ANALYSIS OF MARMATON AND CHEROKEE GROUP CORE SAMPLES FOR GAS CONTENT -LAYNE CHRISTENSEN #3-9 SCOTT WELL

LAYNE CHRISTENSEN #3-9 SCOTT WELL (S2 NE NW Sec. 9-T.33S.-R.16E.) MONTGOMERY COUNTY, KANSAS



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SUMMARY

Fourteen three-inch diameter core samples from the Pennsylvanian Marmaton and Cherokee Groups were collected from the Layne Christensen #3-9 Scott well in S2 NE NW Sec. 9-T.33S.-R.16E. in Montgomery County, KS over July 14th and 15th, 2002:

- 610.0' to 610.8' & 612.0'-612.5' (Lexington coal)
- 632.9' to 633.8' (unnamed coal, provisionally "Labette" coal)
- 697.5' to 698.5' (Little Osage Shale)¹
- 729.0' to 730.0' (Excello Shale)¹
- 730.7' to 731.1' (Mulky coal)
- 778.0' to 778.9' (Croweburg coal & V shale)
- 786.0' to 787.3' (Fleming coal)
- 820.0' to 821.2' (Mineral coal)
- 838.5' to 839.1' (Scammon coal)
- 924.0' to 925.0' (Weir-Pittsburg coal)
- 925.0' to 926.0' (Weir-Pittsburg coal)
- 1078.0' to 1079.0' (Rowe coal)
- 1079.0' to 1079.3' (Rowe coal)¹
- 1134.5' to 1135.5' (Riverton coal)

Of the eleven samples saved for long-term desorption measurements, the following gas contents have been measured, based on the dry-weight of the sample:

onterio in the over interior, order on the dry weight of the built	ore.
610.0' to 610.8' & 612.0'-612.5' (Lexington coal)	(57.5 scf/ton)
632.9' to 633.8' (unnamed coal, provisionally "Labette" coal)	(60.6 scf/ton)
730.7' to 731.1' (Mulky coal)	(95.2 scf/ton)
778.0' to 778.9' (Croweburg coal & V shale)	(100.3 scf/ton)
786.0' to 787.3' (Fleming coal)	(118.5 scf/ton)
820.0' to 821.2' (Mineral coal)	(41.0 scf/ton)
838.5' to 839.1' (Scammon coal)	(117.0 scf/ton)
924.0' to 925.0' (Weir-Pittsburg coal)	(242.6 scf/ton)
925.0' to 926.0' (Weir-Pittsburg coal)	(191.5 scf/ton)
1078.0' to 1079.0' (Rowe coal)	(76.6 scf/ton)
1134.5' to 1135.5' (Riverton coal)	(155.8 scf/ton)
	610.0' to 610.8' & 612.0'-612.5' (Lexington coal) 632.9' to 633.8' (unnamed coal, provisionally "Labette" coal) 730.7' to 731.1' (Mulky coal) 778.0' to 778.9' (Croweburg coal & V shale) 786.0' to 787.3' (Fleming coal) 820.0' to 821.2' (Mineral coal) 838.5' to 839.1' (Scammon coal) 924.0' to 925.0' (Weir-Pittsburg coal) 925.0' to 926.0' (Weir-Pittsburg coal) 1078.0' to 1079.0' (Rowe coal)

BACKGROUND

The Layne Christensen #3-9 Scott well in S2 NE NW Sec. 9-T.33S.-R.16E. (Montgomery County, KS) was selected for desorption tests in association with an ongoing coalbed gas research project at the Kansas Geological Survey. The samples (3-inch-diameter core) were gathered July 14th and 15th, 2002 by K. David Newell and Troy A. Johnson of the Kansas Geological Survey, with well site collection aided by Lawrence A. Weis (consultant for Layne Christensen). Samples were obtained during wireline coring. The well was drilled a rig owned by Layne Christensen, Canada.

¹desorption terminated early due to utilizing canister for another zone

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. After the sample was removed from the canister, it was weighed again before air- or oven-drying, then weighed after drying. The weight loss is noted in the desorption table (Table 1).

Temperature baths for the desorption canisters were on site, with temperatures at 80 degrees F for coals uphole (i.e., Scammon and shallower), and 85 degrees F for the deeper coals (i.e., Weir-Pittsburg and deeper). The canistered samples were later transported to the laboratory at the Kansas Geological Survey in Lawrence, KS and desorption measurements were continued at these temperatures. 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 and commercially obtained. The former were made using 3 1/4"-diameter PVC pipe and plumbing materials available at hardware stores. The latter were obtained from SSD, Inc. in Grand Junction, CO. On average, the canisters were approximately 12.5 inches high (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 (model BA928) marketed by Oregon Scientific (Tualatin, OR). The atmospheric pressure was displayed in millibars on this instrument, however, this measurement was not the actual barometric pressure, but rather an altitude-compensated barometric pressure automatically converted to a sea-level-equivalent pressure. In order to translate this measurement to actual atmospheric pressure, a regression correlation was determined over several weeks by comparing readings from the Oregon Scientific instrument to that

from a pressure transducer in the Petrophysics Laboratory in the Kansas Geological Survey in Lawrence, Kansas (Figure 1). The regression equation shown graphically in Figure 1 was entered into a spreadsheet and was used to automatically convert the millibar measurement to barometric pressure in psi.

A spreadsheet program written by K.D. Newell (Kansas Geological Survey) was used to convert all gas volumes at 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:

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

Customarily, standard temperature and pressure 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 (°R = 460 + °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:

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

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 Layne Christensen Scott #3-9 well, six of the eleven samples are still desorbing 9 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 are washed of drilling mud, and either dried in an oven at 150 °F for 1 to 6 days, or air-dried for up to 6 weeks. After drying, the cores are weighed again to obtain a dry-weight based gas content. Selected samples were sent for proximate analysis at Luman's Laboratories in Chetopa, KS.

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 graphs for individual samples, and 4) 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 and 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 2-15)

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 Graphs (Figures 16-27)

These are desorption graph (gas content per weight vs. square root of time) for all the samples. The last graph in the series has all the desorption curves on it at a common scale.

Appendix 1

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

RESULTS and DISCUSSION

Of the eleven samples saved for long-term desorption measurements, the following gas contents are calculated, based on dry weight of the sample:

•	610.0' to 610.8' & 612.0'-612.5' (Lexington coal)	(57.5 scf/ton)
•	632.9' to 633.8' (unnamed coal, provisionally "Labette" coal)	(60.6 scf/ton)
•	730.7' to 731.1' (Mulky coal)	(95.2 scf/ton)
•	778.0' to 778.9' (Croweburg coal & V shale)	(100.3 scf/ton)
•	786.0' to 787.3' (Fleming coal)	(118.5 scf/ton)
•	820.0' to 821.2' (Mineral coal)	(41.0 scf/ton)
•	838.5' to 839.1' (Scammon coal)	(117.0 scf/ton)
•	924.0' to 925.0' (Weir-Pittsburg coal)	(242.6 scf/ton)
•	925.0' to 926.0' (Weir-Pittsburg coal)	(191.5 scf/ton)
•	1078.0' to 1079.0' (Rowe coal)	(76.6 scf/ton)
•	1134.5' to 1135.5' (Riverton coal)	(155.8 scf/ton)

No gas-content estimates are made for the three samples that were removed early from the canisters.

Proximate analyses at Luman's Laboratories in Chetopa, KS were performed 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:

```
730.7' to 731.1' (Mulky coal)
786.0' to 787.3' (Fleming coal)
838.5' to 839.1' (Scammon coal)
924.0' to 925.0' (Weir-Pittsburg coal)
1078.0' to 1079.0' (Rowe coal)
1079.0' to 1079.3' (Rowe coal)
1134.5' to 1135.5' (Riverton coal)
1134.5' to 1135.5' (Riverton coal)
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According to the BTU/lb. (dry, ash-free) determinations, all the samples can be classified as high-volatile A bituminous coal.

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:

unit	depth	moisture-free ash	G_c	G_{pc}
Mulky	730.7'	33.57%	95.2 scf/ton	143.3 scf/ton
Fleming	786.0'	28.79%	118.5 scf/ton	166.4 scf/ton
Scammon	838.5'	32.72%	117.0 scf/ton	173.9 scf/ton
Weir-Pittsburg	924.0	8.75%	242.6 scf/ton	265.9 scf/ton
Rowe	1078.0'	39.28%	76.6 scf/ton	126.2 scf/ton
Rowe	1079.0'	9.96%	not analyzed	
Riverton	1134.5'	13.24%	155.8 scf/ton	179.6 scf/ton
Riverton (duplicate)	1134.5'	14.44%	155.8 scf/ton	182.1 scf/ton

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

FIGURE 1. Correlation of field barometer to Petrophysics Lab pressure transducer.

TABLE 1. Desorption measurements for samples.

FIGURE 2. Lost-gas graph for 610.0' to 610.8' & 612.0'-612.5' (Lexington coal)

FIGURE 3. Lost-gas graph for 632.9' to 633.8' (unnamed coal, provisionally "Labette" coal)

FIGURE 4. Lost-gas graph for 697.5' to 698.5' (Little Osage Shale)

FIGURE 5. Lost-gas graph for 729.0' to 730.0' (Excello Shale)

FIGURE 6. Lost-gas graph for 730.7' to 731.1' (Mulky coal)

FIGURE 7. Lost-gas graph for 778.0' to 778.9' (Croweburg coal & V shale)

FIGURE 8. Lost-gas graph for 786.0' to 787.3' (Fleming coal)

FIGURE 9. Lost-gas graph for 820.0' to 821.2' (Mineral coal)

FIGURE 10. Lost-gas graph for 838.5' to 839.1' (Scammon coal)

FIGURE 11. Lost-gas graph for 924.0' to 925.0' (Weir-Pittsburg coal)

FIGURE 12. Lost-gas graph for 925.0' to 926.0' (Weir-Pittsburg coal)

FIGURE 13. Lost-gas graph for 1078.0' to 1079.0' (Rowe coal)

FIGURE 14. Lost-gas graph for 1079.0' to 1079.3' (Rowe coal)

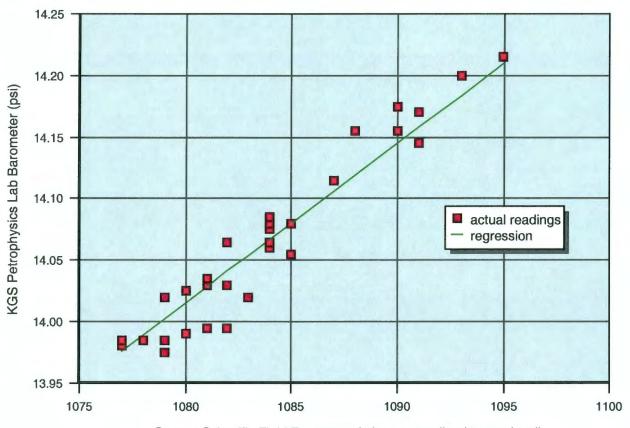
FIGURE 15. Lost-gas graph for 1134.5' to 1135.5' (Riverton coal)

FIGURE 16. Desorption graph for 610.0' to 610.8' & 612.0'-612.5' (Lexington coal)

FIGURE 17. Desorption graph for 632.9' to 633.8' (unnamed coal, provisionally "Labette" coal)

- FIGURE 18. Desorption graph for 730.7' to 731.1' (Mulky coal)
- FIGURE 19. Desorption graph for 778.0' to 778.9' (Croweburg coal & V shale)
- FIGURE 20. Desorption graph for 786.0' to 787.3' (Fleming coal)
- FIGURE 21. Desorption graph for 820.0' to 821.2' (Mineral coal)
- FIGURE 22. Desorption graph for 838.5' to 839.1' (Scammon coal)
- FIGURE 23. Desorption graph for 924.0' to 925.0' (Weir-Pittsburg coal)
- FIGURE 24. Desorption graph for 925.0' to 926.0' (Weir-Pittsburg coal)
- FIGURE 25. Desorption graph for 1078.0' to 1079.0' (Rowe coal)
- FIGURE 26. Desorption graph for 1134.5' to 1135.5' (Riverton coal)
- FIGURE 27. Desorption graph for all samples.
- APPENDIX 1. Proximate analyses performed to date.

Correlation of Field Barometer to KGS Petrophysics Lab Barometer



Oregon Scientific Field Barometer (mbars normalized to sea level)

FIGURE 1.

TABLE 1 -- Description measurements for Layne Christeineen #3-9 Scott, S2 NE NW 9-33S-16E, Montgomery Co. KS

SAMPLE	610.0' to 610.8	-			oal) in canister M2			lba.	grams	moisture %		est. lost gas (cc) =			TIME OF:			elapsed time (off bottom to canistering)
ما شد د د انجاد	an Lorbati	lba.	0	1818.32		wet sample	weight:		1847.58	1.58%		200				at surface	in canister	12.3 minutes
dry sample w	reignt: NOF VOLUMES TO		98	1010.32		wor admiple	worgin.	4.070	1041.00	1.00%					7/14/02 12:09		7/14/02 12:21	0.204 hours
RIGMEASURI		Joir	cc	ONVERSION C	OF RIG MEASUREMENTS	S TO STP (cubi	oft: 0/60 degrees: (914.7 pei)	CUMULATI	VE VOLUMES	SCF/TON (approx.)	SCF/TON (approx.)			TIME SINCE			0.451848057 SQRT (hrs)
mossured on	measured T (F)	measured	P cul	bic ft (Orla)	ABSOLUTE T (F) (@rlg)	peia (Grig)	cubic ft (@STP)	oc (OSTP)	cubic ft (@	oc (@STP)	without lost gas	with lost gas	TIME OF MEAS	SURE	off bottom	at surface	in canister	SQRT hrs. (eince off bottom)
21		108	88 0	0.00102413	540	14.122	0.000947408	28.8275	0.00095	26.82746204	0.472674077				0:14:30	0:11:30	0:02:15	
13		108	88 0	0.00045909	540	14.122	0.000424699	12.0261	0.00137						0:16:45	0:13:45	0:04:30	
8	8 80	108		0.00028252	540									12:28	0:17:30	0:14:30	0:05:15	
11				0.00038846	540				0.00199					12:28	0:19:15	0:16:15	0:08:30	
\$				0.00031783	540			8.32576	0.00229		1.140937427			12:29	0:20:45	0:18:30	0:00:30	
7	7 80			0.0002472	540 540						1.858098095			12:36	0:27:45	0:24:45	0:15:30	
3				0.00130685	540									12:43	0:34:30	0:31:30	0:22:15	
30				0.00056504	540						2.807856976		7/14/02	12:48	0:37:45	0:34:45	0:25:30	0.793200269
1!				0.00052972	540								7/14/02	12:50	0:41:15	0:38:15	0:29:00	
2				0.00074181	540	14.122	0.000888053	19.4288	0.0084	181.31884				12:55	0:46:45	0:43:45	0:34:30	
3	1 80	108	88 0	0.00109476	540									13:04	0:55:00	0:52:00	0:42:45	
2:	2 80	108	88 0	0.00077693	540						4.058477419			13:09	1:00:00	0:57:00	0:47:45	
41	8 80			0.00162448	540									13:22	1:13:00	1:10:00	1:00:45 1:12:45	
31				0.00113007	540						5.329807895 5.47649965			13:34 13:37	1:28:00	1:25:00	1:15:45	
				0.00031783	540 540									13:44	1:35:00	1:32:00	1:22:45	
11	0			0.00067098	540									13:50	1:41:00	1:38:00	1:26:45	
1:	-			0.00045808	540				0.01317					14:04	1:55:00	1:52:00	1:42:45	
3				0.0012007	540						7.122709386	10.64651699	7/14/02	14:21	2:12:00	2:09:00	1:59:45	
8:			87 0	0.00218952	540	14.109	0.002023628	57.3025	0.0163					14:57	2:48:00	2:45:00	2:35:45	
5	1 80	108		0.00180105	540				0.01796					15:34	3:25:00	3:22:00	3:12:45	
3	5 80	108		0.00123602	540									15:59 16:36	3:50:00 4:27:00	3:47:00 4:24:00	3:37:45 4:14:45	
41				0.00141259	540				0.02041		10.18412492			16:48	4:39:00	4:36:00	4:28:45	
2				0.00091818	540 540									17:31	5:22:00	5:19:00	5:09:45	
3				0.00123602	540				0.02332		11.63341208			17:57	5:48:00	5:45:00	5:35:45	2.408318916
3	-			0.00130885	540						12.23592471		7/14/02	18:33	8:24:00	6:21:00	6:11:45	2.529822128
3				0.00113007	540								7/14/02	19:03	6:54:00	8:51:00	6:41:45	
2				0.00091818	540	14.109					13.18040398			19:31	7:22:00	7:19:00	7:09:45	
5	8 8	108	87 0	0.00197783	540									20:31	8:22:00	8:19:00	8:09:45 9:10:45	
4	8 8			0.00182448	540		0.001502763				14.84207388			21:32	9:23:00	9:20:00	10:12:45	
3				0.00134198	540		0.001241429							22:34	11:25:00	11:22:00	11:12:45	
3				0.0012007	540 540								7/15/02		13:01:00	12:58:00	12:48:45	
5	-			0.00194231	540						17.94118112				14:45:00	14:42:00	14:32:45	3.840572874
5	-			0.00208357	540								7/15/02	4:37	16:28:00	16:25:00	18:15:45	
5				0.00180105	540	14.148					19.7364947	23.28030232	7/15/02	6:02	17:53:00	17:50:00	17:40:45	
6				0.00243672	537	7 14.181	0.002273017	84.3644	0.04183	1184.544474			7/15/02		20:14:00	20:11:00	20:01:45	
8		8 101	90 0	0.00293113	538								7/15/02		23:54:00	23:51:00	23:41:45	
5	0 8	101		0.00176574	540									14:01	25:52:00 31:41:00	25:49:00	25:39:45 31:28:45	
8				0.00307239	540				0.04903					19:50 10:50	48:41:00	48:38:00	48:28:45	
19				0.00870981	540 540				0.0552					17:54	53:45:00	53:42:00	53:32:45	
11				0.00388463	540				0.00070					10:05	89:56:00	69:53:00	89:43:45	
7				0.00271924	540								7/17/02	17:10	77:01:00	78:58:00	78:48:45	
18				0.00586226	540				0.07104		35.44504093	38.96884858		17:27	101:18:00	101:15:00	101:05:45	
7			81 0	0.00254267	540		0.002337048		0.07338	2077.92423				17:34	125:25:00	125:22:00	125:12:45	
6	5 8			0.00300176	540				0.07814					16:40	150:31:00	150:28:00	150:18:45 195:50:45	
8				0.0028805	540				0.07877					18:12	198:03:00 218:29:00	198:00:00	218:18:45	
5				0.00197783	540									15:08	242:59:00	242:58:00	242:48:45	
6	-			0.00222483	540				0.08268					15:21	287:12:00	287:09:00	286:59:45	
6				0.00240141	539									15:21	291:12:00	291:09:00	290:59:45	17.06458321
5	_			0.00197783	541									17:50	317:41:00	317:38:00	317:28:45	
_	2 8			0.00218952	541		0.002008738							14:50	362:41:00	362:38:00	382:28:45	
	0 8			0.00141259	540	14.057	0.001300762	36.8333	0.09166	2595.533989				15:40	387:31:00	387:28:00	387:18:45	
	6 8			0.00182448	540									15:18	435:07:00	435:04:00	434:54:45 480:57:45	
4	-			0.00173043	546										481:10:00 525:47:00	481:07:00 525:44:00	525:34:45	
	5 8			0.00158917	540		0.00						8/6/02		555:41:00	555:38:00	555:28:45	
	9 8			0.00141259 0.00137728	540										803:08:00	603:03:00	602:53:45	
_	19 8			0.00137728	544										851:21:00	651:18:00	651:08:48	25.52155951
	8 8			0.00134198	541		0.001230023						8/12/02	12:52	696:43:00	696:40:00	698:30:45	26.39539101
3		. 10	(

35	81	1081	0.00123802	5	11 14.031	0.001133985	32.1102 0.1024	2899.589753	51.08763005	54.61143788	8/14/02 11:27	743:18:00	743:15:00	743:05:45	27.26352875
19	81	1085	0.00067098	5	11 14.083	0.000617859	17.4957 0.10302	2917.085501	51.39588832	54.91969594	8/18/02 11:48	791:39:00	791:38:00	791:28:45	28.13827552
28	79	1082	0.00091818	5	39 14.044	0.000846282	23.9639 0.10388	2941.029445	51.81810996	55.34191759	8/19/02 14:54	888:45:00	888:42:00	888:32:45	29.4408182
23	80	1082	0.00081224	5	10 14.044	0.000747248	21.1598 0.10481	2982.189082	52.19092205	55.71472988	8/23/02 9:18	957:09:00	957:08:00	958:58:45	30.93784091
22	79	1088	0.00077893	5	14.098	0.000718732	20.3521 0.10533	2982.541207	52.54950728	58.07331491	8/28/02 10:14	1030:05:00	1030:02:00	1029:52:45	32.09491133
20	80	1088	0.0007083	5	10 14.122	0.000853384	18.5017 0.10598	3001.042905	52.8754894	58.39929703	8/30/02 11:02	1128:53:00	1128:50:00	1126:40:45	33.569083
25	80	1078	0.00088287	5	10 13.992	0.000809223	22.9148 0.10879	3023.957482	53.27922185	56.80302948	9/2/02 14:32	1202:23:00	1202:20:00	1202:10:45	34.67539954
23	80	1084	0.00081224	5	10 14.070	0.000748829	21.1987 0.10754	3045.158191	53.85272306	57.17853069	9/8/02 11:08	1294:59:00	1294:56:00	1294:46:45	35.98587686
20	80	1084	0.0007083	5	14.070	0.000850982	18.4337 0.10819	3063.589868	53.97750672	57.50131435	9/12/02 15:35	1443:28:00	1443:23:00	1443:13:45	37.99254313
28	88	1073	0.00098881	5	18 13.927	0.000888958	25.1723 0.10908	3088.762211	54.4210192	57.94482883	9/19/02 13:19	1609:10:00	1609:07:00	1608:57:45	40.11441989
27	88	1078	0.0009535	5	18 13.966	0.000882753	24.4304 0.10994	3113.19257	54.85145883	58.37526825	9/28/02 15:20	1779:11:00	1779:08:00	1778:58:45	42.18036688
20	80	1078	0.0007083	5	10 13.992	0.000847378	18.3318 0.11059	3131.524216	55.17444459	58.89825222	10/2/02 15:12	1923:03:00	1923:00:00	1922:50:45	43.65259399
14	82	1084	0.00049441	5	14.070	0.000454008	12.858 0.11104	3144.380175	55.40095423	58.92476185	10/10/02 15:27	2115:18:00	2115:15:00	2115:05:45	45.99239067
10	81	1089	0.00035315	5	14,135	0.000326388	9.24224 0.11137	3153.822412	55.56379354	59.08780117	10/16/02 10:27	2254:18:00	2254:15:00	2254:05:45	47.47948925
5	80	1095	0.00017657	5-	14.213	0.000184397	4.85518 0.11153	3158.277595	55.6458134	59.18982103	10/23/02 9:01	2420:52:00	2420:49:00	2420:39:45	49.20230347
13	82	1087	0.00045909	5-	14,109	0.000422743	11.9707 0.11198	3170.248309	55.85872587	59.3805335	10/30/02 14:43	2594:34:00	2594:31:00	2594:21:45	50.93688906
2	80	1091	7.083E-05	5	14, 161	8.55185E-05	1.85527 0.11202	3172.103581	55.88941397	59.4132218	11/12/02 14:08	2905:59:00	2905:56:00	2905:48:45	53.9071733
34	81	1085	0.0012007	5	14.083	0.001105842	31.3082 0.11313	3203.411763	56.44103402	59.98484164	11/20/02 10:34	3094:25:00	3094:22:00	3094:12:45	55.82748122
80	90	1093	0.00211889	5	0 14.187	0.001933358	54.7484 0.11508	3258.158114	57.40581206	80.92941969	11/27/02 13:40	3285:31:00	3285:28:00	3285:18:45	57.14489938
20	80	1095	0.0007083	5	14.213	0.000657588	18.6207 0.11572	3278.778848	57.7338915	61.25749912	12/4/02 8:50	3428:41:00	3428:38:00	3428:28:45	58.55495994
45	80	1082	0.00158917	5	14.044	0.001482006	41.3992 0.11718	3318.178098	58.46310646	61.98691408	12/11/02 8:03	3595:54:00	3595:51:00	3595:41:45	59.9656236
47	80	1074	0.0018598	5	13.940	0.001515694	42.9195 0.1187	3381.097818	59.21930708	62.74311471	12/20/02 8:21	3812:12:00	3812:09:00	3811:59:45	81.7430158
49	80	1077	0.00173043	5	13,979	0.001584608	44.8709 0.12028	3405.988485	80.00988883	63.53369628	12/30/02 15:43	4059:34:00	4059:31:00	4059:21:45	83.7147288
30	80	1093	0.00105944	5	14.187	0.00098458	27.8801 0.12127	3433.848571	60.50110893	64.02491656	1/7/03 10:30	4246:21:00	4246:18:00	4246:08:45	65.16402382
38	80	1098	0.00127133	5	14.252	0.0011889	33.6092 0.12245	3467.457722	61.09326984	64.61707747	1/18/03 18:40	4468:31:00	4468:28:00	4468:18:45	66.84696453
31	81	1109	0.00109476	54	14.394	0.001030384	29.1771 0.12348	3498.834842	61.60734264	65.13115027	1/23/03 14:40	4834:31:00	4634:28:00	4834:18:45	66.07728451
44	84	1087	0.00155385	54	4 14.109	0.001425563	40.3873 0.12491	3537.002149	82.31857576	65.84236339	1/30/03 11:11	4799:02:00	4798:59:00	4798:49:45	69.27505584
34	82	1093	0.0012007	5	2 14.187	0.001111739	31,4808 0,12602	3568.482984	82.8732378	86.39704543	2/8/03 15:10	4971:01:00	4970:58:00	4970:48:45	70.50543714
45	8 1	1067	0.00158917	5	1 13.849	0.001439073	40.7499 0.12746	3809.232845	63.59121114	87.11501877	2/14/03 15:17	5183:08:00	5183:05:00	5162:55:45	71.85494648
14	84	1100	0.00049441	5	4 14.278	0.000459013	12.9978 0.12792	3822.230598	63.82021904	87.34402687	2/24/03 18:13	5404:04:00	5404:01:00	5403:51:45	73.51235724
31	84	1072	0.00109478	5	4 13.914	0.000990514	28.0481 0.12891	3850.278738	64.31440028	67.83820788	3/4/03 10:14	5590:05:00	5590:02:00	5589:52:45	74.78685986
15	84	1081	0.00052972	5	4 14.031	0.000483305	13.8858 0.12939	3883.984357	64.55552774	88.07933536	3/11/03 11:59	5759:50:00	5759:47:00	5759:37:45	75.89356582
23	84	1068	0.00081224	54	4 13.882	0.000732158	20.7323 0.13012	3684.898817	84.92081021	88.44481784	3/18/03 11:38	5927:27:00	5927:24:00	5927:14:45	78.98993441
13	80	1083	0.00045909	54	0 14.057	0.000422748	11.9708 0.13055	3696.667453	65.13172484	68.65553247	3/25/03 14:12	6098:03:00	6098:00:00	6097:50:45	78.09001217
21	80	1073	0.00074181	54	0 13.927	0.000678595	19,159 0.13122	3715.828404	65.46928712	68.99309475	4/1/03 15:50	8287:41:00	8287:38:00	8267:28:45	79.18870173
20	80	1089	0.0007063	54	0 14.135	0.000653984	18.5187 0.13188	3734.345107	65.79556888	69.31937648	4/10/03 9:23	8477:14:00	8477:11:00	8477:01:45	80.48126076

DECANISTERED 4/17/2003; sample dried 10 days in air

SAMPLE	632.9' to 633.6'	(unnermed co	el; for identificati	on purposes: "Labette co	el") in caniste	r M3										
		lbs.	grame				lba.	grams	moisture %		est. lost gas (cc) =		TIME OF:			elapsed time (off bottom to canistering)
dry sample w	eight:	4.125	1871.24		wet sample t	weight:	4.216	1912.45	2.15%		195		off bottom	at surface	in canister	9.5 minutes
CONVERSION	OF VOLUMES TO	STP												7/14/02 12:50	7/14/02 12:54	
RIG MEASURE				OF RIG MEASUREMENTS						SCF/TON	SCF/TON		TIME SINCE			0.397911213 SQRT (hrs)
measured co	measured T (F)	measured P		ABSOLUTE T (F) (@rig)		cubic ft (@STP)	oc (OSTP)	cubic ft (€	cc (@STP)	without lost gas	with lost gas	TIME OF MEASUR		at surface	in canister	SQRT hrs. (since off bottom)
32	80		0.00113007	540					29.80271874	0.508821471	3.845372713	7/14/02 12:			0:03:30	
20	80	1088		540						0.82358489	4.182136132	7/14/02 12:		0:09:00	0:04:30	
18		1088		540				0.00228		1.108671967	4.447223209	7/14/02 13:			0:06:45	
8	80	1088		540				0.00255		1.235377334	4.573928577	7/14/02 13:			0:08:00	
11	80	1088		540				0.00291		1.409597215	4.748148457	7/14/02 13:			0:09:30	
8	80	1088		540				0.00317		1.536302583	4.874853825	7/14/02 13:			0:10:30	
12			0.00042378	540		0.00039203		0.00356		1.728380834	5.064911878	7/14/02 13:			0:12:30	
10		1088		540				0.00389		1.884742343	5.223293586	7/14/02 13:			0:14:30	
27		1088		540				0.00477		2.312372959	5.650924202	7/14/02 13:			0:20:30	
11		1088		540				0.00513		2.48659284	5.825144082	7/14/02 13:			0:22:00	
18		1088		540				0.00565		2.740003575	8.078554817	7/14/02 13:			0:25:30	
34		1088		540						3.278501387	8.61705263	7/14/02 13:			0:33:30	
10		1088		540				0.00708		3.438883097	8.775434339	7/14/02 13:			0:37:30	
24		1088	4.4	540				0.00787		3.8189992	7.155550442	7/14/02 13:			0:44:30	
15		1088		540				0.00836		4.054571784	7.393123007	7/14/02 13:			0:48:30	
5 6		1088		540				0.01018		4.941509338	8.28006058	7/14/02 14:			1:11:00	
38		1086		540						5.543359834	8.881911076	7/14/02 14:			1:25:30	
4.5			0.00158917	540						6.258077527	9.594628769	7/14/02 14:				
35			0.00123802	540				0.01405		6.81041351	10.14896475	7/14/02 14:			2:04:30	
51				540		0.001684597	47.138			7.817417614	10.95596906	7/14/02 15:			2:37:30	
38		1087		540		0.00117501		0.01889		8.187087912	11.52581915	7/14/02 15:			3:02:30	
48		1087		540		0.00158868				8.946601375	12.28515262	7/14/02 16:			3:41:30	
28		1087		540		0.000913897				9.389662561	12.7282138	7/14/02 18:			4:04:30	
35		1087		540		0.001142371		0.02051		9.943469045	13.28204029	7/14/02 17:			4:38:30	
31		1087		540						10.43402107	13.77257232	7/14/02 18:			5:05:30	
38				540		0.001240288				11.0353184	14.37388984	7/14/02 18:			5:37:30	
9	80	1087		540		0.000293752		0.02308		11.17773092	14.51628216	7/14/02 19:			6:07:30	
62	80	1087	0.00218952	540	14.109	0.002023828	57.3025	0.02508	710.1778132	12.15879498	15.49734622	7/14/02 19:	8:49:00	6:44:00	6:39:30	2.810874894

SAMPLE:	397.5' to 698.5' (Li		Shale) in canister M4				lba.	grame	moisture %		est. lost gas (cc) =		TIME OF:			lapsed time (off bottor
	D 1/23/03; sample															
-10	81	1108		541		-0.000332082				58.99698193	60.33551317	1/23/03 11:55	4831:10:00	4631:05:00	4631:00:30	88.05287588
-4	80	1098		540	14.252	-0.000131878				57.15795893	60.49650817	1/18/03 16:41	4487:58:00	4487:51:00	4467:46:30	88.84280119
10	80 80	1077	7.083E-05	540	14.187	6.56386E-05				57.2218919	80.58044314	1/7/03 10:31	4245:48:00	4245:41:00	4245:36:30	85.15954778
0	80	1079	0.00035315	540		0.000323389				57.19008999	80.52882123	12/30/02 15:44	4058:59:00	4058:54:00	4058:49:30	83.71015094
18	80	1082	0.00058504	540 540	14.044	0.000519824	14.7197			57.03328956 57.03328956	80.3718408	12/11/02 8:04	3811:40:00	3811:35:00	3811:30:30	81.73889887
-2	80	1095	-7.063E-05	540	14.213	-6.57588E-05				58.78127831	80.11982755 80.3718408	12/4/02 8:51 12/11/02 8:04	3428:08:00	3428:01:00	3595:09:30	59.98095952
22	90	1093		550	14.187	0.000708897				58.81315845	80.1517077	11/27/02 13:41	3284:58:00	3284:51:00	3284:48:30 3427:58:30	57,13959514 58,54997865
6	81	1085		541	14.083	0.000195113				56.48947979		11/20/02 10:35	3093:50:00	3093:45:00	3093:40:30	55.62223776
1	80	1091	3.5315E-05	540	14.181	3.27593E-05				58.37488798		11/12/02 14:09	2905:24:00	2905:19:00	2905:14:30	53.90178249
17	82	1087		542	14.109	0.000552818		0.11825	3291.848888	58.35900812	59.69755736	10/30/02 14:44	2593:59:00	2593:54:00	2593:49:30	50.93116269
5	80		0.00017657	540	14.213	0.000184397				58.09099731	59.42954855	10/23/02 9:01	2420:18:00	2420:11:00	2420:06:30	49.19820582
11	62	1089		541	14.135	0.000328388				58.01129698	59.3498482	10/18/02 10:30	2253:45:00	2253:40:00	2253:35:30	47.47367692
16	80 62	1078		542	14.070	0.000317903				55.8530827	59.19181394	10/10/02 15:28	2114:43:00	2114:38:00	2114:33:30	45.98804881
30	86	1076		548	13.998	0.000958615				55.88012385	59.01887509	10/2/02 15:13	1922:28:00	1922:23:00	1922:18:30	43.84594242
37	88	1073	0.00130885	548 548	13.927	0.001174892				55.42904228	58.7875935	9/28/02 15:21	1778:38:00	1778:31:00	1778:28:30	42.17345136
25	60	1084	0.00088287	540	14.070	0.000813727				54.99480535	58.30285273	9/12/02 14:38	1608:34:00	1608:29:00	1608:24:30	40.10894038
25	80		0.00086267	540	14.070	0.000813727				54.0003068 54.39480535	57.33885804 57.7333588	9/7/02 11:09 9/12/02 14:38	1318:24:00 1441:51:00	1441:46:00	1441:41:30	37.97189999
34	80	1077	0.0012007	540	13.979	0.001099522				53.60580824	56.94435948	9/2/02 14:38	1201:51:00	1201:48:00	1201:41:30 1318:14:30	34.66770832 36.3097763
29	80	1088	0.00102413	540	14.122	0.000947408				53.07275479	56.41130804	8/30/02 11:03	1128:18:00	1128:13:00	1128:08:30	33.56039332
24	79	1086	0.00084758	539	14.096	0.000784071				52.61344784	55.95199908	8/26/02 10:14	1029:29:00	1029:24:00	1029:19:30	32.08558289
34	80	1082	0.0012007	540	14.044	0.001104627	31.2794	0.10774	3050.873848	52.23332655	55.57187779	8/23/02 9:19	958:34:00	958:29:00	958:24:30	30.92641198
35	81	1083	0.00123802	541		0.001135014				51.89779839	55.03634964	8/18/02 14:57	842:12:00	842:07:00	842:02:30	29.02088228
23	61	1081	0.00081224	541	14.083	0.000747934				51.14753841	54.48608965	8/16/02 11:49	791:04:00	790:59:00	790:54:30	28.12590739
36	80 81	1080	0.00127133	541	14.010	0.001101588				50.78493841	54.12348765	8/14/02 11:28	742:43:00	742:38:00	742:33:30	27.2528288
38	84	1083	0.00134196 0.00127133	544	14.057	0.001228638				50.25089216	53.58944341	8/12/02 12:53	696:08:00	896:03:00	895:58:30	28.38433679
39	81	1088	0.00137728	541 544	14.122	0.001271743				49.68491047	53.02348171	8/10/02 15:31	850:48:00	850:41:00	850:38:30	25.51012671
35	80	1086	0.00123802	540	14.098	0.00114132				48.47388395 49.09023086	51.81223519 52.4287821	8/8/02 15:53 8/8/02 15:18	802:31:00	802:28:00	802:21:30	24.54821492
47	80	1087	0.0016598	540	14.109	0.001534041		0.09884		47.92036896	51.25891821	8/5/02 9:57	525:12:00 555:08:00	525:07:00 555:03:00	525:02:30 554:58:30	22.91724242 23.58128765
54	80	1085	0.001907	540	14.083	0.001759272				47.17665712	50.51520838	8/3/02 13:21	480:38:00	480:31:00	480:28:30	21.92259109
58	80	1079	0.00197763	540	14.005	0.001814341				48.32375414	49.88230538	8/1/02 15:18	434:33:00	434:28:00	434:23:30	20.8458829
40	80	1083	0.00141259	540	14.057	0.001300762	38.8333	0.09374		45.44415337	48.78270461	7/30/02 15:40	388:55:00	388:50:00	388:45:30	19.87019742
60	81		0.00211889	541	14.031	0.00194394	55.048	0.09244		44.81353798	48.1520892	7/29/02 14:51	382:08:00	382:01:00	381:56:30	19.02892535
55 82	81			541	13.953	0.001997589				43.87110894	47.20965819	7/27/02 17:52	317:07:00	317:02:00	318:57:30	17.60776984
8 8 5 5	81 79	1077	0.00194231	539	13.979	0.001781939		0.08849		42.90288681	48.24121805	7/28/02 15:23	290:38:00	290:33:00	290:28:30	17.04797153
70	80	1086 1079		541	14.005	0.002282838			2455.424864	42.03877488	45.37732592	7/25/02 15:22	288:37:00	286:32:00	266:27:30	16.32840082
61	80	1089	0.0021542 0.00247204	540	14.135	0.001994652				41.00401855	44.34258979	7/24/02 15:09	242:24:00	242:19:00	242:14:30	15.58920038
108	80	1083	0.00374337	540 540	14.057 14.135	0.00344702	97.8084 58.482			39.69738458	42.28891941	7/23/02 14:39	217:54:00	217:49:00	217:44:30	14.78143824
89	80			540	14.018	0.002888179				37.25923734 38.93036817	40.59778858	7/20/02 18:42 7/22/02 18:13	149:57:00 195:28:00	149:52:00	195:18:30	13.98093941
73	80	1081	0.00257798	540	14.031	0.002369507			2094.531559	35.86000481	39.19855805	7/19/02 17:35	124:50:00	124:45:00	124:40:30 149:47:30	11.17268384
189	80	1080	0.0068745	540	14.018	0.006129076				34.71125703	38.04980827	7/18/02 17:34	100:49:00	100:44:00	100:39:30	10.0407503
92	80	1083	0.00324898	540	14.057	0.002991753				31.73985311	35.07840438	7/17/02 17:12	78:27:00	76:22:00	76:17:30	8.743589065
180	80		0.00565037	540	14.109	0.005222288			1789.182705	30.28943787	33.62798892	7/17/02 10:08	89:23:00	69:18:00	89:13:30	8.32966586
103	80	1083	0.00363742	540	14.057	0.003349483				27.75785948	31.09821071	7/18/02 17:55	53:10:00	53:05:00	53:00:30	7.291547818
227	80	1087	0.00801848	540	14,109	0.00740909			1526.439303	26.13382478	29.47237803	7/18/02 10:53	46:08:00	48:03:00	45:58:30	6.792152334
46 92	80	1083		540	14.070	0.002994515				22.54188445	25.88041589	7/15/02 19:54	31:09:00	31:04:00	30:59:30	5.581218505
81	77 78	1091	0.0028605 0.00162448	538	14.057	0.002568325				21.09010975	24.42886099	7/15/02 14:03	25:18:00	25:13:00	25:08:30	5.029910538
86	80	1090	0.00233078	540 537	14.148	0.00218013				20.36220609	23.70075733	7/15/02 12:00	23:15:00	23:10:00	23:05:30	4.82182538
47	60	1089	0.0016598	540	14.135	0.001538863			1052.801219 1113.789057	18.02134927 19.0885901	22.40714134	7/15/02 8:20	19:35:00	19:30:00	19:25:30	4.425308018
51	80	1089	0.00180105	540	14.135	0.00166788				17.27627105	20.6148223 21.35990052	7/15/02 4:35 7/15/02 8:04	15:50:00 17:19:00	17:14:00	17:09:30	4.181329918
56	60			540	14.135	0.001831158				16.46776192	19.80633316	7/15/02 2:58	14:11:00	14:08:00 15:45:00	14:01:30 15:40:30	3.78807885 3.979112129
64	80	1089	0.00228015	540	14.135	0.00209275				15.58002915	18.91858039	7/15/02 1:19	12:34:00	12:29:00	12:24:30	3.544949459
33	80	1089	0.00118539	540	14.135	0.001079074	30.5559	0.03004		14.58545455	17.90400579	7/14/02 23:33	10:48:00	10:43:00	10:38:30	3.288335345
35	80	1088	0.00123602	540	14.122	0.001143422	32.378	0.02896	820.1914941	14.04231452	17.38088578	7/14/02 22:35	9:50:00	9:45:00	9:40:30	3.13581482
		1087	0.00130665	540	14.109	0.001207849	34.1987	0.02782	787.8135227	13.46797654	18.82852978	7/14/02 21:34	8:49:00	8:44:00	0.39.30	2.909201232
47 37	80 80	1087	0.0018598	540		0.001534041		0.02861		12.90250483				0.44.00	8:39:30	2.989287232

elapsed time (off bottom to canistering) be. grams 5.880 2867.30 grame moisture % est. lost gas (cc) = off bottom at surface in canister 10.0 minutes 35 5.907 2879.20 0.44% dry sample weight: wet sample weight: 7/14/02 15:11 7/14/02 15:17 7/14/02 15:21 0.167 hours CONVERSION OF VOLUMES TO STP 0.408248290 SQRT (hrs) CONVERSION OF RIG MEASUREMENTS TO STP (cubic ft; @60 degrees; @14.7 psi) CUMULATIVE VOLUMES SCF/TON SCF/TON TIME SINCE RIG MEASUREMENTS

measured C measured P cubic ft (@rig) ABSOLUTET (F) (@rig) paia (@rig) cubic ft (@STP) cubic ft (@ cc (@STP) without lost gas with lost gas TIME OF MEASURE off bottom at surface SQRT hrs. (since off bottom) in canister 540 14.109 0.000228474 6.46964 0.00023 6.469642454 0.07770714 0.498093572 7/14/02 15.24 0:13:30 0:07:30 0:03:30 0.474341849 1087 0.0002472 80 0:08:30 0:04:30 0.49159804 540 14.109 9.79175E-05 2.7727 0.00033 9.242348382 0.1110102 0.531398832 7/14/02 15:25 0:14:30 1087 0.00010594 80 0.524404424 0:06:30 1087 7.083E-05 540 14.109 8.52783E-05 1.84847 0.00039 11.09081563 0.13321224 0.553598872 7/14/02 15:27 0:16:30 0:10:30 80 2 0:08:30 0.555277708 540 14.109 6.52783E-05 1.84847 0.00048 12.93928491 0:18:30 0:12:30 2 80 1087 7.063E-05

5		0 108	0.0001785	7 540	14.109	0.000183198	4.82117	0.00082	17.58045809	0.210919361	0.831305812	7/14/02 15:3	0:24:30	0:18:30	0:14:30	0.63900965
5		0 108	0.0001785	7 540	14.109	0.000183198	4.82117	0.00078	22.18183127	0.286424481	0.888810913	7/14/02 15:4	0:31:00	0:25:00	0:21:00	0.718795288
4		0 108				0.000130557			25.87856981	0.310828561	0.731214993	7/14/02 15:4			0:27:00	0.785281288
2		0 108				8.52783E-05		0.00098	27.72703909	0.333030601	0.753417033	7/14/02 15:5				0.858348839
2		0 108				8.52783E-05		0.00104	29.57550836	0.355232841	0.775819073	7/14/02 18:0				0.903898114
5			0.00017857			0.000183198		0.00121	34.19888154 38.81785472	0.410737741	0.831124173	7/14/02 18:00 7/14/02 18:10				0.98319208 1.032795559
5			0.00017857			9.79175E-05		0.00137	41.59055883	0.499545901	0.868829273	7/14/02 18:20				
3			0.00017857		,	0.000163198		0.00163	48.21173181	0.555051001	0.975437433	7/14/02 18:3			1:13:00	1.178151918
5			0.00017037			0.000130557				0.599455082	1.019841514	7/14/02 18:4			1:22:00	1.238278375
-			0.00021189			0.000195835		0.00198		0.888081202	1.088447834	7/14/02 18:5				1.316581177
7		0 1087				0.000228474				0.743788342	1.184154774	7/14/02 17:1			1:53:00	1.431782108
e			0.00021189		14.109	0.000195835	5.54541	0.00238	87.48912845	0.810374482	1.230780894	7/14/02 17:28	2:17:00	2:11:00	2:07:00	1.511070281
5		0 108	0.00017857	540	14,109	0.000183196	4.82117	0.00255	72.09030183	0.885879582	1.288285994	7/14/02 17:3				1.570562532
8	8	0 108	0.00028252	540	14.109	0.000281113	7.39388	0.00281	79.48417872	0.954887722	1.375074154	7/14/02 18:0			2:40:00	1.683250823
12			0.00042378		14.100	0.00039187			90.57499435	1.087899983	1.508288395	7/14/02 18:3			3:10:00	1.825741858
25			0.00088287		14.100	0.000815979			113.8808803	1.385425484	1.785811898	7/14/02 19:0	0.00.00		3:40:00	
7		0 108				0.000228474			120.1505027	1.443132804	1.883519038	7/14/02 19:38			4:17:00	2.109502311
5			0.00017857			0.000183198			124.7718759	1.498837704	1.919024138	7/14/02 20:0			4:40:00 5:40:00	2.198484326 2.415229458
4			0.00014126			0.000130557			128.4888144	1.543041784	1.983428218	7/14/02 21:0			8:14:00	2.529822128
8			0.00021189			0.000195835			134.0140223 143.2848712	1.809847904	2.030034338 2.141148862	7/14/02 21:3! 7/14/02 22:3:			7:12:00	2.714180398
10			0.00031783			0.000328892			151.5908353	1.820781323	2.241147755	7/14/02 23:3:			8:11:00	2.889838855
22			0.00077893			0.000719383			171.9812088	2.085433115	2.485819547	7/15/02 1:2:			10:08:00	3.204163956
25			0.00088287		14.135	0.00081748			195.1095878	2.343489242	2.783855874	7/15/02 4:24			13:03:00	3.835473376
11			0.00038848		14.135	0.000359891			205.2948748	2.485805138	2.88819157	7/15/02 8:07			14:48:00	3.884387132
11			0.00038848		14.148	0.000380022	10.1948	0.00781		2.588253372	3.008839804	7/15/02 8:38			15:15:00	3.92640833
DESORPTION			OR CANISTER IN	ANOTHER ZONE; sample of	fried 40 days in	air										
SAMPLE	729.0' to 730.) (Excello She	le) in canleter M	5									THEFOR			alana di di di di battan da anciatarian)
		lbs.	grams		wat sample v		lbs.	grams 2059.05	moisture % 0.92%		est. lost gas (cc) =		TIME OF: off bottom	at surface	in canister	elapsed time (off bottom to canistering) 12.0 minutes
dry sample w		4.498	2040.15	•	war sample v	veignt:	4.538	2059.05	0.82%		10			7/14/02 18:21		0.200 hours
RIG MEASURE	OF VOLUMES T	USIP	CONVERSION	OF RIG MEASUREMENTS	TO STP (or this	fr @60 doggood (@14.7 poi)	CLAM E ATR	VE VOLUMES	SCF/TON	SCF/TON		TIMESINCE	7/14/02 10.21	7714702 16.50	0.447213595 SQRT (hrs)
	measured T (F	magained P		ABSOLUTE T (F) (@rig)						without lost gas		TIME OF MEASURE		at surface	in canister	SQRT hrs. (since off bottom)
9			0.00031783			0.000293752			8.318111728	0.130821849	0.38187415	7/14/02 18:45	0:27:30	0:24:30	0:15:30	0.8770032
1	8	0 1087	3.5315E-05	540	14.109	3.28392E-05	0.92423	0.00033	9.242348362	0.145135165	0.396387887	7/14/02 18:48			0:18:30	0.889202438
1		0 1087			14.109 14.109	3.28392E-05 3.28392E-05			9.242348382				0:28:30	0:25:30		0.752772853
1 1	8		3.5315E-05	540			0.92423	0.00038		0.145135165 0.159648682 0.174182198	0.396387887 0.410901183 0.4254147	7/14/02 18:48 7/14/02 18:52 7/14/02 17:01	0:28:30 0:34:00 0:43:00	0:25:30 0:31:00 0:40:00	0:18:30 0:22:00 0:31:00	0.752772853 0.848581873
1 1 1 11	8	0 1087 0 1087 0 1087	3.5315E-05 3.5315E-05 0.00038848	540 540 540	14.109 14.109 14.109	3.28392E-05 3.26392E-05 0.000359031	0.92423 0.92423 10.1688	0.00038 0.00039 0.00075	10.186581 11.09081583 21.25739863	0.145135185 0.159648882 0.174182198 0.33381088	0.396387887 0.410901183 0.4254147 0.585083381	7/14/02 18:48 7/14/02 18:52 7/14/02 17:00 7/14/02 17:18	0:28:30 0:34:00 0:43:00 1:01:15	0:25:30 0:31:00 0:40:00 0:58:15	0:18:30 0:22:00 0:31:00 0:49:15	0.752772853 0.848581873 1.010382971
1 1 1 11	8 8 8	0 1087 0 1087 0 1087 0 1087	3.5315E-05 3.5315E-05 0.00038848 3.5315E-05	540 540 540 540	14.109 14.109 14.109 14.109	3.28392E-05 3.26392E-05 0.000359031 3.28392E-05	0.92423 0.92423 10.1688 0.92423	0.00038 0.00039 0.00075 0.00078	10.186561 11.09081583 21.25739863 22.18163127	0.145135185 0.159648882 0.174182198 0.33381088 0.348324398	0.396387887 0.410901183 0.4254147 0.585083381 0.599578898	7/14/02 18:44 7/14/02 18:52 7/14/02 17:01 7/14/02 17:18 7/14/02 17:21	0:28:30 0:34:00 0:43:00 1:01:15 1:03:00	0:25:30 0:31:00 0:40:00 0:58:15 1:00:00	0:18:30 0:22:00 0:31:00 0:49:15 0:51:00	0.752772853 0.848581873 1.010382971 1.024895077
1 1 1 1 1 4	8 8 8 8	0 1087 0 1087 0 1087 0 1087 0 1087	3.5315E-05 3.5315E-05 0.00038848 3.5315E-05 0.00014128	540 540 540 540 540 540	14.109 14.109 14.109 14.109	3.26392E-05 3.26392E-05 0.000359031 3.26392E-05 0.000130557	0.92423 0.92423 10.1888 0.92423 3.89894	0.00038 0.00039 0.00075 0.00078 0.00091	10.186581 11.09081583 21.25739863 22.18163127 25.87858981	0.145135185 0.159648882 0.174182198 0.33381088 0.348324398 0.406378482	0.396387887 0.410901183 0.4254147 0.585083381 0.599578898 0.857830984	7/14/02 18:44 7/14/02 18:52 7/14/02 17:01 7/14/02 17:18 7/14/02 17:21 7/14/02 17:25	0:28:30 0:34:00 0:43:00 1:01:15 1:03:00 1:11:00	0:25:30 0:31:00 0:40:00 0:58:15 1:00:00 1:08:00	0:18:30 0:22:00 0:31:00 0:49:15 0:51:00 0:59:00	0.752772853 0.848581873 1.010382971 1.024885077 1.087811258
1 1 1 1 1 4 5	8 8 8 8	0 1087 0 1087 0 1087 0 1087 0 1087 0 1087	7 3.5315E-05 7 3.5315E-05 7 0.00038848 7 3.5315E-05 9 0.00014128 7 0.00017857	540 540 540 540 540 540	14.109 14.109 14.109 14.109 14.109	3.28392E-05 3.26392E-05 0.000359031 3.28392E-05 0.000130557 0.000183198	0.92423 0.92423 10.1888 0.92423 3.89894 4.82117	0.00038 0.00039 0.00075 0.00078 0.00091 0.00108	10.186581 11.09081583 21.25739863 22.18163127 25.87858981 30.499743	0.145135165 0.159848882 0.174182198 0.33381088 0.348324398 0.406378482 0.478948045	0.396387887 0.410901183 0.4254147 0.585083381 0.599576898 0.857830984 0.730198547	7/14/02 18:44 7/14/02 18:52 7/14/02 17:01 7/14/02 17:15 7/14/02 17:25 7/14/02 17:25 7/14/02 17:40	3 0:28:30 0:34:00 0:43:00 1:01:15 1:03:00 0:1:11:00	0:25:30 0:31:00 0:40:00 0:58:15 1:00:00 1:08:00	0:18:30 0:22:00 0:31:00 0:49:15 0:51:00 0:59:00 1:10:00	0.752772853 0.848581873 1.010382971 1.024895077 1.067811258 1.189045194
1 1 1 1 1 4 5	8 8 8 8 8	0 1087 0 1087 0 1087 0 1087 0 1087 0 1087	3.5315E-05 3.5315E-05 0.00038848 3.5315E-05 0.00014128 0.00017857	540 540 540 540 540 540 540	14.109 14.109 14.109 14.109 14.109 14.109	3.28392E-05 3.26392E-05 0.000359031 3.28392E-05 0.000130557 0.000183198 9.79175E-05	0.92423 0.92423 10.1686 0.92423 3.89894 4.82117 2.7727	0.00038 0.00039 0.00075 0.00078 0.00091 0.00108	10.186581 11.09081583 21.25739863 22.18163127 25.87858981 30.499743 33.2724488	0.145135165 0.159848882 0.174182198 0.33381088 0.348324398 0.408378482 0.478948045 0.522488595	0.396387887 0.410901183 0.4254147 0.585083381 0.599578898 0.857830964 0.730198547 0.773739098	7/14/02 18:44 7/14/02 18:52 7/14/02 17:07 7/14/02 17:15 7/14/02 17:22 7/14/02 17:24 7/14/02 17:40 7/14/02 17:50	0:28:30 0:34:00 0:43:00 1:01:15 1:03:00 1:11:00 0:1:22:00 1:32:00	0:25:30 0:31:00 0:40:00 0:58:15 1:00:00 1:08:00 1:19:00	0:18:30 0:22:00 0:31:00 0:49:15 0:51:00 0:59:00 1:10:00	0.752772853 0.848581873 1.010382971 1.024895077 1.087811258 1.188045194 1.238278375
1 1 1 1 4 5 3	6 6 6 6 6 7	0 1087 0 1087 0 1087 0 1087 0 1087 0 1087 0 1087	3.5315E-05 3.5315E-05 0.00038848 3.5315E-05 0.00014128 0.00017857 0.00010594	540 540 540 540 540 540 540	14.109 14.109 14.109 14.109 14.109 14.109 14.109	3.28392E-05 3.26392E-05 0.000359031 3.28392E-05 0.000130557 0.000183198 9.79175E-05 0.000183198	0.92423 0.92423 10.1888 0.92423 3.89894 4.82117 2.7727 4.82117	0.00038 0.00039 0.00075 0.00078 0.00091 0.00108 0.00118	10.186581 11.09081583 21.25739863 22.18163127 25.87858981 30.499743 33.2724489 37.89362009	0.145135165 0.159648862 0.174182198 0.33381088 0.348324398 0.406378482 0.478948045 0.522488595 0.595054177	0.396387887 0.410901183 0.4254147 0.585083381 0.599576898 0.857830964 0.730198547 0.773739098 0.848308879	7/14/02 18:44 7/14/02 18:52 7/14/02 17:0 7/14/02 17:15 7/14/02 17:25 7/14/02 17:4 7/14/02 17:4 7/14/02 18:02 7/14/02 18:02	0:28:30 0:34:00 0:43:00 1:01:15 1:03:00 1:11:00 0:1:22:00 1:32:00 1:44:00	0:25:30 0:31:00 0:40:00 0:58:15 1:00:00 1:08:00 1:19:00 1:29:00	0:18:30 0:22:00 0:31:00 0:49:15 0:51:00 0:59:00 1:10:00 1:20:00	0.752772853 0.848581873 1.010382971 1.024895077 1.067811258 1.189045194 1.238278375 1.316561177
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1 4 5 3 5 3 4 5		0 1087 0 1087	3.5315E-05 3.5315E-05 0.0003884 3.5315E-05 0.00014128 0.00017857 0.00010594 0.00010594 0.00017857	540 540 540 540 540 540 540 540 540	14,109 14,109 14,109 14,109 14,109 14,109 14,109 14,109 14,109 14,109	3.28392E-05 3.26392E-05 0.000359031 3.28392E-05 0.000130557 0.000183198 9.79175E-05 0.000183199 9.79175E-05 0.000130557 0.000183198	0.92423 0.92423 10.1688 0.92423 3.89894 4.82117 2.7727 4.82117 2.7727 3.69894 4.62117 11.0908	0.00038 0.00039 0.00075 0.00078 0.00091 0.00108 0.00118 0.00134 0.00144 0.00157	10.186561 11.09081583 21.25798663 22.18183127 25.87858961 30.499743 33.2724489 37.89362009 40.88632399 44.38328254 48.98443572	0.145135165 0.159648682 0.174182198 0.33381068 0.348324398 0.406376462 0.476948045 0.522486595 0.595054177 0.83859472 0.898646793 0.769218375	0.396387887 0.410901183 0.4254147 0.585063381 0.599578898 0.857830984 0.730198547 0.730198547 0.888847228 0.947901294 1.020468877 1.19483107 1.2948171825	7/14/02 18:34 7/14/02 18:55 7/14/02 17:01 7/14/02 17:15 7/14/02 17:21 7/14/02 17:40 7/14/02 17:40 7/14/02 18:02 7/14/02 18:35 7/14/02 18:35 7/14/02 18:35	0 0:28:30 0:34:00 0:43:00 0:101:15 1:03:00 0:111:00 0:132:00 0:132:00 0:212:00 0:212:00 0:212:00 0:321:00	0.25:30 0:31:00 0:40:00 0:58:15 1:00:00 1:19:00 1:19:00 1:41:00 1:54:00 2:09:00 2:38:00 3:18:00	0:18:30 0:22:00 0:31:00 0:49:15 0:51:00 1:70:00 1:20:00 1:32:00 1:45:00 2:09:00 3:09:00	0.752772853 0.848581873 1.010382971 1.024895077 1.067811258 1.189045194 1.238278375 1.318581177 1.396424004 1.483239897 1.838088317 1.830300522 1.932183588
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DESCRIPTION SAMPLE: dry sample w CONVERSION RIG MEASURE measured oc	SE S	0 108:0 0 108:0	7 3,5315E-05 7 0,00038848 7 3,5315E-05 7 0,00013848 7 3,5315E-05 7 0,00014128 7 0,00017857 0,00017857 0,00017857 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010595 8 7,083E-05 8 7,083E-05 9 0,00038848 7 0,0038848 7 7,083E-05 CCR CANISTER IN Ini canister M1 grams 7 30,25	540 540 540 540 540 540 540 540 540 540	14.109 15.101 16.102 16.105 16	3.28392E-05 3.28392E-05 3.28392E-05 0.000138593 9.79175E-05 0.000183198 9.79175E-05 0.000183198 9.79175E-05 9.79175E-05 9.79175E-05 9.79175E-05 9.79175E-05 9.79175E-05 9.79175E-05 9.79175E-05 9.79175E-05 8.53384E-05 0.000552887 0.000555887 0.000555887 0.0007183198 0.000623167 0.000370701 8.73358E-05 atr	0.92423 0.92423 10.1868 0.92423 3.89894 4.82117 2.7727 3.69894 4.62117 11.0908 2.7727 2.7727 2.7727 2.7727 2.7727 1.85017 4.82542 14.815 15.7409 10.9873 ba. 1.823 014.7 psi) oc (@STP) 4.82117 0.92423	0.00038 0.00078 0.00078 0.00078 0.00018 0.00011 0.00108 0.00113 0.0013 0.00144 0.00157 0.00173 0.00212 0.00242 0.00245 0.00245 0.00245 0.00241 0.00251 0.00248 0.00419 grams 738.16 CLAMLATIT Cubic ft (@ 0.00018	10.186581 11.09081583 21.25799863 22.18193127 25.87858981 30.499743 33.2724489 37.89382009 40.88832399 44.98443572 60.07525138 62.84795528 65.2085917 68.99338308 69.31759772 71.18778751 75.793192 90.80815456 108.3490523 118.849058 118.7528262 moisturs % 0.80% VE VOLUMES co (@STP) 4.821173181 5.545407817	0.145135185 0.15984882 0.174182198 0.33331086 0.348324398 0.408378482 0.478948055 0.59248045 0.59248045 0.59264873 0.789218376 0.988819123 1.030459973 1.17587476 1.190201818 1.422845343 1.870029088 1.834887115 1.88480904	0.396387867 0.410901183 0.4254147 0.585063381 0.599578898 0.857830984 0.730199547 0.730199547 1.92488877 1.19483107 1.29481712174 1.325252724 1.33978624 1.33978624 1.33978624 1.325252724 1.33978624 1.325252724 1.368819977 1.441454319 1.874097844 1.92128159 2.088119817 2.118081542	7/14/02 18:4/ 7/14/02 18:5/ 7/14/02 17:0' 7/14/02 17:2' 7/14/02 17:2' 7/14/02 17:4/ 7/14/02 17:4/ 7/14/02 18:3/ 7/14/02 18:3/ 7/14/02 18:3/ 7/14/02 18:3/ 7/14/02 20:3/ 7/14/02 20:3/ 7/14/02 21:3/ 7/14/02 22:3/ 7/14/02 23:3/ 7/14/02 23:3/ 7/14/02 23:3/ 7/14/02 23:3/ 7/14/02 23:3/ 7/14/02 23:3/ 7/14/02 23:3/ 7/14/02 23:3/ 7/14/02 23:3/ 7/15/02 3:3/ 7/15/02 3:3/	0.28:30 0.34:00 0.43:00 0.10:115 0.10:	0:25:30 0:31:00 0:40:00 0:58:15 1:00:00 1:19:00 1:29:00 1:41:00 2:38:00 3:41:00 4:47:00 4:47:00 6:10:00 7:10:00 0:12:05:00 13:41:00 4:47:00 4:17:00 4:17:00 4:17:00 1:20:00 1:	0:18:30 0:22:00 0:31:00 0:49:15 0:51:00 0:59:00 1:10:00 1:22:00 1:32:0	0.752772853 0.848581873 1.010382971 1.024895077 1.087811258 1.189045194 1.238278375 1.318651177 1.398424004 1.483239897 1.83698317 1.830300522 1.932183588 2.081885999 2.198484328 2.28035085 2.493324421 2.888385428 estimate 3.041381285 3.483293461 3.7199318934 3.785938897
11 4 4 5 5 5 6 5 6 5 6 6 6 6 6 6 6 6 6 6 6	Figure 1 (Figure 1) (F	0 108:0 0 108:0	7 3,5315E-05 7 0,00038848 7 3,5315E-05 7 0,00013848 7 3,5315E-05 7 0,00014128 7 0,00017857 0,00017857 0,00017857 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,00010594 7 0,0001857 8 0,00038848 7 7,083E-05 8 7,083E-05 9 0,00038848 7 7,083E-05 COCCANISTERIN In canistor M1 grams 7 30,25	540 540 540 540 540 540 540 540 540 540	14.109 15.109 16.109 16.109 17.109 18.109 18.109 18.109 18.109 18.109 18.109 18.109 18.109 18.109 18.109 18.109 18.109 18.109 18.109 18.109 18.109 18.109	3.28392E-05 3.28392E-05 0.000359031 3.28392E-05 0.000130557 0.000183198 9.79175E-05 0.000183198 9.79175E-05 0.000183198 0.00039187 9.79175E-05 3.28392E-05 6.200183348 0.000523187 0.000183348 0.000523187 0.000555887 0.000370701 8.73358E-05 air	0.92423 0.92423 10.1868 0.92423 3.89894 4.82117 2.7727 4.82117 11.0908 2.7727 2.7727 2.7727 0.92423 1.85017 4.82542 10.497 10.90873	0.00038 0.00078 0.00078 0.00078 0.00018 0.00011 0.00108 0.00113 0.0013 0.00144 0.00157 0.00173 0.00212 0.00242 0.00245 0.00245 0.00245 0.00241 0.00251 0.00248 0.00419 grams 738.16 CLAMLATIT Cubic ft (@ 0.00018	10.186581 11.09081583 21.25739863 22.18193127 25.97858981 30.499743 33.2724489 37.2724489 40.86832399 44.8822854 46.98443572 80.07525138 82.84795528 85.8208517 75.793192 90.80815458 108.3490523 118.8480958 118.7528262 moisturs % 0.80% VE VOLUMES) 4.821173181	0.145135185 0.15984882 0.174182198 0.33931088 0.348324398 0.408378482 0.478948050 0.522488595 0.595054177 0.838594727 0.898848793 0.789218375 0.9439378574 0.988919123 1.03045997 1.17587478 1.190201818 1.422845343 1.870029088 1.834867115 1.88480904	0.396387867 0.410901183 0.4254147 0.585063381 0.59967898 0.857830964 0.73019954 0.773739096 0.848308879 0.888847228 0.9477901294 1.020488877 1.194831075 1.238171825 1.281712174 1.32552724 1.33978624 1.368819977 1.441454319 1.874097844 1.92128159 2.088119817 2.118061542 est. lost gas (cc) = 35 SCF/TON with lost gas 1.738224077 1.778771258 1.85985852 1.8981507168	7/14/02 18:34 7/14/02 17:07 7/14/02 17:07 7/14/02 17:17 7/14/02 17:27 7/14/02 17:27 7/14/02 18:07 7/14/02 18:07 7/14/02 18:07 7/14/02 18:07 7/14/02 18:07 7/14/02 19:36 7/14/02 20:07 7/14/02 20:07 7/14/02 21:07 7/14/02 21:07 7/14/02 21:07 7/14/02 23:37 7/15/02 3:36 7/15/02 3:36 7/15/02 8:36 7/15/02 8:36 7/15/02 8:36 7/15/02 8:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36	3 0.28:30 2 0.34:00 0:43:00 0:43:00 0:1:11:10 0:1:15:10 0:1:22:00 0:1:13:2:00 0:1:32:00 0:1:23:00 0:2:12:00 0:2:12:00 0:2:12:00 0:3:41:00 0:3:21:00 0:3:41:0	0:25:30 0:31:00 0:40:00 0:58:15 1:00:00 1:08:00 1:19:00 1:29:00 2:38:00 3:18:00 3:41:00 4:17:00 4:47:00 6:10:00 7:10:00 1:20:00 1:20:00 1:10:00 7:10:00 1:10:00 7:10:00 1:10:0	0:18:30 0:22:00 0:31:00 0:49:15 0:51:00 0:59:00 1:10:00 1:22:00 1:45:00 2:00:00 2:29:00 3:32:00 4:08:00 4:08:00 4:08:00 11:58:00 13:38:00 11:58:00 13:38:00 14:08:00	0.752772853 0.848561873 1.010392971 1.024895077 1.087811258 1.189045194 1.239278375 1.318681177 1.398424004 1.483239897 1.830300522 1.932183568 2.081885999 2.198484328 2.28035085 2.493324421 2.868395428 estimate 3.719318934 3.719318934 3.765938897
DESCRIPTION SAMPLE: dry sample w CONVERSION RIG MEASURE measured oc	E E E E E E E E E E E E E E E E E E E	0 108:0 0 108:0	7 3,5315E-05 7 0,00038848 7 3,5315E-05 7 0,00014128 7 0,00017857 7 0,00017857 7 0,00017857 7 0,00017857 7 0,00017857 7 0,00017857 8 0,0001594 7 0,0001594 9 0,0001594 9 0,0001594 9 0,0001594 9 0,0001594 9 0,0001594 9 0,0001594 9 0,0001594 9 0,0001594 9 0,00017857 8 0,00058504 9 0,0003884 9 0,003884 9 0,00388505 7 7,083E-05 7 730.25 CCNVERSION Lubic ft (Φfig) 7 0,00017857 7 3,5315E-05 7 7,063E-05 7 7,063E-05 7 7,063E-05	540 540 540 540 540 540 540 540 540 540	14.109 14.109	3.28392E-05 3.28392E-05 3.28392E-05 0.00013059031 3.28392E-05 0.00013057 0.000183198 9.79175E-05 0.000130557 0.000130557 9.79175E-05 9.79175E-05 9.79175E-05 9.79175E-05 9.79175E-05 8.53384E-05 0.00023187 0.00023187 0.000555887 0.000370701 8.73358E-05 air	0.92423 0.92423 10.1868 0.92423 3.89894 4.82117 2.7727 3.69894 4.82117 11.0908 2.7727 2.7727 2.7727 1.85017 4.82542 14.815 15.7409 10.497 1.90873 ba. 1.823 014.7 psi) oc (@STP) 4.8217 0.92423 1.84847 2.7227 2.7727 2.7227	0.00038 0.00039 0.00075 0.00075 0.00076 0.00108 0.00118 0.00144 0.00144 0.00157 0.000212 0.00222 0.00242 0.00245 0.00251 0.00286 0.0031 0.00413 0.00413 0.00418 CUMULATI cubic fi (@ 0.00028 0.00028 0.00028	10.186581 11.09081583 21.25739863 22.18193127 25.8785881 30.499743 33.2724489 37.89382099 44.88832399 44.8843572 80.07525138 82.84795528 85.82085917 86.9938308 89.31758772 75.793192 90.80615456 106.3490523 116.8460958 118.7528262 moieturs % 0.80% //E VOLUMIE) 4.821173181 5.545407817 7.93987709	0.145135185 0.15984880 0.174182198 0.33331088 0.348324398 0.408378482 0.478948045 0.522488595 0.595054177 0.898894727 0.898894727 0.8988919123 1.030459873 1.07400022 1.086513739 1.117587476 1.190201818 1.422845343 1.870029088 1.834887115 1.88480904	0.396387887 0.410901183 0.4254147 0.585083381 0.599578898 0.857830964 0.730198547 0.773739098 0.848308679 0.888847228 0.947901294 1.020488877 1.194831075 1.236171825 1.2817112174 1.325252724 1.3368819977 1.441454319 1.674097844 1.92128159 2.088119817 2.118061542 eest. lost gas (cc) = 35 SCE/TON with lost gas 1.738224077 1.778671258 1.859858521	7/14/02 18:34 7/14/02 17:07 7/14/02 17:07 7/14/02 17:17 7/14/02 17:27 7/14/02 17:27 7/14/02 18:07 7/14/02 18:07 7/14/02 18:07 7/14/02 18:07 7/14/02 18:07 7/14/02 19:36 7/14/02 20:07 7/14/02 20:07 7/14/02 21:07 7/14/02 21:07 7/14/02 21:07 7/14/02 23:37 7/15/02 3:36 7/15/02 3:36 7/15/02 8:36 7/15/02 8:36 7/15/02 8:36 7/15/02 8:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36 7/14/02 18:36	0.28:30 0.34:00 0.43:00 0.10:1:15 0.10:1:15 0.10:1:15 0.10:1:15 0.10:1:15 0.10:1:15 0.10:1:15 0.10:1:15 0.10:1:15 0.10:1:15 0.10:1:15 0.10:1:15 0.10:1	0:25:30 0:31:00 0:40:00 0:56:15 1:00:00 1:08:00 1:19:00 1:29:00 2:38:00 3:18:00 3:18:00 4:17:00 4:17:00 4:17:00 12:05:00 13:47:00 14:17:00 14:17:00 14:17:00 14:17:00 15:09:00 15:00 15:09:00 15	0:18:30 0:22:00 0:31:00 0:49:15 0:51:00 0:59:00 1:10:00 1:22:00 1:32:00 1:32:00 1:45:00 2:29:00 3:09:00 3:09:00 3:32:00 4:08:00 5:00:00 8:01:00 7:01:00 9:03:00 11:58:00 14:08:00 in canister 7/14/02 18:33 in canister 0:05:30 0:07:00 0:09:00 0:11:00	0.752772853 0.848581873 1.010382971 1.024895077 1.067811258 1.169045194 1.238278375 1.316581177 1.398424004 1.483239897 1.836088317 1.83030522 1.932183566 2.081865999 2.198484326 2.28035085 2.493324421 2.866385428 estimate 3.041381285 3.463293461 3.719318934 3.765938897 elapsed time (off bottom to canistering) 15.0 minutes 0.250 hours 0.500000000 SCRT (hrs) SCRT hrs. (since off bottom) 0.584822597 0.805530071 0.832455532 0.858280589

1	80	1087	3.5315E-05	540	14.109	3.28392E-05	0.92423	0.00055	15.71198882	0.889302084	2.224790254	7/14/02	18:50	0:32:00	0:29:00	0:17:00	0.730298743
7	80	1087	0.0002472	540	14.109	0.000228474	6.48984	0.00078	22.18183127	0.973132354	2.508820524	7/14/02	18:56	0:38:30	0:35:30	0:23:30	0.801040989
00	80		0.00081224	540	14,109	0.000750701	21.2574	0.00153	43.4390279	1.905717527	3.441205897	7/14/02	17:22	1:04:00	1:01:00	0:49:00	1.032795559
23				540	14.109		5.54541		48.98443572	2.149000618	3.684468786	7/14/02	17:24	1:06:00	1:03:00	0:51:00	1.048808848
6	80		0.00021189								4.698168322		17:34	1:18:00	1:13:00	1:01:00	1.125462868
25	80		0.00088287	540	14.109	0.000815979			72.09030183	3.162660152				1:27:00	1:24:00	1:12:00	1.204159458
14	80	1087	0.00049441	540	14.109	0.000456948	12.9393	0.003	85.02958653	3.730340692	5.265828862		17:45			1:22:00	1.271482075
10	60	1087	0.00035315	540	14.109		9.24235		94.2719329	4.135812506	5.871300878		17:55	1:37:00	1:34:00		
18	80	1087	0.00058504	540	14,109	0.000522227	14.7878	0.00385	109.0596871	4.784567409	8.320055579	7/14/02	18:11	1:53:00	1:50:00	1:38:00	1.372345923
15	80		0.00052972	540	14,109	0.000489587	13.8635	0.00434	122.9232068	5.392775131	6.9262633	7/14/02	18:27	2:09:00	2:08:00	1:54:00	1.46628783
11	80		0.00038848	540	14,109	0.000359031	10.1688	0.0047	133.0697876	5.838794128	7.374282298	7/14/02	18:35	2:17:00	2:14:00	2:02:00	1.511070281
	80	1087	3.5315E-05	540	14.109	3.28392E-05			134.0140223	5.679341308	7.414829478	7/14/02	19:05	2:47:00	2:44:00	2:32:00	1.668332501
. 1				540	14.109		10.1888		144.1808033	6.325380304	7.860848473		19:29	3:11:00	3:08:00	2:58:00	1.764169825
11	80		0.00038848						155.2714189	6.811926461	8.347414651	7/14/02		3:42:00	3:39:00	3:27:00	1.923538408
12	80		0.00042378	540	14.109	0.00039167				7.822870109	9.158358279	7/14/02		4:25:00	4:22:00	4:10:00	2.101586702
20	80	1087	0.0007083	540	14.109	0.000852783	18.4847		173.7581118					5:13:00	5:10:00	4:58:00	2.284002335
20	80	1087	0.0007063	540		0.000652783	18.4847		192.2408043	8.433813738	9.989301908		21:31			5:59:00	2.498884441
18	80	1086	0.00083587	540		0.000588045	18.8515		208.8923325	9.184334438	10.69982281	7/14/02		8:14:00	6:11:00		
28	80	1088	0.00098881	540	14.122	0.000914737	25.9024	0.00829	234.7947097	10.30069997	11.83818814	7/14/02		7:18:00	7:13:00	7:01:00	2.695675549
36	80	1089	0.00127133	540	14.135	0.001177172	33.3337	0.00947	288.1283754	11.78308424	13.29857241	7/15/02	1:02	8:44:00	8:41:00	6:29:00	2.955221366
74	80	1089	0.0028133	540	14.135	0.002419742	68.5192	0.01189	338.6475772	14.76909635	16.30458452	7/15/02	8:01	13:43:00	13:40:00	13:28:00	3.70380185
			0.00250735	537	14.181	0.002338902	68.2301		402.8778557	17.67468212	19.21017029	7/15/02	11:59	19:41:00	19:38:00	19:28:00	4.436590282
71	77								425.203193	18.65412779	20.18981596	7/15/02	14:05	21:47:00	21:44:00	21:32:00	4.867281667
24	78		0.00084758		14.070		49.7709		474.9741209	20.83783288	22.37312085		19:58	27:38:00	27:35:00	27:23:00	5.256741703
54	80	1084	0.001907							25.74384183	27.2793298		10:57	42:39:00	42:38:00	42:24:00	6.530696747
121	80		0.00427309	540			111.632		586.6065119				17:56	49:38:00	49:35:00	49:23:00	7.045092855
87	80	1083	0.00236609	540		0.002178777		0.0229	648.5023823	28.45050587	29.98599404					65:39:00	8.117881497
75	80	1087	0.00264881	540	14.109	0.002447937			717.8199601	31.49154448	33.02703265	7/17/02		65:54:00	65:51:00		
63	80	1083	0.00222483	540	14.057	0.0020487	58.0125	0.0274	775.8324782	34.03661683	35.572105	7/17/02		72:55:00	72:52:00	72:40:00	8.539125638
91	80	1080	0.00321385	540	14.018	0.002951037	83.5637	0.03035	859.3962112	37.70264902	39.23813719	7/18/02		97:20:00	97:17:00	97:05:00	9.865765725
41	80	1081	0.00144791	540	14.031	0.001330819	37.6845	0.03168	897.0806669	39.35590719	40.89139538	7/19/02	17:40	121:22:00	121:19:00	121:07:00	11.01665406
49	80		0.00173043	540	14.018	0.00158902			942.0765243	41.32992452	42.88541289	7/20/02	18:43	148:25:00	146:22:00	148:10:00	12.10027548
40			0.00317833	540		0.002928715	82.875	0.0362	1024.951547	44.96574218	48.50123033	7/22/02	18:15	191:57:00	191:54:00	191:42:00	13.85460212
90	80			540			40.7411		1085.892694	46.75310071	48.28858888	7/23/02		214:22:00	214:19:00	214:07:00	14.84128588
44	80		0.00155385				48.1692		1111.881913	48.77859489	50.31408286		15:07	238:49:00	238:48:00	238:34:00	15.45369427
50	80		0.00178574	540									15:23	283:05:00	283:02:00	282:50:00	16.21984381
43	81		0.00151854	541	14.005	0.00139058	39.3787		1151.238593	50.50609256	52.04158073				287:03:00	288:51:00	18.9440255
41	79	1077	0.00144791	539	13.979	0.001328355	37.6147		1188.853262	52.15828913	53.6917773		15:24	287:08:00			17.7087549
52	81	1075	0.00163637	541		0.001875397	47.4418		1238,295045	54.23781187	55.77310004		17:54	313:36:00	313:33:00	313:21:00	
36	81	1081	0.00127133	541	14.031	0.001188364	33.0278	0.04483	1289.322873	55.68658993	57.2220581	7/29/02	14:52	358:34:00	358:31:00	356:19:00	18.93585664
27	80	1083	0.0009535	540	14.057	0.000878014	24.8825	0.0457	1294.18518	56.77731522	58.31280339	7/30/02	15:41	383:23:00	383:20:00	383:08:00	19.56017705
	80		0.00183837	540			47.7085	0.04739	1341.891672	56.87025106	80.40573923	8/1/02	15:20	431:02:00	430:59:00	430:47:00	20.76134228
52	80		0.00180105	540		0.001661534			1388.940911	80.93435252	62.48984089	8/3/02	13:22	477:04:00	477:01:00	476:49:00	21.84185584
51			0.00158917	540			41.5906		1430.53147	82.75897568	84.29446365		15:20	527:02:00	528:59:00	528:47:00	22.95720657
45	80						28.8249		1459.158386	84.01478195	65.55027012		15:54	551:36:00	551:33:00	551:21:00	23.48616614
31	80		0.00109478	540						85.18955848	88.72504483		15:14	598:58:00	598:53:00	598:41:00	24.4731145
29	81		0.00102413	541		0.000945855	28.7779		1485.934259				15:32	847:14:00	647:11:00	848:59:00	25.44078091
36	84	1083	0.00127133	544		0.001182078	32.9083		1518.840518	66.63318993	68.1686781				692:34:00	692:22:00	28.31781134
41	80	1080	0.00144791	540	14.018	0.001329588			1558.490113	88.28491872	89.82040889		12:55	892:37:00			27.18792824
30	81	1061	0.00105944	541	14.031	0.00097197	27.523	0.05594	1584.013137	89.49238377	71.02787194		11:29	739:11:00	739:08:00	738:58:00	
В	81	1085	0.00021189	541	14.083	0.000195113	5.52497	0.05813	1589.53811	69.73477036	71.27025855		11:49	787:31:00	787:28:00	787:18:00	28.08272736
40	79		0.00141259	539	14.044	0.001301972	38.8676	0.05744	1626.405718	71.35219246	72.88768065	8/19/02	14:58	862:40:00	882:37:00	882:25:00	29.3711877
41	80		0.00144791	540	14.044	0.00133205	37.7193	0.05877	1664,125033	73.00698002	74.54248819	8/23/02	9:19	953:01:00	952:58:00	952:48:00	30.87096802
				539	14.096	0.001012759		0.05978	1692.803058	74.28511817	75.80060434	6/28/02	10:16	1025:58:00	1025:55:00	1025:43:00	32.03071443
31	79		0.00123802	540		0.001143422		0.08092	1725.181027	75.68557309	77.22108128	6/30/02		1122:46:00	1122:43:00	1122:31:00	33.50771058
35	80			540	13.979	0.001810978		0.08274	1778.48202	77.93532617	79.47081434		14:37	1198:19:00	1198:16:00	1196:04:00	34.6167106
58	80		0.00197763						1799.504116	78.94620607	80.48169824		11:10	1290:52:00	1290:49:00	1290:37:00	35.92883296
25	60		0.00088287	540						80.36144272	81.89893089		15:38	1439:18:00	1439:15:00	1439:03:00	37.93810749
35	60		0.00123802	540					1831.783051								40.06288726
79	68	1073	0.00278987	548		0.002508127	71.022	0.0872	1902.78502	83.47725398	85.01274213		13:20	1805:02:00	1604:59:00	1604:47:00	
41	86	1076	0.00144791	546	13.966	0.001310107		0.08851	1939.882973	85.1047818	86.64026977	9/28/02		1775:04:00	1775:01:00	1774:49:00	42.13154005
22	80	1078	0.00077893	540	13.992	0.000712118	20.1648	0.08922	1980.047783	85.98943381	87.52492198	10/2/02		1918:56:00	1918:53:00	1916:41:00	43.8056313
10	82	1084	0.00035315	542	14.070				1969.230611	86.39229449	87.92778266	10/10/02		2111:11:00	2111:08:00	2110:58:00	45.9478151
	81	1089	0.00028252	541	14.135	0.00028111		0.0898	1976.6244	86.71666808	88.25215625	10/16/02	10:31	2250:13:00	2250:10:00	2249:58:00	47.43844871
8		1095	0.00052972	540		0.000493191	13.9858	0.0703	1990.589951	87.32935203	88.8848402	10/23/02		2418:44:00	2418:41:00	2418:29:00	49.16026207
15	80				14,109				2022.818797	88.74326686	90.27875483		14:45	2590:27:00	2590:24:00	2590:12:00	50.89848353
35	82	1087	0.00123802	542									14:10	2901:52:00	2901:49:00	2901:37:00	53.86897885
24	80	1091	0.00084758	540		0.000768222			2045.082054	89.71998				3090:18:00	3090:15:00	3090:03:00	55.59048681
19	81	1085	0.00067098	541		0.000817859	17.4957		2082.577802	90.48753757	92.02302574		10:38				57.10888834
35	90	1093	0.00123802	550		0.001127791			2094.513174	91.88857715	93.42406532	11/27/02		3281:24:00	3281:21:00	3261:09:00	
-25	80		-0.00088287	540	14.213	-0.000621984	-23.2759	0.07315	2071.237258	90.86743723	92.4029254	12/4/02		3424:34:00	3424:31:00	3424:19:00	56.51979722
25	80		0.00088287	540	14.044	0.000812228	22.9998	0.07398	2094.236839	91.87845403	93.41194219	12/11/02		3591:47:00	3591:44:00	3591:32:00	59.93148666
24	80		0.00084758	540	14.005	0.000777575			2118.25522	92.84242441	94.37791258	12/20/02	8:28	3808:08:00	3808:05:00	3807:53:00	81.71007481
	80		0.00074181	540	13.979	0.000679117			2135.485592	93.88806182	95.22158999	12/30/02	15:45	4055:27:00	4055:24:00	4055:12:00	63.68241516
21			-0.00017857	540		-0.000164097			2130.838911	93.48222686	95.01771503		10:32	4242:14:00	4242:11:00	4241:59:00	85.1324292
-5	80			540	14.252	-9.89084E-05			2128.038149	93.35935435	94.89484252		18:42	4484:24:00	4484:21:00	4464:09:00	66.81818571
-3	80	1098	-0.00010594	340	14.202	-9.00004E-05	-2.00070	0.07010	2120.000140	55,55555755	7.00707202						

-3 80 1098 -0.00010594 DECANISTERED 01/17/2003; sample dried 35 days in air

SAMPLE: 77	8.0' to 778.9' (Crown	aburg co	al & V shale) in ca grame	mister 4	lbs.	grams	moisture %		est. lost gas (oc) =		TIME OF:				elapsed time (off bottom to canistering)
dry sample weight		2.509	1138.18	wet sample weight:	2.570	1165.88	2.36%		150		off bottom	at surface :33 7/14/02	in caniste	r 02 18:47	14.0 minutes 0.233 hours
CONVERSION OF THE MENT OF T	VOLUMES TO STP		CONVERSION OF F	RIG MEASUREMENTS TO STP (cubic ft; @80 degrees;	@14.7 pei)	CUMULAT	IVE VOLUMES	SCF/TON (approx)	SCF/TON (approx)		TIME SINCE				0.483045891 SQRT (hre)
measured on me	easured T (F) meas	ured P	cubic ft (@rig) AB	BSOLUTE T (F) (@rig) psia (@rig) cubic ft (@STP)	oc (@STP)	cubic ft (@	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in caniste	1	SQRT hrs. (since off bottom)

4	80	1087	0.00014126	540	14.109	0.000130557	3.69694	0.00013	3.898936545	0.104059993	4.326201848	7/14/02	18:51	0:18:00	0:17:00	0:04:00	0.547722557
6	80	1087	0.00021189	540	14.109	0.000195835	5.54541	0.00033	9.242346382	0.280149983	4.482291835	7/14/02	18:52	0:19:00	0:18:00	0:05:00	0.562731434
5	80		0.00017857	540	14,109				13.86351954	0.390224974	4.812366827	7/14/02		0:20:00	0:19:00	0:08:00	0.577350269
3	80		0.00010594	540	14,109	9.79175E-05			18.63822345	0.488269969	4.690411822	7/14/02		0:21:00	0:20:00	0:07:00	0.591807978
4	80		0.00014126	540	14.109	0.000130557			20.333182	0.572329982	4.794471815	7/14/02		0:22:00	0:21:00	0:08:00	0.805530071
3	80		0.00010594	540	14.109	9.79175E-05		0.00082	23.10586591	0.650374957	4.872518809	7/14/02		0:23:00	0:22:00	0:09:00	0.819139187
14	80		0.00049441	540	14.109				38.04515081	1.014584932	5.236728785	7/14/02		0:27:00	0:28:00	0:13:00	0.870820393
32	80		0.00113007	540	14.109				85.82085917	1.847084877	6.089206729	7/14/02		0:33:30	0:32:30	0:19:30	0.747217059
5	80		0.00017857	540	14.109				70.24183235	1.977139888	8.199281721	7/14/02		0:35:00	0:34:00	0:21:00	0.763762616
7	80	1087	0.0002472	540	14.109				78.71147481	2.159244858	6.381388709	7/14/02		0:37:00	0:38:00	0:23:00	0.785281286
12	80 80		0.000 423 76 0.001 059 44	540	14.109	0.00039167		0.0031	87.80229044	2.471424835	8.693588688 7.474018838	7/14/02		0:39:00	0:38:00	0:25:00 0:38:30	0.806225775 0.91742393
30			0.00021189	540	14.109				115.5293295	3.251874783		7/14/02					0.957427108
6 14	80 80		0.00021169	540	14.109	0.000195835			121.0747373 134.0140223	3.407964772 3.772174748	7.830108825 7.994316601	7/14/02		0:55:00	0:54:00	0:41:00 0:45:30	0.995824816
13	80		0.00045909	540	14.109				148.0290725	4.110369726	8.332511578	7/14/02		1:07:00	1:08:00	0:53:00	1.058724499
20	80	1087	0.0007083	540	14,109				164.5137853	4.830889891	8.852811544	7/14/02		1:17:30	1:16:30	1:03:30	1.138515141
14	80		0.00049441	540	14,109				177.4530502	4.994879687	9.217021519	7/14/02		1:25:00	1:24:00	1:11:00	1.190238071
30	80		0.00105944	540	14.109	0.000979175		0.00725	205.1800892	5.775329814	9.997471467	7/14/02		1:48:00	1:45:00	1:32:00	1.329160136
29	80		0.00102413	540	14.109				231.9828937	8.529764564	10.75190642	7/14/02		2:06:00	2:05:00	1:52:00	1.449137875
19	80		0.00087098	540	14,109	0.000620144			249.5433518	7.024049531	11.24619138	7/14/02		2:22:00	2:21:00	2:08:00	1.538397435
38	80		0.00127133	540	14,109	0.00117501			282.8157987	7.980589469	12.18273132	7/14/02		2:55:00	2:54:00	2:41:00	1.707825128
25	80	1087	0.00088287	540	14.109	0.000815979	23.1059	0.0108	305.9218648	8.810984425	12.83310628	7/14/02	22:00	3:27:00	3:28:00	3:13:00	1.857417562
13	80	1088	0.00045909	540	14.122	0.000424699	12.0281	0.01123	317.9477683	8.949470529	13.17161238	7/14/02	22:29	3:56:00	3:55:00	3:42:00	1.983263304
16	80	1088	0.00058504	540	14.122	0.000522707	14.8014	0.01175	332.7491288	9.386093427	13.58823528	7/14/02	22:58	4:25:00	4:24:00	4:11:00	2.101586702
18	80	1086	0.00058504	540	14.122	0.000522707	14.8014	0.01227	347.550485	9.782718325	14.00485818	7/14/02	23:30	4:57:00	4:58:00	4:43:00	2.224859546
83	80	1089	0.00293113	540	14,135	0.002714035	78.8526	0.01499	424.4031033	11.94593403	18.18807589	7/15/02	1:38	7:03:00	7:02:00	6:49:00	2.655183609
83	80	1089	0.00293113	540	14.135	0.002714035	78.8528	0.0177	501.2557218	14.10915174	18.33129359	7/15/02	4:46	10:13:00	10:12:00	9:59:00	3.196352067
28	80		0.00098881	540	14,148	0.000916419		0.01862	527.2057134	14.83958205	19.0617239	7/15/02		11:36:00	11:35:00	11:22:00	3.405877273
73	80		0.00257798	540		0.002389235			594.8610492	16.74391622	20.98606007	7/15/02		14:27:00	14:26:00	14:13:00	3.801315582
48	77		0.00169511	537	14.181	0.00158123			639.6383134	18.004235	22.22637685	7/15/02		17:31:00	17:30:00	17:17:00	4.185291706
35	78		0.00123802	538		0.001149782			872.1943887	18.92066708	23.14280893	7/15/02		19:33:00	19:32:00	19:19:00	4.421538194
60	80		0.00211889	540		0.001952945	55.301		727.4954197	20.47725908	24.69940091	7/15/02		25:28:00	25:27:00	25:14:00	5.046450898
179	80		0.00832135	540	14.109	0.00564241			892.9334198	25.13394375	29.3560656	7/16/02		40:26:00	40:25:00	40:12:00	6.358721045
85	80		0.00300176	540	14.057	0.00276412		0.0343	971.2042747 1069.173148	27.33708144	31.55922329 34.31881311	7/16/02		47:25:00 83:41:00	47:24:00 83:40:00	47:11:00 63:27:00	6.885978087 7.980183791
108	80			540					1152.048189	30.09487125 32.42740527	34.31881311	7/17/02			88:40:00	68:27:00	8.28754085
90 115	80 60		0.00317833	540		0.002928715			1257.850891	35.39988414	39.82200599	7/18/02		88:41:00 95:08:00	95:07:00	94:54:00	9.753831802
66	80		0.00233078	540		0.003729332			1318.313474	37.10737882	41.32951847	7/19/02		119:10:00	119:09:00	118:58:00	10.9183486
83	80		0.00293113	540		0.002691605			1394.530946	39.25271849	43.47485835	7/20/02		144:11:00	144:10:00	143:57:00	12.00783846
126	80		0.00444966	540		0.004097401			1510.555979	42.51854412	46.74068598	7/22/02		189:44:00	189:43:00	189:30:00	13.77437234
80	80		0.00211889	540		0.001961953			1588.112088	44.08231596	48.30445781	7/23/02		212:08:00	212:07:00	211:54:00	14.58479774
75	80		0.00284861	540		0.002445885			1835.365916	46.03164587	50.25378772	7/24/02		238:38:00	236:37:00	238:24:00	15.38289093
70	81	1079	0.00247204	541		0.002283734			1899.487488	47.83595205	52.0580939	7/25/02		260:51:00	260:50:00	280:37:00	18.15085137
55	79	1077	0.00194231	539	13.979	0.001781939	50.4587	0.0818	1749.928191	49.25624408	53.47838591	7/28/02	15:28	284:53:00	284:52:00	284:39:00	18.87848729
66	81	1075	0.00233078	541	13.953	0.002128466	60.2148	0.08392	1810.140781	50.95114044	55.17328229	7/27/02	17:55	311:22:00	311:21:00	311:08:00	17.64558491
75	81	1081	0.00264861	541		0.002429925		0.08635	1878.948319	52.88790692	57.11005077	7/29/02		358:20:00	358:19:00	358:08:00	18.87879351
31	80		0.00109478	540					1907.49416	53.89140819	57.91354805	7/30/02		381:09:00	381:08:00	380:55:00	19.52306328
65	80		0.00229546	540		0.002105932			1967.127278	55.369936	59.59207786	8/1/02		428:49:00	428:48:00	428:35:00	20.707889
82	80		0.00218952	540		0.002019905			2024.324391	56.97989822	61.20204008	8/3/02		474:49:00	474:48:00	474:35:00	21.79028836
84	80		0.00228015	540	14.109	0.002088908		0.07358	2083.475407	58.84485811	62.86899998	8/5/02		519:28:00	519:25:00	519:12:00	22.79108013
47	80	1088	0.0018598	540	14.096		43.3991		2126.874473	59.86843819	64.08658004	8/8/02		549:22:00	549:21:00	549:08:00	23.4385722
50	81		0.00178574	541 544	14.122	0.00183044			2173.04322	61.16597819	65.38812004	8/8/02		596:44:00	598:43:00	598:30:00	24.42812587
54 82	84	1083	0.001907	540	14.037	0.001743117 0.002010598			2222.402609 2279.338143	82.55532712 84.15787016	66.77746898 68.38001202	8/10/02 8/12/02		645:01:00 890:22:00	845:00:00 690:21:00	844:47:00 890:08:00	25.39717832 28.27482953
53	81		0.00187168	541		0.002010380	48.624		2327.960151	65.52651989	69.74888174	8/14/02		736:57:00	738:58:00	738:43:00	27.14882302
20	81	1085	0.0007083	541					2348.378728	66.04490258	70.26704443	8/18/02		785:17:00	785:16:00	785:03:00	28.0229073
54	79	1082	0.001907	539			49.7713		2396.147997	67.44584495	71.66798681	8/19/02		860:28:00	860:27:00	860:14:00	29.33371212
55	80	1082	0.00194231	540		0.001786898			2446.74708	88.87008833	73.09223018	8/23/02		950:47:00	950:46:00	950:33:00	30.83477474
40	79		0.00141259	539		0.001306785			2483.750981	69,91165978	74.13380183	8/26/02		1023:43:00	1023:42:00	1023:29:00	31.99557281
48	80	1068	0.00189511	540	14.122	0.001568121	44.4041	0.08928	2528.155058	71.16152847	75.38367032	8/30/02	11:04	1120:31:00	1120:30:00	1120:17:00	33.47411936
73	80	1077	0.00257798	540	13.979	0.002360739	68.8484	0.09184	2595.003493	73.04315237	77.26529422	9/2/02	14:39	1198:08:00	1198:05:00	1195:52:00	34.58487869
49	80	1084	0.00173043	540	14.070		45.1825		2640.188002	74.31436916	78.53651101	9/6/02		1288:38:00	1288:37:00	1288:24:00	35.89753938 estimate
75	60		0.00284881	540			89,1283		2709.29229	78.26010914	60.48225099	9/12/02		1437:04:00	1437:03:00	1436:50:00	37.90868216
111	88		0.00391994	548				0.0992	2809.082852	79.06898956	83.29111142	9/18/02		1578:48:00	1578:47:00	1578:34:00	39.73411832
57	88		0.00201294	548		0.001821388			2880.857855	80.52068836	84.74283022	9/28/02		1772:49:00	1772:48:00	1772:35:00	42.10482949
49	80		0.00173043	540		0.001586077			2905.570388	81.7848689	86.00701075	10/2/02		1916:43:00	1918:42:00	1918:29:00	43.78032283
25	82		0.00088287	542		0.000810724			2928.527456	82.43105561	86.65319746			2108:57:00	2108:56:00	2108:43:00	45.92330583
27	81	1089	0.0009535	541		0.000881247		0.1043	2953.481495	63.1334522	87.35559405			2247:59:00	2247:58:00	2247:45:00	47.4129028
37	80		0.00130865	540		0.001216537			2987.929854	84.10309125		10/23/02		2414:30:00	2414:29:00	2414:18:00	49.13758201
54	82	1087	0.001907	542			49.7245		3037.854359 3087.748686	85.50271736 86.91289676	69.72485921			2588:12:00	2588:11:00 2899:37:00	2587:58:00 2899:24:00	50.87435503 53.84824355
54 42	80 81		0.001907	541		0.001789001 0.001365793				86.0013004	91.13483881 92.22344225			2899:38:00 3088:04:00	3088:03:00	3087:50:00	55.5703758
44	01	1003	0.00140022	U-7 1	. 4.003	0.001000780	55.07.40	0.11041	0.20.721708	30.0010004	02.22077223	1720102	, 5.07	5300.04.00	5500.00.00	3007.30.00	55.0700700

47	90	1093	0.0018598	550	14.187	0.001514483	42.8848 0	.11192	3169.30814	89.20840087	93.43054252	11/27/02 13:43	3259:10:00	3259:09:00	3258:56:00	57.08911163
-15	80	1095	-0.00052972	540	14.213	-0.000493191	-13.9858 0	.11143	3155.34059	88.81530375	93.0374458	12/4/02 8:53	3422:20:00	3422:19:00	3422:06:00	58.50071225
46	80	1082	0.00169511	540	14.044	0.001559473	44.1592 0	.11299	3199.499789	90.05827979	94.28042184	12/11/02 8:06	3589:33:00	3589:32:00	3589:19:00	59.91285338
36	80	1079	0.00127133	540	14.005	0.001188382	33.0278 0	.11418	3232.527381	90.98792707	95.21008892	12/20/02 8:27	3805:54:00	3805:53:00	3805:40:00	61.89197679
40	80	1077	0.00141259	540	13.979	0.001293558	36.6293 0	.11545	3269.158841	92.01895386	98.24109571	12/30/02 15:48	4053:13:00	4053:12:00	4052:59:00	63.86467761
0	80	1093	0	540	14.187	0	0 0	.11545	3269.156641	92.01895386	96.24109571	1/7/03 10:33	4240:00:00	4239:59:00	4239:48:00	85.11528238
4	80	1098	0.00014128	540	14.252	0.000131878	3.73435 0	.11556	3272.890991	92.1240669	98.34620875	1/16/03 18:43	4482:10:00	4482:09:00	4481:58:00	66.7994511
-50	81	1108	-0.00178574	541	14.381	-0.001660411	-47.0174 0	.11392	3225.873554	90.8006383	95.02276015	1/23/03 11:55	4625:22:00	4625:21:00	4825:08:00	88.01004828
19	64	1087	0.00067098	544	14.109	0.000815584	17.4313 0	.11454	3243.304891	91.29128881	95.51343067	1/30/03 11:12	4792:39:00	4792:38:00	4792:25:00	69.22896793
0	62	1093	0	542	14.167	0	0 0	.11454	3243.304691	91.29128861	95.51343087	2/8/03 15:11	4984:38:00	4964:37:00	4984:24:00	70.46015422
59	81	1067	0.00208357	541	13.649	0.001886765	53.4278 0	.11842	3298.732488	92.79514803	97.01728989	2/14/03 15:18	5158:45:00	5158:44:00	5156:31:00	71.61051455
-15	64	1100	-0.00052972	544	14.278	-0.0004918	-13.9262 0	.11593	3282.808322	92.40315977	98.62530163	2/24/03 16:14	5397:41:00	5397:40:00	5397:27:00	73.46892787
44	84	1072	0.00155385	544	13.914	0.001405891	39.8103 0	.11734	3322.618582	93.52372355	97.7458654	3/4/03 10:15	5563:42:00	5583:41:00	5583:28:00	74.72415941
7	84	1081	0.0002472	544	14.031	0.000225542	6.38882 0	.11756	3329.003205	93.70349174	97.92583359	3/11/03 12:00	5753:27:00	5753:26:00	5753:13:00	75.85149966
25	64	1068	0.00088287	544	13.882	0.000795821	22.5351 0	.11836	3351.53827	94.33780002	98.55994187	3/18/03 11:37	5921:04:00	5921:03:00	5920:50:00	76.9484676
-3	84	1083	-0.00010594	544	14.057	-9.88398E-05	-2.74219 0	.11828	3348.796082	94.26061397	98.48275582	3/25/03 14:13	6091:40:00	8091:39:00	8091:28:00	78.04912983
21	80	1073	0.00074161	540	13.927	0.000676595	19.159 0.	.11694	3367.955033	94.79989266	99.02203453	4/1/03 15:51	6261:18:00	8261:17:00	8281:04:00	79.12637871
-3	80	1089	-0.00010594	540	14.135	-9.80976E-05	-2.77781 0.	.11884	3385.177227	94.72170408	98.94384594	4/10/03 9:24	8470:51:00	8470:50:00	8470:37:00	80.44159372
8	80	1078	0.00028252	540	13.992	0.000258951	7.33266	0.1191	3372.509885	94.92810091	99.15024276	4/18/03 8:30	6681:57:00	8861:58:00	8681:43:00	81.62078942
42	81	1087	0.00148322	541	13.849	0.001343135	38.0332 0.	.12044	3410.543088	95.99864476	100.2207866	4/28/03 14:48	6908:13:00	8908:12:00	8907:59:00	83.11588244
-2	80	1079	-7.063E-05	540	14.005	-6.47979E-05	-1.83487 0.	.12038	3408.708223	95.94699769	100.1691395	5/1/03 13:31	8978:58:00	6978:57:00	8978:44:00	83.54020988
4	80	1067	0.00014128	540	13.649	0.000128154	3.82892 0.	.12051	3412.337141	98.04914305	100.2712849	5/3/03 18:19	7029:46:00	7029:45:00	7029:32:00	83.8437038
-45	80	1080	-0.00156917	540	14.018	-0.001459304	-41.3227 0.	.11905	3371.014415	94.88800897	99.10814883	5/15/03 13:44	7315:11:00	7315:10:00	7314:57:00	85.52884504

DECANISTERED 05/16/2003; sample dried 21 days in air

		lbs.	9	grams				lba.	grams	moisture %		est. lost gas (cc) =		TIME OF:			elapsed time (off bottom to caniste
ample wei	ght:	3.	142	1425.15		wet sample	weight:	3.174	1439.82	1.02%		240		off bottom	at surface	in canister	15.0 minutes
VERSION (OF VOLUMES TO	STP												7/14/02 18:5!	5 7/14/02 18:58	7/14/02 19:10	0.250 hours
EASUREN	ENTS		(CONVERSION C	OF RIG MEASUREMENTS	TO STP (cubic	tt; @60 degrees;	@14.7 psi)	CUMULAT	IVE VOLUMES	SCF/TON (approx)	SCF/TON (approx)		TIME SINCE			0.500000000 SQRT (hrs)
sured oc	measured T (F)	measured	dP d	cubic ft (@rig)	ABSOLUTE T (F) (@rig)	psia (@rig)	cubic ft (@STP)	cc (@STP)	cubic ft (@	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SQRT hrs. (since off bottom)
35	80	10	087	0.00123602	540	14.109	0.001142371	32.3482	0.00114	32.34821227	0.72718049	8.122328188	7/14/02 19:18	0:21:00	0:18:00	0:06:00	0.591607978
8	80	10	087	0.00028252	540	14.109	0.000281113	7.39388	0.0014	39.74208938	0.893393173	8.288538851	7/14/02 19:17	0:22:00	0:19:00	0:07:00	0.805530071
12	80) 10	87	0.00042378	540	14.109	0.00039167	11.0908	0.0018	50.83290499	1.142712199	6.537857876	7/14/02 19:16	0:23:00	0:20:00	0:08:00	0.819139187
4	80	10	87	0.00014126	540	14.109	0.000130557	3.69894	0.00193	54.52984354	1.22581854	6.620964218	7/14/02 19:19	0:24:00	0:21:00	0:09:00	0.832455532
8	80	10	087	0.00021189	540	14.109	0.000195835	5.54541	0.00212	80.07525138	1.350478053	6.74562373	7/14/02 19:20	0:25:00	0:22:00	0:10:00	0.845497224
7	80		087	0.0002472	540						1.495914151		7/14/02 19:21	0:26:00			
4	80			0.00014128	540	14,109	0.000130557	3.69894	0.00248	70.24183235	1.579020493	8.97418817	7/14/02 19:22	0:27:00	0:24:00	0:12:00	
13	80			0.00045909	540						1.849118103		7/14/02 19:24				
8	80			0.00028252	540	14.109	0.000281113	7.39388	0.00317				7/14/02 19:28	0:31:00	0:28:00		
16	80			0.00056504	540				0.00369				7/14/02 19:30				
7	80		087	0.0002472	540		0.000228474				2.493190251	7.888335929	7/14/02 19:32				
21	80			0.00074181	540		0.000885422				2.929498545		7/14/02 19:38				
14	80			0.00049441	540		0.000458948				3.220370741						
28	80			0.00091818	540				0.00591		3.780581983		7/14/02 19:49				
22	80			0.00077893	540				0.00663		4.217848842		7/14/02 19:58				
51	80			0.00180105	540		0.001664597		0.00829		5.277252899		7/14/02 20:18				
49	80			0.00173043	540		0.001599319		0.00989		6.295305365		7/14/02 20:40				
31	80			0.00109478	540		0.001011814				6.939379533		7/14/02 20:56				
25	80			0.00088287	540						7.458794169		7/14/02 21:10				
23	80			0.00081224	540		0.000750701		0.01247		7.936855634		7/14/02 21:27	2:32:00			
40	80			0.00141259	540 540		0.001305566		0.01377		6.787719051 9.391590024	14.18288473 14.7887357					
30	80			0.00105944	540				0.01475				7/14/02 22:27	3:32:00			
28	80		88	0.0009535	540		0.000914737		0.01567		9.9738898		7/14/02 22:57 7/14/02 23:28	4:02:00			
27 63	80			0.0009535	540						11.84688688		7/15/02 1:41	8:48:00			
157	80			0.00554442	540		0.00208003		0.01881		15,11761315		7/15/02 1:41				
83	80			0.00222483	540		0.002061942		0.02581		18.43015052		7/15/02 8:28	13:31:00			
89	71			0.00212400	539		0.002920984		0.02873		18.28951438		7/15/02 12:08	17:11:00			4.145276439
47	7.		90	0.0018598	538				0.03028		19.27234903		7/15/02 14:07	19:12:00			
117	80			0.00413183	540						21.69650062			25:09:00			
229	80			0.00808709	540		0.007474388		0.04156		26,45433869		7/18/02 11:04	40:09:00			
120	80			0.00423778	540				0.04548		28.93835438		7/18/02 17:59	47:04:00			
205	80			0.00723953	540		0.008891028				33,19755438		7/17/02 10:15	63:20:00			
83	80			0.00293113	540		0.002899081				34.91586522			70:20:00			
224	60			0.00791052	540		0.00726409		0.08212		39.53965009		7/18/02 17:43	94:48:00			
112	86			0.00395528	540		0.003835408		0.08575		41.85378325		7/19/02 17:45	118:50:00			10.90107028
124	80			0.00437904	540				0.06977		44,41346916		7/20/02 18:48				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
192	86			0.00678044	540		0.006243658		0.07802		48.38791424		7/22/02 16:18				
99	80			0.00349817	540		0.003237222		0.07925		50.44858071	55.84372839	7/23/02 14:42	211:47:00			14.55277751
111	86		880	0.00391994	540	14.098	0.003619614		0.08287		52.75266007	58.14780575	7/24/02 15:13			238:03:00	15.37205256
99	8			0.00349817	541	14.005	0.003201567					60.18577565		280:30:00			16.14001239

														004.00.00	004:47:00	10 00011500
8	7 8	1077	0.00282518	539	13.979	0.002591911			2510.724821	58.4405212				284:29:00	284:17:00	16.66811588
8	9 61	1075	0.00314302	541	13.953	0.002887507	81.1984	0.09153	2591.923057	58.28584385		7/27/02 17:5		310:58:00	310:46:00	17.83588462
111	2 81	1081	0.00395528	541	14.031	0.003828888	102.753	0.09518	2894.875877	60.57589931	85.97084498	7/29/02 14:5	4 355:59:00	355:58:00	355:44:00	18.86752059
81					14.057	0.002243815	83.5375	0.09741	2756.213195	82.00400832	87.399154	7/30/02 15:4	3 380:48:00	380:45:00	380:33:00	19.51409747
11!			0.0040612		14.005	0.003725879		0.10113	2883.717937	84.37573105	89.77067873	8/1/02 15:2	3 428:28:00	428:25:00	428:13:00	20.69943639
					14.083	0.003323089		0.10445	2957,818417	88.49104357		8/3/02 13:2	4 474:29:00	474:28:00	474:14:00	21.78283835
101					14.109	0.003231277			3049.315848	88.54792553		8/5/02 10:0		519:03:00	518:51:00	22.78378615
91									3115,799321	70.04248349		8/8/02 15:5		548:58:00	548:48:00	23.43110468
7	2 80				14.098	0.002347858		0.11003				8/8/02 15:1		598:20:00	598:08:00	24.42098094
8	0 61	1088			14.122	0.002808704		0.11284	3189.889318	71.70304427						25.39061506
8	1 84	1083	0.0028805	544	14.057	0.002814875	74.0391	0.11528	3283.708399	73.3874281		8/10/02 15:3		844:38:00	844:28:00	
8.	5 80	1080	0.00300178	540	14.018	0.002758483	78.054	0.11801	3341.782438	75.12208321		8/12/02 12:5		889:58:00	889:48:00	26.28816632
8		1081	0.00236809	541	14.031	0.002170733	81.4881	0.12018	3403.230523	78.50385188	81.89899754	8/14/02 11:3		738:32:00	738:20:00	27.14008878
4:					14.083	0.001385793		0.12155	3441.905338	77.3732529	82.78839858	8/16/02 11:5	0 784:55:00	784:52:00	784:40:00	28.01838427
						0.002889043		0.12422	3517.483929	79.07224257		8/19/02 15:0	2 880:07:00	880:04:00	859:52:00	29.32774568
8:						0.002988991			3802.122395	80.97489813		8/23/02 9:2		950:23:00	950:11:00	30.62909881
9:					14.098	0.002156198		0.12938	3883.178831	82.34743099		8/28/02 10:1		1023:19:00	1023:07:00	31.99010264
8									3738.280538	83.99029122		8/30/02 11:0		1120:07:00	1119:55:00	33.46669103
7						0.002580888								1195:45:00	1195:33:00	34.58034124
10	4 80	1077	0.00367274	540		0.003383245			3831.498888	88.13117787		9/2/02 14:4			1288:02:00	35.89286406
5	8 80	1084	0.00197783	540	14.070	0.001822749			3883.110984	87.29145555		9/6/02 11:1		1288:14:00		
8	0 80	1084	0.00282518	540	14.070	0.002803928	73.7347	0.13974	3958.845872	88.9489951		9/12/02 15:3		1438:40:00	1438:28:00	37.90404552
14			0.0050147	548	13.927	0.004508278	127.68	0.14424	4084.505414	91.81875721	97.21390289	9/19/02 13:2	2 1602:27:00	1602:24:00	1802:12:00	40.03081329
9:					13.988	0.002971708		0.14722	4188.854428	93.710408	99.10555366	9/26/02 15:2	4 1772:29:00	1772:28:00	1772:14:00	42.10087093
						0.002136349			4229.148859	95.07030911	100.4854548	10/2/02 15:1	6 1916:21:00	1916:18:00	1918:08:00	43.77613505
8	_				14.070	0.001821449			4275.082999	98.10244859		10/10/02 15:3		2108:32:00	2108:20:00	45.91931329
5									4311,107721	98.91272577	102.3078715	10/18/02 10:3		2247:35:00	2247:23:00	47.40921148
3:					14.135	0.001272912						10/23/02 9:0		2414:08:00	2413:54:00	49.13400045
4									4351.1423	97.81289408				2587:49:00	2587:37:00	50.87107888
8	9 82	1087	0.00243872		14.109	0.002243792		0.1559	4414.879188	99.24098847	104.6361341	10/30/02 14:4		2587:49:00	2899:04:00	53.84530311
7	0 80	1091	0.00247204	540	14.181	0.002293149			4479.813688	100.7007013		11/12/02 14:1				
8	9 81	1085	0.00243872	541	14.083	0.002243803	83.5372	0.18044	4543.150859	102.129003		11/20/02 10:3		3087:40:00	3087:28:00	55.58722855
5					14.187	0.001901134	53.8339	0.18234	4598.98477	103.3391771	108.7343228	11/27/02 13:4	4 3258:49:00	3258:48:00	3258:34:00	57.08804818
-1	-				14.213	-0.000328794	-9.31037	0.18201	4587.874403	103.1298822	108.5250279	12/4/02 8:5	4 3421:59:00	3421:58:00	3421:44:00	58.49772075
	-				14.044	0.001889429		0.1837	4835.513536	104.2052951	109.8004408	12/11/02 8:0	7 3589:12:00	3589:09:00	3588:57:00	59.9099324
5	_		0.00158917		14.005	0.001457953		0.16518	4878.798001	105.1333805		12/20/02 8:2		3805:30:00	3805:18:00	61.68914005
4									4722.584801	108.1828329		12/30/02 15:4		4052:49:00	4052:37:00	63.66212898
5			0.00176574		13.979	0.001818945		0.18678		108.4780019		1/7/03 10:3		4239:38:00	4239:24:00	65.11259479
1	5 80		0.00052972		14,187	0.00049229		0.18727	4738.524845			1/16/03 16:4		4481:48:00	4461:34:00	66.79663126
	9 80	1098	0.00031783		14.252	0.000298725			4744.928932	108.8848835						
2	5 82	1108	0.00088287	542	14.381	0.000828874	23.4853	0.18839	4788.392277	107.1923791		1/23/03 11:5		4824:57:00	4624:45:00	68.00735254
			0.00204828	544	14,109	0.001879152	EO OAAE			108.3885804	113.7837081	1/30/03 11:1	3 4792:16:00	4792:15:00	4792:03:00	69.22644004
5	я 84			044		0.0010/9152	53.2115	0.17027	4821.803727	100.3003004	110.7007001					
5				011		0.000784757			4843.825493	108.8881007		2/8/03 15:1	2 4984:17:00	4984:14:00	4984:02:00	70.45767051
2	4 83	1093	0.00084758	542	14.187	0.000784757	22.2218	0.17108	4843.825493	108.8881007	114.2832484			4984:14:00 5158:21:00		
2 5	4 83 3 8	1093	0.00084758	542 541	14.187 13.849	0.000784757 0.001894908	22.2218 47.9943	0.17108 0.17275	4843.825493 4891.819773	108.8881007 109.9870013	114.2832484 115.3821489	2/8/03 15:1 2/14/03 15:1	9 5158:24:00		4984:02:00	70.45767051
2 5 -1	4 82 3 82 0 84	1093 1 1087 1 1100	0.00084758 0.00187188 -0.00035315	542 541 544	14.187 13.849 14.278	0.000784757 0.001894908 -0.000327888	22.2218 47.9943 -9.28411	0.17108 0.17275 0.17243	4843.825493 4891.819773 4882.535884	108.8881007 109.9870013 109.7582988	114.2832484 115.3821489 115.1534423	2/8/03 15:1 2/14/03 15:1 2/24/03 18:1	9 5158:24:00 5 5397:20:00	5158:21:00 5397:17:00	4984:02:00 5158:09:00 5397:05:00	70.45767051 71.80607754 73.48654587
2 5 -1 4	4 82 3 81 0 84 0 84	1 1093 1 1087 1 1100 1 1072	0.00084758 0.00187188 -0.00035315 0.00141259	542 541 544 544	14.187 13.849 14.278 13.914	0.000784757 0.001894908 -0.000327888 0.001278083	22.2218 47.9943 -9.28411 38.1911	0.17108 0.17275 0.17243 0.1737	4843.825493 4891.819773 4882.535884 4918.728809	108.8861007 109.9870013 109.7582968 110.5718854	114.2832484 115.3821489 115.1534423 115.967011	2/8/03 15:1 2/14/03 15:1 2/24/03 18:1 3/4/03 10:1	9 5158:24:00 5 5397:20:00 6 5583:21:00	5158:21:00 5397:17:00 5583:18:00	4984:02:00 5158:09:00 5397:05:00 5583:06:00	70.45787051 71.80807754 73.48854587 74.72181743
2 5 -1 4	4 83 3 85 0 84 0 84 9 84	2 1093 1 1087 1 1100 1 1072 1 1081	0.00084758 0.00187188 -0.00035315 0.00141259 0.00031783	542 541 544 544 544	14.187 13.849 14.278 13.914 14.031	0.000784757 0.001894908 -0.000327888 0.001278083 0.000289983	22.2218 47.9943 -9.28411 38.1911 8.21137	0.17108 0.17275 0.17243 0.1737 0.17399	4843.825493 4891.819773 4882.535864 4918.726809 4928.936182	108.8881007 109.9870013 109.7582988 110.5718854 110.7584552	114.2832484 115.3821489 115.1534423 115.967011 118.1516006	2/8/03 15:1 2/14/03 15:1 2/24/03 18:1 3/4/03 10:1 3/11/03 12:0	9 5158:24:00 5 5397:20:00 6 5583:21:00 1 5753:08:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00	70.45767051 71.80807754 73.48654587 74.72181743 75.84919248
2 5 -1 4	4 83 3 83 0 84 0 84 0 86 0 86	2 1093 1 1087 1 1100 1 1072 1 1081 1 1088	0.00064758 0.00187188 -0.00035315 0.00141259 0.00031783 0.0007083	542 541 544 544 544	14.187 13.849 14.278 13.914 14.031 13.882	0.000784757 0.001894908 -0.000327888 0.001278083 0.000289983 0.000836857	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281	0.17108 0.17275 0.17243 0.1737 0.17399 0.17483	4843.825493 4891.819773 4882.535884 4918.728809 4928.938182 4944.988234	108.8881007 109.9870013 109.7582988 110.5718854 110.7584552 111.1817217	114.2832484 115.3821489 115.1534423 115.967011 118.1518008 118.5588874	2/8/03 15:1 2/14/03 15:1 2/24/03 18:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3	9 5158:24:00 5 5397:20:00 6 5583:21:00 1 5753:08:00 7 5920:42:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5920:39:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00	70.45787051 71.80807754 73.48854587 74.72181743 75.84919248 76.94806502
2 5 -1 4	4 83 3 83 0 84 0 84 0 84	2 1093 1 1087 1 1100 1 1072 1 1081 1 1088	0.00084758 0.00187188 -0.00035315 0.00141259 0.00031783 0.0007083	542 541 544 544 544 544 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057	0.000784757 0.001894908 -0.000327888 0.001278083 0.000289983 0.000838857 -3.25191E-05	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083	0.17108 0.17275 0.17243 0.1737 0.17399 0.17483 0.1748	4843.825493 4891.819773 4882.535884 4918.728809 4928.938182 4944.988234 4944.045401	108.8861007 109.9870013 109.7582966 110.5718854 110.7584552 111.1817217 111.1410218	114.2832484 115.3821489 115.1534423 115.967011 118.1518006 116.5568674 118.5381872	2/8/03 15:1 2/14/03 15:1 2/24/03 18:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1	9 5158:24:00 5 5397:20:00 6 5583:21:00 1 5753:08:00 7 5920:42:00 4 6091:19:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5920:39:00 8091:18:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00	70.45767051 71.80807754 73.48654587 74.72181743 75.84919248 78.94808502 78.04888782
2 5 -1 4	4 83 3 83 0 84 0 84 9 84 1 86	2 1093 1 1087 1 1100 1 1072 1 1081 1 1088 0 1083	0.00064758 0.00187188 -0.00035315 0.00141259 0.00031783 0.0007083	542 541 544 544 544 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.927	0.000784757 0.001894908 -0.000327888 0.001278083 0.000289983 0.000838857 -3.25191E-05 0.000878595	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159	0.17108 0.17275 0.17243 0.1737 0.17399 0.17483 0.1748	4843.825493 4891.819773 4882.535664 4918.728809 4928.938182 4944.988234 4944.045401 4983.204351	108.8881007 109.9870013 109.7582988 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104	114.2832484 115.3821489 115.1534423 115.967011 116.1516006 116.5568674 116.5981672 118.9888581	2/8/03 15:1 2/14/03 15:1 2/24/03 18:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 4/1/03 15:5	9 5158:24:00 5 5397:20:00 6 5583:21:00 1 5753:08:00 7 5920:42:00 4 6091:19:00 2 8280:57:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5920:39:00 8091:18:00 8260:54:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00 8280:42:00	70.45767051 71.80807754 73.48854587 74.72181743 75.84919248 78.94808502 78.04888762 79.12818508
2 5 -1 4 2 2 2	4 83 3 83 0 84 0 84 9 84 1 86 1 86	2 1093 1 1087 1 1100 1 1072 1 1081 1 1088 0 1083	0.00084758 0.00187188 -0.00035315 0.00141259 0.00031783 0.0007083 -3.5315E-05	542 541 544 544 544 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.927	0.000784757 0.001894908 -0.000327888 0.001278083 0.000289983 0.000838857 -3.25191E-05	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159	0.17108 0.17275 0.17243 0.1737 0.17399 0.17483 0.1748	4843.825493 4891.819773 4882.535664 4918.728809 4928.938182 4944.988234 4944.045401 4983.204351 4977.093378	108.8861007 109.9670013 109.7582968 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839326	114.2632464 115.3621469 115.1534423 115.967011 116.1516006 116.5568674 116.5361672 116.968561 117.2790763	2/8/03 15:1 2/14/03 15:1 2/24/03 18:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 4/1/03 15:5 4/10/03 9:2	9 5158:24:00 5 5397:20:00 8 5583:21:00 1 5753:08:00 7 5920:42:00 4 6091:19:00 2 8280:57:00 6 470:30:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5920:39:00 8091:18:00 8260:54:00 6470:27:00	4984:02:00 5158:09:00 5397:05:00 5563:08:00 5752:51:00 5920:27:00 8091:04:00 8280:42:00 8470:15:00	70.45767051 71.80807754 73.48854587 74.72181743 75.84919248 78.94808552 78.04888762 79.12816508 80.4394182
2 5 -1 4 2 2 1	4 83 3 8 0 0 84 0 86 9 84 1 86 1 86 5 86	2 1093 1 1087 1 1100 1 1072 1 1081 1 1088 0 1083 0 1073	0.00084758 0.00187188 -0.00035315 0.00141259 0.00031783 0.0007083 -3.5315E-05 0.00074181	542 541 544 544 544 540 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.927 14.135	0.000784757 0.001894908 -0.000327888 0.001278083 0.000289983 0.000838857 -3.25191E-05 0.000878595	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159 13.889	0.17108 0.17275 0.17243 0.1737 0.17399 0.17483 0.1748 0.17527 0.17577	4843.825493 4891.819773 4882.535664 4918.728809 4928.938182 4944.988234 4944.045401 4983.204351	108.8881007 109.9870013 109.7582988 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104	114.2832484 115.3821489 115.1534423 115.987011 118.1518008 118.5588874 118.5381872 118.9888581 117.2790783 117.4439148	2/8/03 15:1 2/14/03 15:1 2/24/03 18:1 3/4/03 10:1 3/11/03 12:0 3/18/03 14:1 4/1/03 15:5 4/10/03 9:2 4/18/03 8:2	9 5158:24:00 5 5397:20:00 8 5583:21:00 1 5753:08:00 7 5920:42:00 4 6091:19:00 2 8280:57:00 5 8470:30:00 8 881:33:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5920:39:00 8091:18:00 8280:54:00 6470:27:00 8881:30:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00 8470:15:00 8471:15:00	70.45767051 71.80807754 73.48654587 74.72181743 75.84919248 76.94808502 78.04888782 79.12818508 80.4394182 81.81831902
2 5 -1 4 2 2 1	4 82 3 84 0 84 0 86 9 86 1 86 5 86 8	2 1093 1 1087 1 1100 4 1072 4 1081 1 1088 0 1073 0 1075	0.00084758 0.00187188 -0.00035315 0.00141258 0.0003138 0.0007083 -3.5315E-05 0.00074181 0.00052972	542 541 544 544 544 540 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.927 14.135 13.992	0.000784757 0.001894908 -0.000327888 0.001278083 0.000289983 0.000838857 -3.25191E-05 0.000878595 0.000490488	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159 13.889 7.33288	0.17108 0.17275 0.17243 0.1737 0.17399 0.17483 0.1748 0.17527 0.17577	4843.825493 4891.819773 4882.535664 4918.728809 4928.938182 4944.988234 4944.045401 4983.204351 4977.093378	108.8861007 109.9670013 109.7582968 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839326	114.2832484 115.3821489 115.1534423 115.967011 116.1516006 118.5586874 118.5381872 118.9888561 117.2790783 117.4439148 116.380319	2/8/03 15:1 2/14/03 15:1 2/24/03 16:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 4/1/03 15:5 4/10/03 8:2 4/24/03 14:4	9 5158:24:00 5 5397:20:00 6 5583:21:00 7 5920:42:00 4 6091:19:00 2 8280:57:00 8 8881:33:00 7 8911:52:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5920:39:00 8091:18:00 8260:54:00 6470:27:00 8681:30:00 8811:49:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00 8470:15:00 8881:18:00 8611:37:00	70.45767051 71.80807754 73.48854587 74.72181743 75.84919248 78.94808502 78.04888762 79.12818508 80.4394182 81.81831902 82.53403338
2 5 -1 4 2 2 1	4 82 3 84 0 84 9 84 0 84 1 86 5 86 8 8	2 1093 1 1087 1 1100 4 1072 4 1081 4 1088 0 1083 0 1073 0 1088	0.00084758 0.00187188 -0.00035315 0.00141259 0.00031783 0.0007083 -3.5315E-05 0.00074181 0.00052972 0.00028252 0.00182448	542 541 544 544 544 540 540 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.927 14.135 13.992 13.849	0.000784757 0.001894908 -0.000327888 0.001278083 0.000289983 0.000838857 -3.25191E-05 0.000878595 0.000490488 0.000258951	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159 13.889 7.33288 41.8554	0.17108 0.17275 0.17243 0.1737 0.17399 0.17483 0.1748 0.17527 0.17577 0.17802 0.1775	4843.825493 4891.819773 4882.535664 4918.728809 4928.938182 4944.988234 4944.045401 4983.204351 4977.093378 4984.428037	108.8881007 109.9870013 109.7582988 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839326 112.0487891	114.2832484 115.3821489 115.1534423 115.967011 116.1516006 118.5568674 118.5381872 118.9888561 117.2790783 117.4439148 116.380319	2/8/03 15:1 2/14/03 15:1 2/24/03 16:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 411/03 15:5 4/10/03 8:2 4/18/03 8:2 4/24/03 14:4 5/1/03 13:3	9 5158:24:00 5 5397:20:00 1 5753:08:00 17 5920:42:00 2 8280:57:00 8470:30:00 8 881:33:00 3 8978:38:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5920:39:00 8091:18:00 8260:54:00 8470:27:00 8681:30:00 8811:49:00 8978:35:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00 8470:15:00 8861:18:00 6911:37:00	70.45767051 71.80807754 73.48654557 74.72181743 75.84919248 76.94808502 76.0488762 79.12816508 80.4394182 61.61831902 62.53403338 63.53621481
2 5 -1 4 4 2 2 1 1	4 83 3 84 0 84 9 86 0 84 1 81 1 81 5 86 8 86 8 86	2 1093 1 1087 4 1100 4 1081 4 1088 0 1083 0 1073 1075 0 1076	0.00084758 0.00187188 -0.00035315 0.00141259 0.000783 3.5315E-05 0.00074181 0.00052972 0.0002825 0.00182448 -0.00017857	542 541 544 544 544 540 540 540 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.927 14.135 13.992 13.849 14.005	0.000784757 0.001894908 -0.000327888 0.001278083 0.000289983 0.000838857 -3.25191E-05 0.0004878595 0.000490488 0.000258951 0.001471053	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159 13.869 7.33288 41.8554 -4.58718	0.17108 0.17275 0.17243 0.1737 0.17399 0.17483 0.1748 0.17527 0.17577 0.17602 0.1775 0.17773	4843.825493 4891.819773 4882.535864 4918.728809 4926.938182 4944.988234 4944.045401 4963.204351 4977.093378 4984.428037 5028.081449	108.8881007 109.9870013 109.7582988 110.7584552 111.1817217 111.1410218 111.5717104 111.8839326 112.0487891 112.9851734	114.2832464 115.3821489 115.1534423 115.987011 116.1518008 116.5568674 116.5381872 117.2790783 117.4439148 118.380319 118.2772007	2/8/03 15:1 2/14/03 15:1 2/24/03 16:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 4/1/03 15:5 4/10/03 8:2 4/24/03 14:4	9 5158:24:00 5 5397:20:00 1 5753:08:00 17 5920:42:00 2 8280:57:00 8470:30:00 8 881:33:00 3 8978:38:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5920:39:00 8091:18:00 8260:54:00 6470:27:00 8681:30:00 8811:49:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 6991:04:00 8280:42:00 8470:15:00 881:18:00 6978:23:00 7029:10:00	70.45767051 71.80807754 73.48654587 74.72181743 75.84919248 76.94808502 78.04888762 79.12818508 80.4394182 61.61831902 82.53403338 83.53821481 83.84181856
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2 5 5 1 4 4 2 2 1 1 4 4 1 1 8 1 8 1 1 1 1 8 1	4 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8:	2 1093 1 1067 1 1072 1 1081 1 1081 1 1088 2 1072 1 1088 2 1077 2 1088 2 1077 2 1088 2 1077 2 1088 2 1077 2 1088 2	0.00084758 0.00187188 0.00187188 0.00135315 0.00141258 0.00031783 0.0007083 -3.5315E-05 0.00074181 0.00052972 0.00028252 0.00182448 -0.00017857 0.00035315 -0.002825281 days in air	542 541 544 544 544 540 540 540 540 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 14.135 13.992 13.849 14.005 13.849 14.018	0.000784757 0.001894908 0.001278083 0.000289983 0.000289983 0.00089857 -3.25191E-05 0.000878595 0.000878595 0.000181995 0.000181995 0.00025994318	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159 13.889 7.33286 41.8554 -4.56718 9.07229 -73.4828	0.17108 0.17275 0.17243 0.1737 0.17399 0.1748 0.17527 0.17527 0.1750 0.1775 0.17750 0.17753 0.17750 0.17750 0.17750 0.17750	4843.825493 4891.819773 4892.535884 4918.728809 4928.938182 4944.998234 4944.045401 4983.204351 4977.093378 4984.428037 5028.081449 5021.494287 5030.586581 4957.103958	108.8881007 109.9870013 109.7582908 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839326 112.0487691 112.082055 113.0859981 111.4345749	114.2832484 115.3821489 115.1534423 115.987011 118.1518008 118.5568674 118.5381872 118.9888581 117.2790783 117.4439148 118.380319 118.2772007 118.4811438 118.8297208	2/8/03 15:1 2/14/03 15:1 2/24/03 18:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 4/1/03 15:5 4/10/03 8:2 4/24/03 14:4 5/1/03 13:3 5/3/03 18:2	9 5158:24:00 5 5397:20:00 5 5597:20:00 11 5753:08:00 4 6091:19:00 2 8280:57:00 6 8881:33:00 7 8811:52:00 7 692:25:00 6 611:52:00 TIME OF: off bottom 7/14/02 20:37	5158:21:00 5397:17:00 5583:16:00 5753:03:00 5920:39:00 6290:54:00 6470:27:00 8681:30:00 6878:35:00 7029:22:00 8611:49:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00 8470:15:00 881:137:00 8978:23:00 7029:10:00 8811:37:00	70.45767051 71.80807754 73.48854557 74.72181743 75.84919248 76.94806502 78.04886762 79.12816508 80.4394182 61.61931902 62.53403338 63.53821481 63.84181656 62.53403338 elapsed time (off bottom to canistering) 13.0 minutes 0.217 hours
2 5 1 4 4 2 2 1 1 4 4 4 1 4 1 4 1 4 1 4 1 4	4 8:3 8:0 8:0 8:0 8:0 8:0 8:0 8:0 8:0 8:0 8:0	2 1093 1 1067 1 1072 1 1072 1 1081 1 1088 1 1088 2 1083 1 1075 1 1085 2 1076 1 1087 2	0.00084758 0.00187188 0.00187188 0.00035315 0.00141258 0.0003783 -3.5315E-05 0.00074181 0.00052972 0.00028252 0.00182448 -0.00017867 0.00035315 -0.00282518 11 days in air 1 in canister G grams 1737.27	542 541 544 544 544 540 540 540 540 541 541 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.922 13.849 14.016 wet sample t	0.000784757 0.001894908 0.000227888 0.001278083 0.000289883 -3.25191E-05 0.00048985 0.000490488 0.000490488 0.0004171053 -0.000181995 0.0002594316	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159 13.889 7.32286 41.8554 -4.58718 9.07229 -73.4626	0.17108 0.17275 0.17243 0.1737 0.17399 0.1748 0.17527 0.17527 0.17527 0.17752 0.17753 0.17708 0.177508	4843.825493 4891.819773 4892.535684 4918.728809 4928.938182 4944.945401 4983.204351 4977.093378 4984.428037 5020.081449 5021.494287 5030.586581 4957.103958	108.8881007 109.9870017 109.9870017 109.7582998 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839326 112.0487691 112.9851734 112.682055 113.0859981 111.4345749	114.2832484 115.3821489 115.1834423 115.987011 116.1518008 118.5588874 118.5381872 118.9888581 117.2790783 117.4439148 118.380319 118.2772007 118.4811438 118.8297208 est. lost gas (co) = 130 SCF/TON (approx)	2/8/03 15:1 2/14/03 15:1 2/24/03 18:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 4/1/03 15:5 4/10/03 8:2 4/18/03 8:2 4/24/03 14:4 5/1/03 13:3 5/3/03 18:2 4/24/03 14:4	9 5158:24:00 5 5397:20:00 5 5397:20:00 11 5753:08:00 7 5920:42:00 8 880:37:00 8 881:33:00 7 8811:52:00 7 8611:52:00 7 8611:52:00 7 871:52:00 7 871:52:00 7 871:52:00 7 871:52:00	5158:21:00 5397:77:00 5583:16:00 5753:03:00 5950:39:00 6091:16:00 6470:27:00 6811:49:00 7029:22:00 6811:49:00 at surface 7/14/02 20:42	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 6991:04:00 8470:15:00 8470:15:00 8861:18:00 6911:37:00 6978:23:00 7029:10:00 6811:37:00	70.45767051 71.80807754 73.48654587 74.72181743 75.84919248 76.94808502 76.04888762 79.12816508 80.4394182 61.81831902 62.53403338 63.53621481 63.94161656 62.53403338 elapsed time (off bottom to canistering) 13.0 minutes 0.217 hours 0.485474888 SGRTT (firs)
2 5 1 4 4 2 2 1 1 4 4 4 1 4 1 4 1 4 1 4 1 4	4 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8:	2 1093 1 1007 1 1007 4 1072 4 1072 4 1088 5 1088 5 1088 5 1076 1 1076 1 1087 5 1086 5 1076 1 1087 5 1086 5	0.00084758 0.00187188 0.00187188 0.00035315 0.00141258 0.0003178 0.0007083 -3.5315E-05 0.00074181 0.00052972 0.0008252 0.00182448 -0.00017657 0.00028518 1 days in air 1737.27 CCNVERSION cubic ft (@rig)	542 541 544 544 544 540 540 540 540 541 541 541 541 541 541 542 541 542 543 544 544 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.982 14.005 13.849 14.005 13.849 14.018 wet sample •	0.000784757 0.001894908 -0.000327888 0.001278083 0.000289833 0.000289835 0.000490488 0.000258951 0.0004171053 -0.0001811995 0.000320388 -0.002594316	22.2218 47.9431 98.1911 88.1911 8.21137 18.0281 -0.92083 19.159 13.889 7.33288 41.8554 -4.58718 9.07229 -73.4628 Data Data	0.17108 0.17275 0.17243 0.1737 0.17399 0.1748 0.17527 0.17527 0.1757 0.17752 0.17753 0.17753 0.17750 9rame 1740.31	4843.825493 4891.819773 4892.535684 4916.726809 4928.936182 4944.045401 4983.204351 4977.093376 4984.426037 5028.0811449 5021.494287 5030.588581 4957.103956	108.8881007 109.9870013 109.7582988 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839326 112.0487991 112.982055 113.0859981 111.4345749 SCF/TON (approx) without lost gas	114.2832484 115.3821489 115.1534423 115.967011 118.1518006 119.5568674 118.5391872 118.968561 117.2790763 117.4439114 118.390319 118.2772007 118.4811438 118.8297208 est. lost gas (co) = 330 SCF/TON (approx) with lost gas	2/8/03 15:1 2/14/03 15:1 2/24/03 16:1 3/4/03 10:1 3/11/03 12:0 3/12/03 13:3 3/25/03 14:1 4/1/03 15:5 4/10/03 9:2 4/18/03 6:2 4/24/03 14:4 5/1/03 13:3 5/3/03 18:2 4/24/03 14:4	9 5158:24:00 5 5397:20:00 5 5397:20:00 11 5753:08:00 7 5920:42:00 2 8280:57:00 5 8470:30:00 7 8811:52:00 8076:33:00 7 7029:25:00 7 1ME OF: off bottom 7/14/02 20:37 TIME SINCE	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5920:39:00 8091:18:00 8260:54:00 8611:30:00 8811:49:00 8978:35:00 7029:22:00 8811:49:00 at surface 7/14/02 20:42 at surface	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00 8470:15:00 8881:18:00 6911:37:00 8978:23:00 7029:10:00 8811:37:00 in canister 7/14/02 20:50 in canister	70.45767051 71.0007754 73.40854557 74.72181743 75.84919248 76.94808502 76.0488762 79.12614508 80.4394182 61.61631902 62.53403338 63.53621481 63.84181656 62.53403338 elapsed time (off bottom to canistering) 13.0 minutes 0.217 hours 0.485474888 SQRT (hrs) SQRT hrs. (elince off bottom)
2 5 1 4 4 2 2 2 1 1 4 4 4 1 1 1 1 1 1 1 1 1	4 8:3 8:0 8:0 8:0 8:0 8:0 8:0 8:0 8:0 8:0 8:0	2 1093 1 1007 1 1007 4 1072 4 1072 4 1088 5 1088 5 1088 5 1076 1 1076 1 1087 5 1086 5 1076 1 1087 5 1086 5	0.00084758 0.00187188 0.00187188 0.00035315 0.00141258 0.0003783 -3.5315E-05 0.00074181 0.00052972 0.00028252 0.00182448 -0.00017867 0.00035315 -0.00282518 11 days in air 1 in canister G grams 1737.27	542 541 544 544 544 540 540 540 540 541 541 541 541 541 541 542 541 542 543 544 544 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.982 14.005 13.849 14.005 13.849 14.018 wet sample •	0.000784757 0.001894908 0.001278083 0.001278083 0.000289983 0.000289983 0.000878595 0.000878595 0.000878595 0.000471053 -0.001471053 -0.000181995 0.00025994316 weight: fit @00 degrees; cubic fit @STP) 0.00138208	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159 13.689 7.33288 41.8554 -4.58718 9.07229 -73.4828 ba. 3.837	0.17108 0.17273 0.17243 0.1737 0.17397 0.17399 0.17483 0.17527 0.1757 0.17575 0.1775 0.17760 0.17760 0.17760 0.17760 0.17760 0.17760 0.17760	4843.825493 4891.819773 4892.535684 4918.728809 4928.938182 4944.098234 4944.045401 4983.204351 4977.093376 4984.428037 5030.586581 4957.103958 moleture % 0.17% VE VOLUMES oc (@STP) 37.89382009	108.8881007 109.9870013 109.7582998 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839326 112.0847691 112.082055 113.0859981 111.4345749 SCF/TON (approx) without lost ges 0.898797412	114.2832464 115.3821489 115.1534423 115.987011 116.1518008 116.5588874 118.5381872 118.9888561 117.2790783 117.4439146 118.380319 118.2772007 118.4811438 118.8297208 est. lost gas (cc) = 130 SCF/TON (approx) with lost gas 3.098131405	2/8/03 15:1 2/14/03 15:1 2/24/03 16:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 4/1/03 15:5 4/10/03 8:2 4/24/03 14:4 5/1/03 13:3 5/3/03 18:2 4/24/03 14:4	9 5158:24:00 5 5397:20:00 5 5397:20:00 1 5753:08:00 4 6091:19:00 2 8280:57:00 5 8470:30:00 8 8881:33:00 7 8811:52:00 7 8611:52:00 TIME OF: off bottom 7/14/02 20:37 TIME SINCE 10 0:22:00	5158:21:00 5397:77:00 5583:16:00 5753:03:00 5920:39:00 6091:16:00 6290:54:00 6470:27:00 8681:30:00 6878:35:00 7029:22:00 8611:49:00 41:49:00 41:49:00 41:49:00 41:49:00 41:49:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00 8470:15:00 8861:18:00 6811:37:00 6973:23:00 7029:10:00 6811:37:00 in canister 7/14/02 20:50 in canister 0:09:00	70.45767051 71.80807754 73.48654557 74.72181743 75.84919248 76.94806502 76.0488762 79.12816508 80.4394182 81.61631902 62.53403338 83.53821481 83.84181656 82.53403338 elapsed time (off bottom to canistering) 13.0 minutes 0.217 hours 0.485474888 SQHT (hrs) SQHT hrs. (since off bottom) 0.605530071
2 5 5 1 4 4 2 2 2 1 1 4 4 1 1 8 1 1 1 8 1	4 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8:	1 1093 1 1007 1 1007 4 1072 4 1081 4 1088 5 1083 5 1075 6 1075 6 1075 6 1075 6 1075 7 1087 6 1075 7 1087 8 2 1088 8 2 10	0.00044758 0.00167188 0.00167188 0.00035315 0.00141258 0.0007083 -3.5315E-05 0.00074181 0.00052972 0.00028252 0.00182448 -0.00017657 0.00035315 0.00035315 0.00035315 0.000282518 0 days in air 1737.27 CONVERSION cubic ft (@rig) 0.00144799	542 541 544 544 544 544 540 540 540 540 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.927 13.927 13.992 14.005 13.849 14.016 wet sample t TO STP (cubic peia (@rig)) 14.109	0.000784757 0.001894908 0.001278083 0.000289893 0.000289893 0.000289855 0.0004878595 0.0004878595 0.000471053 -0.000181995 0.0002594318 weight: ## @60 degrees; cubic ft (@STP) 0.001338208	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159 13.689 7.33288 41.8554 -4.58718 9.07229 -73.4828 ba. 3.837	0.17108 0.17273 0.17243 0.1737 0.17397 0.17399 0.17483 0.17527 0.1757 0.17575 0.1775 0.17760 0.17760 0.17760 0.17760 0.17760 0.17760 0.17760	4843.825493 4891.819773 4892.535684 4918.728809 4928.938182 4944.948234 4944.045401 4983.204351 5021.494297 5030.586581 4957.103958 moleture % 0.17% VE VCLUMES cc (@STP) 37.89382009 44.88328254	108.8881007 109.9870013 109.7582988 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839226 112.0487891 112.9851734 112.882055 113.0959981 111.4345749 SCF/TON (approx) without lost gas 0.898797412 0.818104287	114.2832484 115.3821489 115.1534423 115.987011 116.1518006 118.5568874 118.5361872 118.988581 117.2790783 117.4439148 118.380319 118.2772007 118.4811438 118.8297208 est. lost gas (cc) = 130 SCF/TON (approx) with lost gas 3.098131405 3.21543828	2/8/03 15:1 2/14/03 15:1 3/4/03 16:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 4/10/03 5:2 4/18/03 6:2 4/18/03 13:3 5/3/03 18:2 4/24/03 14:4	9 5158:24:00 5 5397:20:00 5 5397:20:00 11 5753:08:00 7 5920:42:00 8280:57:00 8881:33:00 8470:30:00 8881:33:00 7 8811:52:00 TIME OF: off bottom 7/14/02 20:37 TIME SNCE off bottom 9 0:22:00 90 0:23:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5920:39:00 6091:16:00 6260:54:00 6470:27:00 6811:49:00 878:35:00 67029:22:00 6811:49:00 at surface 7/14/02 20:42 at surface 0:17:00 0:18:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 6991:04:00 8470:15:00 8470:15:00 8481:18:00 6911:37:00 6978:23:00 7029:10:00 6811:37:00 in canister 7/14/02 20:50 in canister 0:09:00 0:10:00	70.45767051 71.80807754 73.48654557 74.72181743 75.84918248 75.84918248 76.9488762 79.12618508 80.4394182 61.81831902 62.53403338 83.53621481 83.84181656 62.53403338 82.53621481 83.84181656 82.534748488 SQETT (hrs) SQET hrs. (eince off bottom) 0.805530071 0.819139187
2 5 1 4 2 2 1 1 4 2 2 1 1 CONVERSION RIGHTS MANUAL RIG	4 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8:	2 1093 1 1087 1 11072 1 1088 1	0.00084758 0.00187188 0.00187188 0.00035315 0.00141258 0.00031783 0.00074081 0.00052972 0.00028252 0.00182448 -0.00017857 0.000282518 1 days in air 1737.27 CONVERSION cubic ft (@rig) 0.00144799	542 541 544 544 544 544 540 540 540 540 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.922 13.849 14.018 wet sample t TO STP (cubic (@rig) 14.109 14.109	0.000784757 0.001884908 0.001278083 0.00028983 0.00028983 0.000289857 -3.25191E-05 0.00048055 0.00048055 0.000481995 0.0002594318 weight: at @60 degrees, cubic ft (@STP) 0.001338208 0.00028474	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159 13.689 7.32286 41.8554 -4.58718 9.07229 -73.4828 ba. 3.837 9147 pai) cc (ØSTP) 37.8938 8.48884	0.17108 0.17273 0.17243 0.1737 0.17399 0.1748 0.17527 0.17577 0.17602 0.1775 0.177508 0.17508 0.17508 0.1740.31 CUMULATR cubic ft (@ 0.00134	4843.825493 4891.819773 4892.535684 4918.728809 4928.938182 4944.098234 4944.045401 4983.204351 4977.093376 4984.428037 5030.586581 4957.103958 moleture % 0.17% VE VOLUMES oc (@STP) 37.89382009	108.8881007 109.9870013 109.7582988 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839326 112.0487891 112.982055 113.0859981 111.4345749 SCF/TON (approx) without lost gas 0.898797412 0.818104287 0.903323484	114.2832484 115.3821489 115.1534423 115.967011 118.1518008 118.5588674 118.5381872 118.9888561 117.2790783 117.4439148 118.389319 118.2772007 118.4811438 118.8297208 est. lost gas (co) = 130 SCF/TON (approx) with lost gas 3.098131405 3.21543828 3.309857478	2/8/03 15:1 2/14/03 15:1 2/24/03 16:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 4/1/03 15:5 4/18/03 8:2 4/24/03 14:4 5/1/03 16:2 4/24/03 14:4 5/1/03 14:4 5/1/03 12:0 16:2 17/14/02 20:5 7/14/02 21:0	9 5158:24:00 5 5397:20:00 5 5397:20:00 11 5753:08:00 7 5920:42:00 2 8280:57:00 8470:30:00 7 8811:52:00 3 8976:38:00 7 7029:25:00 7 8611:52:00 TIME OF: off bottom 7/14/02 20:37 TIME SINCE off bottom 00 0:22:00 01 0:22:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5753:03:00 6091:18:00 8260:54:00 6470:27:00 8811:49:00 8811:49:00 8811:49:00 at surface 7/14/02 20:42 at surface 0:17:00 0:18:00 0:18:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00 8280:42:00 8470:15:00 8881:18:00 6911:37:00 6811:37:00 6811:37:00 in canister 7/14/02 20:50 in canister 0:09:00 0:11:00	70.45767051 71.0007754 73.40854557 74.72181743 75.84919248 76.94806502 76.04886762 79.12614508 80.4394182 61.61631902 62.53403338 63.53621481 63.64161656 62.53403338 elapsed time (off bottom to canistering) 13.0 minutes 0.217 hours 0.485474688 SCHT (hrs) SORT hrs. (eline off bottom) 0.605530071 0.619139187 0.632455532
2 5 1 4 2 2 1 1 4 2 2 1 1 CONVERSION RIGHTS MANUAL RIG	4 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8:	2 1093 1 1097 1 1097 1 1097 1 1098 1	0.00084758 0.00187188 0.00187188 0.00035315 0.000141258 0.0007083 -3.5315E-05 0.00074181 0.00052972 0.00028252 0.00182448 -0.00017657 0.0028525181 days in air 1737.27 CCNVERSION cubic fi (@rig) 0.000144791 0.00024722 0.000147657	542 541 544 544 544 540 540 540 540 541 541 541 541 541 542 643 644 644 645 646 646 646 646 646 646 646	14.187 13.849 14.278 13.914 14.031 13.882 14.057 14.135 13.992 14.005 13.849 14.016 wet sample • TO STP (cubic poin (@rig) 14.109 14.109 14.109 14.109	0.000784757 0.001894908 -0.00027888 0.001278083 0.000289833 0.000289835 0.000490488 0.000258951 0.000490488 0.000258951 0.000181995 0.0002594316 mediation (@STP) 0.00138208 0.000228474 0.000228474 0.00028474	22.2216 47.943 47.943 18.1911 86.1911 8.21137 18.0281 -0.92083 18.159 13.889 7.33286 41.8554 -4.56716 9.07229 -73.4626 104.7 psi) 00 (@STP) 37.8936 8.48984 4.62117	0.17108 0.17273 0.17273 0.1737 0.17397 0.17393 0.17483 0.17527 0.17577 0.17802 0.17757 0.177802 0.17757 0.177803 0.17768 0.17508	4843.825493 4891.819773 4892.535684 4918.728809 4928.938182 4944.948234 4944.045401 4983.204351 5021.494297 5030.586581 4957.103958 moleture % 0.17% VE VCLUMES cc (@STP) 37.89382009 44.88328254	108.8881007 109.9870013 109.7582988 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839226 112.0487891 112.9851734 112.882055 113.0959981 111.4345749 SCF/TON (approx) without lost gas 0.898797412 0.818104287	114.2832484 115.3821489 115.1534423 115.967011 118.1518008 118.5588674 118.5381872 118.9888561 117.2790783 117.4439148 118.389319 118.2772007 118.4811438 118.8297208 est. lost gas (co) = 130 SCF/TON (approx) with lost gas 3.098131405 3.21543828 3.309857478	2/8/03 15:1 2/14/03 15:1 3/4/03 16:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 4/10/03 5:2 4/18/03 6:2 4/18/03 13:3 5/3/03 18:2 4/24/03 14:4	9 5158:24:00 5 5397:20:00 5 5397:20:00 11 5753:08:00 7 5920:42:00 2 8280:57:00 8470:30:00 7 8811:52:00 3 8976:38:00 7 7029:25:00 7 8611:52:00 TIME OF: off bottom 7/14/02 20:37 TIME SINCE off bottom 00 0:22:00 01 0:22:00	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5920:39:00 6091:16:00 6260:54:00 6470:27:00 6811:49:00 878:35:00 67029:22:00 6811:49:00 at surface 7/14/02 20:42 at surface 0:17:00 0:18:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00 8470:15:00 8861:18:00 6811:37:00 6973:23:00 7029:10:00 6811:37:00 in canister 7/14/02 20:50 in canister 0:09:00 0:11:00 0:12:45	70.45767051 71.80807754 73.48654557 74.72181743 75.84919248 76.94806502 76.0488762 79.12816508 80.4394182 61.61631902 62.53403338 63.53621461 63.84181656 62.53403338 elapsed time (off bottom to canistering) 13.0 minutes 0.217 hours 0.485474888 SQRT (hrs) SQRT hrs. (elnoe off bottom) 0.605530071 0.819139167 0.83245532 0.655108134
2 5 1 4 2 2 1 4 4 1 BDECANISTE SAMPLE: dry sample 1 CONVERSIO	4 8:3 8:0 8:0 8:0 8:0 8:0 8:0 8:0 8:0 8:0 8:0	2 1093 1 1097 1 1097 1 1097 1 1097 1 1098 1	0.00084758 0.00187188 0.00187188 0.00035315 0.00141258 0.0007083 -3.5315E-05 0.00074181 0.00052972 0.00028252 0.00182448 -0.00017857 0.000282518 1 days in air 1737.27 CONVERSION cubic ft (@rig) 0.00144791 0.0002472 0.0002475	542 541 544 544 544 544 540 540 540 540 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 13.922 13.849 14.005 13.849 14.018 wet sample TO STP (cubic gring) 14.109 14.109 14.109 14.109 14.109	0.000784757 0.001894908 0.001278083 0.000289983 0.000289983 0.00028987 0.000478595 0.000478595 0.000478595 0.000478595 0.000471053 -0.000181995 0.00228974 0.000228474 0.000183198 0.000228474	22.2218 47.9943 -9.2641 38.1911 8.21137 18.0281 -0.92083 19.159 13.689 7.33286 4.4.58718 9.07229 -73.4626 be. 3.637 8147 psi) cc (@STP) 37.6938 8.46984 4.62117 8.46984	0.17108 0.17273 0.17273 0.1737 0.17397 0.17398 0.17483 0.17527 0.17577 0.17577 0.17575 0.17753 0.17768 grame 1740.31 CUMULATI cubic ft (@ 0.00134 0.00157 0.00173 0.00173	4843.825493 4891.819773 4892.535684 4918.728809 4928.938182 4944.045401 4983.204351 4977.093376 4884.428037 5030.586581 4957.103958 moleture % 0.17% VE VOLUMES or (@STP) 37.89382009 44.38328254 48.98443572 55.45407817	108.8881007 109.9870013 109.7582988 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839326 112.0487891 112.982055 113.0859981 111.4345749 SCF/TON (approx) without lost gas 0.898797412 0.818104287 0.903323484	114.2832464 115.3821489 115.1534423 115.987011 116.1518008 116.5588874 118.5381872 118.9888561 117.2790783 117.4439146 118.380319 118.2772007 118.4811438 118.8297208 est. lost gas (cc) = 130 SCF/TON (approx) with lost gas 3.09857478 3.419884351	2/8/03 15:1 2/14/03 15:1 2/24/03 16:1 3/4/03 10:1 3/11/03 12:0 3/18/03 11:3 3/25/03 14:1 4/1/03 15:5 4/18/03 8:2 4/24/03 14:4 5/1/03 16:2 4/24/03 14:4 5/1/03 14:4 5/1/03 12:0 16:2 17/14/02 20:5 7/14/02 21:0	9 5158:24:00 5 5397:20:00 5 5397:20:00 11 5753:08:00 4 6091:19:00 2 8280:57:00 5 8470:30:00 8881:33:00 7 8811:52:00 TIME OF: off bottom 7/14/02 20:37 TIME SINCE off bottom 9 0:22:00 10 0:23:00 11 0:24:00 12 0:25:45	5158:21:00 5397:17:00 5583:18:00 5753:03:00 5753:03:00 6091:18:00 8260:54:00 6470:27:00 8811:49:00 8811:49:00 8811:49:00 at surface 7/14/02 20:42 at surface 0:17:00 0:18:00 0:18:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00 8280:42:00 8470:15:00 8881:18:00 6911:37:00 6811:37:00 6811:37:00 in canister 7/14/02 20:50 in canister 0:09:00 0:11:00	70.45767051 71.80807754 73.48654587 74.72181743 75.84918248 76.94808502 76.04888762 79.12814508 80.4394182 61.61831902 62.53403338 63.53621481 63.84181856 62.53403338 elapsed time (off bottom to canistering) 13.0 minutes 0.217 hours 0.485474888 SQRT (hrs) SQRT hrs. (elinos off bottom) 0.605530071 0.805530071 0.832455532 0.835108134 0.8770032
2 5 1 4 2 2 1 4 4 1 BDECANISTE SAMPLE: dry sample 1 CONVERSIO	4 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8:	2 1083 1 1087 1 1087 1 1088 1 1098 1 1088 1	0.00084758 0.00187188 -0.00035315 0.00141258 0.00031783 0.00074181 0.00052972 0.00052972 0.00017867 0.00035315 -0.00282518 1 days in air 1 ranset G grams 1737.27 CONVERSION cubic R (@rig) 0.00144791 0.0002472 0.00017857	542 541 544 544 544 544 540 540 540 540 540 540	14.187 13.849 14.278 13.914 14.031 13.882 14.057 14.135 13.992 14.005 13.849 14.005 13.841 14.016 wet sample vet sample	0.000784757 0.001894908 -0.00027888 0.001278083 0.000289893 0.000289893 0.000838857 -3.25191E-05 0.000480488 0.000288851 0.000490488 -0.000258851 0.000490488 -0.000258851 0.000258851 0.000258851 0.000258851 0.000258851 cubic ft (@STP) 0.00138208 0.000228474 0.000228474 0.000228474	22.2218 47.9943 -9.28411 38.1911 8.21137 18.0281 -0.92083 19.159 13.889 7.3328 41.8554 -4.58718 9.07229 -73.4828 ba. 3.837 9147 psi) cc (@STP) 37.8938 8.48984 4.82117 8.48984 8.31881	0.17108 0.17273 0.17243 0.1737 0.17399 0.17483 0.17527 0.17577 0.17507 0.17750 0.17750 0.17750 0.17750 0.17508 grame 1740.31 CUMULATI cubic ft (© 0.00134 0.00157 0.00173 0.00198	4843.825493 4891.1819773 4892.535684 4916.728809 4928.938182 4944.988234 4944.045401 4983.204351 4977.093378 4984.428037 5026.0611449 5021.494287 5030.5885611 49577.103958 moisture % 0.17% VE VOLUMES co (@STP) 37.689382009 44.38328254 48.98443572 55.45407817 83.7721899	108.8881007 109.9870013 109.7582998 110.5718854 110.7584552 111.1817217 111.1410218 111.5717104 111.8839326 112.0487891 112.985734 112.882055 113.0859981 111.4345749 SCF/TON (approx) without lost gas 0.898797412 0.818104287 0.903323484 1.022830359 1.178024913	114. 2832484 115. 3821489 115. 1534423 115. 987011 118. 1518006 118. 5568874 118. 5361872 118. 988581 117. 2790783 117. 4439148 118. 380319 118. 2772007 118. 4811438 118. 8297208 est. lost gas (co) = 130 SCF/TON (approx) with lost gas 3.098131405 3.21543628 3.300857476 3.419884351 3.573356905	2/8/03 15:1 2/14/03 15:1 2/24/03 18:1 3/4/03 10:1 3/11/03 12:0 3/18/03 13:3 3/25/03 14:1 4/1/03 5:2 4/18/03 8:2 4/24/03 14:4 5/1/03 13:3 5/3/03 18:2 4/24/03 14:4 TIME OF MEASURI 7/14/02 21:0 7/14/02 21:0 7/14/02 21:0 7/14/02 21:0	9 5158:24:00 5 5397:20:00 5 5397:20:00 11 5753:08:00 7 5920:42:00 8280:57:00 8470:30:00 8881:33:00 7 8811:52:00 TIME OF: off bottom 7/14/02 20:37 TIME SNCE off bottom 90:22:00 10 0:23:00 10 0:24:00 10 0:24:00 12 0:25:45	5158:21:00 5397:77:00 5583:16:00 5753:03:00 5920:39:00 6290:54:00 6470:27:00 8861:30:00 7029:22:00 8811:49:00 7/14/02 20:42 at surface 0:17:00 0:18:00 0:19:00 0:19:00 0:19:00	4984:02:00 5158:09:00 5397:05:00 5583:08:00 5752:51:00 5920:27:00 8091:04:00 8470:15:00 8861:18:00 6811:37:00 6973:23:00 7029:10:00 6811:37:00 in canister 7/14/02 20:50 in canister 0:09:00 0:11:00 0:12:45	70.45767051 71.80807754 73.48654557 74.72181743 75.84919248 76.94806502 76.0488762 79.12816508 80.4394182 61.61631902 62.53403338 63.53621461 63.84181656 62.53403338 elapsed time (off bottom to canistering) 13.0 minutes 0.217 hours 0.485474888 SQRT (hrs) SQRT hrs. (elnoe off bottom) 0.605530071 0.819139167 0.83245532 0.655108134
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41 80 22 80 3 80 24 79 25 78 21 80 17 80 37 80 39 80 21 80 21 80 33 80 47 79 42 81 35 81 49 80 45 80 45 80	00 1000 01 1000 01 1000 01 1000 01 1000 01 1000 01 1000 100	90 0.00144791 90 0.00077893 91 0.0007083 91 0.00010594 91 0.0008287 84 0.00074181 83 0.00060035 83 0.00130885 80 0.00074181 80 0.00074181 80 0.00091818 81 0.00074181 80 0.00091818 80 0.0018574 86 0.00118539	540 540 540 540 539 538 540 540 540 540 540	14.148 14.109 14.148 14.181 14.181 14.148 14.070 14.109 14.057 14.057 14.018 14.031	0.001341899 0.000718082 0.000654585 9.82778E-05 0.000787881 0.000821273 0.000683531 0.000685422 0.000552824 0.001203205 0.00128473	37.9982 0.01352 20.3332 0.01424 18.5357 0.0149 27.78291 0.01499 22.3048 0.01578 23.2558 0.0188 19.3554 0.01729 18.4089 0.01797 15.6542 0.01852	382.9137258 403.2488678 421.7825982 424.5655033 448.8700845 470.1258325 489.4811933 508.8901207 524.5442917	7.081323778 7.436288243 7.778105812 7.829425486 8.240744583 8.669804918 9.02653772	9.458857771 9.833822236 10.1754398 10.22875946 10.63807858 11.08893891 11.42387171	7/15/02 8:16 7/15/02 8:28 7/15/02 10:18 7/15/02 10:33 7/15/02 12:07 7/15/02 14:08	9:39:00 11:51:00 13:39:00 13:58:00 15:30:00 17:31:00	9:34:00 11:46:00 13:34:00 13:51:00 15:25:00 17:26:00	9:28:00 11:38:00 13:28:00 13:43:00 15:17:00 17:18:00	3.106444913 3.442382896 estimate 3.69459064 3.732738048 estimate 3.937003937 4.185291708 4.847679857
22 80 3 80 24 79 25 78 21 80 117 80 117 80 21 80 21 80 21 80 21 80 21 80 33 80 47 79 42 81 35 81 49 80 45 80	0 1000 0 1000 1000 9 1000 8 1000 0 1000 0 1000 0 1000 0 1000 0 1000 0 1000 0 1000 1 10000 1 1000 1 1000 1 1000 1 1000 1 1000 1 1000 1 1000 1 1000 1 1	87 0.00077893 90 0.0007083 91 0.00010594 91 0.00084758 90 0.00086287 84 0.00074181 87 0.00074181 80 0.00130885 80 0.00130728 81 0.00074161 80 0.00197128 81 0.00074161 80 0.0019754 80 0.00178574	540 540 539 538 540 540 540 540 540 540	14.109 14.148 14.181 14.181 14.148 14.070 14.109 14.057 14.057 14.018 14.031	0.000718082 0.000854585 9.82778E-05 0.000787881 0.000821273 0.000883531 0.000885422 0.000552824 0.001203205 0.00128473	20.3332 0.01424 18.5357 0.0149 2.78291 0.01499 22.3048 0.01578 23.2558 0.0188 19.3554 0.01729 19.4089 0.01797 15.8542 0.01852	403.2488678 421.7825962 424.5655033 448.8700845 470.1258325 489.4811933 508.8901207 524.5442917	7.436288243 7.778105812 7.829425486 8.240744583 6.869804918 9.02653772	9.833822236 10.1754398 10.22875946 10.63807656 11.08893891 11.42387171	7/15/02 8:28 7/15/02 10:18 7/15/02 10:33 7/15/02 12:07 7/15/02 14:08	11:51:00 13:39:00 13:56:00 15:30:00 17:31:00	11:46:00 13:34:00 13:51:00 15:25:00 17:26:00	11:38:00 13:28:00 13:43:00 15:17:00 17:18:00	3.442382896 estimate 3.89459084 3.732738048 estimate 3.937003937 4.185291708 4.847679857
20 80 80 80 24 79 25 78 21 80 21 80 37 80 37 80 39 80 21 80 80 33 80 47 78 42 81 82 84 80 85 80 85 80 80 85 80 80 85 80 80 85 80 80 85 80 80 85 80 80 85 80 80 85 80 80 85 80 80 85 80 80 85 80 80 80 80 80 80 80 80 80 80 80 80 80	0 105 0 106 9 106 8 105 0 106 0 106 0 106 0 106 0 106 0 106 0 106 0 106 0 106 0 106 1 106 0 106 1 106	00 0.0007083 91 0.00010594 91 0.00084758 90 0.00084758 90 0.00074181 83 0.00074181 83 0.00130865 80 0.00137728 81 0.00074181 80 0.00091818 83 0.00176574 86 0.00178574	540 539 538 540 540 540 540 540 540 540	14.148 14.181 14.181 14.148 14.070 14.109 14.057 14.057 14.057	0.000654585 9.82778E-05 0.000787881 0.000821273 0.000683512 0.000552824 0.001203205 0.00128473	18.5357 0.0149 2.78291 0.01499 22.3048 0.01578 23.2558 0.0188 19.3554 0.01729 19.4089 0.01797 15.8542 0.01852	421.7825962 424.5655033 448.8700845 470.1258325 489.4811933 508.8901207 524.5442917	7.778105812 7.829425486 8.240744583 8.669804918 9.02653772	10.1754398 10.22875946 10.63807656 11.08893891 11.42387171	7/15/02 10:18 7/15/02 10:33 7/15/02 12:07 7/15/02 14:08	13:39:00 13:56:00 15:30:00 17:31:00	13:34:00 13:51:00 15:25:00 17:26:00	13:28:00 13:43:00 15:17:00 17:18:00	3.69459064 3.732738048 estimate 3.937003937 4.185291708 4.847679857
3 80 24 79 25 78 21 80 21 80 17 80 37 80 39 80 21 80 21 80 33 80 47 79 42 81 35 81 49 80 45 80	0 104 9 105 8 105 0 104 0 106 0 106 0 106 0 106 0 106 0 106 0 106 0 106 0 106 1 106	91 0.00010594 91 0.00084788 90 0.00088287 84 0.00074181 83 0.00060035 83 0.00130885 0.00137728 81 0.00074181 80 0.00091818 80 0.00178574 86 0.00118539	540 539 538 540 540 540 540 540 540 540	14.181 14.181 14.148 14.070 14.109 14.057 14.057 14.018 14.031	9.82778E-05 0.000787881 0.000821273 0.000683531 0.000685422 0.000552824 0.001203205 0.00128473	2.78291 0.01499 22.3048 0.01578 23.2558 0.0188 19.3554 0.01729 19.4089 0.01797 15.8542 0.01852	424.5655033 448.8700845 470.1258325 489.4811933 508.8901207 524.5442917	7.829425486 8.240744583 6.869804918 9.02653772	10.22875946 10.63807856 11.08893891 11.42387171	7/15/02 10:33 7/15/02 12:07 7/15/02 14:08	13:58:00 15:30:00 17:31:00	13:51:00 15:25:00 17:26:00	13:43:00 15:17:00 17:18:00	3.732738048 estimate 3.937003937 4.185291708 4.847679857
3 80 24 79 25 78 21 80 21 80 17 80 37 80 39 80 21 80 50 80 33 80 47 79 42 81 35 81 49 80 45 80	9 104 8 105 0 106 0 106 0 106 0 106 0 106 0 106 0 106 0 106 1 106 1 107 1 107	91 0.00084758 90 0.00084287 84 0.00074181 87 0.00074181 80 0.0009035 83 0.00130885 80 0.00137728 81 0.00074181 80 0.001974181 80 0.00198574 86 0.00118539	539 538 540 540 540 540 540 540 540	14.181 14.148 14.070 14.109 14.057 14.057 14.018 14.031	0.000787881 0.000821273 0.000683531 0.000685422 0.000552824 0.001203205 0.00128473	22.3048 0.01578 23.2558 0.0188 19.3554 0.01729 19.4089 0.01797 15.8542 0.01852	448.8700845 470.1258325 489.4811933 508.8901207 524.5442917	8.240744583 8.869804918 9.02653772	10.63807858 11.08893891 11.42387171	7/15/02 12:07 7/15/02 14:08	15:30:00 17:31:00	15:25:00 17:26:00	15:17:00 17:18:00	3.937003937 4.185291708 4.847679857
24 79 25 78 21 80 21 80 17 80 37 80 21 80 21 80 21 80 21 80 21 80 50 80 33 80 47 79 42 81 35 81 49 80 52 80 45 80	9 104 8 105 0 106 0 106 0 106 0 106 0 106 0 106 0 106 0 106 1 106 1 107 1 107	91 0.00084758 90 0.00084287 84 0.00074181 87 0.00074181 80 0.0009035 83 0.00130885 80 0.00137728 81 0.00074181 80 0.001974181 80 0.00198574 86 0.00118539	538 540 540 540 540 540 540 540	14.148 14.070 14.109 14.057 14.057 14.018 14.031	0.000821273 0.000683531 0.000685422 0.000552824 0.001203205 0.00128473	23.2558 0.0188 19.3554 0.01729 19.4089 0.01797 15.8542 0.01852	470.1258325 489.4811933 508.8901207 524.5442917	8.869804918 9.02653772	11.08893891 11.42387171	7/15/02 14:08	17:31:00	17:26:00	17:18:00	4.185291708 4.847679857
25 78 21 80 21 80 17 80 37 80 39 80 21 80 50 80 33 80 47 78 42 81 35 81 49 80 45 80	8 109 0 104 0 106 0 106 0 106 0 106 0 106 0 106 0 106 0 106 1 107 1 107	90 0.00088287 84 0.00074181 87 0.00074181 83 0.00080035 83 0.00130885 80 0.00137728 81 0.00074181 80 0.00091818 83 0.00178574 86 0.00178574	538 540 540 540 540 540 540 540	14.148 14.070 14.109 14.057 14.057 14.018 14.031	0.000821273 0.000683531 0.000685422 0.000552824 0.001203205 0.00128473	23.2558 0.0188 19.3554 0.01729 19.4089 0.01797 15.8542 0.01852	489.4811933 508.8901207 524.5442917	9.02653772	11.42387171					4.847679857
21 80 21 80 17 80 37 80 39 80 21 80 28 80 50 80 33 80 47 79 42 81 35 81 49 80 52 80 45 80	0 108 0 108 0 108 0 108 0 108 0 108 0 108 0 108 0 108 1 108 1 108	84 0.00074181 87 0.00074181 83 0.00080035 83 0.00130885 80 0.00137728 81 0.00074181 80 0.00091818 83 0.00178574 86 0.00118539	540 540 540 540 540 540 540	14.070 14.109 14.057 14.057 14.018 14.031	0.000683531 0.000685422 0.000552824 0.001203205 0.00128473	19.3554 0.01729 19.4089 0.01797 15.8542 0.01852	489.4811933 508.8901207 524.5442917	9.02653772		7/15/02 20:07	23:30:00	23:25:00	23:17:00	
21 80 17 80 37 80 39 80 21 80 28 80 50 80 33 80 47 78 42 81 35 81 49 80 52 80 45 80	0 108 0 108 0 108 0 108 0 108 0 108 0 108 0 108 1 108 1 108	87 0.00074161 83 0.00060035 83 0.00130885 80 0.00137728 81 0.00074161 80 0.00091818 83 0.00176574 96 0.00118539	540 540 540 540 540 540	14.109 14.057 14.057 14.018 14.031	0.000685422 0.000552824 0.001203205 0.00128473	19.4089 0.01797 15.8542 0.01852	508.8901207 524.5442917							8 204836823
17 80 37 80 39 80 21 80 50 80 33 80 47 78 42 81 35 81 49 80 45 80	0 100 0 100 0 100 0 100 0 100 0 100 0 100 9 100 1 100	83 0.00080035 83 0.00130885 80 0.00137728 81 0.00074161 80 0.00091818 83 0.00178574 86 0.00118539	540 540 540 540 540 540	14.057 14.057 14.018 14.031	0.000552824 0.001203205 0.00128473	15.8542 0.01852	524.5442917	3.304430343	11.78179234	7/18/02 11:07	38:30:00	38:25:00	38:17:00	
37 80 39 80 21 80 28 80 50 80 33 80 47 79 42 81 35 81 49 80 52 80 45 80	0 108 0 108 0 108 0 108 0 108 0 108 9 107 1 107	83 0.00130885 80 0.00137728 81 0.00074161 80 0.00091818 83 0.00178574 86 0.00118539	540 540 540 540	14.057 14.018 14.031	0.001203205 0.00128473			9.873137394	12.07047139	7/18/02 18:00	45:23:00	45:18:00	45:10:00	8.738715322
39 80 21 80 28 80 50 80 33 80 47 79 42 81 35 81 49 80 52 80 45 80	0 108 0 108 0 108 0 108 0 108 9 107 1 107	80 0.00137728 81 0.00074161 80 0.00091818 83 0.00178574 86 0.00118539	540 540 540 540	14.018 14.031	0.00128473	34.0708 0.01973					88:38:00	68:33:00	88:25:00	8.284523724
21 80 28 80 50 80 33 80 47 78 42 81 35 81 49 80 52 80 45 80	0 100 0 100 0 100 0 100 9 100 1 100	81 0.00074161 80 0.00091818 83 0.00176574 86 0.00116539	540 540 540	14.031			558.6151345	10.30143885	12.69877284	7/17/02 17:15				9.855740952
28 80 50 80 33 80 47 79 42 81 35 81 49 80 52 80 45 80	0 100 0 100 0 100 9 107 1 107	80 0.00091818 83 0.00178574 86 0.00118539	540 540			35.813 0.02099	594.4281838	10.96186803	13.35920202	7/18/02 17:51	93:14:00	93:09:00	93:01:00	
28 80 50 80 33 80 47 79 42 81 35 81 49 80 52 80 45 80	0 100 0 100 0 100 9 107 1 107	80 0.00091818 83 0.00178574 86 0.00118539	540	14.018	0.000881839	19.3018 0.02187	813.7299582	11.31781301	13.715147	7/19/02 17:51	117:14:00	117:09:00	117:01:00	10.82743429
50 80 33 80 47 79 42 81 35 81 49 80 52 80 45 80	0 100 0 100 9 107 1 107 1 107	83 0.00178574 86 0.00118539			0.000843153	23.8754 0.02252	837.6053111	11.75809912	14.15543312	7/20/02 18:48	142:11:00	142:06:00	141:58:00	11.9240853
33 80 47 79 42 81 35 81 49 80 52 80 45 80	0 108 9 107 1 107 1 108	86 0.00118539		14.057	0.001625953	46.0417 0.02414	683.8469905	12.80715515	15.00448914	7/22/02 18:20	187:43:00	187:38:00	187:30:00	13.7009732
47 79 42 81 35 81 49 80 52 80 45 80	9 107 1 107 1 108					30.4717 0.02522	714.1186749	13.16908442	15.58641841	7/24/02 15:15	234:38:00	234:33:00	234:25:00	15.3177457
42 81 35 81 49 80 52 80 45 80	1 101		539			43.1193 0.02874	757.2379302	13.98424793	18.36158192	7/28/02 15:28	282:51:00	282:48:00	282:38:00	16.81814498
35 81 49 80 52 80 45 80	1 100						795.558293	14.87087803	17.08821203	7/27/02 17:57	309:20:00	309:15:00	309:07:00	17.58787481
49 80 52 80 45 80			541	13.953		38.3184 0.02809				7/29/02 14:55	354:18:00	354:13:00	354:05:00	18.82285844
52 80 45 80		81 0.00123802	541	14.031		32.1102 0.02923	827.6664889	15.28302311	17.8803571		428:47:00	428:42:00	426:34:00	20.85873504
45 80		79 0.00173043	540	14.005		44.9542 0.03082	872.6206815	16.09202479	18.48935876	8/1/02 15:24				
	0 108	85 0.00183637	540			47.9718 0.03251	920.5924553	16.97667374	19.37400774	8/3/02 13:25	472:48:00	472:43:00	472:35:00	21.74398488
	0 101	87 0.00156917	540	14.109	0.001488762	41.5908 0.03398	982.183014	17.74384651	20.1409805	8/5/02 10:01	517:24:00	517:19:00	517:11:00	22.74642829
53 81	1 101	88 0.00187188	541	14.122	0.001728288	48.9389 0.03571	1011.121886	18.84812975	21.04348375	8/8/02 15:18	594:41:00	594:38:00	594:28:00	24.38612994
48 84		83 0.00189511	544			43.875 0.03726	1054.998898	19.4552302	21.85258419	8/10/02 15:37	843:00:00	642:55:00	842:47:00	25.35744487
27 80			540	14.018	0.000875582	24.7936 0.03813	1079.790534	19.9124504	22.30978439	8/12/02 12:57	888:20:00	688:15:00	688:07:00	28.23810743 estimate
			539			48.0845 0.03978	1125.875042	20.78229823	23.15963022	8/19/02 15:03	858:28:00	858:21:00	858:13:00	29.29903298
50 79		82 0.00178574	540	14.044		84.3988 0.04203	1190.273875	21.94987708	24.34721107	8/23/02 9:22	948:45:00	948:40:00	948:32:00	30.80178566
70 80		82 0.00247204						23.02484144	25.42197543	8/28/02 10:18	1021:41:00	1021:36:00	1021:28:00	31.96378159
83 79		88 0.00222483	539	14.098		58.2811 0.04409	1248.555018				1194:07:00	1194:02:00	1193:54:00	34.55599321
48 80		77 0.00189511	540			43.9551 0.04584	1292.510155	23.63521947	28.23255348	9/2/02 14:44			1434:49:00	37.88183382
35 80	0 10	84 0.00123802	540			32.2589 0.04878	1324.76909	24.43010748	28.82744147	9/12/02 15:39	1435:02:00	1434:57:00		
42 88	8 10	73 0.00148322	548	13.927	0.001333434	37.7585 0.04812	1382.527605	25.12841342	27.52374741	9/19/02 13:23	1600:48:00	1600:41:00	1600:33:00	40.00958219
61 86		78 0.0021542	548	13.986	0.001949183	55.1945 0.05007	1417.72212	26.14425718	28.54159115	9/28/02 15:25	1770:48:00	1770:43:00	1770:35:00	42.08087452
31 80		78 0.00109476	540	13,992	0.001003437	28.4141 0.05107	1448.138171	28.86824154	29.08557553	10/2/02 15:17	1914:40:00	1914:35:00	1914:27:00	43.75690422
30 82			542	14.070	0.000972869	27.5485 0.05204	1473.884655	27.17828398	29.57359797	10/10/02 15:33	2108:58:00	2106:51:00	2108:43:00	45.90134348
		89 0.00148322	541	14.135		38.8174 0.05341	1512.502048	27.89209871	30.2894307	10/16/02 10:34	2245:57:00	2245:52:00	2245:44:00	47.39145493
		95 0.00035315	540	14 213		9.31037 0.05374	1521.812415	28.06378948	30.48112347	10/23/02 9:05	2412:28:00	2412:23:00	2412:15:00	49.11688744
10 80			542	14.109		32.2288 0.05488	1554.041281	28.65812262	31.05545882	10/30/02 14:48	2588:11:00	2588:08:00	2585:58:00	50.8545311
35 82	_	87 0.00123802								11/12/02 14:15	2897:38:00	2897:33:00	2897:25:00	53.82968964 estimate
30 80		91 0.00105944	540			27.8291 0.05588	1581.870332	29.17131937	31.56885336			3085:57:00	3085:49:00	55.55207767
35 81		85 0.00123802	541		0.001138181		1814.099342	29.76565554	32.16298953	11/20/02 10:39	3086:02:00			
52 90	0 10	93 0.00183637	550			47.4468 0.05868	1881.54818	30.84082413	33.03795812	11/27/02 13:45	3257:08:00	3257:03:00	3258:55:00	57.07130043
7 80	0 10	85 0.0002472	540	14.083	0.000228054	6.45774 0.05891	1666.003919	30.75971149	33.15704548	12/4/02 8:55	3420:18:00	3420:13:00	3420:05:00	58.48333096
34 80		85 0.0012007	540	14.083	0.00110769	31.3662 0.08001	1899.370078	31.33813581	33.7354898	12/11/02 9:07	3588:30:00	3588:25:00	3588:17:00	59.90409001
27 80			540	14.044	0.000877204	24.8395 0.06089	1724.209828	31.79620271	34.1935367	12/20/02 8:29	3803:52:00	3803:47:00	3803:39:00	81.87549488
35 80		77 0.00123802	540	13.979		32.0506 0.08202	1756.280249	32.38724919	34.78458318	12/30/02 15:48	4051:11:00	4051:08:00	4050:58:00	63.84890877
		93 0.00084756	540			22.3041 0.08281	1778.584318	32.79855921	35.1958932	1/7/03 10:35	4237:58:00	4237:53:00	4237:45:00	65.09966718
24 80			540			14.9374 0.08334	1793,501718	33.07402027	35,47135426	1/18/03 16:45	4460:08:00	4480:03:00	4459:55:00	66.78422988
18 80		98 0.00058504					1808.519539	33.35098438	35.74829835	1/23/03 11:57	4623:20:00	4623:15:00	4823:07:00	67.99509786
16 82		08 0.00058504	542			15.0178 0.08387					4790:38:00	4790:31:00	4790:23:00	69.2141804
16 84	4 10	87 0.00058504	544	14.109	0.000518387	14.679 0.08439	1823.198559	33.82188083	38.01899462	1/30/03 11:13				70.44572379
16 82	2 10	93 0.00056504	542	14.187		14.8145 0.08491	1838.01307	33.89485548	38.29218947	2/6/03 15:13	4982:38:00	4962:31:00	4982:23:00	
57 81	1 10	67 0.00201294	541	13.849	0.001822826	51.6165 0.08873	1889.62956	34.84871875	37.24405074	2/14/03 15:20	5154:43:00	5154:38:00	5154:30:00	71.79835552
16 84	4 11	00 0.00058504	544	14.278	0.000524586	14.8546 0.08726	1904.484135	35.12085042	37.51798441	2/24/03 16:16	5395:39:00	5395:34:00	5395:28:00	73.45508832
33 84		79 0.00116539	544	14.005	0.001081304	30.0527 0.08832	1934.538796	35.87485247	38.07218646	3/4/03 10:17	5581:40:00	5581:35:00	5581:27:00	74.71055258
00		81 0.00052972	544	14 031	0.000483305	13.6858 0.0888	1948.222417	35.92722943	38.32456342	3/11/03 12:02	5751:25:00	5751:20:00	5751:12:00	75.83809509
10		88 0.00074161	544	13.862	0.00088849		1987,151872	38.27630808	38.67364208	3/18/03 11:39	5919:02:00	5918:57:00	5918:49:00	78.93525418
21 84						13.8125 0.08998	1980.984378	38.53102469	38.92835888	3/25/03 14:15	6089:38:00	8089:33:00	8089:25:00	78.03810278
15 80		83 0.00052972	540						39.44991291	4/1/03 15:53	6259:18:00	8259:11:00	6259:03:00	79.11552734
31 80		73 0.00109476	540			28.2823 0.07098	2009.248836	37.05257892				8488:43:00	6468:35:00	80.42885055
11 80		89 0.00038846	540	14.135		10.1853 0.07132	2019.431922	37.2404061	39.6377401	4/10/03 9:25	6468:48:00			
14 80	10 10	78 0.00049441	540	13.992		12.8322 0.07177	2032.284074	37.47704421	39.87437821	4/18/03 8:24	6659:47:00	6659:42:00	6859:34:00	81.80749557
43 8	1 10	67 0.00151854	541	13.849	0.001375114	38.9388 0.07314	2071.20283	38.195115	40.59244899	4/24/03 14:48	6810:11:00	8810:08:00	6809:58:00	82.52383494
8 80		79 0.00021189	540	14.005	0.000194394	5.5046 0.07334	2078.707425	38.29662541	40.6939594	5/1/03 13:33	6978:56:00	8978:51:00	6978:43:00	83.5280392
16 60		87 0.00056504	540	13.849		14.5157 0.07385	2091.223095	38.58430933	40.96164332	5/3/03 18:21	7027:44:00	7027:39:00	7027:31:00	83.83157719
-40 80		80 -0.00141259	540			-38.7313 0.07255		37.88694607	40.28428007	5/18/03 16:45	7340:08:00	7340:03:00	7339:55:00	85.6745781
DECANISTERED 05/16/2003;			540									7 340.03.00	,000.00.00	

SAMPLE: 838.5' to 839.1' (Scammon coal) in canister L bs. grams bs. grams moisture % est. lost gas (cc) = TIME 0F: elapsed time (off bottom to canistering)

dry sample wei			203	999.10		wet sample			1007.02	0.79%		125		off bottom 7/14/02 21:24 TIME SINCE	at surface 7/14/02 21:29	in canister 7/14/02 21:42	18.0 minutes 0.300 hours 0.547722557 SQRT (hrs)
FIGWEASUREN	MENTS				OF RIG MEASUREMENTS						SCF/TON	SCF/TON	THE OFFICE OF		nt musta an	la canistas	SQRT hrs. (since off bottom)
measured oc	measured T (F)			cubic ft (@rig)	ABSOLUTE T (F) (@rig)	psia (@rig)	cubic ft (@STP)	cc (@STP)	cubic ft (@	∞ (@STP)	without lost gas	with lost gas	TIME OF MEASURE	0:27:30	at surface 0:22:30	in canister 0:09:30	
27	8		087	0.0009535	540		0.000881257			24.95433518				0:27:30			
2	80		087	7.063E-05	540		8.52783E-05			28.80280445							
1	80		087	3.5315E-05	540		3.28392E-05			27.72703909							
5	80			0.00017857	540		0.000183198				1.037271042						
4	80			0.00014128	540					38.04515081	1.155818304						
8	80			0.00021189	540		0.000195835			41.59055883	1.333634197			0:33:00			
13	80			0.00045909	540					53.6056089	1.718908298			0:42:00			
11	80			0.00038848	540					83.7721899	2.044905769			0:48:00			
9	8	-		0.00031783	540					72.09795398	2.311877987			1:01:00			
28	81			0.00091818	540					98.15018133	3.083131082			1:13:00			
20	81		088	0.0007083	540		0.000853384			114.8518593	3.878402858						
29	81			0.00102413	540					141.4793213	4.538848472			1:41:00			
40	81			0.00141259	540					178.4827173 198.0593303	5.723189885 8.288797881		7/14/02 23:15				
19	81			0.00087098	540					209.9358038	6.731751378			2:03:00			
15	80			0.00052972	540 540		0.000490038			227.5122169	7.295359395						
19	81			0.00067098	0.10		0.000820715		0.01055	298.8092242							
77	80			0.00271924	540		0.00251784			371.0321887	11.89744023					4:11:00	
78	81			0.00275455	540 540					551.7553239	17.89247138		7/15/02 6:17	8:53:00			
195	8			0.00868839			0.008382202			599.9481858	19.23781302		7/15/02 8:30				
52	8			0.00183837	540 538				0.02392	877.2281497	21.7158589						
83	7			0.00293113	536	14.148			0.02582	725.6001472	23.2889433						
52	7			0.00183837	540	14.140	0.004101184			841.7323124	28.99081314						
128	81				540		0.007870203			1058.927452	33.95534728		7/18/02 11:10				
235	81	*		0.00829898	540				0.03993	1130.752472	38.25847342		7/18/02 18:00	44:36:00			
78	81			0.00275455	540		0.0048874			1282.918025	40.49848854		7/17/02 10:18				
143	81			0.00505002	540		0.002438929			1331.980544	42.7110109						
75	81			0.00284881	540		0.002436929			1473.398098	47.24581255		7/18/02 17:48				
154	81		080	0.00543848 0.00402589	540	14.010	0.003700328		0.05573	1578,177285	50.80550372		7/19/02 17:54				10.79351857
114	81		080	0.00402388	540		0.0034699			1876.433525	53.7581885		7/20/02 18:49				11.69167398
107	8			0.00533253	540		0.004910377			1815.479397	58.21478449		7/22/02 18:22				13.67357549
151	8		089	0.00333233	540					1883.998599	80.41190898		7/23/02 14:44				14.48835628
74	8			0.00317833	540		0.002934822			1987.103193	83.07872158						
90	8			0.00298844	541		0.002718481			2044.025078	85.54328274						
84	7			0.00247204	539		0.002287922			2108.245248	87.80255328						16.79533665
70				0.00278987	541	13.953	0.002545315				89.91389572		7/27/02 17:59	308:35:00			17.56654016
79 84	8			0.00298844	541		0.002721518		0.07972	2257.384727	72.38482883		7/29/02 14:58	353:32:00	353:27:00	353:14:00	18.60248211
55	8			0.00194231	540		0.001788548			2308.030574	74.00882803		7/30/02 15:44	378:20:00	378:15:00	376:02:00	19.45079261
85	8			0.00300178	540		0.00275391			2388.01234	78.50937511		8/1/02 15:25	428:01:00	425:58:00	425:43:00	20.64017119
102	8			0.00380211	540					2480.11082	79,52871737	83.53494135	8/3/02 13:28	472:02:00	471:57:00	471:44:00	21.72632811
70	8			0.00247204	540		0.002284741			2544.807244		85.80946343	8/5/02 10:03	518:39:00	516:34:00	518:21:00	22.72993621
53	8			0.00187188	540	14.098	0.001728284					87.17878315	8/8/02 15:57	546:33:00	548:28:00	548:15:00	
53	8			0.00187188	541	14,122	0.001728288			2842.685488	84.73980285	88.74802883	8/8/02 15:20	593:58:00	593:51:00	593:38:00	
53	6			0.00187188	544	14.057				2891.130814	86.29324059	90.30148457	6/10/02 15:39	642:15:00	642:10:00		
82	8			0.00218952	540		0.002010598			2748.084348	88.11885943	92.12708342	8/12/02 12:56	687:34:00	687:29:00		
53	8			0.00187188	541		0.001717147		0.09878	2796.688358	89.87802875	93.68625074	8/14/02 11:31	734:07:00			
20	8		085	0.0007083	541				0.09941	2815.104933	90.28858889	94.27879288	8/18/02 11:51	782:27:00			
80	7		082	0.00211889	539	14.044	0.001952958			2870.408343	92.04185239						
75	8		082	0.00284881	540	14.044	0.002438877	88.9987	0.1038	2939.405092	94.25435193	98.26257591	8/23/02 9:23				
40	7		088	0.00141259	539	14.098	0.001308785	37.0039	0.10511	2978.408993	95.44091131	99.44913529	8/28/02 10:19				
45	8		088	0.00158917	540	14.122	0.001470113	41.8288	0.10858	3018.037814	98.7757724						
78	8		077	0.00275455	540	13.979	0.002522434	71.4271	0.1091	3089.484911	99.08813884						
30	8		084	0.00105944	540	14.070	0.000976472	27.8505	0.11008	3117.115427	99.95277451						
45	8		085	0.00158917	540	14.083	0.00148808		0.11155		101.2839549						
103	8		073	0.00383742	548	13.927	0.003270089				104.2531918						
52	8	8 1	078	0.00183837	548	13.988					105.7819211						
31	8	0 1	078	0.00109478	540	13.992	0.001003437										
14	8	2 1	084	0.00049441	542	14.070	0.000454008	12.656	0.11794	3339.548797	107.0852787						
10	8		089	0.00035315	541	14.135	0.000328388		0.11828								
20	8		095	0.0007083	540	14.213	0.000857588		0.11892		107.9787249						
21	8		087	0.00074181	542	14,109	0.000882893		0.1198								
33	8	0 1	091	0.00118539	540		0.001081058		0.12088								
28	8			0.00091818	541						110.3480931						
47	9		093	0.0018598	550												
-40	8			-0.00141259	540		-0.001315175										
28	8			0.00091818	540												
43	-	-		0.00151854	540												
-1	8	0 1	079	-3.5315E-05	540	14.005	-3.23989E-05	-0.91743	0.12393	3509.214703	112.5257483	116.5339723	12/20/02 8:30	3803:06:00	3803:01:00	3802:48:00	01.0092/822

17	80	1077 0.00060035	540	13.979	0.000549761	15.5874 0.12448	3524.782148	113.0249307	117.0331547	12/30/02 15:49	4050:25:00	4050:20:00	4050:07:00	83.84288387
-12	80	1093 -0.00042378	540	14.187	-0.000393832	-11.152 0.12408	3513.830113	112.6673319	118.8755559	1/7/03 10:38	4237:12:00	4237:07:00	4238:54:00	65.0937785
-12	80	1098 -0.00042378	540	14.252	-0.000395633	-11.2031 0.12369	3502.427063	112.3080973	118.3163212	1/16/03 18:48	4459:22:00	4459:17:00	4459:04:00	88.77848955

DECANISTERED 01/17/2003; sample dried for 30 days in air SAMPLE: 924.0' to 925.0' (Weir-Pitt coal) in canister M lha orams moisture % est lost das (oc) = TIME OF elapsed time (off bottom to canistering) lbs. grams dry sample weight: 3.158 1431.43 wet sample weight: 3.218 1458.82 1.88% 300 off bottom at surface in canister 12.9 minutes CONVERSION OF VOLUMES TO STP 7/15/02 0:21 7/15/02 0:34 0.215 hours CONVERSION OF RIG MEASUREMENTS TO STP (cubic #; @60 degrees; @14.7 pei) CUMULATIVE VOLUMES 0.483980384 SQRT (hrs) BIGMEASI FEMENTS SCF/TON SCF/TON TIME SINCE measured comeasured T (F) measured P cubic ft (@rig) ABSOLUTE T (F) (@rig) psia (@rig) cubic ft (@STP) cubic ft (@c (@STP) without lost gas with lost gas TIME OF MEASURE off bottom at surface SQRT hrs. (since off bottom) in canister 14.135 0.003304721 93.5789 0.0033 7/15/02 0:41 0:07:05 0.577350289 85 1089 0 00360211 545 93.57891488 2.094400413 8.806734777 0:20:00 102 0:09:15 0.807819418 1089 0 00067098 545 14 135 0.000615585 17.4314 0.00392 111.0102814 2.484533823 9.198868187 7/15/02 0:44 0:22:10 19 65 1089 0.0018598 545 14 135 0.001522783 43.1197 0.00544 154 1299775 3.44980088 10 18393504 7/15/02 0:50 0:28:10 0:15:15 0.88518016 47 8.5 85 1089 0 00077893 545 14 135 0.000712783 20.1837 0.00818 174 313885 3.901334103 10.81588847 7/15/02 0:53 0:31:10 0:18:15 0.720724944 22 1089 0.0018598 0.001522783 43.1197 0.00788 217 433381 4.86640096 11.58073532 7/15/02 0:59 0:37:40 0.24.45 0 792324288 47 8.5 545 14 135 0.853098926 247 7088923 5 544001093 12 25833548 7/15/02 1:05 0:43:40 0:30:45 1089 0 00118539 545 14 135 0.001089174 30.2755 0.00875 33 85 0.023450878 39 85 1089 0 00137728 545 14 135 0.00128357 35.7802 0.01001 283 4890857 6 344801251 13 05913561 7/15/02 1:13 0:51:10 0.38.15 0.001101574 31.193 0.01111 314.8820373 7.042934722 13.75728909 7/15/02 1:20 0:58:40 0:45:45 0.988828485 34 85 1089 0.0012007 545 14,135 1.054092553 39 85 1089 0.00137728 545 14,135 0.00126357 35.7802 0.01238 350.4822108 7.84373488 14.55808924 7/15/02 1:28 1:08:40 0:53:45 8.562401689 15.27673805 7/15/02 1:37 1:03:00 1.124845688 1089 0.00123602 545 14,135 0.001133973 32.1104 0.01351 382,5726228 1:15:55 35 85 1.187901979 1089 0 00141259 419 2702363 9 383735184 16 09808955 7/15/02 1:48 1:24:40 1:11:45 40 85 545 14 135 0 001295989 38 8978 0 01481 85 1089 0 00148322 545 14.135 0.001380787 38.5325 0.01817 457.8027308 10.24813535 18.96048972 7/15/02 1:58 1:34:10 1-21-15 1 252774898 42 1089 0.00204828 0.001879155 53.2115 0.01805 511.0142705 11.43708892 18.15140329 7/15/02 2:10 1:48:55 1:36:00 1 347322448 58 85 545 14,135 1089 0.00173043 545 14 135 0.001587562 44.9546 0.01963 555 9888472 12 44320245 19 15753882 7/15/02 2:24 2:02:10 1:49:15 1.426923853 85 49 2:02:15 1.50092584 0.00188476 47.7089 0.02132 803 675745 13 510938 20 22527038 7/15/02 2:37 2:15:10 52 85 1089 0.00183837 545 14 135 1089 0.00254287 0.002332744 88.0557 0.02385 889 7314498 14 98933629 21 70387085 7/15/02 3:01 2:39:10 2:28:15 1.828735024 72 85 545 14 135 42 83 1089 0.00148322 543 14 135 0.001385779 38.6744 0.02502 708.4058885 15.85491289 22.58924725 7/15/02 3:18 2.54.10 2:41:15 1.703754025 1089 0.00856855 0.006026255 170.644 0.03104 19.67411364 7/15/02 4:20 3:58:10 3:45:15 1.992346487 188 85 545 14,135 879.0497721 26.388448 2.443244855 85 1090 0.00987626 545 14.148 0.008885539 251.809 0.03993 1130.65926 25.30541441 32.01974878 7/15/02 6:20 5:58:10 5:45:15 274 7/15/02 7:33 1090 0.00444988 545 14.148 0.004088051 115.704 0.04402 1246.382893 27.89499088 34.60932505 7:11:10 6:58:15 2 680892282 128 85 1090 0.00342554 0.00314561 89.0734 0.04718 1335 438325 29 88855337 38 60288773 7/15/02 8:34 8:12:10 7:59:15 2.884049193 97 85 545 14 148 85 1090 0 00434372 545 14.148 0 003988764 112 949 0 05115 1448.38511 32.41647308 39.13080742 7/15/02 9:55 9:33:10 9:20:15 3 090758829 123 1091 0.00247204 0.002272111 84.3388 0.05342 1512.723879 33.8564464 40.57078077 7/15/02 10:43 10:21:10 10:08:15 3.217573275 85 545 14.181 70 85 1091 0.00307239 545 14 181 0.002823909 79.9639 0.05625 1592 887777 35 84612758 42 38046193 7/15/02 11:53 11:31:10 11:18:15 3 394030708 estimate 87 36.05754852 11:35:15 3.435517105 0.0007063 14 181 0.000849174 18.3825 0.05889 42 77188288 7/15/02 12:10 11:48:10 20 85 1091 545 1811 070282 3.51939073 38 88039043 43 5947248 7/15/02 12:45 12:23:10 12:10:15 40 85 1091 0 00141259 545 14 181 0.001298349 38.785 0.05819 1847 835293 93 85 1090 0.00328428 545 14 148 0.003015895 85.4003 0.08121 1733.235593 38.79174435 45.50607871 7/15/02 14:10 13:48:10 13:35:15 3 715208982 275 85 1084 0.00971157 545 14.070 0.0088888878 251.138 0.07008 1984,373303 44.4124882 51,12882058 7/15/02 20:13 19:51:10 19:38:15 4.455645607 5.948622623 85 1087 0.0207651 545 14.109 0.019015755 538.484 0.08909 2522.83749 56.46391463 83.1782492 7/16/02 11:45 35:23:10 35:10:15 588 61.26268326 41:29:15 8 457768793 1083 0.00829898 545 14.057 0.007571888 214.411 0.09887 2737.2481 87.97699782 7/16/02 18:04 41:42:10 235 85 71 77691987 78 49125424 7/17/02 10:25 58:03:10 57:50:15 7.819237349 85 1087 0 01811849 545 14 109 0.016590278 489 783 0.11328 3207 03083 513 188 85 1083 0 00856855 545 14.057 0.005993053 169.704 0.11925 3378.734348 75.5750782 82.28941258 7/17/02 17:20 84:58:10 84:45:15 8 08036255 1080 0.01529131 0.013912922 393.969 0.13318 3770.702943 84.39253448 91.10886885 7/18/02 18:00 89:38:10 89:25:15 9,487634927 433 85 545 14.018 1081 0 01891579 545 14 031 0.01540522 436.226 0.14857 4208 928555 94.15574986 100 8700842 7/19/02 18:04 113:42:10 113:29:15 10.88315046 85 479 1080 0.01380809 14.018 0.012583401 355.755 0.18113 4582 883108 102 1179333 108.8322676 7/20/02 18:54 138:32:10 138:19:15 11.77013641 391 85 545 13.58721948 357 85 1083 0 01280738 545 14 057 0.011502795 325.722 0.17283 4888 404758 109 4079488 118 1222812 7/22/02 16:28 184:04:10 183:51:15 202 85 1088 0.00713359 545 14 122 0.006538633 185.153 0.17917 5073 557529 113.5518722 120 2682068 7/23/02 14:48 208:28:10 208:13:15 14 38788471 1086 0.00791052 0.007237433 204.941 0.18641 118.1388691 124.8530034 7/24/02 15:28 231:08:10 230:53:15 15.20208492 224 85 545 14.098 5278.498032 85 1079 0.00881578 545 14.005 0.00819563 175.44 0.1928 5453 938088 122.0852126 128.779547 7/25/02 15:18 254:58:10 254:43:15 15 98871886 193 1077 0.00885107 132.7191195 279:11:10 278:58:15 16 70888325 194 85 545 13 979 0.006216188 176.022 0.19882 5829.960244 126.0047851 7/28/02 15:33 17.48388147 1075 0 00741811 0.008718388 190 188 0.20554 5820 14588 130 2813518 136.975686 7/27/02 18:03 305:41:10 305:28:15 210 85 545 13 953 85 1081 0.0081224 545 14.031 0.007397079 209.481 0.21293 8029.80703 134.9493258 141.88366 7/29/02 14:58 350:38:10 350:23:15 18 72438992 230 155 85 1083 0.00547379 545 14.057 0.004994211 141.42 0.21793 8171.028794 138.1144575 144.8287919 7/30/02 15:48 375:24:10 375:11:15 19 37531382 1079 0 00708298 545 14 005 0.008420342 181.803 0.22435 8352 82994 142 1834148 148 8977489 8/1/02 15:28 423:04:10 422:51:15 20.56885198 200 85 1085 0.00794583 146.7884458 153.5007801 489:08:10 468:55:16 21.85955011 545 14.083 0.007263049 205.686 0.23161 8558 495801 8/3/02 13:30 85 225 150 7743199 157 4888542 514:08:10 513:53:15 22.87383465 0.0089217 8/5/02 10:28 198 89 1087 549 14 109 0.008292402 178 18 0 2379 8738 878118 156 88 1088 0.00547379 548 14 096 0.004980829 141 035 0 24288 8877 711288 153 9308441 180 8451785 8/6/02 15:59 543:37:10 543:24:15 23.31584806 1088 0.00853324 0.005955589 188.642 0.24884 7046 353586 157.7052468 164.4195811 8/8/02 15:22 591:00:10 590:47:15 24 31054869 185 88 548 14.122 0.006344778 179.663 0.25519 181.7263133 639:11:15 25 28841489 198 88 1083 0.00899233 548 14.057 7226.016959 188.4408476 8/10/02 15:48 839:24:10 1080 0.00582694 549 14 018 0.005263083 149.033 0.28045 7375.049742 165.0816331 171.7781674 8/12/02 13:02 884:40:10 684:27:15 28.16618896 89 185 27.03613837 143 86 1081 0 00505002 548 14.031 0.00459083 129.992 0.28504 7505.041418 167.9711916 174.685526 8/14/02 11:19 730:57:10 730:44:15 27.91898 estimate 162 78 1085 0.005721 538 14 083 0.005297438 150.008 0.27034 7855 047522 171 3284955 178 0428298 8/18/02 11:50 779:28:10 779:15:15 350 92 1082 0.01236018 552 14 044 0.01112398 314.994 0.28148 7970.041814 178.3784188 185 0927531 8/19/02 14:47 854:25:10 854:12:15 29 23045408 190 88 1082 0.00870981 548 14.044 0.008105081 172.878 0.28757 6142.917802 162.2475761 188.9819104 8/23/02 9:11 944:49:10 944:38:15 30 73791542 124 84 1088 0.00437904 544 14.098 0.004013801 113.858 0.29158 8258.575555 184.7913832 191.5056976 8/28/02 10:20 1017:58:10 1017:45:15 31.90563343 1088 0 00512085 543 14 122 0.004710881 133.398 0.29829 8389.971775 187.7789193 194.4912537 8/30/02 11:09 1114:47:10 1114:34:15 33.38841283 145 83 1190:18:15 34.50342173 1077 0 00588228 545 0.005319008 150.817 0.30161 8540.588689 191.1478937 197.8822281 9/2/02 14:51 1190:29:10 188 85 13.979 85 1084 0 00409852 545 14 070 0 003741054 105 934 0 30535 8848 523141 193 5188248 200 2331592 9/8/02 11:18 1282:54:10 1282:41:15 35.81783222 118 85 1085 0.0050147 545 0 004583791 129 798 0 30993 8778 321151 196.423849 203.1361833 9/10/02 14:15 1381:53:10 1381:40:15 37 17372878 estimate 142 14 083 1081 0.00358879 14.031 0.003248282 91.9808 0.31318 198.482481 205 1988154 9/13/02 11:30 1451:08:10 1450:55:15 38 09376048 85 545 8888.301917 101 1070 0 00497939 545 127 102 0 31787 8995 404052 201 3271885 208.0415028 9/18/02 10:21 1589:59:10 1589:46:15 39.62305025

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141

139	88	1090	0.00490878	548	14.148	0.004482951	128.943	0.32215	9122.346595	204.1682841	210.8826184	9/23/02 14:	13 1893:51:10	1893:38:15	41.15844273
128	97	1080	0.00452029	557	14.018	0.00402422	113.953	0.32818	9236.299391	206.7186746	213.433009	9/27/02 10:	59 1788:37:10	1788:24:15	42.26842138
56	85	1078	0.00197783	545	13.992	0.00179603	50.8577	0.32797	9287.157094	207.8569267	214.5712611	10/1/02 14:	1888:34:10	1888:21:15	43.43465718
35	85	1081	0.00123802	545	14.031	0.001125642	31.8745	0.3291	9319.031817	208.5703141	215.2848484	10/4/02 18:	30 1960:08:10	1959:55:15	44.27342443
70	85	1085	0.00247204	545	14.083	0.002259615	83.9849	0.33138	9383.018552	210.0023682	216.7167026	10/9/02 17:	08 2080:44:10	2080:31:15	45.81508644
88	85	1067	0.0031077	545	14.109	0.002845895	80.5865	0.33421	9483.803028	211.8059834	218.5203178	10/14/02 14:	21 2197:59:10	2197:48:15	48.88268456
38	85	1089	0.00134198	545	14,135	0.00123117	34.8827	0.33544	9498.485781	212.5862502	219.3005848	10/18/02 10:	37 2242:15:10	2242:02:15	47.35243159
81	85	1095	0.0021542	545	14.213	0.001987242	58.2722	0.33742	9554.737983	213.8458848	220.5800192	10/22/02 9:	2385:30:10	2385:17:15	48.84160908
49	85	1084	0.00173043	545	14.070	0.001580273	44.7482	0.339	9599.486137	214.8471988	221.5815332	10/25/02 11:	32 2459:10:10	2458:57:15	49.59001356
55	85	1076	0.00194231	545	13.992	0.001763958	49.9495	0.34077	9849.435887	215.985125	222.8794593	10/29/02 13:	17 2557:25:10	2557:12:15	50.57093478
12	85	1100	0.00042378	545	14.278	0.000392718	11.1205	0.34118	9880.556156	218.2140139	222.9283483	11/1/02 6:	7 2623:55:10	2823:42:15	51.2242076
73	85	1091	0.00257798	545	14,181	0.002369487	67.0961	0.34353	9727.6523	217.7157004	224.4300348	11/12/02 13:	2893:37:10	2893:24:15	53.79237348
111	85	1098	0.00391994	545	14.226	0.00381943	102.49	0.34715	9830.14277	220.0095513	228.7238857	11/27/02 11:	35 3251:13:10	3251:00:15	57.01946549
76	65	1095	0.00288392	545	14.213	0.002475908	70.1098	0.34983	9900.252399	221.578683	228.2930173	12/4/02 8:	14 3416:22:10	3418:09:15	58.44971723
91	85	1082	0.00321385	545	14.044	0.002929378	82.9504	0.35255	9983.202822	223.4352059	230.1495403	12/11/02 7:	3583:31:10	3583:18:15	59.8625045
77	85	1079	0.00271924	545	14.005	0.002471832	89.9942	0.35503	10053.19703	225.0017543	231.7180887	12/20/02 8:	9 3799:57:10	3799:44:15	81.84375701
78	85	1079	0.00275455	545	14.005	0.002503933	70.9032	0.35753	10124.10028	228.5886478	233.302982	12/30/02 15:	4047:12:10	4048:59:15	63.81762948
-1	80	1093	-3.5315E-05	540	14.187	-3.28193E-05	-0.92934	0.3575	10123.17092	228.587848	233.2821824	1/7/03 10:	23 4234:01:10	4233:48:15	85.06934335
18	81	1098	0.00056504	541	14.252	0.000528538	14.9098	0.35802	10138.08071	228.9015457	233.8158801	1/16/03 16:		4455:57:15	88.75454825
38	86	1109	0.00134198	546	14.394	0.001251485	35.438	0.35928	10173.51889	227.8948872	234.4090218	1/23/03 11:	4819:27:10	4619:14:15	87.98855832
65	85	1087	0.00229548	545	14.109	0.002102082	59.5241	0.38138	10233.0428	229.026903	235.7412373	1/30/03 11:	7 4788:45:10	4788:32:15	69.18836268
36	86	1093	0.00134198	548	14,187	0.001233429	34.9267	0.36261	10287.9895	229.8088015	238.5229358	2/6/03 15:	4958:41:10	4958:28:15	70.41793884
77	86	1067	0.00271924	548	13.849	0.002439885	89.089	0.38505	10337.0585	231.3548905	238.0892248	2/14/03 15:	13 5150:51:10	5150:38:15	71.78944181
-10	84	1100	-0.00035315	544	14.278	-0.000327868	-9.28411	0.36472	10327.7744	231.1471018	237.8614381	2/24/03 18:	11 5391:49:10	5391:38:15	73.42900958
85	84	1072	0.00229546	544	13.914	0.002076885	58,8108	0.3888	10388.58501	232.4833488	239.1778832	3/4/03 10:	2 5577:50:10	5577:37:15	74.88491221
44	85	1081	0.00155385	545	14.031	0.001415093	40.0708	0.38822	10426.65584	233.3801786	240.074513	3/11/03 11:	5747:35:10	5747:22:15	75.61283808
73	89	1088	0.00257798	549	13.882	0.002302834	65,2031	0.37052	10491.85893	234.8194988	241.5338309	3/18/03 11:	5915:08:10	5914:55:15	76.90992206
10	85	1083	0.00035315	545	14.057	0.000322207	9.12386	0.37084	10500.98279	235.0236986	241.738033	3/25/03 14:0		6085:34:15	78.01144859
35	85	1073	0.00123602	545	13.927	0.001117312	31.8388	0.37198	10532.82142	235.7318085	242.4481409	4/1/03 15:4		8255:12:15	79.09120985
5	81	1098	0.00017657	541	14.252	0.000184543	4.65931	0.37212	10537.28073	235.8380871	242.5504214	4/10/03 15:4	8471:25:10	8471:12:15	80.44513313
-3	81	1098	-0.00010594	541	14.252	-9.87255E-05	-2.79559	0.37202	10534,48515	235.7735187	242.4878531	4/11/03 16:0	8495:39:10	8495:28:15	80.59561265
			O ACO demand C Aco C des												

DECANISTERED 04/11/2003; sample oven dried @150 degrees F for 5 days

		lbs.		grame				lba.	grame	moisture %		est. lost gas (cc) =		TIME OF:			elapsed time (off bottom to canister
ample weig	ht:		3.072	1393.21		wet sample	weight:	3.110	1410.7	2 1.24%		300		off bottom	at surface	in canister	15.7 minutes
	VOLUMES 1	OSTP												7/15/02 0:21		7/15/02 0:37	0.281 hours
EASUREME				CONVERSION	OF RIG MEASUREMENTS	TO STP (cubi	c ft; @60 degrees;	@14.7 psi)	CUMULA	TIVE VOLUMES	SCF/TON (approx)	SCF/TON (approx)		TIME SINCE			0.510990324 SQRT (hrs)
ured oc m	neasured T (F	mee	asured P	cubic ft (@rig)	ABSOLUTE T (F) (@rig)	psia (@rig)	cubic ft (@STP)	cc (@STP)	cubic ft (@ cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SQRT hrs. (since off bottom)
103		35		0.00383742	545	14.135	0.00333712	94.4984	0.0033	4 94.49635522	2.172958289	9.071498207	7/15/02 0:45	0:23:10		0:07:30	
19		35	1089	0.00087098	545	14.135	0.000615585	17.4314	0.0039	5 111.9277217	2.573792862	9.472332801	7/15/02 0:48	0:27:00		0:11:20	0.670820393
55	8	35	1089	0.00194231	545	14,135	0.001781957	50.4592	0.0057	3 162.3889405	3.734109318	10.83264925	7/15/02 0:55	0:33:10		0:17:30	0.743490287
24	8	35	1089	0.00084758	545	14,135	0.000777581	22.0186	0.0065	1 184.4055087	4.240429223	11.13896918	7/15/02 0:58	0:36:10		0:20:30	0.778387847
82		35	1089	0.00289581	545	14.135	0.002658736	75.2301	0.0091	7 259.6358188	5.970355573	12.88889551	7/15/02 1:10	0:48:40		0:33:00	0.900817072
24		35	1089	0.00084758	545	14.135	0.000777581	22.0188	0.0099	5 281.854185	6.47667548	13.37521542	7/15/02 1:15	0:53:40		0:38:00	0.945750731
38	8	15	1089	0.00127133	545	14.135	0.001168372	33.0279	0.0111	1 314.8620373	7.236155341	14.13469526	7/15/02 1:22	1:00:10		0:44:30	1.001387928
45		35	1089	0.00158917	545	14.135	0.001457965	41.2848	0.0125	7 355.9888527	8.185505167	15.08404511	7/15/02 1:31	1:09:10		0:53:30	1.073674894
36		35	1089	0.00127133	545	14,135	0.001168372	33.0279	0.0137	4 388.994705	8.944985028	15.84352497	7/15/02 1:39	1:17:10		1:01:30	1,134068389
33		35		0.00118539	545	14,135	0.001089174	30.2755	0.0148	1 419,2702383	9.8411749	18.53971484	7/15/02 1:49	1:27:10		1:11:30	1.205312315
40		35	1089	0.00141259	545	14,135	0.001295969	38.8978	0.018	1 455.96785	10.48504141	17.38358135	7/15/02 1:57	1:35:55		1:20:15	1.284381938
55		35	1089	0.00194231	545	14,135	0.001781957	50.4592	0.0178	8 506.4270888	11.84535787	18.54389781	7/15/02 2:12	1:50:10		1:34:30	1.355031775
35		35			545	14,135	0.001133973	32,1104	0.0190	2 538.5374807	12.38374108	19.282281	7/15/02 2:21	1:59:10		1:43:30	1.409294544
50		35	1089		545	14,135	0.001619961	45.872	0.0206	4 584.4094978	13.4385742	20.33711414	7/15/02 2:37	2:15:10		1:59:30	1.50092584
50		35			545	14,135	0.001619961	45.872	0.0222	6 830,2815149	14.49340734	21.39194728	7/15/02 2:59	2:37:10		2:21:30	1.618469785
81		33	1089	0.0021542	543	14.135	0.001983832	56.17	0.0242	4 886, 4515042	15.78504373	22.88358388	7/15/02 3:17	2:55:10		2:39:30	1.708638184
178		35	1089	0.0062154	545	14,135	0.005702283	181.47	0.0299	4 847.9210044	19.49805838	26.39659832	7/15/02 4:18	3:56:10		3:40:30	1.983983485
284		35	1090		545	14,148	0.008561249	242,427	0.0385	1 1090,347684	25.0726897	31.97122984	7/15/02 8:24	8:02:10		5:46:30	2.456849835
121		35	1090		545	14,148	0.003923906	111,112	0.0424	3 1201.459884	27.82772997	34.52828991	7/15/02 7:30	7:08:40		6:53:00	2.87290938
39		35	1090		545	14,148	0.00128473	35.813	0.0436	9 1237.272913	28.45125535	35.34979529	7/15/02 8:32	6:10:10		7:54:30	2.858224002
39		35	1090	0.00137728	545	14,148	0.00128473	35.813	0.0449	6 1273.085942	29.27478073	38.17332087	7/15/02 8:54	8:32:10		8:16:30	2.921682388
50		35	1090	0.00178574	545	14.148	0.001821449	45.9141	0.0485	8 1319.000082	30.33058249	37.22912243	7/15/02 9:58	9:34:10		9:18:30	3.093451866
31		3.5	1091	0.00109476	545	14,181	0.00100822	28,4929	0.0475	9 1347.492988	30.98578014	37.88432007	7/15/02 10:41	10:19:10		10:03:30	3.212389211
83		35	1091	0.00293113	545	14,161	0.002694074	78.2874	0.0502	8 1423.780383	32.74001898	39.83855892	7/15/02 11:45	11:23:10		11:07:30	3.374331209
30		35	1091		545	14,161	0.000973782	27.5738	0.0512	5 1451.354121	33.37406122	40,27282118	7/15/02 12:11	11:49:10		11:33:30	3.437941891
44		35	1090		545	14,148	0.001426875	40.4044	0.0528	8 1491.758564	34.30318677	41.20172671	7/15/02 14:11	13:49:10		13:33:30	3.717451337
252		35			545				0.0808	1 1721.892029	39.59513644	46.49367638	7/15/02 20:20	19:56:10		19:42:30	4.488718434
521		35	1079		545		0.01872499				50.48556896	57.38410892	7/18/02 11:55	35:33:10		35:17:30	5.982815012
235		35	1087		545						55.43417788	62.3327176	7/18/02 18:08	41:46:10		41:30:30	8.462928473
415		35		0.01485584	545						64.17321354	71.07175348				57:57:30	7.630186738 estimate
157		35		0.00554442	545		0.005058852				87.4871407	74.38588084				84:44:30	8.082430017
409		30			540		0.01328345					63.00213908				89:32:30	9.478432758
111		35			545		0.003589894					85.32886586				113:34:30	

228	87	1080	0.00798114	547	14.018	0.007235159	204,878	0.12788	3815.516332	83.13927939	90.03781933	7/20/02	18:59	138:37:10		138:21:30	11.77387591
250	85	1083	0.0088287	545	14.057	0.008055179			3843.812728	88.38438833	95.28292827	7/22/02	18:31	164:09:10		163:53:30	13.57029026
120	85		0.00423778	545	14.098	0.003877198		0.13961	3953,402281	90.90901178	97.8075517	7/23/02	14:50	208:28:10		208:12:30	14.38904466 estimate
138	85		0.00487344	545	14 005	0.004430038			4078.848452	93.79381717	100.8921571	7/24/02	15:29	231:07:10		230:51:30	15.20281308 estimate
138	85		0.00487344	545	14.005	0.004430038			4204.290622	96.87822257	103.5767625	7/25/02	15:17	254:55:10		254:39:30	15.96619693
			0.00803683	545	13.979	0.005479217			4359,44419	100.2459995	107.1445395	7/26/02	15:34	279:12:10		278:58:30	16.70938196
171	85		0.00870981	545	13.953	0.008078714			4531.518908	104.2028348	111.1013745	7/27/02		305:45:10		305:29:30	17.48578788
190	85	1075	0.0078752	545	14.031	0.00717195			4734.803153	108.8728298	115,7713898	7/29/02		350:37:10		350:21:30	18.72483498
223	85			545	14.057	0.002418554			4803.032071	110.4483819	117.3449018	7/30/02		375:25:10		375:09:30	19.37574371
75	85		0.00284881	545	14.005	0.005298762			4953.019887	113.8953488	120.7938888	8/1/02		423:05:10		422:49:30	20.58905713
185	85		0.00582894	545	14.005	0.008288782			5124.86492	117.8489511	124.745491	8/3/02		469:12:10		468:56:30	21.88108903
188	85		0.00863918						5271.227323	121.2125741	128.111114		10:27	514:05:10		513:49:30	22.67348712
181	89		0.00588588	549	14.109	0.005188759				122.9492138	129.8477538	8/8/02		543:42:10		543:26:30	23.31743506
83	88		0.00293113	548	14.098	0.002887048			5348.749381			8/8/02		591:01:10		590:45:30	24.31089148 estimate
71	88		0.00250735	548	14.122				5411.471582	124.437509	131.3380489			839:30:10		839:14:30	25.28839215
42	88		0.00148322	548	14.057	0.001345862			5449.581974	125.313883	132.2124029	8/10/02				884:25:30	28.18850743
38	89		0.00127133	549	14.018	0.001148305			5482.098217	128.0815783	132.9801183		13:03	884:41:10		730:42:30	27.03844859
35	88		0.00123802	548	14.031	0.001123581		0.19472	5513.914382	128.7931948	133.8917347	8/14/02		730:58:10		785:37:30	28.03388032 estimate
38	78	1085	0.00127133	538	14.083	0.001177208			5547.249052	127.5597304	134.4582704		18:15	785:53:10			29.23073915
40	92	1082	0.00141259	552	14.044	0.00127131			5583.248399	128.3875402	135.2880802	8/19/02		854:28:10		854:10:30	
92	88	1082	0.00324898	548	14.044	0.002958144			5888.958772	130.3124254	137.2109854	8/23/02		944:51:10		944:35:30	30.73845763
91	84	1088	0.00321385	544	14.122	0.002951037	83.5637	0.20308	5750.520507	132.2339848	139.1325246	8/28/02		1018:00:10		017:44:30	31.9081558
90	83	1088	0.00317833	543	14.122	0.002923983	82.7977	0.208	5833.318161	134.1379277	141.0384878	8/30/02		1114:47:10		1114:31:30	33.38841283
135	8.5	1077	0.0047875	545	13.979	0.004325698	122.49	0.21033	5955.80782	138.9545937	143.8531337	9/2/02		1190:31:10		190:15:30	34.50390477
98	85	1084	0.00348085	545	14.070	0.003180548	89.4983	0.21349	8045.304188	139.0125741	145.9111141	9/6/02	11:17	1282:55:10		282:39:30	35.81788488
95	85	1085	0.00335491	545	14.083	0.003068621	88.8387	0.21856	8132.140885	141.0093958	147.9079355	9/10/02	14:18	1381:54:10		381:38:30	37.17395295
85	85		0.00300178	545	14.031	0.002733703	77.4096	0.21929	8209.55042	142.7894388	149.8879785	9/13/02	11:31	1451:09:10	1	450:53:30	38.09399924
108	85		0.00374337	545	14.031	0.003409088	98.5343	0.2227	8306.084889	145.009257	151.9077989	9/16/02	10:22	1570:00:10	1	569:44:30	39.62326058
109	88		0.00384931	548		0.003488381			8404.807831	147.2794041	154.1779441	9/23/02	14:18	1893:54:10	1	893:38:30	41.15705018
93	97		0.00328428	557	14.031	0.002928555			8487.67812	149.1850221	158.083582	9/27/02	11:00	1788:38:10	1	788:22:30	42.28881851
2	90	1081	7.083E-05	550	14.031	8.37377E-05			8489.482964	149.2285247	158.1250848	9/27/02	14:07	1789:45:10	1	789:29:30	42.30546983 estimate
63	85		0.00222483	545	14.031	0.002028158		0.2312	8548.857105	150.5458507	157.4443908	10/1/02	14:57	1888:35:10	1	888:19:30	43.43484904
	85		0.00183837	545	14.031	0.001872383			8594.213539	151.8348182	158.5333581	10/4/02	16:32	1980:10:10	1	1959:54:30	44.27380088
52	85		0.00236809	545	14.083	0.002182775			8855.458262	153.0431028	159.9418427		17:07	2080:45:10	2	2060:29:30	45.61528913
87	85		0.00282518	545	14.098	0.002584797	73.193		8728.649298	154.7281884			14:22	2198:00:10	2	2197:44:30	46.8828823
80			0.00151854	545	14.135	0.001393187			8788.099233	155.8333429		10/16/02		2242:18:10		2242:00:30	47.35260758
43	85		0.00275455	545		0.002541083			8840.053852	157.2879489	184,1884889	10/22/02		2385:34:10	2	2385:18:30	48.84229156
78	85			545	14.070	0.002341083			8889.388188	158.4219381		10/25/02		2459:11:10	2	2458:55:30	49,5901818
54	85	1084	0.001907	545	13.992	0.001741323			8941.134042	159.8123014		10/29/02		2557:27:10		2557:11:30	50.57128435
57	85		0.00201294	545	14 278	0.000981795			8988.935284	180.2515942	187.1501341	11/1/02		2823:55:10		2823:39:30	51.2242078
30	85		0.00105944	545		0.002953744			7052.575863	182.1749183	189.0734582			2893:38:10		2893:22:30	53.79252839
91	85		0.00321385						7129.357585	163.9405288	170.8390687			3082:21:10		3082:05:30	55.51894071
84	85		0.00298844	545		0.002711538			7189.374527	185.3208244	172.2191843			3251:15:10		3250:59:30	57.01975778
65	85		0.00229548	545		0.002119488						12/4/02		3416:23:10		3418:07:30	58.4498598
82	85		0.00218952	545		0.002019819			7248.589224	188.835824	173.534384	12/11/02		3583:32:10		3583:18:30	59.8626437 estimate
55	85		0.00194231	545		0.001770503			7298.704095	187.7888821	174.887222	12/20/02		3799:58:10		3799:42:30	61.64389219
72	85		0.00254287	545	14.005	0.002311323			7382.153228	189.2938938	178.1922335					1046:57:30	63.81778045
85	85	1077	0.00300178	545	13.979	0.002723588			7439.278348	171.08715		12/30/02		4047:13:10		1233:48:30	65.08947142
27	80	1093	0.0009535	540		0.000888122		0.2838	7484.388424	171.8441458	178.5428856	1/7/03		4234:02:10		455:55:30	68.75467108
39	61		0.00137728	541		0.001283432			7500.711038	172.4798488	179.3783888		18:33	4458:11:10			67.98655632
40	88	1109	0.00141259	548	14.394	0.001317353			7538.014173	173.3378394	180.2381794	1/23/03		4819:27:10		1619:11:30	
80	85		0.00211889	545	14.109	0.001940383			7592.959498	174.8011145	181.4996544	1/30/03		4788:48:10		1788:30:30 1958:28:30	69.18648311 70.41805719
50	88	1093	0.00178574	548	14.187	0.001822934			7838.915884	175.8578831	182.5584231	2/8/03		4958:42:10			
85	88	1087	0.00229548	548	13.849	0.002059826			7897.237574	178.9990027	183.8975427	2/14/03		5150:52:10		5150:38:30	71.76955792
24	84	1100	0.00084758	544	14.278	0.00078888			7719.519438	177.5113771	184.4099171	2/24/03		5391:50:10		391:34:30	73.42912304
49	84	1079	0.00173043	544	14.005	0.001575875	44.8238	0.27419	7784.143085	178.5375039	185.4380438	3/4/03		5577:50:10		5577:34:30	74.68491221
37	85	1081	0.00130885	545	14.031	0.001189985	33.8959	0.27538	7797.839009	179.3123481	186.2108861	3/11/03		5747:38:10		5747:20:30	75.81294598
80	89	1088	0.00211889	549	13.882	0.001892578	53.5918	0.27727	7851.430598	180.5448918	187.4432317	3/16/03		5915:10:10		5914:54:30	76.91013878
18	85	1083	0.00058504	545	14.057	0.000515531	14.5982	0.27779	7888.028785	180.8803788	187.7789186	3/25/03		8085:46:10		6085:32:30	78.01155541
28	85	1073	0.00091818	545	13.927	0.000830003	23.503	0.27882	7889.53175	181.4208329	188.3193729	4/1/03	15:48	6255:28:10		8255:10:30	79.09131502
15	84		0.00052972	544	14.135	0.000488882	13.7889	0.2791	7903.318852	181.7378848	188.8384045	4/10/03	9:20	8484:58:10		8484:42:30	80.4050337
11	84		0.00038848	544	13.992	0.00035344	10.0083	0.27948	7913.326922	181.9880081	188.888546	4/16/03	8:24	8856:02:10		8655:48:30	81.58453353
35	84		0.00123802	544	13.849	0.001113107			7944.848472	182.8928023	189.5913423	4/28/03	14:42	8902:20:10		8902:04:30	83.08029918
18	88		0.00058504	548	14.005	0.000510818			7959.311102	183.0254184	189.9239584	5/1/03	13:30	8973:08:10	6	8972:52:30	83.50530589
17	85		0.00080035	545	14.003	0.000548235			7974.778892	183.3810977	190.2798376	5/15/03	13:39	7309:17:10	7	7309:01:30	85.49436304
	85		0.00052972	545	14.122	0.000485542			7988.52788	183.897257	190.595797	5/23/03	13:39	7501:17:10	7	7501:01:30	88.80998543
15			0.00032872	545	14.109	0.000711474			8008.874279	184.1805312	191.0590712	5/29/03		7845:17:10		7845:01:30	67.43732676
22	8.5		-0.00017857	544		-0.000181549			8004.099745	184.0553392	190.9538792	8/5/03		7810:59:10		7810:43:30	88.37978338
-5	85		0.00084758	545	13.953	0.000787585			8025.835248	184.55515	191.4538899	8/12/03		7981:17:10		7981:01:30	89.33804403
24			-0.00021189	542		-0.000194215			8020.335715	184.4288875	191.3272274	8/19/03		8149:30:10		8149:14:30	90.27459853
-8	82 75		-0.00021189	535		-0.000822847				183.8928928	190.7914327	8/29/03		8387:33:10		8387:17:30	91.58358358
-25	/5	1008	-0.0000020/	030	14.000	-0.000022047	20.0004	0.20241	300000	. 20.0020020	. 30.101.1021	22.00					

dry sample weight:	Ibe	4.518	grams 20 49.47		wet sample v	weight:	lbs. 4.879	grams 2122.23	moisture % 3.43%		est. lost gas (cc) = 500		TIME OF: off bottom	at surface	in canister 7/15/02 8:59	elapsed time (off bottom to canistering) 20.4 minutes 0.340 hours
CONVERSION OF VOLUMES	TOST	P					@447 D	COMMEN		COLLECTION	CCCTON!		7/15/02 8:38 TIME SINCE	7/15/02 8:48	7/15/02 8:59	0.583333333 SQRT (hrs)
RIG MEASUREMENTS			CONVERSION	OF RIG MEASUREMENTS	TOSIP (cubic	IT, GRO degrees;	@14.7 pai)	cubio 8 / 6	M (OSTP)	SCF/TON without lost gas	SCF/TON with lost gas	TIME OF MEASURE		at surface	in canister	SQRT hrs. (since off bottom)
measured oc measured T ((F) m 85	easured P	0.004 1 3183	545	14.148	0.00379419	107 439	0.00379	107.439088							
111	85	1090	0.0009535	545		0.000875582										
E. F	85		0.00088287	545		0.000810724					10.24185598	7/15/02 7:12	0:33:55			
	85		0.00067098	545	14.148	0.00081815	17.4474	0.0081	172.837187	2.89884552						
	85	1090	0.0028805	545	14.148	0.002828747	74.3809	0.00872	247.0180741	3.881359813						
12	85		0.00042378	545		0.000389148		0.00911		4.033813783						
	85		0.00038848			0.000358719		0.00947								
	85		0.00321385	545				0.01242								
	85		0.00118539	545 545		0.001070158		0.01349								
10	85		0.00067098	545		0.00081818		0.01411								
	85 85	1090	0.00077893	545	14.110	0.000713437		0.01402								
	85	1090	0.00084758	545		0.000778295										1.27910559
	85			545		0.002497031		0.01939					1:57:10	1:49:10	1:38:45	1.397418254
	85	1090		545	14.148	0.001558591		0.02095		9.273005351						
	85	1090	0.00194231	545	14.148	0.001783594	50.5058	0.02273	843.7182451	10.08250271						
	85	1090	0.00561505	545	14.148	0.005158207		0.02789								
109	85	1091	0.00384931	545	14,181	0.003538001		0.03143								
	85	1091	0.00625072	545		0.005745194		0.03717					0.00			
	65	1090	0.00582894	545		0.005350781		0.04252				77 107 02 14.12	13:48:10			
	85	1084	0.01013535	545 545		0.009255884		0.05178		28.4022169		7/18/02 12:08				
	85	1087 1083	0.01352557 0.00508533	545		0.004839783										
	85 85	1087	0.00971157	545		0.004893423								51:49:10	51:38:45	7.207827535 estimate
	85	1083	0.00324898	545	14.057	0.002984308		0.08088		35.70474483		7/17/02 17:24	58:45:10	58:37:10	58:24:45	7.885038058
	80	1080	0.00727485	540	14.018	0.008880389	189.188	0.08734	2473.282484	38.8817713	48.47771721	7/18/02 18:18	83:37:10	83:29:10		
	85	1081		545	14.031	0.00585334	165.748	0.0932					107:37:10			
	87	1080	0.00536785	547	14.018	0.004888125	137.793	0.09808								
178	85	1083	0.0062154	545		0.005870848		0.10373		45.91884748						
	85		0.00356879	545		0.003289317										
	85		0.00324898	545		0.002972517		0.10997								
	85	1079	0.0028805	545 545		0.002800238		0.11258								
	65		0.00240141	545		0.00217887		0.11473		51.71540599						
	65 85		0.00278987	545		0.002540738		0.11937					344:22:10		344:01:45	18.55719387
	85		0.00194231	545		0.001772139		0.12115							388:48:45	19.21334895
	85		0.00247204	545	14.005	0.00224712	83.8311	0.12339	3494.084418	54.81914982	82.43509554	6/1/02 15:29				
	85		0.00254287	545	14.083	0.002324178		0.12572								
75	89	1087	0.00284881	549	14.100	0.002407807										
57	86		0.00201294	548		0.001831588				57.5244753						
	88		0.00201294	548		0.001834959							584:45:10 833:15:10			
	88		0.00187188	548 549		0.001898349										
	89		0.00183837	546		0.001858682										
	88 78	1081		538		-3.27002E-05										
	97		0.00275455	557		0.0024588						8/19/02 14:49	848:10:10	848:02:10	847:49:45	29.12334676
	88		0.00148322	548	14.044	0.001349544					89.8083453	8/23/02 9:14				
	84	1088		544	14.098	0.000879757	19.2485	0.14073	3984.8849							
	83	1088	0.00035315	543		0.000324887							, , , , , , , , , , , ,			
	85		0.00182448	545												
	85	1084	0.0009535	545		0.000870783										
20	85	1085	0.0007083	545 545		0.000845804										
25	85	1081		545		0.000891351										
28	85	1070 1078		545		3.20125E-05		0.14577								41.81829799
1 45	65 65	1078		545				0.14721							1904:09:45	43.84080927
25	85	1084		545				0.14802					2098:58:10	2098:48:10		
22	85		0.00077893	545		0.000712783		0.14873				10/18/02 10:39				
28	85		0.00091818	545	14.213	0.000847021	23.9849	0.14958	4235.541627							
28	85	1087	0.00091818	545		0.000840833		0.15042				10/30/02 14:36				
25	85		0.00088287	545		0.000811466		0.15123								
28	85		0.00091818			0.000839286		0.15207				11/20/02 10:44				
14	85		0.00049441	545		0.000458505		0.15253								
15	85	1095 1082	0.00052972	545 545		0.000488888		0.15301								
27 45	85		0.0009535	545				0.15533				12/30/02 15:36				63.56848887
-13	80		-0.00045909						4388.219584						4227:25:45	85.02129993
-13	00		.,													

-2 81 1098 -7.083E-05 541 14.252 -8.5817E-05 -1.86372 0.15463 4364.355841 68.53577823 78.35172215 1/16/03 18:34 4449:55:10 4449:47:10 4449:34:45 88.70771653

DECANISTERED	04/47/2002	cample for	An dove	in air

SAMPLE:	1079.0' to 107	9.3' (Rowe co	al) in canister M	5												
		lbs.	grams				lbs.	grams	moisture weight		est. lost gas (cc) =		TIME OF:			elapsed time (off bottom to canistering)
dry sample w	reight:	0.948	430.39		wet sample	weight:	0.974	441.85	2.8%		130		off bottom	at surface	in canister	24.4 minutes
CONVERSION	OF VOLUMESTO	STP											7/15/02 6:38	7/15/02 6:46	7/15/02 7:03	0.407 hours
RIG MEASURE	EMENTS		CONVERSION	OF RIG MEASUREMENTS	TO STP (cubi	c ft; @60 degrees; 6	914.7 psi)	CUMULATI	VE VOLUMES	SCF/TON	SCF/TON		TIME SINCE			0.637921974 SQRT (hrs)
measured oc	measured T (F)	measured P	cubic ft (@rig)	ABSOLUTE T (F) (@rig)	pela (@rig)	cubic ft (@STP)	cc (@STP)	cubic ft (@	cc (@STP)	without lost gas	with lost gas	TIME OF MEASURE	off bottom	at surface	in canister	SQRT hrs. (since off bottom)
31	6.5	1090	0.00109478	545	14.148	0.001005298	28.4868	0.00101	26.4667669	2.116967937	11.79583088	7/15/02 7:16	0:39:10	0:31:10	0:14:45	0.807946643
8	8 8 8	5 1090	0.00021189	545	14.148	0.000194574	5.5097	0.0012	33.97646372	2.529114835	12.20595758	7/15/02 7:21	0:42:40	0:34:40	0:18:15	0.643274043
16	8 8 8	5 1090	0.00083587	545	14,148	0.000583722	18.5291	0.00178	50.50555418	3.759494727	13.43833785	7/15/02 7:36	0:57:10	0:49:10	0:32:45	0.976103364
8	8 8 8	5 1090	0.00028252	545	14,148	0.000259432	7.34626	0.00204	57.65181881	4.308330324	13.98317325	7/15/02 7:39	1:00:40	0:52:40	0:36:15	1.005540209
2	8	1090	7.083E-05	545	14.148	8.48579E-05	1.83857	0.00211	59.86838221	4.443039223	14.11988215	7/15/02 7:42	1:03:10	0:55:10	0:38:45	1.028049598
16	8 8	5 1090	0.00058504	545	14.148	0.000518864	14.8925	0.00283	74.38090708	5.538710418	15.21355334	7/15/02 7:57	1:18:10	1:10:10	0:53:45	1.141392911
2	8	5 1090	7.083E-05	545	14,146	6.48579E-05	1.83857	0.00289	78.21747287	5.873419315	15.35028224	7/15/02 8:00	1:21:55	1:13:55	0:57:30	1.168451016
45	8.5	1090	0.00158917	545	14.148	0.001459304	41.3227	0.00415	117.5401986	8.749389547	18.42821247	7/15/02 6:19	1:40:40	1:32:40	1:18:15	1.295290815
24	8 8	5 1090	0.00084758	545	14.148	0.000778295	22.0388	0.00493	139.5789861	10.38987834	20.08871928	7/15/02 6:37	1:58:10	1:50:10	1:33:45	1.403368982
17	7 85	5 1090	0.00060035	545	14,148	0.000551293	15.6108	0.00548	155.1897938	11.55190198	21.2287449	7/15/02 8:52	2:13:10	2:05:10	1:48:45	1.489779999
14	8 8	1090	0.00049441	545	14.148	0.000454008	12.858	0.00593	188.045753	12.50686427	22.1857072	7/15/02 9:08	2:27:10	2:19:10	2:02:45	1.586134661
21	1 85	1091	0.00074181	545	14.181	0.000881833	19.3018	0.00862	167.3473838	13.94562464	23.82246756	7/15/02 9:23	2:44:10	2:38:10	2:19:45	1.854119437
52	2 85	1083	0.00183637	545	14.057	0.001675477	47.444	0.00829	234.7914334	17.47722939	27.15407231	7/16/02 17:45	35:06:10	34:58:10	34:41:45	5.924759723

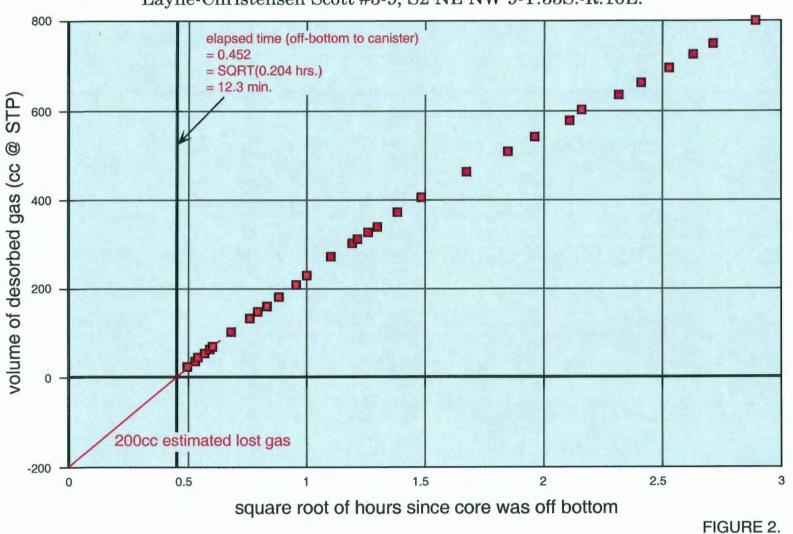
DESORPTION TERMINATED EARLY DUE TO NEED OF CANISTER TO TEST ANOTHER ZONE; sample dried 10 days @ 150 dag. F (65 dag.C)

SAMPLE:	1134.5' to 113	5.5' (Riv	erton co	oal) in canister l	4 5												
		lbe.		grams				lbs.	grame	moisture %		est. lost gas (cc) =		TIME OF:			elapsed time (off bottom to canistering)
dry sample v	veight:		2.504	1135.95258		wet sample	weight:	2.596	1177.5	3.5%		800		off bottom	at surface	in canister	23.2 minutes
CONVERSIO	NOF VOLUMEST	OSTP												7/15/02 9:14		7/15/02 9:37	
RIG MEASUR	EMENTS				F RIG MEASUREMENT						SCF/TON	SCF/TON		TIME SINCE			0.622494980 SQRT (hrs)
measured co	measured T (F				ABSOLUTE T (F) (@rig) peia (@rig)	cubic ft (@STP)	∞ (9 5TP)	cubic ft (@		without lost gas	with lost gas	TIME OF MEASURE		at surface	in canister	SQRT hrs. (since off bottom)
7	7 8	5	1090	0.00271924	54	5 14.148	0.002497031	70.7078	0.0025		1.994157674	24.55640235				0:05:00	
1	7 8	5	1090	0.00080035	54	5 14,148	0.000551293	15.6108	0.00305	88.31858351	2.434428252	24.99887093	7/15/02 9:43			0:08:30	
1	9 8	5	1090	0.00087098	54	5 14.148	0.00081615	17.4474	0.00386	103.7859588	2.928491132	25.48873581	7/15/02 9:45	0:31:15		0:08:00	
2	9 8	5	1090	0.00102413	54	5 14.148	0.00094044	26.8302	0.0048	130.3981581	3.877537529	28.23978221	7/15/02 9:47	0:33:30	•	0:10:15	
2	8 8	5	1090	0.00098881	54	5 14.148	0.000908011	25.7119	0.00551	158.1080766	4.402685774	28.96493045	7/15/02 9:49	0:35:45		0:12:30	
3	1 8	5	1090	0.00109478	54	5 14,148	0.001005298	28.4688	0.00652	184.5748435	5.205528474	27.76777315	7/15/02 9:52	0:38:30)	0:15:15	
7	3 8	5	1090	0.00257798	54	5 14.148	0.002367315	67.0348	0.00889	251.8094881	7.098093542	29.85833822	7/15/02 9:59	0:45:45		0:22:30	
1	8 8	5	1090	0.00083587	54	5 14.148	0.000583722	16.5291	0.00947	266,1385788	7.582280271	30.12450495	7/15/02 10:02	0:48:00	•	0:24:45	0.894427191
3	0 8	5	1090	0.00105944	54	5 14.148	0.000972869	27.5485	0.01044	295.8870828	6.33920462	30.9014495	7/15/02 10:05	0:51:00	ł.	0:27:45	
2	7 8	5	1090	0.0009535	54	5 14.148	0.000875582	24.7938	0.01132	320.4808983	9.038454913	31.80089959	7/15/02 10:07	0:53:30)	0:30:15	0.944281032
3	0 8	5	1090	0.00105944	54	5 14,148	0.000972869	27.5485	0.01229	348.0291624	9.815399482	32.37784414	7/15/02 10:09	0:55:45	i	0:32:30	0.983932916
8	8 8	5	1090	0.00240141	54	5 14.148	0.00220517	62.4432	0.0145	410.4724131	11.57847377	34.13871645	7/15/02 10:18	1:04:00	1	0:40:45	1.032795559
8	7 8	5	1090	0.00236609	54	5 14.148	0.002172741	61.5249	0.01667	471.9973609	13.31184993	35.87389461	7/15/02 10:27	1:13:00	F	0:49:45	1.10302614
2	5 8	5	1091	0.00088287	54	5 14.181	0.000811488	22.9781	0.01748	494.9754925	13.95989771	38.52194239	7/15/02 10:31	1:17:00	ł .	0:53:45	1.132843031
8	5 8	5	1091	0.00229548	54	5 14.181	0.002109817	59.7431	0.01959	554.7188347	15.64482195	38.20888883	7/15/02 10:37	1:23:00	F	0:59:45	1.176151918
8	2 8	5	1091	0.00218952	54	5 14.161	0.002012441	58.9858	0.0218	811.7044011	17.25178048	39.81402514	7/15/02 10:46	1:32:30	l'	1:09:15	1.241636702
3	8 6	5	1091	0.00127133	54	5 14,181	0.001188514	33.0885	0.02277	844.7929108	18.18498927	40.74721395	7/15/02 10:52	1:38:00		1:14:45	1.278019301
4	2 6	5	1091	0.00148322	54	5 14.161	0.001383288	36.8033	0.02413	883.3981717	19.27388955	41.83593423	7/15/02 11:00	1:48:00	F	1:22:45	1.329160136
8	5 8	5	1091	0.00229548	54	5 14,181	0.002109817	59.7431	0.02824	743.1393139	20.95881379	43.52085847	7/15/02 11:13	1:59:00	k .	1:35:45	1.408308678
9	1 8	5	1091	0.00321385	54	5 14.181	0.002953744	83.8404	0.0292	828.779713	23.31750772	45.8797524	7/15/02 11:32	2:18:00	l .	1:54:45	1.516575089
4	9 8	5	1091	0.00173043	54	5 14.181	0.001590478	45.0371	0.03079	871.816851	24.58788138	47.14992808	7/15/02 11:44	2:30:00	k.	2:08:45	1.56113883
10	9 8	5	1091	0.00384931	54	5 14.181	0.003538001	100.185	0.03433	972.0015048	27.41318972	49.9754144	7/15/02 12:13	2:59:00		2:35:45	1.727232854
31	4 8	5	1090	0.01108885	54	5 14.148	0.010182898	288.341	0.04451	1280.342305	35.54516933	56.10743401	7/15/02 14:13	4:59:00	l .	4:35:45	2.232338087
45	3 8	5	1064	0.0159978	54	5 14.070	0.014809481	413.892	0.05912	1674.034805	47.21247295	69.77471783	7/15/02 20:34	11:20:00	F.	10:58:45	3.368501848
50	2 6	5	1087	0.01772803	54	5 14.109	0.018234539	459.709	0.07535	2133.743628	80.17758285	82.73980752	7/18/02 12:10	28:58:15		26:33:00	5.190134873
22	8 8	5	1083	0.00798114	54	5 14.057	0.007281881	208.199	0.08283	2339.942985	85.99295715	88.55520183	7/18/02 18:15	33:01:00	F.	32:37:45	5.748013111
34	3 8	5	1087	0.01211298	54	5 14.109	0.011092524	314,104	0.09373	2654.047074	74.85157435	97.41381903	7/17/02 10:41	49:27:00	F .	49:03:45	7.032069397
14	7 8	5	1083	0.00519128	54	5 14.057	0.004736445	134,121	0.09848	2788.187754	76.83415383	101.1983985	7/17/02 17:25	56:11:00	F .	55:47:45	
21	9 8	0	1080	0.00773394	54	0 14.018	0.007101945	201.104	0.10557	2989.271888	64.30584903	108.8880937	7/18/02 18:22	81:08:00	l .	60:44:45	9.007404362
18	0 0	5	1081	0.00835888	54	5 14.031	0.005789018	183.928	0.11135	3153.197805	88.92902549	111.4912702	7/19/02 18:22	105:08:00	F.	104:44:45	
15	3 8	7	1080	0.00540318	54	7 14.018	0.004698139	138.899	0.11625	3291.89712	92.84073534	115.40298	7/20/02 19:05	129:51:00	ł.	129:27:45	
12	9 8	5	1083	0.00455581	54	5 14.057	0.004156472	117.898	0.12041	3409.594859	98.18014182	118.7223885	7/22/02 16:35	175:21:00	l	174:57:45	13.2419787
8	4 8	5	1088	0.00298844	54	5 14.122	0.002719038	78.9942	0.12313	3486,589081	98.33159492	120.8936396	7/23/02 14:55	197:41:00	F .	197:17:45	14.05999052
9	1 8	5	1088	0.00321385	54	5 14.098	0.002940207	83.2571	0.12807	3589.84818	100.6798762	123.2419228	7/24/02 15:37	222:23:00	F .	221:59:45	
8	8 8	5	1079	0.0031077	54	5 14.005	0.00282495	79.9934	0.12889	3849.839544	102.935716	125.4979807	7/25/02 15:14	246:00:00)	245:36:45	
7	1 8	5	1077	0.00250735	54	5 13.979	0.002274997	64.4205	0.13117	3714.280031	104.7525545	127.3147992	7/28/02 15:38	270:24:00	F	270:00:45	
6	8 8	5	1075	0.00240141	54	5 13.953	0.002174824	81.5839	0.13334	3775.843951	108.4893939	129.0518388	7/27/02 18:14	297:00:00	1	298:36:45	
6	9 8	5	1081	0.00243872	54	5 14.031	0.002219124	82.8383	0.13558	3838.882298	108.2816115	130.8238582	7/29/02 15:03	341:49:00)	341:25:45	
5	2 8	5	1083	0.00183837	54	5 14.057	0.001875477	47.444	0.13724	3886.128348	109.5996668	132.1819115	7/30/02 15:49	368:35:00	•	388:11:45	
5	1 6	5	1079	0.00180105	54	5 14.005	0.001837187	48.3598	0.13867	3932.488149	110.9071433	133.489388	8/1/02 15:30	414:18:00	•	413:52:45	
5	9 8	5	1085	0.00208357	54		0.001904533		0.14078					480:23:00		459:59:45	
8	2 8	9	1087	0.00218952	54	9 14.109	0.001990454	58.3832	0.14277	4042.779489	114.0177245	136.5799891	8/5/02 10:37	505:23:00)	504:59:45	22.48073249

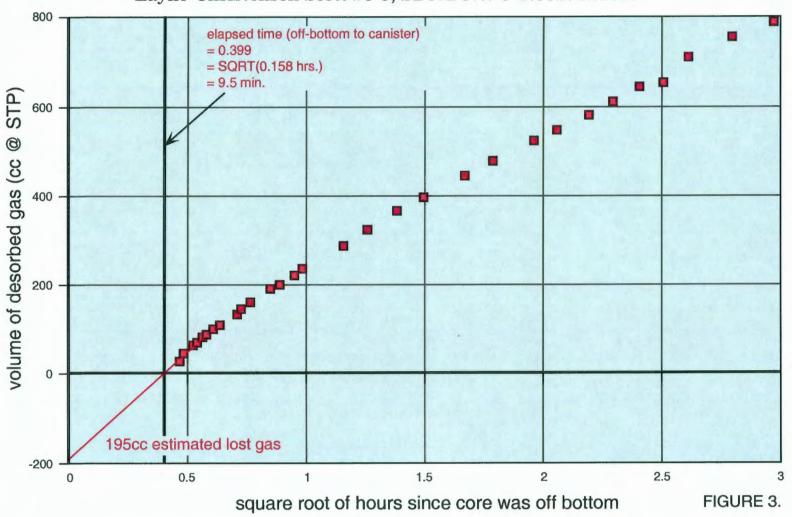
55	88	1086	0.00194231	548	14.098	0.00178732	50.0447	0.14454	4092.824206	115.4291285	137.9913711	8/8/02 16:01	534:47:00	534:23:45	23.12536288
49	88	1088		548	14.122	0.001577421		0.14811	4137.491827	118.888873	139.2511177	8/8/02 15:25		561;47;45	24.12847557
45	88			548	14.057	0.001441995		0.14758	4178.324211	117.8404885	140.4027112	8/10/02 15:55		630:17:45	25.11340943
48	89			549	14.018			0.14902	4219.872744	119.0122517	141,5744984	8/12/02 13:05		675:27:45	25.99711522
30	88	1081	0.00105944	546	14.031	0.000963069	27.271		4247.143728	119.7813699	142.3436148	8/14/02 11:22		721:44:45	26.87253865
1	78	1081	3.5315E-05	538	14.031	3.25797E-05		0.15002	4246.088275	119.8073884	142.3898331	8/16/02 11:56		770:18:45	27.76148411
38	92			552	14.044	0.001207744		0.15123	4282.265856	120,7719069	143,3341516	8/19/02 14:51	645:37:00	845:13:45	29.07948876
24	88			546	14,109	0.000774732			4304.203533	121.3906186	143.9528612	8/23/02 9:15		935:37:45	30.59438948
29	84	1087	0.00102413	544	14,109	0.000939576		0.15294	4330.809258	122,1409727	144.7032173	8/28/02 10:23		1006:45:45	31.76712137
30	83	1088	0.00105944	543		0.000974861		0.15392	4358.408478	122.919348	145.4615927	8/30/02 11:11		1105:33:45	33,25562656
54	85	1077	0.001907	545	13.979	0.001730279		0.15585	4407.404339	124.3011889	146.8634138	9/2/02 14:55		1181:17:45	34.37582121
28	85	1084	0.00091818	545	14.070	0.000838512			4431,148268	124.9708143	147.533059	9/8/02 11:19		1273:41:45	35.69430393
20	85	1085	0.0007083	545	14.083	0.000645804	18.2814	0.15713	4449.429878	125.4864013	148.048848	9/10/02 14:20	1373:06:00	1372:42:45	37.05536398
21	85			545	14.031	0.000675385	19,1247	0.15781	4488.554392	128.0257719	148,5880186	9/13/02 11:32		1441:54:45	37.97762499
24	85	1070	0.00084758	545	13.888	0.000764015	21.6344	0.15857	4490.186798	126,6359229	149,1981676	9/16/02 10:24	1581:10:00	1580:48:45	39.51160167
0	80	1076	0	540	13.966	0	0	0.15857	4490.188798	128.6359229	149,1961678	9/28/02 15:18	1758:02:00	1757:38:45	41.92890809
15	85	1078	0.00052972	545	13.992	0.000481079	13.6226	0.15905	4503.811397	127.0201184	149.5823831	10/2/02 15:10	1901:56:00	1901:32:45	43.61116065
14	65	1084	0.00049441	545	14.070	0.000451507	12.7852		4516.596569	127,3808987	149,9429414	10/10/02 15:38	2094:22:00	2093;58:45	45.76425097
24	85	1089	0.00084756	545	14.135	0.000777581	22.0166	0.16028	4538.615157	128.0016821	150.5639268	10/16/02 10:41	2233:27:00	2233:03:45	47.2593908
49	85	1095	0.00173043	545	14.213	0.001598309	45.2023	0.16188	4583.817418	129,2765127	151,8387574	10/23/02 9:08	2399:54:00	2399:30:45	48.98877422
55	85	1087	0.00194231	545	14,109	0.001778665	50.3885	0.18388	4834.183968	130.8989907	153.2592353	10/30/02 14:39	2573:25:00	2573:01:45	50.72885438
37	85	1091	0.00130685	545	14,161	0.001200973	34.0078	0.18488	4688.191801	131.6561014	154.2183481	11/12/02 14:02	2664:48:00	2884:24:45	53.7103342 estimate
3	85	1085	0.00010594	545	14.083	9.88407E-05	2.74221	0.16495	4670.933812	131.7334394	154.2956841	11/20/02 10:45	3073:31:00	3073:07:45	55.43930815
10	85	1085	0.00035315	545	14.063	0.000322802	9.1407	0.16528	4680.074517	131,991233	154.5534778	11/27/02 11:39	3242:25:00	3242:01:45	56.94222218
15	85	1095	0.00052972	545	14.213	0.000488688	13.8374	0.16576	4893.911944	132.3814672	154.9437319	12/4/02 8:47	3407:33:00	3407:09:45	58.37422378
16	85	1082	0.00056504	545	14.044	0.000515055	14.5847	0.18626	4708.496834	132,7928184	155.3550811	12/11/02 7:58	3574:42:00	3574:18:45	59.76879494
27	85	1077	0.0009535	545	13.979	0.00086514	24.4979	0.18714	4732.994565	133.4837268	156.0459715	12/30/02 15:37	4036:23:00	4037:59:45	63.54827561
-8	80	1093	-0.00028252	540	14.187	-0.000262555	-7.43469	0.16888	4725.559876	133.2740477	155.8382924	1/7/03 10:26	4225:12:00	4224:48:45	65.00153844
-3	81	1098	-0.00010594	541	14.252	-9.87255E-05	-2.79559	0.18878	4722.78429	133.1952043	155,757449	1/16/03 18:34	4447:20:00	4448:58:45	88.66632981

-3 81 1098 -0.00010594 DECANISTERED 01/17/2003; sample dried for 30 days in air

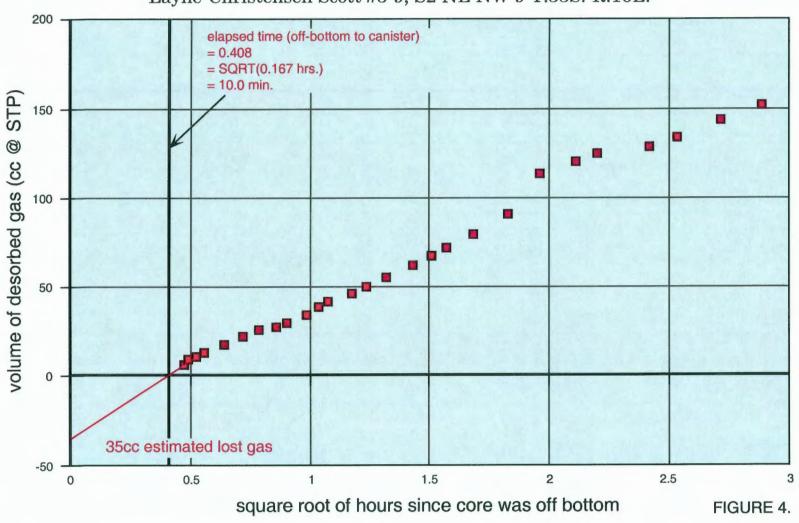
610.0' to 610.8' & 612.0'-612.5' (Lexington coal) in canister M2 Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



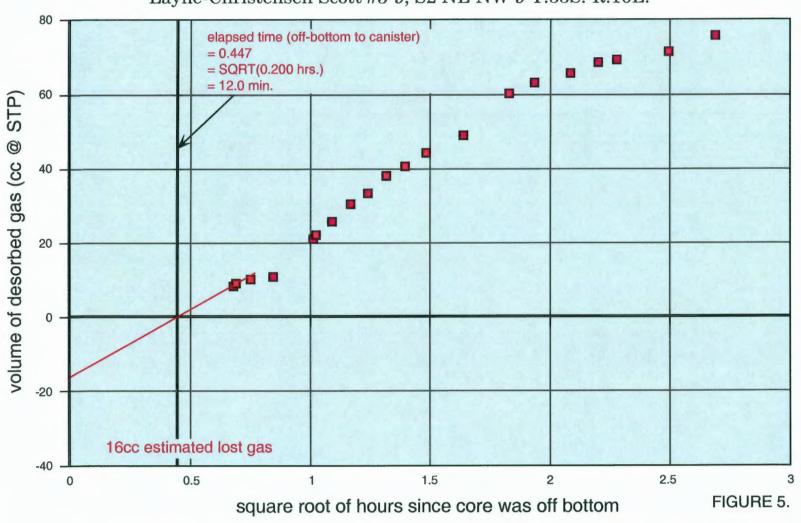
632.9' to 633.8' (unnamed coal, provisionally named "Labette") in canister M3 Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



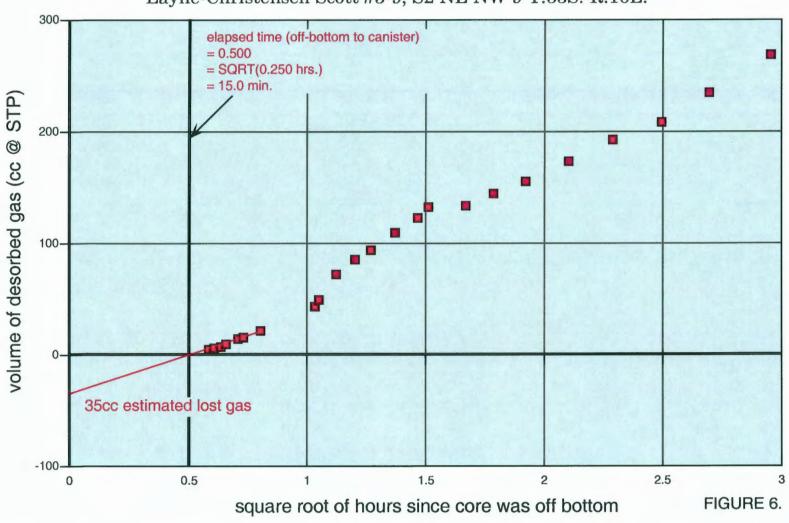
697.5' to 698.5' (Little Osage Shale) in canister M4 Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



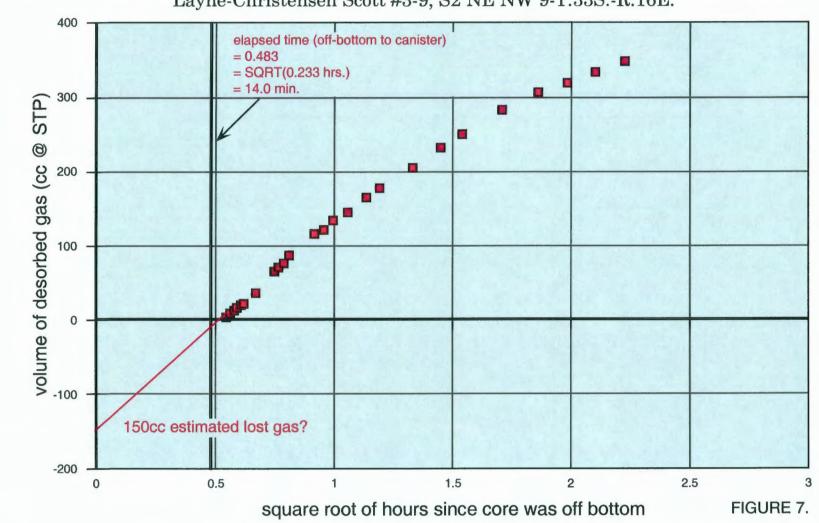
729.0' to 730.0' (Excello Shale) in canister M5 Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



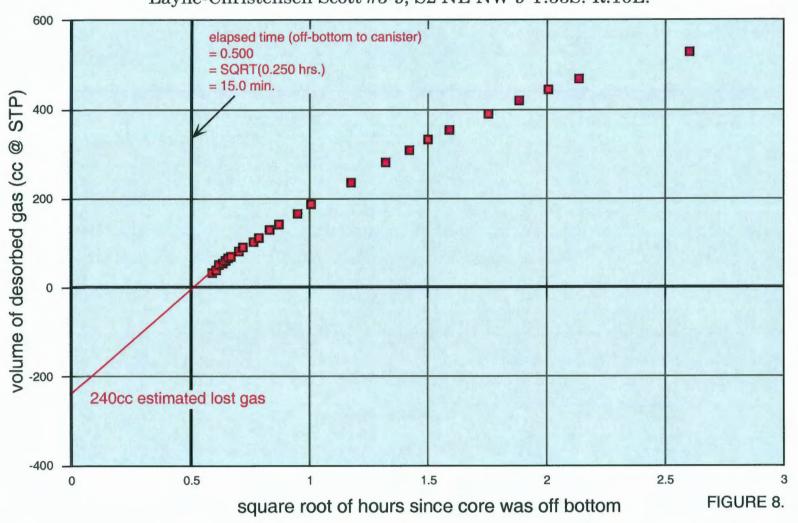
730.7' to 731.1' (Mulky coal) in canister M1 Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



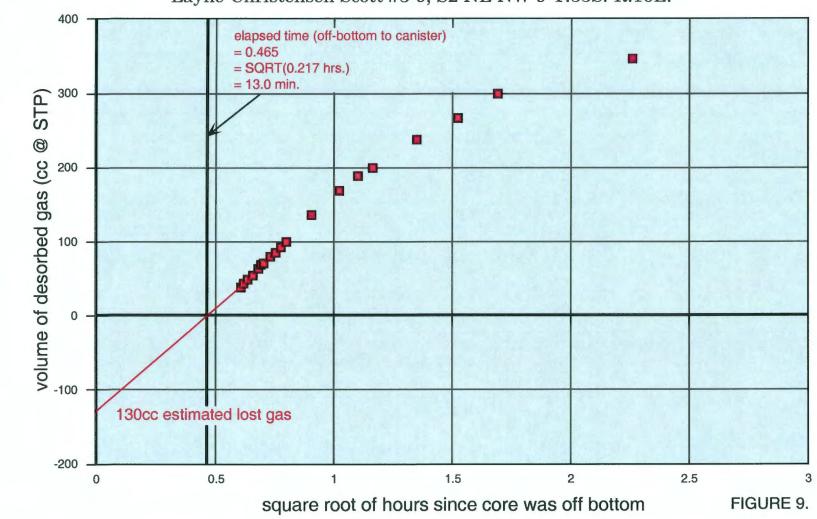
778.0' to 778.9' (Croweburg coal & V shale) in canister 4 Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



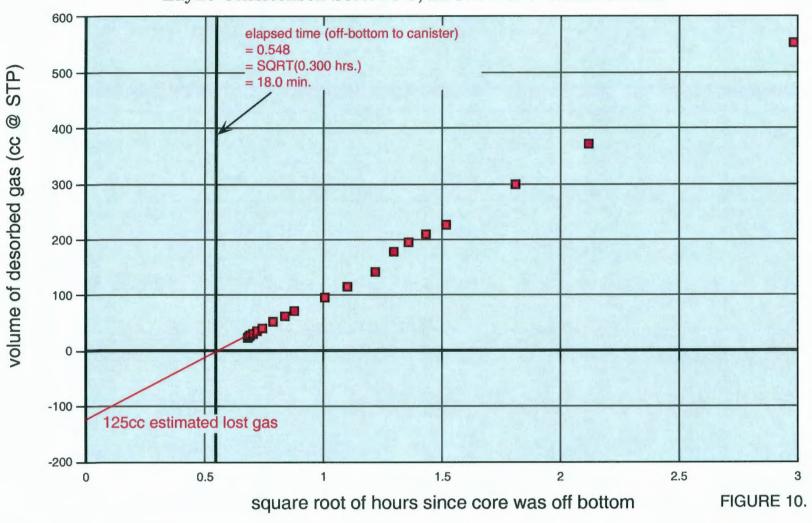
786.0' to 787.3' (Fleming coal) in canister K Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



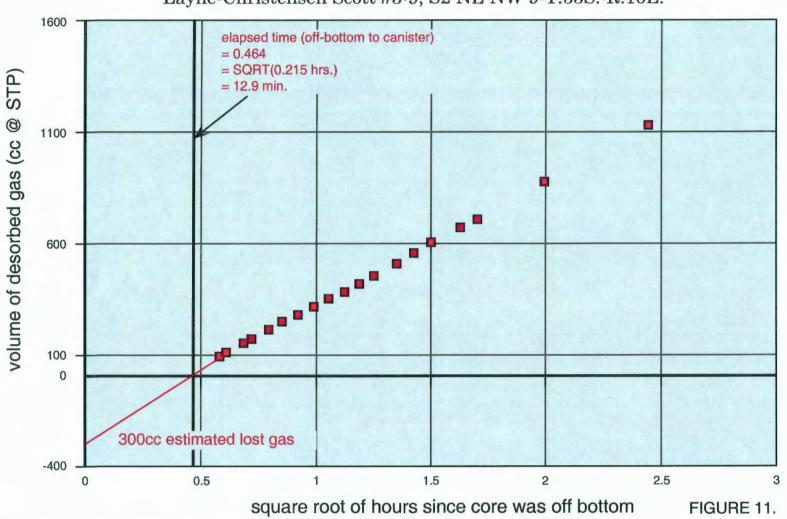
820.0' to 821.2' (Mineral coal) in canister G Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



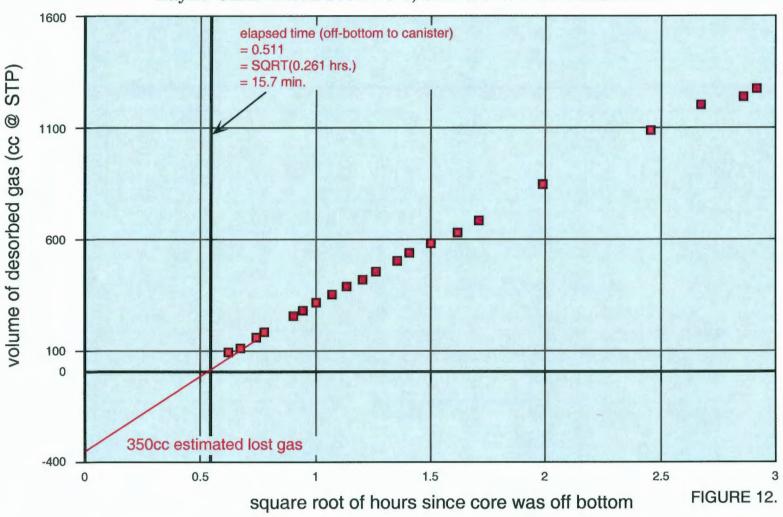
838.5' to 839.1' (Scammon coal) in canister L Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



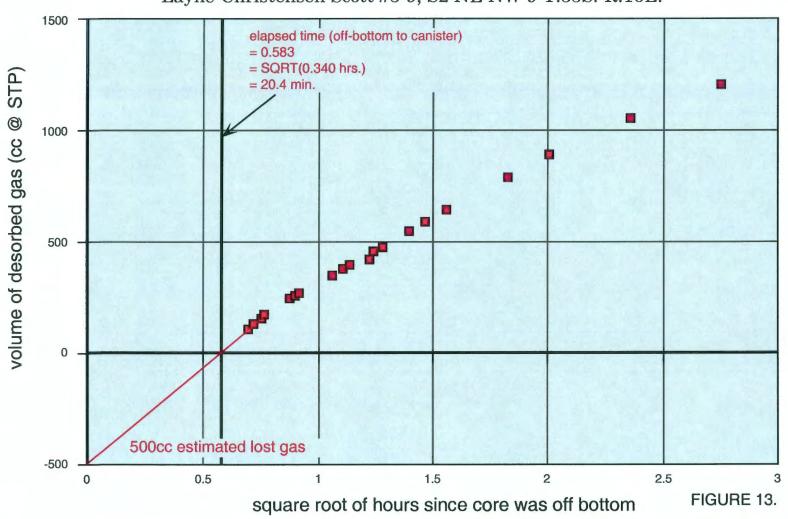
924.0' to 925.0' (Weir-Pittsburg coal) in canister M Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



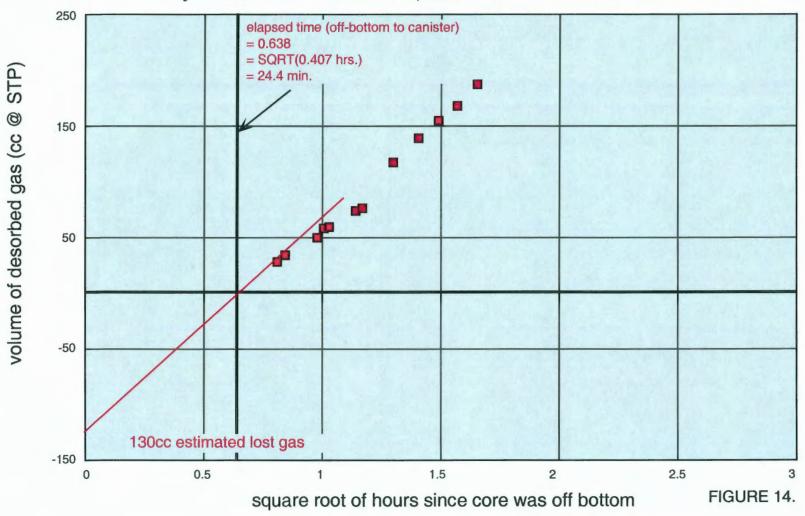
925.0' to 926.0' (Weir-Pittsburg coal) in canister Brady 28 Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



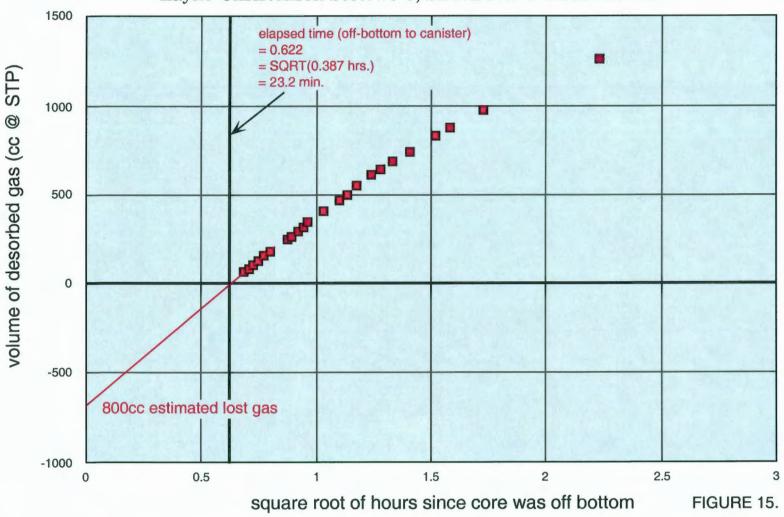
1078.0' to 1079.0' (Rowe coal) in canister M4 Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



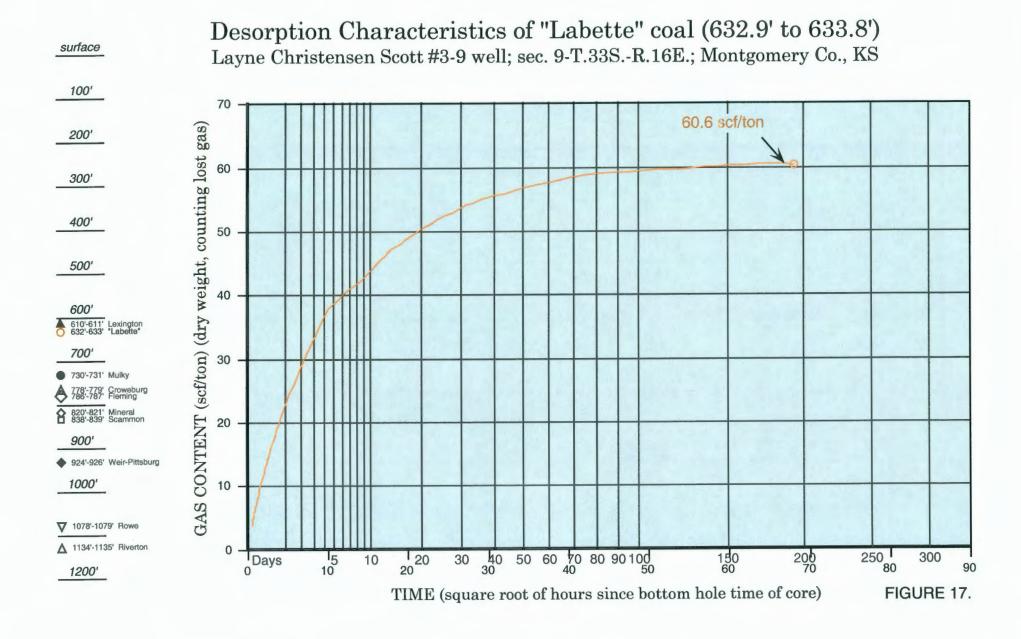
1079.0' to 1079.3' (Rowe coal) in canister M5 Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



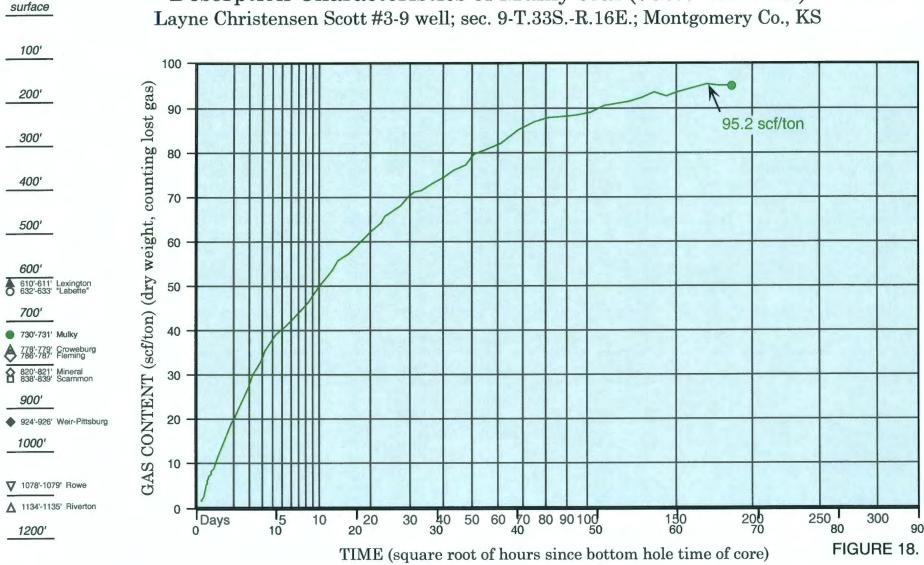
1134.5' to 1135.5' (Riverton coal) in canister M5 Layne-Christensen Scott #3-9; S2 NE NW 9-T.33S.-R.16E.



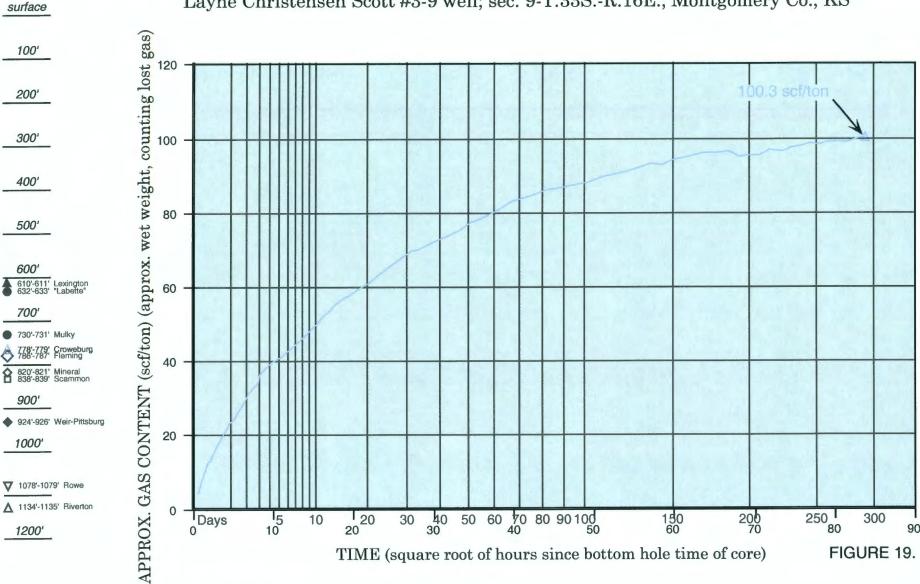
TIME (square root of hours since bottom hole time of core) Desorption Characteristics of Lexington coal (610.0' to 610.8' & 612.0'-612.5') surface 100' 200' 300' 400' 500' 600' 610'-611' Lexington 632'-633' "Labette" 700' 900' 924'-926' Weir-Pittsburg 1000' ▼ 1078'-1079' Rowe ▲ 1134'-1135' Riverton 250 300 90 1200' FIGURE 16.



Desorption Characteristics of Mulky coal (730.7' to 731.1') Layne Christensen Scott #3-9 well; sec. 9-T.33S.-R.16E.; Montgomery Co., KS

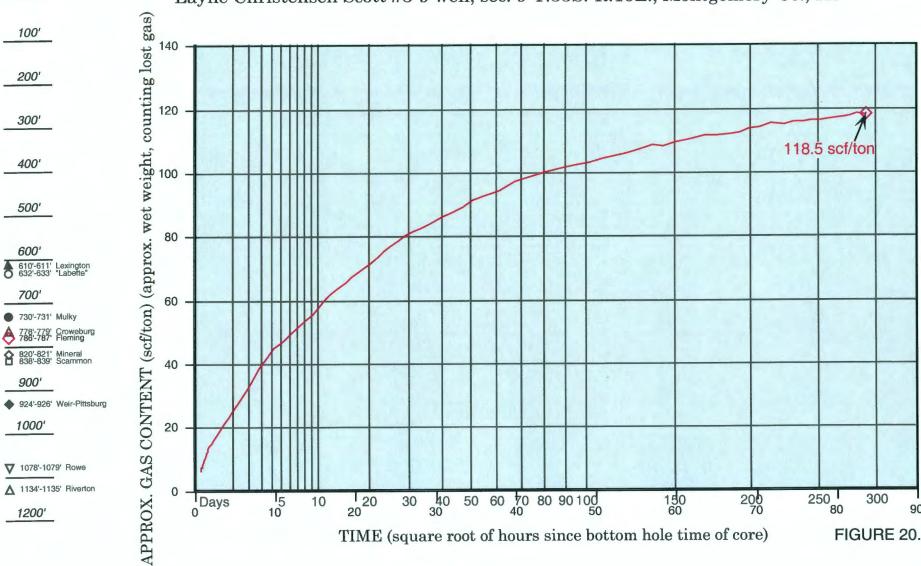


Desorption Characteristics of Croweburg coal & V shale (778.0' to 778.9') Layne Christensen Scott #3-9 well; sec. 9-T.33S.-R.16E.; Montgomery Co., KS



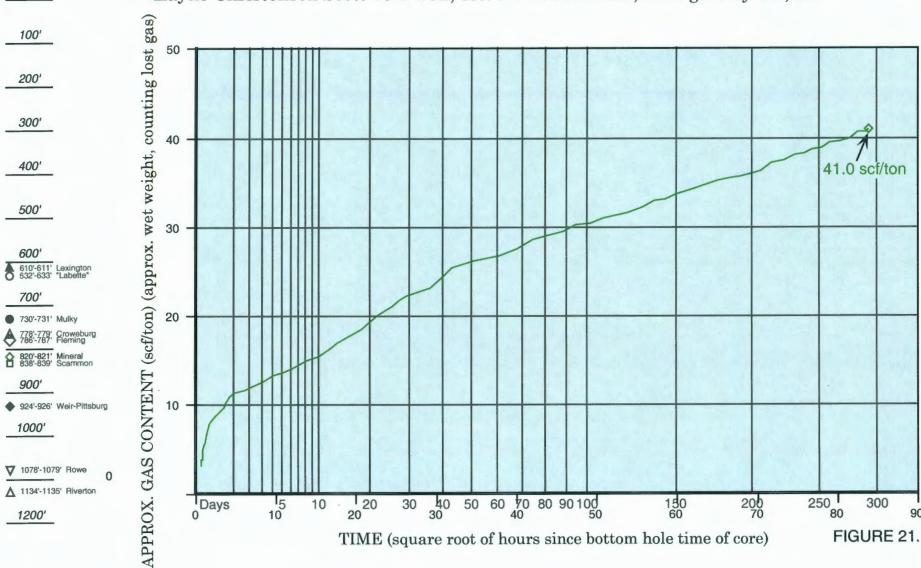
Desorption Characteristics of Fleming coal (786.0' to 787.3') Layne Christensen Scott #3-9 well; sec. 9-T.33S.-R.16E.; Montgomery Co., KS

surface

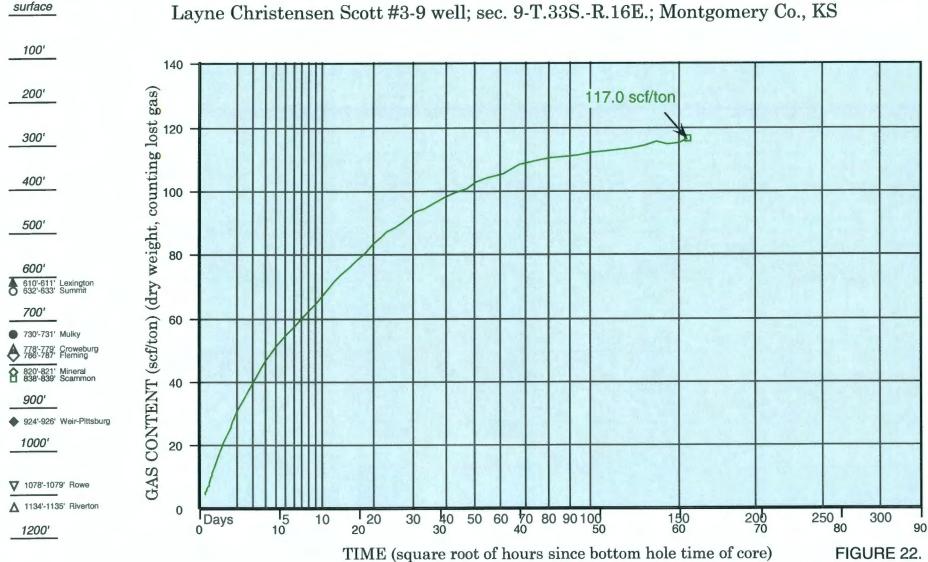


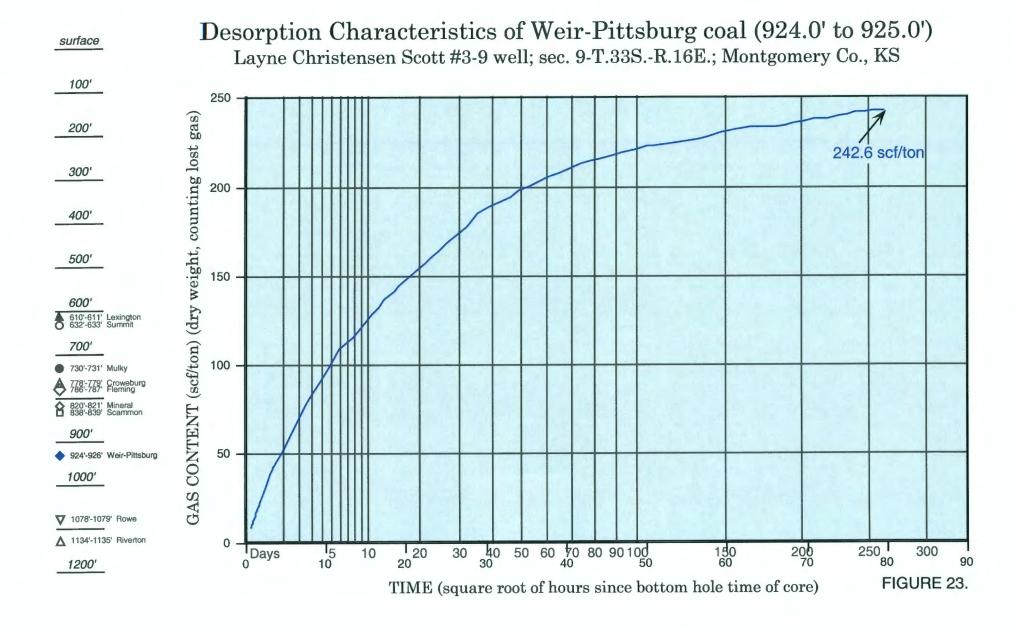
Desorption Characteristics of Mineral coal (820.0' to 821.2') Layne Christensen Scott #3-9 well; sec. 9-T.33S.-R.16E.; Montgomery Co., KS

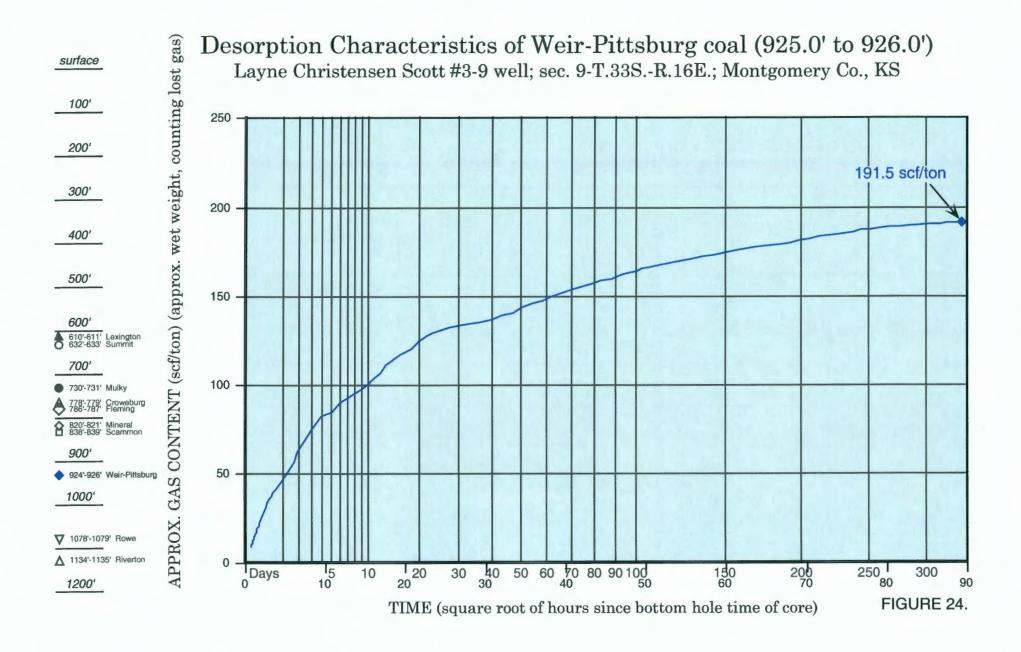
surface



Desorption Characteristics of Scammon coal (838.5' to 839.1') Layne Christensen Scott #3-9 well; sec. 9-T.33S.-R.16E.; Montgomery Co., KS

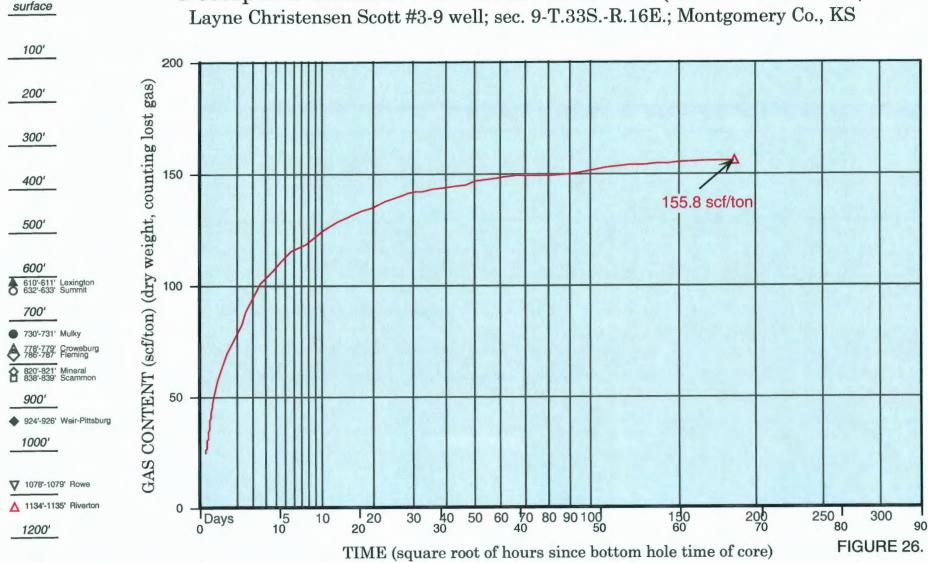




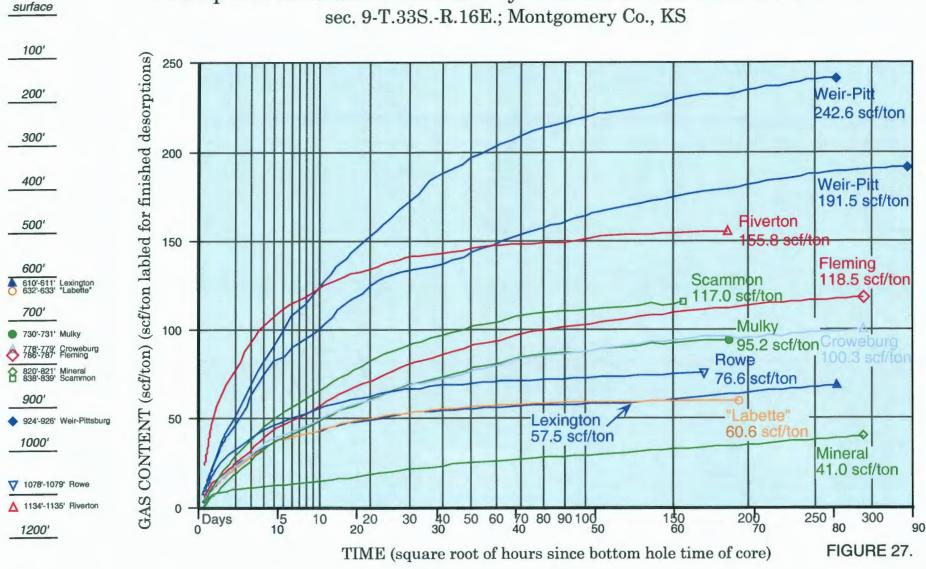


Desorption Characteristics of Rowe coal (1078.0' to 1079.0') surface Layne Christensen Scott #3-9 well; sec. 9-T.33S.-R.16E.; Montgomery Co., KS APPROX. GAS CONTENT (scf/ton) (dry weight, counting lost gas) 100' 80 200' 70 76.6 scf/ton 300' 60 400' 500' 50 600' 610'-611' Lexington 632'-633' Summit 40 730'-731' Mulky 30 20 924'-926' Weir-Pittsburg 1000' 10 -▼ 1078'-1079' Rowe ▲ 1134'-1135' Riverton 40 50 60 70 80 90 10d 30 50 150 60 200 250 20 30 300 Days 10 90 1200' FIGURE 25. TIME (square root of hours since bottom hole time of core)

Desorption Characteristics of Riverton coal (1134.5' to 1135.5') Layne Christensen Scott #3-9 well; sec. 9-T.33S.-R.16E.; Montgomery Co., KS



Desorption Characteristics of Layne Christensen Scott #3-9 Well sec. 9-T.33S.-R.16E.; Montgomery Co., KS



P.O. Box 326 • Chetopa, KS 67336 (620) 236-7874



February 14, 2003

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

Attn: Jonathan Lange

Statt #3-9

Please find listed below analysis on the following sample.

Lab ID. 21206 Sample ID. Kansas Geological Survey Sample F.

Moisture	As Received 1.79%	Moisture Free	MAF
Ash	32.97%	33.57%	
Volatile Matter	28.95%	29.48%	
Fixed Carbon	36.29%	36.95%	
BTU/lb Sulfur	9,622 11.69%	9,797 11.90%	14,749
*			

Respectfully,

Carrol Luman

P.O. Box 326 • Chetopa, KS 67336 (620) 236-7874



June 20, 2003

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

Attn: Jonathan Lange

Lash Christensen Fleming 786-787,3

Please find listed below analysis on the following sample.

Lab ID. 61609 Sample ID. Kansas Geological Survey Sample 3E-704.00g.

Moisture	As Received 3.19%	Moisture Free	MAF
Ash	27.87%	28.79%	
Volatile Matter	28.91%	29.86%	
Fixed Carbon	40.03%	41.35%	
BTU/lb Sulfur	10,329 5.63%	10,669 5.82%	14,983

Respectfully,

Carrol Luman

CGL:pdl

MEIDY

P.O. Box 326 • Chetopa, KS 67336 (620) 236-7874



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. 21201 Sample ID. Kansas Geological Survey Sample A.

Moisture	As Received 3.34%	Moisture Free	MAF
Ash	31.61%	32.72%	
Volatile Matter	27.13%	28.06%	
Fixed Carbon	37.90%	39.22%	
BTU/lb	9,832	10,172	15,120
Sulfur	5.73%	5.93%	

Respectfully,

Carrol Luman

LUMAN'S LABORATORIES

P.O. Box 326 • Chetopa, KS 67336 (620) 236-7874



April 24, 2003

Kansas Geological Survey 1930 Constant Ave. Lawrence Ks 66047-3724 ye Unistensa Scott # 39 924-925 Weis-Pitt

Attn: Jonathan Lange

Please find listed below analysis on the following sample.

Lab ID. 42205 Sample ID. Kansas Geological Survey KGSX.

Moisture	As Received 2.16%	Moisture Free	MAF
Ash	8.56%	8.75%	
Volatile Matter	35.72%	36.51%	
Fixed Carbon	53.56%	54.74%	
BTU/lb	13,570	13,869	15,198
Sulfur	4.51%	4.60%	

Respectfully,

Carrol Luman

P.O. Box 326 • Chetopa, KS 67336 (620) 236-7874



February 14, 2003

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

Attn: Jonathan Lange

Scotl#3-9
Rowle (upper H)

Please find listed below analysis on the following sample.

Lab ID. 21205 Sample ID. Kansas Geological Survey Sample E.

Moisture	As Received 7.51%	Moisture Free	MAF
Ash	36.33%	39.28%	
Volatile Matter	16.72%	18.08%	
Fixed Carbon	39.44%	42.64%	
BTU/lb Sulfur	8,113 9.02%	8,772 9.76%	14,447

Respectfully,

Carrol Luman

P.O. Box 326 • Chetopa, KS 67336 (620) 236-7874



February 14, 2003

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

Attn: Jonathan Lange

Scotlate 9
1 Plowe (lower ft)

Please find listed below analysis on the following sample.

Lab ID. 21208 Sample ID. Kansas Geological Survey Sample H.

Moisture	As Received 4.05%	Moisture Free	MAF
Ash	9.55%	9.96%	
Volatile Matter	30.89%	32.19%	
Fixed Carbon	55.51%	57.85%	
BTU/lb	13,146	13,701	15,216
Sulfur	3.25%	3.39%	

Respectfully,

Carrol Luman

P.O. Box 326 • Chetopa, KS 67336 (620) 236-7874



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. 21202 Sample ID. Kansas Geological Survey Sample B.

Moisture	As Received 1.76%	Moisture Free	MAF
Ash	13.00%	13.24%	
Volatile Matter	33.42%	34.02%	
Fixed Carbon	51.82%	52.74%	
BTU/lb	13,081	13,316	15,347
Sulfur	4.85%	4.94%	

Ruertoy 1134.5

Respectfully,

Carrol Luman

P.O. Box 326 • Chetopa, KS 67336 (620) 236-7874



February 14, 2003

Reserving (blind doplicate).

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

Attn: Jonathan Lange

Please find listed below analysis on the following sample.

Lab ID. 21204 Sample ID. Kansas Geological Survey Sample D.

Moisture	As Received 2.31%	Moisture Free	MAF
Ash	14.11%	14.44%	
Volatile Matter	32.93%	33.71%	
Fixed Carbon	50.65%	51.85%	
BTU/lb	12,746	13,047	15,250
Sulfur	5.94%	6.08%	

Respectfully,

Carrol Luman