KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Division of Environment
Bureau of Waste Management

MEMORANDUM

TO: Koch Nitrogen Company, LLC Facility File

FROM: Everett Spellman ES

DATE: June 16, 2009

RE: O&M Inspection Report

On July 14-16, 2008, I visited the Koch Nitrogen Company, LLC (KNC) facility to conduct an Operations and Maintenance (O&M) Inspection. During the inspection, KDHE collected groundwater samples from monitoring wells TW-20, and TW-80. The analytical results for these samples are attached to this memo. Also attached is the completed inspection checklist.

RCRA

531857

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

BUREAU OF WASTE MANAGEMENT
HAZARDOUS WASTE PERMIT SECTION

OPERATION AND MAINTENANCE CHECKLIST
HAZARDOUS WASTE COVER PAGE

General ☒ Routine ☐ Follow-up

EPA/ ID/Permit No. KSD044625010 Date(s) July 14-16, 2008

Facility Name Koch Nitrogen Company, LLC KDHE District SW

Street 11559 US Highway 50 City Dodge City KS ZIP 67801-1337

Mailing Address (if different than above) _____

Facility Contact Ms Annie-Laurie Burke Phone 620-227-8631, Ext 350

Fax _____ e-mail _____

Inspector(s) Everett Spellman

Sampling Crew Cory Zellers, Joe Corbin

Facility Information:

Regulatory Status of T/S/D Facility:
☐ Loss of Interim Status ☐ Order
☐ Approved Post-Closure Plan ☐ Other _____
☒ Post-Closure Permit

Sampling and Analysis Plan: Date of Plan Approval July 9, 2001

Groundwater Monitoring System:
☒ Dedicated System ☒ Non-dedicated System
Number of Monitoring Wells more than 100 at facility
Approximate Depth to Groundwater 80-120 feet

Type of Equipment Use:
Water Level Indicator X Oil/Water Interface Probe _____
Well Evacuation Device _____ Type of Tubing _____
pH meter X Turbidity meter _____
Conductivity Meter X Flow-through-cell X
Other pH/Conductivity/Temp/DO

Decontamination Procedures:
Wash: ☐ nonphosphate detergent ☐ other _____
Rinse: ☐ Tap water ☐ Organic-free reagent water
☐ Hexane ☐ Methanol ☐ Acetone
☐ hydrochloric acid ☐ nitric acid ☐ other

Laboratory Analytical Parameters:
☒ VOC ☐ SVOC ☐ 1,4 Dioxane
☒ Metals ☐ Pesticides/Herbicides ☐ Radiation
☐ PCB ☒ Other NO_3

Name of Laboratory Continental Analytical Services, Inc. KDHE Certified Lab? ☒ Yes ☐ No

OPERATION AND MAINTENANCE CHECKLIST
HAZARDOUS WASTE COVER PAGE

Inspection Goals and Tasks

The goal of an Operation and Maintenance Inspection (O&M) is to ensure the facility is properly operating and maintaining the groundwater monitoring system installed at the facility. This evaluation requires an examination of sampling procedures including preparations, equipment calibration, static water level and total well depth measurements, well purging and sampling methods and techniques, equipment decontamination, quality assurance and quality control procedures, and well conditions. This checklist is intended to assist in the evaluation of these details.

Goals of the Inspection To observe sampling procedures and note any violations or deficiencies with respect to the KDHE approved Sampling & Analysis Plan (SAP).

Date(s) of Inspection July 14-16, 2008

Arrival Time(s) 12:30pm on July 14, 7:30 Am on July 15 and 7:30 am on July 16, 2008

Departure Time 6:30pm on July 14, 6:30pm on July 15, and approx. 2:30pm on July 16, 2008.

Wells to Split TW-28 & TW-80

Wells to photograph Various

RCRA OPERATION AND MAINTENANCE INSPECTION CHECKLIST

A. SAMPLING EVENT PREPARATION [40 CFR 264.97 (e), 40 CFR 265.92 (a)]

	YES	NO	NA
A.1. Did the sampling crew adequately prepare and check all equipment prior to mobilization?	☒	☐	☐
A.2. Were field instruments properly calibrated and calibrations recorded in a field logbook?	☒	☐	☐
A.3. Did the Sampling Crew have a copy of the SAP and QAPP in the Field?	☐	☒	☐

Notes: Sampling personnel later produced a copy of the SAP document.

☐ See Section I for additional information.

B. WELL INTEGRITY [40 CFR 264.97 (c), 40 CFR 265.91 (c)]

B.1. Are the following elements of the well properly maintained? (See attached Monitoring Well Integrity Worksheet.)

	YES	NO	NA
a. Protective outer casing and lock — Some wells do not have protective casings	☒	☐	☐
b. Concrete pad / surface seal — Some wells could use additional bentonite.	☒	☐	☐
c. Gas vent and weep hole	☒	☐	☐
d. Survey elevation mark clearly visible	☒	☐	☐
e. Primary casing — Some wells have holes in side of casing	☒	☐	☐
f. Cap for primary casing	☒	☐	☐
g. Well identification markers	☒	☐	☐
h. Flush mount vault seal (water in vault?)	☐	☐	☒

Notes: Need to check for water in the well vault of new flush-mount wells (i.e. SJT-RG006).

☐ See Section I for additional information.

C. STATIC WATER-LEVEL (SWL) AND TOTAL WELL DEPTH (TWD) MEASUREMENTS [40 CFR 264.97 (f), 40 CFR 265.92 (e)]

	YES	NO	NA
C.1. Were static water level and total well depths measured from the well survey mark?	☒	☐	☐
C.2. Were static water level and total well depths measured in accordance with the Sampling and Analysis Plan? If not, describe any variances. Did not observe total well depth msmt.	☒	☐	☐
C.3. Did the sampling crew obtain organic vapor reading at the wellhead prior to SWL or TWD measurements?	☐	☐	☒
C.4. Did the sampling crew measure SWLs in the wells and total well depths prior to the collection of samples?	☒	☐	☐
C.5. Did the sampling crew record measurements to 0.01 feet? w/Tape	☒	☐	☐
C.6. Were all SWL measurements taken within a 24-hour period?	☒	☐	☐
C.7. Was the water level probe decontaminated in accordance with the SAP?	☒	☐	☐
C.8. Were TWD measurements compared with "as built" well depths? Data not provided	☐	☐	☒
C.9. Was percent occlusion determined based on TWD measurements versus "as built" well depths?	☐	☐	☐

Notes: KNC uses a Sonic meter to measure SWL in wells with operating pumps.

☐ See Section I for additional information.

D. DETECTION / SAMPLING OF IMMISCIBLE LAYERS [40 CFR 264.97 (f), 40 CFR 265.92 (a)]

	YES	NO	NA
D.1. Are procedures used which would detect light or dense phase immiscible layers?	☐	☐	☒
D.2. Are any detected immiscible layers measured or sampled separately prior to well purging?	☐	☐	☒
D.3. Do the sampling procedures minimize mixing with the aqueous phase?	☐	☐	☒

Notes:

☐ See Section I for additional information.

E. WELL PURGING AND SAMPLING PROCEDURES [40 CFR 264.97 (d), 40 CFR 265.92 (a)]

	YES	NO	NA
E.1. Were clean disposable ☐latex, ☒nitrile, or ☐vinyl gloves worn during sampling?	☒	☐	☐
E.2. Were gloves changed before each sample or as needed?	☒	☐	☐
E.3. Were the wells sampled in the sequence outlined by the approved Sampling and Analysis Plan? (List the sampling sequence.)	☒	☐	☐
E.4. Did the sampling crew sample background wells before sampling downgradient wells?	☐	☐	☒
E.5. Did the sampling crew avoid placing clean sampling equipment, hoses, and lines on the ground or other contaminated surfaces prior to insertion in the well?	☒	☐	☐

Purge Procedures

E.6. Were the wells purged in accordance with the approved Sampling and Analysis Plan? ☐No-purge method ☒Low-Flow method ☐Borehole volumes	☒	☐	☐

E.7. Were the wells purged using ☒Dedicated or ☐Non-dedicated equipment?

E.8. What equipment was used to purge the wells?
☒Bladder pump ☐Inertia pump ☐Suction pump
☒Submersible pump ☐Bailer ☐Other_____

E.9. Did the sampling crew measure purge parameters in the field?	☒	☐	☐

Frequency of measurements_____ ☒pH_____
☒Temperature_____ ☒Specific Conductance_____
☒Dissolved Oxygen_____ ☐Oxidation Reduction_____
☐Turbidity_____ ☐Other_____

E.10. Did the sampling crew collect the purge water for ☐storage and analysis, ☒on-site disposal, or for ☐shipment off-site to a RCRA treatment facility?	☒	☐	☐
E.11. Did the sampling crew use the proper field method to calculate the volume of water to purge?	☒	☐	☐
E.12. Did the sampling crew use the proper field method to measure the volume of water to purge?	☒	☐	☐
E.13. Was a sufficient volume of water purged prior to sampling?	☒	☐	☐

Bailers

E.14. Did the sampling crew lower and raise the bailer slowly to minimize disturbance and turbidity in the water column?	☐	☐	☒
E.15. Did the sampling crew prevent the rope attached to the bailer from touching the ground?	☐	☐	☒

E.16. Were the bailer contents transferred to the sample container using techniques to minimize

agitation and aeration? ☐ ☐ ☒

E.17. Were bailers bottom valve bailers? ☐ ☐ ☒

Pumps

E.18. Was the bladder pump discharge adjusted to a flow of 100 ml/min or less while collecting VOC samples? ☒ ☐ ☐

E.19. Were the samples collected from the pump discharge tube (not from any purge device discharge tube)? ☒ ☐ ☐

E.20. Was the pump discharge flow free of gas bubbles before each sample collection, as a test for bladder integrity? ☒ ☐ ☐

E.21. Was bladder pump flow performance monitored regularly for drop-off in flow rate and discharge volume per cycle? ☒ ☐ ☐

E.22. Were operating procedures established and followed to prevent the entry of drive gas into the sample flow or the bladder pump? ☒ ☐ ☐

Sampling Procedures

E.23. Were the wells sampled within a 24-hour period after purging? ☒ ☐ ☐

E.24. Were the proper sample containers and preservation methods used for each parameter or group of parameters to be analyzed? ☒ ☐ ☐

E.25. List parameter, container type and volume, and preservation methods for each sample.

Parameter/Group	Sample Container	Preservation
VOCs	40 ml	HCl
SVOCs	—	—
Pesticides/Herbicides	—	—
Metals	250 ml Plastic Bottle	HNO_3
PCBs	—	—
Other - NO3	250 ml Plastic Bottle	H_2SO_4

E.26. Were samples preserved in accordance with the approved Sampling and Analysis Plan? ☒ ☐ ☐

E.27. Were sample containers ☒Pre-preserved or ☐Preserved in the field?

E.28. Did the sampling crew filter samples during sampling? ☐ ☒ ☐

E.29. Did the sampling crew collect and containerize samples in the order of the volatilization sensitivity of the parameters in accordance with the Sampling and Analysis Plan? ☒ ☐ ☐

E.30. Did a laboratory supply the sample containers? If not, describe the method used to clean the sample containers. ☒ ☐ ☐

E.31. Were the sample containers labeled? ☒ ☐ ☐

E.32. Did the labels provide the following information?

Facility / Site Name	☒	☐	☐
Sample identification number	☒	☐	☐
Well number	☒	☐	☐
Name of collector	☒	☐	☐
Date and time of collection	☒	☐	☐
Parameter analyses requested	☒	☐	☐

E.33. Do the sample labels remain legible when wet? ☒ ☐ ☐

E.34. Were split samples collected for/by the regulatory agency? If yes, which wells were sampled? TW-30 & TW-28 ☒ ☐ ☐

Notes: Samples were collected from residential wells

☐ See Section I for additional information.

F. EQUIPMENT DECONTAMINATION [40 CFR 264.97 (d), 40 CFR 265.92 (a)]

	YES	NO	NA
F.1. Were decontamination procedures completed in accordance with the approved Sampling and Analysis Plan?	☒	☐	☐
F.2. Was non-dedicated sampling equipment disposed in accordance with the Sampling and Analysis Plan?	☐	☐	☒

Notes:

☐ See Section I for additional information.

G. QUALITY ASSURANCE AND QUALITY CONTROL [40 CFR 264.97 (d) and (e), 40 CFR 265.92 (a)]

	YES	NO	NA
G.1. Did the sampling crew calibrate the field equipment in accordance with the approved Sampling and Analysis Plan?	☒	☐	☐
G.2. Did the sampling crew follow proper maintenance procedures for the field equipment?	☒	☐	☐
G.3. Did the sampling crew prevent contamination of sampling equipment (i.e. tubing, probes, bottles)?	☒	☐	☐

G.4. Were the samples handled properly prior to analyses (immediately placed on Ice after collection, refrigerated, and secured)? _____ ☒ ☐ ☐

G.5. Does the Sampling and Analysis Plan require the following QA/QC samples?_____

Trip Blanks - Was one trip blank prepared for each transport cooler containing VOC samples? How many trip blanks were collected?_____
VOC only 1 ☒ ☐ ☐

Duplicate Samples – From which wells were duplicate samples collected?_____
_____ ☒ ☐ ☐

Field Blanks - How frequently were field blanks collected?_____
_____ ☐ ☒ ☐

Equipment Blanks - How frequently were equipment blanks collected?_____
_____ ☒ ☐ ☐

G.6. Did the sampling crew maintain a field logbook and/or individual well sampling sheets? ____ ☒ ☐ ☐

G.7. Was the following information documented?

a. Date and time of sampling	☒	☐	☐
b. Weather conditions	☐	☒	☐
c. Field sampling participants	☒	☐	☐
d. Observations and physical well integrity	☒	☐	☐
e. Field equipment descriptions	☒	☐	☐
f. Field analysis results	☒	☐	☐
g. Field equipment and calibration/maintenance information	☒	☐	☐
h. Any other pertinent field observations or unusual conditions Notes	☒	☐	☐

G.8. Who maintains the field logbook and/or individual well sampling sheets? Sampling Crew

Notes:_____

☐ See Section I for additional information.

H. CHAIN-OF-CUSTODY [40 CFR 264.97 (d), 40 CFR 265.92 (a)]

	YES	NO	NA
H.1. Was a chain-of-custody record included with each sample?	☒	☐	☐
H.2. Were the following chain-of-custody items documented?			
a. Sample identification number	☒	☐	☐
b. Well number	☒	☐	☐
c. Signature of collector	☒	☐	☐
d. Date and time of collection	☒	☐	☐
e. Sample container and preservative type	☒	☐	☐
f. Number of containers	☒	☐	☐
g. Parameter analyses requested	☒	☐	☐
h. Signature of all persons involved in the chain-of-possession	☒	☐	☐

i. Inclusive dates of possession _____ ☒ ☐ ☐

H.3. How long are samples held prior to transport to the laboratory? ~~to end of~~
No more than 2 days.

H.4. How are the samples transported/shipped to the laboratory (i.e., hand delivered, overnight express, etc.)? Transported to the laboratory by overnight carrier (UPS)

H.5. Were sample seals attached to the containers or coolers to ensure that the samples are not tampered with while in transit? KDHE did not observe container preparation. ☐ ☐ ☒

Notes: _____

☐ See Section I for additional information.

I. ADDITIONAL INFORMATION (Include field notes, inspection conclusions, and other details)

Notes: _____

Photograph Log

Number	Direction Facing	Description

Monitoring Well Integrity Worksheet

Well ID	Photo Number	Static Water Level	Total Well Depth	Product Level	Protective Casing Condition* (Good/Bad)	Lock in Place (Yes/No)	Concrete Pad Condition** (Good/Bad)	Weep Hole (Yes/No)	Survey Elevation Mark (Yes/No)	Inner Casing Condition (Good/Bad)	Inner Protective Cap (Yes/No)	Other

* Evidence of collision damage, casing degradation, identification number legibility
** Evidence of frost heaving, well subsidence

Comments: _____

_____

_____

KANSAS HEALTH AND ENVIRONMENTAL LABORATORIES
Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: BUREAU OF WASTE MANAGEMENT
ATTN EVERETT SPELLMAN
CURTIS SOB, SUITE 320
TOPEKA KS 66612

Analysis Code: PT Lab Number: 512674

4EM73
Site ID:
Account Code: HD

Collection Location: KOCH NITROGEN COMPANY TW-28
Collector: EVERETT SPELLMAN BWM Matrix: Water Collect Depth:
Date/Time Collected: 07/15/08 12:30 Date/Time Received: 07/17/08 08:11

Sample Comments:

Parameter	Analytical Result	Units	Analysis Date	Analytical Method
Ammonia (N)	0.23	mg/L	07/22/08	EPA 350.1
Nitrate-Nitrite (N)	50	mg/L	07/29/08	SM 4500-NO3

Reporting Analyst: JAB
Date Reported: 08/01/08
Copies To: File

< - Not Detected at Indicated Level
* - Holding Time Exceeded

RECEIVED
AUG 04 2008
BUREAU OF WASTE MANAGEMENT

Laboratory Customer Service - (785) 296-1620
Laboratory Fax - (785) 296-1641
CLIA No. 17D0648254

KANSAS HEALTH AND ENVIRONMENTAL LABORATORIES
Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: BUREAU OF WASTE MANAGEMENT
ATTN EVERETT SPELLMAN
CURTIS SOB, SUITE 320
TOPEKA KS 66612

Analysis Code: PT Lab Number: 512675

4EM73
Site ID:
Account Code: HD

Collection Location: KOCH NITROGEN COMPANY TW-80
Collector: EVERETT SPELLMAN BWM Matrix: Water Collect Depth:
Date/Time Collected: 07/15/08 08:25 Date/Time Received: 07/17/08 08:12

Sample Comments:

Parameter	Analytical Result	Units	Analysis Date	Analytical Method
Ammonia (N)	0.52	mg/L	07/22/08	EPA 350.1
Nitrate-Nitrite (N)	180	mg/L	07/29/08	SM 4500-NO3

Reporting Analyst: JAB
Date Reported: 08/01/08
Copies To: File

< - Not Detected at Indicated Level
* - Holding Time Exceeded

RECEIVED
AUG 04 2008
BUREAU OF WASTE MANAGEMENT

Laboratory Customer Service - (785) 296-1620
Laboratory Fax - (785) 296-1641
CLIA No. 17D0648254

Kans Department of Health and Environ nt
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Everett Spellman Address: BWM, CSCB, Ste 320

Collection Site: Koch Nitrogen Company TW-28
Legal Project Code Name PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ Feet

Sample Type: (Water) Soil Sediment Sludge Air Oil Solid Liquid Wipe Priority: Regular Moderate Urgent

Sample Collector: Everett Spellman BWM Date: 07-15-08 Time: 1230
Name Agency (Abbr) Mo Day Yr 24 Hour

Program Code:

EA	EB	EC	ED	EE	EF	EG	EH	EK	EL	EM	EN	EP	ET	EW	EX	EZ
ES	FK	LM	SC	SE	SG	SN	SP	SW	PC	PD	PE	PG	PI	PL	PP	PT
PU	PV	WE	WI	(HD)	HF	HL	HS	RP	AR	GS	KC	US	AQ	RT	WC	

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

Inorganic Chemistry Laboratory

Bottle Nos.: Chem____ DO____ NUT X HM X CN____ O&G____ Phenol____

Check Desired Analysis: ☐ Other NO_3, NH_3

☒ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: _____

Chain of Custody:

Date 7/17/08 Relinquished By Everett Spellman Received By _____

Date _____ Relinquished By _____ Received By _____

Date _____ Relinquished By DIV. OF H&E LABORATORIES Received By _____

2008 JUL 17 AM 8:04

Additional Reports Routed To:

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____

DHEL-01/2001

Instructions for this form are printed on the reverse side

Kansas Department of Health and Environment
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Everett Spellman Address: Blum, 6508, Hwy 320

Collection Site: Koch Nitrogen Company TL-86
Legal Project Code Name PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ Feet

Sample Type: (Water) Soil Sediment Sludge Air Oil Solid Liquid Wipe Priority: Regular Moderate Urgent

Sample Collector: Everett Spellman Blum Date: 07-15-08 Time: 0825
Name Agency (Abbr) Mo Day Yr 24 Hour

Program Code:

EA	EB	EC	ED	EE	EF	EG	EH	EK	EL	EM	EN	EP	ET	EW	EX	EZ
ES	FK	LM	SC	SE	SG	SN	SP	SW	PC	PD	PE	PG	PI	PL	PP	PT
PU	PV	WE	WI	(HD)	HF	HL	HS	RP	AR	GS	KC	US	AQ	RT	WC	

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

Inorganic Chemistry Laboratory

Bottle Nos.: Chem ____ DO ____ NUT X HM X CN ____ O&G ____ Phenol ____

Check Desired Analysis: ☐ Other NO_3, NH_3,

☒ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: _____

Chain of Custody:

Date 7/17/08 Relinquished By Everett Spellman Received By Ra

Date _____ Relinquished By _____ Received By _____

Date _____ Relinquished By _____ Received By _____

Additional Reports Routed To:

DIV. OF H&E
LABORATORIES
2008 JUL 17 AM 8:04

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____

DHEL-01/2001

Instructions for this form are printed on the reverse side