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September 7, 2010

VIA E-MAIL AND U.S. MAIL

Benjamin H. Grumbles, ADEQ Project Manager
Arizona Department of Environmental Quality
ADEQ Central Office
1110 W Washington St.
Phoenix, AZ 85007

Re: West Van Buren WQARF Site
Roosevelt Irrigation District Well Investigation Work Plan

Dear Director Grumbles:

Univar USA Inc. (“Univar”) provides the following comments to address the August 9, 2010 Roosevelt Irrigation District’s (“RID”) Well Investigation Work Plan (“Work Plan”) prepared by Montgomery & Associates. The Work Plan was submitted to meet the requirements imposed by the Arizona Department of Environmental Quality (“ADEQ”) in their conditional approval of RID’s February 3, 2010 Early Response Action (ERA) Work Plan.

General Comments on the Work Plan

1. ADEQ noted that Task 2 (RID Wells Investigation) was required as part of its conditional approval because:

“Due to the proposed increased pumping rate at RID wells to be used for remediation, RID must conduct well testing and modeling to insure that changes in pumping will not adversely affect groundwater quality and levels within the WVBA beyond what would be expected with the current pumping conditions. Water levels must be maintained at or near current levels taking into account natural variations. The investigation must determine how ERA workplan implementation will affect both the aquifer and wells in the area of the plume.”

ADEQ required RID to submit:

“Within 45 days of ERA approval... a well investigation work plan for the investigation of RID wells within the plume boundary. This investigation shall include at a minimum,

water levels, screen intervals, spinner log testing, depth specific analytical testing, and video logging”.

The RID Work Plan does not meet the conditions imposed by ADEQ and is nonresponsive to ADEQ’s requirements. Therefore, the Work Plan does not satisfy the second specific condition of ADEQ’s conditional approval, and cannot result in a demonstration that the ERA will not negatively affect the aquifer and surrounding wells. Specifically, all RID wells within the plume boundary must be comprehensively and thoroughly evaluated to determine their current effect on the aquifer and surrounding wells in the WVBA, and to determine how implementation of the ERA will change that effect. At a minimum, the investigation must include water levels, screen intervals, spinner log testing, depth specific analytical testing, and video logging. Instead, RID only proposes a limited investigation of 13 of its impacted wells, with a detailed investigation of four of its wells. Further, the Work Plan states that the scope is “limited to a phased approach to assess wells within the existing plume and wells proposed for use in the ERA.” RID provides no details of the “phased approach”, what the limitations will be or justification for excluding the other RID wells within the plume boundary.

2. The Work Plan provides no discussion on how the data collected during the well investigation will meet ADEQ’s specific goals to 1) Insure that changes in pumping will not adversely affect groundwater quality and levels within the WVBA beyond what would be expected with the current pumping conditions, 2) Maintain water levels at or near current levels taking into account natural variations, and 3) Determine how the ERA workplan implementation will affect both the aquifer and wells in the area of the plume.
3. Section 4.0 “Well Investigations” is the section of the Work Plan where the specific technical details regarding each task should be presented. This Section contains very limited technical details and is grossly insufficient to perform the analysis required by ADEQ.
4. The Work Plan contains no data quality objectives. There is no explanation of how the data will be used to support the analysis and subsequent descisions. There is no explanation of how these data collection activities are related to the follow-on tasks regarding modeling of the groundwater system.

Specific Comments on the Work Plan

1. Page 2. Although RID states that there will be “no net change in annual groundwater pumping volume in the WVB Site.”, this does not address the key mandate to determine what effect changing the location and rate of pumping will have on the WVBA plume. In addition, changes in annual groundwater pumping volumes may be necessary to effectively control, contain and remediate contaminants and should be evaluated.
2. Page 2. This section should describe in detail the physical setting, hydrogeologic conditions, groundwater conditions and sources of contamination and how they relate to the RID well investigation.

3. Page 3. RID notes that operations have significant seasonal impacts on the local water levels. However there is no discussion of how RID operations have contributed to the introduction and movement of contaminants within the aquifers. This baseline understanding is necessary to evaluate future RID operations and pumping scenarios that can be used to effectively control, contain and remediate the plume.
4. Page 3. Planned well investigations need to be completed on all wells within one season to avoid seasonal variations.
5. Page 4. The discussion regarding vertical gradients should be expanded to discuss the seasonal changes to vertical gradients due to RID pumping and the effect vertical gradients have on contaminant migration.
6. Page 4. The description of the wells that will be pumped for the proposed ERA in the text, Table 1 and Figure 2 are inconsistent. RID divided the proposed ERA into two phases and the proposed ERA should be discussed in terms of the phases.
7. Page 5. The Work Plan states, "The contaminated groundwater in the WVBA Site impairs RID's wells, its operations and restricts the use of its water supply." The Work Plan should either identify how the wells and RID operations have been "impaired" by the contaminated groundwater or the statement should be removed from the Work Plan. RID has provided no demonstration of adverse impact to current or past operation of RID wells in the WVB Site.
8. Page 5. RID has presented no factual or technical evidence that the current use of RID's water supply has been restricted by the contaminated groundwater. There also is no evidence that RID has changed or altered its production, distribution and sale of irrigation water based on the groundwater contamination. Data regarding VOCs in some RID wells has been publicly available since at least 1984 and RID has operated these wells for at least 25 years under these conditions with the same end use; non-potable irrigation for non-edible crops. In the absence of any evidence contrary to that publicly available information, the statement should be removed from the Work Plan.
9. Page 6. The Work Plan states that "detailed investigation of selected key wells" will be performed. There is no discussion of how these "key wells" were selected and why other wells were excluded. Are the selected "key wells" tied to specific data quality objectives from which decisions will be made? Are the "key wells" filling a perceived data gap that needs addressing for the modeling effort? Focusing on four "key" wells does not meet ADEQ's requirement to investigate and conduct spinner logging, depth specific analytical testing, and video logging in all RID wells within the plume boundary.
10. Page 6. "Information gathered from investigation of these key wells will be used: 1) to determine if additional well investigations are needed...." RID's contingency is to investigate only four more wells (screened in UAU and MAU). There appears to be no

plan to investigate any of the other RID wells located within the plume boundary, which does not meet ADEQ's requirement.

11. Page 7. All recommendations for subsequent well investigations should be included in the Work Plan to address all RID wells within the plume boundary.
12. Page 7. The description of the proposed well investigation activities is unusually brief and lacks the necessary detail to evaluate the effectiveness of the proposed activities.
13. Page 7. The Work Plan states that all groundwater monitoring activities "will be conducted in coordination with the goals" of the proposed Groundwater Monitoring and Data Management Plan. All groundwater monitoring activities should be conducted under a comprehensive and approved plan, not the goals of a proposed plan.
14. Page 7. RID field activities, sampling methods, laboratory analyses, and quality assurance procedures should adhere to protocols previously developed by ADEQ or a RID plan approved by ADEQ. Any deviations should be documented in writing and approved by ADEQ prior to conducting the work.
15. Page 8. The data sources are not sufficient to characterize existing well conditions. At a minimum, physical inspection of the RID wells should also be conducted.
16. Page 9. All RID wells within the plume boundary are required by ADEQ to include the spinner logging as part of the well investigation, not just the wells listed.
17. Page 10. How will RID determine if replacement pumping equipment will be needed and whether replacement of that specific equipment is necessary?
18. Page 11. How will the depths for sampling be specifically identified and when and how will ADEQ and other parties be informed so that a technical review of the selected sampling depths can be performed?
19. Page 13. The paragraph describing the schedule restricts the proposed work to investigation of the four "key wells", which is inconsistent with other portions of the Work Plan and ADEQ's requirements.
20. Page 13. Providing a detailed schedule within 30 days following project initiation is completely out of normal sequence and indicates a lack of understanding of the work necessary to meet the requirements imposed by ADEQ in the conditional approval letter.

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Univar appreciates the opportunity to provide these comments. Please contact me if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Michael Gaudette (ga)". The signature is written in a cursive style with a large, stylized "G" at the end.

Michael Gaudette
Senior Project Manager

cc: James Hooper, Univar, Director, Environmental Affairs (via email)
Leslie Schenck, Univar, Assistant General Counsel (via email)
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