ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR

217/524-3300

March 16, 2011

CERTIFIED MAIL
7009 3410 0002 3807 6475
7009 3410 0002 3807 6482

Shell Oil Products US
Attn: Mr. Kevin Dyer
17 Junction Drive
PMB #399
Glen Carbon, Illinois 62034

WRB Refining LLC Wood River Refinery
Attn: Mr. David Dunn
900 South Central Avenue
P.O. Box 76
Roxana, Illinois 62084

Re: 1191150002 -- Madison County
Equilon
ILD080012305
Log No. B-43R-CA-20
Received: January 3, 2011
RCRA Permit
Permit CA

Dear Mr. Dyer and Mr. Dunn:

This is in response to certain portions of a December 31, 2010 submittal made on your behalf by Robert B. Billman, URS regarding investigation/remediation effort being conducted by Equilon to address contamination present along/near the west property line of the North property of the WRB Refining, LLC Wood River Refinery in Roxana, Illinois. The suspected sources of this contamination are (1) free product detected at/around a groundwater monitoring well referred to as "P-60" (P-60 is a part of the groundwater monitoring/remediation system associated with the RCRA permit for the Equilon facility); and (2) a 1986 benzene release from an underground pipe near the intersection of Illinois Route 111 and Rand Avenue. A drawing showing the general location of this area is attached to this letter.

The Equilon Enterprises facility which is the subject of this letter has been assigned Illinois EPA Identification Number 1191150002 and has a RCRA permit. This facility is physically located at the WRB Refining, LLC Wood River Refinery in Roxana, Illinois; the Illinois EPA Identification Number for the refinery itself and its operations is 1190905013. Equilon Enterprises, d/b/a/ Shell Oil Products US, is the operator for Site Number 1191150002 as it has contractual responsibilities to carry out certain remedial activities at the refinery, including those required by the RCRA permit issued to Equilon (Log No. B-43 and associated modifications); Equilon and its corporate predecessors actually owned and operated the refinery until 2000.

On May 12, 2009, Illinois EPA approved a plan for conducting an investigation of the soil, groundwater and soil vapors in the area mentioned A report documenting the results of this investigation effort was approved by Illinois EPA on August 5, 2010; among other things, this

letter required that plans be developed for Illinois EPA review and approval which address remediation of the contamination in this area.

One of the items that must be addressed in the afore-mentioned area is the potential for contaminated soil vapors in the subsurface to migrate and adversely impact human health and the environment. On November 15, 2010, Illinois EPA approved a plan for determining if contaminated vapors had migrated into buildings/residences located near the two suspected source areas mentioned above. In addition, this letter required that Equilon submit a workplan for conducting a pilot scale test of a soil vapor extraction system to obtain information necessary to eventually design and operate a full scale SVE system which would remove contaminated vapors from the subsurface beneath the subject area. Among other things, Mr. Billman's December 31, 2010 submittal contained procedures for conducting this pilot test.

Illinois EPA has completed its review of the proposed pilot test procedures in Mr. Billman's December 31, 2010 and hereby approves them as a part of the overall RCRA corrective action efforts being carried out by Equilon at the above-referenced facility subject to the following conditions and modifications:

1. This approval letter is only for the procedures to be carried out in conducting a pilot test of a soil vapor extraction system which will be used to design a full-scale remediation system to address contaminated vapors in the subsurface along/near the western property boundary of the Wood River Refinery in Roxana, Illinois.

   Soil vapor samples in the area of concern were initially collected in November 2009; subsequent major sampling efforts have occurred in August/September 2010; November 2010; and the first quarter of calendar year 2011.

2. Soil vapor samples must continue to be collected/analyzed on a quarterly basis at:

   a. Vapor Monitoring Points (VMP) 1 through 19. Fifteen of these locations have four sampling points, four (VMP-3, VMP-17, VMP-18 and VMP-19) have only one sampling point.

   b. The multiple sampling points which have been or are being installed at six additional locations (one near the intersection of Rand Avenue and Route 11 and the other five approximately 200' west of VMP-2, 3 4, 5 and 7 respectively.

3. The workplan indicates that a pilot test will be conducted at two different locations—these locations are shown on the attached site layout map. At each location, nests of three pressure monitoring points will be installed 30', 60' and 90' from the extraction well.

4. The workplan indicates that the pilot tests will be conducted using flow rates of 50, 75 and 90 cubic feet per minute. It may be necessary to conduct pilot tests using higher flow rates to obtain the desired radius of influence for the extraction well. In addition, based upon observations from other vapor extraction systems being operated near this facility, it may be desirable to conduct pilot tests using lower flow rates to see if these lower extraction rates can also achieve the desired radius of influence.

5. Appropriate instrumentation must be installed in the pilot test system to ensure all the data identified in the Pilot Test Vapor Reading Form in Appendix B of the workplan can be documented.

6. The air pressure in each of the nine pressure monitoring points must be determined at the frequency identified in the Pilot test Vapor Reading Form in Appendix B of the workplan; this form must be modified to reflect the fact that there are three nested pressure monitoring points at each monitoring location. The rate at which air is extracted from the pilot well may not be modified until the pressure in all these monitoring points stabilize.

7. The radius of influence for a given extraction rate shall be defined as that distance where the system creates a minimum vacuum of 0.1" water column in the soil gas.

8. Once the proposed pilot tests are completed, a report summarizing the field pilot tests must be submitted to Illinois EPA for review and approval. Such report should include the following:

   a. Background information associated with the project.

   b. Scaled drawing showing the layout of each pilot test system;

   c. A piping and instrumentation diagram for each pilot test system;

   d. A detailed description of the various components of each pilot test system;

   e. A discussion of all efforts which went into the pilot test, including the management of any wastewater generated during the test and compliance with the permit issued for the test system by the Illinois EPA's Bureau of Air;

   f. Color photographs of the field activities conducted.

g. Summary of the all the field data collected and any necessary site/chemical specific data for each pilot test;

h. A discussion/evaluation of the results of the pilot test efforts.

9. On November 30, 2010 Equilon submitted a compilation of all available and applicable information regarding soil vapors in the area of concern as part of the third quarter 2010 report documenting the results of the continued soil vapor monitoring effort. Since that time, Equilon has: (1) installed additional soil vapor monitoring wells to better define the horizontal and vertical extent of contaminated soil gas: (2) conducted two additional quarters of soil vapor monitoring data; and (3) collected additional groundwater monitoring data, including additional monitoring for the presence of free product beneath the area of concern. Thus, an updated report containing all the available and applicable information regarding soil vapors in the area must be submitted to Illinois EPA along with the combined conceptual/final design report for the full-scale soil vapor extraction system. At a minimum, this report must include:

a. An introduction to and an overall view of the project;

b. A presentation/discussion of the following characteristics of the area and what impacts they have individually and cumulatively on the distribution of contaminated vapors present in the subsurface soil gas: (1) the geology of the area in question; (2) the levels/extent of groundwater contamination in the area; and (3) the amount/extent of free product present beneath and/or near the area in question.

c. A presentation/discussion of the potential sources of contaminated soil gas in the area of concern. One of the issues that should be incorporated into this presentation/discussion is the information required to be submitted in Condition 5 of Illinois EPA's August 5, 2010 letter.

d. A description of the soil vapor monitoring system currently present in the area of concern;

e. A discussion of the procedures used to collect the soil vapor samples;

f. A summary of all available information;

g. A general discussion of the distribution of contaminated soil vapor beneath the area of concern and a description of any efforts which must be carried out to fully characterize the extent of the contaminated soil vapor beneath the facility.

h. Drawings which identify the horizontal distribution of soil gas concentrations for each of the general vertical intervals where soil gas monitoring points have been installed;

i. Drawings which identify the horizontal distribution of groundwater contamination beneath the area of concern

j. Drawings which identify the horizontal distribution and thickness of free product beneath the area of concern

k. A drawing which superimposes the geology along the cross-section shown in Figure 15 of the February 10, 2010 report on the vertical distribution of soil gas concentrations shown in the figure.

10. A combined conceptual/final design report for the full scale soil vapor extraction system must be submitted to Illinois EPA for review and approval within ninety days of this letter.

a. Guidance on the development of these documents can be found in the Hazardous Waste Remediation page of Illinois EPA's internet site. Other applicable guidance from USEPA and Illinois EPA should also be used, as necessary, in the development of these documents.

b. Establishing the horizontal and vertical boundaries of the contaminated soil gas to be addressed by the system is some of the most important information needed to design the system. These boundaries will need to be verified by soil gas data, groundwater data and data regarding the presence of free product in the subsurface.

11. RCRA corrective action activities carried out at the Equilon facility including off-site activities as necessary must meet the requirements of: (1) 35 Ill. Admin. Code 724.201; (2) the facility's RCRA permit; and (3) Illinois EPA letters regarding such activities.

12. The documents previously submitted by SOPUS regarding this project as well as the requirements of Illinois EPA's previous letters regarding this project are incorporated herein by reference.

13. As necessary, the appropriate permits for this system must be obtained from Illinois EPA's Bureau of Air and Bureau of Water.

14. Soil vapor extraction systems only remove contaminated soil vapors from the unsaturated subsurface, they are not sufficient to remove free product from the subsurface at any reasonable rate. Other systems must be used in addressing the free product present in the area of concern.

This letter constitutes Illinois EPA's final decision on the identified portions of the subject submittal. Within 35 days after the date of mailing of the Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

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.

If you have any questions regarding this letter, please contact James K. Moore, P.E. at 217/524-3295.

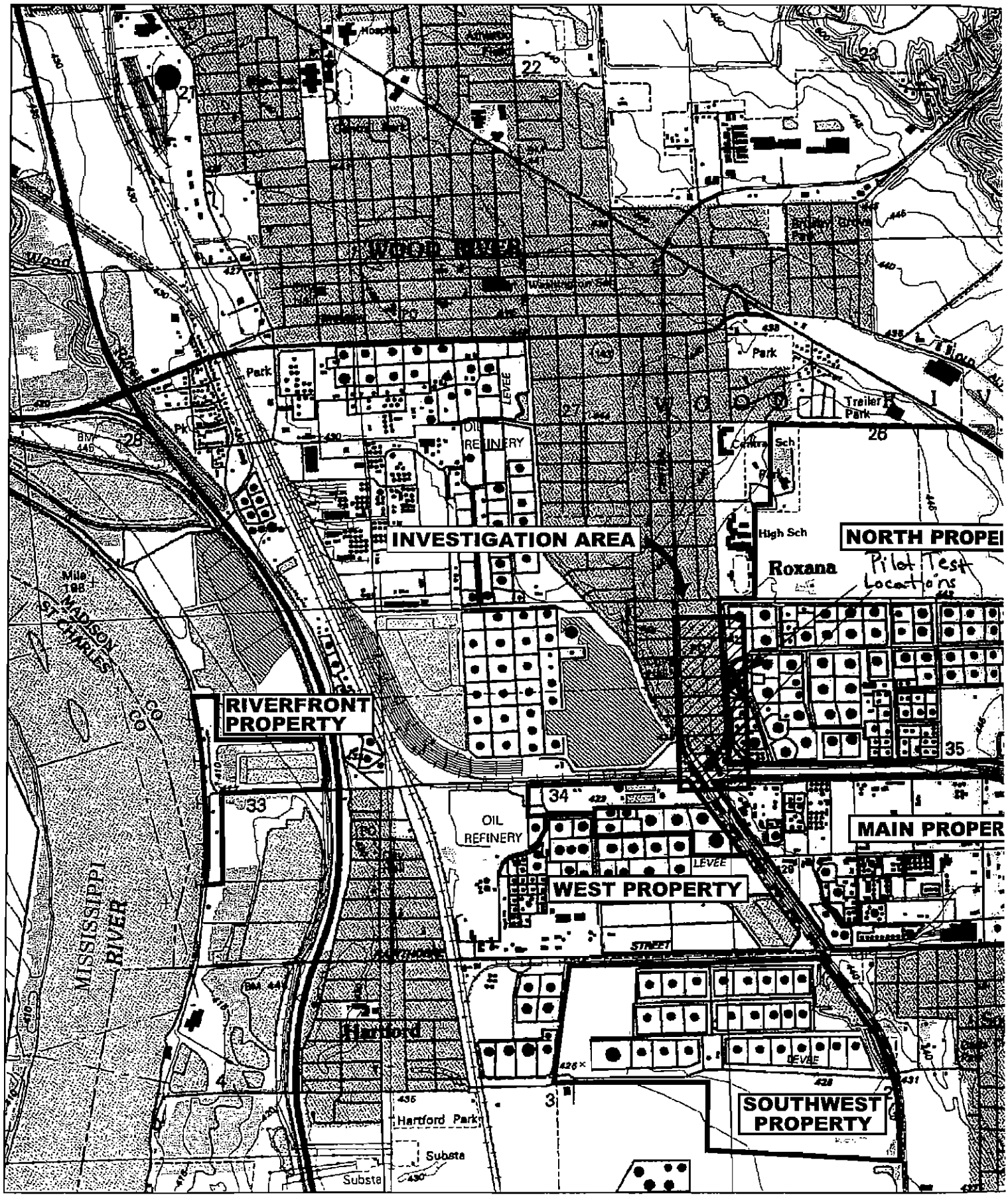
Sincerely,

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

SFN:JKM:mls/112982s.doc
JKM

Attachment: Site Layout Map

cc: Robert B. Billman, URS



Site Layout Map
B-43R-CA-20