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ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL
COLLECTED DURING FISCAL YEAR 1985

By
Hyman Schultz
H. L. Retcofsky
Leslie R. Davis

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Pittsburgh Energy Technology Center
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U.S. DEPARTMENT OF ENERGY
Pittsburgh Energy Technology Center

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ANALYSES OF TIPPLE AND DELIVERED SAMPLE OF COAL

Collected During Fiscal Year 1985

by

H. Schultz, H.L. Retcofsky & L.R. Davis¹

ABSTRACT

This Department of Energy (DOE) publication updates a series of Topical Reports (formerly "Reports of Investigation") on the quality of coal purchases under specifications for government use. Listed in alphabetical order by state, county, town, and mine are analytical data on the composition and quality of tipple and delivered samples of coal collected during the fiscal year 1985. Tipple samples were collected by certified commercial laboratories in accordance with instructions given by the Analytical Research Branch (ARB), Coal Science Division (CSD). The delivered samples were collected at destination by installation personnel, and all samples were analyzed under the supervision of the DOE-CSD located at the Pittsburgh Energy Technology Center (PETC), Pittsburgh, Pennsylvania, or the U.S. Army General Materiel and Petroleum Activity Laboratory, located at New Cumberland, Pennsylvania.

INTRODUCTION

The federal government has long been active in promoting the purchase of coal for government use under specifications that define the requirements in terms of heating value of the coal, expressed in British thermal units, and composition, as shown by proximate analyses. To these, when required, are added the ash-softening temperature, the free-swelling index, the Hardgrove grindability index, and ultimate analyses. Under most of these specification contracts, the bidders guarantee the quality of the coal, and the quality guaranteed by the successful bidder becomes the standard of his contract. The deliveries are sampled in accordance with instructions issued by the ARB², and the samples are analyzed under the supervision of the CSD or the U.S. Army General Materiel and Petroleum Activity Laboratory to determine whether the coal is of the quality guaranteed by the contractor; if it is not, a price adjustment is made.

Tipple samples (breaker samples in the anthracite region) are collected after the coal has received final treatment at the tipple or cleaning plant, as it is loaded into railroad cars or trucks. The increments of a sample are complete cross sections of the entire stream of coal and are

¹Analytical Research Branch, Coal Science Division, Pittsburgh Energy Technology Center, Department of Energy, Pittsburgh, Pennsylvania

²Snyder, N.H. (rev. by S.J. Aresco), Coal Sampling (Revision of Technical Paper 133), BuMines Handbook, 1957, 16 pp.

taken regularly throughout the period of loading so that all parts of the shipment are equally represented. The increments constitute the gross sample, which weighs not less than 1,000 pounds; this gross sample is reduced by mechanical crushing and riffing to approximately 4 pounds and a fineness of about 8 mesh, and then shipped to the laboratory for further reduction of both particle size and quantity and for analysis. Delivered coal samples are collected during unloading. The method of sampling, size of sample, and precautions observed are the same as in the collection of tipple samples.

Results of analyses of both tipple and delivered samples from 99 mines are tabulated in this report. Over 900 analyses were performed for quality control purposes. All tests were conducted according to the appropriate ASTM standards as stated in the most recent "Annual Book of ASTM Standards," Section 5, Volume 05.05. Such analyses of tipple and delivered samples provide valuable data for monitoring contract compliance, evaluating bids from coal companies, and producing new coal sources for the future.

EXPLANATION OF TABLE OF ANALYSES

The analyses in Table 1 are arranged alphabetically with respect to states, counties, towns, and mines, and are listed as follows:

1. Proximate analysis (Columns 7-10) -- moisture, volatile matter, fixed carbon, and ash
2. Ultimate analysis (Columns 11-15) -- sulfur, hydrogen, carbon, nitrogen, and oxygen
3. Calorific value (Columns 16-17) -- the heat of combustion of a substance, expressed in British thermal units (Btu) per pound.
4. Numbers greater than 1 in Column 18 indicate the number of deliveries averaged.
5. Ash-softening temperature (AST), Column 19, determinations are performed in a reducing atmosphere using an electric furnace that has a maximum temperature reading of 2800°F. Numbers in Column 20 greater than 1 indicate the number of determinations averaged.
6. The free-swelling index (FSI), Column 21, is determined on all tipple samples by characterizing a single aliquant. The FSI is determined only on some of the delivered samples, with the number of portions analyzed being a function of the tonnage delivered. The numbers in parenthesis after the FSI values determined for delivered coals indicate the number of analyses that yielded that particular value.

The free-swelling index is indicative of the caking characteristics of bituminous coal when burned in fuel beds.^{3,4}

7. Hardgrove grindability index (HGI) is listed in Column 22 when such tests were made. The grindability index indicates the relative grindability or ease of pulverizing coals in comparison with coals chosen as standards.⁵

The analyses are given to the nearest 0.1 percent, and the British thermal units to the nearest 10, although the laboratory determinations are recorded to 0.01 percent and to the nearest British thermal unit.

The tipple samples were taken by commercial laboratories at the mine tipple or breaker as the coal was loaded into railroad cars or trucks. These samples represent as nearly as possible the quality of the coal shipped. They are designated in Column 5 as tipple; individual analyses are given for them.

The delivered samples were collected systematically throughout all deliveries by representatives of the government departments under directions furnished by the Analytical Research Branch. Yearly average analyses are given for these samples.

EXPLANATION OF SYMBOLS USED IN TABLE OF ANALYSES

Kind of sample (Column 5, Table 1):

T - tipple or breaker sample
D - delivered sample

Preparation (Column 6, Table 1):

W - washed
Q - partially washed
R - raw

³Selvig, W.A., and W.H. Ode, An Investigation of a Laboratory Test for Determination of the Free Swelling Index of Coal, BuMines RI 4238, 1948, 11 pp.

⁴Annual Book of ASTM Standards, Standard D-720-83 (1986)

⁵Annual Book of ASTM Standards, Standard D-409-85 (1986)

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R E D S I O N	M A S S I V E R E C I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							V O L A T I L E S	F C A X R E B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N	A S R E C E I V E D	D R Y		D E G R E E S O F D E T E R M I N E D	F S I	H G I	
																					D R Y C O A L
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
ALASKA																					
NENANA FIELD HEALY FORK USIBELLI	VARIOUS	ROM	287285	D	R	26.0	47.1	41.0	11.6	0.2	---	---	---	---	7770	10510	346	---	-	-----	---
COLORADO																					
FREMONT FLORENCE DORCHESTER NO. 1	VERMEJO/ VENTO	1 1/4 INCH BY 1/4 INCH	6609	D	W	10.6	38.5	53.2	8.1	0.5	---	---	---	---	11200	12540	9	----	-	-----	---
GARFIELD SILT EASTSIDE	E SEAM	1 1/4 INCH BY 1/4 INCH	500	T	R	6.3	37.9	50.9	11.0	0.6	5.3	69.1	1.0	12.7	11850	12650	1	>2800	1	1 1/2	39
GUNNISON SOMERSET BEAR	JUANITA C	1 1/4 INCH BY 1/4 INCH	300	T	R	6.5	37.3	53.7	8.8	0.6	5.3	73.0	1.5	10.5	12120	12960	1	2680	1	2	53
GUNNISON SOMERSET BEAR	JUANITA C	1 1/4 INCH BY 1/4 INCH	15147	D	R	5.3	39.5	51.5	8.8	0.5	---	---	---	---	12350	13040	21	----	-	-----	---
ROUTT OAK CREEK APEX NO. 2	PINNACLE	1 1/2 INCH BY 1/4 INCH	220	T	R	8.1	39.3	49.8	10.7	0.6	4.8	67.3	1.4	----	11360	12360	1	>2800	1	1	45
ROUTT OAK CREEK APEX NO. 2	PINNACLE	1 1/2 INCH BY 1/4 INCH	4378	D	R	8.7	38.9	49.6	11.2	0.6	---	---	---	---	11220	12290	9	----	-	-----	---
ROUTT OAK CREEK APEX NO. 2	PINNACLE	2 INCH BY 0	7258	D	R	8.1	36.9	48.7	14.1	0.6	---	---	---	---	10870	11840	10	----	-	-----	---

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R A T I O N	M A S S I S T E R E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							V O L A T I L E S	F C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N	A S R E C E I V E D	D R Y		D E G R E E S O F D E T E R M I N E D	F S I	H G I	
																					D R Y C O A L
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
ILLINOIS																					
FRANKLIN BENTON OLD BEN NO. 24	NO. 6	2 INCH BY 0	1000 T W	10.9	38.6	52.3	9.0	2.1	5.0	73.4	1.0	9.3	11700	13130	1	2260	1	2 1/2		56	
FRANKLIN SESSER OLD BEN NO. 21	NO. 6	2 INCH BY 0	1000 T W	11.0	36.8	53.5	9.5	1.2	4.9	73.8	1.3	9.1	11660	13100	1	2490	1	3 1/2		53	
FRANKLIN SESSER OLD BEN NO. 26	NO. 6	1 INCH BY 1/4 INCH	1000 T W	8.0	38.4	51.8	9.6	2.3	5.0	72.8	1.1	8.9	12000	13040	1	2330	1	3 1/2		54	
FRANKLIN SESSER OLD BEN NO. 26	NO. 6	2 INCH BY 0	1000 T W	11.1	37.6	51.9	10.3	2.3	5.1	72.3	1.2	8.5	11480	12910	1	2320	1	4		55	
INDIANA																					
DAVISS CANNELBURG SUGAR CREEK NO. 1	BUFFALOVILLE & BRAZIL	1 1/2 INCH BY 1/4 INCH	200 T R	11.7	41.2	51.0	7.7	1.1	4.9	75.3	1.1	9.7	11920	13500	1	2780	1	2		48	
GREENE LINTON COAL, INC.	NO. IV	1 1/4 INCH BY 1/4 INCH	16564 D W	12.7	40.2	51.4	8.2	1.1	---	---	---	---	11720	13420	20	---	-	-----	---		
KNOX BICKNELL J & R	NOS. V & VI	1 1/4 INCH BY 1/4 INCH	200 T W	12.7	40.7	46.7	12.4	2.8	5.2	69.1	1.0	9.1	10870	12450	1	2360	1	3		54	
PIKE ARTHUR OLD BEN NO. 1	NOS. V & VI	1 1/2 INCH BY 0	1000 T W	10.6	44.4	46.0	9.5	4.1	4.9	71.1	1.1	9.1	11670	13050	1	2170	1	3 1/2		56	

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	TONNAGE	KIND OF SAMPLE	PREPARATION	MASS RECEIVED	PROXIMATE, PERCENT			ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		NO. OF ANALYSES	AST		INDEXES	
							VOLATILES	FIXED CARBON	ASH	SULFUR	HYDROGEN	CARBON	NITROGEN	OXYGEN	AS RECEIVED	DRY	DEGREES F		NO. OF DETN.	FSI	HGI	
																						DRY COAL
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	

INDIANA

(CONTINUED)

PIKE PETERSBURG OLD BEN NO. 2	NOS. V & VI	2 1/2 INCH BY 0	1000 T W	14.0	37.9	52.5	9.5	1.6	5.2	73.2	1.2	9.0	11230	13060	1	2510	1	3 1/2	58
-------------------------------------	-------------	--------------------	----------	------	------	------	-----	-----	-----	------	-----	-----	-------	-------	---	------	---	-------	----

SULLIVAN CARLISLE HAWTHORN	NO. VII	1 1/4 INCH BY 1/4 INCH	200 T W	15.4	39.7	49.1	11.1	2.4	4.8	72.2	1.1	8.1	11290	13350	1	2640	1	2 1/2	56
----------------------------------	---------	---------------------------	---------	------	------	------	------	-----	-----	------	-----	-----	-------	-------	---	------	---	-------	----

SULLIVAN CARLISLE HAWTHORN	NO. VI	1 1/4 INCH BY 1/4 INCH	100 T W	11.7	42.3	46.5	11.0	2.3	5.2	71.9	1.0	8.3	11480	13000	1	2350	1	3	57
----------------------------------	--------	---------------------------	---------	------	------	------	------	-----	-----	------	-----	-----	-------	-------	---	------	---	---	----

KENTUCKY EAST

BELL BEVERLY BLOSSOM SURFACE	HAZARD 5-A	ROM	100 T W	4.7	37.7	54.7	7.4	0.8	5.1	77.2	1.1	8.2	13160	13810	1	2490	1	3	44
---------------------------------------	------------	-----	---------	-----	------	------	-----	-----	-----	------	-----	-----	-------	-------	---	------	---	---	----

BELL BEVERLY BLOSSOM SURFACE	HAZARD 5-A	1 1/4 INCH BY 1/4 INCH	200 T W	3.5	36.8	57.0	6.0	0.8	5.6	78.9	1.0	7.5	13500	13990	1	2720	1	3 1/2	45
---------------------------------------	------------	---------------------------	---------	-----	------	------	-----	-----	-----	------	-----	-----	-------	-------	---	------	---	-------	----

BELL BEVERLY BLOSSOM SURFACE	JELICO	ROM	150 T W	7.1	37.0	57.4	5.4	0.7	5.2	73.3	1.3	7.7	13090	14090	1	2610	1	3 1/2	51
---------------------------------------	--------	-----	---------	-----	------	------	-----	-----	-----	------	-----	-----	-------	-------	---	------	---	-------	----

BELL BEVERLY BLOSSOM SURFACE	JELICO	1 1/4 INCH BY 1/4 INCH	150 T W	4.9	38.2	57.7	3.9	0.6	5.6	80.2	1.2	8.2	13600	14300	1	2650	1	4 1/2	46
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TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R A T I O N	M A S O N I S R T E U C R E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							V O L A T I L E S	F C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N	A S R E C E I V E D	D R Y		D E G R E E S O F D E T N	F S I	H G I	
																					D R Y C O A L
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
KENTUCKY EAST (CONTINUED)																					
BELL MIDDLESEBORO KMA	HIGNITE	1 1/2 INCH BY 0	200	T	R	2.5	38.6	58.3	2.9	0.6	5.6	80.9	1.2	8.5	13960	14320	1	2710	1	3 1/2	56
BELL PRUDEN ROYAL GEM NO. 1	MASON	1 1/4 INCH BY 1/4 INCH	300	T	R	2.5	38.4	56.9	4.6	1.0	5.5	80.2	1.4	7.1	14030	14390	1	2660	1	5 1/2	52
BELL PRUDEN ROYAL GEM NO. 1	JELICO	1 1/4 INCH BY 1/4 INCH	300	T	R	2.5	38.5	57.4	4.0	0.9	5.4	79.8	1.4	8.2	14040	14400	1	2230	1	4 1/2	53
BOYD CATLETTSBURG TRIPLE ELKHORN	HAZARD 5-A	2 INCH BY 1/4 INCH	100	T	R	5.9	38.1	56.0	5.8	0.7	5.3	77.6	1.2	9.0	12880	13690	1	>2800	1	2	43
BREATHITT EVANSTON SKYLINE TIPPLE	VARIOUS	1 1/4 INCH BY 1/4 INCH	1000	T	R	5.9	39.1	56.3	4.5	0.8	5.6	78.8	1.2	8.7	13320	14160	1	>2800	1	3 1/2	42
BREATHITT EVANSTON SKYLINE TIPPLE	VARIOUS	2 INCH BY 0	1000	T	R	7.2	37.7	57.8	4.4	0.8	5.2	78.0	1.4	10.0	13170	14190	1	2750	1	3	44
BREATHITT JACKSON KENTUCKY MAY	HAZARD 5-A	1 1/4 INCH BY 3/8 INCH	100	T	R	5.5	37.6	54.4	7.8	0.6	5.2	75.9	1.0	9.2	12760	13500	1	>2800	1	2 1/2	47
BREATHITT JACKSON KENTUCKY MAY	HAZARD 5-A	1 1/4 INCH BY 1/4 INCH	100	T	R	4.6	37.9	55.1	6.9	0.7	5.3	76.5	0.8	9.6	13030	13660	1	>2800	1	4	47

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R A T I O N	M A S S I S T E R E I V E D	PROXIMATE, PERCENT			ULTIMATE, PERCENT					CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N	F S I	H G I
							V O L A T I L E S	F C A I R E D O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

KENTUCKY EAST

(CONTINUED)

CLAY MANCHESTER HARDLY ABLE NO. 1 SURFACE	HORSE CREEK	1 1/4 INCH BY 1/4 INCH	2001 D R	2.4	36.6	57.0	6.2	0.7	---	---	---	---	---	---	13730	14080	3	---	---	---	---
CLAY MANCHESTER ONEIDA	HORSE CREEK	1 1/4 INCH BY 1/4 INCH	4087 D R	3.0	37.7	54.9	7.1	1.1	---	---	---	---	---	---	13510	13940	8	---	---	---	---
FLOYD DAVID BEVERLY ANN TIPPLE	WINIFREDE	1 1/4 INCH BY 1/4 INCH	44597 D R	3.6	38.1	54.6	7.0	0.8	---	---	---	---	---	---	13110	13610	70	>2800		1(3) 1 1/2(11) 2(18) 2 1/2(26) 3(6) 3 1/2(2) 4 1/2(1) 6(1) 6 1/2(1)	---
FLOYD DAVID HILLER NO. 1	ELKHORN 2	1 1/4 INCH BY 1/4 INCH	5438 D R	3.7	37.4	52.7	9.6	1.1	---	---	---	---	---	---	12760	13260	16	---	---	---	---
FLOYD DAVID HILLER NO. 1	WANCE SPLIT	1 1/4 INCH BY 1/4 INCH	9188 D R	3.8	37.1	55.1	7.5	0.9	---	---	---	---	---	---	13150	13670	13	---	---	---	---
FLOYD GARRETT VICTORIA & PEMBROKE/JET TIPPLE	HAZARD 4 & ELKHORN 3	1 1/4 INCH BY 1/4 INCH	250 T W	4.0	37.2	56.0	6.6	0.7	5.5	76.8	1.1	9.0			13220	13770	1	2650	1	2 1/2	48

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY. TOWN. MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R I M A R Y S T R U C T U R E R E C E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES		
						D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T E R M I N E D	F S I	H G I	
						V O L A T I L E S	F C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
KENTUCKY EAST (CONTINUED)																					
FLOYD GARRETT VICTORIA & PEMBROKE/JET TIPPLE	HAZARD 4 & ELKHORN 3	2 INCH BY 0	800	T	R	6.2	35.1	55.0	9.8	0.7	5.3	73.8	1.0	9.1	12390	13210	1	2640	1	1 1/2	48
HARLAN BENHAM BENHAM D-7	D SEAM	1 1/4 INCH BY 1/4 INCH	350	T	W	4.0	38.2	56.0	5.7	0.8	5.4	78.3	1.3	8.2	13600	14170	1	>2800	1	6	44
HARLAN HARLAN DARBY NO. 1	HANCE SPLIT	1 1/2 INCH BY 1/4 INCH	100	T	W	2.9	40.0	55.7	4.2	0.8	4.9	78.5	1.0	10.4	14010	14430	1	>2800	1	4	45
HARLAN HARLAN DARBY NO. 1	HANCE SPLIT	1 1/4 INCH BY 1/4 INCH	100	T	W	4.1	39.9	55.1	4.9	0.8	5.4	78.2	1.0	9.5	13660	14240	1	>2800	1	3 1/2	47
HARLAN HARLAN DARBY NO. 1	HANCE SPLIT	1 1/2 INCH BY 0	100	T	W	5.4	39.0	55.2	5.7	0.9	5.8	79.7	1.1	6.6	13260	14020	1	2770	1	3 1/2	45
HARLAN HARLAN MILL CREEK NO. 5	HANCE SPLIT	1 1/2 INCH BY 1/4 INCH	100	T	W	4.1	39.1	56.1	4.7	0.8	5.1	78.7	1.1	9.3	13530	14110	1	2730	1	3 1/2	46
HARLAN HARLAN MILL CREEK NO. 5	HANCE SPLIT	1 1/4 INCH BY 1/4 INCH	100	T	W	4.7	38.8	55.8	5.3	0.9	5.2	78.1	1.2	9.0	13350	14010	1	2710	1	3	45

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY. TOWN. MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R A T I O N	M A S O N S R E T U C E I V E D	PROXIMATE. PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N .	F S I	H G I
							V O L A T I L E S	F C A I X R E B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

KENTUCKY EAST

(CONTINUED)

HARLAN HARLAN MILL CREEK NO. 5	HANCE SPLIT	1 1/2 INCH BY 0	100	T W	6.2	37.7	55.2	7.0	0.8	---	----	----	----	12980	13840	1	2660	1	2 1/2	46
HARLAN PATHFORK DEBRA LYNN NO. 01 SURFACE	MASON	1 1/4 INCH BY 0	100	T R	2.6	39.1	51.1	9.7	2.2	5.4	74.7	1.1	6.6	13060	13410	1	2230	1	3 1/2	51
HARLAN TOTZ TOTZ	HANCE SPLIT	1 1/4 INCH BY 1/4 INCH	2664	O R	3.8	39.2	55.7	4.8	0.7	---	----	----	----	13640	14180	4	-----	-	-----	---
MADISON BEREA BUNCOMB	HORSE CREEK	1 1/4 INCH BY 1/4 INCH	2208	O R	4.0	38.7	56.6	4.4	0.7	---	----	----	----	13670	14250	7	2360	1	2 1/2(1)	---
KNOTT KITE: PARMA II	HAZARD 4	1 1/4 INCH BY 1/4 INCH	100	T W	3.5	35.0	58.4	6.5	0.6	4.9	78.6	1.3	1.8	13400	13890	1	>2800	1	3 1/2	43
KNOTT PIPPA PASSES ANDERSON	HAZARD 4	1 1/4 INCH BY 1/4 INCH	3723	O R	5.0	38.1	54.3	7.3	0.8	---	----	----	----	12940	13630	7	-----	-	-----	---
KNOX COUNTY CORBIN KENTUCKY BLUE	HORSE CREEK	1 1/4 INCH BY 1/4 INCH	4	T R	3.8	37.0	56.4	6.5	1.2	5.3	78.3	1.2	7.1	13580	14120	1	2570	1	3 1/2	48
LEE BEATTYVILLE ACE	JELLICO	1 1/4 INCH BY 1/4 INCH	100	T R	5.8	39.5	52.2	8.1	1.1	5.6	75.0	1.1	8.7	12690	13470	1	>2800	1	3 1/2	45

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY. TOWN. MINE	BED	COAL SIZE	T O N N A G E	K I N D P A R T I O N S A M P L E	P R E P A R E D O F	M A S S I S T E R E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N	F S I	H G I
							V O L A T I L E S	F I X E D C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

KENTUCKY EAST

(CONTINUED)

LESLIE HYDEN DARK HOLLOW	HAZARD 4	1 1/2 INCH BY 0	300	T R	8.0	35.9	54.0	10.0	1.3	5.0	73.8	1.1	8.6	12180	13240	1	2540	1	3 1/2	54
LETCHER CUMBERLAND (HARLAN COUNTY) SCOTIA	IMBODEN	1 1/4 INCH BY 1/4 INCH	18976	D W	2.6	36.7	57.8	5.2	0.8	---	---	---	---	14120	14510	20	---	---	---	---
LETCHER DEANE; DEANCO TIPPLE	VARIOUS	1 1/4 INCH BY 1/4 INCH	6891	D R	4.2	39.5	49.9	10.3	2.4	---	---	---	---	12530	13080	7	---	---	---	---
LETCHER ISOM TRIPLE G & T	HAZARD 4	1 1/4 INCH BY 1/4 INCH	200	T R	6.7	37.0	55.8	7.0	0.8	4.9	77.5	1.0	8.4	12750	13670	1	>2800	1	3	49
LETCHER ISOM TRIPLE G & T	HAZARD 4	2 INCH BY 0	200	T R	7.5	35.8	55.2	8.8	0.8	4.9	74.4	0.8	9.9	12280	13280	1	2780	1	1 1/2	51
LETCHER WHITESBURG NO. 8 LIMITED	HAZARD 4 RIDER	1 1/4 INCH BY 1/4 INCH	400	T R	4.6	37.4	54.9	7.6	0.9	5.5	77.3	1.2	7.2	13160	13790	1	2730	1	3 1/2	45
MAGOFFIN ROYALTON BIZWEL 6 & 12	HAZARD 5-A	1 1/4 INCH BY 1/4 INCH	100	T R	5.3	38.7	55.4	5.8	0.8	5.1	76.4	1.1	10.5	13000	13730	1	>2800	1	2	---
MAGOFFIN ROYALTON BIZWEL NO. 12	HAZARD 5-A	1 1/4 INCH BY 1/4 INCH	100	T R	4.5	37.8	53.1	9.0	0.6	5.2	74.4	1.0	9.6	12670	13270	1	>2800	1	1 1/2	43

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R E D S I O N	M A S S I S T E R E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N	F S I	H G I
							V O L A T I L E S	F C A X R E B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
KENTUCKY EAST (CONTINUED)																					
PERRY CORNETTSVILLE LEATHERWOOD TRUCKING	HAZARD 5-A	1 1/4 INCH BY 1/4 INCH	100	T	Q	2.3	37.7	56.4	5.7	0.6	5.4	77.5	1.3	9.2	13760	14080	1	>2800	1	4 1/2	44
PERRY HAZARD LENNUT TIPPLE	HAZARD 5-A	1 1/4 INCH BY 3/8 INCH	240	T	R	4.0	39.4	52.2	8.2	1.0	5.5	75.6	1.8	7.6	13090	13640	1	>2800	1	4 1/2	41
PERRY HAZARD LENNUT TIPPLE	HAZARD 5-A	1 1/4 INCH BY 1/4 INCH	100	T	R	6.0	35.3	56.2	8.4	0.8	4.9	75.1	1.7	9.0	12560	13360	1	>2800	1	2	43
PERRY HAZARD LENNUT TIPPLE	HAZARD 5-A	2 INCH BY 0	100	T	R	7.5	34.5	55.0	10.3	0.8	4.9	73.4	1.7	8.6	12020	12990	1	>2800	1	1 1/2	45
PERRY LEATHERWOOD LEATHERWOOD NO. 1	HAZARD 5-A	1 1/4 INCH BY 1/4 INCH	12244	D	W	2.2	38.2	55.5	6.0	0.6	---	---	---	---	13720	14020	13	---	-	-----	---
PERRY VICCO ALLIED 1 & 2	HAZARD 4	1 1/4 INCH BY 1/4 INCH	100	T	W	6.8	37.5	55.5	6.8	0.7	6.2	78.9	1.3	5.7	13030	13980	1	>2800	1	3 1/2	45
PERRY VICCO ALLIED 1 & 2	HAZARD 4	2 INCH BY 0	100	T	W	6.3	38.1	55.8	6.0	0.7	5.3	78.1	1.3	8.3	13090	13970	1	>2800	1	4	46
PIKE BELFRY SAMOYED ENERGIES	JELTICO	1 1/4 INCH BY 1/4 INCH	200	T	W	2.6	36.4	59.1	4.4	0.8	5.3	80.1	1.1	8.1	13750	14120	1	>2800	1	4 1/2	51

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R E D I O N	M A S S I S T E R E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N .	F S I	H G I
							V O L A T I L E S	F C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

KENTUCKY EAST

(CONTINUED)

PIKE DORTON JUST MORE	JELICO	1 1/4 INCH BY 1/4 INCH	100	T R	2.8	36.2	59.4	4.3	0.9	5.4	79.9	1.0	8.3	13800	14200	1	2450	1	5	52
PIKE ELKHORN CITY FEDERAL	IMBODEN	1 1/4 INCH BY 1/4 INCH	400	T W	2.2	35.4	58.1	6.3	0.7	5.5	78.6	1.0	7.7	13880	14190	1	>2800	1	5	40
PIKE ELKHORN CITY FEDERAL	ELSWICK	2 INCH BY 0	100	T W	5.7	31.1	59.2	9.5	1.8	4.7	77.3	1.0	5.5	13190	13990	1	2400	1	6	66
PIKE ELKHORN CITY KENTUCKY ELKHORN TIPPLE	JELICO	1 1/4 INCH BY 1/4 INCH	70	T W	3.7	38.3	57.5	4.1	0.7	5.3	80.7	1.1	7.8	13920	14450	1	2690	1	6 1/2	46
PIKE ESCO ESCO 10-K	VARIOUS	1 1/4 INCH BY 1/4 INCH	100	T R	5.1	37.7	53.9	8.3	0.8	5.4	77.2	1.0	7.1	13060	13760	1	>2800	1	4 1/2	56
PIKE META INGRAM PLANT	HAZARD NOS. 5 AND 5-A	1 1/4 INCH BY 1/4 INCH	500	T W	5.7	38.6	53.0	8.3	0.8	5.6	76.9	1.2	6.8	12820	13590	1	>2800	1	3	41
PIKE META JOHNS CREEK	WINIFREDE & ELKHORN #1	1 1/4 INCH BY 1/4 INCH	120	T W	4.4	40.0	53.8	6.0	0.7	5.2	77.3	1.1	9.5	13340	13950	1	>2800	1	2 1/2	40

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R A T I O N	M A S S I S T E R E C E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N	F S I	H G I
							V O L A T I L E S	F C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

KENTUCKY EAST

(CONTINUED)

PIKE PHELPS JAMBOREE	HANCE SPLIT	ROM	8932 D W	3.5	37.4	55.3	7.0	0.8	---	----	----	----	13200	13690	16	>2800	6	1 1/2(4) 2(4) 2 1/2(3) 3(1) 3 1/2(1) 5(1) 6 1/2(2)	---
PIKE PHELPS KENCAR NO. 1	IMBODEN	2 INCH BY 0	1000 T W	5.6	32.7	60.2	6.9	0.5	5.2	81.2	1.3	4.5	13480	14280	1	>2800	1	6 1/2	54
PIKE PHELPS KENCAR NO. 2	IMBODEN	2 INCH BY 0	600 T R	3.9	30.8	58.4	10.7	0.5	4.9	77.1	1.4	5.2	13050	13580	1	>2800	1	7	57
PIKE PIKEVILLE FREEPORT	WINIFREDE	1 1/2 INCH BY 0	300 T R	5.9	39.6	56.2	4.1	0.8	5.6	78.6	1.3	9.3	13460	14300	1	2710	1	3 1/2	47
PIKE PIKEVILLE HAWKEYE SERVICES	BROAS AND PEACH ORCHARD	1 1/4 INCH BY 1/4 INCH	100 T R	5.9	35.6	55.1	9.2	0.6	5.0	76.7	1.2	7.0	12530	13320	1	>2800	1	2 1/2	45
PIKE PIKEVILLE OMNI TIPPLE	VARIOUS	1 1/4 INCH BY 1/4 INCH	100 T W	3.6	38.5	53.2	8.1	0.9	5.0	75.7	1.1	8.9	12980	13460	1	>2800	1	1 1/2	41
PIKE PIKEVILLE PETER FORK NO. 2	JELICO	1 1/4 INCH BY 3/8 INCH	100 T R	3.1	39.4	57.1	3.4	0.8	5.7	81.0	1.2	7.7	13980	14430	1	2690	1	4	45

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I R D I P O F S A M P L E	P R O P O R T I O N	M A S S I S T E R E I V E D	PROXIMATE, PERCENT			ULTIMATE, PERCENT					CALORIFIC VALUE, BTU/LB		N O . O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S O F D E T E R M I N E D	F S I	H G I	
							V O L A T I L E S	F I X E D C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
KENTUCKY EAST (CONTINUED)																					
PIKE PIKEVILLE PETER FORK NO. 2	JELICO	1 1/4 INCH BY 1/4 INCH	100	T	R	3.5	38.2	55.4	6.3	0.8	5.4	78.2	1.2	7.9	13460	13950	1	>2800	1	3 1/2	47
ROCKCASTLE MT. VERNON BUFFALO	BUFFALO	1 1/4 INCH BY 1/4 INCH	100	T	R	7.9	40.1	55.9	3.9	0.9	5.7	79.4	1.0	8.7	12990	14100	1	2240	1	2 1/2	46
KENTUCKY WEST																					
BUTLER JETSON MIDDLE KENTUCKY	JETSON	1 1/2 INCH BY 1/2 INCH	300	T	R	10.0	38.1	55.8	6.0	1.0	5.4	75.8	1.5	10.1	12340	13710	1	>2800	1	3 1/2	51
CHRISTIAN MANNINGTON EMPIRE NO. 1 STRIP	NO. 04	1 1/2 INCH BY 1/4 INCH	100	T	W	9.8	40.9	54.5	4.5	1.9	5.4	76.1	1.3	10.5	12400	13750	1	2120	1	4	49
OHIO PLEASANT RIDGE HARRY YOUNG	NO. 06	ROM	100	T	R	12.9	36.7	51.0	12.1	1.2	---	---	---	---	10940	12560	1	>2800	1	1	---
MONTANA																					
BIG HORN DECKER SPRING CREEK	ANDERSON AND DIETZ	1 1/4 INCH BY 1/4 INCH	5658	D	R	20.4	43.1	51.5	5.1	0.4	---	---	---	---	9960	12520	11	---	-	-----	---
OHIO																					
CARROLL MALVERN JONES	MIDDLE KITTANNING (NO. 6)	1 1/4 INCH BY 3/8 INCH	200	T	W	6.0	40.3	52.0	7.6	2.1	5.5	72.9	1.0	10.6	12390	13180	1	2630	1	5	51

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R A T I O N	M A S S I S T E R E C E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N	F S I	H G I
							V O L A T I L E S	F C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

OHIO

(CONTINUED)

VINTON HAMDEN SANDS HILL STRIP	BROOKVILLE (NO. 4)	1 1/4 INCH BY 1/4 INCH	6831 D W	6.7	41.2	47.1	11.4	2.9	---	---	---	---	11700	12550	7	---	---	---	---
VINTON MC. ARTHUR ECONOCOAL NO. 1	BROOKVILLE (NO. 4)	1 1/4 INCH BY 1/4 INCH	200 T W	7.9	44.0	48.8	7.0	2.2	5.6	73.3	1.0	10.5	12300	13360	1	2400	1	3 1/2	51

PENNSYLVANIA ANTHRACITE

DAUPHIN ELIZABETHVILLE AD PREP. PLANT	MAMMOTH	CHESTNUT	10 T W	4.9	3.6	86.9	9.3	0.5	2.5	84.1	0.9	2.4	12860	13520	1	>2800	1	-----		33
DAUPHIN ELIZABETHVILLE AD PREP. PLANT	MAMMOTH	PEA	10 T W	5.2	3.6	87.3	8.9	0.5	2.3	83.3	0.7	4.0	12860	13570	1	>2800	1	-----		33
DAUPHIN ELIZABETHVILLE AD PREP. PLANT	MAMMOTH	BUCKWHEAT NO. 01	10 T W	5.2	5.1	85.3	9.4	0.5	2.5	81.6	0.9	4.8	12750	13450	1	>2800	1	-----		38
DAUPHIN ELIZABETHVILLE AD PREP. PLANT	MAMMOTH	RICE	10 T W	6.5	4.8	85.1	10.0	0.5	2.6	83.1	0.8	2.8	12490	13360	1	>2800	1	-----		38
DAUPHIN ELIZABETHVILLE AD PREP. PLANT	MAMMOTH	BARLEY	10 T W	7.5	4.9	81.2	13.7	0.6	2.5	79.5	0.7	2.7	12340	13340	1	>2800	1	-----		36
HUNTINGDON WARRIORS MARK EMERALD ANTHRACITE	VARIOUS	BARLEY	5467 D W	9.6	7.2	80.5	12.0	0.8	---	---	---	---	---	---	11480	12710	17	-----		---

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R A T I O N	M A S S I S T R E C U R E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N	F S I	H G I
							V O L A T I L E S	F C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

PENNSYLVANIA ANTHRACITE (CONTINUED)

LUZERNE BEAVERBROOK BEAVERBROOK	VARIOUS	CHESTNUT	20 T W	6.3	3.3	86.9	9.7	0.5	1.6	86.8	0.5	0.7	12520	13360	1	>2800	1	-----	36
LUZERNE BEAVERBROOK BEAVERBROOK	VARIOUS	PEA	15 T W	6.8	3.4	87.1	9.4	0.5	1.7	85.4	0.5	2.3	12450	13360	1	>2800	1	-----	35
LUZERNE BEAVERBROOK BEAVERBROOK	VARIOUS	BUCKWHEAT NO. 01	20 T W	7.2	4.2	86.5	9.2	0.5	1.8	85.2	0.5	2.5	12390	13350	1	>2800	1	-----	34
LUZERNE BEAVERBROOK BEAVERBROOK	VARIOUS	RICE	20 T W	8.9	4.3	85.4	10.2	0.4	1.7	84.5	0.5	2.5	12020	13190	1	>2800	1	-----	35
LUZERNE BEAVERBROOK BEAVERBROOK	VARIOUS	BARLEY	15 T W	8.3	4.9	82.9	12.1	0.4	1.6	82.5	0.5	2.7	11770	12840	1	>2800	1	-----	36
NORTHUMBERLAND ATLAS ATLAS FINE COAL PLANT	VARIOUS	STOVE	40 T W	5.5	5.6	81.6	12.6	0.7	2.6	79.7	0.6	3.5	12110	12810	1	>2800	1	-----	31
NORTHUMBERLAND ATLAS ATLAS FINE COAL PLANT	VARIOUS	CHESTNUT	40 T W	5.0	5.0	82.7	12.2	0.7	2.5	82.4	0.6	1.4	12540	13200	1	>2800	1	-----	31
NORTHUMBERLAND ATLAS ATLAS FINE COAL PLANT	VARIOUS	PEA	40 T W	6.3	5.0	82.9	12.0	0.7	2.1	82.7	0.6	1.7	12570	13420	1	>2800	1	-----	27

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY. TOWN. MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R A T I O N	M A S S I S T E R E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S O F D E T E R M I N E D	F I S S I N G	H G I	
							V O L A T I L E S	F C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

PENNSYLVANIA ANTHRACITE (CONTINUED)

SCHUYLKILL POTTSVILLE MARLIN	VARIOUS	CHESTNUT	30	T	W	5.0	4.5	88.1	7.3	0.5	2.5	87.4	0.8	1.2	13190	13880	1	>2800	1	-----	32
SCHUYLKILL POTTSVILLE MARLIN	VARIOUS	CHESTNUT	725	D	W	4.3	5.6	83.6	10.4	0.6	---	---	---	---	12690	13270	5	-----	-	-----	---
SCHUYLKILL POTTSVILLE MARLIN	VARIOUS	PEA	30	T	W	6.9	4.5	86.3	9.1	0.6	2.2	86.1	0.7	1.0	12750	13690	1	>2800	1	-----	32
SCHUYLKILL POTTSVILLE MARLIN	VARIOUS	BUCKWHEAT NO. 01	40	T	W	6.5	5.1	85.2	9.6	0.5	2.2	85.6	0.6	1.3	12550	13420	1	>2800	1	-----	34
SCHUYLKILL POTTSVILLE MARLIN	VARIOUS	RICE	40	T	W	7.9	5.2	84.1	10.6	0.5	2.3	83.1	0.7	2.5	12210	13260	1	>2800	1	-----	36
SCHUYLKILL POTTSVILLE MARLIN	VARIOUS	BARLEY	30	T	W	9.5	5.8	81.1	13.0	0.5	2.4	80.5	0.6	2.7	11470	12670	1	>2800	1	-----	36
SCHUYLKILL TAMAQUA SOUTH TAMAQUA	VARIOUS	PEA	30	T	W	2.7	3.5	87.3	9.0	0.7	2.2	85.4	0.7	1.8	13050	13410	1	>2800	1	-----	33
SCHUYLKILL VALLEY VIEW KOCHER	VARIOUS	BUCKWHEAT NO. 01	300	D	W	3.3	7.2	81.2	11.4	0.8	---	---	---	---	12880	13320	1	-----	-	-----	---
SCHUYLKILL VALLEY VIEW KOCHER	VARIOUS	BARLEY	5882	D	W	6.8	7.0	82.9	9.7	0.7	---	---	---	---	12670	13600	14	-----	-	-----	---

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R O D U C T I V E S I G N	M A S S I S T R E C T E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N .	F S I	H G I
							J D I A T I L E S	F C I A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

PENNSYLVANIA ANTHRACITE (CONTINUED)

SCHUYLKILL ZERBE SWATARA	VARIOUS	CHESTNUT	791 D W	4.2	7.2	81.9	10.6	0.8	---	---	---	---	---	---	12900	13470	2	---	---	---	---
SCHUYLKILL ZERBE SWATARA	VARIOUS	BUCKHEAT NO. 01	67 D W	3.1	7.2	81.2	11.5	0.8	---	---	---	---	---	---	12700	13110	1	---	---	---	---
SULLIVAN MILDRED YORK NO. 1	B & B RIDER	PEA	419 D W	2.8	9.1	77.1	13.6	0.7	---	---	---	---	---	---	12740	13120	3	---	---	---	---
SULLIVAN MILDRED YORK NO. 1	B & B RIDER	RICE	469 D W	3.8	9.0	78.1	12.7	0.6	---	---	---	---	---	---	12680	13180	3	---	---	---	---

PENNSYLVANIA BITUMINOUS

ALLEGHENY IMPERIAL RIDER	PITTSBURGH	1 1/4 INCH BY 1/4 INCH	200 T W	1.7	39.4	51.5	8.9	2.1	5.3	74.7	0.9	7.9	12940	13160	1	2630	1	5 1/2		53
ARMSTRONG TEMPLETON MAHONING CREEK	UPPER FREEPORT (E)	1 1/4 INCH BY 1/4 INCH	100 T W	4.6	34.3	58.9	6.7	0.6	5.6	79.2	1.1	6.6	13460	14110	1	>2800	1	7 1/2		58
ARMSTRONG TEMPLETON MAHONING CREEK NO. 2	UPPER FREEPORT (E)	1 1/4 INCH BY 1/4 INCH	1000 T W	11.4	33.9	59.3	6.6	0.4	5.3	79.3	1.2	6.9	12460	14060	1	>2800	1	8		61
BUTLER BOYERS SUNDEAM	BROOKVILLE AND MIDDLE KITANNING (A AND C)	1 1/4 INCH BY 1/4 INCH	150 T W	4.9	36.1	55.5	8.3	0.6	5.6	75.8	1.4	8.1	13140	13820	1	>2800	1	5 1/2		53

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY. TOWN. MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R A T I O N	M A S S I S T E R E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N	F S I	H G I
							V O L A T I L E S	F C I A X R E B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

PENNSYLVANIA BITUMINOUS (CONTINUED)

BUTLER SLIPPERY ROCK BROAD-BEAL	MIGOLE KITTANNING (C)	1 1/4 INCH BY 1/4 INCH	200	T W	2.9	37.2	57.7	4.9	0.8	5.6	78.4	1.2	8.8	13670	14080	1	>2800	1	6 1/2	46
FAYETTE LECKRONE WM PICCOLOMINI STRIP	PITTSBURGH	1 1/4 INCH BY 1/4 INCH	200	T R	5.5	32.1	57.8	9.9	0.9	5.0	75.7	1.1	7.1	12910	13660	1	2790	1	7	76
JEFFERSON PUNKSUTAWNEY ORIGINAL FUELS	LOWER KITTANNING (B)	1 1/4 INCH BY 1/4 INCH	100	T R	14.1	30.5	60.0	9.4	0.6	5.0	76.9	1.2	6.5	11690	13610	1	>2800	1	5	70
WESTMORELAND MURRYSVILLE KOWALSKI NOS. 1 & 2	PITTSBURGH	1 1/4 INCH BY 1/4 INCH	100	T R	2.7	30.4	60.3	9.2	1.0	5.1	78.1	1.3	5.1	13530	13910	1	2580	1	6 1/2	72

TENNESSEE

CAMPBELL NEWCOMB TRIPLE I	JELICO	1 1/4 INCH BY 1/4 INCH	30	T R	2.7	39.2	57.0	3.7	0.6	5.3	80.2	1.3	8.7	13990	14380	1	2090	1	4	47
CLAIBORNE CLAIRFIELD JAMES SPUR	JELICO	ROM	7801	D R	2.8	36.7	55.8	7.3	1.0	---	---	---	---	13280	13670	16	---	-	-----	---
CLAIBORNE CLAIRFIELD JAMES SPUR	JELICO	1 1/4 INCH BY 1/4 INCH	9228	D R	2.8	37.8	55.8	6.2	1.0	---	---	---	---	13630	14020	15	---	-	-----	---

UTAH

CARBON HIAWATHA KING	HIAWATHA	1 1/2 INCH BY 3/8 INCH	8083	D W	6.9	44.3	47.4	8.0	0.8	---	---	---	---	11980	12880	9	---	-	-----	---
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TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I P E M A S O S I R T E C U R E I V E D S A M P L E	P R O X I M A T E P E R C E N T	ULTIMATE, PERCENT								CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES		
						D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N	F S I	H G I	
						V O L A T I L E S	F C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
UTAH (CONTINUED)																					
CARBON WATTS STAR POINT NO. 1	HIAWATHA	1 1/4 INCH BY 1/4 INCH	4343	D	R	4.5	43.9	48.9	7.0	0.6	---	---	---	---	12730	13340	5	---	---	---	---
SEVIER SALINA: SOUTHERN UTAH FUEL NO. 1	UPPER HIAWATHA	1 1/4 INCH BY 1/4 INCH	2628	D	R	9.6	41.5	47.1	11.2	0.2	---	---	---	---	11300	12510	3	---	---	---	---
VIRGINIA																					
BUCHANAN BIG ROCK EAGLE	EAGLE	1 1/4 INCH BY 0	100	T	R	2.3	29.8	63.8	6.2	0.7	5.4	81.7	1.2	4.5	14140	14470	1	>2800	1	7	68
DICKENSON CLINCHCO MILL CREEK STRIP	UPPER BANNER	1 1/2 INCH BY 1/4 INCH	100	T	W	1.2	27.7	64.5	7.6	0.6	4.8	79.6	1.4	6.9	14030	14200	1	>2910	1	6 1/2	62
LEE PENNINGTON GAP MILLERS COVE	NO. 9 MAX	2 INCH BY 0	1000	T	W	7.0	38.2	53.2	8.4	0.9	5.5	74.7	1.3	8.9	12530	13470	1	2690	1	2 1/2	43
LEE PENNINGTON GAP MILLERS COVE	TAGGART	1 1/4 INCH BY 1/4 INCH	300	T	W	4.3	39.1	57.9	2.8	0.5	5.5	80.7	1.3	8.9	14020	14650	1	2290	1	3 1/2	44
LEE PENNINGTON GAP MILLERS COVE	TAGGART	1 1/4 INCH BY 1/4 INCH	1624	D	W	2.9	35.1	59.0	5.7	0.7	---	---	---	---	13730	14150	8	2515	8	4 1/2(1) 5(5) 5 1/2(2)	40

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY. TOWN. MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R A T I O N	M A S S I S T R E C T I V E	PROXIMATE, PERCENT			ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES			
							D R Y C O A L												A S R E C E I V E D	D R Y	D E G R E E S O F D E T E R M I N E D	F S I	H G I	
							V O L A T I L E S	F C A I R E D O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			

VIRGINIA

(CONTINUED)

WISE NORTON CUMBERLAND COLLIERIES	NO. 4	1 1/4 INCH BY 1/4 INCH	250	T	R	3.9	37.0	56.9	6.0	0.8	5.2	77.3	1.3	9.1	13260	13800	1	>2800	1	3	43
WISE NORTON GREATER WISE, INC.	PHILLIPS	1 1/4 INCH BY 1/4 INCH	100	T	R	4.8	36.2	59.0	4.7	0.6	5.3	82.4	1.0	5.8	13940	14640	1	>2800	1	2 1/2	47
WISE NORTON GREATER WISE NO. 1	PHILLIPS	1 1/2 INCH BY 3/8 INCH	150	T	R	2.1	34.8	58.2	6.9	0.8	5.5	81.3	0.9	4.4	14140	14440	1	>2800	1	3	50
WISE NORTON GREATER WISE NO. 1	LOWER STANDIFORD	1 1/2 INCH BY 1/4 INCH	100	T	R	3.4	30.7	58.2	10.9	0.8	5.1	76.0	1.1	5.7	13170	13630	1	>2800	1	7 1/2	51
WISE PARDEE PARDEE	VARIOUS	1 1/4 INCH BY 0	11419	D	R	3.1	35.1	57.3	7.3	0.6	---	---	---	---	13670	14120	15	---	---	---	---
WISE WISE GLAMORGAN NO. 1	CLINTWOOD & BLAIR	1 1/4 INCH BY 1/4 INCH	100	T	R	1.9	32.1	58.8	9.0	0.6	5.2	79.2	1.5	4.2	13720	13990	1	>2800	1	7	59
WASHINGTON																					
KING BLACK DIAMOND McKAY/SECTION 12	McKAY	1 5/8 INCH BY 0	100	T	W	6.4	42.4	46.9	10.6	0.7	5.1	69.3	1.3	12.7	11720	12520	1	>2800	1	1	46

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R A T I O N	M A S S I R E C E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N	F S I	H G I
							V O L A T I L E S	F C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

WEST VIRGINIA

BARBOUR PHILIPPI BERRYBURG	PITTSBURGH	2 INCH BY 0	100 T R	1.1	38.6	54.2	7.0	2.6	5.4	78.8	1.4	4.5	13970	14130	1	2290	1	7		66
LOGAN LORADO LORADO NO. 5 PREP. PLANT	CHILTON AND WINIFREDE	1 1/4 INCH BY 1/4 INCH	6147 D W	2.1	35.6	59.5	4.6	0.6	---	---	---	---	14260	14560	10	>2800	5	5 1/2(1) 6(2) 7(1) 7 1/2(1)	---	
MCDOWELL GARY BLACKWOLF NO.21	POCAHONTAS NO. 3	1 1/4 INCH BY 0	3495 D W	4.2	16.6	75.1	8.0	0.5	---	---	---	---	13790	14400	5	---	-	-----	---	
MINGO DELBARTON CRYSTAL RIVER	ALMA	1 1/4 INCH BY 1/4 INCH	10 T W	4.8	37.6	55.3	7.0	0.8	5.6	80.4	1.1	4.8	13390	14070	1	2600	1	4 1/2		43
MINGO DELBARTON CRYSTAL RIVER	ALMA	2 INCH BY 0	20 T W	5.8	37.5	54.3	8.0	0.7	4.9	76.1	1.1	8.9	13000	13800	1	2500	1	3 1/2		45
MINGO GLENALUM SAMARA NO. 1	NO. 2 GAS	1 1/4 INCH BY 1/4 INCH	105 T W	1.9	37.8	55.0	7.3	0.7	5.2	77.9	0.9	7.7	13610	13870	1	>2800	1	4 1/2		51
MINGO MATEWAN CUMBERLAND PREP. PLANT	ALMA	1 1/4 INCH BY 1/4 INCH	200 T W	5.0	36.4	57.4	6.1	0.5	---	---	---	---	13700	14420	1	>2800	1	5 1/2		45
MINGO THACKER OLD BEN NO. 20	ALMA	2 INCH BY 0	800 T W	6.1	34.1	59.2	6.3	0.7	5.3	78.9	1.1	7.4	13430	14300	1	2740	1	7 1/2		52

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY, TOWN, MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R O P O R T I O N	M A S S I S T E R E C E I V E D	PROXIMATE, PERCENT		ULTIMATE, PERCENT						CALORIFIC VALUE, BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							D R Y C O A L								A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T E R M I N E D	F S I	H G I
							V O L A T I L E S	F C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
WEST VIRGINIA (CONTINUED)																					
MONONGALIA MORGANTOWN GREER	PITTSBURGH	1 1/4 INCH BY 1/4 INCH	100	T	R	2.5	35.7	55.7	8.4	3.2	5.5	77.0	1.3	4.3	13690	14040	1	2150	1	6	---
MONONGALIA MORGANTOWN SNAKE HILL	UPPER FREEPORT	ROM	200	T	R	2.4	32.9	58.6	8.4	1.8	5.1	77.7	1.2	5.6	13630	13970	1	2590	1	7 1/2	67
NICHOLAS SUMMERSVILLE BIG FORK NO. 9	LOWER KITANNING	1 1/4 INCH BY 1/4 INCH	150	T	W	4.0	34.6	58.3	7.0	0.6	5.0	79.6	1.5	6.9	13670	14240	1	2910	1	5 1/2	39
NICHOLAS SUMMERSVILLE MARGARET PEERLESS NO.2	VARIOUS	1 1/4 INCH BY 1/4 INCH	2967	D	W	2.7	35.9	57.8	6.0	0.8	---	---	---	---	13860	14250	10	---	-	-----	---
PRESTON ALBRIGHT PATRIOT T & T	UPPER FREEPORT	1 1/4 INCH BY 0	600	T	W	9.1	29.8	59.5	10.6	1.3	5.0	77.1	1.1	4.7	12400	13640	1	2690	1	7	94
PRESTON KINGWOOD KINGWOOD STRIP	UPPER FREEPORT	2 INCH BY 0	100	T	W	7.7	28.1	60.8	10.9	1.5	4.7	76.8	1.0	4.9	12720	13780	1	2640	1	7	91
PRESTON MASON TOWN OMEGA	UPPER FREEPORT	1 1/4 INCH BY 0	5490	D	W	3.1	32.1	58.8	8.9	1.3	---	---	---	---	13280	13710	7	-----	-	-----	---
RANDOLPH HELVETIA CARTER-ROAG	SEWELL A&B	2 INCH BY 0	200	T	W	5.8	29.2	62.4	8.2	1.1	4.8	79.1	1.1	5.3	13190	14000	1	2800	1	7 1/2	63

TABLE 1. ANALYSES OF TIPPLE AND DELIVERED SAMPLES DURING THE FISCAL YEAR 1985

COUNTY. TOWN. MINE	BED	COAL SIZE	T O N N A G E	K I N D O F S A M P L E	P R E P A R E D S I T I O N	M A S S I S T E R E C E I V E D	PROXIMATE. PERCENT		ULTIMATE. PERCENT						CALORIFIC VALUE. BTU/LB		N O O F A N A L Y S E S	AST		INDEXES	
							V O L A T I L E S	F I X E D C A R B O N	A S H	S U L F U R	H Y D R O G E N	C A R B O N	N I T R O G E N	O X Y G E N	A S R E C E I V E D	D R Y		D E G R E E S F	N O O F D E T N	F S I	H G I
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

WEST VIRGINIA

(CONTINUED)

WAYNE WILSONDALE QUEEN'S RIDGE	LOWER KITTANNING	2 INCH BY D	100 T R	6.0	37.4	53.6	8.9	0.9	4.9	77.3	1.1	6.6	12430	13220	1	2210	1	1 1/2	52
WEBSTER BERGOO ELK RIVER/SEWELL	SEWELL	1 1/4 INCH BY 1/4 INCH	300 T W	3.0	32.2	62.3	5.3	0.5	5.8	81.0	1.0	6.2	14300	14740	1	2650	1	7	61
WEBSTER BERGOO ELK RIVER/SEWELL	SEWELL	2 INCH BY D	880 T W	5.3	30.7	69.9	9.2	0.6	5.2	76.1	0.9	7.6	13200	13940	1	2670	1	6 1/2	66
WYOMING KOPPERSTON KOPPERSTON	EAGLE AND CAMPBELLS CREEK	1 1/4 INCH BY 1/4 INCH	26625 D W	2.0	35.3	58.7	5.8	0.8	---	---	---	---	14020	14320	28	----	-	-----	---

APPENDIX

Previous publications in this series are--

Snyder, N. H., and S. J. Aresco. Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Years 1948 to 1950, Inclusive). BuMines Bull. 516, 1953, 133 pp.

Aresco, S. J., and C. P. Haller. Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1951). BuMines RI 4934, 1953, 93 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1952). BuMines RI 4972, 1953, 84 pp.

Aresco, S. J., C. P. Haller, and R. F. Abernethy. Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1953). BuMines RI 5085, 1955, 82 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1954). BuMines RI 5221, 1956, 77 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1955). BuMines RI 5270, 1956, 67 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1956). BuMines RI 5332, 1957, 67 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1957). BuMines RI 5401, 1958, 59 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1958). BuMines RI 5489, 1959, 54 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1959). BuMines RI 5615, 1960, 59 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1960). BuMines RI 5792, 1961, 44 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1961). BuMines RI 6086, 1962, 41 pp.

Aresco, S. J., J. B. Janus, and F. E. Walker. Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1962). BuMines RI 6300, 1963, 46 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1963). BuMines RI 6461, 1964, 38 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1964). BuMines RI 6622, 1965, 38 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1965). BuMines RI 6792, 1966, 49 pp.

Aresco, S. J., and J. B. Janus. Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1966). BuMines RI 6904, 1967, 43 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1967). BuMines RI 7104, 1968, 43 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1968). BuMines RI 7219, 1969, 31 pp.

Staff, Coal Sampling and Inspection. Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1969). BuMines RI 7346, 1970, 29 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1970). BuMines RI 7490, 1971, 20 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1971). BuMines RI 7588, 1972, 20 pp.

Janus, J. B., and B. S. Shirley. Analyses of Tipple and Delivered Samples of Coal (Collected During Fiscal Year 1972). BuMines RI 7712, 1973, 17 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1973). BuMines RI 7848, 1974, 15 pp.

Janus, J. B. Analyses of Tipple and Delivered Samples of Coal. (Collected during Fiscal Year 1974). BuMines RI 7997, 1975, 13 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1975). BuMines RI 8115, 1976, 11 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Period of July 1975 Through September 1976). BuMines RI 8213, 15 pp.

Janus, J. B. Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1977). DOE/ET-0045, 16 pp.

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Welsh, R. A., and J. B. Janus. Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1979). DOE/PMTC-8(80), 16 pp.

Welsh, R. A. Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1980). DOE/RI-PETC-11(81), 16 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1981). DOE/PETC/TR-83/4(DE83009749), 24 pp.

Analyses of Tipple and Delivered Samples of Coal (Collected During Fiscal years 1982 and 1983). DOE/TR-84/7(DE84012132), 27 pp.

Welsh, R. A., and L. R. Davis. Analyses of Tipple and Delivered Samples of Coal (Collected During the Fiscal Year 1984). DOE/PETC/TR86/5 (DE86011321), 36 pp.

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DOE/PETC/TR-89/2

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL
COLLECTED DURING FISCAL YEAR 1985

DOE