30781

Facility Name: Beall High School	CCB Tonnage Report - 2008
----------------------------------	---------------------------

B. Applicability. If you or your company meet the definition of a generator of CCBs as defined above, you must provide the information as required below. For the purposes of this report, "you" shall hereinafter refer to the generator defined above. Please note that COMAR 26.04.10.08 requires generators of CCBs to submit an annual report to the Department concerning the disposition of the CCBs that they generated the previous year.

III. Required Information. The following information must be provided to the Department by March 1, 2009:

A. Contact information:			
Facility Name: Beall High School		10.	
Name of Permit Holder:			
Facility Address: 331 East Main Street			
Stree			
Facility Address: Frostburg City	MD State	-	21532 Zip
County: Allegany			
Contact Information (Person filing report or Enviro	onmental Manager)		
Facility Telephone No.: 301-722-4968	_ Facility Fax No.:	301-722-4985	. ·
Contact Name: Larry Lancaster			
Contact Title: Supervisor of Operations			
Contact Address: 211 Market Street Street			
Contact Address: Cumberland City	MD State		21502 Zip
Contact Email: <u>larry.lancaster@acps.k12.md.us</u>			
Contact Telephone No.: 301-722-4968	Contact Fax No.:	301-722-4985	

For questions on how to complete this form, please call Mr. Tariq Masood, Head of the Office of Reports and Data Management, Solid Waste Program at 410-537-3326.

A Salah a language de la company

FED 25 200

Form Number: MDE/WAS/PER.033 Date: January 16, 2009 TTY Users: 800-735-2258

Facility Na	me: <u>Beall High School</u>	ССВ Т	onnage Report – 2008
type of coal	ption of the process that gen or other raw material that g insufficient, please attach ac	nerates the coal combustion by enerates the coal combustion ditional pages:	yproducts, including the byproducts. If the space
One (1) sto	ker coal boiler, firing bitum	inous coal, was used to provi	de steam for building heat.
This facility	y was closed and then dem	olished during the summer	of 2007.
generated di coal combus in subsequer year.) If the	aring the last 5 calendar year stion byproducts generated a at years you need only provi	it, the annual volume of coal ars, including an identification and the volume of each type go de the information in this parent, please attach additional parenty of the previous 5 Years:	of the different types of enerated. (Please note that
Reporting	Volume of CCB Type:	Volume of CCB Type:	Volume of CCB Type:
Year	Bottom Ash (ft <sup>3</sup> )	N/A	N/A
2008	0	1771	IVA
2007	1,229.31		
2006	937.67		
2005	265.45		
2004	420.73		
Additional n			

The volumes of CCBs generated from this facility were estimated using the quantities of coal used by the facility and the ash values from the corresponding testing reports.

Form Number: MDE/WAS/PER.033 Date: January 16, 2009 TTY Users: 800-735-2258

Facility Name:	Beall High School	CCB Tonnage Report – 2008
combustion bypi	of any modeling or risk assess roducts or their use, that were p Please attach this information to	ments, or both, conducted relating to the coal performed by you or your company during the to the report.
E. Copies of all byproducts. Plea	laboratory reports of all chemic ase attach this information to the	cal characterizations of the coal combustion te report.
coal combustion	byproducts in the last 5 calend	scription of how you disposed of or used your ar years (Please note that in subsequent years you raph for the last calendar year), identifying:
than described in	n Paragraph C above), the locat	astion byproducts disposed of or used (if different ion of disposal, mine reclamation and use sites, products disposed of or used at each site:
The coal combus	stion byproducts (CCBs) genera	ated by this facility are listed in Table I.
The CCBs gener Coal Company b to this site are lis	olending yard located near Lona	past five years were transported to the Phillips aconing, MD. The volumes of CCBs transported
and (b) The diffe	erent uses by type and volume o	of coal combustion byproducts:
If the space provi	ided is insufficient, please attac	h additional pages in a similar format (Please

note that in subsequent years you need only provide the information in Section F for the last calendar year).

Form Number: MDE/WAS/PER.033 Date: January 16, 2009 TTY Users: 800-735-2258

Facility Name:	Beall High	School	C	CB Tonnage I	Report – 2008
G. A description 5 years, identifyi	n of how you ing:	intend to dispose of	or use coal c	ombustion bypro	ducts in the next
used, the location	n of intended	ume of coal combust disposal, mine recla ts intended to be dis	amation and ι	ise sites, and the	disposed of or type and volume
This facility was combustion prod	demolished ucts (CCBs)	in 2007 and therefor	e there will b	oe no future gener	ration of coal
and (b) The d	ifferent inten	ded uses by type an	d volume of (	coal combustion l	pyproducts.
If the space provi	ided is insuff	icient, please attach	additional pa	ges in a similar f	ormat.
eport, and certify eport:	y as to the ac	ion. An authorized curacy and complete	eness of the in	nformation conta	ined in the annual
This is to certify any attached docu	that, to the beaments are tr	est of my knowledge ue, accurate, and co	e, the informa mplete.	ition contained in	this report and
faryfar Signatur	neos T	Larry Lancaster,  Name, Title, & Te	301-722-496	8_	2/23/09 Date
/		larry.lancaste		nd.us	

Form Number: MDE/WAS/PER,033 Date: January 16, 2009 TTY Users: 800-735-2258

# PHILLIPS COAL CO.

11 Front Street Lonaconing, Maryland 21539

Phones \_\_\_\_\_ Office 301-463-2066 Home 301-463-5326

August 12, 2006

Coal Bids
Supervisor of Plant Operations
211 Market Street (Rear)
P.O. Box 1724
Cumberland, M.D. 21501-1724

TRI-STAR DATE 08-11-06 #6323-C	MOIST.	#4 FRANKI ASH 16.20 16.57	LIN JOB # VOL. 0.00 0.00	434 SULFUR 3.54 3.63	BTU 12430 12714 15239	COKE 9	LBS.SUL. 2.85
TRI-STAR DATE 08-11-06 #6324-C	MOIST.	#3 FRANKI ASH 10.82 11.04	LIN JOB # VOL. 0.00	434 SULFUR 1.39 1.42	BTU 13532 13813 15527	COKE 9	LBS.SUL.

# MATERIAL SAFETY DATA SHEET

CORPORATE RESEARCH & DEVELOPMENT
SCHENECTADY, N. Y. 12305



No. \_\_\_\_491

BITUMINOUS CDAL DUST

Date -SECTION I. MATERIAL IDENTIFICATION MATERIAL NAME: BITUMINOUS COAL DUST DESCRIPTION: Includes coals between lignites and anthracites with "fixed carbon" <86%, "volatile matter" >14% "calorific value" >10,500 BTU/lb (see ASTM D388 & D3172). Particulate <75 µm (thru No. 200 sieve), dispersable in air, is of primary interest. Coal consists of conjugated poly(aromatic/unsaturated/saturated) ring structures with hetrocycles containing O,N, and S. C<sub>102</sub>H<sub>78</sub>O<sub>10</sub>N<sub>2</sub> has been suggested as a "coal molecule". as a "coal molecule". SOURCE: Mining, handling, and pulverizing processes with coal. SECTION II. INGREDIENTS AND HAZARDS HAZARD DATA "Proximate Analysis" of some air-dried bituminous coals: 8-hr TWA 2 mg/m 3 or "Moisture" "Volatiles" Source "Fixed Carbon" "Ash" OSHA PEL 2.4 mg/m<sup>3</sup> West Virginia 1.8 72.4 5.4 Respirable dust with Pennsylvania .1.2 34.5 58.4 5.9 <5% quartz\* Illinois 8.4 35.0 48.2 8.4 Wyoming 11.0 38.6 40.2 10.2 Bituminous coals also contain trace metals, sulfur (0.4-3.5) and nitrogen (0.9-1.5%), depending on source and type. \*Respirable dust is particulate <5 \mu m in size. Use quartz formula (MSDS #71) if quartz content is >5%. SECTION III. PHYSICAL DATA N/A Specific gravity (H<sub>2</sub>O=1) -1.3-1.6Vapor pressure at 25 C ----- Negligible Volatiles at 25 C 2----Negligible Water solubility ----- Negligible Appearance & Odor: Black powder; little or no odor.

SECTION IV. FIRE AND EXPLOSION DATA	LOWER	
Flash Point and Method Autoignition Temp. Flammability Limits In Ai	>0.05*	
(cloud) > 1114 F   cloud(10 jm Av.), 50mJ spark	$\int_{1}^{\infty} oz/ft^3$	1
Fytinguishing Media: Nitrogen garbon digwide attack		

Extinguishing Media: Nitrogen, carbon dioxide, steam, water, ammonium biphosphate powder A water spray can be used to cautiously wet down coal dust to help prevent ignition (avoid raising dust). It is a fire and explosion hazard when exposed to heat or flame. Firefighters should have self-contained breathing equipment and protective clothing.

\*Ca l oz/ft<sup>3</sup>gives max. flame energy; smallest 20% of particulate determines ignition characteristics; 10-50mJ spark needed at 0-5% moisture, respectively, to initiate combustion in <200 mesh dust, \*\*A pile of 2-7 µm Pittsburgh coal dust heated at 169 C

### SECTION V. REACTIVITY DATA

coal dust is fairly stable at 25 C, but it can react with oxygen from the air, very slowly at room temperature and faster when heated. In piles with good heat retention a slow heat build-up and spontaneous ignition can occur. (Humid air can accelerate this ignition of dry coal.) On heating coal releases combustibles by devolatization and pyrolysis. When these burn, they can heat the solid carbon; hot carbon reacts with O2, CO2, and water vapor to produce combustible gases.

Oxidation products of coal can include oxides of carbon, nitrogen and sulfur, partially exidized hydrocarbons, soot and fly ash.

this material is incompatible with strong oxidizing agents, especially when heated.

- ' , gr -

#### SECTION VI. HEALTH HAZARD INFORMATION

Coal workers pneumoconiosis (CWP) can occur after years of excessive exposure to respirable coal dust in the mining, handling and processing of coal. Respirable quartz particulate can be simultaneously present with the coal, especially in the mine. In general, coal dust is deposited in the lungs like quartz but requires over 10% as much for adverse effects. It does not kill macrophages; reticulin fibers form, but little collagen is generated. (That which forms is often attributed to quartz.)

The severity of CWP is directly related to the amount of coal dust in the lungs. In many does not progress beyond the simple stage, which is detectable by x-ray as round.

CWP does not progress beyond the simple stage, which is detectable by x-ray as round and irregular "coal macules" of 1-5 mm diameter, but which does not change lung function or shorten life. CWP is a precursor of progressive massive fibrosis (PMF) resulting in large masses of fibrous tissue development (mechanisms unclear). PMF impairs pulmonary function and shortens life. There is no evidence of association of CWP and

bronchogenic cancer.
Chronic bronchitis and emphysema are reported to result from excessive coal dust inhalation. Persons having rheumatoid arthritis in conjunction with simple CWP may have rapidly developing lung damage. (Caplan's Syndrome).

### SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Remove ignition'sources. Clean-up personnel may need dust repirators and eye protection. Coal dust should be cleaned up in manner that avoids dispersing particulate in air

Collect dust in a covered metal container for use as fuel or for disposal.

DISPOSAL: Use as fuel in a pulverized coal-burning furnace, or burn as slurry in water For other incineration, possible dust explosions or "puffs" and high temperature need TO DE CONSIDERED. Scrap coal dust may be wet down thoroughly with water in a container and buried in landfill. Follow Federal, State, and Local regulations.

### SECTION VIII. SPECIAL PROTECTION INFORMATION

Promide explosion-proof general and local exhaust ventilation to meet TLV requirements. httproved filtration of exhausted air may be required to prevent excessive environmen-

Where airborne dust is excessive in the workplace, dust respirators and eye protection

In working with coal dust, use good personal hygiene. Wear regularly cleaned work chathing. Showering and changing into street clothing after work may be desirable.

Follow good housekeeping procedures to control coal dust build up. Collect dust from ₩tling areas and surfaces in a manner to avoid generating airborne dust. Design dust supression measures into processes. Meet explosion-proof code requirements for electrical services where coal dust may be present.

### SETTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Kersources of heat and ignition, flammable materials, and strong oxidizing agents from areas where coal dust may collect. Prevent static sparks. Inerting may be mirable, such as powdered CaCO, or rock dust laid down over coal dust on mine floor \*\* nitrogen enriched atmosphere in a coal pulverizing machine.

L.D. Smoot, et. al., "Pulvurized Coal Power Plant Fires and Explosions" Parts I, II and V, Brigham Young University, Mechanical Engineering Dept.. Prepared for Utah Power and Light Co., Selt Lake City, Utah 1979-1981.

DARSHURCE(S) CODE: 2-4, 14, 38, 43, 47

Mements as to the sulfability of information hardin for purchasor's purposes are curestrily purchasor's reaponsibility. Therefore, although reasonable care has been taken in the properation of such information, General Electric Company exiteds no warranties, makes no copresentations and assumes no responsibility country occuracy or suitability of such information for application so purchasor's moded purposes to for consequences of the use.

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APPROVALS:	MIS CRD	D.M	· M.	سروكر	-
Industrial	Hygiene	(Lawrence La	THE STREET	THE PARTY OF	. S.A. or describe
and Safet		$\Delta Z$	a.	, , , , ,	
MEDICAL	REVIEW:			1982	etaen ar mo

PHILLIPS COAL CO.
11 Front Street
Lonaconing, Maryland 21539
Phones
Office 301-463-2066
Home 301-463-5326

August 8, 2005

Coals Bids Supervisor of Plant Operations 211 Market Street (Rear) P.O. Box 1724 Cumberland, M.D. 21501-1724

APPROVED BY

GOULD ENERGY DIVISION 11600 MEXICO FARMS RD. SE CUMBERLAND, MD 21502

DATE: 07/16/05

STANDARD NO 1897-15411-1

TRI-STAR MINING, INC. P.O. BOX 339 BARTON, MD 21521

SAMPLE ID: AES PITT

OPERATING CO.: TRI-STAR MINING, INC.

SAMPLED BY:

CUSTOMER

MINE:

LOCATION:

BARTON MD

DATE SAMPLED: 07/16/05

DATE RECEIVED: 07/16/05

WEATHER:

GROSS WEIGHT: 19.52 KG

CLEAR

OTHER ID:

### CERTIFICATE OF ANALYSIS

		AS RECEIVED	DRY BASIS
MOISTURE	D2961	5.40 %	XXXX
ASH ·	D3174	12.83 %	13.56 %
SULFUR	D4239 (3.3)	2.35 %	2.48 %
BTU/LB	D5865	12738	13465
MAF BTU/LB	D3180		15577

FY 2004-05

# PHILLIPS COAL CO. 11 Front Street

Lonaconing, Maryland 21539

Phones \_\_\_\_\_\_ Phones \_\_\_\_\_ Home 301-463-5326

August 13,2004

Coal Bids Supervisor of Plant Operations 211 Market St. (Rear) P.O. Box 1724 Cumberland, M.D. 21501-1724

Mics

GOULD ENERGY DIVISION 11600 MEXICO FARMS RD. SE CUMBERLAND, MD 21502

TRI-STAR MINING, INC.

P.O. BOX 339

BARTON, MD 21521

SAMPLE ID: AES RAW

.DATE: 07/14/04 STANDARD NO 1997-14273-1 420

OPERATING CO.:

TRI-STAR MINING, INC.

SAMPLED BY:

CUSTOMER

MINE:

LOCATION:

BARTON, MC.

DATE SAMPLED:

07/13/04

WEATHER: GROSS WEIGHT:

SUNNY 17.66 KG

OTHER ID:

DATE RECEIVED: 07/14/04

## CERTIFICATE OF ANALYSIS

•	•	AS RECEIVED	DRY BASIS
MOISTURE	D2961	1.55 %	xxxx
ASH	D3174	13.95 %	14.17 %
SULFUR	D4239 (3.3)	2.86 %	2.91 %
BTU/LB	01989	13178	13385
MAF BTU/LB	D3180		15595

# MATERIAL SAFETY DATA SHEET



491

BITUMINOUS COAL DUST

CORPORATE RESEARCH & DEVELOPMENT SCHENECTADY, N. Y. 12305

SECTION I.	MATERIAL I	DENTIFICATION			
MATERIAL NAME: DESCRIPTION: <86%, "volate	BITUMINOUS Includes coatile matter"	G COAL DUST als between light >14% "calorific	ites and anthraci value" >10,500 B	tes with TU/lb (se	"fixed carbon" e ASTM D388 & D3172). of primary
interest. ( structures v as a "coal n	vith hetrocy	ru No. 200 sieve s of conjugated p cles containing (	), dispersable in poly(aromatic/uns O,N, and S. C <sub>lo2</sub> H	air, is aturated/ 78 <sup>0</sup> 10 <sup>N</sup> 2 h	of primary saturated) ring as been suggested
			g processes with		
SECTION II.	INGREDIEN	ITS AND HAZARD	S		HAZARD DATA
"Proximate Ana	lysis" of so	ome air-dried bi	tuminous coals:	·····	ACGIH TLV
Source	8-hr TWA 2 mg/m <sup>3</sup> or OSHA PEL 2.4 mg/m <sup>3</sup>				
West Virginia Pennsylvania	.1.2	20.4 34.5	"Fixed Carbon" 72.4 58.4	5.4 5.9	Respirable dust with
Illinois Wyoming	8.4	35.0	48.2	8.4	<5% quartz*
	11.0	38.6	40.2	10.2	
Bituminous coa and nitrogen	ls also cont (0.9-1.5%),	tain trace metals depending on so	s, sulfur (0.4-3.	5)	
*Respirable du	st is partic	- culate <5μm in s	size. Use quartz		
formula (MSD	S #711 if au	lartz content is	>5%		
SECTION III	PHYSICAL	DATA			
Boiling point		N/A	1 J~!!!	y (H <sub>2</sub> O=1)	) - 1.3-1.6
vapor pressure Water solubili	at 25 C	Negligible	Volatiles at 25	i C ≝	- Negligible
macki solmbili	су	Negligible	•		
Appearance & O	dor: Black	powder; little o	r no odor.		
				•	ļ
SECTION IV.	FIRE AND	EXPLOSION DATA	\	<del></del>	LOWER UPPER
Flash Point a	ind Method	Autoignition Te		Limits I	n Air >0.05*
		(cloud) >1114 F (laver) >392 F	cloud(10 um Au	\ 50m T =	
Extinguishing N	Media: Nitro	gen, carbon diox	ide, steam, water	ammonii	m hiphographata roudou
warrer shrai	y can be use	u to cautiousiv	Wet down coal due	+ +0 501-	
(avoid raist)	ig dust/. it	is a fire and e	xnlosion hazard w	han awaa	ad to book 69
rrerrducers si	iourd have s	err-contained br	eathing equipment	and prot	ective clothing.
*Ca l oz/ft <sup>3</sup> giv characteristic combustion in ludir can rea	ves max. flar cs; 10-50mJ : <200 mesh di co AIT in Q	me energy; small spark needed at o ust, **A pile of	est 20% of partic 0-5% moisture, re 2-7 µm Pittsbur	ulate det spectivel gh coal d	ermines ignition y, to initiate ust heated at 169 C
SECTION V. F	REACTIVITY	DATA			Million y says and the state of
Coal dust is fa	irly stable	at 25 C, but it	can react with o	KVaen fra	m the air vary
coal dust is fairly stable at 25 C, but it can react with oxygen from the air, very slowly at room temperature and faster when heated. In piles with good heat retention					
a slow heat bullia-up and spontaneous ignition can occur. (Humid air can accelerate"					
curs iduration	or ary coal	) On heating co	Dal releases combi	seriblee i	hee dournlation tion
and barorasis	. when thes	ie burn, they car	l heat the solid a	warbone he	ot carbon reacts
WILL 02, CO2,	and water v	abor to broduce	Combustible aseas	•	
oxidized hvdr	ous or coal ocarbons, so	can include oxider oxider or	les of carbon, nit	xogen and	d sulfur, partially
Told of the second seco	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	were orgin of a trailed			į.

this material is incompatible with strong oxidizing agents, especially when heated.

HEALTH HAZARD INFORMATION SECTION VI.

TLV

2 mg/m(See Sect II)

Coal workers pneumoconiosis (CWP) can occur after years of excessive exposure to respirable coal dust in the mining, handling and processing of coal. Respirable quartz particulate can be simultaneously present with the coal, especially in the mine. In general, coal dust is deposited in the lungs like quartz but requires over 10X as much for adverse effects. It does not kill macrophages; reticulin fibers form, but little collagen is generated. (That which forms is often attributed to quartz.)

The severity of CWP is directly related to the amount of coal dust in the lungs. In many

CWP does not progress beyond the simple stage, which is detectable by x-ray as round and irregular "coal macules" of 1-5 mm diameter, but which does not change lung function or shorten life. CWP is a precursor of progressive massive fibrosis (PMF) resulting in large masses of fibrous tissue development (mechanisms unclear). PMF impairs pulmonary function and shortens life. There is no evidence of association of CWP and

bronchogenic cancer. Chronic bronchitis and emphysema are reported to result from excessive coal dust inhalation. Persons having rheumatoid arthritis in conjunction with simple CWP may have rapidly developing lung damage. (Caplan's Syndrome).

#### SPILL, LEAK, AND DISPOSAL PROCEDURES SECTION VII.

Remove ignition sources. Clean-up personnel may need dust repirators and eye protection. Coal dust should be cleaned up in manner that avoids dispersing particulate in air or into the environment.

Collect dust in a covered metal container for use as fuel or for disposal.

DISPISAL: Use as fuel in a pulverized coal-burning furnace, or burn as slurry in water For other incineration, possible dust explosions or "puffs" and high temperature need ne considered. Scrap coal dust may be wet down thoroughly with water in a container and buried in landfill. Follow Federal, State, and Local regulations.

#### SECTION VIII. SPECIAL PROTECTION INFORMATION

Promide explosion-proof general and local exhaust ventilation to meet TLV requirements. Ameroved filtration of exhausted air may be required to prevent excessive environmental dispersion of dust.

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L.D. Smoot, et. al., "Pulvurized Coal Power Plant Fires and Explosions" Parts I, II and V, Brigham Young University, Mechanical Engineering Dept., Prepared for Utah Power and Light Co., Salt Lake City, Utah 1979-1981.

DEMIassification: DAMMURCE(S) CODE:2-4,14,38,43,47

Adjunants as to the suitability of information herein for purchaser's purposes are executive purchaser's responsibility. Therefore, although reasonable care has beatation in the preparation of such information, General Electric Company oceds no worrenties, makes no representations and assumes no responsibilis expites accuracy or suitability of such information for application to purchasor's marked purposes or for consequences of its use.

APPROVALS:

MIS

Industrial Hygiene

and Safety MEDICAL REVIEW:

# PHILLIPS COAL CO.

PACE STA

Lonaconing, Maryland 21539

Phones \_\_\_\_ Office 301-463-2066 Home 301-463-5326

August 13,2003

Coal Bids Supervisor of Plant Operations 340 Frederick Street P.O. Box 1724 Cumberland, M.D. 21501-1724

#5930-C	DRY:	- BIG VEIN ASH 30.82 32.61	SHAKER VOL. 0.00	JOB #16 SULFUR 0.78 0.83	BTU 9281 9819 14570	COKE 1	LES.SUL.
TRI-STAF DATE 07-03-03 #5931-C	MOIST. 6.90 DRY:	- LITTLE PI ASH 12.43 13.35	TTSBURG VOL. 0.00	H (RAW) JOB SULFUR 1.00 1.08	#434 BTU 11589 12448 14366	COKE 1	LBS.SUL.
TRI-STAR DATE 07-03-03 #5932-C	MINING MOIST. 1.55 DRY:	FRANKLIN ASH 16.98 17.25	#4 (RAW) VOL. 0.00 0.00	JOB #429 SULFUR 3.40 3.45	BTU 12599 12798 15465	COKE 9	LBS.SUL. 2.70

# MATERIAL SAFETY DATA SHEET

CORPORATE RESEARCH & DEVELOPMENT SCHENECTADY, N. Y. 12305



491

BITUMINOUS COAL DUST

Date SECTION I. MATERIAL IDENTIFICATION MATERIAL NAME: BITUMINOUS COAL DUST DESCRIPTION: Includes coals between lignites and anthracites with "fixed carbon" <86%, "volatile matter" >14% "calorific value" >10,500 BTU/lb (see ASTM D388 & D3172). Particulate <75 µm (thru No. 200 sieve), dispersable in air, is of primary interest. Coal consists of conjugated poly(aromatic/unsaturated/saturated) ring structures with hetrocycles containing 0,N, and 5. Clo2<sup>H</sup>78 10<sup>N</sup>2 has been suggested as a "coal molecule". SOURCE: Mining, handling, and pulverizing processes with coal. SECTION II. INGREDIENTS AND HAZARDS HAZARD DATA "Proximate Analysis" of some air-dried bituminous coals: 8-hr ACGIH TLV 3 or "Moisture" Source "Volatiles" "Fixed Carbon" "Ash" OSHA PEL 2.4 mg/m<sup>3</sup> West Virginia 1.8 20.4 72.4 5.4 Pennsylvania Respirable dust with .1.2 34.5 58.4 5.9 Illinois 8.4 <5% quartz\* 35.0 48.2 8.4 Wyoming 11.0 38.6 40.2 10.2 Bituminous coals also contain trace metals, sulfur (0.4-3.5) and nitrogen (0.9-1.5%), depending on source and type. \*Respirable dust is particulate <5  $\mu$  m in size. Use quartz formula (MSDS #71) if quartz content is >5% SECTION III. PHYSICAL DATA Vapor pressure at 25 C ----- Negligible Volatiles at 25 C ----Negligible Water solubility ----- Negligible ' Appearance & Odor: Black powder; little or no odor. SECTION IV. FIRE AND EXPLOSION DATA LOWER-UPPER Flash Point and Method Autoignition Temp." Flammability Limits In Air >0.05\* (cloud) >1114 F cloud(10 jm Av.),50mJ spark Extinguishing Media: Nitrogen, carbon dioxide, steam, water, ammonium biphosphate powder A water spray can be used to cautiously wet down coal dust to help prevent ignition (avoid raising dust). It is a fire and explosion hazard when exposed to heat or flame. Firefighters should have self-contained breathing equipment and protective clothing. \*Ca l oz/ft<sup>3</sup>gives max. flame energy; smallest 20% of particulate determines ignition characteristics; 10-50mJ spark needed at 0-5% moisture, respectively, to initiate combustion in <200 mesh dust, \*\*A pile of 2-7 µm Pittsburgh coal dust heated at 169 C

# SECTION V. REACTIVITY DATA

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The severity of CWP is directly related to the amount of coal dust in the lungs. In many does not progress beyond the simple stage, which is detectable by years as round.

CWP does not progress beyond the simple stage, which is detectable by x-ray as round and irregular "coal macules" of 1-5, mm diameter, but which does not change lung function or shorten life. CWP is a precursor of progressive massive fibrosis (PMF) resulting in large masses of fibrous tissue development (mechanisms unclear). PMF impairs pulmonary function and shortens life. There is no evidence of association of CWP and

bronchogenic cancer. Chronic bronchitis and emphysema are reported to result from excessive coal dust inhalation. Persons having rheumatoid arthritis in conjunction with simple CWP may have rapidly developing lung damage. (Caplan's Syndrome).

### SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Remove ignition sources. Clean-up personnel may need dust repirators and eye protection. Coal dust should be cleaned up in manner that avoids dispersing particulate in air

Collect dust in a covered metal container for use as fuel or for disposal.

DISPOSAL: Use as fuel in a pulverized coal-burning furnace, or burn as slurry in water For other incineration, possible dust explosions or "puffs" and high temperature need to be considered. Scrap coal dust may be wet down thoroughly with water in a container and buried in landfill. Follow Federal, State, and Local regulations.

### SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide explosion-proof general and local exhaust ventilation to meet TLV requirements. Amoroved filtration of exhausted air may be required to prevent excessive environmen-

Where airborne dust is excessive in the workplace, dust respirators and eye protection

In working with coal dust, use good personal hygiene. Wear regularly cleaned work risthing. Showering and changing into street clothing after work may be desirable. Fallow good housekeeping procedures to control coal dust build up. Collect dust from settling areas and surfaces in a manner to avoid generating airborne dust. Design dust supression measures into processes. Meet explosion-proof code requirements for electrical services where coal dust may be present.

## SECTION IX, SPECIAL PRECAUTIONS AND COMMENTS

Keasources of heat and ignition, flammable materials, and strong oxidizing agents from areas where coal dust may collect. Prevent static sparks. Inerting may be zairable, such as powdered CaCO or rock dust laid down over coal dust on mine floor \*\* nitrogen enriched atmosphere in a coal pulverizing machine.

L.D. Smoot, et. al., "Pulvurized Coal Power Plant Fires and Explosions" Parts I, II and V, Brigham Young University, Mechanical Engineering Dept., Prepared for Utah Power and Light Co., Salt Lake City, Utah 1979-1981. DOTATASSIFICATION: FLAMMABLE SOLID

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thements as to the suitability of information herein for purchaser's purposes are entry or to the surface of the surfa ds no warranties, makes no representations and assumes no responsibility mathe accuracy or suitability of such Information for application to purchaser weeted purposes or for consequences of its use.

MIS APPROVALS: Industrial Hygiene

and Safety MEDICAL REVIEW:

29 May 1982