KOCH

KOCH NITROGEN COMPANY

469880

RCRA RECORDS

October 26, 2006

Return Receipt Requested
Via Certified Mail No ***7005 0390 0006 6702 0070***

Director, RCRA Corrective Action & Permits Branch (2 copies)
Air, RCRA and Toxics Division
U.S. Environmental Protection Agency Region VII
901 North Fifth Street
Kansas City, Kansas 66101 (2 copies)

RE: Koch Nitrogen Company – Dodge City, Kansas
EPA ID No. KSD044625010
Quarterly Progress Report for Third Quarter 2006

Ladies/Gentlemen:

In accordance with Section C.13 of the above referenced Permit, Koch Nitrogen Company (KNC) hereby submits the enclosed original and duplicate of the Quarterly Progress Report for the third quarter of 2006.

If you have any questions about the attachments, please do not hesitate to contact AnnieLaurie Burke at (620) 227-8631, ext. 350.

Sincerely,

Gary J. LeRock

Gary J. LeRock
Plant Manager

cc ***Return Receipt Requested - Via Certified Mail No***
Andrea Stone, U.S. Environmental Protection Agency – Region VII, Kansas City, KS — 7005 0390 0006 6702 1978

Kansas Department of Health and Environment, Bureau of Waste Management, Topeka, KS — 7005 0390 0006 6702 1947

cc via electronic copy:
Stephen B. Ellingson, KMS Wichita. KS
AnnieLaurie Burke, KNC Dodge City, KS

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OCT 30 2006

11559 U.S. Highway 50 ▪ P.O. Box 1337 ▪ Dodge City, Kansas 67801-1337
620/227-8631 ▪ FAX 620/227-6016

QUARTERLY PROGRESS REPORT
3RD QUARTER 2006

DODGE CITY NITROGEN PLAN
KOCH NITROGEN COMPANY

EPA ID NO. KSD044625010

OCTOBER 27, 2006

CERTIFICATION STATEMENT

In accordance with Sections B.2.b and B.22 of the Part II Permit, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

By: Gary J. LeRock

Gary J. LeRock
Plant Manager

A description of the work completed (Part II Permit Section C.13.a): This Quarterly Report covers activities in the third quarter of 2006, during which KNC accomplished the following work:

KNC and the owners and tenants of the Nelson-Penner property, located northeast of the Plant, began negotiations for an access agreement to provide for future work related to the investigation and corrective action program.

KNC received approval to implement its recovery system optimization plan in a letter from Kansas Department of Health and Environment (KDHE), dated July 14, 2006. This study is designed to determine the best combination of well locations and pumping rates to control and remediate the chromium and nitrate plus nitrite constituents in groundwater. KNC began the optimization study program with the implementation of Optimization Configuration 1 on July 31, 2006. Configuration 1 included shutdown of 13 wells coupled with enhanced water level and groundwater quality monitoring. Results from the first configuration are included in the attached optimization status report. Configuration 1 was completed on September 13, 2006.

KNC implemented Optimization Configuration 2 beginning on September 13, 2006 and continuing through October 25, 2006. This portion of the plan included biweekly groundwater level monitoring to track changes in the potentiometric surface. Figure 1 shows the potentiometric surface prior to initiation of optimization activities. Figure 2 shows the potentiometric surface and associated capture zones at the completion of Configuration 1. Optimization also includes additional groundwater sampling at select wells to monitor any changes in total chromium, dissolved chromium, and nitrate plus nitrite concentrations.

The U.S. Environmental Protection Agency Region VII (EPA) approved the revised RCRA Facility Investigation (RFI) WorkPlan (submitted May 2006) with comments in a letter from Andrea Stone, dated September 11, 2006. EPA's comments incorporated comments from KDHE. KNC submitted responses to comments and revised replacement pages to the Agencies on October 11, 2006.

In accordance with the project Sampling and Analysis Plan (SAP), KNC conducted additional sampling and analysis during the third quarter groundwater monitoring event in early July to supplement the data gathered during the investigation.

Although not a part of the current corrective action investigation, KNC submitted a revised SAP for the assessment of the potential impacts from the Andco clarifier basin overflow, pipe fracture, and pipe union failure to KDHE and EPA on August 28, 2006. The revised SAP details sample collection, analysis, and reporting to be conducted in response to these events.

KNC had contracted with Pratt Well Services (Pratt) to complete the monitoring well in the Dakota formation (Dakota) at SWMU 4, including the collection of the associated water quality samples. Due to repeated equipment failures, health and safety concerns, and other drilling problems, Pratt's contract was terminated for failure to perform. KNC previously informed both KDHE and EPA of this situation by telephone. As a result of this termination, groundwater

samples were not collected from the Dakota borehole and the borehole was not successfully completed with a well screen.

KNC disposed of the well cuttings and drilling mud from the partially-completed well at the Ford County Landfill under KDHE Special Waste Disposal Authorization Number 06-0837 issued on August 16, 2006.

KNC has temporarily capped the partially-drilled Dakota well with a welded riser. KNC is considering two options to use this borehole to yield some benefit to the project.. The first is to finish it as a shallow Dakota well. The second is to convert the borehole to a new recovery well. The optimization study indicates that this boring is in a desirable location for enhanced capture of groundwater.

KNC is in the process of selecting another drilling contractor with more extensive experience drilling in the geologic formations associated with the Dakota Formation.. The Agencies have agreed that a new boring should be completed to the planned total depth of 500 feet below ground surface in accordance with the original plan, as modified in March 2006.

KNC plans to finalize arrangements with a new drilling contractor to complete the existing boring at SWMU 4 and begin the deeper Dakota well. It is anticipated that both tasks will be completed by the end of November 2006.

A licensed land surveyor, TriTerra Land Services (TriTerra) of Clearwater, Kansas, conducted a survey of the most recently installed monitoring wells, borehole locations, and several existing historical groundwater wells. In total, TriTerra surveyed 8 new wells, 11 existing historical wells, and 5 borehole locations. KNC subsequently entered the survey results into the geographic information system (GIS). Survey results from the historical wells were used to perform a quality assurance check. Inconsistencies with previous survey results were corrected.

KNC is continuing the soil delineation by hand auger and direct push technology. Hand augering was completed at SWMUs 1, 2, and 3 on August 8, 9, and 11, 2006. Below Ground Surface Inc. completed the direct push work at SWMUs 1, 2 and 3 on September 21 and 22, 2006.

The field team completed samples at SWMU 10, leaving SWMUs 5 and 6 as the only remaining sites where sampling remains to be completed. Aboveground and subsurface interferences from the cooling tower and other structures at SWMU 8 make it unlikely that further sampling can be completed in these areas. As noted below, KNC made modifications based on best engineering judgment to sampling locations and methods to accomplish the delineation at these sites.

Although not a part of the corrective action investigation, KNC continues to develop a formal request for permit modifications, based on the most recent comments from KDHE. (See below and attached supplemental information).

Summaries of all findings, including summaries of laboratory data (Part II Permit Section C.13.b): Despite the difficulties with the drilling operations, KNC was able to gather select lithologic information through observation of the cuttings and from core samples. The lithologic log from the Dakota formation is provided below. Depths are in feet and are referenced from the ground surface.

190' to 206' Gray Green/Tan Shale
206' to 221' Tan Siltstone Very Fine Sandstone
221' to 223' Siltstone Very Fine Sandstone
223' to 227' White Shale
227' to 224' Black Shale (with dark green/gray zones)
224' to 260' Very Fine Sand Alternating Hard/Soft Layers
260' to 275' Clear Quartz Sand
275' to 277' Red Very Fine Sand
277' to 364' Gray and Red Clay/Shale
364' to 384' Fine Sandstone

Based on the data gathered to date from the optimization study, wells shutdown under Configuration 1 are not essential to maintaining an inward hydraulic gradient relative to the chromium plume. Refer to Figure 3 for the potentiometric surface and associated capture zones after two weeks into configuration 2.

Groundwater samples are collected from 18 monitoring wells located on the boundaries of the study area to evaluate potential changes in the groundwater concentrations and extent of chromium and nitrate plus nitrite. No adverse groundwater impacts have been observed; total chromium, dissolved chromium, and nitrate plus nitrite concentrations have not shown significant fluctuations during the optimization activities. Figure 4 details the results of groundwater sampling to date. The fluctuations observed to date are consistent with the error bars of the laboratory analyses.

KNC will continue to monitor groundwater concentrations closely during the remainder of the optimization study.

Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems (Part II Permit Section C.13.c): As described above, KNC terminated its contract with Pratt Well Services in late August due to the contractor's failure to perform. The termination was the result of the contractor's inability to complete the Dakota well in accordance with the RFI Work Plan requirements. Drilling at this site reached a depth of 385 feet below ground surface prior to Pratt's final equipment failure and subsequent contract termination.

The shutdown of the wells associated with the pump optimization study has raised concerns regarding the available water supply for plant operations. KNC is addressing this issue (see Projected Work below).

There were a number of adjustments to the RFI field program that were necessitated by site conditions. These changes were implemented in accordance with Section 6.1 of the RFI Work Plan and will be the described in a forthcoming Interim Status Report.

Projected work for the next quarter (Part II Permit Section C.13.d): During October, as part of the optimization study, KNC will evaluate locations where larger pumps or deeper wells can be placed in the uppermost saturated zone to enhance groundwater production and chromium mass removal. Also as part of the optimization study, KNC will

- Install flow meters on individual recovery system wells to allow more accurate monitoring of extraction rates;
- Install transducers and data loggers in select wells to allow continuous groundwater monitoring (as needed);
- Shut down of the entire pumping network for a period of 3 to 5 days to evaluate the non-pumping groundwater flow directions;
- Conduct several multiple well hydraulic tests (pumping tests); and
- Implementation of configuration 3, as detailed below.

KNC plans to contract with a new driller to complete the planned Dakota well at SWMU 4, and to complete the unfinished borehole at that location, as described above.

Depending on contractor availability, KNC will complete further investigation of the magnetic anomaly at SWMU 7.

In accordance with the RCRA SAP, KNC will conduct additional sampling and analysis during the fourth quarter groundwater monitoring event in October to supplement the data gathered during the investigation.

KNC will review the current groundwater monitoring network and extent of the chromium and nitrate plus nitrite impacts and determine if additional groundwater delineation is needed.

Any instances of noncompliance with Part II of this permit not otherwise required to be reported pursuant to Part II Permit Conditions B.18 (Part II Permit Section C.13.e): As discussed on previous occasions with EPA and KDHE, KNC has been pursuing certain alternative methods and procedures that differ from those currently specified in the Part I Permit (Permit) and the Facility SAP. All of these issues have been noted in previous reports and, at a meeting of September 16, 2004, EPA and KDHE agreed to the alternative methods and procedures being used. KNC submitted to KDHE a request for modifications to the Permit to clarify the acceptable use of these alternate methods and procedures, and discussions continue to formally modify the permit in response to this application. KNC appreciates the input and comments from KDHE concerning this submittal.

KNC understands, based on the discussions noted above, that EPA and KDHE do not consider these alternative methods and procedures to be instances of noncompliance. However, to the extent that the Part II Permit includes requirements to continue implementation of the existing groundwater monitoring, recovery, and treatment system, supplemental information regarding these alternatives as potential instances of noncompliance are described in the attached document.

SUPPLEMENTAL INFORMATION
SUBMITTED WITH THE
THIRD QUARTER REPORT 2006
Koch Nitrogen Company
Dodge City, Kansas
EPA ID No. KSD044625010
October 27, 2006

Pursuant to Section I.E. 14 of the Hazardous Waste Management Facility Permit, Part I (Part I Permit), Koch Nitrogen Company (KNC) is required to "report all other instances of noncompliance not otherwise required to be reported above in Sections Permit Conditions I.E.10 through I.E.13, at the time monitoring reports are submitted."

The following items are reported as deviations noted during the third quarter 2006, as requested by Section I.E. 14 of the Part I permit. All of these issues have been noted in previous reports, and, at the meeting of September 16, 2004, EPA and KDHE accepted the alternatives currently being used. KNC continues to coordinate with the Agencies to formalize the request for modification of the permit documents.

In those documents, KNC also provides a description of planned changes in operating and maintenance procedures to resolve any such issues, and schedule resolution dates. Our review continues and KNC may add to the information in this document.

1. **Private Wells**. Attachment D of the Part I Permit and the September 7, 2001 RCRA Groundwater Sampling and Analysis Plan (SAP) (page 4) identifies ten private wells that are to be sampled quarterly. As noted in the second quarter report, the plumbing at the Coker well has been disconnected and has not been sampled during 2006. KNC will coordinate with the owner to discuss the plugging and abandonment of the Coker well, since the Cokers have been connected to the City of Dodge City water system since the fall of 2004.

2. **Nitrogen Laboratory Method**. Section I.E.9.a of the Part I Permit specifies that chemical analyses must be those specified in the U.S. Environmental Protection Agency (EPA) Publication SW-846. The SAP indicates that the method to be used for nitrate plus nitrite analysis will be EPA Method 353.2. Although this method is not incorporated into SW-846, KNC understands that this method was previously preferred by EPA and KDHE for measurement of these analytes, and this was the method used. KNC also understands that the current preferred method is Standard Methods 4500-NO3 F (most recent edition). The conflict among the permit condition, the SAP requirement, and the preference for most recent methods is being resolved by the referenced permit modification.

3. **Nitrogen Species Measured**. Section I.E.9.a and Attachment D of the Part I Permit states that the Permittee shall determine the concentrations of "nitrate" throughout the compliance period and any extension due to corrective action implementation according to the schedule set out in the SAP. There is no reference to testing for "nitrite" in the Part

I Permit. However, Attachment C of the Part I Permit specifies that the Ground Water Protection Standard (GWPS) will be nitrate plus nitrite as N (See Part I Permit Attachment C). Table 2.3 of the SAP specifies that the groundwater sampling parameters should include nitrate plus nitrite.

4. **Field/Laboratory Forms**. Section IV.C.3.b of the Part I Permit provides that the Permittee will comply with the Ground Water Monitoring Plan set out in the Part B Permit Application. The Ground Water Monitoring Plan in the Part B Permit Application states that the data will be reported on Field Sampling and Laboratory Results Data Sheets (see Section E, p. E-2). In some cases alternate forms containing the same information were used. The requested permit modifications allow for format flexibility.

5. **Recovery Well Operation**. Wells TW-2 , 4 and 8, and TW-79 have been identified in the Part I Permit as recovery wells (Part I Table 1 IV.C.1.a and Attachment D). As agreed during the September 16, 2004 meeting with KDHE and EPA, TW-2 and TW-79 are not used for recovery. Well TW-2 has insufficient water to pump and therefore cannot be operated as a recovery well. Well TW-79 was listed as a recovery well in error. It is located on private property and has never been part of the recovery system. Wells TW-4 and TW-8, which had fed the same north-south pipeline along which TW-2 is located, also currently have insufficient water levels for recovery. The inability to operate TW-2, -4, and -8 appears due to dropping water levels in the aquifer in the general area of the Plant. The conflict between the permit conditions and the use of these wells will be resolved by the temporary authorization for the optimization study and the above-referenced permit modification.

6. **Alternate Field Meters**. The SAP in Section E, Appendix F of the Part B Permit Application provides that a multi-parameter water quality meter (MP20 Flow Cell) will be used during low-flow groundwater purging (See page 15 of SAP). Since that meter is no longer functional, KNC has substituted newer equipment that provides a higher degree of accuracy and reliability.