



DEPARTMENT OF PUBLIC HEALTH
CITY OF CHICAGO

December 9, 2014

Stephen A. Swedlow
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Re: KCBX Terminals Company's Petition for Variance

Dear Mr. Swedlow:

The Chicago Department of Public Health ("CDPH") is in receipt of KCBX Terminals Company's ("KCBX") June 9, 2014 letter requesting five variances from requirements of CDPH's Rules and Regulations for Control of Emissions from the Handling and Storage of Bulk Material Piles ("Bulk Material Regulations"), supplemental materials in support of the variance requests provided by KCBX dated June 10, 2014 and June 23, 2014, and further supplemental materials dated September 26, 2014 and October 14, 2014. Pursuant to the Bulk Material Regulations, CDPH accepted written comments on the variance request during a comment period which was extended, upon request of the public, to September 2, 2014, as further described below. The five variance requests are:

1. Conveyors: KCBX requests CDPH to grant a variance from Sections 3.0(6) and 6.0(3) of the Bulk Material Regulations, which require all conveyors to be covered or enclosed within 6 months of the effective date of the Bulk Material Regulations, specifically (a) to allow KCBX to not cover 8 of its 55 conveyors, which 8 fixed conveyors at the KCBX North Terminal KCBX states will be de-commissioned upon transitioning bulk materials to the South Terminal; and (b) to extend the time to cover 26 conveyors at the KCBX North and South Terminals, which are currently uncovered, from September 13, 2014 to March 31, 2015 (discussed in more detail below).

2. Pile Height Limit: KCBX requests CDPH to grant a variance from Section 5.0(2) of the Bulk Material Regulations, which requires that outdoor piles be no higher than 30 ft., specifically to allow KCBX to maintain outdoor piles up to 45 ft. in height (discussed in more detail below).

3. Dust Suppressant System – Freezing Weather Operations: KCBX requests CDPH to grant a variance from Section 5.0(5)(b) of the Bulk Material Regulations, which requires facilities to apply chemical stabilizers and/or maintain and operate water spray bars, a misting system, water spray systems and/or water trucks to prevent fugitive dust emissions, and that when temperatures fall below freezing, the facility must use water heating systems and/or chemical stabilizers to ensure that dust suppression continues. Specifically, KCBX requests that this requirement not apply when temperatures fall below 25 degrees Fahrenheit (discussed in more detail below).

4. Dust Suppressant System – Suspension of Activities During Dust Suppressant System Maintenance or Other Inoperable Circumstances: KCBX requests CDPH to grant a variance from Section 5.0(5)(c) of the Bulk Material Regulations, which states that if any part of the dust suppressant system is undergoing maintenance or is otherwise inoperable, the facility must suspend disturbance of bulk material piles that would be controlled by the inoperable portion of the dust suppressant system until it is functioning again. Specifically, KCBX requests that this requirement not apply, so long as KCBX uses a different method to apply dust suppressant in place of the part that is inoperable, unless weather conditions and/or product moisture render additional dust suppressant unnecessary, and so long as KCBX monitors the activity and responds to visible dust emissions, shutting down the activity if necessary (discussed in more detail below).

5. Runoff Management: KCBX requests CDPH to grant a variance from Section 5.0(6)(d) of the Bulk Material Regulations, which requires the facility owner or operator to maintain stormwater management and grading to ensure proper drainage and to prevent pooling of water. Specifically, KCBX seeks a variance to allow temporary pooling of water in ruts created by heavy equipment on the material storage pads (discussed in more detail below).

SUMMARY OF CDPH VARIANCE DETERMINATIONS

As set forth in greater detail in subsequent sections of this document, following is a summary of CDPH's determinations for each of KCBX's variance requests:

1. Conveyors: With respect to KCBX's request to leave 8 conveyors at the KCBX North Terminal uncovered pending transitioning of bulk materials to the KCBX South Terminal, for the reasons set forth below, CDPH finds that KCBX has failed to meet the requirements set forth in Sections 8.0(2) and 8.0(3)(a) of the Bulk Material Regulations for issuance of a variance, and the variance request is therefore denied. In summary, the basis for this determination includes, but is not limited to, CDPH's finding that KCBX has not demonstrated that issuance of the variance will not create a public nuisance or adversely impact the surrounding area. Importantly, the City's expert consultant conducted an electron microscopy analysis of dust samples collected near the facility, and this analysis found evidence of petroleum coke ("petcoke") off site. This is contrary to the conclusions regarding absence of off-site impacts drawn by KCBX, which relies in part upon the results of soil sampling in adjacent neighborhoods to demonstrate the absence of impacts from petcoke. The City's expert consultant determined that soil sampling of the sort undertaken by KCBX is unlikely to detect petcoke even if it is present, because of the many years of aerial deposition required before petcoke can accumulate in detectable concentrations. Moreover, the City's expert identified gaps in the air monitoring programs around the North and South Terminals regarding potential fugitive dust impacts on some of the nearest residences. This analysis, combined with deficiencies identified in KCBX's supporting materials, leads CDPH to conclude that KCBX has not established that there will be no adverse impact from uncovered conveyors. Moreover, KCBX has not provided a date certain by which the uncovered conveyors will be decommissioned. Accordingly, the 8 conveyors that are the subject of this variance request must be taken out of service or covered or enclosed within six (6) months from the date of this variance determination letter, consistent with the six-month timeframe set forth in Section 6.0(3) of the Bulk Material Regulations.

With respect to KCBX's request to extend the time for covering 26 currently uncovered conveyors at the KCBX North and South Terminals, a variance is granted extending the time to cover to March 31, 2015. As explained below, CDPH finds that the additional time, which is approximately four months from the issuance of this variance determination, will result in

minimal adverse impacts, in that the extension period occurs over the cold winter months when the neighboring community is likely to be less affected than during warmer seasons.

2. Pile Height Limit: For the reasons set forth below, CDPH finds that KCBX has failed to meet the requirements of Sections 8.0(2) and 8.0(3)(a) of the Bulk Material Regulations for issuance of a variance allowing KCBX to maintain bulk material piles up to 45 ft. in height, and the variance request is therefore denied. As with CDPH's decision regarding the 8 North Terminal conveyors, the basis for this determination includes, but is not limited to, CDPH's finding that KCBX has not demonstrated that issuance of the variance will not create a public nuisance or adversely impact the surrounding area, including previously referenced issues relating to soil sampling, electron microscopy results, and gaps in air monitoring coverage of the nearest residences. Notably, the City's expert consultant has also determined that emissions from bulk material piles will increase with increased height. This analysis, combined with deficiencies identified in KCBX's supporting materials, leads CDPH to conclude that KCBX has not established that there will be no adverse impact from 45 ft. high piles. Moreover, KCBX has not provided a date certain by which the piles will be enclosed. Accordingly, all bulk material piles at the facility must be maintained at no more than 30 ft. in height within ninety (90) days from the date of this variance determination letter, consistent with the 90-day timeframe set forth in Section 6.0(2) of the Bulk Material Regulations.

3. Dust Suppressant System – Freezing Weather Operations: As set forth below, CDPH finds that any adverse impacts resulting from the suspension of dust suppressant application during freezing weather can be minimized with the addition of certain reasonable conditions. Therefore, CDPH grants KCBX's variance request regarding dust suppression system operation during freezing weather, subject to the following conditions pursuant to Section 8.0(3)(c): KCBX must monitor weather forecasts and apply chemical stabilizers before temperatures drop to sub-25 degrees Fahrenheit preventing their application; refuse to accept any loads of material that are not moist as defined in the Bulk Material Regulations; monitor for visible dust during freezing weather operations; and, in the event visible dust is detected and neither water nor chemical stabilizers can be applied due to freezing temperatures, immediately shut down such operations unless dust can be effectively suppressed in another manner. If the Commissioner finds that operation of the facility under this variance creates a public nuisance or

otherwise adversely impacts the surrounding area, surrounding environment, or surrounding property uses, this variance will be revoked.

4. Dust Suppressant System – Suspension of Activities During Dust Suppressant System Maintenance or Other Inoperable Circumstances: As set forth below, CDPH finds that dust suppressant activities during dust suppressant system maintenance or other inoperable circumstances as described by KCBX in its variance application are consistent with the requirements of the Bulk Material Regulations, and that a variance is therefore not required for such operations.

5. Runoff Management: As set forth below, CDPH finds that KCBX’s description of relevant operations and management in this regard will meet the requirements of Sections 8.0(2) and 8.0(3)(a) of the Bulk Material Regulations for issuance of a variance, and the variance request is therefore granted, on the condition, pursuant to Section 8.0(3)(c), that runoff at the KCBX North and South Terminals is managed to ensure that water pooling in ruts created by heavy equipment is temporary and that KCBX ensures that no runoff enters the Calumet River.

DETAILED DISCUSSION

I. Requirements for Issuance of a Variance

Under Section 8.0 of the Bulk Material Regulations, the burden of proof is upon the applicant for the variance to demonstrate that issuance of the requested variance will not create a public nuisance or adversely impact the surrounding area, the surrounding environment, or surrounding property uses. In the event that the applicant does not meet this burden, the variance request will be denied. Pursuant to Section 8.0(2), a variance request must be in writing and must set forth, in detail, all of the following (in pertinent part):¹

- a) A statement identifying the regulation or requirement from which the variance is requested;
- b) A description of the process or activity for which the variance is requested, including pertinent data on location, size, and the population

¹Because the variance requests under review do not involve a request for an extension of time for full enclosure, requirement 8.0(2)(i) is not relevant to this discussion, and is therefore omitted.

and geographic area affected by, or potentially affected by, the process or activity;

- c) The quantity and types of materials used in the process or activity in connection with which the variance is requested, as appropriate;
- d) A demonstration that issuance of the variance will not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses;
- e) A statement explaining:
 - i. Why compliance with the regulations imposes an arbitrary or unreasonable hardship;
 - ii. Why compliance cannot be accomplished during the required timeframe due to events beyond the Facility Owner or Operator's control such as permitting delays or natural disasters; or
 - iii. Why the proposed alternative measure is preferable.
- f) A description of the proposed methods to achieve compliance with the regulations and a timetable for achieving that compliance, if applicable;
- g) A discussion of alternate methods of compliance and of the factors influencing the choice of applying for a variance;
- h) A statement regarding the person's current status as related to the subject matter of the variance request[.]

In addition, Section 8.0(3) of the Bulk Material Regulations sets forth the criteria for reviewing applications:

- a) In determining whether to grant a variance, the Commissioner [of CDPH] will consider public comments received pursuant to 8.0(4) and will evaluate the information provided in the application to meet the requirements of 8.0(2). Particular consideration will be given to the following information:
 - i. Inclusion of a definite compliance program;
 - ii. Evaluation of all reasonable alternatives for compliance;
 - iii. Demonstration that any adverse impacts will be minimal.
- b) The Commissioner may deny the variance if the application for the variance is incomplete or if the application is outside the scope of relief provided by

variances.

- c) The Commissioner may grant a variance in whole or in part, and may attach reasonable conditions to the variance to ensure minimization of any adverse impacts.
- d) Issuance of a variance is at the sole discretion of the Commissioner. A variance may be revoked at any time if the Commissioner finds that operation of the Facility is creating a public nuisance or otherwise adversely impacting the surrounding area, surrounding environment, or surrounding property uses.

II. Variance Process and Public Comments

In addition to the requirement that the Commissioner of CDPH (“Commissioner”) consider public comments, as set forth in Section 8.0(3)(a) of the Bulk Material Regulations, Section 8.0(5) also provides that the Commissioner will not grant any variance until members of the public have had an opportunity to submit written comments on the variance application. This section further provides that public notice will be provided by publication in a newspaper of general circulation published within the City and by publication on the City’s website, and that the Commissioner will accept written comments for a period of not less than thirty (30) days from the date of the notice.

On June 17, 2014, public notice of KCBX’s variance request was provided by publication in the Chicago Sun-Times and on the City’s website at www.cityofchicago.org/environmentalrules. This notice stated that, to be considered, written comments must be received by CDPH on or before July 17, 2014. On July 16, 2014, a subsequent public notice was published in the same manner, notifying the public that the comment period had been extended upon request of members of the public. The new deadline for public comments was September 2, 2014.

During the public comment period, CDPH received twelve written submissions from the public, all of which are posted on the same website referenced above. Two of these submissions consisted of collections of signed form letters generally opposing the variance request. One collection contained twenty (20) signed form letters, and the other collection contained 17 signed form letters. In addition to the form letters, five separate submissions also contained a general objection to the variance request.

Another letter expressed specific opposition to a variance from runoff and grading requirements, citing a lawsuit filed by the Illinois Attorney General which alleged water pollution and illegal dumping violations because the facility's design was unable to prevent petcoke and coal runoff from entering the Calumet River. This letter raised a concern about the potential for water pollution through runoff from the site if pooling of water were to be allowed.

Another opposition letter was submitted jointly by the Natural Resources Defense Council ("NRDC") and a number of other environmental and public health advocacy non-governmental organizations and community groups (hereafter collectively referred to as "NRDC *et al.*"). This letter raised specific objections in some detail and will be discussed more fully below.

Finally, three of the written comments contained general support for KCBX's variance request, expressing the sentiment that KCBX required the requested variances in order to be able to continue conducting business while working towards enclosure of all petcoke and coal materials as required by the regulations.

With regard to the comment letter from NRDC *et al.*, KCBX requested an opportunity to submit a written response. This response was submitted on September 26, 2014 and is also posted on the City's website referenced above.

Notably, the letter from NRDC *et al.* included comments on the Fugitive Dust Plan and the Enclosure Plan that KCBX submitted to CDPH on June 9, 2014. These plans are still under review by CDPH and are not addressed in this response to the variance request. Additionally, the regulations do not provide for a public comment process regarding these plans. Therefore, this determination does not address those comments.

As to the variance application, NRDC *et al.* noted a general objection to the inclusion of a variance provision in the Bulk Material Regulations, but also stated that KCBX's variance requests should be denied 1) "because they are incomplete" and 2) "because KCBX has not shown that the exemptions it seeks will not result in adverse community impacts."

With regard to incompleteness, NRDC *et al.* cited the variance criteria set forth in the Bulk Material Regulations and stated that KCBX had failed to include the requisite detail to support the variance requests, including specific information on the quantity and type of materials affected by the variance requests and specific information about KCBX's assertion of hardship.

With regard to adverse community impacts, NRDC *et al.* raised a number of objections to the soil and surface sampling analyses and the air quality modeling analysis that KCBX submitted in support of its application. They also cited the June 3, 2014 Notice of Violation issued by the U.S. Environmental Protection Agency to KCBX based on the emission of PM10 into the air in violation of the Clean Air Act. Further, with each variance requested, NRDC *et al.* argued that KCBX did not demonstrate that there would be no adverse impacts on the community from dust emissions caused by KCBX's existing operations.

In response to the comments from NRDC *et al.*, KCBX asserted that it did, in fact, meet the variance application criteria set forth in the Bulk Material Regulations and that it did demonstrate that granting of the variances would not adversely impact the surrounding area. In addition to the previously-discussed sampling and modeling analyses, KCBX pointed to the results of fence line air monitoring data that it has been collecting, as well as the results of a furnace filter analysis that had been conducted after the variance request was submitted.

In addition to receiving written comments, the City met with interested parties upon request. On June 10, 2014, City representatives met with representatives of KCBX to hear KCBX's presentation of their variance request. On June 30, 2014, representatives of the City met with representatives of NRDC and the Southeast Environmental Task Force to hear a presentation of some of the concerns that were ultimately expressed in the written comments submitted by NRDC *et al.*

III. Technical Review

For technical assistance in reviewing and analyzing KCBX's variance application, the City retained the environmental consulting company CDM Smith, Inc. ("CDM Smith"). A report of CDM Smith's analyses in the form of a letter to CDPH, and supporting technical memoranda, are attached hereto as Appendices 1 through 5.

IV. Variance Requests and Determinations Detailed Analysis

1. Conveyors.

A. Detailed Conveyor Variance Request: KCBX requests CDPH to grant a variance from Sections 3.0(6) and 6.0(3) of the Bulk Material Regulations to allow KCBX to not cover 8 of its fixed conveyors at the KCBX North Terminal and to extend the time to cover 26 of the conveyors at the KCBX North and South Terminals to March 31, 2015. As more fully set forth

in KCBX's June 9, 2014 variance application and supplemental and supporting materials, KCBX states that compliance with the regulations with respect to coverage of the 8 conveyors imposes an arbitrary and unreasonable hardship. KCBX states that, "[t]he air monitoring and soil and surface data demonstrate that the Facility's dust suppression system is effective, and that the Facility does not adversely affect the surrounding area." June 9, 2014 KCBX Variance Petition, p. 20. In addition, KCBX states that because KCBX plans to transition its bulk material handling to the South Terminal, after that time, those conveyors would not be used, "[t]hus, covering these conveyors would provide little to no protection from potential fugitive dust emission." June 9, 2014 KCBX Variance Petition, p. 20. KCBX states that, "[r]equiring KCBX to incur the costs to comply in these circumstances is unnecessary, arbitrary, and unreasonable. Covering all of the conveyors, including the Highline Conveyor which was not designed to support the weight of additional covering, would be prohibitively expensive. Initial estimates for covering these conveyor systems and the Highline Conveyor are well over \$1 million, and due to engineering, permitting, and construction required, would take over one year to complete. In all 8 cases, these costs are unreasonable, in light of the effectiveness of the dust suppression system that is already in place, and the long term plans to halt bulk material handling at the North Terminal." June 9, 2014 KCBX Variance Petition, pp. 20-21.

With respect to coverage of the 8 conveyors, KCBX states that, "[g]ranted KCBX a variance from Section 3.0(6) as to the 8 conveyors at the North Terminal would not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses. All 8 of the conveyors at issue use spray bars to add water to material being transferred. Like all conveyors at the Facility, operators monitor these conveyors when they are in operation and respond to fugitive dust by adding water via truck, choke feeding material, activating water cannons in the area where the conveyor is operating, activating additional spray bars, or even shutting the conveyors down if necessary. Because of KCBX's existing dust suppression techniques, use of these conveyors without covers would not result in an increased threat of emissions, and would not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses." June 9, 2014 KCBX Variance Petition, pp. 19-20.

With respect to the extension of time in which to cover 26 conveyors that KCBX plans to cover, KCBX states that the 6-month timeframe set forth in section 6.0(2) imposes an arbitrary

and unreasonable hardship. KCBX states that, “[t]he 26 conveyors at issue were not designed to have covers. Rather, KCBX would have to have the covers custom-designed and manufactured, as well as modify the conveyors in order to install supports for the covers. For safety purposes, once KCBX has received the covers at the Facility, it cannot install the covers while the conveyors are in operation. It is estimated that it would take approximately 10 to 12 weeks of installation of the custom covers from the time the covers are ordered. If additional support or structural engineering is required for the conveyors that work would extend the time required to complete installation of the custom covers. To meet the obligations of KCBX’s current contracts, all conveyors must be kept in service through October 31, 2014. So long as the design, manufacturing and structural issues have been resolved at this time, KCBX will endeavor to install the covers between November 1, 2014 and March 31, 2015, when activity at the Facility is reduced due to the freezing of the Calumet River and Great Lakes.” June 9, 2014 KCBX Variance Petition, p. 21.

B. Detailed Analysis of Variance Request:

- i. No Demonstration of No Adverse Impact. Section 8.0(2)(d) requires a demonstration that issuance of the variance will not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property use. For its request regarding leaving 8 KCBX North Terminal conveyors uncovered, KCBX describes the use of spray bars and other dust suppression techniques to reduce fugitive dust from conveyor operations, and states that the existing dust suppression techniques would ensure that the use of these conveyors without covers would not adversely impact the surrounding area. However, as described below, the effectiveness of the dust suppression system has not been demonstrated. Further, KCBX states that covering the conveyors would provide little or no protection from potential fugitive dust emissions. In fact, covering conveyors does provide a means of dust control. In a report cited by CDM Smith in their technical analysis letter, attached as Appendix 1, it was found that covering conveyors carrying material at iron and steel plants offered 70% to 99% emissions control efficiency. Moreover, covering the conveyors would certainly provide further protection during times when the current measures cannot operate, such as when temperatures are below 25° F.

While dust suppression techniques reduce fugitive dust emissions from conveyors, KCBX's submittals fail to demonstrate that there will be no creation of a public nuisance or adverse impact, as required by the Bulk Material Regulations. What is required for the variance request is a demonstration that the operation of these 8 conveyors will not contribute to public nuisance or adverse impacts in the future. Since quantities of material may change with time (and have not been specified, *see* Section 8.0(2)(c)), the demonstration must show that even if past operations did not contribute to public nuisance or adverse impact, the same would apply in the future. Such demonstration requires that specifications be provided for operator actions, the conditions under which the conveyors would be shut down, and demonstration that operation up to such conditions does not create a public nuisance or adverse impact.

- ii. Electron Microscopy Indicates the Presence of Petcoke. In its variance application and supporting materials, KCBX states that soil and surface sampling in the area of the facility confirms that the facility does not adversely impact the surrounding area, surrounding environment, or surrounding property uses as it is currently operated. However, as explained in a separate technical memorandum by CDM Smith, attached as Appendix 2, KCBX's sampling results are not dispositive.

KCBX also offers modeling analyses to support its contention that dust emissions from its facilities are acceptably small. However, as explained by CDM Smith in the technical memorandum attached as Appendix 3, the premise of the modeling study is not a valid means of assessing potential off-site impacts from the facility. KCBX's consultant, Sonoma Technology, Inc. ("STi"), attempted to reproduce the conditions and specific emission sources that led to observed, elevated PM₁₀ concentrations on certain given days at downwind monitoring locations. However, STi cannot be certain that it has identified the specific sources of dust emissions that caused the high PM₁₀ concentrations at the monitoring location. The actual distance that the responsible emission source(s) was from the monitor is not precisely known.

Importantly, modeling will predict the same concentration at the monitoring location from a small emission source close by or a much larger emission source located some distance away. For example, if the elevated dust concentrations were caused by bulldozing activities, the impacts could have been caused by a limited level of bulldozing

close to the monitor, or a substantially larger amount of bulldozing a considerable distance away (or any other combination of sources at uncertain proximities).

Recognizing this impossibility of isolating and identifying the precise emission sources, one cannot “validate” a modeling scenario that can be confidently used to model/extrapolate PM₁₀ impacts at residential locations (even assuming that only residential locations are relevant).

Contrary to KCBX’s assertions, results of electron microscopy analyses of off-site dust performed by CDM Smith indicate the likely presence of petcoke particles.

Comparing samples of petcoke collected from KCBX’s facility with samples of dust collected from sidewalks in neighborhood locations to the east of the South Terminal, CDM Smith identified high sulfur/low accessory element carbon rich grains consistent with petcoke in each of three dust samples collected. These results are described in detail in a separate technical memorandum by CDM Smith, attached as Appendix 4. Therefore, this indicates that KCBX’s operations are currently impacting surrounding neighborhoods, despite the dust suppression measures implemented by KCBX and air monitoring data that KCBX argues indicates no impacts.

- iii. Dust Monitors Do Not Provide Full Coverage of Potential Off-Site Fugitive Dust Impacts. KCBX points to the peripheral fence line monitoring program as the principal means of justifying each variance request. As described in the technical analysis letter from CDM Smith, attached as Appendix 1, each of the present monitoring programs for both the North and South Terminals lacks a monitoring station directly between the facility and the closest residential area. At present, it is possible for dust releases from certain portions of the KCBX property to migrate off-site toward residential areas and not be detected by any of the existing monitors.
- iv. Population and Geographic Area Are Not Described. Section 8.0(2)(b) also requires that the population and geographic area affected by, or potentially affected by, the process or activity for which the variance is requested be described. KBCX states that no population or geographic area would be affected by a grant of this variance request. This is not responsive to the requirement. The requirement does not apply to the population and geographic area affected by grant of the variance, it applies to the population and

geographic area affected by the *process or activity for which the variance is requested*.
Section 8.0(2)(b) therefore has not been met.

- v. Quantity of Materials is Not Detailed. Section 8.0(2)(c) states that the quantity and types of materials used in the process or activity for which the variance is requested must be set forth in detail. This requires KCBX to identify the quantities of material (and specific types of material) handled by the conveyors for which the variance is requested. KCBX does not identify the quantities handled by the affected conveyors; thus, it is not clear whether current operations and emissions are indicative of future operations and emissions.
- vi. Evidence of Hardship Relating to 8 Conveyors. KCBX further does not explain why the requirement for covers on the conveyors imposes an arbitrary or unreasonable hardship. KCBX states that initial estimates for the cost of covering these 8 conveyor systems would be well over \$1 million and would take over one year to complete. No details of this cost estimate are provided, however, nor is there any explanation of why this cost would impose an “arbitrary or unreasonable hardship” beyond the statement that “these costs are unreasonable, in light of the effectiveness of the dust suppression system that is already in place.”
- vii. No Specific Time Limit for Decommissioning of 8 Conveyors. KCBX states that the variance is sought “until its bulk material handling activities are transitioned to the South Terminal.” No specific time limit is included in the variance request. Nor did KCBX’s proposed Enclosure Plan, submitted to CDPH on June 9, 2014, specify a date certain that materials would no longer be handled outdoors. Furthermore, while the Bulk Material Regulations require full enclosure within two years from submission of the Enclosure Plan, KCBX’s submissions indicated that they would need at least two additional years. Thus, if these conveyors are not covered, it is unknown how long they would remain uncovered.
- viii. Time Extension for Coverage of 26 Conveyors. The Bulk Material Regulations provided a six-month timeframe for the covering or enclosure of conveyors, resulting in a deadline of September 13, 2014. As described above, KCBX stated that the existing conveyors were not designed to have covers and, therefore, covers would have to be custom-designed and manufactured and the conveyors would have to be modified in order to

install supports for the covers. They further noted that, following the design, manufacturing, and delivery period, the conveyors would need to be taken out of service during the 10-12 week installation period. While KCBX has not demonstrated that uncovered conveyors will not cause adverse impacts (*see* discussion above), CDPH finds that, as a practical matter, such impacts are likely to be minimal as the extended time period occurs over the winter months when operations are reduced and neighboring communities are less likely to be outside. (*See* discussion of Freezing Weather Operations in Section IV(3) below.)

C. CDPH Determination: For the reasons set forth above, with respect to KCBX's request to leave 8 conveyors at the KCBX North Terminal uncovered pending transitioning of bulk materials to the KCBX South Terminal, CDPH finds that KCBX has failed to meet the requirements set forth in Sections 8.0(2) and 8.0(3)(a) of the Bulk Material Regulations for issuance of a variance, and the variance request is therefore denied. Accordingly, the 8 conveyors that are the subject of this variance request must be taken out of service or covered or enclosed within six (6) months from the date of this variance determination letter, consistent with the six-month timeframe set forth in Section 6.0(3) of the Bulk Material Regulations. With respect to KCBX's request to extend the time for covering 26 currently uncovered conveyors at the KCBX South Terminal, a variance is granted extending the time to cover to March 31, 2015.

2. Pile Height.

A. Detailed Pile Height Variance Request: KCBX requests CDPH to grant a variance from Section 5.0(2) of the Bulk Material Regulations, which requires that outdoor piles be no higher than 30 ft., specifically to allow KCBX to maintain outdoor piles up to 45 ft. high until the full enclosure of the materials. KCBX states that it has engaged a third-party, multi-disciplinary engineering firm to assist it in evaluating the feasibility of the 30 ft. pile height limit required by section 5.0(2), and that the engineering firm analyzed customer obligations, usable pad space and the management of pile logistics at the facility (including required customer product segregation), and determined that KCBX cannot meet existing customer obligations with 30 foot pile heights. June 9, 2014 KCBX Variance Petition, p. 25. KCBX states that it "has contracts in place with customers that require KCBX to accept specific amounts of Product, others that require segregation, and still others that require blending of different Products. All of these factors impact the number of piles required for any one customer. For KCBX, this means

that the number of piles of Product at the Facility can vary significantly based on customer needs. If the Department requires KCBX to reduce its pile height to 30 feet, KCBX would be unable to meet its contractual obligations. Further, KCBX's business requires it to have physical space to stage and transload Product. It cannot do so with 30 foot pile limitations." June 9, 2014 KCBX Variance Petition, p. 25. As a compromise between KCBX's self-imposed 60 foot height limit and the Bulk Material Regulation's 30 foot limit, KCBX proposes a 45 foot height limit, which it believes would allow it to meet customer obligations and satisfy the intent of the regulations. June 9, 2014 KCBX Variance Petition, p. 25.

KCBX states that granting a variance as to pile height would not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses. If the variance is granted, KCBX states that it will continue to apply water or chemical stabilizer to each Product pile no greater than 45 feet utilizing dust suppression systems that are effectively designed for pile heights of up to 60 feet. "Operators would continue to monitor the piles and respond to fugitive dust by using KCBX's dust suppression system and best management practices Because of KCBX's existing dust suppression techniques, pile heights up to 45 feet would not result in an increased threat of fugitive dust emissions and would not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses." June 9, 2014 KCBX Variance Petition, p. 26.

KCBX states that compliance with Section 5.0(2) imposes an arbitrary and unreasonable hardship. KCBX states that, "[t]he air monitoring and soil and surface data demonstrate that the Facility's dust suppression system is working effectively, and that the Facility does not adversely affect the surrounding area. Thus, changing the maximum pile height allowed at the Facility would provide little to no protection from potential fugitive dust emissions. Requiring KCBX to limit the volume of Product that it accepts from customers to maintain pile heights no greater than 30 feet is arbitrary and unreasonable. KCBX cannot meet the obligations of its current contracts without the ability to at least manage pile heights no greater than 45 feet. Requiring KCBX to reduce its piles to 30 feet would cause economic hardship and threaten its existing customer obligations." June 9, 2014 KCBX Variance Petition, p. 27.

B. Detailed Analysis of Variance Request:

- i. Increased Emissions from Higher Piles. Based on CDM Smith's analysis, emissions, and consequently impacts to ambient air, will increase as pile height increases. Higher

emissions from higher piles can be expected due to the fact that wind speeds increase with height in the atmosphere, as set forth in detail in the technical memorandum attached as Appendix 5. This is a different conclusion than that reached in the supplemental modeling study developed by KCBX's consultant, STi. The STi study, which models PM₁₀ concentrations due to emissions from pile heights of 30 feet and 45 feet, finds no substantial differences in impacts between the two pile height scenarios, but the STi study assumes exactly the same emissions in each scenario and does not account for the potentially larger emissions from the higher pile scenario. Moreover, it is stated in the STi report that windblown erosion from stockpiles accounted for only 7% of the monthly total emissions, although no details are provided of the methodologies used to reach this conclusion. However, the other sources of dust are also sensitive to wind speed. Insofar as those sources are located at elevations that depend on pile height (*e.g.*, all load-in/load-out operations), higher storage piles will result in other sources being at higher elevation, subject to higher wind speeds, and producing higher dust emissions. Thus, pursuant to Section 8.0(2)(d), KCBX has not demonstrated that issuance of the requested variance will not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses, and pursuant to Section 8.0(3)(a)(iii), has not demonstrated that any adverse impacts will be minimal.

- ii. KCBX Has Not Met Burden of Demonstrating Dust Suppression System Will Control Dust from Proposed 45 ft. Piles. As referenced above, KCBX pointed to soil and surface sampling in the area of the facility to argue that the facility does not adversely impact the surrounding area, surrounding environment, or surrounding property uses as it is currently operated. However, as explained in Appendices 1 and 2, KCBX's sampling results are not dispositive. Soil and surfaces do not represent the entirety of the surrounding environment, and a great number of years of accumulation may be required for petcoke to become detectable in a soil sample. Moreover, as discussed previously, contrary to KCBX's statements and the results of its soil sampling, CDM Smith's electron microscopy study demonstrates that petcoke has migrated from the site. *See* Appendix 4. Finally, as also discussed previously, CDM Smith's analysis indicates that there are gaps in the air monitor coverage of potential impacts on the residences nearest to the facilities. *See* Appendix 1.

- iii. Location, Population, and Geographic Area Are Not Described. KCBX's response is non-responsive to the requirement of Section 8.0(2)(b) regarding information on the location, size, and the population and geographic area affected by, or potentially affected by, the process or activity. KCBX provides no description of the process or activity for which the variance is requested and, in particular, provides no discussion on the location and size of the population or geographic area affected by, or potentially affected by, the process or activity. Depending on criteria used to identify potentially affected locations, changes in the allowed pile height could result in changes in the location and size of the population and geographic area affected, or potentially affected by KCBX processes and activities.
- iv. No Demonstration of Arbitrary or Unreasonable Hardship. Pursuant to Section 8.0(2)(e), KCBX states that compliance with the pile height requirements of the regulations imposes an arbitrary and unreasonable hardship, providing few details. These assertions are not sufficient to demonstrate the existence of an arbitrary or unreasonable hardship.
- v. No Timeframe for Achieving Compliance. KCBX's response to Section 8.0(2)(f) does not specify how long 45 foot high piles would remain outdoors. As mentioned above, KCBX's proposed Enclosure Plan, submitted to CDPH on June 9, 2014, did not specify a date certain that materials would no longer be handled outdoors. While the Bulk Material Regulations require full enclosure within two years from submission of the Enclosure Plan, KCBX's submissions indicated that they would need at least two additional years. Thus, it is unclear how long piles would remain at 45 feet high.
- vi. Limited Discussion of Alternate Methods of Compliance. Regarding Section 8.0(2)(g), KCBX provides only a limited discussion of alternate methods of compliance, stating that the only alternative method to comply with the pile height limitation would be to turn away customers who have already entered into contracts with KCBX.

C. CDPH Determination: For the reasons set forth above, CDPH finds that KCBX has failed to meet the requirements of Sections 8.0(2) and 8.0(3)(a) of the Bulk Material Regulations for issuance of a variance allowing KCBX to maintain bulk material piles up to 45 ft., and the variance request is therefore denied. Accordingly, any bulk material piles at the facility that are above 30 ft. in height must be reduced to no more than 30 ft. within ninety (90)

days from the date of this variance determination letter, consistent with the 90-day timeframe set forth in Section 6.0(2) of the Bulk Material Regulations.

3. **Dust Suppressant System – Freezing Weather Operations.**

A. Detailed Freezing Weather Operations Variance Request: KCBX requests CDPH to grant a variance from Section 5.0(5)(b) of the Bulk Material Regulations, which requires facilities to apply chemical stabilizers and/or maintain and operate water spray bars, a misting system, water spray systems and/or water trucks to prevent fugitive dust emissions, and that when temperatures fall below freezing, the facility must use water heating systems or chemical stabilizers to ensure that dust suppression continues. Specifically, KCBX requests that this requirement not apply when temperatures fall below 25 degrees Fahrenheit. KCBX states that it “currently uses water trucks to apply water and chemical stabilizers (which are water based) and uses pole-mounted water cannons to apply water to address the potential for emissions of fugitive dust from the Product piles. When temperatures fall below 32 degrees Fahrenheit for extended periods of time, KCBX applies chemical stabilizers to piles before temperatures fall. These chemical stabilizers encrust the Product and are effective in addressing potential fugitive dust emissions for up to sixty days. Also, because of the use of heated buildings for the storage of water trucks at the North and South Terminals, and a heated control valve room at the South site, KCBX can continue to apply water and chemical stabilizers down to 25 degrees.” June 9, 2014 KCBX Variance Petition, pp. 30-31. However, KCBX states that “below 25 degrees Fahrenheit, ice begins to accumulate on the spray nozzles, causing the water spray to become ineffective, piping and pumps to clog with ice, and eventually causing damage to the piping and equipment.” June 9, 2014 KCBX Variance Petition, p. 31. KCBX seeks a variance “to the extent that the Facility transloads Product when the temperature is below 25 degrees Fahrenheit and the Facility is not able to apply water or chemical stabilizer to the Product. KCBX would apply water or chemical stabilizer to that Product at the Facility when temperatures rise above 25 degrees Fahrenheit. Further, KCBX would refuse to transload any product during such conditions that does not meet the definition of ‘Moist’ under the Rules.” June 9, 2014 KCBX Variance Petition, p. 31.

B. Analysis of Variance Request:

- i. Minimization of Adverse Impacts. Section 8.0(2)(d) of the Bulk Material Regulations requires a demonstration that issuance of the variance will not create a public nuisance or

adversely impact the surrounding area, environment, or property uses. KCBX's application includes a statement that there will not be adverse impacts from the absence of dust suppressants during winter months. June 9, 2014 KCBX Variance Petition, p. 32. Clearly, a statement is not a demonstration. Moreover, as discussed above, CDM Smith's analyses indicate that KCBX has not established that current operations are not impacting the neighborhood. However, KCBX notes that their operations generally slow down during winter months. Thus, any adverse impacts are likely to be minimized during periods of freezing conditions because there is a reduction in the amount of transloading activity at the facility due to the freezing of the Calumet River and the Great Lakes. Furthermore, as a practical matter there is a reduction in exposure to outdoor air impacts during the winter because of the general reduction in outdoor activity for many residents and the likelihood that windows will be closed during the winter. Moreover, even when water and chemical stabilizers cannot be used, the facility must still ensure that there will be no fugitive dust in violation of Section 3.0(2) of the Bulk Material Regulations.

- ii. Alternative Compliance Program. While KCBX states that it cannot apply water or chemical stabilizers when temperatures are below 25 degrees due to safety and operational concerns, the variance request did describe other measures to control dust. Notably, as discussed by CDM Smith in Appendix 1, it is not clear that KCBX fully explored other methods of dust suppression used in other contexts, such as at coal-fired power plants. However, the measures outlined by KCBX include some practical best management practices such as 1) planning and preparing for cold weather operations by monitoring daily forecasts, 2) applying stabilizers to encrust piles before temperatures drop, and 3) rejecting loads of material that are not "moist" as defined in the Bulk Material Regulations. Further, KCBX notes that, should facility operators observe dust during pile disturbance, they can reduce or cease such disturbance.

C. CDPH Determination: Based on considerations set forth above, CDPH conditionally grants KCBX's variance request regarding dust suppression system operation during freezing weather. CDPH hereby grants this variance subject to the following conditions pursuant to Section 8.0(3)(c):

- 1) Beginning November 1st and continuing through March 31st each year that bulk materials are stored or transloaded outdoors, KCBX must monitor weather forecasts on a daily

basis and apply chemical stabilizers to bulk material piles before temperatures drop to sub-25 degrees Fahrenheit preventing their application;

2) Beginning November 1st and continuing through March 31st each year that bulk materials are stored or transloaded outdoors, KCBX must assign on-site personnel to monitor for visible dust at all transfer points during freezing weather operations, and in the event visible dust is observed, immediately shut down such operations that are causing the visible dust, unless dust can be effectively suppressed in another manner in accordance with the approved Fugitive Dust Control Plan; and

3) Beginning November 1st and continuing through March 31st each year that bulk materials are stored or transloaded outdoors, KCBX must refuse to accept any loads of material that are not moist as defined in the Bulk Material Regulations.

Finally, in accordance with Section 8.0(3)(d) of the Bulk Material Regulations, CDPH reserves the right to revoke this variance if the Commissioner finds that operation of the facility is creating a public nuisance or otherwise adversely impacting the surrounding area, surrounding environment, or surrounding property uses.

4. Dust Suppressant System – Suspension of Activities During Dust Suppression System Maintenance or Other Inoperable Circumstances.

A. Detailed Inoperable Circumstances Variance Request: KCBX requests CDPH to grant a variance from Section 5.0(5) of the Bulk Material Regulations, which states that if any part of the dust suppression system is undergoing maintenance or is otherwise inoperable, the facility must suspend disturbance of bulk material piles that would be controlled by the inoperable portion of the dust control system, until it is functioning again. Specifically, KCBX requests that this requirement not apply, so long as KCBX uses a different method to apply dust suppression in place of the part that is inoperable, unless weather conditions and/or product moisture mean that additional dust suppressant is not necessary, and KCBX monitors the activity and responds to visible dust emissions, shutting down the activity if necessary.

In its petition for variance, KCBX states that compliance with the requirements of Section 5.0(5)(c) would “prevent KCBX from handling Product if a piece of dust suppression equipment became inoperable, even if KCBX was applying the same amount or more water to the Product by using a water truck, or if it was raining at the time or had been raining in the preceding days, or if the Product was otherwise moist.” June 9, 2014 KCBX Variance Petition,

p. 37. KCBX argues that under such conditions, “it is not reasonable to prevent KCBX from conducting operations, as there is no increased risk of dust emissions. Further, preventing operations would cause KCBX and its customers operational difficulties and force them to incur unnecessary costs.” June 9, 2014 KCBX Variance Petition, p. 37.

B. CDPH Determination: CDPH finds that the dust suppression activities during dust suppression system maintenance or other inoperable circumstances as described by KCBX in its variance application are consistent with the requirements of the Bulk Material Regulations, and that a variance is therefore not required for such operations. (Notably, Section 5.0(5) in the Bulk Material Regulations lists multiple forms of dust suppressant delivery, including the use of water trucks.)

5. **Runoff Management.**

A. Detailed Runoff Management Variance Request: KCBX requests CDPH to grant a variance from Section 5.0(6)(d) of the Bulk Material Regulations, which requires the facility owner to maintain stormwater management and grading to ensure proper drainage and to prevent pooling of water. Specifically, KCBX seeks a variance to allow temporary pooling of water in ruts created by heavy equipment on the material storage pads. KCBX states that the “Terminals are not graded so as ‘to prevent the pooling of water.’ When KCBX uses heavy equipment to move Product at the facility, the equipment can create depressions and ruts in the pads that may temporarily collect water.” June 9, 2014 KCBX Variance request, pp. 39-40. KCBX states that “[i]t is impossible for KCBX to completely smooth out these depressions and ruts in a way that would eliminate any pooling of water—either from stormwater or from water applied to piles to address potential emissions.” June 9, 2014 KCBX Variance Petition, p. 40.

B. Analysis of Variance Request: The purpose of the requirement in Section 5.0(6)(d) is to ensure that the site is properly managed and graded to direct water to an on-site detention pond. The regulation does not directly prohibit water-filled ruts created by vehicles, but the intent is for such ruts to be managed to avoid issues such as track-out.

C. CDPH Determination: CDPH finds that KCBX’s description of relevant operations and management in this regard should meet the requirements of Sections 8.0(2) and 8.0(3)(a) of the Bulk Material Regulations for issuance of a variance, and the variance request is therefore granted pursuant to Section 8.0(3)(c), subject to the following conditions: 1) runoff at the KCBX North and South Terminals must be managed to ensure that water pooling in ruts

created by heavy equipment is temporary, and 2) KCBX ensures that no runoff enters the Calumet River.²

CONCLUSION

CDPH's determinations regarding KCBX's variance requests will be effective as of the date of this letter, and will be posted, along with appendices and supporting materials, on CDPH's website at www.cityofchicago.org/environmentalrules. Please be advised that if KCBX fails to comply with the Bulk Material Regulations within the timeframes provided above, KCBX will be subject to enforcement action including daily fines in the amount of \$1,000 to \$5,000 per violation as provided by Section 11-4-810(a)(7) of the Chicago Municipal Code. Furthermore, CDPH may issue a summary abatement order pursuant to Section 11-4-025(c) of the Chicago Municipal Code, requiring KCBX to correct any violations within a timeframe prescribed by the Commissioner.

Please contact Assistant Commissioner Dave Graham at (312) 745- 4034 if you have any questions regarding the above.

Sincerely,



Bechara Choucair, M.D.
Commissioner

Attachments:

- Appendix 1 – CDM Smith Technical Analysis Letter
- Appendix 2 – CDM Smith Technical Memorandum regarding Soil Sampling
- Appendix 3 – CDM Smith Technical Memorandum regarding Dispersion Modeling
- Appendix 4 – CDM Smith Technical Memorandum regarding Electron Microscopy
- Appendix 5 – CDM Smith Technical Memorandum regarding Pile Height

cc: Mort Ames, DOL

²CDPH did not premise its determination in this regard on the pending lawsuit filed by the Illinois Attorney General which alleged water pollution and illegal dumping violations, cited by commenters and referenced earlier.