

Lawrence, Kansas 6-11-2008

Monica K. Williams, Geologist
Camp Dresser & McKee, Inc.

Dear Ms. Williams,

RE: Construction and Demolition (C&D) Landfill Expansion,
Reno County Landfill, Hutchinson, Kansas

Thank you for the reply letter you sent about the C&D landfill in Reno Co. in response to my February 13, 2008 letter that expressed reservations about expanding that landfill. The information you provided somewhat allays my concerns about the C&D landfill expansion. However, I would like to stress that careful and regular monitoring of the C&D landfill is very important as Arsenic was found in other C&D landfills in several states in the US as a result of leaching from treated lumber. In addition, the average leachate values for nine Ohio C&D landfills exceeded the primary drinking water standards for Arsenic and Lead, and exceeded the secondary drinking water standards for additional constituents according to tests done by the Ohio EPA and reported in November 2005. Thus, extra precautionary measures are called for in this case given the non-ideal landfill siting conditions of the Reno Co. landfill as explained in my previous letter. Thank you.

Sincerely,



Marios Sophocleous
Senior Scientist

PS. The above comments are based on regional geologic conditions and limited information available to the KGS at the time of writing and cannot be used in substitute for a detailed site characterization. Other geologic conditions, not discussed here, or for which the KGS has no knowledge, may affect the viability or safe operation of this facility or property. Geotechnical engineering and design are outside the purview of the KGS. It is the responsibility of the applicant to produce any detailed site characterizations, geotechnical or environmental testing, or design by a licensed professional geologist or engineer to complete the project.



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Wichita, Kansas 67203
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February 21, 2008

Kansas Geological Survey
1930 Constant Ave.
Lawrence, KS 66047-3726

Subject: Construction and Demolition Landfill Expansion
Reno County Landfill, Hutchinson, Kansas

Dear Marios Sophocleous:

Thank you for your reply on February 13, 2008 regarding the request for an assessment of the stability of the area proposed for use as a construction and demolition (C&D) landfill in Reno County, Kansas (S/2 17-23S-6W). In the February 13, 2008 reply letter from the Kansas Geological Survey, some area groundwater contamination issues were noted. On behalf of the Reno County Solid Waste Department, Camp Dresser & McKee, Inc. (CDM) is providing the following response in an effort to allay the Kansas Geological Survey's concerns.

The proposed landfill expansion is for disposal of C&D waste only (typically composed of non-degradable waste and wood waste). Reno County currently operates a C&D landfill and is currently in compliance with state regulations regarding acceptance of waste for disposal in the C&D landfill. Reno County also intends to continue to comply with state regulations regarding accepting waste for disposal in the C&D landfill; therefore, C&D waste disposal in the proposed expansion area is not expected to adversely impact surface waters or downgradient receptors.

In the February 13, 2008 letter, the Kansas Geological Survey notes groundwater contamination issues as described in the *U.S. Geological Survey Water-Resources Investigations Report 92-4169, Hydrology and Ground-Water Quality Conditions at the Reno County Landfill, South-Central Kansas, 1990-91* prepared by Brian A. Heck, Nathan C. Meyers, and Dirk A. Hargadine. In addition to this report, geologic, hydrogeologic, and groundwater contaminant information may be found in the following reports:

- *Reno County Municipal Solid Waste Facility, Hydrogeology Groundwater Investigation* (CDM, 1995),
- *Reno County Site "D" Municipal Solid Waste Facility, Phase II Hydrogeologic and Geotechnical Investigation* (CDM, February 1996),
- *Reno County Municipal Solid Waste Landfill, Interim Release Impact Plan Report* (CDM, 1998),
- *Reno County Municipal Solid Waste Landfill, Summary Release Impact Plan Report* (CDM, 1999),



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- *Reno County Municipal Solid Waste Landfill, Assessment of Corrective Measures* (CDM, January 2000),
- Groundwater monitoring reports for the Subtitle-D landfill (CDM, November 2000, May 2001, November 2001, May 2002, December 2002, June 2003, November 2003, May 2004, November 2004, May/July 2005, November 2005, May 2006, November 2006, May 2007, November 2007),
- Groundwater analytical data (pre-November 2005) and monitoring reports for the closed landfills (CDM, November 2005, May 2006, November 2006, May 2007, November 2007),
- Groundwater monitoring reports for the air sparge/soil vapor extraction (AS/SVE) remediation system (CDM, July 2004 through November 2007), and
- *2006 MW-16A Geoprobe Investigation Report, Reno County Municipal Solid Waste Landfill, Permit Number 723.* (CDM, January 2007).

Based on a review of the geologic, hydrogeologic, and groundwater contamination data, CDM notes the following:

When the groundwater contaminant plume was identified and characterized in the late 1990s, volatile organic compound (VOC) contaminants of concern (COCs), including tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride (VC), were detected at levels exceeding maximum contaminant levels (MCLs) east and southeast of the closed landfill area as far as Valley Pride Road, nearly two miles away. The source of the groundwater contamination was determined to be the unlined, closed landfill cells that accepted sanitary and municipal solid waste into the unlined cells for disposal prior to establishment of protective regulations by the State of Kansas. Reno County's current C&D landfill has not been shown to be a contributor to the groundwater contaminant plume.

Groundwater potentiometric surface data indicate that groundwater flow is to the east to slightly south of east. The nearest surface waters that could be impacted are Salt Creek and the Arkansas River. These water bodies are located to the north of the landfill area gradually shifting to the east of the landfill several miles downstream. Reno County is not currently aware of any impacts from this plume to surface waters or downgradient receptors. In addition, following delineation of the groundwater contaminant plume, corrective action was implemented including:

- 1) placement of clay caps on the closed landfill cells, and
- 2) installation and operation of an air sparge and soil vapor extraction (AS/SVE) remediation system at the leading edge of the groundwater contaminant plume.



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Semiannual groundwater data gathered following implementation of the KDHE-approved corrective measures suggests that the clay caps limited stormwater intrusion into the landfills as intended and therefore the amount of contaminants leaching into groundwater from the unlined cells was minimized. Currently, the contaminant levels in wells along the property boundary downgradient of the closed, unlined landfill cells (point of compliance), as well as in the AS/SVE system performance monitoring wells, remain below MCLs, and the Reno County Municipal Solid Waste Landfill Facility is in compliance with state regulations K.A.R. 28-29-113 and K.A.R. 28-29-114.

Conclusions

Reno County's current C&D landfill has not been shown to be a contributor to the groundwater contaminant plume. Groundwater investigations in the landfill area, and groundwater monitoring results, indicate the source of groundwater contamination is the unlined, closed, sanitary landfill cells. Reno County has implemented corrective action and is currently in compliance with state regulations at the point of compliance (property boundary).

Current (October 2007) regulations do not require construction of a basal liner for a C&D landfill because allowable C&D waste does not include waste that is expected to degrade and adversely impact human health or the environment. In addition, the proposed landfill has been designed to maintain the minimum vertical separation from groundwater as required in K.A.R. 28-29-302(g). Reno County intends to continue full compliance with state regulations regarding accepting waste for disposal in the C&D landfill; therefore, C&D waste disposal in the proposed expansion area is not expected to adversely impact surface waters or downgradient receptors.

The proposed C&D landfill expansion area is located upgradient of the current C&D and closed landfill areas. Although not required for C&D landfills, monitoring systems are already in place for the closed, unlined landfill cells that will provide monitoring points for the proposed C&D landfill.

CDM hopes this information helps allay the Kansas Geological Survey's concerns regarding the proposed C&D landfill expansion. Based on this information, CDM also hopes that the Kansas Geological Survey will re-consider their opinion of the proposed C&D landfill expansion.



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Thank you for your consideration in this matter. If you have any questions about this request, please contact either me at 316-660-6700 or Jim Kriss at (303) 383-2407.

Sincerely,

A handwritten signature in black ink, appearing to be 'Monica K. Williams'.

Monica K. Williams

Geologist

Camp Dresser & McKee, Inc.

cc Doug Yott (Reno County)
 Megan Davidson (Reno County)
 Charley Bowers (KDHE)