



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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ROD R. BLAGOJEVICH, GOVERNOR

DOUGLAS P. SCOTT, DIRECTOR

November 25, 2008

Certified Mail  
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Shell Oil Products US  
Kevin Dyer, Staff Project Manager  
Shell Oil Products US  
17 Junction Drive  
PMB #399  
Glen Carbon, Illinois 62034

WRB Refining LLC Wood River Refinery  
David Dunn  
900 South Central Avenue  
PO Box 76  
Roxana, Illinois 62084

Re: 1191150002 -- Madison County  
Equilon Enterprises LLC  
ILD2018000002  
Log No. B-43-CA-10  
Received: August 14, 2008; August 20, 2008; and September 8, 2008  
Permit CA  
RCRA Permits

Dear Mr. Dyer and Mr. Dunn:

This is in response to three documents prepared by URS on behalf of Shell Oil Products US (SOPUS) regarding subsurface investigation results and proposed investigation within the Village of Roxana, Illinois and along the west fenceline of the North Property of the Wood River Refinery (WRR). The three documents being responded to in this letter are as follows:

Submittal No. 1 – A document entitled, “Route 111/Rand Avenue Subsurface Investigation Report”, dated August 19, 2008, and received by the Illinois EPA on August 20, 2008.

Submittal No. 2 – A document entitled, “Request for Extension”, dated August 11, 2008 and received by the Illinois EPA August 14, 2008.

Submittal No. 3 – A document entitled, “Dissolved Phase Groundwater Investigation”, dated September 5, 2008, and received by the Illinois EPA on September 8, 2008.

The issuance of this letter will not: (1) resolve any of this facility’s possible violations of the Illinois Environmental Protection Act and/or 35 Ill. Adm. Code 620 regulations as set forth in Violation Notice L-2008-01134; or (2) prevent the USEPA or Illinois EPA from pursuing enforcement proceedings and monetary penalties as a result of the afore-mentioned possible violations.

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A technical review has been conducted for the, "Route 111/Rand Avenue Subsurface Investigation Report", dated August 19, 2008, and the workplan entitled, "Dissolved Phase Groundwater Investigation", dated September 5, 2008. The subject documents cannot be approved as will be discussed below.

1. The document entitled, "Route 111/Rand Avenue Subsurface Investigation Report", dated August 19, 2008, cannot be approved based on the following deficiencies:
  - a. In Section 1.0 of the subject submittal. SOPUS states that; "the April 18, 2008 Illinois EPA letter to SOPUS and the WRR, the IEPA approved the work plan and provided: 1) conditions related to information to be included in the report for this work; and 2) a condition requiring a Water Well Survey". However, the April 18, 2008 Illinois EPA letter (Log No. B-43-CA-6) did not approve the February 15, 2008 work plan. As stated specifically by the Illinois EPA in the letter:

"The subject document was not submitted for Illinois EPA review and approval; however, the following conditions and modifications apply to the results obtained from the groundwater investigations being conducted by SOPUS", which is followed by conditions and modifications.

Therefore, in order to clarify, the letter's purpose was to provide a framework for the submittal of results obtained from groundwater investigation being conducted at the facility.
  - b. The Illinois EPA does not consider a 15 foot well screen to be an appropriate length for intercepting a contaminant plume. In order to provide discrete sampling results in the investigation area, the facility must install all future monitoring wells with 5 or 10 foot well screens, and install nested wells as appropriate.
  - c. A copy of the data collected during the spring of 2006 Cone Penetrometer Testing and Rapid Optical Screening Tool probes must be included in the report.
  - d. Sampling protocol outlined in Section 4.4 of this plan is unacceptable, based on the following:
    - i. Sampling with the submersible pump and the hydrasleeve samplers must occur at the top of the water column so that any dissolved hydrocarbons will be detected during sampling;
    - ii. The "Standard Operating Procedure for Low-Stress (Low-Flow)/Minimal Drawdown Groundwater Sample Collection" on Page 29 of the USEPA May

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2002 guidance emphasizes the importance of placing the pump at or near the known source of contamination within the screened interval;

- A. Discrete groundwater sampling at the location of the pump intake is dependent on the distribution of the hydraulic conductivity of the aquifer within the screened interval;
  - B. The "Technical Guidance on Low-Flow Purging & Sampling and Passive Sampling" dated December 1999, David Nielsen and Gillian Nielsen provides requirements for pump placement. Section 2.5.2 Pump Placement states "In situations in which contaminants of interest are known to concentrate near the top or the bottom of the screened zone, it may be desirable to position the pump intake to target this zone."
- e. A copy of all referenced SOPs must be included in the report.
- f. The soil gas analytical data contained in the Subsurface Investigation report is not acceptable for the following reasons:
- i. Section 2.3 of the report indicates soil vapor samples were collected from a total of sixteen different sampling points (consists of four different vertical intervals at four different locations). However, no information was provided regarding the construction of these sampling points to demonstrate that only soil gas from the vertical interval of interest was collected.
  - ii. No information was provided indicating that a leak detection compound was used to ensure the samples were properly collected.
  - iii. No information was provided to demonstrate that rigid-walled tubing made of nylon or Teflon were used in the collection of the samples.
  - iv. No information was provided regarding the procedures and data used to calculate the volume of air which should be purged from the sampling points prior to collection of soil gas samples for analysis.

It is extremely important that soil gas samples be properly collected and analyzed in accordance with procedures developed by Illinois EPA, USEPA and other governmental or quasi-governmental entities. It must be noted that Illinois EPA has proposed regulations regarding the indoor inhalation exposure pathway; this pathway is impacted by the levels of contaminants in soil gas at a facility. These proposed regulations have been filed with the Illinois Pollution Control Board (IPCB) and assigned Docket No. R09-009; a copy of these regulations can be found on the IPCB's internet site ([www.ipcb.state.il.us](http://www.ipcb.state.il.us)).

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2. The workplan entitled, "Dissolved Phase Groundwater Investigation", dated September 5, 2008, cannot be approved based on the following:
  - a. The primary and secondary transects are not sufficient to assess the nature and extent of hydrocarbons in areas of known contamination along the fenceline. At a minimum, in addition to the proposed groundwater sampling locations on Figure 4 of the subject workplan, the following groundwater sampling locations listed below must be included in the workplan required by Condition 3 below:
    - i. The intersection of Second and Chaffer Street;
    - ii. The intersection Third and Chaffer Street;
    - iii. The intersection of Fourth and Chaffer Street;
    - iv. The intersection of Fifth and Chaffer Street;
    - v. The intersection of Sixth and Chaffer Street;
    - vi. East to west transects should be proposed similar to those in the subsurface investigation;
    - vii. The east to west block of Third Street that lies between Chaffer Street and Highway 111 (S. Central Ave.) requires a transect of investigation probes due to the product present in the P-60 area;
    - viii. The east to west block of Fourth Street that lies between Chaffer Street and Highway 111 (S. Central Ave.) requires a transect of investigation probes due to the product present in the P-60 area; and
    - ix. In addition to the groundwater sampling locations required above, the Illinois EPA concurs that locations may be added based on field observations or results obtained during the work.
  - b. First Street cannot be used to define the northern boundary of the dissolved groundwater plume, rather, a boundary of wells that show no exceedances of the applicable 35 Ill. Adm. Code, Part 620, Class I GQSs must be in place to define the lateral and vertical extent of the dissolved groundwater plume in all directions.
  - c. To facilitate the Illinois EPA oversight of the proposed work in the field, and to aid in the technical review of the proposed work and the results of the investigation,

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submit a site-wide map which depicts all monitoring points, wells and piezometers at the facility and area of investigation in the Village of Roxana.

- d. One set of Volatile Organic Compounds (VOCs) trip blanks (two 40ml vials) be submitted with samples each day that samples are collected and for every ten (10) samples collected.
- e. Groundwater must be analyzed for the full list of VOCs, Semivolatile Organic Compounds (SVOCs), and Polycyclic Aromatic Hydrocarbons (PAHs).
- f. Groundwater analysis must be in accordance with the applicable methods found in USEPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, Final Update III (December 1996), or the most current SW-846 Method.
- g. SOPUS has installed one (1) skimmer pump at well P-60 to remove free product. SOPUS must submit, for Illinois EPA review and approval, the basis for the current cycle of six (6) times per day, and pumping for ten (10) minutes per cycle calculations.
  - i. Any modifications to the current pumping time and cycles per day must be approved by the Illinois EPA; and
  - ii. Pursuant to 35 Ill. Adm. Code 724.201(c), SOPUS is not relieved of addressing potentially impacted groundwater conditions beyond the facility boundary, subsequent to any investigation of the WRR property. If needed, the facility must implement corrective action beyond the facility property boundary, where necessary to protect human health and the environment and will not be relieved of responsibility to cleanup a release that has migrated beyond the facility boundary where off-site access is denied
  - iii. If free product is discovered by SOPUS outside of the WRR property boundaries, a remediation method must be proposed within thirty (30) days to promptly remove any potential threat to human health and the environment.
- h. The facility must utilize available technologies to adequately determine FPH/residual hydrocarbon contamination present in the subsurface.
- i. Similar to the deficiency listed in 1.e above, Section 4.6 of the Dissolved Phase Groundwater Investigation Work Plan contains very limited information as to the collection of soil gas samples. Specifically, a reference is made to a standard operating procedure, but a copy of that procedure is not provided. In addition, the other deficiencies noted above also apply to the information in this section.


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3. The subject documents must be revised and resubmitted for Illinois EPA review and approval within forty-five (45) days to address the deficiencies listed in Conditions 1 and 2 above. The following format is required:
  - a. The revised report and workplan must include an itemized response to address each denial point listed in Conditions 1 and 2 above; and
  - b. All new text added to the report and workplan must be in italics and a strike-through format must be used for any text that is removed from the report and workplan.
  - c. General guidance for the development of investigation plans and reports is contained in Illinois EPA's RCRA closure plan guidance documents which can be found only on Illinois EPA's internet site ([www.epa.state.il.us](http://www.epa.state.il.us)).

Work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions concerning groundwater-related aspects of this letter, please contact Amy Boley at 217/558-4716. Questions about any soil related aspects of this letter should be directed to James K. Moore, P.E. at 217/524-3295.

Sincerely,



Stephen F. Nightingale, P.E.  
Manager, Permit Section  
Bureau of Land

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JKM AMB 

cc: Bob Billman, URS Corporation  
Eric Peterson, ConocoPhillips