

July 11, 2011

Joseph Pajor  
City of Wichita  
Department of Public Works  
Office of Environmental Health  
1900 East 9<sup>th</sup> Street  
Wichita, Kansas 67214

BER SCANNED  
JUL 11 2011

**RE: Site-Wide Groundwater Feasibility Study  
North Industrial Corridor Site, Wichita, Kansas**

Dear Mr. Pajor,

The Kansas Department of Health and Environment (KDHE) acknowledges receipt of the Site-Wide Groundwater Feasibility Study (FS), prepared by Camp Dresser & McKee Inc. (CDM), dated June 2011. KDHE has completed its review of the subject document and the City of Wichita's cover letter dated June 9, 2011 which augments the recommendations presented in the FS.

In general, the City of Wichita satisfactorily addressed the majority of KDHE's comments pertaining to the draft FS as discussed during our January 27, 2011 meeting and our March 10, 2011 conference call and identified a reasonably protective and pragmatic remedial strategy for groundwater in the North Industrial Corridor (NIC) Site en bloc; therefore, KDHE is pleased to approve the FS (including the cover letter) provided the following comments are resolved. Please be advised that no additional revision of the FS is required.

**Comment 1 - Recommended Alternative for Groundwater Unit (GWU) 1:** For the record, KDHE has reservations related to the efficacy of monitored natural attenuation (MNA) as the recommended alternative for GWU-1. Our primary concern with respect to MNA is the lack of supporting data in regards to the existing KDHE MNA Policy and relevant U.S. Environmental Protection Agency guidance. This information would need to be collected within a two year period as a component of pre-design data acquisition to demonstrate the effectiveness of MNA within this GWU.

Upon completion of the MNA assessment, depending on assessment findings (such as contaminant concentration trends in groundwater and surface water, MNA parameters and scoring, etc.), the City of Wichita will be requested to either (1) continue with the MNA monitoring program as recommended in the FS or (2) proceed with design (e.g., including optimization of extraction well placement) and implementation of the identified groundwater extraction and treatment contingent remedy. In addition, monitoring for offsite contaminant migration must be conducted during the MNA assessment phase, including evaluation of conditions east of the East Fork of Chisholm Creek. Contamination which continues to migrate beyond the site boundaries during this timeframe would be expected to be promptly addressed through contingent remedy implementation.

**Comment 2 - Recommended Alternative for GWU-2:** KDHE concurs with the recommendation of Alternative 4a for GWU-2 as presented in the FS as augmented by the City's cover letter; however, this alternative appears to be misidentified in the City of Wichita's cover letter as Alternative 3a. The modifications proposed in the City's cover letter include a detailed groundwater investigation east of Chisholm Creek (and groundwater/surface water interactions), identification of enhanced bioremediation as a contingency to address contamination east of the Creek, and contingent installation of an additional extraction well. This misidentification was confirmed during a call with the City of Wichita on June 22, 2011.

**Comment 3 - Recommended Alternative for GWU-3:** KDHE concurs with the City's recommendation of Alternative 4 for GWU-3; however, we note that the contingencies identified in Alternative 5 (e.g., additional wells based on operation of Coleman remediation system and contaminant concentration in Chisholm Creek) are not part of Alternative 4 as presented in the FS but are identified as contingencies in the City's cover letter. The contingencies will be incorporated as appropriate in the Draft Corrective Action Decision for Interim Groundwater Remediation (CAD).

**Comment 4 - Recommended Alternative for GWU-4:** KDHE concurs with the City's recommendation of Alternative 2 for GWU-4 presented in the FS with incorporation of an additional contingency extraction well as proposed in the City's cover letter.

**Comment 5 - Remedial Action Objectives (RAOs):** In the revised FS the City of Wichita acknowledges the need to monitor surface water within the NIC Site; however, the FS does not identify any RAOs specific to groundwater discharge to surface water. Although no changes to the remedial approach are anticipated, KDHE will include a RAO addressing the discharge of contaminated groundwater to surface water which results in unacceptable contaminant concentrations in surface water in the Draft CAD.

**Comment 6 - Scope of Source Area Remedial Actions:** As previously noted, KDHE expects source area remedial actions to address contamination which has migrated beyond facility boundaries and remains at concentrations significantly above respective threshold levels. This expectation will be addressed in the Draft CAD.

**Comment 7 - Vapor Intrusion Assessment:** To move this project forward, the FS focused on addressing site-wide groundwater contamination, as documented in our October 26, 2010 and December 13, 2010 letters, discussed during our January 2011 meeting, and agreed to in the City of Wichita's/CDM's response letter dated March 31, 2011. KDHE reiterates its request for the City of Wichita to complete a comprehensive vapor intrusion assessment concurrently with KDHE's development and issuance of the Draft/Final CAD. As you know current guidance recommends indoor air sampling during the winter months; therefore, please submit a work plan for conducting the vapor intrusion assessment no later than September 30, 2011 so that implementation can occur winter 2011/2012. As the vapor intrusion pathway will be addressed as a separate operable unit, no revisions to the FS are required.

To summarize KDHE's and the City's understanding, based on the revised FS, the City's June 9, 2011 letter, and the comments presented above, KDHE anticipates that the Draft CAD will incorporate the identified remedial alternatives for groundwater, pre-design data acquisition components and contingencies summarized in the table below.

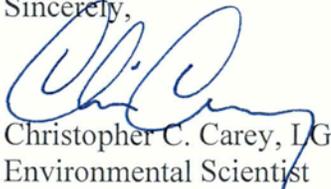
**Identified Remedial Action Alternatives for Interim Groundwater Remediation**

| Groundwater Unit | Identified Alternative  | Pre-Design Data Acquisition   | Contingency   |
|------------------|---|---|---|
| GWU-1            | GWU1-2: Source Abatement and MNA <sup>‡</sup>                         | MNA assessment including evaluation of migration east of the East Fork of Chisholm Creek.   | Groundwater Extraction and Treatment and/or Enhanced Anaerobic Bioremediation |
| GWU-2            | GWU2-4a: Source Abatement and Groundwater Extraction and Treatment    | Detailed groundwater investigation east of Chisholm Creek; study of groundwater/surface water interactions; study to support remedial system design | Additional extraction well(s) and/or Enhanced Anaerobic Bioremediation        |
| GWU-3            | GUW3-4: Source Abatement and Groundwater Extraction and Treatment     | Study to support remedial system design   | Additional extraction well(s)   |
| GWU-4            | GWU4-2: Source Abatement and Groundwater Extraction and Treatment     | Study to support remedial system design   | Additional extraction well(s)   |
| GWU-5            | To be determined through separate evaluation of remedial alternatives |   |   |
| GWU-6            | To be determined through separate evaluation of remedial alternatives |   |   |

<sup>‡</sup> As noted in comment 1 above, KDHE maintains reservations regarding the efficacy of MNA for GWU-1.

While no further revision of the FS is required, KDHE requests the City of Wichita submit a letter response acknowledging acceptance or agreement with the comments presented herein within 30 days of the date of this letter. Upon receipt of the City's affirmative response, KDHE will begin preparation of the Draft CAD accordingly and initiate the appropriate community involvement activities. KDHE looks forward to moving into the remedial phase of this important project. Should you have any questions regarding this letter, please contact me by phone at 785-296-0225 or email at ccarey@kdheks.gov.

Sincerely,



Christopher C. Carey, I.G.  
 Environmental Scientist  
 Remedial Section/Site Remediation Unit  
 Bureau of Environmental Remediation

- c: Rick L. Bean, KDHE → E. Jean Underwood, KDHE → North Industrial Corridor File - C2-087-70150
- Ken Rapplean, U.S. Environmental Protection Agency
- Walter Weinig, Golder Associates
- Shawn Maloney, City of Wichita
- Doris Leslie, City of Wichita
- Roger Olsen, CDM



DEPARTMENT OF PUBLIC WORKS & UTILITIES -  
ENVIRONMENTAL HEALTH DIVISION  
Environmental Assessment & Remediation

RECEIVED

AUG 12 2011

BUREAU OF  
ENVIRONMENTAL REMEDIATION

August 10, 2011

KDHE-BER  
Chris Carey  
1000 SW Jackson, Suite 410  
Topeka, KS 66612-1367

RE: Letter Response to KDHE Approval/Comment Letter Dated July 11, 2011 for the *Site-wide Groundwater Feasibility Study (FS)* – North Industrial Corridor Site, Wichita, Kansas

Dear Mr. Carey;

The City has received your July 11, 2011 approval/comment letter on the Site-Wide Groundwater Feasibility Study (FS) – North Industrial Corridor Site, Wichita, Kansas. The letter requested that the City submit a comment response letter acknowledging acceptance or agreement with the comments included in the KDHE letter. The City and our consultant, CDM, have prepared the following comment responses:

***KDHE Comment 1 - Recommended Alternative for Groundwater Unit (GWU) 1: For the record, KDHE has reservations related to the efficacy of monitored natural attenuation (MNA) as the recommended alternative for GWU-1. Our primary concern with respect to MNA is the lack of supporting data in regards to the existing KDHE MNA Policy and relevant U.S. Environmental Protection Agency guidance. This information would need to be collected within a two year period as a component of pre-design data acquisition to demonstrate the effectiveness of MNA within this GWU.***

*Upon completion of the MNA assessment, depending on assessment findings (such as contaminant concentration trends in groundwater and surface water, MNA parameters and scoring, etc.), the City of Wichita will be requested to either (1) continue with the MNA monitoring program as recommended in the FS or (2) proceed with design (e.g., including optimization of extraction well placement) and implementation of the identified groundwater extraction and treatment contingent remedy. In addition, monitoring for offsite contaminant migration must be conducted during the MNA assessment phase, including evaluation of conditions east of the East Fork of Chisholm Creek. Contamination which continues to migrate beyond the site boundaries during this timeframe would be expected to be promptly addressed through contingent remedy implementation.*

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**City Response:** Comment noted. The City agrees that a monitoring program specifically designed for the MNA processes in accordance with KDHE and EPA guidance protocols is necessary to document the MNA processes occurring in the southern extent of GWU1. The City also believes that due to the land use, industrial and commercial overlying the plume upgradient of the active MNA process zone (southern end of GWU1), the plume will be remediated as it migrates downgradient as well as through other natural attenuations process (i.e. dilution from natural water recharge influx, etc.) and therefore is protective of human health and the environment. In addition, the City agrees that the conditions east of the East Fork of Chisholm Creek will be evaluated.

*Comment 2 - Recommended Alternative for GWU-2: KDHE concurs with the recommendation of Alternative 4a for GWU-2 as presented in the FS as augmented by the City's cover letter; however, this alternative appears to be misidentified in the City of Wichita's cover letter as Alternative 3a. The modifications proposed in the City's cover letter include a detailed groundwater investigation east of Chisholm Creek (and groundwater/surface water interactions), identification of enhanced bioremediation as a contingency to address contamination east of the Creek, and contingent installation of an additional extraction well. This misidentification was confirmed during a call with the City of Wichita on June 22, 2011.*

**City Response:** The City agrees that the preferred remedial alternative for GWU2 is Alternative 4a and cover letter should have read:

- GWU2-4a – one downgradient well for the pump & treatment system
  - With a detailed groundwater investigation on the east site of Chisholm Creek in GWU2
    - Contingency EAB treatment in GWU2 east of Chisholm Creek
  - Additional contingency mid-plume well near 21<sup>st</sup> Street and Mosley Street

*Comment 3 - Recommended Alternative for GWU3: KDHE concurs with the City's recommendation of Alternative 4 for GWU3; however, we note that the contingencies identified in Alternative 5 (e.g., additional wells based on operation of Coleman remediation system and contaminant concentration in Chisholm Creek) are not part of Alternative 4 as presented in the FS but are identified as contingencies in the City's cover letter. The contingencies will be incorporated as appropriate in the Draft Corrective Action Decision for Interim Groundwater Remediation (CAD).*

**City Response:** Comment noted. The City is committed to remediating the NIC site. Just to be clear on the process for implementing the contingency, the City offers the following additional comments: GWU3 remedial Alternative 4 includes 3 remediation wells (NIC#3-1, NIC#3-2, and NIC#3-3A) that the City proposes to have designed and installed as described in the remedial Alternative 4 FS assessment. The City also commits to ensuring the collection piping and treatment system will be designed to allow for expansion of the system if necessary. Upon installation of the Alternative 4 system and implementation of a groundwater monitoring plan for a sufficient time period to allow for the effectiveness of the remedial system to be evaluated, then the contingency wells may be added if determined necessary.

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**Comment 4 - Recommended Alternative for GWU-4:** *KDHE concurs with the City's recommendation of Alternative 2 for GWU-4 presented in the FS with incorporation of an additional contingency extraction well as proposed in the City's cover letter.*

**City Response:** Comment noted. Again, similar to the response to KDHE Comment 3, just to be clear on the process for implementing the contingency, the City offers the following additional comments: GWU4 remedial Alternative 2 includes one remediation well that the City proposes to have designed and installed as described in the remedial Alternative 2 FS assessment. The City also commits to ensuring the collection piping and treatment system will be designed to allow for expansion of the system if necessary. Upon installation of the Alternative 2 system and implementation of a groundwater monitoring plan for a sufficient time period to allow for the effectiveness of the remedial system to be evaluated, then the contingency well may added if determined necessary.

**Comment 5 - Remedial Action Objectives (RAOs):** *In the revised FS the City of Wichita acknowledges the need to monitor surface water within the NIC Site; however, the FS does not identify any RAOs specific to groundwater discharge to surface water. Although no changes to the remedial approach are anticipated, KDHE will include a RAO addressing the discharge of contaminated groundwater to surface water which results in unacceptable contaminant concentrations in surface water in the Draft CAD.*

**City Response:** Comment noted. The City looks forward to reviewing the surface water RAO and the Draft CAD. The City would appreciate the opportunity to work with KDHE in drafting appropriate surface water RAO.

**Comment 6 - Scope of Source Area Remedial Actions:** *As previously noted, KDHE expects source area remedial actions to address contamination which has migrated beyond facility boundaries and remains at concentrations significantly above respective threshold levels. This expectation will be addressed in the Draft CAD.*

**City Response:** Comment noted.

**Comment 7 - Vapor Intrusion Assessment:** *To move this project forward, the FS focused on addressing site-wide groundwater contamination, as documented in our October 26, 2010 and December 13, 2010 letters, discussed during our January 2011 meeting, and agreed to in the City of Wichita's/CDM's response letter dated March 31, 2011. KDHE reiterates its request for the City of Wichita to complete a comprehensive vapor intrusion assessment concurrently with KDHE's development and issuance of the Draft/Final CAD. As you know current guidance recommends indoor air sampling during the winter months; therefore, please submit a work plan for conducting the vapor intrusion assessment no later than September 30, 2011 so that implementation can occur winter 2011/2012. As the vapor intrusion pathway will be addressed as a separate operable unit, no revisions to the FS are required.*

**City Response:** Comment noted. The City will be working toward meeting this deadline and will keep KDHE apprised of the progress.

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Overall, the City acknowledges KDHEs approval of the NIC Site-wide Groundwater FS and thanks you for your time, comments and interactions. As requested, the City also acknowledges our agreement with the comments in your July 11, 2011 letter as discussed above. We believe that we can cooperatively move ahead in our common goal of remediating the NIC site.

Please contact me if you have any comments or questions.

Sincerely,



Shawn Maloney, P.G.  
Program Manager  
Environmental Assessment & Remediation

Cc: Joseph Pajor, Public Works & Utilities, Interim Director  
Don Henry, Public Works & Utilities - Environmental Health Division Manager  
Doris Leslie, Public Works & Utilities - Environmental Health Division  
Jeff Vanzandt, Law Department  
Roger Olsen, CDM  
Monica Williams, CDM  
Kevin Hopkins, Shaw Environmental - NIC TAC

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August 12, 2011

Joseph Pajor  
City of Wichita  
Department of Public Works  
Office of Environmental Health  
1900 East 9<sup>th</sup> Street  
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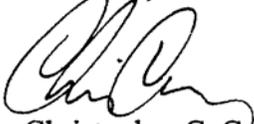
BER SCANNED  
AUG 15 2011

**RE: City of Wichita's Letter Response to KDHE's July 11, 2011 Comments on the Revised *Site-wide Groundwater Feasibility Study*  
North Industrial Corridor Site, Wichita, Kansas**

Dear Mr. Pajor,

The Kansas Department of Health and Environment (KDHE) acknowledges receipt of the above-referenced letter dated August 10, 2011. KDHE has completed its review and believes the City of Wichita has satisfactorily addressed KDHE's comments on the *Site-wide Groundwater Feasibility Study* (FS) and therefore approves the FS. For the record, however, please be advised that KDHE's evaluation of the anticipated MNA assessment and determination of the path forward for Groundwater Unit 1 will be based on data collected for the groundwater unit as a whole as previously discussed and not just the southern part of the groundwater unit. No further response or revision to the FS is required. A copy of KDHE's July 11, 2011 letter, the City of Wichita's August 10, 2011 response, and this letter will be filed with the FS in the Administrative Record file. Should you have any questions regarding this letter, please contact me by phone at 785-296-0225 or email at [ccarey@kdheks.gov](mailto:ccarey@kdheks.gov).

Sincerely,



Christopher C. Carey, LG  
Environmental Scientist  
Remedial Section/Site Remediation Unit  
Bureau of Environmental Remediation

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