

November 18, 2013

Via Hand Delivery

Ms. Tammie J. Hynum
Chief, Hazardous Waste Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

**Re: Whirlpool Corporation, Fort Smith, Arkansas
Comments on September 2013, Draft Remedial Action Decision Document
EPA No. ARD042755389 AFIN No. 66-00048**

Dear Ms. Hynum:

ENVIRON International Corporation (ENVIRON) on behalf of Whirlpool Corporation (Whirlpool) has prepared this document as a formal written response to the Draft Arkansas Department of Environmental Quality (ADEQ) Draft Remedial Action Decision Document (RADD) dated September 2013 (AFIN: 66-00048) as published in the News Release dated October 14, 2013.

Whirlpool overall supports the remedy set forth in the RADD with recommended changes that we believe strengthen the objectives of treating the site and doing so with appropriate and effective reporting. Whirlpool will be prepared to implement the remedy once the RADD has been finalized. In-Situ Chemical Oxidation (ISCO) treatment has been used to remediate groundwater contamination at sites around the United States and in Arkansas, and Whirlpool concurs that the combination of an asphalt impermeable cover for the on-site source area, ISCO treatment, institutional controls, and monitored natural attenuation will provide a protective remedy.

In keeping with the May 21, 2013 Revised Risk Management Plan (RRMP), June 14, 2013 Revised Risk Management Plan Addendum (hereinafter the Revised Risk Management Plan and Addendum will be collectively referred to as the RRMP), and the July 16, 2013 Draft Final Remedy Work Plan (Work Plan), ENVIRON requests ADEQ consider the following suggested minor modifications to the RADD. Incorporating these comments would clarify certain statements in the RADD. The modifications would also make clear that future required submittals (as approved by ADEQ) would further establish the schedule beyond the milestones set forth in the RADD and would allow for some flexibility on the specifics of remedial timing and implementation based on data and information gathered during design and during pilot implementation, and other considerations such as the possible adoption of institutional controls. This flexibility would allow for minor changes, improvements or modifications to the remedy as new data and information is obtained without having to modify or reissue the RADD.

Whirlpool remains committed to working with ADEQ, as well as the City of Fort Smith and the residents of the area, until this issue has been addressed. Whirlpool looks forward to the finalization of RADD

following ADEQ's review of the comments submitted during the comment period, and to initiating the remediation activities once approval has been given.

Site History

The Whirlpool Fort Smith site is located at 6400 Jenny Lind Road on the south side of Fort Smith, Arkansas. The site manufactured side-by-side household refrigerators and trash compactors. The property (approximately 153 acres) consists of the main manufacturing building (approximately 1.3 million square feet), separate warehouse and administrative offices, and undeveloped land (approximately 21 acres) Additional buildings located on the north side of the property include a water treatment plant and a boiler house. The majority of the property surrounding the buildings consists of concrete or asphalt service roads and parking areas. Some gravel parking areas are also present.

Whirlpool entered into a Letter of Agreement (LOA) with the Arkansas Department of Environmental Quality (ADEQ), dated July 19, 2002 (ADEQ 2002). Under the LOA, Whirlpool has been following ADEQ program requirements including the United States Environmental Protection Agency's (USEPA's) Corrective Action Strategy, which includes the development of a conceptual site model (CSM), describing environmental conditions at the site. To date, Whirlpool has met the LOA requirements including items required / requested by ADEQ by Items F and G, of the LOA.

All completed investigations, reports, and monitoring events have been used by Whirlpool to create a full understanding of the site background, delineate Constituents of Concern (COCs) in soil and groundwater, evaluate potential exposure pathways for the risk assessment, and propose a corrective measure, all of which are detailed in the RRMP and Work Plan.

The following sections provide Whirlpool's general and detailed comments on the RADD. Each section discusses the general issue along with solutions and corresponding references to specific sections of the RADD.

1 Schedule

Whirlpool agrees with the dates for quarterly, annual and five year reporting, and for recording of deed restriction documentation that are specifically addressed in the RADD. Whirlpool also agrees that the Work Plan will be updated to include the requirements of the RADD, and proposes it should be done within 30 days of the later of the effective date of the RADD or the effective date of an administrative consent order that will accompany or shortly follow the RADD. Further, we feel the schedule set forth in Section 12 of the RADD should be modified to strengthen the overarching objectives of treating the site while being transparent and providing reports on the progress being made.

The schedule in Section 12 of the RADD should contain a specific statement that acknowledges that the Work Plan and subsequent documents will develop a more detailed schedule with project milestones subject to ADEQ approval. Any remaining references throughout the RADD document to specific start

dates or deadlines based on the effective dates of the Final RADD should be deleted to eliminate the potential for inconsistent deadlines throughout the document and to place all schedule requirements in Section 12. This will allow future schedule modifications through modification and approvals to the Work Plan without reopening the RADD.

Second, the technical review of remedial activities should commence on or after December 31, 2016. As explained further below, providing additional time for this technical review will provide an opportunity for Whirlpool to implement and optimize operation of the ISCO treatment and will allow the oxidant to reach and react with the contaminants of concern (COCs) for a reasonable period of time prior to attempting to evaluate the effectiveness of the ISCO treatment. The work required for the deployment of a successful remedy including ISCO treatment, will begin in the timeframe discussed in the RADD whereby Section 12 of the RADD states that remediation will begin within 60 days after the effective date of the RADD.

Third, as is commonly recognized in such plans, the schedule should contain a specific recognition that events beyond Whirlpool's control may impact any ADEQ approved schedule and that, if such an event occurs, the schedule may be adjusted with ADEQ's consent.

Each of these comments is addressed further below.

1.1 Technical Review Schedule

Clarification of certain specific schedule requirements contained outside Section 12 which create inconsistencies with the schedule in Section 12 are beneficial to all parties. For example, on page 20, the RADD states that "Whirlpool shall begin remediation of the TCE plume within 60 days after the effective date RADD". How this requirement fits with the schedule in Section 12 or would be interpreted is unclear. Whirlpool is actively engaged in efforts necessary and required by ADEQ to assure a robust full scale remedy implementation that will include additional investigations, preliminary design, bench and pilot scale testing, and full scale design before implementation of the full scale remedy. Keeping the referenced statement in the Final RADD requires ADEQ to define "remediation" so Whirlpool can meet ADEQ RADD expectations. The statement could be misinterpreted by the public and create the unintended expectation that ISCO will begin as soon as 60 day, which is not the case, and which would be technically not feasible.

1.2 Start Dates and Performance Milestones

The most significant schedule change proposed that will best address the progress being made on the site within the practical limitations that exist with the plan is related to the technical review of remedial activities proposed by ADEQ in the RADD by December 31, 2015. As outlined in the Work Plan requested by ADEQ and submitted by Whirlpool in July 2013, full scale implementation of the first phase of ISCO will not take place until 2015 resulting in insufficient time to determine the true effectiveness of the remedy. A submittal too early in the evaluation process will likely result in inconclusive data or data trends that have not been substantiated within an appropriate timeframe. Providing an additional year for this technical review will allow for the implementation of the Phase I injection program and sufficient

monitoring after the implementation to provide data that will aid in assessing the effectiveness of the ISCO treatment and determinations as to whether technical adjustments to the injection program need to be made as the remedy proceeds.

With the various phases of the proposed remedy implementation, Whirlpool requests all implementation dates and performance milestones except those specifically identified in Section 12 be developed, agreed to and enforced through ADEQ approved work plans, work plan updates or addendums. The work plans ADEQ requires in the RADD for review and approval before any work can commence at the site should be the detailed basis for moving forward including determining effectiveness in meeting all schedules and deliverables. A draft schedule was provided in the Work Plan submitted to ADEQ on July 16, 2013. While this schedule will be updated based on Final RADD requirements, it illustrates the framework Whirlpool is requesting ADEQ consider.

Schedule Delays Outside Whirlpool's Control

It should also be noted that delays in schedule outside of Whirlpool's control may affect the schedule outlined in the RADD. For example: local and State permitting delays, work plan approvals, off-site property access issues and adverse weather, etc. are not addressed nor are they afforded a framework for their potential impact to schedule in the RADD. Whirlpool pledges to work diligently in all aspects of implementation, but it is not uncommon for plans of this nature to reflect the realities of issues that might be outside the control of either Whirlpool or ADEQ. Thus, we propose the RADD should be revised to reflect that such delays may be presented to ADEQ and approved by ADEQ, revising the schedule set forth administratively without formally reopening the RADD, which could actually result in further delay.

1.3 Locations to address within the RADD:

- Section 10 – Selected Remedy/Site Plan; C. Placement of Institutional Control
- Section 11 – Effectiveness Monitoring Program
- Section 12 – Schedule

2 Constituents of Concern

The Draft RADD states, "Based upon the historical process, the primary constituent of concern (COC) is TCE. However tetrachloroethene (PCE) and TCE daughter products, including cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), 1,1-dichloroethene (1,1-DCE) and vinyl chloride (VC) resulting from the natural degradation of PCE and TCE have also been detected in the groundwater monitoring wells". Other sections of the Draft RADD (listed below) include additional COCs not included in the COCs documented to be present at the site. Moreover, historical site activities do not warrant the inclusion of these additional COCs. Therefore Whirlpool requests ADEQ limit the Remedial Action Levels (RALs) table and COC Table 2 to TCE, PCE cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE and VC as the COCs for the site.

To maintain consistency through the RADD, Table 2 titled Contaminants of Concern should be changed to Constituents of Concern.

2.1 Locations to address within the RADD:

Section 3 – Summary of Site Risks; A. Human Health Risks
Section 8 – Remedial Action levels; C. Groundwater
Table 2 - Contaminants of Concern

3 Off-Site Soils

Certain sections of the RADD do not clearly distinguish between on-site soils and off-site soils when discussing risk. With no known off-site impacts to soil there is no documented risk associated with off-site soil, so any discussion of risks associated with soil should clearly reference only on-site soil, and should make clear that there are no off-site impacted soils.

3.1 Locations to address within the RADD:

Section 3 – Summary of Site Risks; A. Human Health Risks, Off-site Receptors and Exposure Routes
Section 3 – Summary of Site Risks; A. Human Health Risks, Off-site Potential Carcinogenic and Non-Carcinogenic Risks
Section 5 – Summary of Alternatives Considered in Revised Risk Management Plan
Section 11 – Effectiveness Monitoring Program

4 Groundwater Ingestion Pathway

The RADD sets forth a summary of human health risks in Section 3. However it appears the risk associated with off-site groundwater ingestion has been omitted. All other exposure routes are clearly defined in the text with tables documenting the basis for the risk. There is no such discussion or presentation of data to substantiate the risk from off-site groundwater ingestion. There is only a single sentence statement at the very end of this section that states “However, if drinking water wells are installed on-site or off-site, significant potential risks could result from the use of groundwater.”

Without the inclusion of the potential risk associated with off-site groundwater, there is no basis for incorporation of any future institutional control into the determination of future potential risk. Therefore, Whirlpool requests ADEQ acknowledge and include the current and future groundwater exposure risks and acknowledge that risk-based RALs can be applied to on-site and off-site groundwater until appropriate, enforceable institutional controls have been recorded to the satisfaction of ADEQ.

Finally, on page 4, the RADD accurately states that the depth to groundwater is routinely observed during the construction of monitoring wells to be 15 to 25 feet below ground surface but also notes that the measured depth in completed wells may be less in the northeast portion of the off-site area. Because the measured depth in these particular wells may be related to confined aquifer conditions leading to artesian conditions impacting the measured depth to water within the monitoring well, this

statement in the RADD does not impact the selected remedy and measured depth in the monitoring wells may not reflect actual groundwater depth. For these reasons, this statement should be deleted from the RADD.

4.1 Locations to address within the RADD:

Section 3 – Summary of Site Risks; A. Human Health Risks, Off-site Potential Carcinogenic and Non-Carcinogenic Risks

Section 3 – Summary of Site Risks; A. Human Health Risks, Off-site Receptors and Exposure Routes

Section 8 – Remedial Action Levels; C. Groundwater

5 Effectiveness of Remedy

Timely and appropriate determination of effectiveness of the remedy is critically important. The effectiveness determinations will be used to evaluate whether the selected remedial actions are achieving the desired goals and determining interim and final success or failure. Whirlpool is committed to implementing a successful project; therefore the methods and criteria used to evaluate the project should be clearly defined. Whirlpool requests ADEQ use the work plan document(s) to clearly define interim and final goals rather than the Final RADD.

On-site, institutional controls in conjunction with an asphalt surface and impervious coating will be used to address surface soil impacts and mitigate risks associated with exposure to on-site soils. The effectiveness of a remedial measure off-site may also be evaluated on a risk based method. As the remedy implementation process moves forward, circumstances may change resulting in changes to risks associated with off-site receptors, so it is important to allow flexibility in the path chosen to reach the site endpoint. Therefore the RADD should be amended to make clear that a no further action document may be obtained either through (a) the achievement of RALs for the relevant COCs by a combination of ISCO treatment, institutional controls and monitored natural attenuation or (b) a site specific analysis demonstrating that risk associated with all potential pathways has been reduced to acceptable regulatory levels based on a combination of ISCO treatment, institutional controls, and monitored natural attenuation.

5.1 Locations to address Effectiveness within the RADD:

Section 6 – Proposed/Recommended Remedies; B. Groundwater

Section 8 – Remedial Action Levels; C. Groundwater

Section 9 – Justifications for Selections; B. Groundwater

Section 10 – Selected Remedy/Site Plan; A. Surface and Subsurface Soils

Section 11 – Effectiveness Monitoring Program

6 Institutional Controls

There are multiple points in the RADD requiring institutional controls that incorporate specific language concerning the control of future on-site exposures. An example is in Section 9 Justification for Selections, A. Subsurface Soils "This remedy will be coupled with an institutional control to prevent excavation of the on-site impacted soils." This sentence implies that excavation of on-site soil should never be allowed. The RADD should state that proposed remedies will be coupled with an institutional control to prevent *unauthorized* excavation of the on-site impacted soils. The intent of on-site institutional controls is not to prohibit the excavation of on-site soils, but to require that such activities be conducted in accordance with approved site specific risk management plans that will facilitate the full redevelopment of the site.

In Section 10 under "Selected Remedy/Site Plan, C. Placement of Institutional Control", it states in the second paragraph: "Within sixty (60) days of the effective date of this RADD, the Facility must provide documentation of a deed restriction for the Facility." This requirement should be revised to make clear that Whirlpool will submit a draft restrictive covenant prior to recording to allow for ADEQ comment.

6.1 Locations to Institutional Controls within the RADD:

Section 6 – Proposed/Recommended Remedies, A. Subsurface Soils

Section 9 – Justification For Selections, A. Subsurface Soils

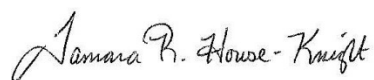
Section 9 – Justification For Selections, B. Groundwater

Section 10 - Selected Remedy Site Plan, C. Placement of Institutional Control.

As we have stated previously, overall Whirlpool is in agreement with the RADD, and remains committed to working with ADEQ, as well as the City of Fort Smith and the residents of the area, until this issue has been addressed. Whirlpool looks forward to initiating the remediation activities once approval has been given.

If ADEQ has any questions or requires clarification to the comments contained in this correspondence please contact me.

Sincerely,



Tamara House-Knight, PhD
Project Manager / Toxicologist

cc: Robert Karwowski – Whirlpool Corporation