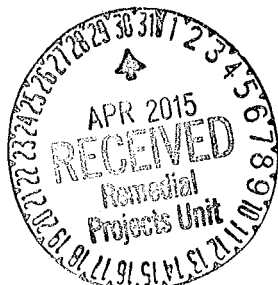


THE CAVANAGH LAW FIRM

A Professional Association



Jerry D. Worsham II
(602) 322-4040
Facsimile: (602) 322-4105

April 28, 2015

E-Mail:
jworsham@cavanaghlaw.com
www.cavanaghlaw.com
File No. 50211-3

Ms. Jennifer Botsford, MSPA
Program Manager, Office of Environmental Health
Arizona Department of Health Services
150 North 18th Avenue
Phoenix, AZ 85007

Mr. Scott Green, RG
Remedial Projects Unit Manager
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, AZ 85007

**Re: West Van Buren WQARF Site Feasibility Study Evaluation
Arizona Department of Health Services "Health Consultation –
Evaluation of Water Sampling Results in the Roosevelt Irrigation
District (RID) Phoenix, Maricopa County, Arizona" (January 8, 2015)**

Dear Jennifer and Scott:

On behalf of Meritor, Inc., I submit the following comments for the record on the West Van Buren Water Quality Assurance Revolving Fund (WQARF) Site Feasibility Study (FS) Evaluation. The Arizona Department of Health Services (ADHS) completed a recent Health Consultation on January 8, 2015. This ADHS Health Consultation Report is clearly relevant to any discussion of the human health risk and exposure issues to determine whether an actual threat to human health exists with the pumping of groundwater in the West Van Buren WQARF Site by the Roosevelt Irrigation District (RID). By letter dated February 11, 2015, the RID through Synergy Environmental, LLC submitted negative comments upon, and was critical of, the captioned ADHS Health Consultation Report. (See Exhibit 1)

In summary, the ADHS Report concluded that:

"Update of the 1992 Statement of Risk (ADHS 1992): ADHS re-evaluated the potential health risks associated with the exposure to RID #84 as if it were used as potable water. With the available information, ADHS concluded that exposure to trichloroethene (TCE), tetrachloroethene (PCE) and 1,1-dichloroethene (1,1-DCE) in RID #84 would not be expected to harm people's health under typical conditions of household water use.

7171947_1

RID irrigation wells and canal water: This health consultation evaluated the potential health risks associated with the exposure to groundwater collected from RID irrigation wells and canal water collected in the RID area. **With the available information, ADHS concluded that ingestion exposure to TCE and PCE in groundwater and canal water in RID sampling area is not expected to harm people's health.**

Calculated cancer risk was below EPA's target risk range."

RID declined to submit a Human Health Risk Assessment (HHRA) which meets the standard and requirements of the U.S. Environmental Protection Agency (EPA) or the Arizona Department of Environmental Quality (ADEQ).^{1,2} Generally, EPA and ADEQ require an HHRA which evaluates the total carcinogenic risk from any medium to an individual exposed over a life time. Carcinogenic risk evaluations, fall within a range from 10^{-4} to 10^{-6} , with the cumulative carcinogenic risk not to exceed 10^{-4} are considered protective. For non-carcinogenic effects, EPA generally interprets protective cleanup standards to mean constituent concentrations that an individual could be exposed to on a daily basis without appreciable risk of deleterious effect during a lifetime; the hazard index generally should not exceed one (1).

DISCUSSION

After close review of the RID's comments, I point out the attached information previously submitted by RID which refutes the RID's negative comments on the ADHS Health Consultation Report based upon the RID's own "screening-level assessment" of potential exposure titled:

"Early Response Action-Public Health Exposure Assessment and Mitigation Summary Report, West Van Buren Area Water Quality Assurance Revolving Fund Site, Synergy Environmental, LLC (September 16, 2011)

The RID's own screening level assessment report listed above asserts:

4.2 EXPOSURE ASSESSMENT FOR CONTAMINANTS OF CONCERN IN AIR

The overall findings of this investigation lead to the conclusion that emissions of COCs currently associated with the pumping and conveyance of contaminated groundwater *do not pose an imminent air inhalation hazard to public health.* The potential

¹ See RID's Revised Feasibility Study (FS) Report submitted November 26, 2014.

² Note: The scope of the [RID's] assessment was limited to the potential public exposure from VOCs released during RID pumping and conveyance of groundwater. The RID's assessment did not constitute a quantitative HHRA, but rather a screening-level assessment of potential exposure and no modeling and/or calculation of quantitative risk was conducted.

for acute exposure from the notably elevated *point source emissions that were measured is not considered significant* based on the fact that measured COC concentrations in the adjacent breath zones are substantially lower. Moreover, discharge points at well sites are fenced to control public access and there are a limited number of open segments within the water conveyance to the RID Main Canal. (Pgs. 22-23)

4.3 EXPOSURE ASSESSMENT FOR CONTAMINANTS OF CONCERN IN WATER

The frequency and duration of public use of the RID open water conveyances is not known. The RID Main Canal is an open structure, however the canal is posted with no trespassing signs and has regular security patrols in an attempt to prevent unauthorized access. Even with these precautionary measures, public exposure to waters in the open RID system has been known to occur and has been documented but is believed to be limited to localized and periodic usage in the warmer months. Based on this limited opportunity and duration of public exposure to COCs in the RID water conveyance systems, *there appears to be no imminent (acute) risk to public health from exposure to COCs in RID waterways.* (p. 23)

4.4 LIMITATIONS AND UNCERTAINTY

As stated in the Introduction, this Public Health Exposure Assessment is not intended to quantify the risk to individuals in the local public.³ Instead, it is intended to provide previously unavailable data regarding the extent and magnitude of observed contaminant distribution in the local environment to facilitate preliminary, informed assessments of the potential for exposure to the public that could adversely impact human health or the environment through screening-level comparison to established guidelines. . . . The following are notable areas of potential uncertainty that may limit conclusions drawn from these results . . .

Screen-Level Guidelines

Screening-level guidelines provide standardized, risk-based numerical criteria to use in making informed assessments of potential public health risk from exposure to measured chemical concentrations of contaminants in a medium and at a location. *The*


³ Note: RID fails to mention the Human Health Risk Assessment (HHRA) completed by the West Van Buren WQARF Site Working Group included in the Feasibility Study Report (Appendix D) submitted December 1, 2014 [Determined by ADEQ as administratively complete on April 13, 2015.]. This HHRA concluded that there is no risk to RID workers or to residents within the West Van Buren Area and was completed following EPA and ADEQ risk assessment guidance documents.

screening tools are generally based on conservative assumptions in order to assure the screening values derived are protective of human health. Thus, the screening levels used in this study may overestimate the potential health risk. (p. 24)

CONCLUSION

The ADHS Health Consultation Report concludes that human exposure to the identified chemicals in the groundwater from RID's irrigation wells and canal water would not be expected to harm people's health. The ADHS Health Consultation Report's conclusion is consistent with 1) RID's own screening-level evaluation and 2) the West Van Buren WQARF Site Working Group's HHRA. RID's negative comments are not relevant to evaluate the conclusions reached by the ADHS Health Consultation Report. ADEQ has put RID on notice of their deficient "screening-level evaluation" associated with the Early Response Action since October 7, 2010. (See **Exhibit 2**) If RID wants to criticize the ADHS Health Consultation Report, they should complete their own formal Human Health Risk Assessment as described under Arizona Administrative Code (AAC) R18-16-401 requirements or adopt the Appendix D HHRA submitted by the West Van Buren WQARF Site Working Group.

Sincerely,



Jerry D. Worsham II

JDM:kca

cc: Linda Furlough, Esq. – Meritor, Inc.
Laura Malone – ADEQ
Tina Le Page – ADEQ
Danielle Taber – ADEQ

Exhibit 1

Health Consultation

Evaluation of Water Sampling Results in the Roosevelt Irrigation District (RID)

PHOENIX, MARICOPA COUNTY, ARIZONA

Prepared by the

Arizona Department of Health Services

January 8, 2015

HEALTH CONSULTATION

Evaluation of Water Sampling Results in the Roosevelt Irrigation District (RID)

PHOENIX, MARICOPA COUNTY, ARIZONA

Prepared By:

Arizona Department of Health Services

Office of Environmental Health

Environmental Health Consultation Services

Executive Summary

Introduction:	<p>This report was written in response to a request from interested parties to evaluate whether there are potential human health risks from exposure to water for domestic use and residential irrigation in the Roosevelt Irrigation District (RID). This report serves two purposes – first, it analyzes updated 2013 data from monitoring well RID #84, which was the subject of a 1992 report prepared by the Arizona Department of Health Services (ADHS) due to concerns of the plume contaminated with volatile organic compounds (VOCs) reaching a production well. Second, it reviews 29 RID wells to determine whether concentrations of contaminants are at or above levels of public health concern. Since RID water is currently used for irrigation only, a risk assessment was conducted based on ingestion, inhalation, and dermal contact from recreational use and gardening.</p>
Conclusions:	<p>Update of the 1992 Statement of Risk (ADHS 1992): ADHS re-evaluated the potential health risks associated with the exposure to RID #84 as if it were used as potable water. With the available information, ADHS concluded that exposure to trichloroethene (TCE), tetrachloroethene (PCE) and 1,1-dichloroethene (1,1-DCE) in RID #84 would not be expected to harm people's health under typical conditions of household water use.</p> <p>RID irrigation wells and canal water: This health consultation evaluated the potential health risks associated with the exposure to groundwater collected from RID irrigation wells and canal water collected in the RID area. With the available information, ADHS concluded that ingestion exposure to TCE and PCE in groundwater and canal water in RID sampling area is not expected to harm people's health.</p> <p>Calculated cancer risk was below EPA's target risk range.</p>
Basis for Decision:	<p>For RID well #84:</p> <ol style="list-style-type: none">1. The detected TCE, PCE and 1,1-DCE concentrations were below their respective non-cancer health-based comparison values. Comparison values are estimated contaminant concentrations in a media where non-carcinogenic health effects are unlikely.2. The detected PCE concentration was below its Cancer Risk Evaluation Guideline (CREG), which was developed by ATSDR. CREGs are estimated contaminant concentrations that would be expected to cause no more than one additional excess cancer in one million (1,000,000) person exposed over a lifetime.3. The estimated cancer risk for TCE exposure was 1.43×10^{-6} and represents a possible 1-2 excess cancer cases in a population of 1,000,000 over a lifetime. Lifetime risk refers to the probability that an individual, over the course of a lifetime, will develop cancer. EPA has established a target risk range of 1 in 1,000,000 to 10,000 (10^{-6} to 10^{-4}) for hazardous waste sites. The estimated cancer risk did not exceed EPA target risk range (10^{-6} to 10^{-4}).

For canal water samples collected in the RID area:

1. Potential non-cancer health effects: the detected TCE, PCE, 1,1-DCE, cis-1,2-dichloroethene (cis-1,2-DCE), 1,1-dichloroethane (1,1-DCA), and 1,1,1-trichloroethane (TCA) concentrations were below their respective non-cancer health-based comparison values. Comparison values are estimated contaminant concentrations in a media where non-carcinogenic health effects are unlikely.
2. Potential cancer health effects:
 - o The detected PCE concentration was below its Cancer Risk Evaluation Guideline developed by ATSDR. CREGs are estimated contaminant concentrations that would be expected to cause no more than one additional excess cancer in one million (1,000,000) person exposed over a lifetime.
 - o The estimated cancer risk for TCE exposure was 1.0×10^{-8} and represents a possible 1 excess cancer case in a population of 100,000,000 over a lifetime. The estimated cancer risk did not exceed EPA target risk range (10^{-6} to 10^{-4}).

For groundwater collected from RID irrigation wells, and canal water samples collected in the RID area:

1. Potential non-cancer health effects:
 - o The detected PCE, 1,1-DCE, cis-1,2-dichloroethene (cis-1,2-DCE), 1,1-dichloroethane (1,1-DCA), and 1,1,1-trichloroethane (TCA) concentrations were below their respective non-cancer health-based comparison values. Comparison values are estimated contaminant concentrations in a media where non-carcinogenic health effects are unlikely.
 - o The calculated TCE daily exposure doses for adults and children were less than the reference dose. Reference dose is an estimate, with uncertainty or safety factors built in, of the daily lifetime does of a substance that is unlikely to cause non-cancerous health effects in humans.
2. Potential cancer health effects: The estimated cancer risk for TCE exposure was 1.6×10^{-7} and represents a possible 1-2 excess cancer cases in a population of 10,000,000 over a lifetime. The estimated cancer risk for PCE exposure was 1.9×10^{-9} and represents a possible of 2 excess cancer cases in a population of 1,000,000,000. The estimated cancer risks did not exceed EPA target risk range (10^{-6} to 10^{-4}).

Next Steps

ADHS recommends continuing to monitor levels of VOCs at RID #84, groundwater wells, and canal water to ensure that ingestion, inhalation, and dermal contact with the water does not occur at levels that exceed levels protective of public health.

For More Information:

If you have concerns about your health, you should contact your health care provider. Please call ADHS at 602-364-3118 if you have questions about the information in this report.

Danielle R. Taber

From: Joel Peterson <joel.peterson@syn-env.com>
Sent: Wednesday, February 11, 2015 7:39 PM
To: Scott R. Green
Cc: Danielle R. Taber; Tina LePage; Laura L. Malone; Donovan Neese; David Kimball; Sheryl Sweeney; Dennis Shirley; Will Humbel
Subject: RID Comments on ADHS Health Consultation dated 1/8/15
Attachments: RID Comments on ADHS HC dated 1-8-15.pdf

Dear Scott,

Synergy Environmental, in collaboration with RID and its legal counsel, is providing the attached letter to provide comments on the Arizona Department of Health Services "Health Consultation - Evaluation of Water Sampling Results in the Roosevelt Irrigation District (RID)", dated 1/8/15. As always, we are available to discuss RID's responses and answer any questions you may have.

Best Regards,

Joel

Joel Peterson, PE

SYNERGY Environmental, LLC

10645 N. Tatum Blvd., Suite 200-437

Phoenix, Arizona 85028

(480) 284-3518





February 11, 2015

Mr. Scott Green, RG
Remedial Projects Unit Manager
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, AZ 85007

**Re: Comments on the ADHS Health Consultation Dated January 8, 2015,
Evaluation of Water Sampling Results in the Roosevelt Irrigation District,
Phoenix, Maricopa County, Arizona**

Dear Mr. Green:

Synergy Environmental, LLC, on behalf of the Roosevelt Irrigation District (RID), has reviewed and provides the following comments regarding the Arizona Department of Health Services (ADHS) *Health Consultation - Evaluation of Water Sampling Results in the Roosevelt Irrigation District (RID)*, dated January 8, 2015 (ADHS Report). We are submitting these comments to ADEQ for the administrative record because ADEQ has attached the ADHS Report to its website. It seems this ADHS Report was prompted by a request of one or more parties who are potentially responsible parties (PRPs) for groundwater contamination in the West Van Buren Area (WVBA) Water Quality Assurance Revolving Fund (WQARF) Site and these PRPs have already begun to misconstrue the significance of the report's narrowly focused conclusions to ADEQ's feasibility study review process.

The ADHS Report is a very limited and incomplete characterization of public risk profile in the WVBA WQARF Site. The ADHS Report has significant limitations, summarized below, and does not address the more fundamental issues that are critical considerations in the process for ADEQ's selection of an appropriate groundwater remedy for the WVBA WQARF Site under state law and the WQARF Program that will address the over one dozen RID wells currently exceeding applicable health-based legal standards for the hazardous contaminants that are impacting those wells and rendering them unfit for their impending use as a West Valley drinking water source without treatment.

- ADHS considers a hypothetical scenario wherein untreated water from well RID-84 is used for drinking water consumption. This is not a realistic scenario.
- ADHS concludes that, if RID-84 were used as potable water, "...it would not be expected to harm people's health..." despite the fact that it violates applicable federal and state drinking water standards.



- ADHS does not consider the planned use of groundwater from other, more contaminated RID wells as a source of drinking water, even though that has been determined by ADEQ to be the “reasonably foreseeable use” of the water supply.
- ADHS does not consider the health effects of prolonged (and ongoing) public exposure from inhalation of the thousands of pounds of contaminants released each year into the ambient air of the WVBA WQARF Site.
- ADHS fails to consider recent exposure assessment air sampling data that show “*many breathing-zone air samples exceed screening-level guidelines for chronic exposure to TCE and PCE ... in ambient air.*”¹
- The ADHS Report does not mention the ADEQ policy restricting the uncontrolled transfer of contaminants from one environmental media (groundwater) into another (ambient air)².
- ADHS fails to note, as it has in other recent and similar ADHS health consultations, the statutory requirement to enforce Arizona Aquifer Water Quality Standards developed to protect all Arizona aquifers for a drinking water use and to be protective of human health and the environment.

The ADHS Report examined two limited scenarios related to “potential health risks” from hazardous volatile organic compound (VOC) contamination impacting RID wells in the WVBA WQARF Site. Although somewhat confusing in scope, the first stated purpose of the ADHS Report was to evaluate the potential health risks associated with one specific well (RID-84) “*as if it were used as potable water.*” ADHS concluded that exposure to VOCs in the water supply from RID-84 “*would not be expected to harm people’s health under typical conditions of household water use.*” Such a conclusion disregards the fact that tetrachloroethene (PCE) is present at a concentration of 8.1 micrograms per liter [$\mu\text{g}/\text{L}$], which exceeds the primary drinking water maximum contaminant level (MCL) standard of 5.0 $\mu\text{g}/\text{L}$. MCLs are enforceable health-based standards set by the United States Environmental Protection Agency (EPA) as the legal threshold limit for the concentration of a substance that is safely allowed in public water systems. Consequently, the water in this hypothetical scenario is prohibited, as a matter of law, from being used as a potable drinking water source without treatment. In fact, serving this contaminated water for potable purposes, as considered in the ADHS Report, would be a violation of federal and state law, as Arizona has adopted the EPA primary MCLs as applicable Arizona public drinking water supply standards.³

¹ Early Response Action, Public Health Exposure Assessment and Mitigation Summary Report, Sept. 16, 2011.

² ADEQ has confirmed this policy in response to the legal position taken by Maricopa County Air Quality Department which “clearly articulated” that “ADEQ does not support the relocation of contaminants from one media (groundwater) to another (air). Contaminants should be removed from the environment and treated or disposed of appropriately.” See ADEQ letter to the Director of Superfund Program, Environmental Protection Agency Region 9, November 14, 2007.

³ A.R.S. § 49-353.A.2; A.A.C. R18-4-109.



The second stated purpose of the ADHS Report was to evaluate hazardous VOC concentrations in other RID wells and canal water to determine if there is a health concern for people that come in contact with this water *"during recreational use and gardening."* The ADHS Report provides little useful information in this regard and simply clarifies, once again, that there is no current risk to public health from incidentally swallowing small amounts of contaminated water while occasionally gardening or playing in the water.⁴ The ADHS Report did not evaluate the more pertinent issue of the public health risk associated with potable use of contaminated groundwater from these RID wells. Consequently, this report accomplishes very little towards informing the public about the health concerns associated with the reasonably foreseeable future use of contaminated groundwater in the WVBA WQARF Site as a drinking water resource.

RID is concerned that the casual reader of the ADHS Report will fail to grasp these distinctions, especially given the mischaracterization of the ADHS Report provided to ADEQ by the PRPs. In this regard, the ADHS Report's Executive Summary states, *"ADHS concluded that ingestion exposure to TCE and PCE in groundwater and canal water in RID sampling area is not expected to harm people's health."* This conclusion is confusing and misleading. Since this statement (in bold font) so plainly references ingestion, the general public may wrongly interpret this statement as applicable to potential drinking water use. The public, however, would need to sift through the detailed report to understand the evaluation is not about potable use (like the first scenario) and only considers very limited and incidental exposure to contaminants. The misplaced emphasis on this exposure pathway and failure to address the health risk associated with potable use of this water supply are confusing, misleading and inadequate.

RID also is concerned that the ADHS Report fails to consider the potential public health effects of prolonged (and ongoing) public exposure from inhalation of the thousands of pounds of contaminants released each year into the ambient air of the WVBA WQARF Site. Over the past ten years, an average of nearly 3,000 pounds/year of VOC contaminants have been released into the local environment, the ambient air and surface water in the WVBA WQARF Site. ADHS fails to include recent air sampling data that consider that *"many breathing-zone air samples exceed screening-level guidelines for chronic exposure to TCE and PCE ... in ambient air."*⁵

⁴ Such points of exposure and assumed intake may be appropriate at present, particularly because RID has converted most of the open waterways in the WVBA to buried pipelines. However, these assumptions do not apply to past exposures. In particular, video footage that was telecast on KPHO news showed local residents swimming in RID canals and intentionally drinking contaminated water. Past public exposure potential is likely much greater due to higher contaminant concentrations, more widespread points of exposure, and through direct and incidental ingestion.

⁵ For example, TCE concentrations up to 29.0 $\mu\text{g}/\text{m}^3$ were measured in the breathing zone in areas of public exposure. All TCE concentrations measured in this study exceeded the Annual Arizona Ambient Air Quality Guideline of 0.58 $\mu\text{g}/\text{m}^3$, established by ADHS. See Early Response Action, Public Health Exposure Assessment and Mitigation Summary Report, Sept. 16, 2011



The ADHS Report only discussed health risks based on current and future exposure and did not consider the consequence of long-term exposure over the past 30 or possibly 50 years of past exposure to VOC contaminants at the WVBA WQARF Site. There also was no consideration of ADEQ's determination that measures should be taken to limit the transfer of contaminants from groundwater into the air. RID would have thought the state agencies would coordinate on such important policy matters. Even the City of Phoenix, an identified PRP for the WVBA WQARF Site, has expressed support for a remedy that will "*capture and treat the contaminants ... preventing exposure to the public and the environment.*"⁶ Likewise, SRP previously indicated, "*[a]lthough not required to meet water quality standards associated with RID's current irrigation use, some or all of the groundwater could be treated to reduce the transfer of VOCs from the current plume to the air.*"⁷ Not only have such measures already been adopted at the WVBA WQARF Site, ADEQ has required similar measures at other WQARF sites.

At the West Osborn Complex WQARF Site, ADEQ required treatment that would provide a high degree of public protection against potential exposure to VOCs in air.⁸ It is apparent that ADEQ is applying this policy against the transfer of contaminants at WQARF sites regardless of whether "an unacceptable risk level" is created by the transfer.⁹ In fact, ADEQ's prior actions at other communities contradict the recent arguments raised by the PRPs that the minority population in West Phoenix should not be afforded the same level of environmental and public health protection as provided at other groundwater cleanup sites.¹⁰

Further, it is curious that this particular ADHS Report does not contain specific language that has been included by ADHS in other recent, relevant and similar health consultation reports. For example, in a similar July 2013 report, ADHS noted that "*[a]t the present time, the chemicals detected in the monitoring wells ... are not expected to cause public health concern*" and that "*[t]here would be no public health concern if these wells were to be used as*

⁶ City of Phoenix Comments in letter to ADEQ dated January 13, 2015, Attachment 2, page 1. It is unclear why the Environmental Programs Manager for the City of Phoenix supports a remedial strategy that prevents exposure to the public, but the City of Phoenix attorney concurs that treatment is not necessary if no immediate health risk exists. See City of Phoenix Comments, page 1. .

⁷ SRP letter regarding Roosevelt Irrigation District's Proposed Early Response Plan, West Van Buren WQARF Site, December 4, 2009.

⁸ Final Feasibility Study Report for the Shallow Groundwater System, West Osborn Complex WQARF Site, Phoenix, Arizona, prepared by GeoTrans, Inc. January 27, 2012, page 46. Note, the proposed remedy was projected to remove approximately 30 pounds of VOCs per year.

⁹ *Ibid.* For example at the West Osborn Complex WQARF Site, ADEQ stipulated treatment to address uncontrolled hazardous VOCs even though there were no Maricopa County regulatory requirements. It was stated that the use of treatment to eliminate air emissions was a matter of ADEQ internal policy and because the Site "encompasses predominantly residential neighborhoods" and there may consequently be "political and /or public perception concerns."

¹⁰ Working Group comments in letter to ADEQ dated January 14, 2015, pages 9-10.



residential wells, because no cancerous or non-cancerous adverse health effects would be expected under the assumed exposure scenarios."¹¹ However, this ADHS report goes on to say that "[i]n Arizona, all aquifers are identified as drinking water source aquifers unless specifically exempt (ARS §49-224). The Arizona Aquifer Water Quality Standards (AAWQSs) are enforceable standards developed to protect groundwater sources for drinking water use (AAC §R18-11-406) and protective of human health." Surprisingly, these relevant statements are not included in the ADHS Health Consultation Report for RID's wells. Nevertheless, these relevant statements demonstrate that ADHS correctly recognizes that there are environmental health-based standards that must be achieved in a WQARF remedial action, even if there is no immediate public health risk.

In closing, RID is concerned that the casual and uninformed reader of the ADHS Report could be misled to the conclusion that there are no applicable health-based legal requirements, standards or policies requiring ADEQ and PRPs at the WVBA WQARF Site to proactively address the groundwater contamination impacting the WVBA aquifer and RID's water supply wells. Such an impression would be incorrect and would violate multiple applicable state laws and WQARF Program requirements.¹²

The ADHS Report also overlooks critical information regarding the pervasive exposure pathway from inhalation of hazardous VOC contaminants released to ambient air, historically over the past 30 to 50 years and going forward, as well as ADEQ requirements to prevent such pollutant transfer.

We appreciate your prompt review of these comments and are available to meet at your convenience regarding any questions you may have.

Best Regards,
Synergy Environmental, LLC

A handwritten signature in black ink, appearing to read "Joel Peterson", is written over a horizontal line.

Joel Peterson, PE

cc: by Electronic Mail

Danielle Taber, ADEQ

Laura Malone, ADEQ

Donovan Neese, RID

Dennis Shirley, Synergy

Tina LePage, ADEQ

Will Humble, ADHS

David Kimball, Gallagher & Kennedy

Sheryl Sweeney, Ryley Carlock & Applewhite

¹¹ ADHS, Health Consultation: Kinder Morgan Yuma Booster, An Update for Water Sampling Results, page 2 (2013).

¹² For more complete information on the applicable state laws, standards and policies see RID's responses to comments on its FS Report.

Exhibit 2



Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov



Benjamin H. Grumbles
Director

Registered Mail/Return Receipt

October 7, 2010

RPU11:044

Mr. Stanley H. Ashby
Superintendent
Roosevelt Irrigation District
103 W. Baseline Road
Buckeye, AZ 85326

Re: Review of Public Health Exposure Assessment and Mitigation Work Plan
Roosevelt Irrigation District Early Response Action
West Van Buren (WVB) Water Quality Assurance Revolving Fund (WQARF) Site
Phoenix, Arizona

Dear Mr. Ashby:

The Remedial Projects Unit (RPU) of the Arizona Department of Environmental Quality (ADEQ) has reviewed the above referenced work plan received via email by ADEQ on July 26, 2010. The work plan was prepared by Synergy Environmental, L.L.C. on behalf of the Roosevelt Irrigation District (RID). This work plan was requested by ADEQ as part of ADEQ's approval of the proposed Early Response Action (ERA) to be conducted in the West Van Buren Area (WVBA) Water Quality Assurance Revolving Fund (WQARF) Registry Site. The work plan was to identify how and where data/information would be collected to demonstrate the existing risk to the public as stated in the ERA Implementation Plan and other documents supporting the need for the proposed ERA and how to mitigate the risk(s). RPU reviews this work plan under a working agreement dated October 8, 2009 and signed by both Roosevelt Irrigation District (RID) and ADEQ.

The RPU has the following comments:

1. The work pan has no date, signature, or State of Arizona registered professional stamp. These are basic requirements of the ADEQ when documents of such importance are submitted to ADEQ for review and approval.
2. The work plan lacks the four components of a site-specific human health risk assessment as described in Arizona Administrative Code (AAC) R18-16-401. These components need to be included in the work plan. They are:
 - A. Identification of potential contaminants,
 - B. An exposure assessment,
 - C. A toxicity assessment, and

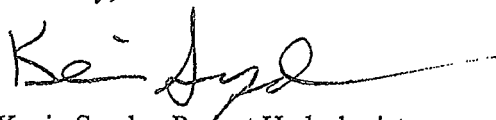
Northern Regional Office
1801 W. Route 66 • Suite 117 • Flagstaff, AZ 86001
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

- D. A risk characterization.
3. The work plan should identify the contaminants present and the harmful effects caused by the contaminants including the expected dosage that the public may be exposed to. To determine this, the following need to be completed:
 - A. The quantity of chemicals of concern (COCs) released to the air through volatilization at the point of well discharge to the canals,
 - B. The quantity of COCs released to the air due to volatilization of VOCs from the surface of the canal,
 - C. The potential exposure to each of these COCs to nearby residents (Adult and child) from the point of well discharge to the canals and the surface of the canal,
 - D. The potential exposure to each of these COCs to nearby industrial workers from the point of well discharge to the canals and the surface of the canal,
 - E. The potential exposure to each of these COCs due to swimming in the canals, as appropriate,
 - F. The potential exposure to an individual that ingests fish caught in the canal, and
 4. Sampling methods/techniques of the various media that contain the contaminants need to be identified and thoroughly described. The collection of data may be supplemented by the use of existing data where available.
 5. The work plan is just as vague when explaining how the data will be interpreted and used to determine the level of risk caused by the presence of VOCs contained in the groundwater. The work plan should describe techniques/modeling to be used to calculate risk if any.
 6. The work plan is vague in describing what, if any, procedures will be proposed to mitigate risks to human health and the environment. The work plan should present engineering procedures/remedial activities to be used to determine the most effective method to be utilized to mitigate the risk.
 7. The work plan states that the scheduling of the risk analysis is contingent upon receipt of project funding. The Working Agreement with RID and approval of work is not based on RID's funding source.

The work plan should be resubmitted with the edits requested above.

Sincerely,



Kevin Snyder, Project Hydrologist
Remedial Projects Unit

Mr. Stanley H. Ashby
October 8, 2010

RPU11:044
Page 3 of 3

Cc: Dennis Shirley, Synergy Environmental
Amanda Stone, WPD Director
Julie Riemenschneider, RPS Manager
Jennifer Thies, RPU Manager