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KOCH NITROGEN COMPANY LLC

October 22, 2012

UPS Tracking #

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Chief - RCRA Corrective Action & Permits Branch
Air, RCRA and Toxic Division
U.S. Environmental Protection Agency - Region VII
11201 Renner Blvd
Lenexa, Kansas 66219

**RE: Koch Nitrogen Company, LLC – Dodge City, Kansas
EPA ID No. KSD044625010
Quarterly Progress Report for Third Quarter 2012**

Ladies/Gentlemen:

In accordance with Section C.13 of the above referenced Permit, Koch Nitrogen Company, LLC (KNC) hereby submits the enclosed original and duplicate of the Quarterly Progress Report for the Third Quarter of 2012.

If you have any questions about the attachments, please contact Elise Stucky-Gregg at (620) 371-7910.

Sincerely,


Michael J. Sherbak II
Plant Manager

cc w/ encl:

UPS Tracking #:

1Z 693 661 03 9935 4718

Andrea Stone, U.S. Environmental Protection Agency (CD-electronic copy)
Region VII, Lenexa, KS

UPS Tracking #:

1Z 693 661 03 9914 3320

Kansas Department of Health and Environment,
Bureau of Waste Management, Topeka, KS

Tom Siegrist, Koch Fertilizer, Wichita, KS (electronic copy)

620.227.8631 Tel
620.227.6016 Fax

11559 U.S. Highway 50
P.O. Box 1337
Dodge City, Kansas 67801-1337

RCRA



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QUARTERLY PROGRESS REPORT
3rd QUARTER 2012

DODGE CITY NITROGEN PLANT
KOCH NITROGEN COMPANY, LLC

EPA ID NO. KSD044625010

October 22, 2012

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: 

Michael J. Sherbak II
Plant Manager

A description of the work completed (Part II Permit Section C.13.a): This Quarterly Report covers activities in the 3rd quarter of 2012, during which KNC accomplished the following work:

- Although not a part of the Part II permit requirements, the third quarter groundwater sampling event was completed on July 31, 2012. As requested by EPA, KNC has supplemented our approved SAP methods to include differentiation between trivalent chromium (Cr+3) and the hexavalent form (Cr+6), and between nitrate (NO3) and nitrite (NO2).
- Following the August 30, 2010 inspection and repair of the liner of the Recovery RO Equalization Basin, KNC continued to monitor the leak detection system of the basin.
- KNC continued work on the RCRA permit renewal application. By email dated September 13, 2012, KNC submitted a draft Groundwater Sampling and Analysis Plan to KDHE and EPA. KNC will consider any comments received from the agencies and submit the Groundwater Sampling and Analysis Plan as part of the Permit Renewal that will be submitted in October 2012.
- To aid in the preparation of the Permit Renewal Application, KNC performed additional VOC delineation sampling in August 2012. VOC sampling results from 2011 and 2012 are displayed in the attached figure titled, "Groundwater Volatile Organic Compounds Concentration Map."
- By letter dated September 14, 2012, KNC requested temporary authorization from KDHE to shut down the groundwater recovery system to allow the completion of maintenance activities. KDHE approved the request by letter dated September 18, 2012. While the groundwater recovery system was down, KNC installed 7 check valves, 8 flow meters, 8 pressure gauges, and 9 isolation valves in the system. The check valves and isolation valves will allow for easier isolation for future maintenance activities. The flow meters and pressure gauges will provide information about the effectiveness of the groundwater recovery system and help design any future modifications to the system. The attached figure titled, "Groundwater Recovery Well Network," displays the location of the flow meters.
- By letter dated May 23, 2012, KNC received comments on the proposed Tier II soil sampling locations and the analytical program for additional delineation activities associated with approved Phase II Addendum of the RFI Workplan that were submitted to EPA by memo dated August 8, 2011. On June 15, 2012 KNC met with EPA and KDHE at EPA Region 7 offices in Kansas City, KS to discuss the comments received and the path forward for soil delineation at the facility. By letter dated June 25, 2012, EPA approved KNC's extension request for submittal of a response to those comments. KNC's response and revised Phase II RFI Work Plan Addendum: Tier II Soil Sampling Work Plan was submitted on July 26, 2012.

Summaries of all findings, including summaries of laboratory data (Part II Permit Section C.13.b): Third quarter findings include the following:

- Laboratory results from the second quarter 2012 groundwater sampling event were evaluated during the quarter. The results were consistent with those of the previous quarter. Only small changes in chromium and nitrate concentrations were observed. KNC has sampled the new perimeter wells during the quarters 3 and 4 in 2011 as well as quarters 1, 2, and 3 in 2012. Results from the new wells are displayed on the attached figure, "Groundwater Analytical Results For New Monitoring Wells." Section 3.6 of the approved Phase II RFI Work Plan Addendum: Groundwater Characterization states, "KNC will continue to sample the wells quarterly for one year." Sampling results have been collected for one year and KNC will continue to sample the new wells during the quarterly groundwater sampling events. As data become available, KNC will evaluate them and make recommendations to EPA and KDHE to finalize a sampling schedule for the wells.

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):

- During the 3rd Quarter Groundwater Sampling event, 2 of the new perimeter wells (MW-24 MW-26) were observed to be dry. These same wells have been dry since they were installed in 2011. KNC is currently evaluating options for potential replacement of these wells.
- By letter dated October 5, 2012, KNC notified EPA and KDHE of a release of recovered groundwater that occurred on September 27, 2012.

Projected work for the next quarter (Part II Permit Section C.13.d): In the next quarter (Third Quarter 2012); KNC expects to conduct the following work under Part II of the permit:

- Although not a part of the Part II permit requirements, KNC intends to complete the Fourth Quarter 2012 Groundwater Sampling.
- KNC continues to monitor the leak detection system of the Recovery RO Equalization Basin. KNC intends to recommend system modifications and work with EPA and KDHE to implement these modifications.
- During the week of March 19, 2012 and during the second quarter 2012 groundwater sampling event completed in May, KNC tested various methods for assessing the vertical distribution of nitrate, chromium, and VOCs in existing non-recovery wells. Currently, KNC is evaluating the results and will summarize the findings in a future submittal.
- KNC intends to submit a RCRA Permit Renewal Application no later than October 26, 2012.
- KNC will continue working on proposed revisions to the corrective action program and corrective action plans, and expects to submit these proposed revisions as an amendment to the RCRA Permit Renewal no later than February 28, 2013

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):

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 potential instances of noncompliance is described in the attached document.

**SUPPLEMENTAL INFORMATION
SUBMITTED WITH THE
Third QUARTER REPORT 2011
Koch Nitrogen Company, LLC
Dodge City, Kansas
EPA ID No. KSD044625010
October 22, 2012**

Pursuant to Section I.E. 14 of the Hazardous Waste Management Facility Permit, Part I (Part I Permit), Koch Nitrogen Company, LLC (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 have previously been discussed with the Agencies, who have indicated that they do not consider these to be deviations. However, because there are inconsistencies between certain permit documents, or between the language in these documents and best practices (e. g., use of most recent and accurate analytical methods), KNC is listing these items to meet the intent of Section I.E. 14 of the Part I permit.

KDHE and KNC have previously discussed and revised a request for modifications to the Part I Permit to ensure consistency of wording and to clarify the acceptable use of alternate methods. KDHE and EPA have recently suggested in informal discussions that there may be more effective approaches to managing the permit; for example, EPA indicates that they prefer to consolidate the two parts of the Permit. KNC looks forward to further discussions of these approaches to management of the Permit at the anticipated meeting with the Agencies. Based on the Agencies' input, KNC will then prepare the appropriate documents and submit them for approval.

1. **Private Wells.** Attachment D of the Part I Permit and the September 7, 2001 RCRA Groundwater Sampling and Analysis Plan (SAP) (page 4) identify ten private wells that are to be sampled quarterly.
 - Plumbing at the Coker well was disconnected in 2005, and the well has not been sampled since that time. The Cokers have been connected to the City of Dodge City water system since the fall of 2004.
 - The Bogners have been connected to the City of Dodge City water system since the fall of 2005. KNC continues to sample their well, where the analyte of concern is nitrogen species above the MCL.
 - It has not been possible to sample the Chaffin well since 2007, as previously noticed to KDHE. The current owner still had electrical power to the site turned off during this quarterly sampling event. KNC will continue to monitor the Chaffin Well status, and, if conditions permit, the well will be sampled.
 - It has not been possible to sample the Dodge City Services well since 4th Quarter 2010. The current owner has closed the facility and KNC was unable to obtain access to the facility to collect a sample from this well. KNC will continue to

monitor the Dodge City Services status, and, if conditions permit, the well will be sampled.

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. Based on direction from the Agencies, KNC is using the latest approved method. In addition, at the direction of EPA, KNC began nitrate-nitrite speciation on these compounds. KNC anticipates that the small inconsistency among the permit conditions, the SAP requirement, and the Agencies' preference for most recent methods, and perhaps expanded methods, will be resolved by the selection of the agreed-upon permit management option.
3. **Nitrogen Species Measured.** Section I.E.9.a, and Attachment D of the Part I Permit state 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. KNC has analyzed for nitrate plus nitrite as N since 2004. As noted above, KNC is currently speciating nitrate and nitrite at the direction of EPA in addition to the analysis previously agreed on.
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). KDHE has clarified that any format that includes all required data is acceptable. KNC anticipates that this issue will be resolved by the selection of the permit management option referenced above.
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). KNC has noted previously, and KDHE and EPA have acknowledged, that TW-2 and TW-79 are not used for recovery, due to insufficient water level and the original well design, respectively. As previously noted, the regional drop in water level has caused the level in several of the monitoring/recovery wells to fall below the well pump, making it impossible to continue to utilize these wells for recovery and sampling. KNC has noted previously that the regional drop had impacted wells TW-4, TW-8, TW-36, and the "CP" wells. KNC will continue to document any wells that are affected by the regional water table changes.
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). The Agencies have previously acknowledged that nonfunctional equipment should be replaced with newer

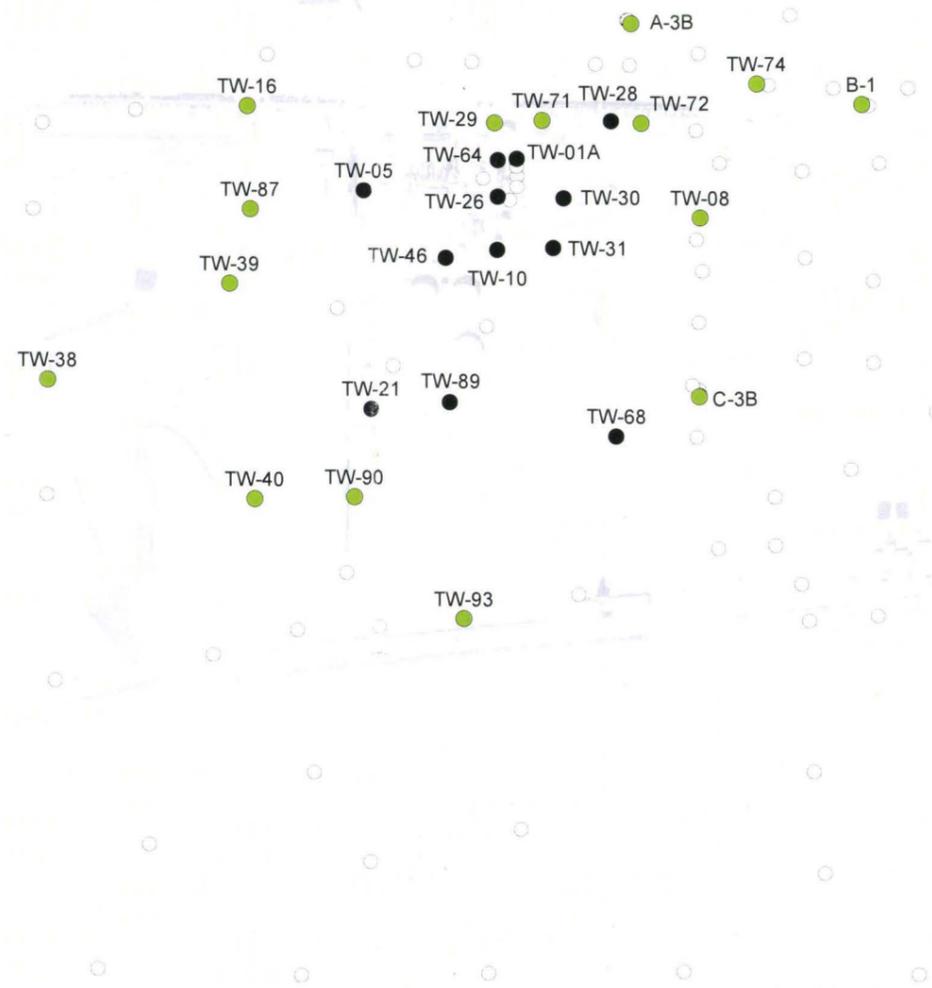
equipment that offers a higher degree of accuracy and reliability.

KDHE provided an O&M Inspection Report to KNC, dated September 3, 2009, which contained some items described as deficiencies and identified by KDHE relating to the groundwater monitoring system. It is not clear whether those items are required to be disclosed in this report, but in the interest of completeness, KNC includes below the one remaining item on which work is continuing.

- #3. **Recommendation to propose static water level monitoring network separate from the existing recovery well network.** – In progress. To be proposed after evaluation of the work to be completed from the approved RFI Phase II Work Plan Addendum: Groundwater Characterization.

Well ID	Analyte	May-11	Oct-11	Apr-12	Aug-12
A-3B	1,1,1-Trichloroethane	ND(1.0)	ND(1.0)	ND(1.0)	NS
A-3B	1,1-Dichloroethene	ND(1.0)	ND(1.0)	ND(1.0)	NS
A-3B	Tetrachloroethene	ND(1.0)	ND(1.0)	ND(1.0)	NS
A-3B	Trichloroethylene	ND(1.0)	ND(1.0)	ND(1.0)	NS
A-3B	Vinyl Chloride	ND(1.0)	ND(1.0)	ND(1.0)	NS
B-1	1,1,1-Trichloroethane	ND(1.0)	ND(1.0)	ND(1.0)	NS
B-1	1,1-Dichloroethene	ND(1.0)	ND(1.0)	ND(1.0)	NS
B-1	Tetrachloroethene	ND(1.0)	ND(1.0)	ND(1.0)	NS
B-1	Trichloroethylene	ND(1.0)	ND(1.0)	ND(1.0)	NS
B-1	Vinyl Chloride	ND(1.0)	ND(1.0)	ND(1.0)	NS
C-3B	1,1,1-Trichloroethane	ND(1.0)	ND(1.0)	ND(1.0)	NS
C-3B	1,1-Dichloroethene	ND(1.0)	ND(1.0)	ND(1.0)	NS
C-3B	Tetrachloroethene	ND(1.0)	ND(1.0)	ND(1.0)	NS
C-3B	Trichloroethylene	ND(1.0)	ND(1.0)	ND(1.0)	NS
C-3B	Vinyl Chloride	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-01	1,1,1-Trichloroethane	ND(1.0)	NS	NS	NS
TW-01	1,1-Dichloroethene	2.5	NS	NS	NS
TW-01	Tetrachloroethene	4.6	NS	NS	NS
TW-01	Trichloroethylene	ND(1.0)	NS	NS	NS
TW-01	Vinyl Chloride	ND(1.0)	NS	NS	NS
TW-05	1,1,1-Trichloroethane	ND(1.0)	NS	NS	ND(1.0)
TW-05	1,1-Dichloroethene	11.5	NS	NS	17.4
TW-05	Tetrachloroethene	26.9	NS	NS	12.3
TW-05	Trichloroethylene	ND(1.0)	NS	NS	ND(1.0)
TW-05	Vinyl Chloride	ND(1.0)	NS	NS	ND(1.0)
TW-08	1,1,1-Trichloroethane	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-08	1,1-Dichloroethene	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-08	Tetrachloroethene	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-08	Trichloroethylene	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-08	Vinyl Chloride	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-10	1,1,1-Trichloroethane	ND(1.0)	NS	NS	ND(1.0)
TW-10	1,1-Dichloroethene	5.7	NS	NS	16.6
TW-10	Tetrachloroethene	3.9	NS	NS	8.2
TW-10	Trichloroethylene	ND(1.0)	NS	NS	ND(1.0)
TW-10	Vinyl Chloride	ND(1.0)	NS	NS	ND(1.0)
TW-16	1,1,1-Trichloroethane	NS	NS	NS	ND(1.0)
TW-16	1,1-Dichloroethene	NS	NS	NS	ND(1.0)
TW-16	Tetrachloroethene	NS	NS	NS	ND(1.0)
TW-16	Trichloroethylene	NS	NS	NS	ND(1.0)
TW-16	Vinyl Chloride	NS	NS	NS	ND(1.0)
TW-21	1,1,1-Trichloroethane	NS	NS	NS	ND(4.0)
TW-21	1,1-Dichloroethene	NS	NS	NS	ND(4.0)
TW-21	Tetrachloroethene	NS	NS	NS	154
TW-21	Trichloroethylene	NS	NS	NS	23
TW-21	Vinyl Chloride	NS	NS	NS	ND(4.0)
TW-26	1,1,1-Trichloroethane	ND(1.0)	ND(1.0)	15.7	NS
TW-26	1,1-Dichloroethene	7.0	17.8	ND(1.0)	NS
TW-26	Tetrachloroethene	12.5	16.1	16.0	NS
TW-26	Trichloroethylene	ND(1.0)	ND(1.0)	1.1	NS
TW-26	Vinyl Chloride	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-28	1,1,1-Trichloroethane	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-28	1,1-Dichloroethene	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-28	Tetrachloroethene	2.5	2.4	2.3	NS
TW-28	Trichloroethylene	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-28	Vinyl Chloride	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-29	1,1,1-Trichloroethane	ND(1.0)	NS	NS	NS
TW-29	1,1-Dichloroethene	ND(1.0)	NS	NS	NS
TW-29	Tetrachloroethene	ND(1.0)	NS	NS	NS
TW-29	Trichloroethylene	ND(1.0)	NS	NS	NS
TW-29	Vinyl Chloride	ND(1.0)	NS	NS	NS
TW-30	1,1,1-Trichloroethane	ND(1.0)	NS	NS	ND(1.0)
TW-30	1,1-Dichloroethene	ND(1.0)	NS	NS	4.0
TW-30	Tetrachloroethene	11.3	NS	NS	3.8
TW-30	Trichloroethylene	1.0	NS	NS	ND(1.0)
TW-30	Vinyl Chloride	ND(1.0)	NS	NS	ND(1.0)

Well ID	Analyte	May-11	Oct-11	Apr-12	Aug-12
TW-31	1,1,1-Trichloroethane	ND(1.0)	NS	NS	ND(1.0)
TW-31	1,1-Dichloroethene	1.2	NS	NS	3.5
TW-31	Tetrachloroethene	2.2	NS	NS	3.5
TW-31	Trichloroethylene	ND(1.0)	NS	NS	ND(1.0)
TW-31	Vinyl Chloride	ND(1.0)	NS	NS	ND(1.0)
TW-38	1,1,1-Trichloroethane	ND(1.0)	NS	NS	NS
TW-38	1,1-Dichloroethene	ND(1.0)	NS	NS	NS
TW-38	Tetrachloroethene	ND(1.0)	NS	NS	NS
TW-38	Trichloroethylene	ND(1.0)	NS	NS	NS
TW-38	Vinyl Chloride	ND(1.0)	NS	NS	NS
TW-39	1,1,1-Trichloroethane	NS	NS	NS	ND(1.0)
TW-39	1,1-Dichloroethene	NS	NS	NS	ND(1.0)
TW-39	Tetrachloroethene	NS	NS	NS	ND(1.0)
TW-39	Trichloroethylene	NS	NS	NS	ND(1.0)
TW-39	Vinyl Chloride	NS	NS	NS	ND(1.0)
TW-40	1,1,1-Trichloroethane	ND(1.0)	NS	NS	ND(1.0)
TW-40	1,1-Dichloroethene	ND(1.0)	NS	NS	ND(1.0)
TW-40	Tetrachloroethene	ND(1.0)	NS	NS	ND(1.0)
TW-40	Trichloroethylene	ND(1.0)	NS	NS	ND(1.0)
TW-40	Vinyl Chloride	ND(1.0)	NS	NS	ND(1.0)
TW-46	1,1,1-Trichloroethane	2.7	NS	NS	NS
TW-46	1,1-Dichloroethene	27.9	NS	NS	NS
TW-46	Tetrachloroethene	8.3	NS	NS	NS
TW-46	Trichloroethylene	ND(1.0)	NS	NS	NS
TW-46	Vinyl Chloride	ND(1.0)	NS	NS	NS
TW-64	1,1,1-Trichloroethane	ND(1.0)	NS	NS	ND(1.0)
TW-64	1,1-Dichloroethene	3.0	NS	NS	3.1
TW-64	Tetrachloroethene	1.5	NS	NS	1.4
TW-64	Trichloroethylene	ND(1.0)	NS	NS	ND(1.0)
TW-64	Vinyl Chloride	ND(1.0)	NS	NS	ND(1.0)
TW-68	1,1,1-Trichloroethane	ND(1.0)	NS	NS	ND(1.0)
TW-68	1,1-Dichloroethene	1.6	NS	NS	ND(1.0)
TW-68	Tetrachloroethene	6.1	NS	NS	2.6
TW-68	Trichloroethylene	ND(1.0)	NS	NS	ND(1.0)
TW-68	Vinyl Chloride	ND(1.0)	NS	NS	ND(1.0)
TW-71	1,1,1-Trichloroethane	ND(1.0)	NS	NS	NS
TW-71	1,1-Dichloroethene	ND(1.0)	NS	NS	NS
TW-71	Tetrachloroethene	ND(1.0)	NS	NS	NS
TW-71	Trichloroethylene	ND(1.0)	NS	NS	NS
TW-71	Vinyl Chloride	ND(1.0)	NS	NS	NS
TW-72	1,1,1-Trichloroethane	ND(1.0)	NS	NS	NS
TW-72	1,1-Dichloroethene	ND(1.0)	NS	NS	NS
TW-72	Tetrachloroethene	ND(1.0)	NS	NS	NS
TW-72	Trichloroethylene	ND(1.0)	NS	NS	NS
TW-72	Vinyl Chloride	ND(1.0)	NS	NS	NS
TW-74	1,1,1-Trichloroethane	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-74	1,1-Dichloroethene	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-74	Tetrachloroethene	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-74	Trichloroethylene	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-74	Vinyl Chloride	ND(1.0)	ND(1.0)	ND(1.0)	NS
TW-87	1,1,1-Trichloroethane	NS	NS	NS	ND(1.0)
TW-87	1,1-Dichloroethene	NS	NS	NS	ND(1.0)
TW-87	Tetrachloroethene	NS	NS	NS	ND(1.0)
TW-87	Trichloroethylene	NS	NS	NS	ND(1.0)
TW-87	Vinyl Chloride	NS	NS	NS	ND(1.0)
TW-89	1,1,1-Trichloroethane	NS	NS	NS	ND(1.0)
TW-89	1,1-Dichloroethene	NS	NS	NS	ND(1.0)
TW-89	Tetrachloroethene	NS	NS	NS	77.8
TW-89	Trichloroethylene	NS	NS	NS	9.9
TW-89	Vinyl Chloride	NS	NS	NS	ND(1.0)
TW-90	1,1,1-Trichloroethane	ND(1.0)	NS	NS	NS
TW-90	1,1-Dichloroethene	ND(1.0)	NS	NS	NS
TW-90	Tetrachloroethene	ND(1.0)	NS	NS	NS
TW-90	Trichloroethylene	ND(1.0)	NS	NS	NS
TW-90	Vinyl Chloride	ND(1.0)	NS	NS	NS
TW-93	1,1,1-Trichloroethane	NS	NS	NS	ND(1.0)
TW-93	1,1-Dichloroethene	NS	NS	NS	ND(1.0)
TW-93	Tetrachloroethene	NS	NS	NS	ND(1.0)
TW-93	Trichloroethylene	NS	NS	NS	ND(1.0)
TW-93	Vinyl Chloride	NS	NS	NS	ND(1.0)

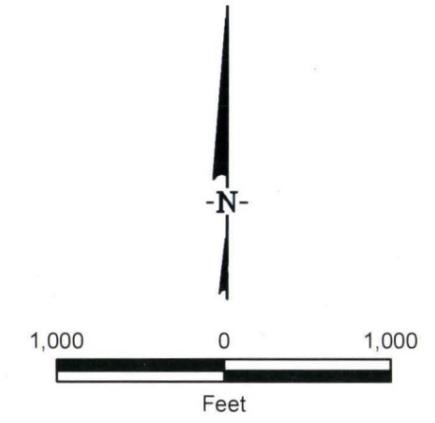


LEGEND

- MONITORING WELL SAMPLED FOR SELECTED VOLATILE ORGANIC COMPOUNDS DURING RESPECTIVE 2011 OR 2012 QUARTER - SOME DETECTIONS REPORTED
- MONITORING WELL SAMPLED FOR SELECTED VOLATILE ORGANIC COMPOUNDS DURING RESPECTIVE 2011 OR 2012 QUARTER - NO DETECTIONS REPORTED
- OTHER WELL WITHIN STUDY AREA NOT SAMPLED FOR VOLATILE ORGANIC COMPOUNDS DURING 2011 OR 2012

NOTES:

1. VOLATILE ORGANIC COMPOUND (VOC) SAMPLING WAS PERFORMED DURING THE SECOND QUARTER (MAY) 2011, FOURTH QUARTER (OCTOBER) 2011, SECOND QUARTER (APRIL) 2012, AND THIRD QUARTER (AUGUST) 2012.
2. VOC CONCENTRATIONS ARE REPORTED IN ug/L.
3. DUE TO THE LIMITED AMOUNT OF DATA POINTS, THE VOC CONCENTRATIONS COULD NOT BE COUNTOURED WITH ANY PRECISION.
4. NS = NOT SAMPLED.
5. ND - NOT DETECTED (AT LISTED DETECTION LIMIT).



GROUNDWATER VOLATILE ORGANIC COMPOUNDS CONCENTRATION MAP

PREPARED BY:	
KOCH KOCH NITROGEN COMPANY, LLC	
PROJECT.	FIGURE NO.
DATE. SEP 2012	FILE NO.

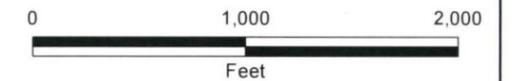


LEGEND

- RECOVERY WELL CURRENTLY IN USE
- MONITORING WELL CURRENTLY IN USE
- RECOVERY WELL NOT IN USE - DRY
- MONITORING WELL NOT IN USE - DRY
- ▲ FLOW TOTALIZER
- ⌵ FORCE MAIN VALVE - NORMALLY OPEN
- ⌵ FORCE MAIN VALVE - NORMALLY CLOSED
- 3-INCH DIAMETER GROUNDWATER RECOVERY PIPE WITH FLOW DIRECTION
- 4-INCH DIAMETER GROUNDWATER RECOVERY PIPE WITH FLOW DIRECTION
- 6-INCH DIAMETER GROUNDWATER RECOVERY PIPE WITH FLOW DIRECTION

NOTE:

PIPE DIAMETER BASED ON DOCUMENT: "PLOT PLAN, TEST WELL LOCATIONS, PLANT AND VICINITY; FARMLAND INDUSTRIES, 1 MAY 1991."



GROUNDWATER RECOVERY WELL NETWORK



PROJECT NO.	FIGURE NO.
DATE: OCTOBER 2012	FILE NO.

MW-01					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	ND(0.040)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	0.009	ND(0.005)	ND(0.005)	0.005	0.008
Nitrate (as N)	ND(0.1)	1.0	0.5	0.9	0.3
Nitrate+Nitrite (as N)	0.2	1.0	1.0	1.4	0.6
Nitrite (as N)	0.2	ND(0.1)	0.5	0.5	0.3

MW-02					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	ND(0.005)	0.025	0.011	0.013	0.006
Nitrate (as N)	0.9	1.6	1.3	1.5	1.3
Nitrate+Nitrite (as N)	1.0	1.8	1.3	1.6	1.4
Nitrite (as N)	0.1	0.2	ND(0.1)	0.1	0.1

MW-03					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	ND(0.020)	0.025	ND(0.010)	ND(0.010)	0.011
Total Chromium	0.045	0.007	ND(0.005)	0.005	0.006
Nitrate (as N)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	0.8
Nitrate+Nitrite (as N)	0.1	0.1	0.5	0.4	1.0
Nitrite (as N)	0.1	0.1	0.5	0.4	0.2

MW-18S					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	0.023	0.008	0.008	0.036	ND(0.005)
Nitrate (as N)	32	27	44	46	51
Nitrate+Nitrite (as N)	35.8	33.4	45	47.6	52.1
Nitrite (as N)	3.8	6.4	1.0	1.6	1.1

MW-18D					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Nitrate (as N)	6.1	3.1	2.3	6.7	6.6
Nitrate+Nitrite (as N)	6.6	4.1	4.8	7.2	7.5
Nitrite (as N)	0.5	1.0	2.5	0.5	0.9

MW-19S					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	ND(0.005)	0.008	ND(0.005)	0.019	0.013
Nitrate (as N)	7.1	33	69	73	91
Nitrate+Nitrite (as N)	7.5	35.5	71.3	80.2	92.5
Nitrite (as N)	0.4	2.5	2.3	7.2	1.5

MW-19D					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Nitrate (as N)	27	38	48	50	57
Nitrate+Nitrite (as N)	30.4	42.2	51.1	52.2	59.2
Nitrite (as N)	3.4	4.2	3.1	2.2	2.2

MW-23S					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	0.012	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	0.016	0.021	ND(0.005)	ND(0.005)	ND(0.005)
Nitrate (as N)	1.3	1.1	0.7	0.7	0.8
Nitrate+Nitrite (as N)	1.6	1.1	0.8	0.8	1.0
Nitrite (as N)	0.3	ND(1)	0.1	0.1	0.2

MW-23D					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	ND(0.010)	ND(0.50)	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	0.006	0.012	ND(0.005)	ND(0.005)	ND(0.005)
Nitrate (as N)	ND(0.1)	0.1	ND(0.1)	0.3	0.4
Nitrate+Nitrite (as N)	0.2	0.1	ND(0.1)	0.3	0.5
Nitrite (as N)	0.2	ND(0.1)	ND(0.1)	ND(0.1)	0.1

MW-17					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	0.007	ND(0.005)	0.007	ND(0.005)	ND(0.005)
Nitrate (as N)	ND(0.1)	0.9	0.9	1.0	0.6
Nitrate+Nitrite (as N)	0.1	1.1	1.0	1.5	1.1
Nitrite (as N)	0.1	0.2	0.1	0.5	0.5

MW-22S					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	0.019	ND(0.005)	0.006	ND(0.005)	ND(0.005)
Nitrate (as N)	1.2	1.6	2.8	4.8	6.6
Nitrate+Nitrite (as N)	1.4	1.9	3.2	5.4	6.9
Nitrite (as N)	0.2	0.3	0.4	0.6	0.3

MW-22D					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	ND(0.005)	ND(0.005)	0.005	ND(0.005)	ND(0.005)
Nitrate (as N)	1.2	1.8	2.3	2.3	2.4
Nitrate+Nitrite (as N)	1.4	2.1	2.4	2.5	2.4
Nitrite (as N)	0.2	0.3	0.1	0.2	ND(0.1)

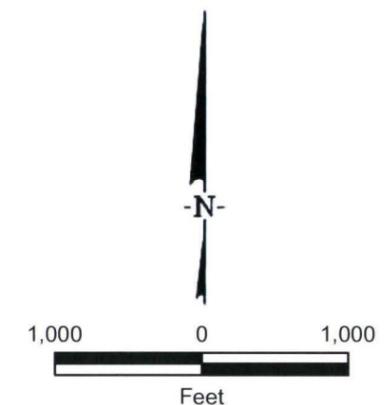
MW-25					
Analyte	3rd Qtr 2011	4th Qtr 2011	1st Qtr 2012	2nd Qtr 2012	3rd Qtr 2012
Hexavalent Chromium	dry	0.015	ND(0.010)	ND(0.010)	ND(0.010)
Total Chromium	dry	0.006	ND(0.005)	0.027	0.018
Nitrate (as N)	dry	6.5	0.2	0.2	0.5
Nitrate+Nitrite (as N)	dry	9.5	0.4	0.2	0.9
Nitrite (as N)	dry	3.0	0.2	ND(0.1)	0.4

LEGEND

- NEW MONITORING WELL INSTALLED IN 2011
- OTHER WELL WITHIN STUDY AREA

NOTES:

1. ALL RESULTS ARE mg/L.
2. WELL MW-25 WAS DRY IN THIRD QUARTER 2011.
3. WELLS MW-24 AND MW-26 WERE DRY IN ALL FOUR QUARTERS.
4. ND = NOT DETECTED AT RESPECTIVE DETECTION LIMIT.



GROUNDWATER ANALYTICAL RESULTS FOR NEW MONITORING WELLS

PREPARED BY:

KOCH

KOCH NITROGEN COMPANY, LLC

PROJECT.	FIGURE NO.
DATE. OCTOBER 2012	FILE NO.