

February 28, 2013

**Delivery Via E Mail**

Mr. Wally Bailey  
Director of Development Services  
City of Fort Smith  
P.O. Box 1908 (02)  
623 Garrison Avenue (01)  
Fort Smith, AR 72901

**Re: Response to Questions Dated February 20, 2013  
Whirlpool Request for City Ordinance  
City Directors Meeting – March 5<sup>th</sup>, 2013**

Dear Mr. Bailey,

On behalf of Whirlpool Corporation, ENVIRON International has prepared the following responses to the questions you submitted to Robert L. Jones III on February 20, 2013. We trust our responses will assist the City Directors to understand the Whirlpool site impacts and how the requested ordinance will be protective.

The questions you posed are numbered and highlighted in **blue text**. Our response follows each question in black text.

**1. How did the substance get into the ground water?**

The use of TCE was discontinued in 1981 and the degreaser building is not currently used for any cleaning operations. There are no historical records that document any spills or other release incidents from the degreaser building. It is possible that historical leaks from the tank or surface spills in the vicinity of the degreaser building may have occurred, resulting in releases to the soil and groundwater.

**2. Since Whirlpool stopped using it around 1980 and was notified by ADEQ in 2011, what happened between these years?**

The use of TCE was discontinued in 1981. Sampling in conjunction with removal and closure of a underground storage tank (UST), not associated with the degreaser system, in 1989 indicated the presence of TCE. Whirlpool began voluntary site investigation activities in 1989 based on the impacts discovered during the UST closure. The initial investigation started with a series of soil borings and groundwater monitoring wells in 1989. Additional soil borings and groundwater monitoring wells were completed over time as new data was integrated into the site understanding.

Groundwater flow direction data showed groundwater moving from the impact area to the southeast and all impacted groundwater limited to the Whirlpool property. However in 2001, data confirmed a groundwater divide exists and groundwater is also flowing to the north-northeast offsite to the residential areas to the north. Whirlpool notified ADEQ of a potential offsite impact to groundwater north of facility in 2001. Whirlpool and ADEQ entered into a Letter of Agreement (LOA) in 2002 based on the 2001 notification and the data collected since 1989. The LOA is the binding Consent

Administrative Order executed between Whirlpool and ADEQ imposing formal corrective action requirements for the site.

Presented below is a summary of site actions and activities since 1981:

Activity / Report	Date
TCE Use Discontinued	June 1981
UST Closure Confirmation Sampling Indicates TCE In Soils	May 1989
Whirlpool Begins Voluntary Onsite Investigation	August 1989
Site Investigation and Routine Well Sampling Begins	October 1989
Additional Upgradient Monitoring Wells Installed	January 1990
Onsite Aquifer Characterization Test Completed	March 1990
Additional Monitoring Wells Installed And Sampled	November 1990
All Groundwater Wells Sampled	February 1991
Pilot Groundwater Recovery Test Completed	April 1991
Additional Wells Installed to North and South / All Wells Sampled	November 1993
Electric Offset Logging (EOL) Survey Conducted	September 1996
All Groundwater Wells Sampled	December 1996
Geoprobe Sampling Completed	December 1996
Additional Wells Installed On North Side Of Tank Area	January 1997
Supplemental Site Investigation Report Prepared	January 1997
Onsite Source Area Bench Scale Treatment Study Completed	January 2000
Annual Groundwater Monitoring Report	May 2000
Supplemental Site Investigation Report Prepared	December 2000
Whirlpool Notifies ADEQ of Offsite Impact To Groundwater	January 2001
Meeting With ADEQ To Review All Data And Remedial Action Plan To Address Potential Offsite Impacts	February 2001
City Of Fort Smith Mayor's Office, City Administrator, LEPC, County Health Department and ADEQ Ft Smith Office Notified In Writing Of The Presence Of TCE And Whirlpool's Intent To Install Wells Along Ingersoll	February 2001
Annual Groundwater Monitoring Report	May 2001
Notice of Intent (NOI) To Enter Corrective Action Strategy Program Submitted To ADEQ	August 2001
Annual Groundwater Monitoring Report	April 2002
Letter Of Agreement (LOA) With ADEQ Signed	July 2002
Conceptual Site Model Report Submitted To ADEQ	August 2002
Onsite Scoping Meeting With ADEQ	August 2002
Risk Management Strategy Work Plan Submitted To ADEQ	August 2002
Conceptual Site Model Report Addendum Submitted To ADEQ	August 2002
On-Site Scoping Meeting With ADEQ	August 2002
On-Site ChemOx Pilot Study Report	August 2002
Corrective Action Strategy (CAS) Work Plan Submitted To ADEQ	November 2002
ADEQ Approves Offsite Work Plan	February 2003

Activity / Report	Date
Residents Contacted in Writing Requesting Access To Property For Installation of Wells Including a Question / Answer Trifold Brochure	April 2003
Annual Groundwater Monitoring Report	May 2003
Off-site Delineation Phase A	July 2003
Annual Groundwater Monitoring Report	May 2004
Revised Corrective Action Strategy (CAS) Submitted To ADEQ	June 2004
Off-site Delineation Phase B	June 2004
Interim Status Report To ADEQ	June 2004
CAS Work Plan Revision Submitted To ADEQ	June 2004
Off-site Delineation Phase C	November 2004
Interim Status Report for Off-Site Investigations	March 2005
Annual Groundwater Monitoring Report	March 2005
Off-site Delineation Phase D	April 2005
Interim Status Report for Off-Site Investigations Submitted To ADEQ	June 2005
Annual Groundwater Monitoring Report	March 2006
Off-site Delineation Phase E	April 2006
USEPA Ecological Exclusion Criteria Worksheet Submitted To ADEQ	June 2006
ADEQ / Whirlpool Meeting To Review Project Status	June 2006
CAS Work Plan Addendum Submitted To ADEQ	August 2006
Facility Activities Report Submitted To ADEQ	September 2006
Annual Groundwater Monitoring Report	March 2007
Risk Evaluation Report Submitted To ADEQ	June 2007
Risk Management Plan Submitted To ADEQ	March 2008
Interim Measure Work Plan Submitted To ADEQ	March 2008
Annual Groundwater Monitoring Report	March-08
Interim Measure Status Report / Annual Groundwater Monitoring Report	March 2009
ADEQ Issues UIC Authorization Letter Approving Expanded Interim Measures	April 2009
Interim Measure Status Report / Annual Groundwater Monitoring Report	March 2010
Public Meeting To Present Interim Measures And Need For Temporary Use Permit - All Property Owners / Residents Notified By Letter	March 2010
Interim Measure Status Report / Annual Groundwater Monitoring Report Submitted To ADEQ	June 2010
City of Ft Smith Authorizes Discharge of Treated Groundwater - Industrial Users Permit Issued	August 2010
Interim Measure Status Report / Annual Groundwater Monitoring Report Submitted To ADEQ	March 2011
Interim Measure Status Report / Annual Groundwater Monitoring Report Submitted To ADEQ	June 2012
Meeting With ADEQ To Discuss Path Forward Based On Interim Action Results	October 2012
Revised Risk Management Plan Submitted To ADEQ	November 2012

**3. Why didn't the city know about this from ADEQ in 2001?**

While Whirlpool cannot provide insights to communication between the City and ADEQ, ADEQ only became aware of the potential for an offsite impact to groundwater in February 2001. At the time of the 2001 notification to ADEQ no investigation activities had started offsite. Offsite investigation plans were developed and implemented after the LOA was executed. Offsite access agreements were negotiated with the City of Ft Smith and property owners prior to field work starting in 2003.

**4. When was the city notified about the issue from ADEQ?**

Whirlpool cannot provide insights to communication between the City and ADEQ.

**5. What is ADEQ thoughts on this? Could they put together a timeline of their events?**

While Whirlpool cannot provide insights to ADEQ thoughts or timeline for this site, USEPA and ADEQ have approved similar groundwater use restrictions at other sites in Arkansas.

Whirlpool and ADEQ have been addressing the offsite impacts for 12 years since ADEQ was notified in 2001. Since 2001 the site has been managed within the ADEQ Corrective Action Strategy Program.

**6. Has Whirlpool looked at trying to clean up the issue?**

As defined by the 2002 LOA Whirlpool prepared and submitted a Risk Management Plan (RMP) for review and approval by ADEQ in 2006 which outlined interim measures Whirlpool then executed. The interim measures did not produce the results required to be successful in meeting the remedial action criteria for the site established with ADEQ.

Based on the outcomes of the multiple interim actions, Whirlpool prepared and submitted a Revised Risk Management Plan (RRMP) to ADEQ on November 29, 2012. The RRMP is currently under review by ADEQ. The RRMP assimilated over 14 years of data, with an emphasis on data from the interim measures, to identify, screen and rank corrective measures that will be protective of human health and the environment. The RRMP requests the incorporation of this ordinance, as an additional safety precaution, to further protect current and future property owners and residents.

With approval from ADEQ, Whirlpool will implement the activities defined by the approved RRMP. The RRMP has many activities incorporated into it, including a public involvement process, which is separate from the City ordinance process, to actively solicit public input into the final remedy with direct communication and feedback to ADEQ and Whirlpool. The RRMP public involvement process has not started.

**7. Why now? – is there a major reason for it?**

Whirlpool Corporation is requesting this ordinance, as an additional safety precaution, to further protect current and future property owners and residents. All ingestion pathways (drinking, bathing and inhalation) are currently incomplete because all impacted properties receive water from the City of Ft Smith water utility and there are no groundwater wells in the surrounding neighborhoods. Whirlpool is making this request now based on the RRMP submitted to ADEQ on November 29, 2012 to ensure the ingestion pathway remains incomplete in the future. The RRMP requests the incorporation of this ordinance as an additional protective measure for the onsite and offsite impacts.

With ADEQ knowledge, Whirlpool is asking the City to consider the groundwater well ban ordinance to be an additional protection of human health.

**8. What is the State of Arkansas acceptable level of Trichloroethylene?**

The State of Arkansas limit for TCE in groundwater is 0.005 mg/l, which is the same as USEPA's maximum contaminant level (MCL) for drinking water.

**9. Does Whirlpool know what the concentrations levels of the Trichloroethylene was prior to 2001?**

Whirlpool only has offsite data from 2001 forward.

**10. Submit information concerning the concentration levels of each of the drill sites by year and location (with map) from Whirlpool.**

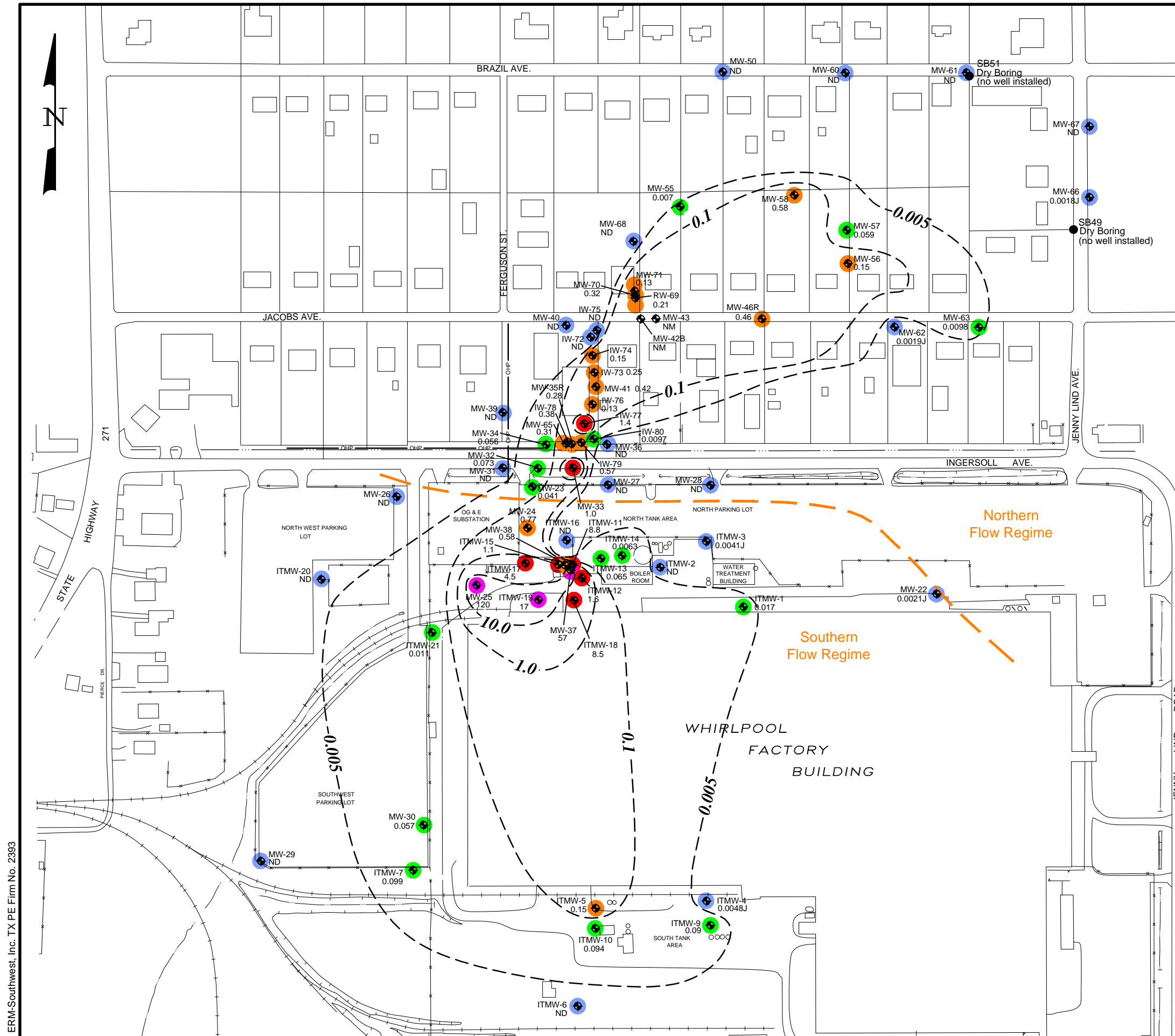
See the attached map which best illustrates the levels of TCE in groundwater, and all monitoring well locations.

Please contact me if you have any questions or need any additional information.

Sincerely,

Gregory R. Gillespie  
Principal Consultant

GRG:grg  
2013-02-28 ENVIRON Response To City Questions Dated 2-20-2013



ERM-Southwest, Inc. TX PE Firm No. 2393

- LEGEND**
- MW-58 0.58 EXISTING MONITORING WELL WITH TCE CONCENTRATION IN mg/L
  - ND RESULT IS NOT DETECTED ABOVE THE REPORTING LIMIT
  - J RESULT IS LESS THAN THE REPORTING LIMIT BUT GREATER THAN OR EQUAL TO THE MINIMUM DETECTION LIMIT AND THE CONCENTRATION IS AN APPROXIMATE VALUE
  - NM NOT MEASURED
  - 1.0-- TCE ISOCONCENTRATION CONTOUR LINE (mg/L) (DASHED WHERE INFERRED)

- TCE CONCENTRATION (mg/L)**
- < 0.005
  - 0.005 to 0.10
  - 0.10 to 1.00
  - 1.00 to 10.0
  - ≥ 10.0



**Environmental Resources Management**

FIGURE 4a  
FALL TCE ISOCONCENTRATION MAP  
OCTOBER 2011  
Whirlpool Corporation  
Fort Smith, Arkansas

DESIGN: MAB	DRAWN: EFC	CHKD.: TWM
DATE: 6/7/2012	SCALE: AS SHOWN	REV.:
W.O.NO.: H:\DWG\F12\0159348\203.dwg, 6/7/2012 11:23:53 AM		