ADEQ
ARKANSAS
Department of Environmental Quality

July 13, 2012

U.S. EPA Region 6
Attn: Mr. Stephen Tzhone
Mail Code: 6SF
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

RE: Groundwater Remediation Summary June 2012, Arkwood Superfund Site, Omaha, Arkansas; EPA ID No. ARD084930148; AFIN: 05-00003

Dear Mr. Tzhone:

The Arkansas Department of Environmental Quality – Hazardous Waste Division & Water Division (ADEQ) have reviewed the **Groundwater Remediation Summary** dated **June 2012**. The ADEQ concurs with the summary document with the following comments:

1) **Conclusions and Recommendations, p.9:** In February 2012, ADEQ sent to EPA a letter with recalculated water quality standards for New Cricket Spring. These limits should be referenced in the proposed recommendations. The text describes these values as cleanup standards. ADEQ recommends in the sixth sentence of this section "Based on the Arkansas Pollution Control and Ecology Commission's water quality standard for penta-chlorophenol (PCP) presented by ADEQ in their February 14, 2012 letter, the chronic standard of 15.57 ug/l is the appropriate standard for the Arkwood Site." The appropriate standard for this stream is the chronic standard 15.57 µg/L. The organisms in the receiving stream experience long term exposure to PCP; therefore the chronic standard is most appropriate. ADEQ also recommends monthly monitoring of PCP for the next five year period. Because of the typically large fluctuation in flow at the spring, quarterly sampling may not be an adequate representation of the PCP level in the short term. Because the spring is now physically restricted from contact, any proposal to remove this barrier may need to be reevaluated for potential risk as a drinking water source.

2) The attached letter also includes a request for measuring additional parameters during each monthly sampling event at the mouth of the spring. These parameters include the temperature, pH and dissolved oxygen of the spring water.

Please proceed with the recommendations and send ADEQ a revised summary report with the above revisions. If you have any comments or questions, please contact me at 501-682-0852 or via e-mail moix@adeq.state.ar.us.

9423036

Sincerely,

for Annette Cusher

Mark Moix
Engineer, PE
Technical Branch
Hazardous Waste Division
Attachment

ADEQ
ARKANSAS
Department of Environmental Quality

February 14, 2012

USEPA REGION 6
Attn: Mr. Shawn Ghose
Mail Code: 6SF
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

RE: New Cricket Spring Water Quality Standards, Arkwood Superfund Site, Omaha, Arkansas; EPA ID No. ARD084930148; AFIN: 05-00003

Dear Mr. Ghose:

Arkwood is a Superfund site under the direct authority of EPA. The surface water regulations, Arkansas Pollution Control and Ecology Commission (APC&EC) Regulation No. 2 would be an applicable or relevant and appropriate requirement (ARAR). Water Quality Standards and the basis for calculating a specific standard are given in APC&EC Regulation 2. Definitions for all terms used are also in the Regulation.

Because the State Water Quality Standard is pH based, surface water sample(s) proximal to the site are used to determine if the standard should be changed. A review of APC&EC Regulation 2 indicates that the equation for the calculation has not changed since the ROD was issued. In addition, pH data should be included in the weir discharge sample to ensure it falls between 6.0 and 9.0 pH.

The pH data from the nearest ADEQ Water quality monitoring station (WHI0071) for the period 2004-2009 was averaged for use in the calculation. Periodic updates may be made based on more recent or site specific data. This would be done with each five year review of the NPL site at a minimum. Pentachlorophenol Calculations for Surface Discharge, Per Reg. 2.508, the Pentachlorophenol aquatic life water quality standards (WQS) are as follows:

Acute	Chronic
e[1.005(pH)-4.869]	e[1.005(pH)-5.134]
pH = 7.84 s.u.	

The pH used in calculating the standards, 7.84 s.u., is the average pH taken at monitoring station WHI0071 from 2004 – 2009.
Acute Standard
e[1.005(7.84)-4.869] = 20.29 μg/l
Chronic Standard
e[1.005(7.84)-5.134] = 15.57 μg/l

Reasonable potential for water quality violations is determined by comparing the effluent data to the WQS without taking into account a background flow because the 7Q10 of the receiving stream is 0 cfs. In accordance with the procedures outlined in the Continuing Planning Process (CPP), the highest effluent test result is compared to the water quality standards because over twenty data points exist. The highest effluent test result is 20 µg/l which occurred on July 10, 2008. It is important to note that higher test results occurred on October 22, 2007, and July 7, 2008. Those test results, 53.7 µg/l and 189 µg/l respectively, were not used because it appears as though those results were not representative of the effluent.

Comparison with Acute Standard
20 µg/l < 20.29 µg/l
Comparison with Chronic Standard
20 µg/l > 15.57 µg/l

Organisms in the effluent discharge stream experience chronic exposure, therefore; the chronic standard of 15.57µg/l is the appropriate standard for the Arkwood Site. With respect to the previously calculated values, the monthly average would be 15.57 µg/l and the daily maximum would be 20.29 µg/l.

In addition to measuring pH at the sample points, temperature and dissolved oxygen data should be collected. APC&EC Regulation 2.505 requires that dissolved oxygen (D.O.) levels meet or exceed 6.0 mg/l. During the months of March, April, and May, when discharge levels at the weir exceed 15 CFS, the D.O. standard is 6.5 mg/l.

If you have any questions, please contact me at 501-682-0660 or via e-mail at clem@adeq.state.ar.us.

Sincerely,

Sarah Clem
ADEQ Branch Manager
Water Quality Planning, Water Division

cc: M. Moix, Engineer P.E., Hazardous Waste Division, ADEQ

ADEQ

A R K A N S A S
Department of Environmental Quality

HAZARDOUS WASTE DIVISION ROUTING SLIP

June 21, 2012

Subject: Arkwood, Inc. CERCLA Superfund Site

From: Mark Moix MM 6-21-2012

Route in turn to:	*Action Needed*	*Initials*	*Date*
Grant Kneebone	☑ Concurrence ☑ Review (by DK)	GK	6-25-12
Dianna Kilburn	☑ Concurrence ☑ Review	DK	6/22/12 w/ comment
Jay Rich	☑ Concurrence ☑ Review	JR	7-11-12
Annette Cusher	☑ Concurrence ☑ Review	AC	6/25/12
Shane Byrum	☐ Concurrence ☑ Review	SB	6/26/12
Sarah Clem	☐ Concurrence ☑ Review	SC	7-2-12 7-5-12
Mo Shafii	☑ Concurrence ☑ Review	MS	7-2-12
Tammie Hynum	☑ Concurrence ☑ Review	TH	7/11/12 comments 7/3/12 comments 7/11/12
Ryan Benefield	☑ Concurrence ☑ Review	RB	7/12/12

Note: Marking the Concurrence box indicates the individual agrees with the applicable text as it relates to their individual discipline and Work Section (e.g., Engineer; Risk Assessor; Geology; Compliance; Policy/Management), as applicable. Marking the Review box indicates the individual has read the document.

DISPOSITION:

Return to Mark Moix 682-0852

COMMENTS: *Approval letter with comments for the Arkwood, Inc. Groundwater Remediation Summary dated June 2012*