.33	0.1239286	3509.25	83.36	87.64	10/1/02	14:08	2712:32:00	2712:27:00	2712:19:00	52.08198665
25	66	1083	0.00088	526	14.057	0.000834615	23.63	0.124763215	3532.89	83.92	88.20	10/4/02	18:54	2789:18:00	2789:13:00	2789:05:00	52.81382395
17	66	1085	0.0006	526	14.083	0.000568586	16.10	0.125331801	3548.99	84.31	88.58	10/8/02	13:42	2880:06:00	2880:01:00	2879:53:00	53.66656315
17	68	1091	0.0006	528	14.161	0.000569565	16.13	0.125901365	3565.12	84.69	88.97	10/14/02	10:26	3020:50:00	3020:45:00	3020:37:00	54.96210816
23	63	1076	0.00081	523	13.966	0.000767258	21.73	0.126668624	3586.84	85.21	89.48	10/18/02	14:56	3121:20:00	3121:15:00	3121:07:00	55.86889415
36	68	1089	0.00127	528	14.135	0.001203926	34.09	0.127872549	3620.93	86.02	90.29	10/26/02	15:00	3313:24:00	3313:19:00	3313:11:00	57.56214034
23	67	1096	0.00081	527	14.226	0.000775588	21.96	0.128648137	3642.90	86.54	90.81	10/31/02	10:45	3429:09:00	3429:04:00	3428:56:00	58.55894466
44	69	1081	0.00155	529	14.031	0.001457894	41.28	0.130106031	3684.18	87.52	91.79	11/7/02	13:16	3599:40:00	3599:35:00	3599:27:00	59.99722216
49	68	1086	0.00173	528	14.096	0.001634162	46.27	0.131740193	3730.45	88.62	92.89	11/21/02	14:45	3937:09:00	3937:04:00	3936:56:00	62.74671306 estimate
16	65	1086	0.00057	525	14.226	0.000541595	15.34	0.132281788	3745.79	88.98	93.26	12/3/02	18:30	4228:54:00	4228:49:00	4228:41:00	65.02999300
28	67	1087	0.00099	527	14.109	0.00093644	26.52	0.133218228	3772.31	89.61	93.89	12/10/02	10:50	4389:14:00	4389:09:00	4389:01:00	66.2512893
39	70	1074	0.00138	530	13.940	0.001281434	36.29	0.134499662	3808.59	90.47	94.75	12/16/02	15:36	4538:00:00	4537:55:00	4537:47:00	67.36467917
3	67	1088	0.00011	527	14.122	0.000100425	2.84	0.134600088	3811.44	90.54	94.82	12/23/02	19:13	4709:37:00	4709:32:00	4709:24:00	68.62664691
43	70	1078	0.00152	530	13.992	0.001418125	40.16	0.136018213	3851.59	91.49	95.77	12/30/02	16:56	4875:20:00	4875:15:00	4875:07:00	69.82358723
20	67	1101	0.00071	527	14.291	0.000677501	19.18	0.136695714	3870.78	91.95	96.23	1/6/03	13:44	5040:08:00	5040:03:00	5039:55:00	70.99389645 estimate
25	67	1088	0.00088	527	14.122	0.000836877	23.70	0.137532559	3894.47	92.51	96.79	1/13/03	16:14	5210:38:00	5210:33:00	5210:25:00	72.18471676
12	66	1100	0.00042	526	14.278	0.000406903	11.52	0.137939494	3906.00	92.79	97.06	1/22/03	15:28	5425:52:00	5425:47:00	5425:39:00	73.6604822
21	68	1095	0.00074	528	14.213	0.000706159	20.00	0.138645653	3925.99	93.26	97.54	1/29/03	13:47	5592:11:00	5592:06:00	5591:58:00	74.78090224
26	66	1075	0.00092	526	13.953	0.000861587	24.40	0.13950724	3950.39	93.84	98.12	2/3/03	14:01	5712:25:00	5712:20:00	5712:12:00	75.580531
12	67	1083	0.00042	527	14.057	0.000399855	11.32	0.139907095	3961.71	94.11	98.39	2/10/03	14:12	5880:36:00	5880:31:00	5880:23:00	76.68507025
12	66	1084	0.00042	526	14.070	0.000400985	11.35	0.14030808	3973.07	94.38	98.66	2/17/03	14:03	6048:27:00	6048:22:00	6048:14:00	77.77178151
3	64	1100	0.00011	524	14.278	0.000102114	2.89	0.140410194	3975.96	94.45	98.73	2/24/03	14:19	6216:43:00	6216:38:00	6216:30:00	78.84615822
30	69	1076	0.00106	529	13.966	0.000989421	28.02	0.141399615	4003.98	95.11	99.39	3/3/03	13:59	6384:23:00	6384:18:00	6384:10:00	79.90233622
13	69	1089	0.00046	529	14.135	0.000433929	12.29	0.141833544	4016.26	95.41	99.68	3/10/03	14:04	6552:28:00	6552:23:00	6552:15:00	80.94730796
28	66	1072	0.00099	528	13.914	0.000921769	26.10	0.142755313	4042.37	96.03	100.30	3/20/03	11:47	6790:11:00	6790:06:00	6789:58:00	82.40256873
14	71	1073	0.00049	531	13.927	0.000458708	12.99	0.143214021	4055.35	96.34	100.61	3/24/03	13:59	6888:23:00	6888:18:00	6888:10:00	82.99628506
11	69	1077	0.00039	529	13.979	0.000363125	10.28	0.143577146	4065.64	96.58	100.86	3/31/03	17:17	7059:41:00	7059:36:00	7059:28:00	84.02192174
4	66	1090	0.00014	526	14.148	0.000134401	3.81	0.143711548	4069.44	96.67	100.95	4/9/03	18:18	7276:42:00	7276:37:00	7276:29:00	85.30357554
20	69	1078	0.00071	529	13.992	0.00066084	18.71	0.144372388	4088.16	97.11	101.39	4/14/03	15:12	7393:36:00	7393:31:00	7393:23:00	85.98604538
4	64	1085	0.00014	524	14.083	0.000134296	3.80	0.144506683	4091.96	97.20	101.48	4/21/03	15:21	7561:45:00	7561:40:00	7561:32:00	86.95832335
4	64	1081	0.00014	524	14.031	0.0001338	3.79	0.144640484	4095.75	97.29	101.57	4/28/03	11:16	7725:40:00	7725:35:00	7725:27:00	87.89577161
15	64	1069	0.00053	524	13.875	0.000498182	14.05	0.145136665	4109.80	97.63	101.90	5/5/03	14:41	7897:05:00	7897:00:00	7896:52:00	88.86553513
0	64	1088	0	524	14.122	0	0.00	0.145136665	4109.80	97.63	101.90	5/12/03	14:19	8064:43:00	8064:38:00	8064:30:00	89.80376755
2	64	1083	7.1E-05	524	14.057	6.7024E-05	1.90	0.145203689	4111.70	97.67	101.95	5/19/03	14:28	8232:52:00	8232:47:00	8232:39:00	90.73514571
11	64	1083	0.00039	524	14.057	0.000368632	10.44	0.145572321	4122.13	97.92	102.20	5/30/03	16:32	8498:56:00	8498:51:00	8498:43:00	92.18965958
12	68	1081	0.00042	528	14.031	0.00039836	11.28										

dry sample weight		2.4284	1101.50	wet sample weight:		2.5236	1144.67	3.8%	130	off bottom	at surface	in canister	10.0 minutes		
RIG/LAB MEASUREMENTS		CONVERSION OF RIG/LAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)				CUMULATIVE VOLUMES		SCF/TON	SCF/TON	TIME SINCE	TIME SINCE	in canister	SQRT (hrs)		
measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas	off bottom	at surface	in canister	SQRT hrs. (since off bottom)
6/10/02	14:04	6/10/02	14:06	6/10/02	14:14	6/10/02	14:14	6/10/02	14:14	6/10/02	14:28	0:24:00	0:22:00	0:14:00	0.167 hours
75	66	1075	0.00265	526	13.953	0.002485348	70.38	0.002485348	70.38	2.05	5.83	6/10/02 14:28	0:24:00	0:14:00	0.63245532
42	66	1075	0.00148	526	13.953	0.001391795	39.41	0.003877143	109.79	3.19	6.97	6/10/02 14:34	0:30:00	0:28:00	0.707106781
44	66	1075	0.00155	526	13.953	0.001458071	41.29	0.005335213	151.08	4.39	8.18	6/10/02 15:00	0:58:00	0:54:00	0.966091783
55	68	1075	0.00194	528	13.953	0.001815685	51.41	0.007150898	202.49	5.89	9.67	6/10/02 15:39	1:35:00	1:33:00	1.258305739
37	68	1075	0.00131	528	13.953	0.001221461	34.59	0.008372359	237.08	6.90	10.68	6/10/02 16:10	2:06:00	2:04:00	1.449137675
33	68	1074	0.00117	528	13.940	0.001088397	30.82	0.009460756	267.90	7.79	11.57	6/10/02 16:40	2:36:00	2:34:00	1.61245155
81	70.9	1074	0.00286	530.9	13.940	0.002656928	75.24	0.012117684	343.13	9.98	13.76	6/10/02 19:12	5:08:00	5:06:00	2.265886062
201	64	1077	0.0071	524	13.979	0.006698594	189.88	0.018816279	532.82	15.50	19.28	6/11/02 11:25	21:21:00	21:19:00	4.620606021
163	63	1080	0.00576	523	13.992	0.005447634	154.26	0.024263912	687.07	19.98	23.76	6/12/02 11:27	45:23:00	45:21:00	6.736715322
92	63.5	1080	0.00325	523.5	14.018	0.0030775	87.14	0.027341412	774.22	22.52	26.30	6/13/02 9:16	67:12:00	67:10:00	8.197560613
105	63.5	1082	0.00371	523.5	14.044	0.003518869	99.64	0.030860281	873.86	25.42	29.20	6/14/02 20:18	102:14:00	102:12:00	10.11105006
61	63	1079	0.00215	523	14.005	0.002040576	57.78	0.032900857	931.65	27.10	30.88	6/15/02 18:53	124:49:00	124:47:00	11.17213796
76	63	1081	0.00268	523	14.031	0.00254707	72.12	0.035447927	1003.77	29.19	32.98	6/17/02 11:38	165:34:00	165:32:00	12.86727114
54	63	1077	0.00191	523	13.979	0.001803063	51.06	0.03725099	1054.83	30.68	34.46	6/18/02 18:27	196:23:00	196:21:00	14.01368379
41	63.5	1081	0.00145	523.5	14.031	0.001372765	38.87	0.038623755	1093.70	31.81	35.59	6/19/02 16:41	218:37:00	218:35:00	14.78569128
35	63.5	1089	0.00124	523.5	14.135	0.001180545	33.43	0.0398043	1127.13	32.78	36.56	6/20/02 16:02	241:58:00	241:56:00	15.55527778
38	63.5	1090	0.00134	523.5	14.148	0.001282911	36.33	0.041087211	1163.46	33.84	37.62	6/22/02 0:41	274:37:00	274:35:00	16.57156199
60	63.5	1084	0.00212	523.5	14.070	0.002014499	57.04	0.04310171	1220.50	35.50	39.28	6/23/02 19:37	317:33:00	317:31:00	17.81993266
56	64	1084	0.00198	524	14.070	0.001878405	53.19	0.044980115	1273.69	37.05	40.83	6/25/02 13:57	359:53:00	359:51:00	18.97059128
75	64	1079	0.00265	524	14.005	0.002504117	70.91	0.047484232	1344.60	39.11	42.89	6/27/02 19:19	413:15:00	413:13:00	20.32855135
73	65	1085	0.00258	525	14.083	0.002446226	69.27	0.049930457	1413.87	41.12	44.90	6/30/02 20:14	486:10:00	486:08:00	22.04918744
35	64.5	1086	0.00124	524.5	14.096	0.001175048	33.27	0.051105505	1447.14	42.09	45.87	7/2/02 17:18	531:14:00	531:12:00	23.04849959
23	62.5	1087	0.00081	522.5	14.109	0.000775844	21.97	0.051881349	1469.11	42.73	46.51	7/5/02 17:07	603:03:00	603:01:00	24.55707637
25	62.5	1087	0.00088	522.8	14.109	0.000843308	23.88	0.052724658	1492.99	43.42	47.20	7/7/02 21:26	655:22:00	655:20:00	25.60013021
26	63	1082	0.00092	523	14.044	0.000872172	24.70	0.05359683	1517.69	44.14	47.92	7/11/02 18:22	748:18:00	748:16:00	27.35507266
17	63	1082	0.0006	523	14.044	0.000570266	16.15	0.054167096	1533.84	44.61	48.39	7/13/02 20:25	798:21:00	798:19:00	28.25508804
25	63	1083	0.00088	523	14.057	0.000839402	23.77	0.055006498	1557.60	45.30	49.08	7/16/02 17:46	867:42:00	867:40:00	29.45674795
45	65	1083	0.00159	525	14.057	0.001505168	42.62	0.056511666	1600.23	46.54	50.32	7/22/02 16:06	1010:02:00	1010:00:00	31.78102159
20	66	1081	0.00071	526	14.031	0.000666459	18.87	0.057178124	1619.10	47.09	50.87	7/29/02 15:19	1177:15:00	1177:13:00	34.31107693
75	75	1087	0.00265	535	14.109	0.002470815	69.97	0.059648939	1689.06	49.13	52.91	8/5/02 10:12	1340:08:00	1340:06:00	36.60783158
125	80	1080	0.00441	540	14.018	0.004053622	114.79	0.063702561	1803.85	52.46	56.25	8/12/02 13:21	1511:17:00	1511:15:00	38.87522776
26	64	1082	0.00092	524	14.044	0.000870508	24.65	0.064573068	1828.50	53.18	56.96	8/20/02 15:03	1704:59:00	1704:57:00	40.129144383
35	64	1086	0.00124	524	14.096	0.001176169	33.31	0.065749237	1861.80	54.15	57.93	8/26/02 10:32	1844:28:00	1844:26:00	42.94725447
60	64	1078	0.00212	524	13.992	0.002001437	56.67	0.067750675	1918.48	55.80	59.58	9/2/02 14:24	2016:20:00	2016:18:00	44.90360045
27	64	1085	0.00095	524	14.083	0.000906495	25.67	0.06865717	1944.15	56.55	60.33	9/7/02 12:44	2134:40:00	2134:38:00	46.20245304
42	63	1077	0.00148	523	13.979	0.001402383	39.71	0.070059552	1983.86	57.70	61.48	9/13/02 18:27	2284:23:00	2284:21:00	47.79522291
60	68	1074	0.00212	528	13.940	0.001978904	56.04	0.072038457	2039.89	59.33	63.11	9/20/02 10:24	2444:20:00	2444:18:00	49.44019957
26	64	1090	0.00092	524	14.148	0.000876944	24.83	0.0729154	2064.73	60.05	63.83	9/23/02 14:52	2520:48:00	2520:46:00	50.20756915 estimate
30	65	1080	0.00106	525	14.018	0.001000665	28.34	0.073916066	2093.06	60.88	64.66	9/27/02 13:55	2615:51:00	2615:49:00	51.14538102
70	76	1078	0.00247	536	13.992	0.002282734	64.64	0.076198799	2157.70	62.76	66.54	10/1/02 14:09	2712:05:00	2712:03:00	52.07766636
11	66	1083	0.00039	526	14.057	0.00036723	10.40	0.07656603	2168.10	63.06	66.84	10/4/02 18:54	2788:50:00	2788:48:00	52.80940573
17	66	1086	0.0006	526	14.096	0.00056911	16.12	0.07713514	2184.22	63.53	67.31	10/8/02 13:44	2879:40:00	2879:38:00	53.66252572
21	68	1091	0.00074	528	14.161	0.00070358	19.92	0.077838719	2204.14	64.11	67.89	10/14/02 10:26	3020:22:00	3020:20:00	54.95786265
24	63	1076	0.00085	523	13.966	0.000800617	22.67	0.078639337	2226.81	64.77	68.55	10/18/02 14:58	3120:54:00	3120:52:00	55.86501589
36	68	1089	0.00127	528	14.135	0.001203926	34.09	0.079843263	2260.90	65.76	69.54	10/26/02 15:01	3312:57:00	3312:55:00	57.55823138
18	67	1096	0.00064	527	14.226	0.000606982	17.19	0.080450244	2278.09	66.26	70.04	10/31/02 10:46	3428:42:00	3428:40:00	58.55510225
43	70	1081	0.00152	530	14.031	0.001422072	40.27	0.081872316	2318.36	67.43	71.21	11/4/02 21:55	3535:51:00	3535:49:00	59.46301371
20	69	1081	0.00071	529	14.031	0.000662679	18.76	0.082534995	2337.12	67.98	71.76	11/7/02 13:17	3599:13:00	3599:11:00	59.99347187
38	69	1086	0.00134	529	14.096	0.001264914	35.82	0.083799909	2372.94	69.02	72.80	11/16/02 23:02	3824:58:00	3824:56:00	61.8463149
14	68	1086	0.00049	528	14.096	0.000466904	13.22	0.084266812	2386.16	69.40	73.18	11/21/02 14:45	3936:41:00	3936:39:00	62.7429943 estimate
5	65	1096	0.00018	525	14.226	0.000169248	4.79	0.084436061	2390.95	69.54	73.32	12/3/02 18:52	4228:48:00	4228:46:00	65.0292242
39	67	1087	0.00138	527	14.109	0.001304328	36.93	0.085740389	2427.89	70.61	74.40	12/10/02 10:52	4388:48:00	4388:46:00	66.24801884
51	70	1074	0.0018	530	13.940	0.001675721	47.45	0.08741611	2475.34	72.00	75.78	12/16/02 15:38	4537:34:00	4537:32:00	67.36146277
5	67	1088	0.00018	527	14.122	0.000167375	4.74	0.087583485	2480.08	72.13	75.91	12/23/02 19:14	4709:10:00	4709:08:00	68.62336823
46	70	1078	0.00162	530	13.992	0.001517064	42.96	0.089100549	2523.04	73.38	77.16	12/30/02 16:58	4874:54:00	4874:52:00	69.8204841
27	67	1101	0.00095	527	14.291	0.000914626	25.90	0.090015176	2548.94	74.14	77.92	1/6/03 13:45	5039:41:00	5039:39:00	70.99072709 estimate
30	67	1088	0.00106	527	14.122	0.001004252	28.44	0.091019428	2577.37	74.96	78.74	1/13/03 16:15	5210:11:00	5210:09:00	72.18159969
10	66	1100	0.00035	526	14.278	0.000339086	9.60	0.091356514	2586.98	75.24	79.02	1/22/03 15:30	5425:26:00	5425:24:00	73.65754091
29	68	1095	0.00102	528	14.213	0.000975172	27.61	0.092333686	2614.59	76.05	79.83	1/29/03 13:48	5591:44:00	5591:42:00	74.77789335
33	66	1075	0.00117	528	13.953	0.001093553	30.97	0.093427239	2645.55	76.95	80.73	2/3/03 18:04	5714:00:00	5713:58:00	

46	69	1076	0.00162	529	13.966	0.001517112	42.96	0.095811928	2713.08	78.91	82.69	3/3/03	13:59	6383:55:00	6383:53:00	6383:45:00	79.89941593
12	69	1089	0.00042	529	14.135	0.00040055	11.34	0.096212478	2724.42	79.24	83.02	3/10/03	14:04	6552:00:00	6551:58:00	6551:50:00	80.94442538
41	68	1072	0.00145	528	13.914	0.001349733	38.22	0.097562211	2762.64	80.35	84.13	3/20/03	11:48	6789:44:00	6789:42:00	6789:34:00	82.39983819
18	71	1073	0.00064	531	13.927	0.000589768	16.70	0.098151978	2779.34	80.84	84.62	3/24/03	13:59	6887:55:00	6887:53:00	6887:45:00	82.99347364
11	69	1077	0.00039	529	13.979	0.000363125	10.28	0.098515103	2789.63	81.14	84.92	3/31/03	17:18	7059:14:00	7059:12:00	7059:04:00	84.01924383
4	66	1090	0.00014	526	14.148	0.000134401	3.81	0.098649505	2793.43	81.25	85.03	4/9/03	18:19	7276:15:00	7276:13:00	7276:05:00	85.30093786
25	69	1078	0.00088	529	13.992	0.00082605	23.39	0.099475555	2816.82	81.93	85.71	4/14/03	15:14	7393:10:00	7393:08:00	7393:00:00	85.98352555
11	64	1085	0.00039	524	14.083	0.000369313	10.46	0.099844867	2827.28	82.23	86.01	4/21/03	15:22	7561:18:00	7561:16:00	7561:08:00	86.95573587
4	64	1081	0.00014	524	14.031	0.0001338	3.79	0.099978668	2831.07	82.34	86.12	4/28/03	11:16	7725:12:00	7725:10:00	7725:02:00	87.89311691
24	64	1069	0.00085	524	13.875	0.000793891	22.48	0.100772559	2853.55	83.00	86.78	5/5/03	14:41	7896:37:00	7896:35:00	7896:27:00	88.8629094
-3	64	1088	-0.00011	524	14.122	-0.000101	-2.86	0.100671559	2850.69	82.91	86.69	5/12/03	14:19	8064:15:00	8064:13:00	8064:05:00	89.80116926
3	64	1083	0.00011	524	14.057	0.000100536	2.85	0.100772095	2853.54	82.99	86.78	5/19/03	14:28	8232:24:00	8232:22:00	8232:14:00	90.73257408
22	64	1083	0.00078	524	14.057	0.000737264	20.88	0.101509399	2874.41	83.60	87.38	5/30/03	16:33	8498:29:00	8498:27:00	8498:19:00	92.18721893
16	68	1081	0.00057	528	14.031	0.000531147	15.04	0.102040506	2889.45	84.04	87.82	6/3/03	10:59	8588:55:00	8588:53:00	8588:45:00	92.67640836
1	64	1078	3.5E-05	524	13.992	3.33573E-05	0.94	0.102073863	2890.40	84.07	87.85	6/9/03	13:49	8735:45:00	8735:43:00	8735:35:00	93.46523418
0	64	1087	0	524	14.109	0	0.00	0.102073863	2890.40	84.07	87.85	6/16/03	13:30	8903:26:00	8903:24:00	8903:16:00	94.35800662
9	63	1079	0.00032	523	14.005	0.000301069	8.53	0.102374932	2898.92	84.32	88.10	6/23/03	11:16	9069:12:00	9069:10:00	9069:02:00	95.23234745
4	62	1088	0.00014	522	14.122	0.000135183	3.83	0.102510115	2902.75	84.43	88.21	6/30/03	11:14	9237:10:00	9237:08:00	9237:00:00	96.11017983
22	65	1078	0.00078	525	13.992	0.000732462	20.74	0.103242577	2923.49	85.03	88.81	7/2/03	15:14	9289:10:00	9289:08:00	9289:00:00	96.38032303

DECANISTERED 7/2/2003

SAMPLE: 687' 11" to 688' 11" (Upper Neutral Coal) in canister 6

dry sample weight		lbs.	grams	wet sample weight:		lbs.	grams	moisture weight	est. lost gas (cc) =	TIME OF:				elapsed time (off bottom to canistering)			
		3.7266	1690.36				3.9127	1774.75	4.8%	190				10.0 minutes			
										6/10/02 14:04 6/10/02 14:06 6/10/02 14:14				0.167 hours			
RIG/LAB MEASUREMENTS			CONVERSION OF RIG/LAB MEASUREMENTS TO STP (@60 deg F; 14.7 psi)				CUMULATIVE VOLUMES		SCF/TON	SCF/TON	TIME SINCE				0.408248290 SORT (hrs)		
measured cc	measured T (F)	measured P	cubic ft	absolute T (F)	psia	cubic ft (@STP)	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SORT hrs. (since off bottom)			
110	66	1075	0.00388	526	13.953	0.003645177	103.22	0.003645177	103.22	1.96	6/10/02	14:26	0:22:00	0:20:00	0:12:00	0.605530071	
110	66	1075	0.00388	526	13.953	0.003645177	103.22	0.007290354	206.44	3.91	6/10/02	14:44	0:40:00	0:38:00	0:30:00	0.816496581	
92	66	1075	0.00325	526	13.953	0.003048693	86.33	0.010339047	292.77	5.55	6/10/02	15:08	1:04:00	1:02:00	0:54:00	1.032795559	
110	68	1075	0.00388	528	13.953	0.003631369	102.83	0.013970417	395.60	7.50	6/10/02	15:45	1:41:00	1:39:00	1:31:00	1.297433364 estimate	
53	68	1075	0.00187	528	13.953	0.00174966	49.54	0.015720077	445.14	8.44	6/10/02	16:05	2:01:00	1:59:00	1:51:00	1.420093894	
60	68	1074	0.00212	528	13.940	0.001978904	56.04	0.017698981	501.18	9.50	6/10/02	16:37	2:33:00	2:31:00	2:23:00	1.596871942	
160	71.2	1074	0.00565	531.2	13.940	0.005245289	148.53	0.02294427	649.71	12.31	6/10/02	19:09	5:05:00	5:03:00	4:55:00	2.254624876 estimate	
419	64	1077	0.0148	524	13.979	0.013963737	395.41	0.036908006	1045.11	19.81	6/11/02	11:28	21:24:00	21:22:00	21:14:00	4.626013402	
334	63	1078	0.0118	523	13.992	0.011162636	316.09	0.048070642	1361.20	25.80	6/12/02	11:30	45:26:00	45:24:00	45:16:00	6.740425308	
214	63.5	1081	0.00756	523.5	14.031	0.007165162	202.89	0.055235803	1564.10	29.64	6/13/02	9:17	67:13:00	67:11:00	67:03:00	8.198577112	
244	63.5	1082	0.00862	523.5	14.044	0.008177181	231.55	0.063412984	1795.65	34.03	6/14/02	20:20	102:16:00	102:14:00	102:06:00	10.11269829	
137	63	1079	0.00484	523	14.005	0.004582933	129.77	0.067995918	1925.42	36.49	6/15/02	18:56	124:52:00	124:50:00	124:42:00	11.17437545	
175	63	1081	0.00618	523	14.031	0.005864963	166.08	0.07386088	2091.50	39.64	6/17/02	11:40	165:36:00	165:34:00	165:26:00	12.8685635	
198	63.5	1081	0.00699	523.5	14.031	0.006629449	187.72	0.080490329	2279.22	43.20	6/19/02	16:43	218:39:00	218:37:00	218:29:00	14.78681845	
76	63.5	1089	0.00288	523.5	14.135	0.002563469	72.59	0.083053797	2351.81	44.57	6/20/02	16:04	242:00:00	241:58:00	241:50:00	15.55634919	
95	63.5	1090	0.00335	523.5	14.148	0.003207278	90.82	0.086261076	2442.63	46.29	6/22/02	0:43	274:39:00	274:37:00	274:29:00	16.57256769	
119	63.5	1084	0.0042	523.5	14.070	0.003995423	113.14	0.090256499	2555.77	48.44	6/23/02	19:39	317:35:00	317:33:00	317:25:00	17.82086792	
106	64	1085	0.00374	524	14.083	0.003558832	100.77	0.093815331	2656.54	50.35	6/25/02	13:55	359:51:00	359:49:00	359:41:00	18.9697127	
132	64	1079	0.00466	524	14.005	0.004407246	124.80	0.098222577	2781.34	52.71	6/27/02	19:20	413:16:00	413:14:00	413:06:00	20.32896128	
158	65	1085	0.00558	525	14.083	0.00529457	149.92	0.103517147	2931.27	55.56	6/30/02	20:15	486:11:00	486:09:00	486:01:00	22.04956538	
72	64.5	1086	0.00254	524.5	14.096	0.002417241	88.45	0.105934389	2999.72	56.85	7/2/02	17:19	531:15:00	531:13:00	531:05:00	23.04886114	
137	62.5	1087	0.00484	522.5	14.109	0.00462133	130.86	0.110555719	3130.58	59.33	7/7/02	21:27	655:23:00	655:21:00	655:13:00	25.60045573	
125	63	1082	0.00441	523	14.044	0.004193134	118.74	0.114748854	3249.31	61.58	6/5/18	17:11/02	748:20:00	748:18:00	748:10:00	27.35568192	
59	63	1082	0.00208	523	14.044	0.001979159	56.04	0.116728013	3305.36	62.65	6/6/25	17:13/02	798:22:00	798:20:00	798:12:00	28.25538297	
72	63	1083	0.00254	523	14.057	0.002417478	86.46	0.119145491	3373.81	63.94	6/7/54	17:16/02	867:42:00	867:40:00	867:32:00	29.45674795	
111	65	1083	0.00392	525	14.057	0.003712747	105.13	0.122858238	3478.94	65.94	6/9/54	16:07	1010:03:00	1010:01:00	1009:53:00	31.7812838	
135	66	1081	0.00477	526	14.031	0.004498595	127.39	0.127356833	3606.33	68.35	7/19/02	15:20	1177:16:00	1177:14:00	1177:06:00	34.3113198	
196	78	1087	0.00692	538	14.109	0.006421057	181.82	0.13377789	3788.15	71.80	7/5/02	10:11	1340:07:00	1340:05:00	1339:57:00	36.60760395	
229	80	1080	0.00809	540	14.018	0.007426235	210.29	0.141204125	3998.44	75.78	8/12/02	13:23	1511:19:00	1511:17:00	1511:09:00	38.87565648	
77	64	1082	0.00272	524	14.044	0.002578042	73.00	0.143782167	4071.44	77.17	8/20/02	15:03	1704:59:00	1704:57:00	1704:49:00	41.29144383	
60	64	1086	0.00212	524	14.096	0.00201629	57.09	0.145798457	4128.54	78.25	8/28/02	10:33	1844:29:00	1844:27:00	1844:19:00	42.94744851	
91	64	1086	0.00321	524	14.096	0.00305804	86.59	0.148856497	4215.13	79.89	9/2/02	14:26	2016:22:00	2016:20:00	2016:12:00	44.90397161	
42	64	1086	0.00148	524	14.096	0.001411403	39.97	0.1502679	4255.10	80.65	84.25	9/7/02	12:45	2134:41:00	2134:39:00	2134:31:00	46.2026334
61	63	1077	0.00215	523	13.979	0.002036794	57.68	0.152304693	4312.77	81.74	85.34	9/13/02	18:27	2284:23:00	2284:21:00	2284:13:00	47.79522291
81	68	1074	0.00286	528	13.940	0.002671521	75.65	0.154978214	4388.42	83.17	86.77	9/20/02	10:26	2444:22:00	2444:20:00	2444:12:00	49.44053667
42	65	1080	0.00148	525	14.018	0.001400932	39.67	0.156377146	4428.09	83.92	87.53	9/27/02	13:57	2615:53:00	2615:51:00	2615:43:00	51.14570689
98	76	1078	0.00346	536	13.992	0.003195827	90.50	0.159572973	4518.59	85.64	89.24	10/1/					

34	63	1076	0.0012	523	13.966	0.001134208	32.12	0.162882194	4612.29	87.42	91.02	10/18/02	14:59	3120:55:00	3120:53:00	3120:45:00	55.86516506
48	68	1089	0.0017	528	14.135	0.001605234	45.45	0.164487428	4657.75	88.28	91.88	10/26/02	15:00	3312:56:00	3312:54:00	3312:46:00	57.5580866 estimate
25	67	1096	0.00088	527	14.226	0.00084303	23.87	0.165330458	4681.62	88.73	92.33	10/31/02	10:47	3428:43:00	3428:41:00	3428:33:00	58.55524457
78	69	1081	0.00275	529	14.031	0.002584448	73.18	0.167914906	4754.80	90.12	93.72	11/7/02	13:19	3599:15:00	3599:13:00	3599:05:00	59.99374967
76	68	1086	0.00268	528	14.096	0.002534619	71.77	0.170449525	4826.57	91.48	95.08	11/21/02	14:45	3936:41:00	3936:39:00	3936:31:00	62.7429943 estimate
10	65	1096	0.00035	525	14.226	0.000338497	9.59	0.170788022	4836.16	91.66	95.26	12/3/02	18:53	4228:49:00	4228:47:00	4228:39:00	65.02935235
52	67	1087	0.00184	527	14.109	0.001739104	49.25	0.172527126	4885.41	92.59	96.19	12/10/02	10:52	4388:48:00	4388:46:00	4388:38:00	66.24801884
72	70	1074	0.00254	530	13.940	0.002365724	66.99	0.17489285	4952.40	93.86	97.46	12/16/02	15:39	4537:35:00	4537:33:00	4537:25:00	67.36158648
8	67	1088	0.00028	527	14.122	0.000267801	7.58	0.17516065	4959.98	94.01	97.61	12/23/02	19:15	4709:11:00	4709:09:00	4709:01:00	68.62348966
63	70	1078	0.00222	530	13.992	0.002077718	58.83	0.177238369	5018.81	95.12	98.72	12/30/02	17:05	4875:01:00	4874:59:00	4874:51:00	69.82131957
-5	67	1101	-0.00018	527	14.291	-0.000169375	-4.80	0.177068993	5014.02	95.03	98.63	1/6/03	13:46	5039:42:00	5039:40:00	5039:32:00	70.99084448
39	67	1088	0.00138	527	14.122	0.001305528	36.97	0.178374521	5050.98	95.73	99.33	1/13/03	16:16	5210:12:00	5210:10:00	5210:02:00	72.18171514
12	66	1100	0.00042	526	14.278	0.000406903	11.52	0.178781425	5062.51	95.95	99.55	1/22/03	15:32	5425:28:00	5425:26:00	5425:18:00	73.65776718
38	68	1095	0.00134	528	14.213	0.001277812	36.18	0.180059237	5098.69	96.63	100.24	1/29/03	13:49	5591:45:00	5591:43:00	5591:35:00	74.77800479
46	66	1075	0.00162	526	13.953	0.001524347	43.16	0.181583583	5141.86	97.45	101.05	2/3/03	16:02	5713:58:00	5713:56:00	5713:48:00	75.59078427
14	67	1083	0.00049	527	14.057	0.000466497	13.21	0.182050081	5155.06	97.70	101.30	2/10/03	14:18	5880:14:00	5880:12:00	5880:04:00	76.68267949
14	66	1084	0.00049	526	14.070	0.000467816	13.25	0.182517896	5168.31	97.95	101.55	2/17/03	14:03	6047:59:00	6047:57:00	6047:49:00	77.76878123
-3	64	1100	-0.00011	524	14.278	-0.000102114	-2.89	0.182415782	5165.42	97.90	101.50	2/24/03	14:19	6216:15:00	6216:13:00	6216:05:00	78.84319882
65	69	1076	0.0023	529	13.966	0.002143745	60.70	0.184559527	5226.12	99.05	102.65	3/3/03	13:59	6383:55:00	6383:53:00	6383:45:00	79.89941593
16	69	1089	0.00057	529	14.135	0.000534067	15.12	0.185093594	5241.25	99.34	102.94	3/10/03	14:04	6552:00:00	6551:58:00	6551:50:00	80.94442538
52	68	1072	0.00184	528	13.914	0.001711857	48.47	0.186805451	5289.72	100.26	103.86	3/20/03	11:48	6789:44:00	6789:42:00	6789:34:00	82.39983819
23	71	1073	0.00081	531	13.927	0.000753592	21.34	0.187559043	5311.06	100.66	104.26	3/24/03	13:59	6887:55:00	6887:53:00	6887:45:00	82.99347364
13	69	1077	0.00046	529	13.979	0.000429148	12.15	0.18798819	5323.21	100.89	104.49	3/31/03	17:18	7059:14:00	7059:12:00	7059:04:00	84.01924383
0	66	1090	0	526	14.148	0	0.00	0.18798819	5323.21	100.89	104.49	4/9/03	18:20	7276:16:00	7276:14:00	7276:06:00	85.30103555
35	69	1078	0.00124	529	13.992	0.00115647	32.75	0.18914466	5355.96	101.51	105.11	4/14/03	15:15	7393:11:00	7393:09:00	7393:01:00	85.98362247
-1	64	1085	-3.5E-05	524	14.083	-3.35739E-05	-0.95	0.189111086	5355.01	101.49	105.09	4/21/03	15:22	7561:18:00	7561:16:00	7561:08:00	86.95573587
1	64	1081	3.5E-05	524	14.031	3.34501E-05	0.95	0.189144536	5355.96	101.51	105.11	4/28/03	11:18	7725:14:00	7725:12:00	7725:04:00	87.89330653

DECANISTERED 4/28/2003; sample air-dried 22 days

235' 0" to 236' 0" (South Mound Shale) in Brady #27 canister
Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

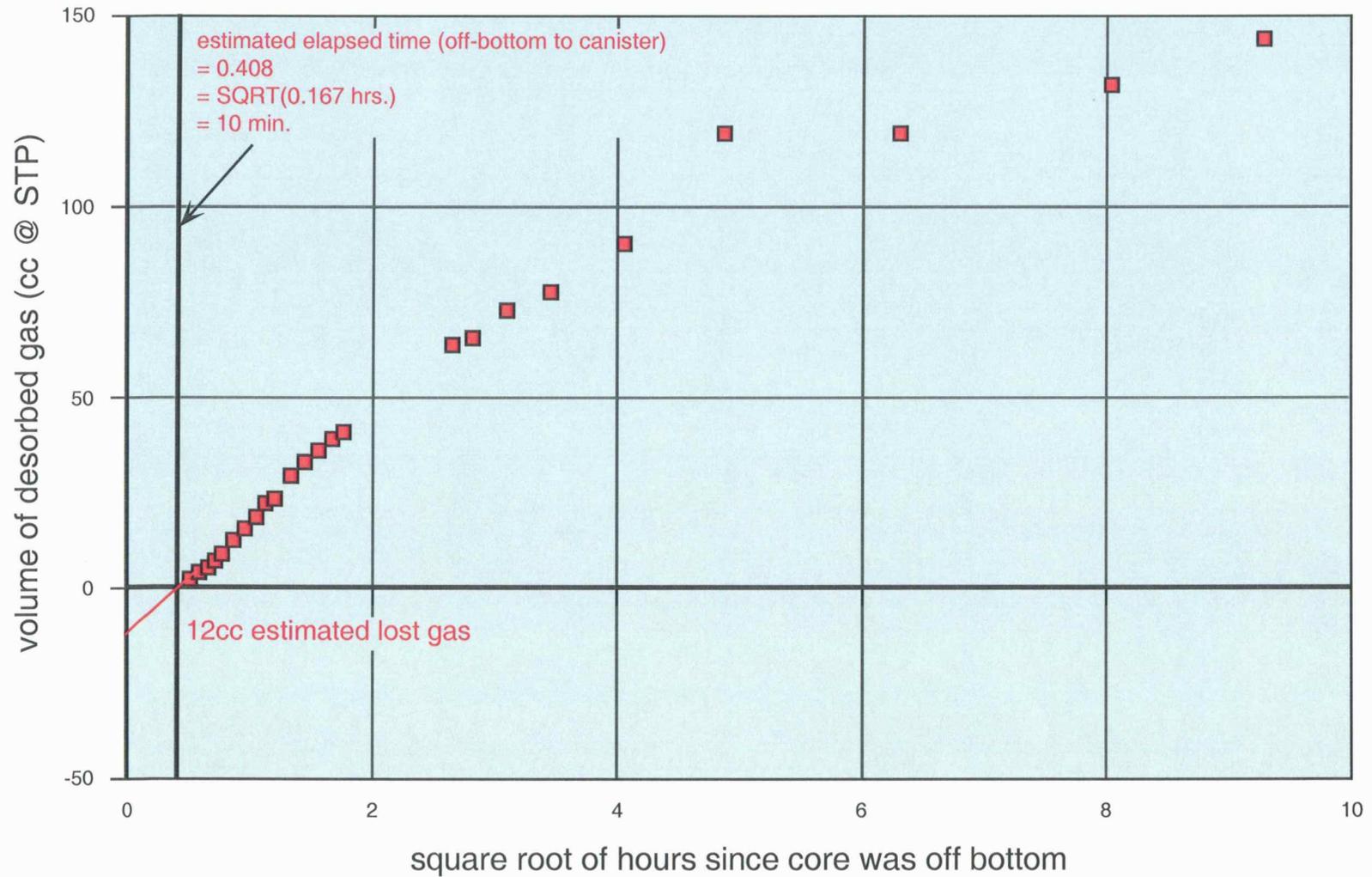


Figure 1

320' 6" to 321' 6" (Lexington Coal) in canister C

Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

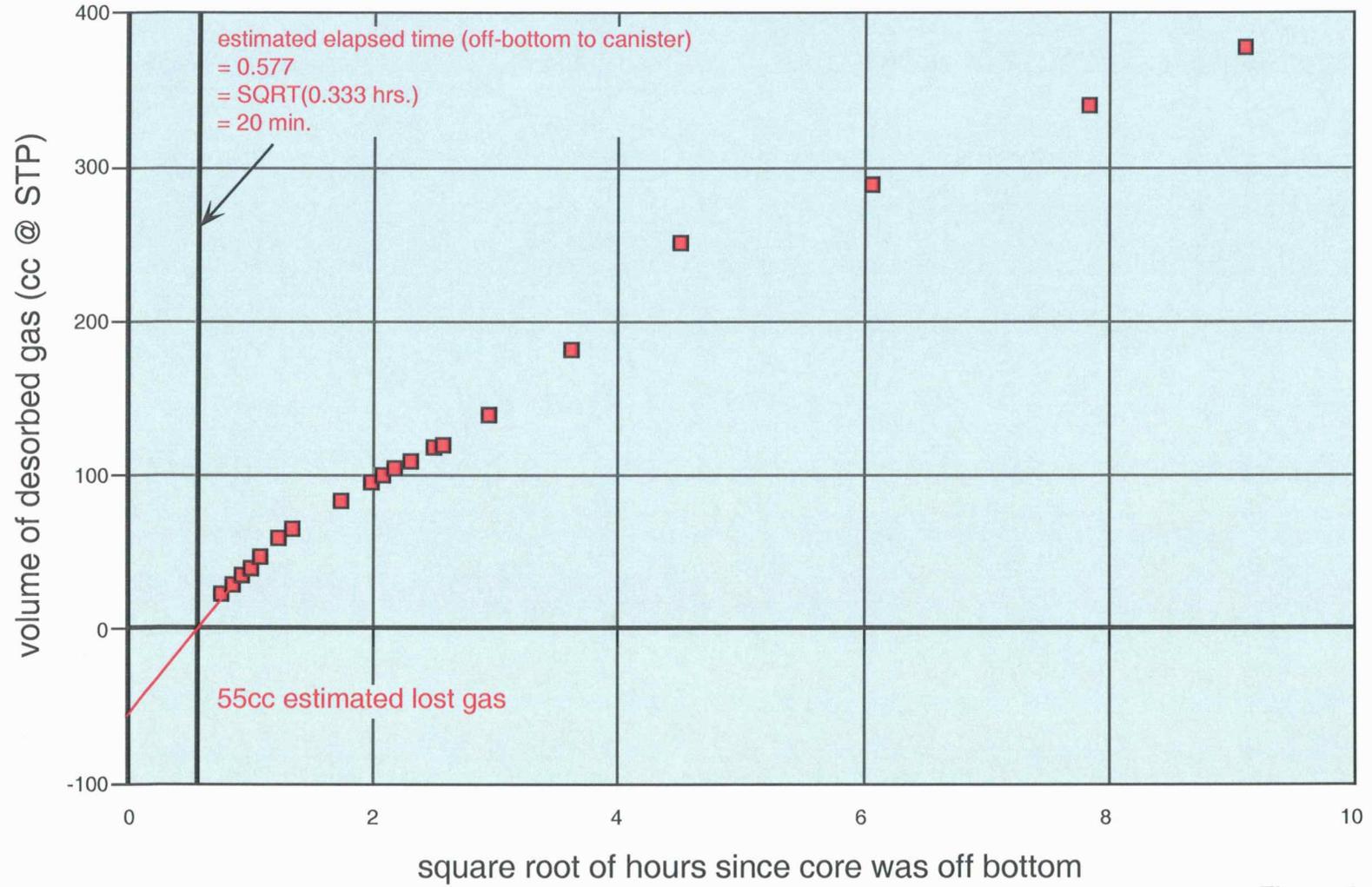


Figure 2

321' 6" to 322' 6" (Lexington Coal) in canister B
Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

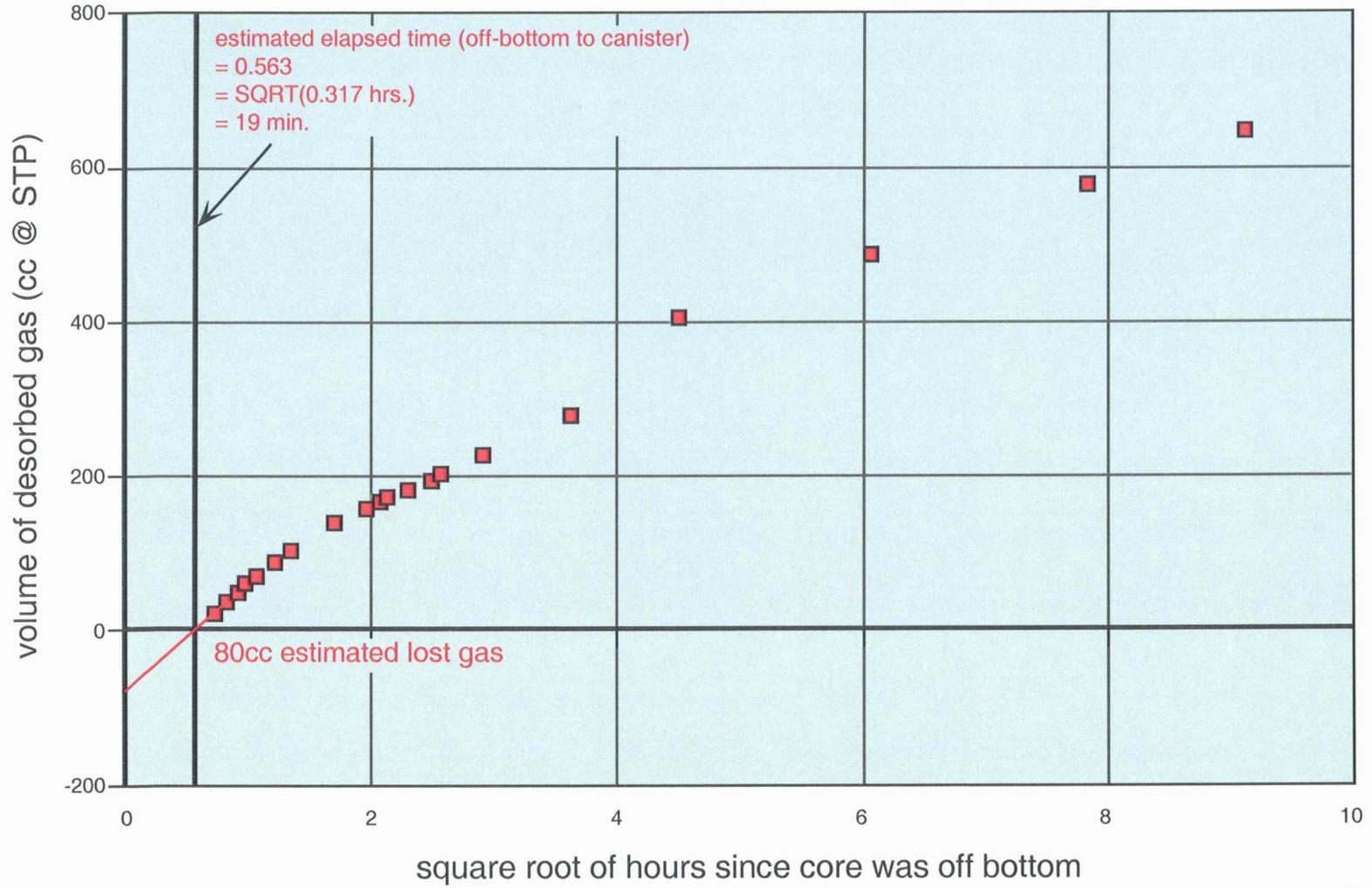


Figure 3

322' 6" to 323' 6" (Lexington Coal) in canister A
Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

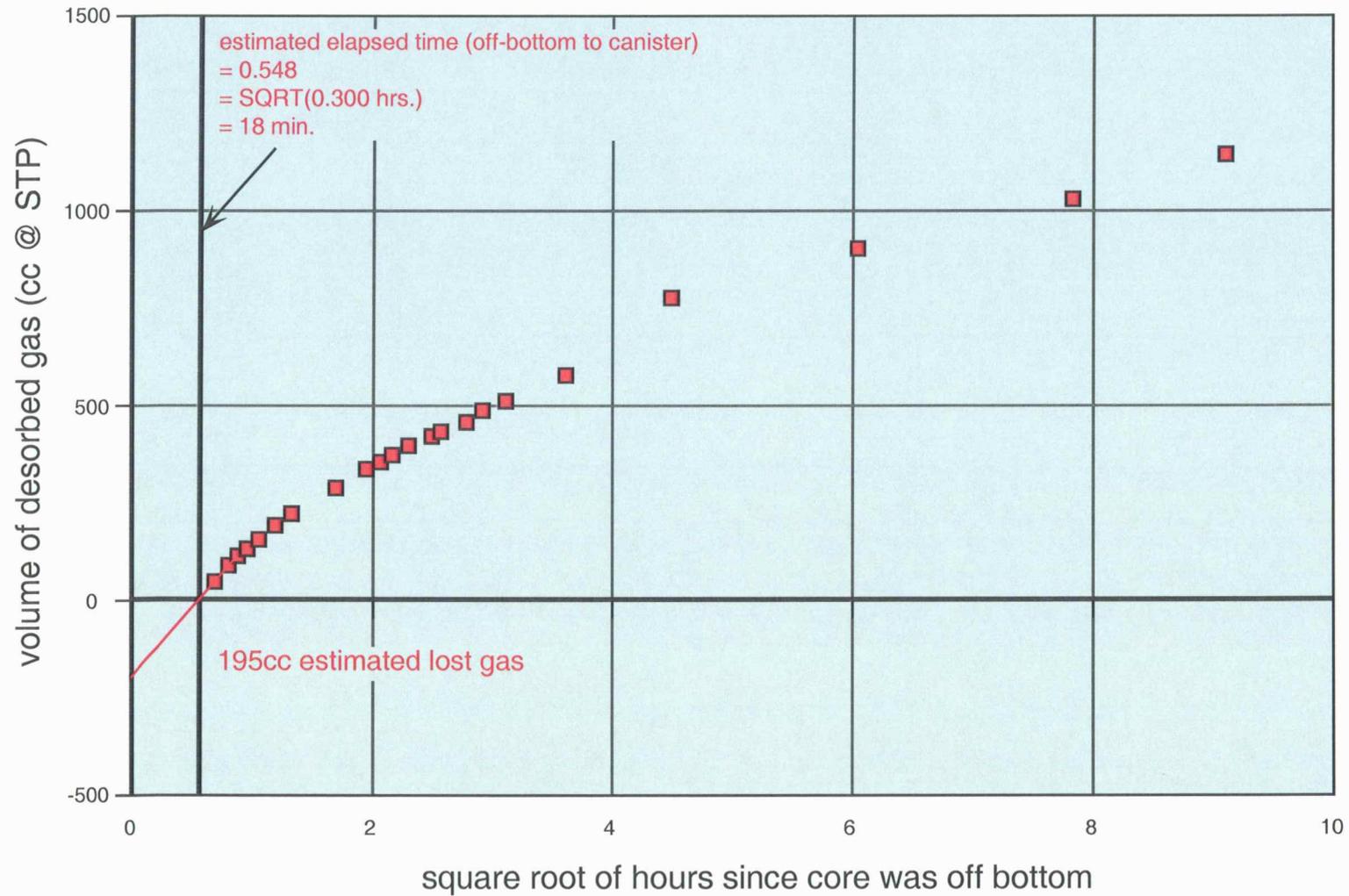


Figure 4

370' 0" to 371' 0" (Mulky Coal) in canister F
Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

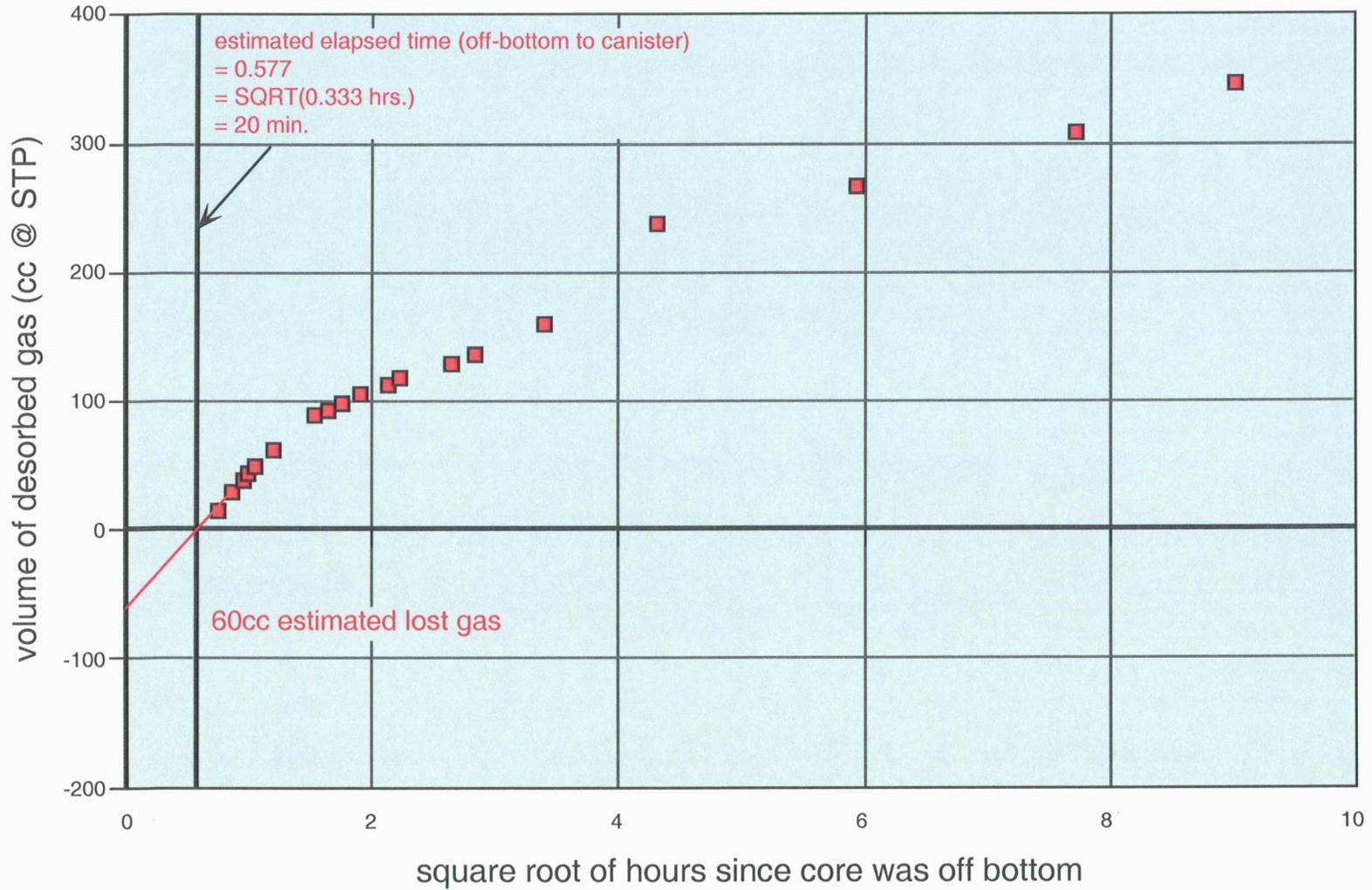


Figure 5

371' 0" to 372' 0" (Mulky Coal) in canister E

Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

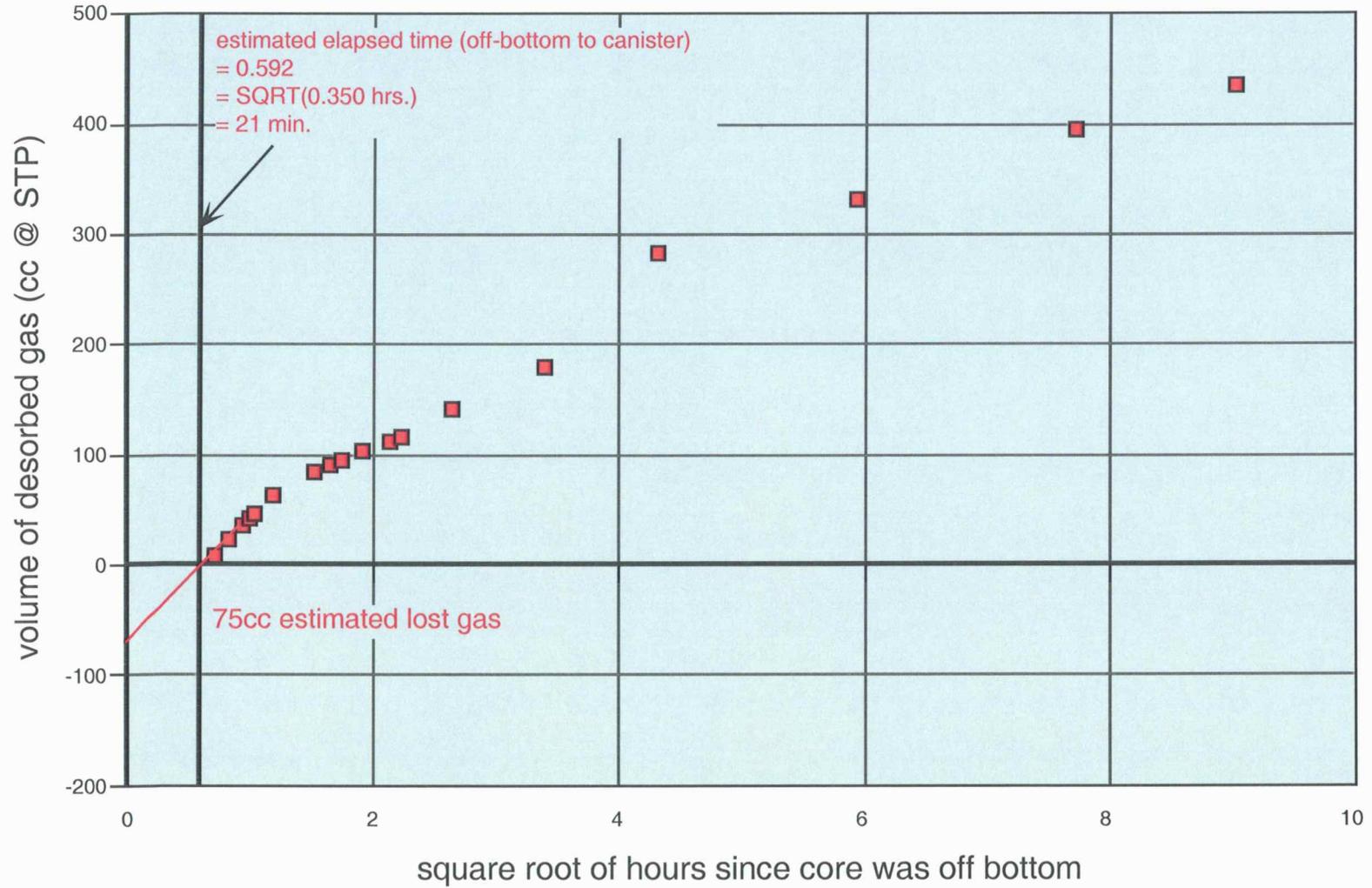


Figure 6

372' 0" to 373' 0" (Mulky Coal) in canister D
Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

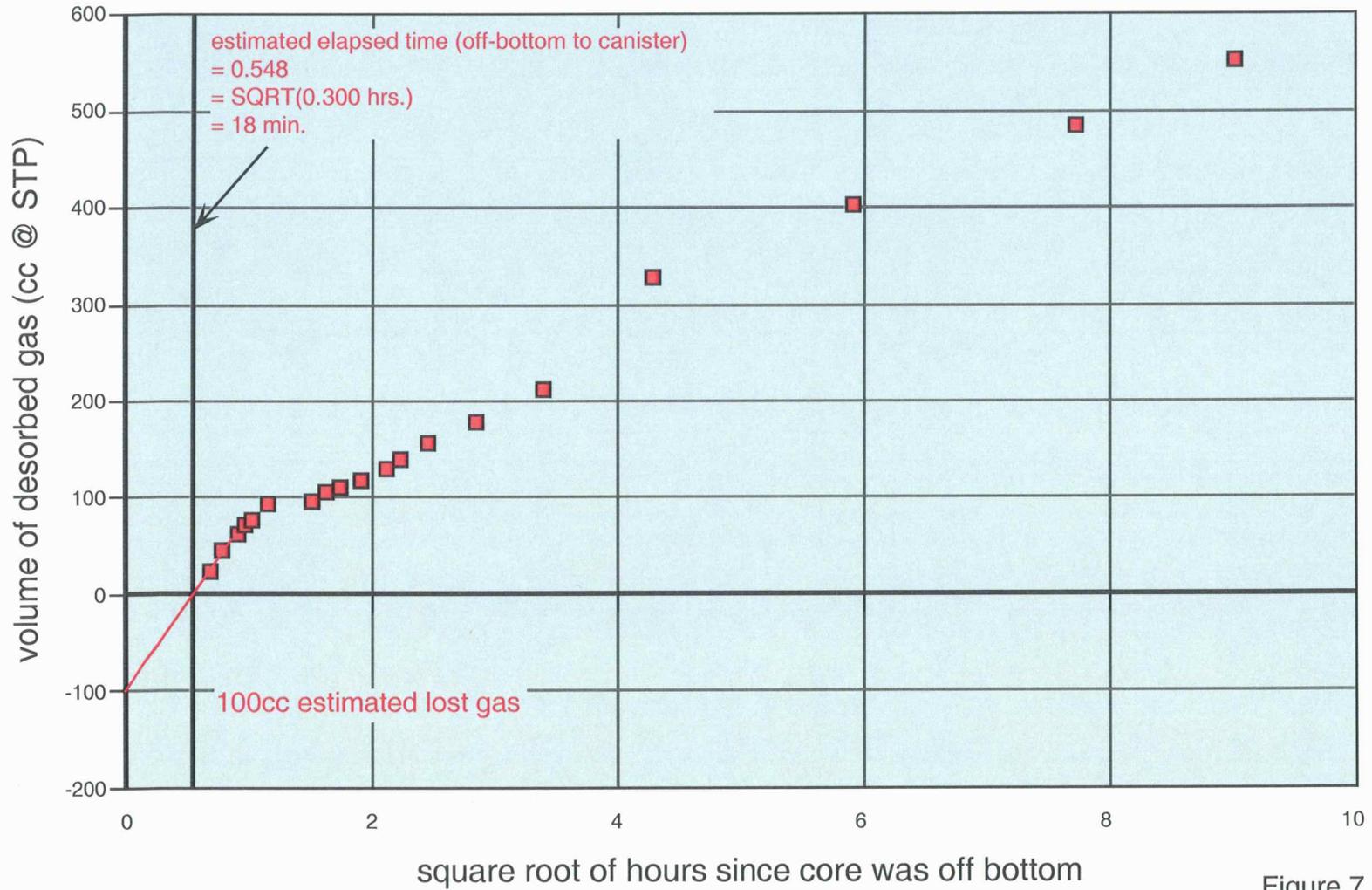


Figure 7

490' 0" to 490' 6" (Croweburg Coal) in canister G

Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

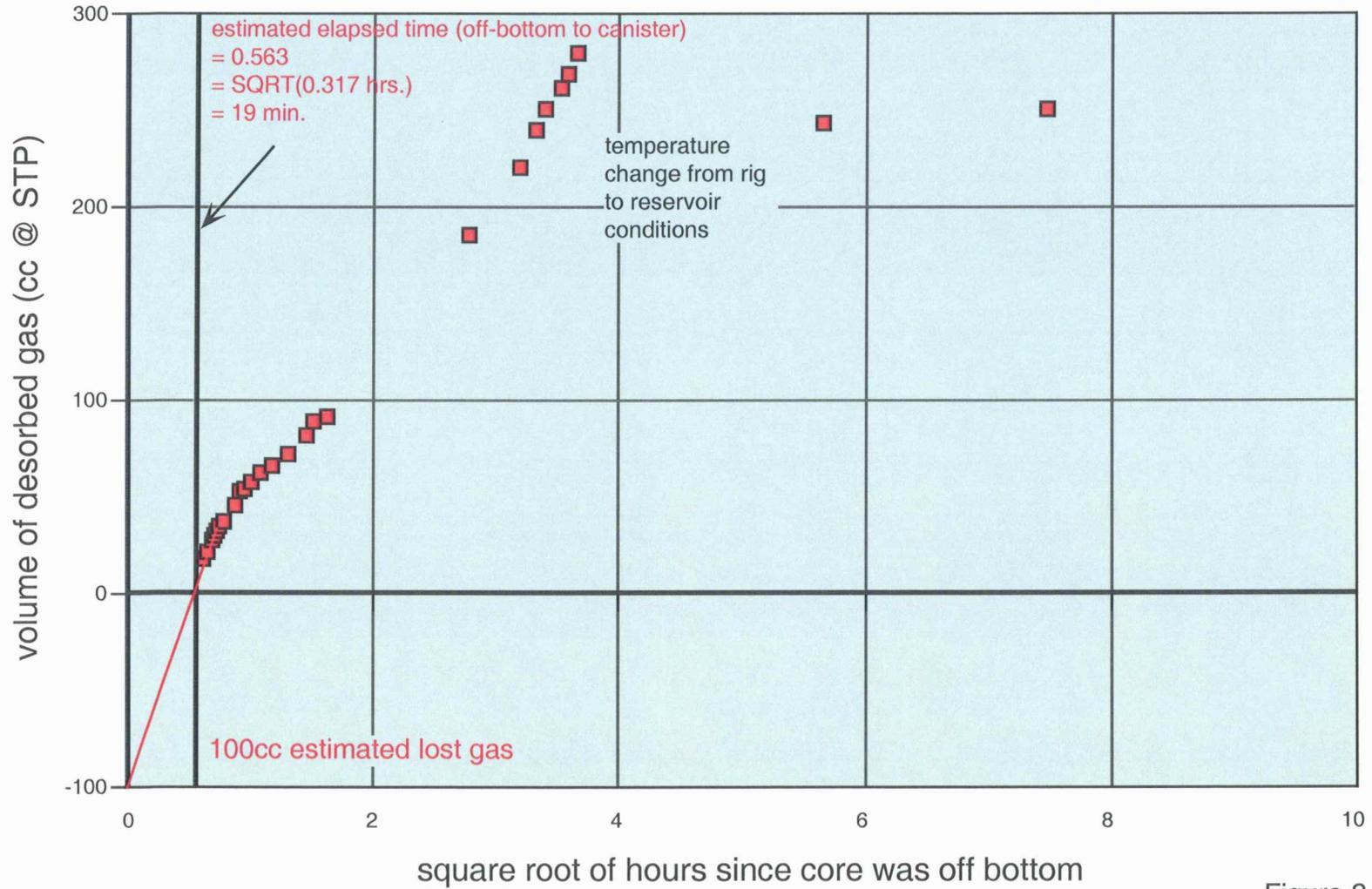


Figure 8

510' 0" to 511' 0" (Mineral Coal) in canister H
Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

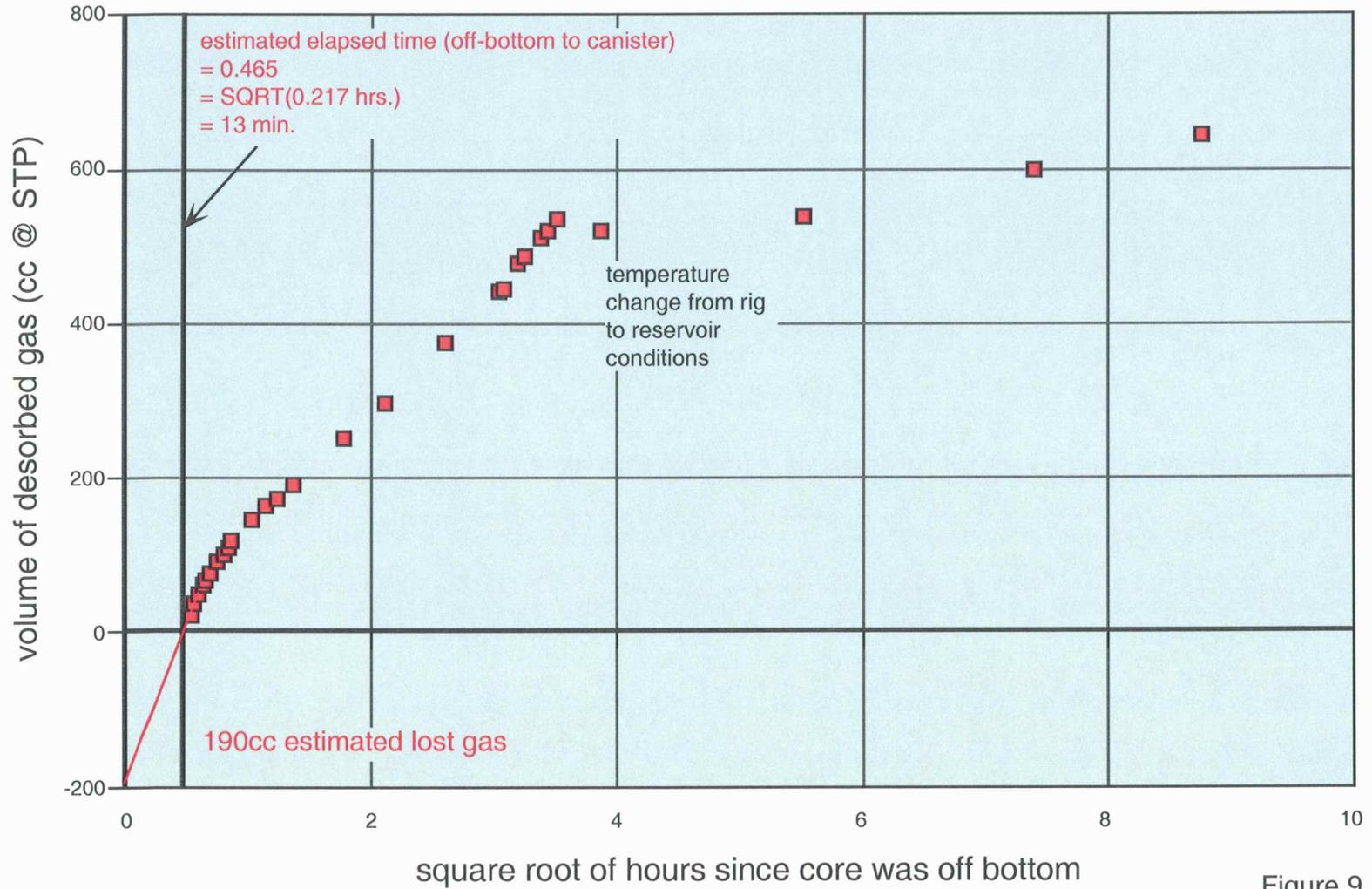


Figure 9

519' 7" to 520' 7" (Scammon Coal) in canister I
Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

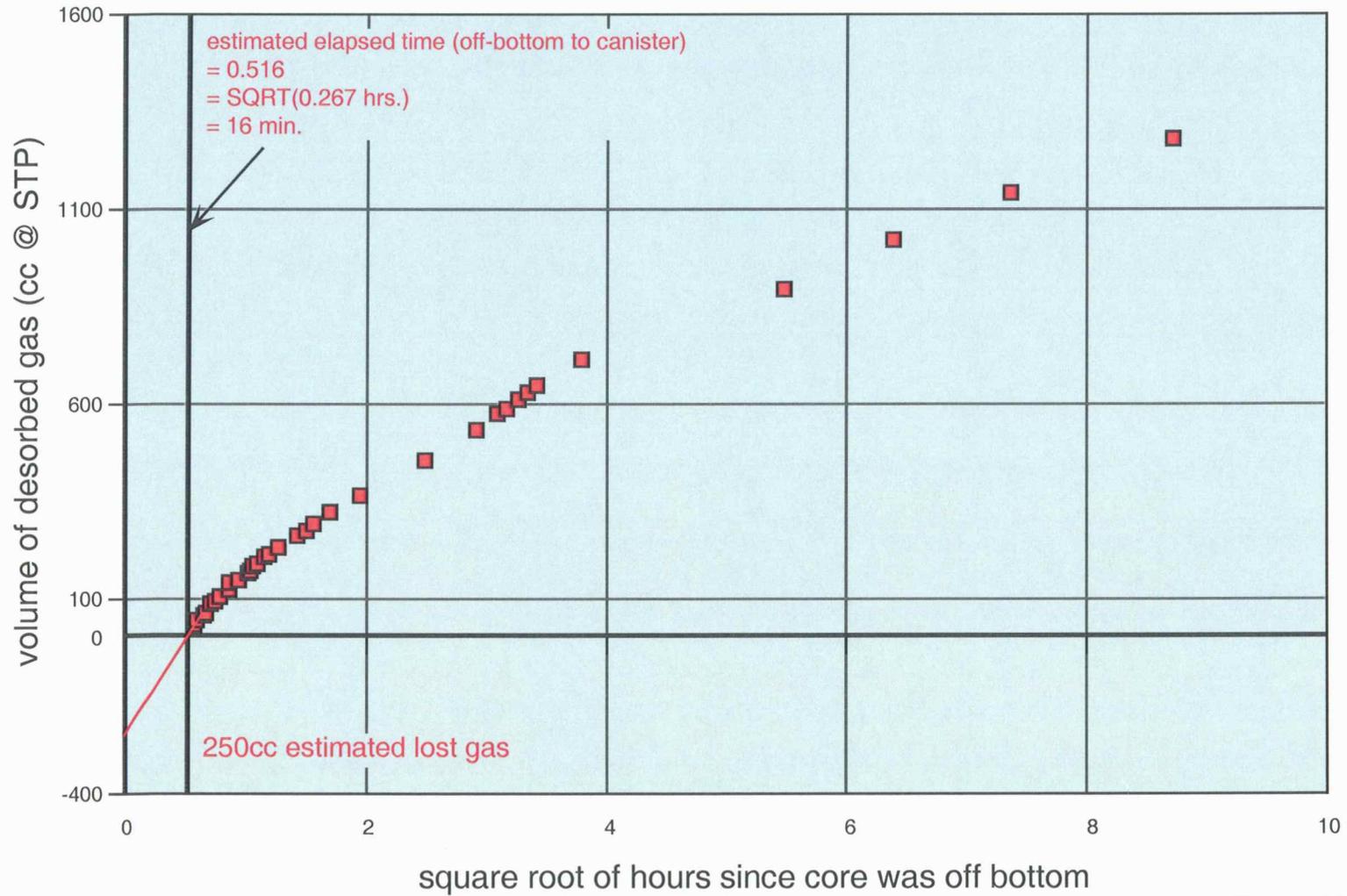


Figure 10

551' 0" to 552' 0" (Tebo Coal) in canister J
Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

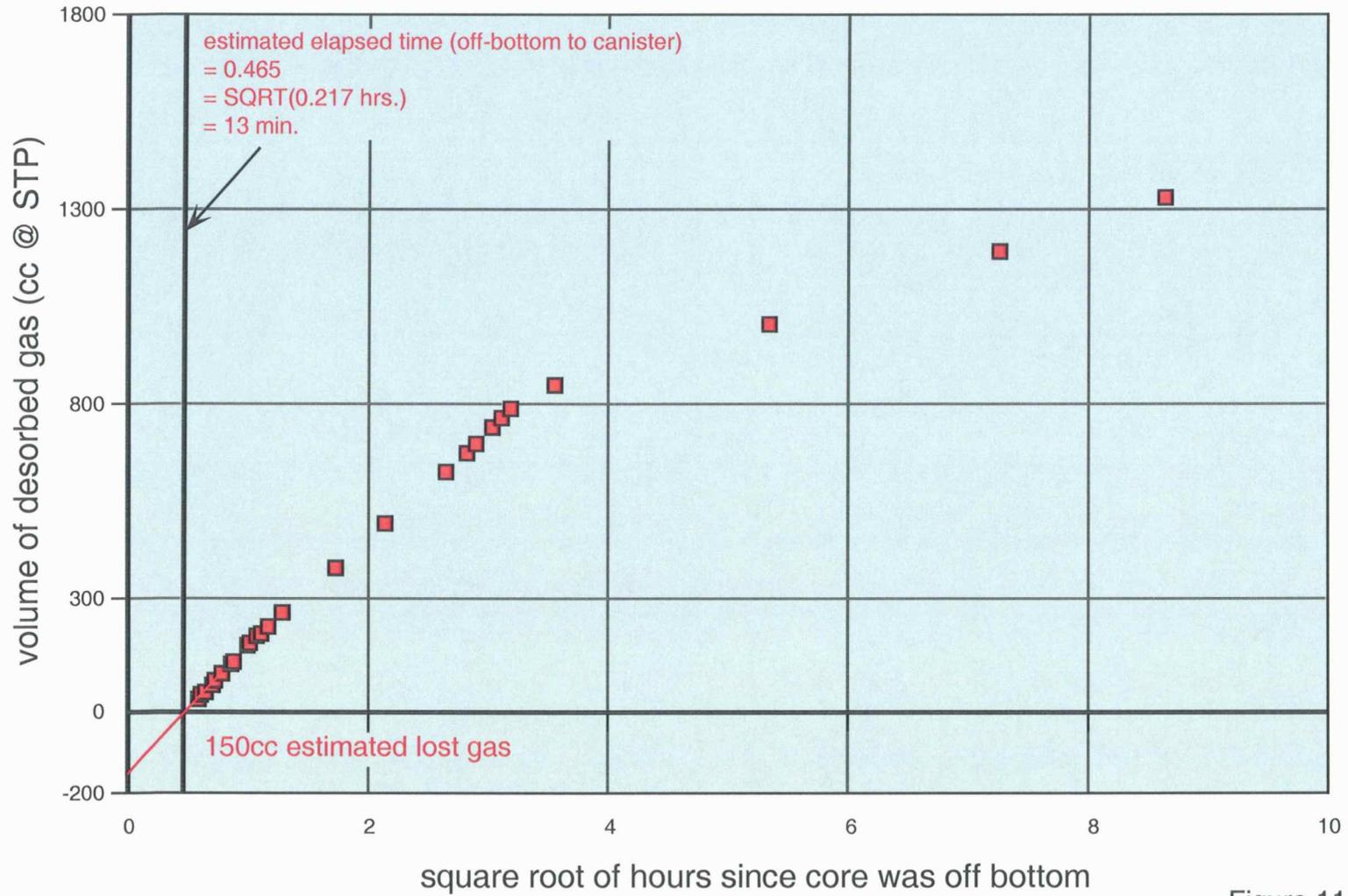


Figure 11

552' 0" to 553' 0" (Tebo Coal) in canister 2
Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

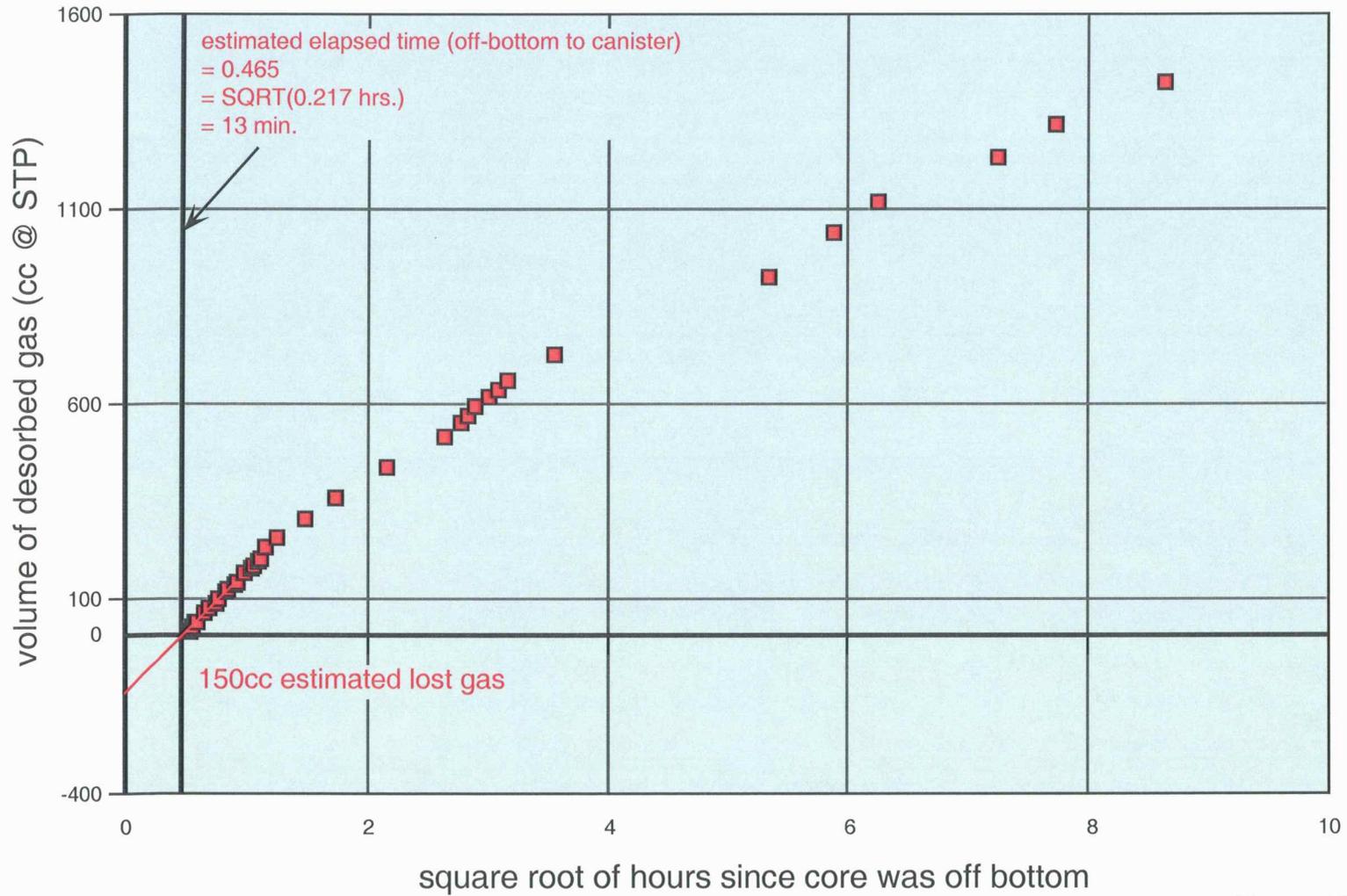


Figure 12

686' 4" to 687' 1" (Upper Neutral Coal) in canister 8
Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

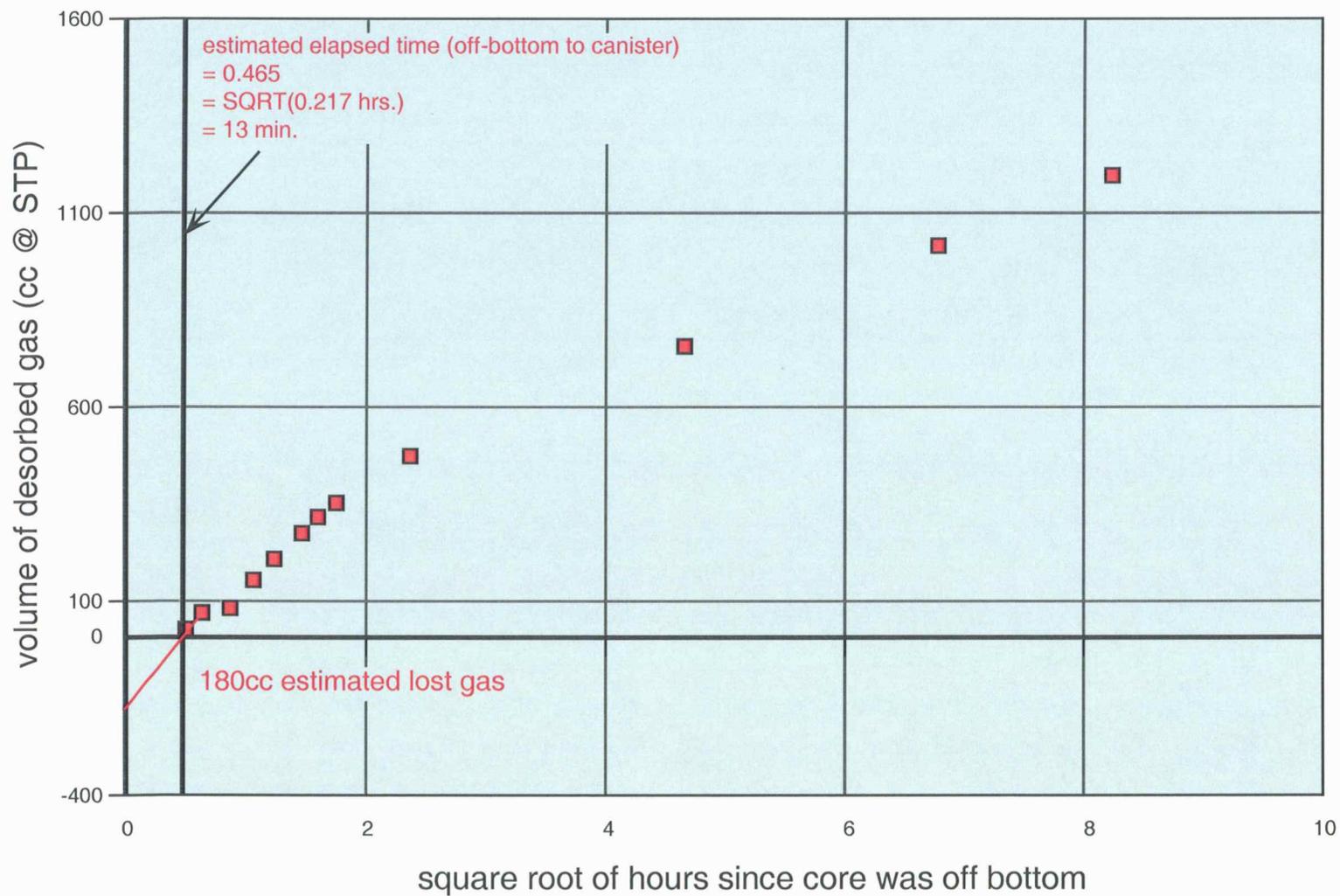


Figure 13

687' 1" to 687' 11" (Upper Neutral Coal) in canister Brady #24
 Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

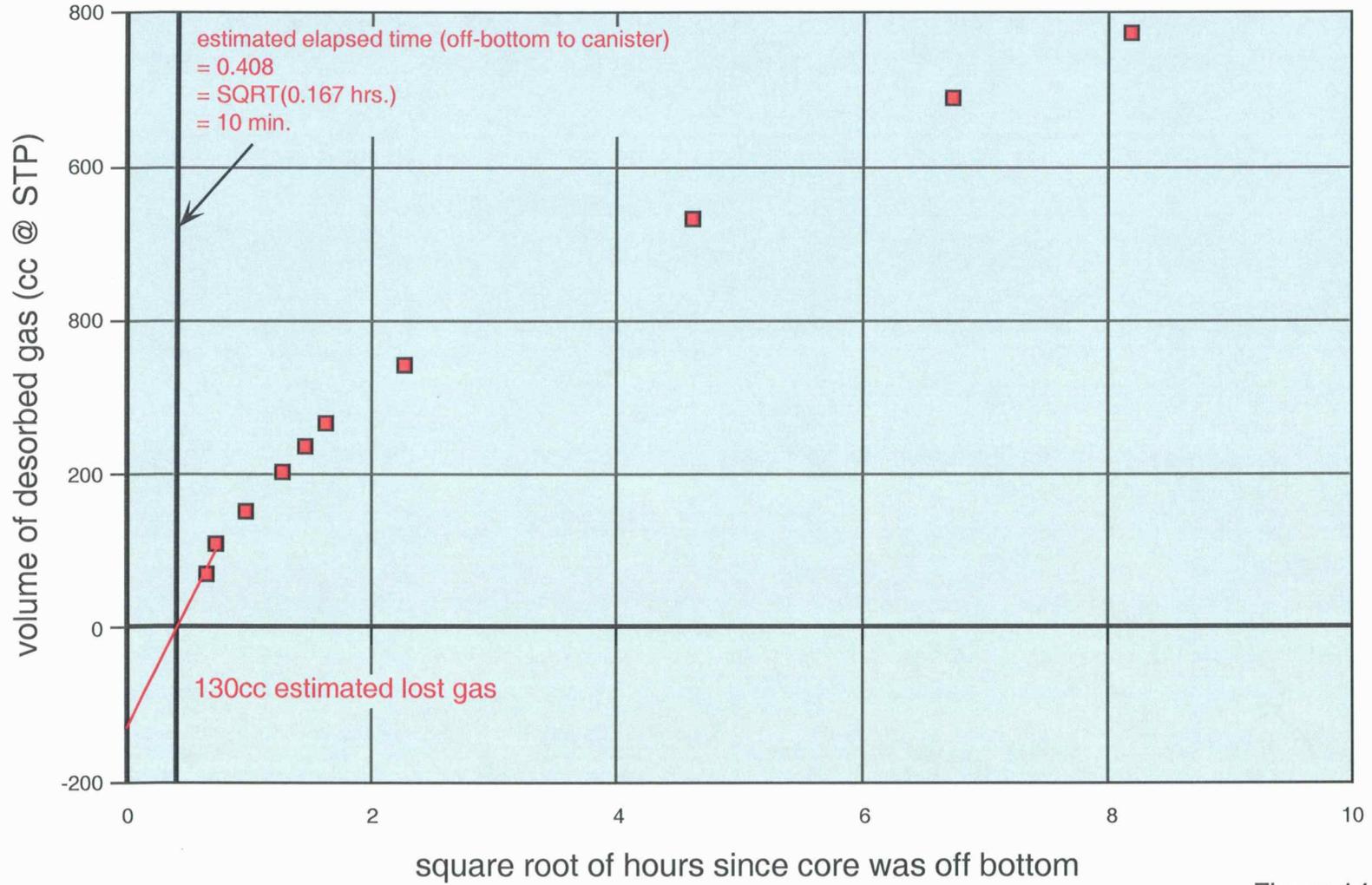


Figure 14

687' 11" to 688' 11" (Upper Neutral Coal) in canister 6
Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.

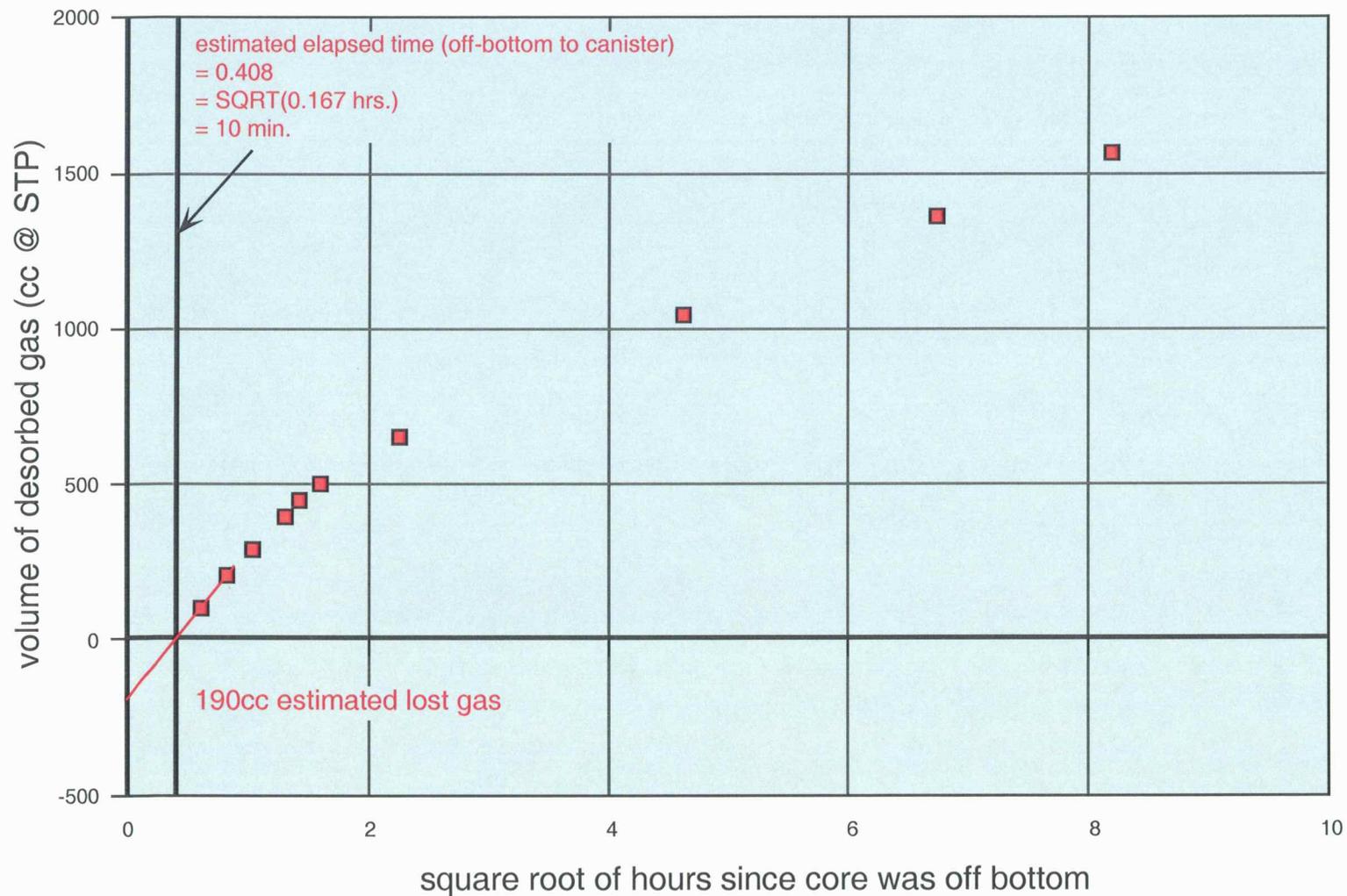


Figure 15

Desorption Characteristics of Smith #1-22 Samples

Osborn Energy Smith #1-22; sec. 22-T.44N.-R.33W.; Cass Co., MO

(analyses by Kansas Geological Survey, June, 2002 - April, 2004)

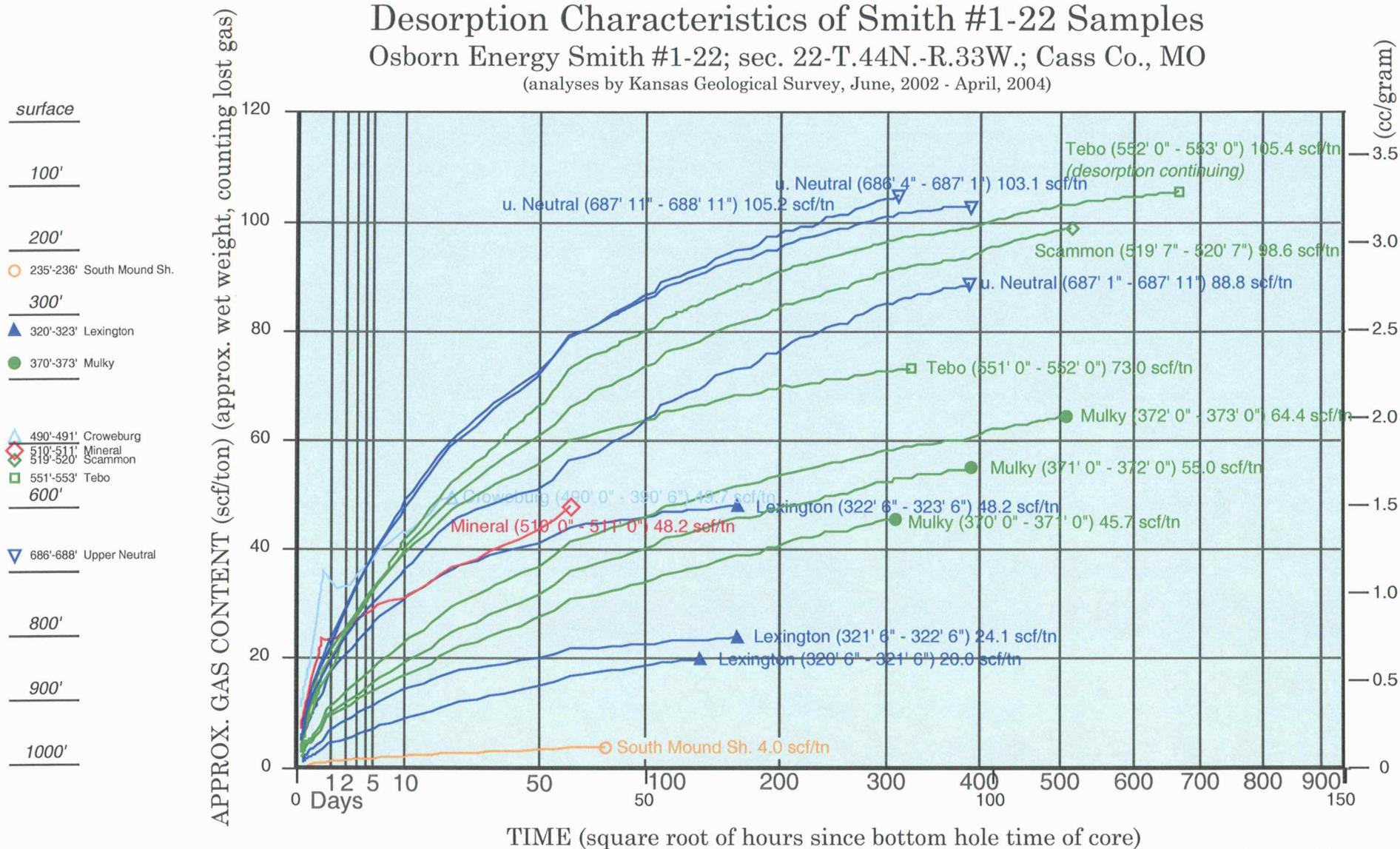
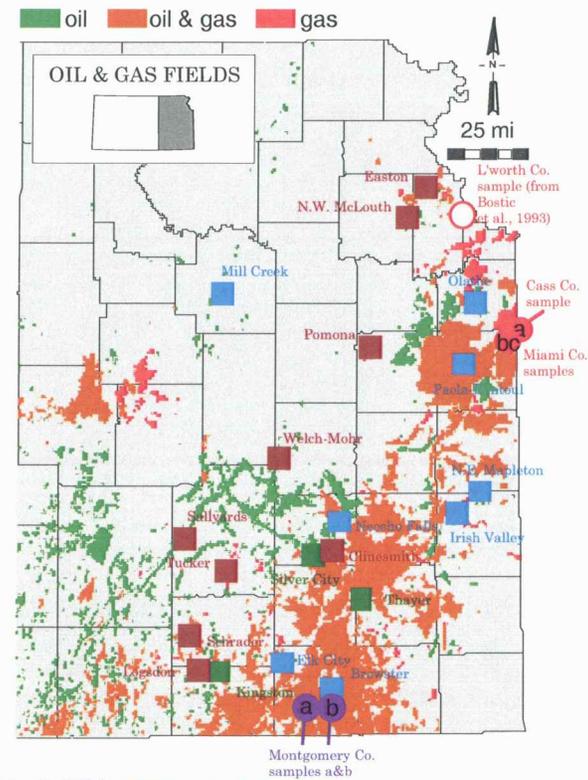
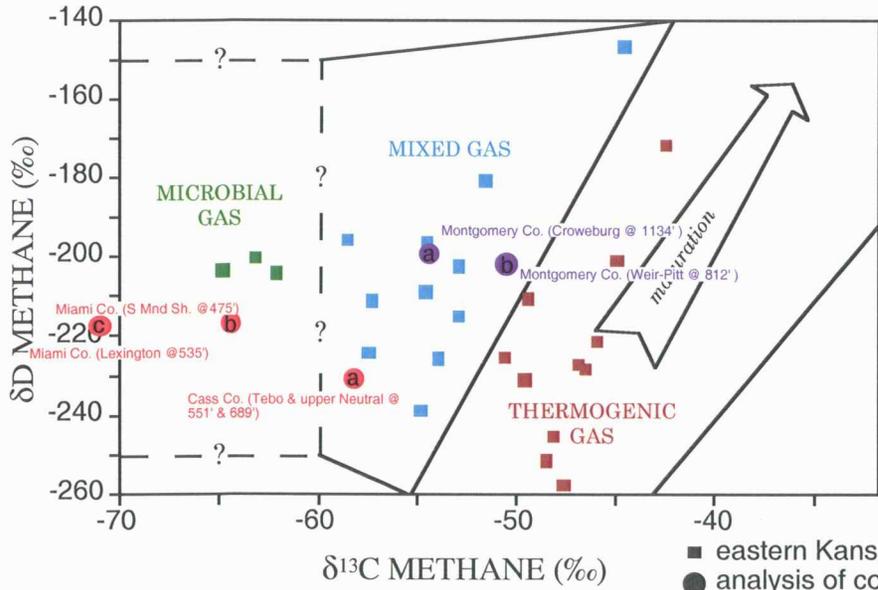
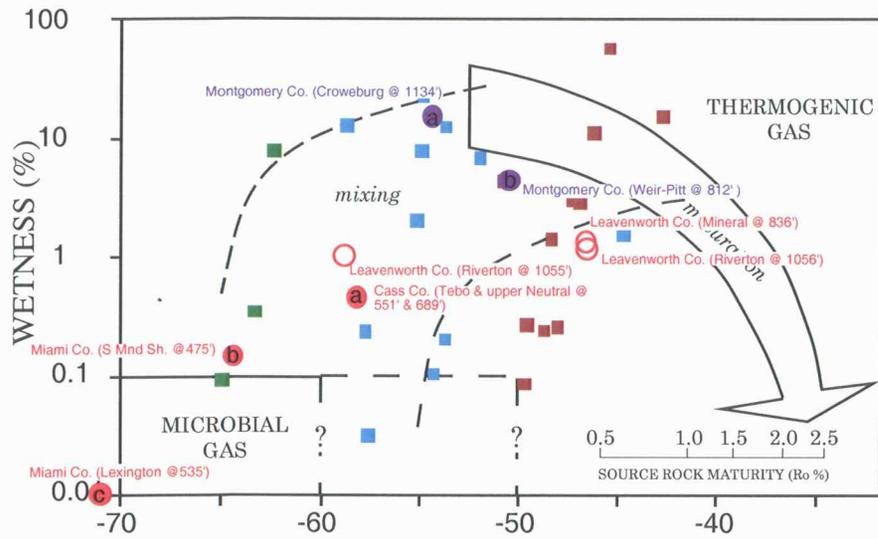


Figure 16



- U. PENN Mill Creek, Schrader
 - M. PENN Silver City, Thayer, Brewster, Elk City, Mapleton NE, Neosho Falls, Olathe, Clinesmith, Easton, McLouth NW, Pomona, Sullyards, Welch-Mohr
 - MSSP Kingston, Brewster, Irish Valley, Neosho Falls, Paola-Rantoul, Tucker
 - L. ORD Logsdan
- eastern Kansas conventional gas (from Jenden et al., 1988)
- analysis of coalbed desorption gas

LUMAN'S LABORATORIES

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ANALYTICAL
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February 14, 2003

Osborn Energy

Kansas Geological Survey
1930 Constant Ave.
Lawrence Ks 66047-3724

1-22 *Smith Lexington* 321'6" - 322'6"

Attn: Jonathan Lange

Please find listed below analysis on the following sample.

Lab ID. 21212 Sample ID. Kansas Geological Survey Sample L.

	As Received	Moisture Free	MAF
Moisture	3.62%		
Ash	48.52%	50.34%	
Volatile Matter	21.74%	22.56%	
Fixed Carbon	26.12%	27.10%	
BTU/lb	7,032	7,296	14,691
Sulfur	3.25%	3.37%	

Respectfully,

Carrol Luman

CGL:pd1

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ANALYTICAL
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June 20, 2003

Kansas Geological Survey
1930 Constant Ave.
Lawrence Ks 66047-3724

Johnson State # 1-22
31-383.03
(Luman)

Attn: Jonathan Lange

Please find listed below analysis on the following sample.

Lab ID. 61803 Sample ID. Kansas Geological Survey Sample 31-383.03g.

	As Received	Moisture Free	MAF
Moisture	2.30%		
Ash	53.62%	54.88%	
Volatile Matter	19.90%	20.37%	
Fixed Carbon	24.18%	24.75%	
BTU/lb	5,613	5,745	12,731
Sulfur	1.91%	1.96%	

Respectfully,

Carrol Luman

CGL:pdI

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April 24, 2003

Kansas Geological Survey
1930 Constant Ave.
Lawrence Ks 66047-3724

Osborn Smith #1-22
370-371
Mulkey

Attn: Jonathan Lange

Please find listed below analysis on the following sample.

Lab ID. 42206 Sample ID. Kansas Geological Survey KGSY.

	As Received	Moisture Free	MAF
Moisture	2.62%		
Ash	16.03%	16.46%	
Volatile Matter	39.88%	40.96%	
Fixed Carbon	41.47%	42.58%	
BTU/lb	12,131	12,457	14,912
Sulfur	4.40%	4.52%	

Respectfully,

Carrol Luman

CGL:pdl

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ANALYTICAL
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TESTING

June 20, 2003

Kansas Geological Survey
1930 Constant Ave.
Lawrence Ks 66047-3724

Handwritten notes:
1-22
3-17-03
3-17-03

Attn: Jonathan Lange

Please find listed below analysis on the following sample.

Lab ID. 61608 Sample ID. Kansas Geological Survey Sample 3D-784.53g.

	As Received	Moisture Free	MAF
Moisture	5.45%		
Ash	30.66%	32.43%	
Volatile Matter	26.96%	28.49%	
Fixed Carbon	36.96%	39.08%	
BTU/lb	8,939	9,455	13,992
Sulfur	8.22%	8.69%	

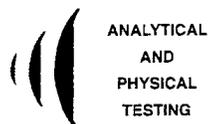
Respectfully,

Carrol Luman

CGL:pdI

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(620) 236-7874



June 20, 2003

Kansas Geological Survey
1930 Constant Ave.
Lawrence Ks 66047-3724

Attn: Jonathan Lange

Please find listed below analysis on the following sample.

Lab ID. 61607 Sample ID. Kansas Geological Survey Sample 3C-714.00g.

	As Received	Moisture Free	MAF
Moisture	3.78%		
Ash	13.50%	14.03%	
Volatile Matter	37.35%	38.82%	
Fixed Carbon	45.37%	47.15%	
BTU/lb	12,306	12,790	14,878
Sulfur	1.96%	2.04%	

Respectfully,


Carrol Luman

CGL:pdI

ANALYSIS REPORT

Lab #: 49458 *revised* Job #: 3869
Sample Name/Number: Tebo & Rowe desorption gas
Company: Kansas Geological Survey
Date Sampled: / /
Container: Glass Bottle
Field/Site Name: Cass County, MO
Location: API# 24-037-20721
Formation/Depth: Osborn Energy #1-22 Smith
Sampling Point: 551' - 689' depth
Date Received: 1/15/2003 Date Reported: 2/18/2003

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	nd			
Helium -----	nd			
Hydrogen -----	0.42			
Argon -----	0.15			
Oxygen -----	0.014			
Nitrogen -----	12.98			
Carbon Dioxide -----	1.26	3.89		
Methane -----	84.79	-58.28	-230.5	
Ethane -----	0.34			
Ethylene -----	nd			
Propane -----	0.038			
Iso-butane -----	0.0044			
N-butane -----	0.0032			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0012			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 868

Specific gravity, calculated: 0.621

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100 percent. Mol. % is approximately equal to vol. %

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(620) 236-7874



ANALYTICAL
AND
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TESTING

April 24, 2003

Kansas Geological Survey
1930 Constant Ave.
Lawrence Ks 66047-3724

*Osborn Smith #1-22
370-371
Mudkey*

Attn: Jonathan Lange

Please find listed below analysis on the following sample.

Lab ID. 42206 Sample ID. Kansas Geological Survey KGSY.

	As Received	Moisture Free	MAF
Moisture	2.62%		
Ash	16.03%	16.46%	
Volatile Matter	39.88%	40.96%	
Fixed Carbon	41.47%	42.58%	
BTU/lb	12,131	12,457	14,912
Sulfur	4.40%	4.52%	

Respectfully,

Carrol Luman

CGL:pdl

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(620) 236-7874



ANALYTICAL
AND
PHYSICAL
TESTING

February 14, 2003

Kansas Geological Survey
1930 Constant Ave.
Lawrence Ks 66047-3724

Attn: Jonathan Lange

Please find listed below analysis on the following sample.

Lab ID. 21212 Sample ID. Kansas Geological Survey Sample L.

Smith Lexington ★

	As Received	Moisture Free	MAF
Moisture	3.62%		
Ash	48.52%	50.34%	
Volatile Matter	21.74%	22.56%	
Fixed Carbon	26.12%	27.10%	
BTU/lb	7,032	7,296	14,691
Sulfur	3.25%	3.37%	

Respectfully,

Carrol Luman

CGL:pdl

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ANALYTICAL
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TESTING

June 20, 2003

Kansas Geological Survey
1930 Constant Ave.
Lawrence Ks 66047-3724

Attn: Jonathan Lange

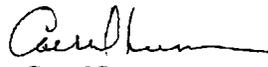
Please find listed below analysis on the following sample.

Lab ID. 61803 Sample ID. Kansas Geological Survey Sample 3I-383.03g.

Sample Mineral

	As Received	Moisture Free	MAF
Moisture	2.30%		
Ash	53.62%	54.88%	
Volatile Matter	19.90%	20.37%	
Fixed Carbon	24.18%	24.75%	
BTU/lb	5,613	5,745	12,731
Sulfur	1.91%	1.96%	

Respectfully,


Carrol Luman

CGL:pdI

Smith (Meredith)

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(620) 236-7874



June 20, 2003

Kansas Geological Survey
1930 Constant Ave.
Lawrence Ks 66047-3724

Attn: Jonathan Lange

Please find listed below analysis on the following sample.

Lab ID. 61608 Sample ID. Kansas Geological Survey Sample 3D-784.53g.

SMITH TERO

	As Received	Moisture Free	MAF
Moisture	5.45%		
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Volatile Matter	26.96%	28.49%	
Fixed Carbon	36.96%	39.08%	
BTU/lb	8,939	9,455	13,992
Sulfur	8.22%	8.69%	

Respectfully,

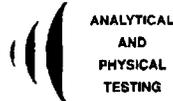

Carrol Luman

CGL:pdI

Smith Tero J

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June 20, 2003

Kansas Geological Survey
1930 Constant Ave.
Lawrence Ks 66047-3724

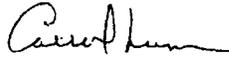
Attn: Jonathan Lange

Please find listed below analysis on the following sample.

Lab ID. 61607 Sample ID. Kansas Geological Survey Sample 3C-714.00g.

	As Received	Moisture Free	MAF	SMITH UPPER NEUTRAL
Moisture	3.78%			
Ash	13.50%	14.03%		
Volatile Matter	37.35%	38.82%		
Fixed Carbon	45.37%	47.15%		
BTU/lb	12,306	12,790	14,878	
Sulfur	1.96%	2.04%		

Respectfully,


Carrol Luman

CGL:pdI

[Faint handwritten text]

ANALYSIS REPORT

Lab #: 49458 *neutral* Job #: 3869
 Sample Name/Number: Tebo & ~~Bowe~~ desorption gas
 Company: Kansas Geological Survey
 Date Sampled: // *desorption gas*
 Container: Glass Bottle
 Field/Site Name: Cass County, MO
 Location: API# 24-037-20721
 Formation/Depth: Osborn Energy #1-22 Smith
 Sampling Point: 551' - 689' depth
 Date Received: 1/15/2003 Date Reported: 2/18/2003

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
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Hydrogen Sulfide -----	nd			
Helium -----	nd			
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Argon -----	0.15			
Oxygen -----	0.014			
Nitrogen -----	12.98			
Carbon Dioxide -----	1.26	3.89		
Methane -----	84.79	-58.28	-230.5	
Ethane -----	0.34			
Ethylene -----	nd			
Propane -----	0.038			
Iso-butane -----	0.0044			
N-butane -----	0.0032			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0012			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 868
 Specific gravity, calculated: 0.621

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100 percent. Mol. % is approximately equal to vol. %



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