BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

KCBX TERMINALS COMPANY)	
)	
Petitioner,)	PCB No. 10-110
)	PCB No. 11-43
)	(Consolidated)
)	,
v.)	(Permit Appeal-Air)
)	••
)	
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY)	
)	
Respondent.)	

NOTICE OF ELECTRONIC FILING

PLEASE TAKE NOTICE that on May 11, 2011, the Respondent filed its Motion to Supplement Record, by electronic filing. A true and accurate copy of the document so filed is attached hereto and herewith served upon you.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By LISA MADIGAN Attorney General of the

State of Illinois

Christopher J. Grant

Assistant Attorney General

Environmental Bureau

69 W. Washington Street

Suite 1800

Chicago Illinois, 60602

(312)814-5388

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

KCBX TERMINALS COMPANY,)	
Petitioner,)	
v.)	PCB No. 11-043
ILLINOIS ENVIRONMENTAL)	(Permit Appeal-Air)
PROTECTION AGENCY)	
Respondent.)	

MOTION TO SUPPLEMENT RECORD.

Now comes Respondent, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY ("Illinois EPA"), by LISA MADIGAN, Attorney General of the State of Illinois, and requests that the Board allow it to supplement the record in this matter. In support thereof, Respondent states, as follows.

- This matter was filed by Petitioner KCBX Terminals Company ("KCBX") filed this
 Permit appeal on February 1, 2011. Respondent filed the Record of its decision on April 4,
 2011.
- On April 28, 2011, Petitioner filed a separate Motion to Supplement Record, which
 Respondent has opposed in part and agreed to in part. Petitioner's Motion is currently with the
 Board for decision.
- 3. On April 13, 2011, KCBX deposed retired Illinois EPA Permit Engineer George Kennedy. At his deposition, Mr. Kennedy referred to certain review notes he had crated related to the disputed FESOP permit in this matter. Counsel for Petitioner requested copies of any notes so created.
 - 4. After some searching, Mr. Kennedy's notes were found attached to the back of a

permit which had already been included in the record. Although these notes do not readily fit into the definition of "record" contained in 35 Ill. Adm. Code 105.212 (i.e., they summarize Illinois EPA's decisions but were not 'relied upon' or used in actually <u>making</u> the decision), Respondent has no objection to producing the notes.

5. Accordingly, Respondent moves the Board to allow it to supplement the record in PCB 11-43 with these materials.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

by LISA MADIGAN

Attorney General of the

State of Illinois

Christopher J. Grant

Assistant Attorney General

Environmental Bureau

69 West Washington Street

Suite 1800

Chicago, Illinois 60602

(312) 814-5388

CERTIFICATE OF SERVICE

I, CHRISTOPHER GRANT, an attorney, do certify that I caused to be served this 11th day of May, 2011, Respondent's Motion to Supplement Record by email and first class mail.

CHRISTOPHER GRANT

Ms. Lauren C. Lurkins Hodge Dwyer & Driver 3150 Roland Avenue P.O. Box 5776 Springfield, Illinois 62705-5776 (by email and first class mail)

Mr. John Therriault Assistant Clerk Illinois Pollution Control Board 100 W. Randolph Chicago, Illinois 60601 (by electronic filing) Mr. Bradley P. Halloran Hearing Officer Illinois Pollution Control Board 100 W. Randolph Chicago Illinois 60601 (by hand delivery)

KCBX Terminals Company v. Illinois EPA, PCB 10-110/11-43 (Consolidated)

ANALYSIS SHEET

Rock & Concrete & Bulk & Asphalt

Facility Name:	KCBX Terminals Co.	Analyst Engineer:	George Kennedy
I.D. #:	031600AHI	Initials: GM/K	GMK
Permit #:	95050167	Date Received:	01/31/05
Contact:	Kathy Hodge	Date Review Received:	12/01/08
Contact Phone #:	217-523-4900 Ext	Date Review Completed:	12/29/10

Reason for Opening/Background:

Facility is requesting Renewal of FESOP and incorporation of Construction Permit 07100090 for 2 portable conveyers. Permittee sent suggested DRAFT in letter January 19, 2009.

Flag File:

All flags have expired

ICEMAN Status:

The current ICEMAN status for the above mentioned permit number is for FESOP.

Applicable Regulations:

- 212.123 PM opacity 30% other units
- 212.301 PM fugitive
- 212.304 PM storage piles
- 212.305 PM conveyor loading
- 212.306 PM traffic
- 212.307 PM unloading
- 212.308 PM crushers etc
- 212.309 PM operating program
- 212.310 PM program includes
- 212.312 PM operating program
- 212.313 PM 0.03 gr/dscf
- 212.314 spraying and wind speed
- 212.316 PM opacity 10% fugitive
- 212.321 PM process rate
- 212.322 PM process units prior to April 14, 1972
- 212.700 Subpart U additional controls
- 212.324 PM from process units
- 214.122 SO2 0.30 #/mmbtu
- 214.301 SO2 2000 ppm
- 214.304 SO2 Burning fuel in Chicago Area

40 CFR 60 Subpart Y – conveyers not subject; conveyers not used to convey coal to machinery at the coal preparation plant

Description of Facility/Emission Sources:

Facility is a bulk materials terminal used mainly for coal, coke and salt.

Existing Equipment:

Bulk materials terminal (including 2 portable conveyers)

- 1 425 kW diesel powered generator
- 1 450 kW diesel powered generator

Several fuel combustion units (small non-mobile engines and portable heaters)

Calculations:

See "Emission Calculations – KCBX Terminals Co. Chicago, IL" dated Dec 8, 2010 for PM10 calculations. For screening calculations based on 7.5% moisture proposed permit was 1.3% and 3%. Also see spread sheets from KCBX Steinert sep 2, 2010, attached.

Note:

Limits of proposed permit were requested in letter from KCBX dated January 19, 2009. DRAFT FESOP was sent to KCBX June 24, 2009 – no comment has been received as of May 17, 2010.

Discussion:

KCBX states that they are not subject to emission limits other than NOx as all other emissions are below major ie 100 ton/yr. Ill regulation 201.144 says source is to have an operating permit for emission source unless exempt. Being exempt does not relieve obligation to comply with other applicable requirements, including ---.

KCBX believes they are not subject to 212.304 PM for storage piles because their fugitive PM emissions are below 50 ton/yr; however this regulations call for uncontrolled emissions to be below 50, and from all emission units; and their calculations are based on controlled. Calculation based on the spread sheet furnished by KCBX and using uncontrolled emission factors also supplied by KCBX resulted in 61 ton/yr.

In letter of October 13, 2010 KCBS listed conditions which they believe do not apply to their facility and therefore should be deleted. They are as follows:

Condition 2d – refers to 212.304(a) PM fugitive in excess of 50 ton/yr; Using KCBX spread sheet for uncontrolled results in over 50 ton/yr therefore this regulations applies.

Condition 2e – refers to 212.305 conveyor loading and applies via 212.304 applicability.

Condition 2f – refers to 212.306 normal traffic applies via 212.304 applicability.

Condition 2g – refers to 212.307 unloading and transporting operation materials (emission) would be either enclosed or controlled by spraying ect.

Condition 2h.i and 2h.ii – 212.308 crushers--- shall be sprayed ---.

Condition 2l - 212.313 – operation pursuant to 212.304 not exceed 0.03 gr/dscf, or 68 mg/dscm – they are subject to 212.304.

Condition 2t refers to 212.324(b) PM process emission unit – 0.03 gr/dscf or 68 mg/dscm emission for certain areas – they are in the certain area.

Condition 4b refers to 214.301 SO2 for process emission units to 2000 ppm – they do a some coal processing.

Condition 6b and 6c – refers to 205 for season ERMS; the emissions they had earlier requested could cause more than 10 ton VOM in the summer season – cause new ERMS source.

Condition 8f - 212.704(e) PM contingency plan applies when limited to 70 mg/dscm – source is limited to 68 mg/dscm.

Also made changes requested in condition covering 212.321 and added condition covering 212.322 as requested by KCBX.

KCBX has caused delays in processing of FESOP in that they sent reply to letter, dated August 7, 2009, to facility requesting comments on DRAFT FESOP, but then call EPS ie Chris Pressnall saying to disregard that letter and new comments would be forthcoming. Having not received the follow up comment the DRAFT went out for Public comment June 9, 2010.

Recommendations:

It is recommended FESOP be Granted as source is not major.

K 000909

PERMIT CALCULATION SHEET

 Facility:
 KCBX Terminals Co.
 I.D.:
 031600AHI

 Anal. Eng.:
 GMK
 Date:
 12/29/2010
 P.N.:
 95050167

Rev. Eng.: Date: Date Rec.: 1/31/2005

<u>Section 1</u>: Identify noted File Traveler Sheet and ICEMAN source information that may affect permit issuance; if active VN indicate if Compliance is ok with issuance of a permit or NOI/Denial letter:

LEGAL: none FOS FLAG: none CROPA: na na

<u>Section 2</u>: Identify type of permit and brief summary of application/permit history if submitted in response to a NOI/Denial letter or to request revision to an existing permit:

Facility is requesting Renewal of FESOP and incorporation of Construction Permit 07100090 for 2 portable conveyers. Permittee sent suggested DRAFT in letter January 19, 2009.

Section 3: Description of the source with an itemized list of emission units and pollution control equipment included in the application. If for an operating permit, list all existing and proposed units and equipment that the operating permit will need to address:

Description of Facility/Emission Sources:

Facility is a bulk materials terminal used mainly for coal, coke and salt.

Existing Equipment:

Bulk materials terminal (including 2 portable conveyers)

- 1 425 kW diesel powered generator
- 1 450 kW diesel powered generator

Several fuel combustion units (small non-mobile engines and portable heaters)

<u>Section 4</u>: Identify the proposed type(s) and maximum actual operating quantities and rates of pollutant containing materials to be used/processed/produced that will be included in permit:

Limits are to be based on total facility emissions no matter what the material.

<u>Section 5</u>: Identify the proposed type(s), quantities and rates of maximum actual operating emissions for the source to be included in the permit including the units/controls proposed. Identify the source(s) of the emission factors used:

WILL NEED TO BE INSERTED

<u>Section 6</u>: Identify the source's potential-to-emit (PTE) including any proposed additions/revisions. Show calculations or reference where in application or file PTE is satisfactorily presented. Emissions from 35 IAC 201.146 exempt units must be included in PTE calculations:

Source is FESOP.

<u>Section 7</u>: List potentially applicable State and Federal (NSPS and NESHAP) regulations and indicate if application demonstrated those regulations would not be violated by construction and/or operation of equipment/units/processes in application:

Applicable Regulations:

- 212.123 PM opacity 30% other units
- 212.301 PM fugitive
- 212.304 PM storage piles
- 212.305 PM conveyor loading
- 212,306 PM traffic

- 212.307 PM unloading
- 212.308 PM crushers etc
- 212.309 PM operating program
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- 212.312 PM operating program
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- 214.301 SO2 2000 ppm
- 214.304 SO2 Burning fuel in Chicago Area

40 CFR 60 Subpart Y – conveyers not subject; conveyers not used to convey coal to machinery at the coal preparation plant

<u>Section 8</u>: Conclusions and recommendations. Indicate your final recommendation (e.g., NOI, denial, issue permit with conditions, etc.) and indicate reason(s) for that action:

Calculations:

See "Emission Calculations – KCBX Terminals Co. Chicago, IL" dated Dec 8, 2010 for PM10 calculations. For screening alculations based on 7.5% moisture proposed permit was 1.3% and 3%. Also see spread sheets from KCBX Steinert sep 2, 2010, attached.

Note:

Limits of proposed permit were requested in letter from KCBX dated January 19, 2009. DRAFT FESOP was sent to KCBX June 24, 2009 – no comment has been received as of May 17, 2010.

Discussion:

KCBX states that they are not subject to emission limits other than NOx as all other emissions are below major ie 100 ton/yr. Ill regulation 201.144 says source is to have an operating permit for emission source unless exempt. Being exempt does not relieve obligation to comply with other applicable requirements, including ---.

KCBX believes they are not subject to 212.304 PM for storage piles because their fugitive PM emissions are below 50 ton/yr; however this regulations call for uncontrolled emissions to be below 50, and from all emission units; and their calculations are based on controlled. Calculation based on the spread sheet furnished by KCBX and using uncontrolled emission factors also supplied by KCBX resulted in 61 ton/yr.

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Condition 2f – refers to 212.306 normal traffic applies via 212.304 applicability.

Condition 2g – refers to 212.307 unloading and transporting operation materials (emission) would be either enclosed or controlled by spraying ect.

Condition 2h.i and 2h.ii – 212.308 crushers--- shall be sprayed ---.

Condition 21 – 212.313 – operation pursuant to 212.304 not exceed 0.03 gr/dscf, or 68 mg/dscm – they are subject to 212.304.

Condition 2t refers to 212.324(b) PM process emission unit -0.03 gr/dscf or 68 mg/dscm emission for certain areas – they are in the certain area.

Condition 4b refers to 214.301 SO2 for process emission units to 2000 ppm – they do a some coal processing.

Condition 6b and 6c – refers to 205 for season ERMS; the emissions they had earlier requested could cause more than 10 ton VOM in the summer season – cause new ERMS source.

Condition 8f - 212.704(e) PM contingency plan applies when limited to 70 mg/dscm – source is limited to 68 mg/dscm.

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Recommendations:

It is recommended FESOP be Granted as source is not major.

Dec 8,2016 GMK

Emission Calculations - KCBX Terminals Co. Chicago, 1L

Screening Emissions (NSPS Y) @1.3% and 3% moisture (proposed FES

1. Material Handling (from AP-42 13.2.4. "Aggregate Handling and Storage Piles", Equation 1, 11/2006)

 $EF = k(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$ where:

	PM_{30}	PM_{10} $PM_{2.5}$
k =	0:74	0.35 0.053
U =	10.3	nph (average wind speed for O'Hare through 2001 - NOAA)
M =	1.3	.3% receiving Condition 9a proposed FESOP limit
EF=	0.01107	0.00524 0.00079 blb pollutant/ton transferred (receiving)
.M=		% after receiving Condition 9a proposed FESOP limit
EF=	0.00343	0.00162 0.00025 bollutant/ton transferred
	112.8	on/hr screening rated capacity (from equipment spec sheet)
	9	naximum drop points in rail unload system to rock chute plus 2 drops for pad transfers
	11	naximum drop points in ship load system plus 2 drops for pad transfers

Emissions = Amount Transfered * Material Handling EF * No. of Drop Points Control is by watering to maintain moisture at or above the value of M

Potential Emissions - unloading

@ 1.3% moisture

E	PM ₃₀	PM ₁₀	PM _{2.5}	
	11.2	5.3	0.8	lb/hr
	49	23.3	3.5	ton/yr

Potential Emissions - loading

@ 3% moisture

PM ₃₀	PM ₁₀	PM _{2:5}	
17.0	8. 1	1.2	Ιŧ
75	35	5.3	to

lb/hr ton/yr

2.	Screening (from	AP-42. Crushed	Stone Processing,	Table 11.19.2	2-2, 08/2004)
_					

	PM	PM_{10}	$PM_{2.5}$	_			
EF=	0.0022	0.00074	0.000050	lb pollutant/ton screened (controlled)			
$\mathbf{EF} =$	0.025	0.0087	0.00013	lb pollutant/ton screened (uncontrolled)			
	112.8	ton/hr scree	ton/hr screening rated capacity (from equipment spec sheet)				

Emissions = Amount screened * Screening EF

Controlled emissions are those with material moisture content of at least 2.88 %

(see footnote b to AP42 Table 11.19.2-2)

Potential Controlled Emissions

PM ₃₀	PM ₁₀			
0.2	0.1	* 0.01	lb/hr	
1.1	0.4	0.02	ton/yr	
			•	

Potential Uncontrolled Emissions

PM ₃₀	PM ₁₀ ·	PM _{2.5}
2.8	1.0	0.01
. 12.4	: 4.3	0.06

3. Storage Piles (AP-42, Chapter 11.9, Western Surface Coal Mining, 1998)

Note: k factors not available for PM₁₀ & PM_{2.5}, so the ratio of Material Handling k factors from Scenario 1 is applied

Area 4 acres of total available storage

Active Piles (from AP-42, Table 11.9-1)

EF = 0.72* u lb $PM_{30}/acre/hr$ (disturbed area)

U = 10.3 mph (average wind speed for O'Hare through 2001 - NOAA)

100 % of storage piles that are active (most conservative estimate)

	PM_{30}	PM_{10}	$PM_{2.5}$	
				lb pollutant/acre/hr (controlled)
$\mathbf{EF} =$	7.42	3.51·;·	0.53	Ib pollutant/acre/hr (uncontrolled)

Assume

75% assumed control efficiency from water application

0% for no control

Potential Controlled Emissions

PM ₃₀	PM ₁₀	PM _{2.5}	
7.4	3.5	0.5	lb/hr
32	15	2,3/11/2	ton/yr

Potential Uncontrolled Emission

	11001101	
PM ₃₀	PM ₁₀	PM _{2.5}
29.7	14.0	2.1
130	61	9.3

Assume Pile remains active (no emissins from an inactive pile) because screening occurs 8760 hrs/yr

Dec B, 20/6

4. Vehicle Traffic

<u>Unpaved Roads</u> (AP-42 Section 13.2.2 Unpaved Roads, 2003)
Applicable for 90% of vehicle traffic (estimate)

 $EF = k(s/12)^{a*}(W/3)^{b*}[(365-P)/365]$ lb/vehicle mile traveled (VMT)

988;128 tons/yr maximum screener throughput

Assume All screened material is moved by truck and loader (worst case)

 $W = \sum \frac{\text{(VMT * avg vehicle wt)}}{\text{Total VMT}}$ Mean Vehicle Fleet Weight for all vehicle types

						Operating			
		,-	Weight (tons)			Speed	Time	VMT	(mi/yr)
Vehicle Type	Number	Loaded	Empty	Average	(mi)	(mi/hr)	(hrs/yr)	Unpaved	Paved
End loader/dozer	1	20.0	10.0	15.0	0.03			2,807	0.
Water truck ²	1	20.0	5.0	12.5		5.0	100	500	0.
Haul truck	39,525	40.0	15.0	≥ 27.5 -	0.8			31,620	0.47

round trip

²100 fills/year @ 1 hr each

W	١	'n	A	١.	ß	
¥ν	1	ı	v	ı	·	•

re:	PM_{30}	PM_{10}	$PM_{2.5}$	
k =	4.9	1.5	0.15	constant for lb/VMT
a =	0.7	0.9	0.9	
b =	0.45	0.45	0.45	
s =	5.1	5.1	5.1	road surface % silt (AP-42 Table 13.2.2.1 for Plant Road)
W =	26.3	26.3	26.3	Mean weight of vehicles, tons
$P_{\text{uncontrolled}} =$	120	120	120	Figure 13.2.2-1 for days with > 0.01 inches precipitation
$P_{controlled} =$	⁸ . 215	215	215	1/3 of P _{uncontrolled} (non-sprinkling season) + watering days
E ex1 =	4.8	1.2	0.1	Ib/VMT Uncontrolled
$E_{ext} =$	2.9	0.8	0.08	lb/VMT Controlled

Emission = Unpaved Road EF (adjusted for local rainfall) * Fleet Weighted Vehicle Miles Traveled

Control assumes P = 175 days of watering (Apr 1 - Nov 31 ~ 35 wks @ 5 days/wk)

Potential Uncontrolled Emissions

PM ₃₀	Š	PM ₁₀	PM	2.5	
19	1	4.9 "	0.5	5	lb/hr
84		22/17	2.2	<u>) </u>	ton/yr

K 000915

Total =

34:927

Dec 8,20

5. Non-mobile Fuel Combustion

Large Diesels

	1510	total hp	Source: AP-42. "Gasoline and Diesel Engines." Tables 3.3-1	and -2
PM_{10}	0.0007	lb/hp-hr	Source: AP-42, "Gasotine and Diesel Engines," Tables 3.3-1	and -2

Potential Uncontrolled Emissions

PM ₃₀	PM ₁₀	PM _{2.5}	
1.1	1.1	1.1	lb/hr
- 4.6	4.6	4.6	ton/yr

Small Engines

using AP-42 Tables 1.3-1 and 1.3-3

Diesels Gasoline

Installed capacity	41.5	144	horsepower
BSFC	7000	7000	Btu/hp-hr Source: footnote a of AP-42 Table 3.3-
PM ₁₀	0.31	0.10	lb/MMBTU (AP-42 Table 3.3-1)

Potential Uncontrolled Emissions

PM ₃₀	PM ₁₀	PM _{2.5}	
0.2	.0.2	0.2	lb/hr
0.8	4.0.8	0.8	ton/yı

Other Combustion

Fuel Oil	Kerosene*
ruei Oii	ver ozene

|--|

heating value	10200	10200	D+1./lb	Courses featmate a of AD 42 Table 2.2.1
neating value	1.9300	19300	Diwio .	Source: footnote a of AP-42 Table 3.3-1
density	7050	7050	lb/1000 gal	Source: AP-42 Appendix A
PM	0.4	0.4	lb/1000 gal	Source: AP-42 Table 1.3-1

Potential Uncontrolled Emissions

PM ₃₀		PM ₁₀	PM _{2.5}	
0.02		0.02	0.02	lb/hr
0.07	ť	0.07	0.07	ton/yr

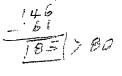
*Distillate fuel emission factors may be used for kerosene per Residential and Commercial/ Institutional Fuel Oil and Kerosene Combusion in Areas Source Category Abstract-Fuel Oil and Kerosene Combustion, USEPA 4/6/99 at

http://www.epa.gov/ttn/chief/eiip/techreport/volume03/fueloil.pdf

SUMMARY OF UNCONTROLLED EMISSIONS

		Pounds/year				
	PM ₃₀	PM ₃₀ PM ₁₀ PM _{2.5}				
Transfers	247,819	117,212	17,749			
Screening	24,703	8,597	124			
Storage Piles	259,857	122,905	18,611			
Yehicie Traffic	167,586 :	<u> </u>	4,323			
Site Totals	699.965	291,946=	= 40.807 II			

Tons/year							
PM ₃₀ PM ₁₀ PM _{2.5}							
124	59	8.9					
12.4-	4.3	0.1					
130	61	9.3					
11.84	22==	2.2.					
350	<u></u>	20.4					



Fluid Coke Receiving Emissions 60.0.75% moisture

Material Handling (from AP-42 13.24, "Aggregate Handling and Storage Piles

 $EF = k(0.0032)[(U/5)^{1/3}]/[(M/2)^{1/4}]$ where

	PM ₃₀	PM_{10}	PM _{2.5}
k =	0.74	0.35	0.053
U =	10.3	mph (avera	ge wind speed for O'Hare through 2001 - NO
M =		Current FES	
EF =	0.024	0.011	0.0017 Ib pollutant/ton transferred

200	10% fluid coke blend on a 2000 tph belt
ı	drop points in rail unload system

Emissions = Amount Transfered * Material Handling EF * No. of D

Potential Emissions - unloading

PM ₃₀	PM ₁₀	PM _{2.5}	
4.78	2.26	0.34	lb/hr
21.0	9.9	1.5	ton/yr

The ton/year calculation assumes receiving fluid coke 8760 hours per year In reality, the facility would not receive fluid coke for 8760 hours per year be cannot bring in that much green delayed coke to use for blend.

200 tpy * 8760 hr/yr = 1,752,000 n fluid coke * 9x blend ###### tons green delayed coke

Kennedy, George

From: Sent: Steinert, Terry [STEINE3T@KOCHIND.COM]

To:

Thursday, September 02, 2010 11:16 AM Kennedy, George

Subject:

KCBX emissions spreadsheets

Attachments:

FESOP Renewal 2010-07-14 fuel combustion PTE.xls; FESOP Renewal 2010-08-27 fugitive

particulate PTE.xls

George.

Thanks again for meeting with us last week to discuss the FESOP for KCBX Terminals again in Chicago. I think Chris Presnall summed it up pretty well when he characterized the meeting as productive. We certainly better understand the Agency point of view on some topics that were confusing us.

As we promised, I am attaching the spreadsheets from which the printouts were made (Attachments C and D) from our July 16, 2010 comments on the draft FESOP submitted to Brad Frost of the Agency. For the PM / PM10 PTE spreadsheet, I added the calculations that would show the emissions from offloading low moisture product (I assumed 0.75% moisture) through 1 drop point on the rail unload system.

Please call me if you have any questions.

<<FESOP Renewal 2010-07-14 fuel combustion PTE.xls>> PTE.xls>>

<<FESOP Renewal 2010-08-27 fugitive particulate

Terry L. Steinert

Terry L. Steinert Environmental Compliance Manager Koch Carbon, LLC 4111 East 37th Street North Wichita, KS 67220 316.828.7847 (office) 316.200.5075 (cell)

nic Filing - Received, Clerk's Office, May 11

Emission Calculations - KCBX Terminals Co. Chicago, IL

Screening Emissions (NSPS Y) @ 7.5% moisture (current FESOP)

Material Handling (from AP-42 13.2.4, "Aggregate Handling and Storage Piles", Equation 1, 11/2006)

 $EF = k(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$ where:

	PM_{30}	PM_{10}	$PM_{2.5}$	
k =	0.74	0.35	0.053	
U =	10.3	mph (average	wind spee	d for O'Hare through 2001 - NOAA)
	14 4 1 1 1 1	Current FESO		
EF=	0.00095	0.00045	0.00007	lb pollutant/ton transferred
	112.8	ton/hr screen	ing rated ca	pacity (from equipment spec sheet)
	9	maximum dro	op points in	rail unload system to rock chute plus 2 drops for pad transfe
	11	maximum dro	op points in	ship load system plus 2 drops for pad transfers

Emissions = Amount Transfered * Material Handling EF * No. of Drop Points Control is by watering to maintain moisture at or above the value of M

Potential Emissions - unloading

. PM ₃₀	* PM ₁₀	PM _{2.5}	
-, 1.0	0.5	0.1	lb/hr
4	2.0)。0.3	ton/yr

Potential Emissions - loading

assumes blend of 25% reclaim &

virgin

PM ₃₀	PM ₁₀	∞PM _{2.5}	
4.7	表 2.2		lb/hr

Screening (from AP-42, Crushed Stone Processing, Table 11.19.2-2, 08/2004)

	PM	PM_{10}	$PM_{2.5}$	
$\mathbf{EF} =$	0.0022	0.00074	0.000050	lb pollutant/ton screened (controlled)
$\mathbf{EF} =$	0.025	0.0087	0.00013	Ib pollutant/ton screened (uncontrolled)
	112.8	ton/hr screen	ing rated ca	pacity (from equipment spec sheet)

Emissions = Amount screened * Screening EF Controlled emissions are those with material moisture content of at least 2.88 % (see footnote b to AP42 Table 11.19.2-2)

Potential Controlled Emissions

PM ₃₀	PM_{10}	PM _{2.5}	
±:0.2: ±:	3-10-116-E	4:-0:01 i:-	lb/hr
	111045	-0:02	<u>tố</u> ṇ/yr

3. Storage Piles (AP-42, Chapter 11.9, Western Surface Coal Mining, 1998)

Note: k factors not available for PM₁₀ & PM_{2.5}, so the ratio of Material Handling k factors from Scenario 1 is applied

Area acres of total available storage

Active Piles (from AP-42, Table 11.9-1)

EF =
$$0.72* \text{ u}$$
 lb PM₃₀/acre/hr (disturbed area)
U = 10.3 mph (average wind speed for O'Hare through 2001 - NOAA)

% of storage piles that are active (most conservative estimate)

	PM_{30}	$\mathbf{PM_{i0}}$	$PM_{2.5}$	-
				lb pollutant/acre/hr (controlled)
$\mathbf{E}\mathbf{F} =$	7.42	3.51	0.53	lb pollutant/acre/hr (uncontrolled)

Assume 75% assumed control efficiency from water application

Potential Controlled Emissions

PM ₃₀	PM ₁₀	PM _{2.5}	
7.4	3.5	0.5	lb/hr
32	. 15	2.3	ton/yr

Assume Pile remains active (no emissins from an inactive pile) because screening occurs 8760 hrs/yr

4. Vehicle Traffic

<u>Unpaved Roads</u> (AP-42 Section 13.2.2 Unpaved Roads, 2003)
Applicable for 90% of vehicle traffic (estimate)

 $EF = k(s/12)^{n}*(W/3)^{h}*[(365-P)/365]$ lb/vehicle mile traveled (VMT)

988,128 tons/yr maximum screener throughput

Assume All screened material is moved by truck and loader (worst case)

 $W = \sum \frac{\text{(VMT * avg vehicle wt)}}{\text{Total VMT}}$ Mean Vehicle Fleet Weight for all vehicle types

•					C	peratin	g		
		We	eight (tons))	Distance ¹	Speed	Time	VMT (n	ni/yr)
Vehicle Type	Number	Loaded	Empty	Average	(mi)	(mi/hr)	(hrs/yr)	Unpaved	Paved
End loader/dozer	1.11	20.0	3110.0	15.0	0.03	1.4.4	• .	2,807	20
Water trucki	124 143	20:0 == =	5.0	12.5		5_0	100	:= 500	i Di

Haul truck	39,525	40.0	15.0 27.5	0.8		31,620	0
round trip					Total =	34,927	0

²100 fills/year @ 1 hr each

Where:

re:	PM_{30}	PM_{10}	$PM_{2.5}$	_
k =	4.9	1.5	0.15	constant for lb/VMT
. a =	0.7	0.9	0.9	
b =	0.45	0.45	0.45	
s =	5.1	5:1	5.1	road surface % silt (AP-42 Table 13.2.2.1 for Plant Road)
W =	26.3	26.3	26.3	Mean weight of vehicles, tons
Puncontrolled =	120	120	120	Figure 13.2.2-1 for days with > 0.01 inches precipitation
P _{controlled} =	215	215	215	1/3 of P _{uncontrolled} (non-sprinkling season) + watering days
$E_{\rm ext} =$	4.8	1.2	0.1	lb/VMT Uncontrolled
$E_{ext} =$	2.9	0.8	0.08	lb/VMT Controlled

Emission = Unpaved Road EF (adjusted for local rainfall) * Fleet Weighted Vehicle Miles Traveled

Control assumes P =

175

days of watering (Apr 1 - Nov 31 ~ 35 wks @ 5 days/wk)

Potential Controlled Emissions

PM ₃₀	PM ₁₀	PM _{2.5}	
	3.0		
51	13.	1.3	ton/yr

SUMMARY OF CONTROLLED EMISSIONS

		Pounds/year	
	PM ₃₀	PM_{10}	PM _{2.5}
Transfers	49,872	23,588	3,572
Screening	2,174	731	49
Storage Piles	64,964	30,726	4,653
Vehicle Traffic	102,604	26,469	2,647
Site Totals	219,613	81,514	10,921

Tons/year										
PM ₃₀	PM ₁₀	PM _{2.5}								
25	12	1.8								
1,1	0.4	0.0								
32 7.0	15	2.3								
51	13	1.3								
110	41	5.5								

Emission Potential Revised 7/9/2010

	Equ	ipment				·	** 1				Date	of	
				Engine			Capacity			Manufac-	Install-		Modif
ΙD.	Name / Description	Power	Type*	Duty	Units	Hourly	Annual	Units	Applicability	ture	ation	Start Up	cation
1754		HARITA COL	HERMO			A CONTRACTOR			THE REPORT OF THE PERSON NAMED IN				
HIE	Red Europa Boom Furnace Armstrong	diesel	- 7 - 1		3	0 450	3942	MMBtu.	35 IAC 201 146(d)	Pre 1993	Pre 1993	Pre 1993	
11 8	RED DISSESSOP Furnace, Armstrong	diesel				0 284	2488	MMBtu-	35 IAC 201 146(d)	Pre 1993	Pre 1993	Pre 1993	
MMA	Armstrong - Purnace, Armstrong - Purnace, Weil McLain	diesel.		· ·		.0 298	2610	MMBtu	35 IAC 201 146(d)	Pre 1993	Pre 1993	Pre 1993	
1	Malen Heater, Boch Model 71E	diesel		1.0		0 138	1205	MMBtu	35 IAC 201 146(c)	2006	2006	2006	
il ili	ked Waler Healen Bock Model 71E	diésel :				0 138	. 1205	MMBtu	35 IAC 201 146(c)	2006	2006	2006	
i di	matta le Haltleater Dayton kar	kërosene 1				0.6	: -5256	MMBtù		2005	2005	2005	1
H	Rotta ve Krait Pater Dayton (1871)	kerósene .	J		()	0.6	. 5256	MMBtu	35 IAC 201 146(c), (d)	2005	2005	2005	
11115		kerosene	100	7 ,	:	0.6	5256	MMBtu	35 IAC 201 146(c), (d)	2006	2006	2006	
HIA	Manual Market P. 1	kerosene :	(11.	35/ .	. 0 35		MMBtű	35 IAC 201 146(c), (d)	2006	2006	2006	
	Hat I Daylot Tigging	kerosene -	"a"	4.7		0 35	3066	MMBtu	35 IAC 201 146(c), (d)	2006	2006	2006	
14	Ald In the Property of the Control o	kerosene		1441		0.15	1314	MMBtu	35 IAC 201 146(c), (d)	2006	2006	2006	
1117	Market Master : 19	kerosene	- ,		**5 _	. 0 15	-1314	MMBtu	35 IAC 201 146(c), (d)	2006	2006	2006	
118	Master	kerosene	1000	1.75%	20 g 19	0 15			35 IAC 201 146(c), (d)	2006	2006	2006	
HIE	Hart Martin Master Line	kerosene	1.1		7.	′′0.15	1314	MMBtu	35 IAC 201.146(c), (d)	2007	2007	2007	
119	Market bid Market Master - Land State - Lan	kerosene				0 15	1314	MMBtu	35 IAC 201 146(c), (d)	2007	2007	2007	
	Marie Haller HWaster Line	kerosene -		1978	(A+1.11)	0 15	J#1314	MMBtu	35 IAC 201 146(c), (d)	2007	2007	2007	
112	Harter Master	kerosene	-1		27	0 15	1314	MMBtu	35 IAC 201 146(c), (d)	2007	2007	2007	
412	The Carle Master i	kerosene	319 30	: . <u></u>	4 20.0	∴ 0.60	5256	MMBtu	35 IAC 201 146(c), (d)	2007	2007	2007	
8131	Mayer wathen Landalwi 5 hp electric engine 15	kerosene:	2 . * * *	20		0 33	2891	MMBtu	35 IAC 201 148(nn)	2000	2000	2000	
ĐΧ	TANE ANABASE MIM W/16 hp engine	gasoline 🚁	142 - 1 m		نا ـ شادول	= 0.54	4730	MMBtu	35 IAC 201 146(nn)	2000	2000	2000	
3311		MARIJE JE S	e in				ARREST DE	細蝠科					
330	Stick with a stailor like to the same that the same to	diesel	CI.	750	hp 🖟	4	J. 379.0	Fillians.	35 IAC 201.146(i)	1996	May-96	May-96	T
818	SOUND BEAUTIFUL SOUTH	diesel 🛶 😘	CI	-760	hp	1.00	·	F	35 IAC 201 146(i)	1998	Oct-98	Oct-98	
80H	Will Will High Electric Truck	gasoline -	4SRB	9	hp	,5 ° 14.	12.71.25.4	E	35 IAC 201 146(i)	2006	2006	2006	
826	Meta vice WaderGeneraton	diesel 4	CI :	- 9	hp:	19.65		Bris.	35 IAC 201 146(i)	2005	2005	2005	
826	WADE VIE DESIMONEETH NOTES	gasoline	4SRB	34	hp.		44		35 IAC 201 146(y)	1990	1990	1990	
2 N M	But A Conte / Enerator: Multiquip	gasoline	4SRB:	10	hp		1 1 1 1 1 1 1 1 1	1. 1	35 IAC 201 146(nn)	1995	1995	1995	
Will B	Spart Spart aton welder	gasoline .	4SRB	9	hp:	·	12 1 January	2 .	35 IAC 201 146(y)	2003	2003	2003	T
VIII!	Med him Mir Compressor Kohler	gasoline	4SRB	16	hp÷		2.3. 7	1.000	35 IAC 201 146(i)	2001	2001	2001	$\overline{}$
824	High Hill ampardig 6"	diesel	Ci ·	32.5	hp .			T	35 IAC 201.146(i)	2007	2007	2007	T
824	no ea 3 main Pumpil eal	gasoline	4SRB	.9	hp				35 IAC 201 146(i)	1994	1994	1994	
HEAL	IRISHUSISHRITSIER Portizion Trailer	gasoline	4SRB		hp				35 IAC 201 146(i)	2002	2002	2002	
1824	HION 411 Tash Plimbe	gasoline	4SRB	116			100		35 IAC 201 146(1)	1996	1996	1996	
4824	開始的 提出用的基础与H Pbmp !	gasoline 🐇	4SRB	16	hp	a real transfer	1 B	W. W. L.	35 IAC 201.146(i)	2007	2007	2007	1

т							THIN	otential to b											
ľ	1		•	ton/yr		_		lb/hr											
ľ	VOC -	PM25	PM ₁₀	PM	SQx	CO	NOx	VOC	PM _{2.5}	PM ₁₀	PM	SOx	co	NOx					
1	3112	學統	は、大学は	会がはな	339"	3	5 45	多的建筑	が存在され	は気は数	鐵學術問	きる	東京の	SEPTION .					
l	0 0049	0 029	0 029	0 029	0 10	0 07	0 29	0.00112	0.0066	0 0066	0 0066	0 023	0.016	0 066					
J,	0 0031	0 018	0 018	0 018	0 06	0 05	Ö 18	0.00070	0.0041	0 0041	0 0041	0 015	0 010	0 041					
	0 0032	0 019	0 0 1 9	0 019	0 07	0 05	0 19	0.00074	0.0044	0 0044	0 0044	0 015	0 011	0 044					
	0 0015		0 0088	0 0088	0.031	0 022	0 088	0.00034	0 0020	0 0020	0 0020	0 0071	0 0050	0 020					
			0 0088		0.031	0 022	0 088	0.00034	0 0020	0 0020	0 0020	0 0071	0 0050	0 020					
	0 0065		0 038	0 038	0 14	0 096	0 38	0.0015	0 0088	0 0088	0 0088	0 031	0 022	0 088					
	0.0065		0 038	0 038	0 14	0 096	0 38	0.0015	0 0088	0 0088	8800 0	0 031	0 022	0 088					
	0 0065		0 038	0 038	0 14	0 096	0 38	0.0015	0 0088	8800 0	0 0088	0 031	0 022	0 088					
	0 0038		0 022	0 022	0 079	0 056	0.22	0.00087	0 0051	0 0051	0 0051	0 018	0 013	0 051					
	0 0038		0 022	0 022	0 079	0 056	0 22	0.00087	0 0051	0 0051	0 0051	0 018	0 013	0.051					
				0 0096		0 024	0 096	0.00037	0 0022	0.0022	0 0022	0.0078	0 0055	0 022					
				0 0096		0 024	0 096	0.00037	0 0022	0 0022	0 0022	0 0078	0.0055	0 022					
				0 0096		0 024	0 096	0.00037	0 0022	0 0022	0 0022	0 0078	0 0055	0 022					
				0 0096		0 024	0 096	0.00037	0 0022	0 0022	0 0022	0 0078	0 0055	0 022					
			0 0096			0 024	0 096	0.00037	0 0022	0 0022	0 0022	0 0078	0 0055	0 022					
				0 0096		0 024	0 096	0.00037	0 0022	0 0022	0 0022	0 0078	0 0055	0 022					
				0 0096		0 024	0 096	0.00037	0 0022	0.0022	0 0022	0 0078	0 0055	0 022					
	0 0065		0.038		0 14	0 096	0 38	0.0015	0 0088	0 0088	0 0088	0 031	0 022	0 088					
				0 0000		0.0000		0.00000		0.00000			0 0000	0.0000					
	0.0	0 000	0.000	0 000	0 000	0 000	0 00	0.00	0.000	0 000	0 000	0 0000	0.000	0.00					
		75,474 S		外中部的	1300	教の場	32-78	2代的政治					手件類標	部海路					
	2.1	2 3	23	2.3	7.4	18	79	0.48	0.53	0.53	0.53	1.7	4.1	18					
	2 1	2 3	23	2.3	7.5	18	80	0.49	0.53	0.53	0.53	1.7	4 2	18					
	0 85	0 026	0 028	0 028	0 023	0.274	0 43	0.19	0 0065	0 0065	0.0065	0 0053	0 0626	0 10					
	0 10	0 087	0 087	0 087	0 081	0 26	1.2	0.023	0.020	0 020	0 020	0.018	0 060	0 28					
	- 32	011	0,11	0.11	0 088	1 04	1.6	0.73	0.025	0 025	0 025	0.020	0.237	0 37					
	0 95	0 032	0 032		0 026	0.305	0 48	0.22	0 0072	0 0072	0.0072	0 0059	0 0696	0 11					
		0 028	0 028		0 023	0.274	0.43	0.19	0 0065	0 0065	0.0065	0 0053	0 0626	0.10					
	"1 5	0 051	0 051	0 051	0 041	0.488	0 77	0.35	0.012	0 012	0 012	0 0095	0 111	0 18					
	0.36	0 31	0.31	0.31	0.29	0 95	4.41	0.082	0.072	0 072	0.072	0.067	0.22	1.0					
	0.85	0 028	0 028	0 028	0 023	0.274	0.43	0.19	0 0065	0 0065	0.0065	0 0053	0 0626	0 10					
	0.85	0.028	0 028	0 028	0 023	0.274	0.43	0.19	0 0065	0 0065	0.0065	0 0053	0 0626	0 10					
	1.5	0 051	0.051	0 051	0 041	0.488	0.77	0.35	0.012	0 012	0.012	0 0095	0.111	0 18					
=	1 5	0 051	0.051	0.051	0.041	0.488	0.77	0.35	0.012	0.012	0.012	0.0095	0.111	0 18					
ıL	16 9	58	58	5.8	17	42	174	3.9	1.3	1.3	1.3	3.9	97	40					

			Emissio						
Diesel ≤ 600 hp	0 031	0 0067	0 0021	0 0022	0 0022	0.0022	0.0025	Source	AP-42 Table 3 3-1
Gasoline	0 011	0.00696	0.00059	0 00072	0 00072	0.00072	0.022	Jource	A1 142 Table 3 5-7
Diesel > 600 hp	0 024	0 0055	0.00227	0 00070	0.00070	0.00070	0.00064	Source	AP-42 Table 3 4-1 and footnote f
	00 /							4 11	

SO, for large diesels assumes a maximum sulfur content of 0.28% as allowed by perm

VOC assumed to be TOC minus methane

Γ			Emission	Factors	(lb/mmB	tu)		7			4	
Diesel	4.41	0 95	0 29	0.31	0.31	0.31	0.36	Source	AP-42 Table 3 3-1	•]
Kerosene	4.41	0 95	0 29	0.31	0.31	0.31	0.36	Source.	DOE EIIP Vol III page 2			1
Diesel =		mmBtu/g mmBtu/h						Source	AP-42 Appendix A			

[Emissio	on Facto	rs (lb/gal)			
Fuel Oil	0.02	0.005	0.0071	0.002	0 002	0.002	0.00034	Source AP-42 Tables 1.3-1 and 1.3-3
Kerosene	0.02	0.005	0.0071	0.002	0.002	0.002	0.00034	Source. DOE EIIP Vol III page 2
Distillate Oil =	0 140	mmBtu/g	al					Source: AP-42 Appendix A

	ing and an
& C	ncrete & Bulk & Asphalt
agny	KCBXiTerminals Co.
	031600AHI
	95050167
	1/31/2005
THE	71/31/2003
ISISI	GMK :
	112/8/2010

Handary 19: 2009
Ricoposed DRAFT from KCBX
9a.
9b.

KCBX Terminals Co. Calculation Sheet

	PM10	PM2.5	5 PM	NOx	Со	SO2	VOM		•
		95	95	95	95	95	66.8	25	
,	2	88 3.5			95	92	21.9	40.1	processing of coal in the poal preparation plant non-mobile fuel combustion units
	none	none	none		92 none	none	none		non-mobile fuel combustion units
									Only believe NOx should be limited