



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII  
901 NORTH 5TH STREET  
KANSAS CITY, KANSAS 66101

CERTIFIED MAILRETURN RECEIPT REQUESTED

24 MAR 2006

Article No. 7004 2510 0006 9717 6416

Mr. Gary J. LeRock  
Plant Manager  
Koch Nitrogen Company  
P.O. Box 1337  
Dodge City, KS 67801-1337

Dear Mr. LeRock:

RE: Review of Koch Nitrogen Company's (KNC's) Revised RCRA Facility  
Investigation Work Plan (RFI WP) dated August 1, 2005

The U.S. Environmental Protection Agency Region 7 (EPA) has received KNC's above-referenced document. Based on a review by EPA, the Kansas Department of Health and Environment (KDHE), EPA's Risk Assessor, and EPA's Ecological Risk Assessor, the EPA offers the following additional comments.

GENERAL COMMENTS:

1. Changes that were agreed to and approved in the FSP that apply to the revised RFI WP will be made in the second revision of the RFI WP.

In discussion with KNC, it was agreed that EPA would review the revised RFI WP with the understanding that this document was also going to be changed based on the agreed and approved changes to the FSP that would apply to the revised RFI WP. This was done in an effort to save KNC from having to revise the document twice (once from comments from EPA and again based on the universal changes in the FSP that would apply to the revised RFI WP).

SPECIFIC COMMENTS:

1. Page 9, Comment 5D, KNC Response, 3rd paragraph: Ion exchange capacity is a requirement of C.6(g)(4) of the Part II of the Permit. In KNC's Response to Comments dated August 1, 2005, KNC states that, "..., KNC proposes to perform anion exchange capacity testing ..." KNC requests the Agencies' approval of this proposed change. EPA will not accept this proposed change. EPA will however, accept what is written on the last paragraph of Page 6-20, in the revised RFI WP dated August 2005. KNC states that it will conduct cation and anion exchange

capacity (CAEC). Later in the paragraph, KNC states, “CAEC analysis will be performed to estimate the sorption potential of site constituents as they move in groundwater.” This is acceptable to EPA.

2. Page 9 & 10, Comment 5E, KNC Response: KNC states that grain-size distribution was discussed in Section 5.5 of the draft RFI Work Plan. It further states that the proposed analysis to address this requirement is presented in Section 6.4.1 of the revised RFI Work Plan. The information presented in both of those sections does not determine grain-size distribution. EPA’s purpose in asking for grain-size distribution was not to determine hydraulic conductivity, but to ensure that when recovery wells are designed it is important to know the grain-size to properly determine the correct screen size for the wells. If the correct screen size is not installed in the wells, the wells will silt up and have to be replaced. In asking for grain-size distribution as a requirement of Part II of the Permit, Section C.6(g)(5), EPA was thinking ahead to the remedy stage of the corrective action process. Please revise Section 6.4.1 to adequately address grain-size distribution.
  
3. Page 11, RFI WP Specific Comments, Comment 1, KNC Response: EPA would like to clarify some of the statements made by KNC in its Response. EPA disagrees somewhat with the statement that allowing KNC to demonstrate clean closure of the CDU “was the basis of the settlement agreement that resolved the Permit appeals and led to the issuance of the amended RCRA Permits.” While the language discussing clean-closure in Sections C.5.f. and C.6.a of Part II of the Permit were discussed during the settlement discussions, EPA believes that the resolution of the permit appeals was predicated on EPA and KDHE’s application of the Post-Closure Rule (i.e., incorporating the requirements of Part I of the Permit into Part II to allow a site-wide investigation under one Agency’s authority). As stated in EPA’s June 9, 2004, letter, “EPA, the Kansas Department of Health and Environment (KDHE) and Koch entered into discussions to resolve the issues with the whole permit and utilized the Post-Closure Rule to allow for a site-wide investigation under one Agency’s authority.”

In addition, KNC stated that “[t]here are no data at this time upon which the Agencies could currently rely to conclude that clean closure cannot occur.” As you know, it is KNC’s burden to demonstrate clean closure of the CDU to EPA’s satisfaction. Sections C.5.f and C.6.a of Part II of the Permit state that if KNC can demonstrate clean closure of the CDU according to 40 CFR 264.228(a) to EPA’s satisfaction, then KNC will be deemed to have satisfied the general post-closure and post-closure care requirements in Sections II.I and III of Part I of the Permit. However, if KNC fails to demonstrate clean closure, then KNC will be required to fulfill the closure and post-closure requirements of Part I (through the implementation of the Corrective Action portion of Part II).

KNC's letter stated that its "proposed additional soil sampling in the RFI Work Plan will definitely address the potential for CDU contribution of chromium to the groundwater." As EPA has discussed with Koch on several occasions, the soil sampling currently proposed in the December 2005 Field Sampling Plan (FSP), approved by EPA January 24, 2006 (approved FSP), is not adequate to demonstrate clean closure for the former CDU, regardless of the sampling results. The EPA approved the FSP sampling approach for the former CDU as a SWMU, not for a clean closure determination. In addition, if the "proposed additional soil sampling in the RFI Work Plan" refers to the soil sampling in the "Closure Plan for the Inactive Chromium Destruct Unit" previously submitted January 15, 2004, then this plan is also not adequate to demonstrate clean closure.

KNC mentioned the March 16, 1998 Risk-Based Approach to Clean Closure memorandum from EPA Headquarters which discusses the possibility of demonstrating clean closure for certain units. This memorandum states, "EPA's expectation is that, *with the exception of landfills and most land treatment units*, well designed and well operated RCRA units (i.e., units that comply with the unit-specific minimum technical requirements) will generally be clean closed. Units that are not clean closed remain subject to the requirements for post-closure care, including post-closure permitting" (emphasis added). As KNC is aware, the former CDU is a surface impoundment, which is a "land treatment unit."

As stated in my clarification e-mail of March 10, 2006, "Based on internal discussions and review of the permit, if KNC chooses to pursue the clean closure determination of the former CDU, it needs to submit an addendum to the approved RFI Work Plan or a Phase 2 RFI Work Plan to address the investigation, instead of submitting a revised Closure Plan."

It is important to note that even if KNC conducts an investigation of the CDU and successfully demonstrates clean closure to EPA's satisfaction, KNC is still obligated under the Permit to conduct an investigation and clean-up of the site-wide contamination (chromium, nitrates, and VOCs) in the groundwater and provide for financial assurance and continued operation of the existing groundwater monitoring system.

4. Pages 13-15, Comments 7 & 8, KNC Responses: KNC cites the Environmental Indicator Determination completed by EPA dated July 20, 2004. The Environmental Indicator Determination is a snapshot in time. According to EPA Guidance on the Environmental Indicators, "While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA. The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and

the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors). A conceptual site model detailing potential future exposure pathways should be submitted in the referenced Risk Assessment Work Plan. EPA's Risk Assessor is available, if needed, to answer specific questions on the forthcoming Risk Assessment Work Plan.

5. Pages 22-23, Comment 20, KNC Response: See EPA's Comment Number 3 above.
6. Pages 32-33, Comment 38, KNC Response: EPA has further evaluated its comment and is in agreement with KNC.
7. Page 33, Comment 39, KNC Response: See EPA's Comment Number 3 above.
8. Pages 36-38, Comments 45A-C, KNC Response: KNC cites to an EPA letter dated January 24, 2003. This letter was sent to Farmland Industries, Inc. (Farmland) in EPA's efforts to work with a facility that was bankrupt prior to issuance of a Final RCRA Post-Closure Permit. This letter was sent to Farmland prior to KNC's ownership of the facility. KNC is subject to the requirements of the RCRA Post-Closure Permit. Any correspondence between EPA and the prior owner is not a requirement of the Permit.
9. Page 38, Comment 45D, KNC Response: This issue was resolved in the FSP/QAPP to delineate to background levels approved by EPA.
10. Page 39, Comment 47B, KNC Response: EPA would like to clarify its position on hot spots. Certainly, large exposure units can generate uncertainty and often such areas need to be broken up into smaller units that are more representative of where exposure may occur. Conversely, exposure units should not be too small. Breaking down exposure units to "hot spots" is not necessarily appropriate unless such a hot spot is of sufficient size (i.e., 1/2 acre). In discussion with EPA's Risk Assessor, EPA Region 7 recommends defining the exposure unit according to potential land uses, receptors, exposure media, and other land characteristics.
11. Page 40 & 42, Comments 49 & 51, respectively, KNC Response: In discussions with the Eco-Risk Assessor regarding KNC's responses to comments 49 & 51, the following comments were provided:
  - a. KNC commented that they will consider the risk to the environment at their site and will delineate to human health preliminary remediation goals (PRGs) and assume that those will suffice for any ecological receptors. PRGs for the Superfund/RCRA programs are risk-based concentrations, derived from standardized equations combining exposure information assumptions with EPA toxicity data. They are considered by the Agency

to be protective for humans. However, PRGs do not address non-human health endpoints such as ecological impacts.

In Region 7, the following screening levels are used to determine if chemicals of potential ecological concern (COPEC) could be a risk to ecological receptors:

#### **Soil**

- Background soil is preferred, but when not available, Region 7 uses EPA's Ecological Soil Screening levels (Eco-SSLs) for chromium. ([http://www.epa.gov/ecotox/ecossl/pdf/eco-ssl\\_chromium.pdf](http://www.epa.gov/ecotox/ecossl/pdf/eco-ssl_chromium.pdf)) and;
- Oak Ridge National Laboratories (ORNL) benchmarks. (<http://www.esd.ornl.gov/programs/ecorisk/documents/tm126r21.pdf>)

#### **Sediment**

- MacDonald, D., C.G. Ingersoll, and T.A. Berger. 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems.

#### **Freshwater**

- National Ambient water Quality Criteria (AWQC) (<http://www.epa.gov/waterscience/criteria/wqcriteria.html>)

#### **Ecological Risk Assessment Guidance**

- EPA. 1997. Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments. (<http://www.epa.gov/swerrims/riskassessment/ecorisk/ecorisk.htm>)

- b. KNC also comments, in their response to comment 49, that no environmental receptors are found on the facility, so off site receptors will be assessed. During a site visit, EPA Region 7 observed avian receptors (ducks and herons) in the on-site ponds. Any waterbody, regardless of its size or location will attract wildlife. The ponds on the KNC facility should have the sediment, surface water, and biota (fish or frogs) sampled for COPECs.

Earthworms should also be sampled along with co-located soil samples. Vermivores (earthworm consuming), such as shrews, robins, and woodcocks, are pollution sensitive organisms and are found throughout Region 7. These sensitive vermivores should be included in the ecological site conceptual model and chosen as a possible receptor.

12. Page 42, Comment 52B, KNC Response: MCLs should not be used for risk-based screening. KNC should use the Region 9 tap water PRGs for screening chemicals of potential concern.

13. RFI Work Plan (August 2005) Volume I, Figure 3-10: Potentiometric Surface Contour Map - April 2005: In the interest of improving the understanding of the complex groundwater flow patterns resulting from the numerous recovery wells, the EPA would like to request that Koch enlarge Figure 3-10 to the size of Figure 2-1, increasing the scale to 1" = 300'.
14. RFI Work Plan (August 2005), Volume I, Figure 3-11: Monitoring and Recovery Well Location Map: This figure does not differentiate between the recovery wells and the monitoring wells, as was done previously in the 10-27-04 RFI Work Plan in, for example, Figures 2-9 and 3-1. Please revise Figure 3-11 using different symbols to designate monitoring wells and recovery wells. Additionally, because of the scale used on Figure 3-11 combined with the density of the wells, the EPA believes a clearer depiction of the well locations would result by enlarging Figure 3-11 to the size of Figure 2-1, increasing the scale to 1" = 300'.

Please submit the revised RFI Work Plan and written responses to these comments within sixty (60) days of certified receipt of this letter. If you have any questions regarding this letter, please contact me at 1-800-223-0425 ext. 7662 or (913) 551-7662.

Sincerely,



Andrea R. Stone  
Environmental Scientist  
Air, RCRA & Toxics Division  
RCRA Corrective Action & Permits Branch

cc: Everett Spellman  
KDHE  
Katherine Dunn  
KDHE  
AnnieLaurie Burke  
KNC-Dodge Office  
Stephen B. Ellingson, Ph.D.  
KNC-Wichita Office