October 21, 2016

Mr. Steven Ashenbrucker Wisconsin Department of Natural Resources 875 South 4th Avenue Park Falls, Wisconsin 54552

Subject:

Koppers Inc. Superior, Wisconsin Facility

EPA ID # WID006179493

Dear Mr. Ashenbrucker:

On behalf of Koppers Inc, KU Resources, Inc. is submitting the attached RCRA Subpart W Drip Pad Closure Demonstration Plan (CDP) for your consideration. The attached CDP is being submitted consequent to your July 2, 2013 letter to Ms. Leslie Hyde – Koppers, regarding closure of their drip pad at the subject facility.

Koppers is soliciting your review and approval of the attached CDP, as the next step for Koppers to meet their final obligation at this property, within the context of the site-wide RCRA corrective action being conducted by Beazer. Note that the schedule to implement the CDP may be dependent on the timing of receipt of your approval and the weather, which could delay the work until next spring based on the drip pad coring method proposed.

I will give you a call to discuss any questions you may have within the next week or two. In the meantime, if you should have any questions or comments regarding the attached CDP, please do not hesitate to contact Ms. Linda Paul, Koppers, at 412-227-2434.

Sincerely,

Robert T. Smith, LRS

Senior Environmental Scientist

Attachment

cc: Linda Paul - Koppers

Jane Patarcity - Beazer

RCRA SUBPART W DRIP PAD CLOSURE DEMONSTRATION PLAN KOPPERS INC. SUPERIOR, WISCONSIN U.S. EPA ID NO. WID 006 179 493

Prepared for:
KOPPERS INC.
436 SEVENTH AVENUE
PITTSBURGH, PENNSYLVANIA 15219

Prepared by:
KU RESOURCES, INC.
22 SOUTH LINDEN STREET
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OCTOBER 2016



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1.0 OBJECTIVE

Koppers Inc. (Koppers) is submitting this Closure Demonstration Plan (CDP) to satisfy its obligations for closure of the RCRA Subpart W drip pad at its former wood treating facility located in Superior, Wisconsin. By implementing this CDP, the presence and concentration, or absence, of former wood treating operations-related constituents beneath the drip pad will be assessed to satisfy the remaining concern expressed by the Wisconsin Department of Natural Resources (WDNR) (letter dated July 2, 2013 to Koppers). This approach would also support evaluation as to whether the drip pad solid waste management unit (SWMU 7) has been adequately assessed and if conditions at SWMU 7 are protective of human health and the environment, consistent with the other SWMUs identified and studied as part of the site-wide RCRA Corrective Action program.

The drip pad area was lined with concrete in the late 1970s/early 1980s (Decommissioning Report, Koppers Inc. Superior WI Facility, May 1, 2007). Prior to the installation of concrete, there was no physical barrier for drippage in this area. The drip pad became subject to federal regulation under 40 CFR 265, Subpart W, in the early 1990s and subsequently in the mid-1990s under Chapter NR 656 in Wisconsin (NR 656 was updated to NR 665 during 2006). The CDP is designed to determine: if the concrete drip pad served as an effective barrier to migration of wood treating chemicals to the underlying soils; and if constituents of interest are present in soils beneath the drip pad and at what concentration. Following collection and review of the data, any long-term maintenance requirements or functional uses (ex. cover to prevent direct contact with underlying soils) will be determined.

It should be noted that, as a requirement for RCRA-regulated drip pads, in January 1992 the facility obtained P.E. certification for the, then, newly regulated drip pad; thereafter surface sealed and maintained the drip pad; obtained annual P.E. certifications; and also conducted weekly inspections and made repairs, as needed, beginning in the early 1990s. Contemporaneously, the original drip pad was extended in late 1991.

As an outcome of this CDP, it is anticipated that the drip pad concrete will remain in place to serve one of the following purposes:

- As a cover to preclude potential direct contact exposure, consistent with the site-wide corrective
 action approach for soil should constituents of concern be present above the risk-based
 corrective action levels.
- As a remaining feature for future use should constituents of concern be absent, or present below risk-based corrective action levels.

2.0 INTRODUCTION

This CDP has been developed in response to the WDNR correspondence to Koppers: *Subject: Request for Final Closure Approval of Drip Pad*, July 2, 2013 (Attachment 1). Specifically, the CDP addresses the



WDNR's concern regarding the potential presence and concentration of former wood treating operationsrelated constituents beneath the drip pad.

When the U.S. Environmental Protection Agency (U.S. EPA) developed and promulgated their 40 CFR 265, Subpart W drip pad regulations (analogous Wisconsin NR 665 Subchapter W), they recognized that upon transitioning to a specifically designed and operated regulated RCRA unit, some past contamination could be present beneath the, then, newly regulated drip pads. In the preamble to the December 6, 1990 Final Rule (Federal Register Vol. 55, No. 235, Thursday December 6, 1990, page 50453) the U.S. EPA specifically discussed that past releases may have caused contamination beneath drip pads and that potential cleanup mechanisms under RCRA could be used to address this contamination. The drip pad at the subject facility was identified as a SWMU (a portion of Area F) (June 1988 RCRA Facility Assessment) as a part of the beginning facility assessment under the RCRA corrective action program.

3.0 SUBPART W DRIP PAD INFORMATION

The following drip pad information was used to develop the methods and materials needed to implement an investigation of conditions beneath the drip pad.

3.1 Historical Information

The history of the drip pad had previously been researched and shared with the WDNR in a July 17, 2012 e-mail correspondence from Koppers to the WDNR (Attachment 2, beginning at the bottom of page 1 and continuing onto page 2). In summary:

- Initial operations at the site included the use of an unlined (no concrete) drippage area dating back to the late 1920s (Phase II RFI Report, June 1991).
- An original concrete drip pad was installed adjacent to the treating cylinders in the late 1970s or early 1980s. As a part of this concrete drip pad installation, an unknown amount and depth of soil was removed.
- A concrete drip pad expansion was installed in late 1991 to comply with the, then, new drip pad
 regulations, and to lengthen the original concrete drip pad. A 125-foot extension was installed to
 the existing concrete drip track extending the length by about 20%.
 - Soil was excavated based on visible evidence of site-related constituents. Historical information references memos that indicate approximately 700 cubic yards of soil were removed; but these memos were not located.
 - Beazer collected soil samples in the excavation area from the 0.0- to 1.0-foot depth to provide data on the soils remaining beneath the newly constructed drip track extension.
- The drip pad became subject to federal regulation under 40 CFR 265, Subpart W, in the early 1990s and subsequently in the mid-1990s under Chapter NR 656 in Wisconsin (NR 656 was updated to NR 665 during 2006); noting compliance with regulatory requirements, operation as a



surface sealed drip pad was then required. The drip pad certification report was dated January 1992.

In 2006 - 2007, Koppers Inc. ceased treating operations at the facility and decommissioned the
facility. As part of the facility decommissioning, Koppers cleaned and sampled the drip pad
surface, and collected soil and groundwater samples adjacent to the drip pad. These sampling
results were previously reported to WDNR and the drip pad surface was determined by the
WDNR to be decontaminated.

3.2 Construction Information

A schematic depicting the drip pad construction that is believed to have been developed for the drip pad expansion in 1991 (see Section 3.1) is included as Attachment 3. As depicted, the drip pad expansion appears to be underlain by compacted clay subgrade, approximately 6" of ballast with embedded railroad ties, and anywhere from 13" (center of pad) to 15" (pad edge curb) of concrete.

4.0 CLOSURE DEMONSTRATION PLAN

The following subsections provide a description of the investigation, sampling, and analysis proposed for the drip pad concrete (Section 4.1) and subsoils (Section 4.2). This approach is based on the current understanding of the drip pad construction, as described in Sections 3.1 and 3.2.

Due to the relatively small area of the drip pad, 10 individual locations will be studied by coring the drip pad concrete and underlying soils, observing the concrete and subsoil cores, and collecting subsoil samples for analytical testing. A generalized schematic of the drip pad configuration and the target locations of the cores are shown on Figure 1.

Creosote, and pentachlorophenol and its number 6 fuel oil carrier, are the wood treating constituents that were identified to be associated with the drip pad (SWMU F) (June 14, 1991 Phase II Facility Investigation Report of Findings). In addition, because the site has been studied for decades, the site-related constituents of interest are well documented. Consequently, the subsoil analytical suite will consist of the polynuclear aromatic hydrocarbon (PAHs) and phenolic compounds listed on Table 1. These constituents will be tested by use of U.S. EPA Method 8270, by a Wisconsin state-certified laboratory.

Field methods will include decontamination of sampling equipment between each location and/or sample depth interval to preclude potential cross-contamination. Decontamination will consist of scrubbing with a non-phosphate detergent and potable water rinse. Investigation derived waste will be containerized and managed per applicable regulations.

4.1 Concrete

The following methods and procedures will be used for the drip pad concrete study.



Objectives

- Facilitate access to the subsoils beneath the drip pad.
- Assess the effectiveness of the drip pad as a physical barrier to the migration of residual wood treating solutions through visual inspection of the drip pad concrete.

As discussed in Section 3.1 and referenced in Attachment 2, the drip pad surface had been sufficiently cleaned and rinseate samples collected as a part of the facility decommissioning, as documented in the January 2007 Drip Pad Closure Investigation Report. The drip pad surface was deemed by the WDNR to have achieved the partial closure requirement of decontamination. For purposes of this investigation, the concrete will be visually assessed throughout its thickness to obtain additional information for evaluating its effectiveness as a barrier and for evaluating the concrete as an ongoing cover or cap, or remaining property feature. The following investigation procedures will be implemented.

- The concrete will be cored through its full thickness at 10 representative locations spaced across the drip pad (see Figure 1). If a railroad tie or other obstruction is encountered in the concrete, the core hole will be off-set in order to avoid the obstruction.
- For each concrete core, observations will be recorded and photo-documentation will be collected. The "oil"-based wood treating solutions that were used at the facility should be visually evident if present within the concrete core.
- Underlying drip pad ballast will be moved or removed from the core hole, as needed, to allow access for subsoil sampling.
- At the completion of subsoil sampling (described within the following Section 4.2), the concrete
 core holes will be repaired with hydraulic cement, and surface coating applied to the core hole
 locations.

4.2 Subsoils

The following methods and procedures will be used for the drip pad subsoil study.

Objective

- Assess whether wood treating-related constituents are present in subsoils directly beneath the drip pad.
- Determine whether the concrete drip pad structure is needed to act as an effective cover to preclude direct soil contact.

A maximum depth of ~4 feet below the adjacent ground surface has been selected for the subsoil investigation because past investigations indicated that groundwater in the area of the drip pad is present at ~3 to 4 feet below ground surface and is already known to contain site-related constituents. As a consequence, only unsaturated/vadose zone soils will be collected for this investigation so as not to reflect the known saturated soil/groundwater area-wide impacts. Assessment of this data may be



complicated by site-related constituents contributed by the seasonal rising and falling of the extremely shallow water table and capillary fringe effect.

- At each of the 10 concrete core locations, hand-driven sampling equipment will be used to collect soil samples at the 0-1' interval below the drip pad and any gravel/construction base fill. These subsoil samples will be submitted for analysis.
- The soil bore will be extended to saturated soil or a maximum of 4 feet, photo-documentation will be collected, and the soil bore content will be visually characterized and documented.

5.0 CLOSURE DEMONSTRATION REPORT

All analytical and observational information will be collated into a report. The report will provide a description of the methods and materials used in the investigation, the results, and summary and conclusions. Final disposition of the drip pad concrete within the site-wide RCRA Corrective Action program will also be addressed, as described in the text bullets at the end of Section 1.0.



CERTIFICATION

"I hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance the Rules of Professional Conduct in ch. A-E, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

HAROLD P. MCCJCHEGA

Name

Signature

CHIEF ENGINEEL 5-47245-6

Title and P.E. Number

P.E. Stamp



TABLE



Table 1 List of PAHs and Phenolics

PAHs	Phenolics
Acenaphthene	Pentachlorophenol
Acenaphthylene	2,3,4,6-Tetrachlorophenol
Anthracene	2,3,5,6-Tetrachlorophenol
Benzo(a)anthracene	2,4,6-Trichlorophenol
Benzo(a)pyrene	4-Chloro-3-methylphenol
Benzo(b)fluoranthene	2-Chlorophenol
Benzo(g,h,i)perylene	2,4-Dichlorophenol
Benzo(k)fluoranthene	2,4-Dimethylphenol
Chrysene	2,4-Dinitrophenol
Dibenz(ah)anthracene	2-Methyl-4,6-dinitrophenol
Fluoranthene	2-Nitrophenol
Fluorene	4-Nitrophenol
Indeno(123-cd)pyrene	Phenol
Naphthalene	
Phenanthrene	
Pyrene	

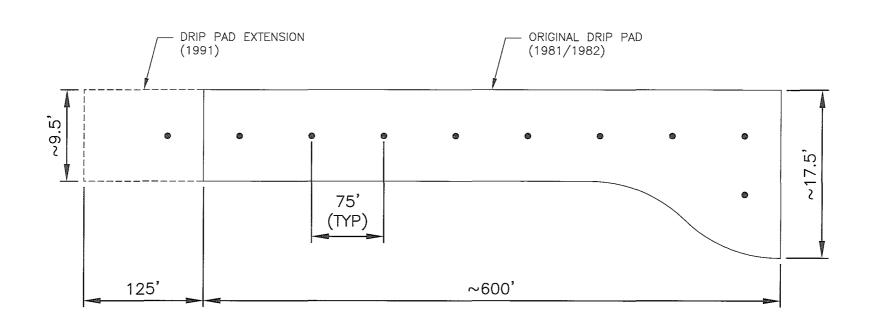


FIGURE



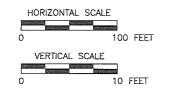
Figure 1 Drip Pad Core Locations





LEGEND

CORING/SAMPLING LOCATIONS



RTS 07/22/2016 APPROVED CHECKED RTS 07/22/2016 DRAWN RAM 07/21/2016 CAD FILE NO. 16261A001 PROJECT NO. KI.16216.SDPC



KU Resources, Inc. 22 South Linden Street Duquesne, PA 15110 412 469.9331 412.469.9336 fax www.kuresources.com

FIGURE 1 DRIP PAD CORE LOCATIONS SUPERIOR FACILITY

TOWN OF SUPERIOR DOUGLAS COUNTY, WISCONSIN

PREPARED FOR KOPPERS INC SUPERIOR, WISCONSIN

ATTACHMENTS

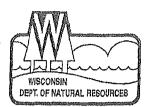


Attachment 1 WDNR correspondence to Koppers; Subject: Request for Final Closure Approval of Drip Pad July 2, 2013



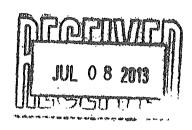
State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
875 South 4th Avenue
Park Falls Wi 64552

Scott Walker, Governor Cathy Stepp, Secretary Telephone 608-266-2621 Toll Free 1-888-936-7463 TTY Access via relay - 711



July 2, 2013

Ms. Leslie Hyde Koppers, Inc. 436 Seventh Avenue Pittsburgh, PA 15219-1800



FID#: 816009810 'HW/CORR Douglas County

Subject:

Request for Final Closure Approval of Drip Pad

Koppers, Inc. Superior, WI Facility - EPA ID #: WID006179493

Dear Ms. Hyde:

The Department of Natural Resources (Department) has received Koppers, Inc. (Koppers) correspondence dated May 21, 2013, regarding management of the drip pad. The letter requests concurrence by the Department for three items regarding the management of the drip pad. The Department is not able to provide concurrence to this request for the following reasons.

Item number one in Koppers' letter states that no further action at the drip pad is required at this time. The June 28, 2007, letter addressed to you from the former Department Waste Management Specialist James Ross clearly states that it is for review of a partial closure report submitted by Koppers, not clean closure. The letter also states that Section NR 665.0445(1), and (2), Wis. Adm. Code, allows the owner or operator to close the facility and perform long-term care in accordance with the closure and long-term care requirements that apply to landfills if all the contaminated sub-soils cannot be practically removed or decontaminated. Clean closure could not be approved without the removal of the drip track and excavation and proper treatment or disposal of any remaining contaminated soil beneath it.

The Department agrees that final closure of the drip pad could be issued to Koppers upon completion of the off-site remediation and closure of the overall RCRA Corrective Action site under ch. NR 726, Wis. Adm. Code. Site closure would include continuing obligations under s. 292.12(3), Wis. Stats., for inspection and maintenance of the concrete drip track as described below. However, the Department does not agree that there is no need for regular inspections of the drip pad or the re-application of low permeability coating. As stated in the June 28, 2007 letter, "We will also need to establish site operational conditions to periodically inspect and maintain the integrity of the drip pad as a permanent cap for the underlying contaminated soils, agree on an ongoing groundwater monitoring strategy, and a tentative schedule to achieve "final closure" of the facility." Long-term care requirements of the drip pad will need to be completed as part of any long-term care under Subpart W. The drip pad is considered by the Department as both a barrier cap that needs to be maintained and as a structural impediment to previous investigation and remediation actions.

Item number two in Koppers' letter states that the drip pad concrete can be maintained as a cover material similar to the other cover materials placed by Beazer as part of the on-property remedy. The Department does not agree that the drip pad can be maintained in the same manner as the soil and gravel caps installed elsewhere on the site. The soil and gravel caps placed by Beazer were allowed because the degree and extent of contamination was known and the caps were intended only to address the direct contact pathway. Due to the structural impediment



posed by the drip pad, we do not know the degree and extent of contamination under the drip pad and could not explicitly rule out impacts via the groundwater pathway. Filling of significant cracks in the concrete with soil or gravel could have the effect of concentrating water infiltration in those cracked areas, potentially increasing soil-to-groundwater leaching of contaminants.

Item number three in Koppers' letter states that the Continuing Obligations letter to be issued to the new property owner and the site survey to be filed with the Department's online GIS Registry will identify the drip pad as an area to be included within the continuing site obligations for long-term maintenance. However, your requests in items number one and two directly contradict this notion of long-term maintenance. Continuing obligations will continue to apply to the site unless the structural impediment and groundwater barrier of the drip track is removed and investigated. Koppers will need to research the repercussions of the Continuing Obligations letter with internal legal staff.

If you have any other questions regarding this matter, please contact me at (715) 762-1339.

Sincerely,

Steve Ashenbrucker

Waste Management Specialist

Cc: Chris Saari – WDNR Ashland Jill Schoen – WDNR Eau Claire Ed Lynch – WDNR Madison

Ed Lynch – WDNR Madison Jane Patarcity – Beazer East, Inc.

Linda Paul – Koppers, Inc.

Attachment 2 E-mail Correspondence from Koppers to WDNR July 17, 2012



Paul, Linda S

From:

Saari, Christopher A - DNR [Christopher.Saari@Wisconsin.gov]

Sent: Thursday, August 09, 2012 3:03 PM

To: Cc: Paul Linda S; Ashenbrucker, Steven J - DNR; Lynch, Edward K - DNR

Robinson, John H - DNR; Gordon, Mark E - DNR; Patarcity, Jane (Pittsburgh) NA

(Jane.Patarcity@hanson.biz)

Subject:

RE: Koppers Inc., Superior, WI Facility, Drip Pad Closure

Hello Linda:

Following internal discussions between Wisconsin DNR's Waste and Materials Management (WMM) and Remediation and Redevelopment (RR) programs, it was determined that the RR program will have the lead on responding to your request below. Based on this message and previous discussions with you, it appears that Koppers Inc. is trying to achieve final closure for the former drip track area at the facility Superior. It also appears that a joint decision was made between Koppers Inc. and the WDNR prior to 2007 to close the drip track area as part of the site wide RCRA closure, rather than as a separate site under the drip track regulations (p. 2 of the May 2007 Decommissioning Report). Because final closure of the drip track area is apparently tied to the site wide closure, and site wide closure will not happen until after the off-property soil and sediment contamination has been addressed, it is not likely that the WDNR can provide Koppers Inc. with a final closure for the drip track area in the near term.

However, we can offer an alternative that might help explain the regulatory status of the drip track area and clarify any liability questions associated with that area. The WDNR's RR program can write General Liability Clarification Letters (GLCLs) that answer site-specific questions about status and liability issues. For more information, please refer to the GLCL Fact Sheet found at this link: http://dnr.wi.gov/files/PDF/pubs/rr/RR619.pdf. Requests for GLCLs are fee-based and should be accompanied by an application detailing the specific questions and/or issues for which the requestor is seeking clarification. The application can be found at this link: http://dnr.wi.gov/files/PDF/forms/4400/4400-237.pdf.

One issue that likely would require clarification would be the responsibility for ongoing inspection and maintenance of the concrete drip track. The WDNR considers the concrete covering the drip track area as both a barrier cap and a structural impediment. Under s. 292.12, Wis. Stats., barrier caps and structural impediments require continuing obligations at the time of case closure, in order to ensure that such things as inspection and maintenance activities are performed for as long as the contamination beneath the cap or structural impediment remains in place. These continuing obligations are conveyed with the property, meaning that the current property owner is responsible to make sure that the obligations are met. This does not preclude responsible parties and property owners from reaching separate agreements over which party or parties will take on those responsibilities, but I raise this as an issue now because of similarities between the continuing obligations for the drip track area and the direct contact soil barrier caps that Beazer installed in 2010 as part of the on-property cleanup work. This issue is also pertinent considering the potential sale of the property to the tie-grinding company (Omaha Track Materials?).

Once you have had a chance to look this material over, please contact me to let me know how you would like to proceed. Feel free to call me (715-685-2920) if you have any questions.

From: Paul Linda S [mailto:PaulLS@koppers.com]

Sent: Tuesday, July 17, 2012 3:27 PM

To: Ashenbrucker, Steven J - DNR; Saari, Christopher A - DNR; Lynch, Edward K - DNR

Subject: Koppers Inc., Superior, WI Facility, Drip Pad Closure

Gentleman.

In recent discussions with Steve Ashenbrucker about a final drip pad closure at the Koppers Inc., Superior, WI facility, the question arose about the soil removal activities that had occurred in the drip track area. After review, the following summarizes information that was located on this subject.

- From 1928 until either 1981 or 1982, the drip track adjacent to the treating building at Superior was unlined (*Phase II RFI*, *June 1991*, *page 1-5*).
- In 1981 or 1982, the concrete-lined drip track was constructed, after removal of underlying soils (Phase II RFI, June 1991, page 1-5; and Drip Track Extension Soil Sampling & Analysis Plan, Sept. 1991, page 2-2). No specific data on the depth or volume of soil removal has been located for this project. Based on the dates, the removal and concrete drip track construction would have been completed by Koppers Company, Inc. (Beazer East, Inc.).
- In late 1991, to comply with new RCRA regulations, Koppers Inc. extended the Superior drip track. A 125 foot extension was installed to the existing concrete drip track extending the length by about 20% and an additional 25 ft. x 75 ft. drip pad was installed adjacent to the existing 9.5 ft x approx. 600 ft. concrete drip track (see Figure 1 of the attached *Draft Sampling and Analysis Report, May 1992*).
- Soils in each of the two drip track expansion construction areas were to "be excavated . . . to remove all soils showing visible evidence of site-related constituents" and it was "anticipated that 2 to 3 feet of soil" was to be excavated from each area prior to installation of the drip track extension/expansion. (*Drip Track Extension Soil Sampling & Analysis Plan, Sept. 1991, pages 2-1 and 3-1*). Beazer collected soil samples in the two excavation areas to provide data on the soils remaining beneath the two newly constructed drip track extension areas.
- The Drip Track Extension and Expansion Project was completed in the fall of 1991. There is reference to memos that indicate approximately 700 cubic yards of soil were removed but I have been unable to locate those memos at this time. After the visibly impacted surficial soils were excavated, soil samples were collected from 0.0 to 1.0 foot depth from ten locations in the two expansion areas as shown on Figure 1 of the *Draft Sampling and Analysis Report* for the drip track extension. The sampling results for TPH, total PAHs, total phenolics, and pentachlorophenol are included on page 1b of the *Draft Sampling and Analysis Report*.

The information provided previously by Koppers at the time of facility decommissioning demonstrated that the drip track concrete had been sufficiently cleaned (rinseate sampling) and soil samples and groundwater samples were collected from adjacent to the drip track as reported in the *January 2007 Drip Pad Closure Investigation Report* and May 2007 follow-up letter. Per the above, soils beneath at least portions the concrete drip track were removed (likely to the 2 to 3 foot depth) in two different projects coinciding with the original concrete pad construction and the extension in 1991.

I will contact you shortly to review the information contained herein and to determine any remaining steps to obtain final closure of the drip pad at the Superior facility. Thank you for your timely review of this information.

Linda S. Paul, P.E. Koppers Inc. 436 Seventh Avenue, Suite 1800 Pittsburgh, PA 15219 Direct Dial: 412-227-2434 Fax: 412-227-2423

Cell: 412-512-6910 paulis@koppers.com

Attachment 3 Drip Pad Construction Schematic



