Danielle R. Taber

From: JWALWORT@FCLAW.com
Sent: Wednesday, January 14, 2015 5:01 PM
To: Danielle R. Taber
Cc: SAMES@FCLAW.com; AGOMEZ@FCLAW.com
Subject: Nucor Comments re: RID's FS Report
Attachments: 1.14.15 Comments re RID's FS Report.pdf

SENT ON BEHALF OF SCOTT AMES

Please find the attached comments on RID's Feasibility Study Report submitted on behalf of Nucor Corporation.

Thank you.

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January 14, 2015

VIA E-MAIL TABER.DANIELLE@AZDEQ.GOV

Ms. Danielle Taber
Project Manager
Waste Programs Division
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, AZ 85007

Re: Roosevelt Irrigation District's Feasibility Study of the West Van Buren WQARF Site

Dear Ms. Taber:

These comments are submitted on behalf of Nucor Corporation ("Nucor") and address issues raised in the Feasibility Study Report (the "RID FS") prepared by Synergy Environmental, LLC and Montgomery & Associates on behalf of the Roosevelt Irrigation District ("RID"). RID alleges that contamination is entering into the West Van Buren WQARF Area ("WVBA") from West Central Phoenix ("WCP"). These comments also address comments on RID's FS submitted by Univar USA Inc. on January 12, 2015. These comments focus on the following two issues: (1) RID mistakenly assumes that contamination migrating into the WVBA from WCP, if any, is from the West Osborn Complex ("WOC"); and (2) RID's groundwater model does not adequately represent observed groundwater elevations and flow patterns in the WCP area to credibly identify the WOC as a source of contamination migrating from WCP into the WVBA.

As an initial consideration, it is important to note that the sources of contamination within the WCP remain undetermined. Indeed, the 2012 Final Feasibility Study Report for the Shallow Groundwater System of the WOC WQARF Site ("WOC FS") indicates that contamination in the southern portion of WCP may have originated from multiple sources. *See* WOC FS, p. 24-26; *id.* at Fig. 3-11. In addition to entities that operated at the WOC, RID has identified Univar's WCP facility as a source of groundwater contamination impacting its irrigation wells. Therefore, resolution of this issue will be addressed at some later time.

Further, with respect to RID's groundwater model, the model domain covers approximately 174 square miles and includes, among other regions, the WVBA and the WCP WQARF Area. *See* RID FS, Appendix F, p. 5. Nucor's consultants have not been provided access to RID's model's electronic input/output files but, based solely on the report, it is clear that RID has assigned unrealistic aquifer parameters in the region of the WOC site.

The subsurface at or near the WOC has been studied for more than 20 years. At the WOC, the upper alluvial unit ("UAU") is divided generally into three subunits: (1) the shallow groundwater system ("SGWS") that consists of sands and silts; (2) the middle fine grained unit ("MFGU") that consists of over 100 feet of silts and clays; and (3) the lower sand and gravel subunit ("LSGS") that consists of sand and gravel. The MFGU that lies between the SGWS and the LSGS permits only minimal communication between the SGWS and the LSGS. RID FS, p. 16; *see also* SGWS Proposed Remedial Action Plan, p. 3-1.

GeoTrans and ADEQ have determined that the SGWS flows generally south from the WOC, whereas the LSGS flows generally to the west. ADEQ has recognized the distinct nature of those two subunits as evidenced by it requiring separate feasibility studies and separate proposed remedial action plans for those two distinct water bearing strata contained within the UAU. The two subunits have very different hydraulic conductivities, have no apparent connectivity to each other, and migrate in completely different directions.

Despite clear evidence to the contrary, RID has chosen to ignore these well-established facts and has modeled the area near the WOC as a single layer with one set of aquifer parameters. RID claims that it has assigned hydraulic conductivity values at the WOC based on the geometric mean of conductivities at the WOC but provides no explanation of what values it used in calculating the geometric mean or even an explanation of why employing the geometric mean is an appropriate or logical modeling approach. Instead, RID simply states that the geometric mean is 72 feet/day and then claims to use that value. However, based on RID's own map of conductivities used in its model, the map appears to show that the assigned conductivity values at or near the WOC are between 100 – 200 feet/day. *See* RID FS, Figure F-7.

The importance of these issues is demonstrated in RID's modeling results. For example, RID performed a calibration for 1990 that resulted in an average difference between measured water levels and the model predicted water levels ("Residual Mean") of 10.8 feet. RID FS, Appendix F, p. 16. However, the Residual Mean between measured and predicted water levels for calibration targets at or near the WOC were much greater than that – closer to 30-40 feet. *See* RID FS, Appendix F, Tables.

RID's failure to use appropriate model input parameters, and RID's model's failure to reasonably predict groundwater flow at or near the WOC precludes the use of RID's model for: (1) identifying potential sources of groundwater contamination within WCP and (2) accurately

predicting the affect RID's recommended remedy would have on contamination migrating from WCP, if any.

Sincerely,

FENNEMORE CRAIG, P.C.

Scott K. Ames

SAME/tmm