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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

June 16, 2009

Mr. Randy Schmaltz
Environmental Manager
Western Refining Southwest, Inc
Bloomfield Refinery
P.O. Box 159
Bloomfield, New Mexico 87413

**RE: APPROVAL WITH DIRECTION
RIVER TERRACE VOLUNTARY CORRECTIVE MEASURES
BIOVENTING SYSTEM ANNUAL REPORT
JANUARY 2008 THROUGH DECEMBER 2008
WESTERN REFINING CO., SOUTHWEST INC.,
BLOOMFIELD REFINERY
EPA ID# NMD089416416
HWB-GRCB-09-002**

Dear Mr. Schmaltz:

The New Mexico Environment Department (NMED) has reviewed Bloomfield Refinery's (Western Refining Southwest, Inc.) (Western) *River Terrace Voluntary Corrective Measure Bioventing System Annual Report (January 2008 through December 2008)* (Report), dated January 2009. NMED hereby issues this Approval with Direction provided in the following comments.

Comment 1

The following items (a and b) reference the Cover Letter:

- a. Western requests that, “[a]fter reviewing three years of operation of the bioventing system, Bloomfield Refinery would like to propose a reduction in monitoring the wells on the eastern portion of the River Terrace (TP#3, TP#7, TP#9, TP#10, TP#12, and TP#13) to an annual event instead of quarterly.”

Western must continue to monitor TP#7 and TP#9 on a quarterly basis. NMED agrees to modify the sampling at the eastern portion of the River Terrace (TP#3, TP#10, TP#11, TP#12, and TP#13) to semi-annual sampling. The semi-annual sampling must be conducted during the high and the low water flows of the San Juan River.

If there is an increase in contaminant concentrations or any anomalies observed in TP#7 or TP#9, Western must notify NMED and the Oil Conservation Division (OCD) within 5 business days. The results of quarterly and the semi-annual monitoring must be submitted as part of the bioventing system annual report. Table 1 (Groundwater Monitoring) and Table 2 (Soil Vapor Monitoring) from NMED’s April 18, 2007 and June 13, 2007 letters have been modified to reflect this change (*see* Attachments 1 and 2).

- b. Western states that “[t]here have been only a few very minor exceedences of the action level for lead, which are most likely attributable to turbid water samples and not dissolved metals concentrations, and all of these occurred in the 2nd and 3rd quarters of 2007 with no exceedences since.”

Western must provide evidence that turbidity is causing the increased concentrations of lead detected in the groundwater. Turbidity measurements were not recorded; therefore this statement cannot be verified. If Western believes that turbidity is affecting the metal concentrations detected in water samples then turbidity data must be collected and discussed in future reports.

Comment 2

In Section 5.0 (Groundwater Monitoring Table), Tab 2, the data show that there is an increase in the amount of DRO detected in the groundwater in the fourth quarter 2008 sampling event (e.g., TP#1 went from an average of 3 mg/L to 17 mg/L in the last quarter, TP#2 increased from 1 mg/L to 7.5 mg/L, TP#5 increased from mostly non-detects to 8.5 mg/L as did TP#6 which increased to 3.10 mg/L, and TP#8 increased from 1 mg/L to 8.6 mg/L). Several other wells also

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have fluctuating concentrations of contaminants. Western posits in the Summary Section 7.0 (Analysis and Conclusion) that, "fluctuation in groundwater [contaminant] concentration at [5] wells in the western portion of the River Terrace were most likely caused by fluctuating groundwater levels due to dewatering system operations and change in river flow, thus causing a flushing effect of the soil." A flushing effect is not evident in all of the data presented in the Report in relation to water level fluctuations; increases of the contaminant concentrations do not follow increases of the water level. The reasons behind the fluctuation are likely more complicated than a flushing effect; for instance, a combination of factors such as fluctuating aerobic degradation or a change in air pressure injected into the BV wells also may affect the contaminant levels. In the next annual report, Western must take into account other conditions to explain the fluctuations in contaminant concentrations and discuss these data.

Comment 3

The following comments are in reference to Section 7.0 (Summary):

- a. On page 2 (Analysis and Conclusions), Western states that "[m]ercury was detected one time at DW-1 during the February 2007 sampling event. Mercury was not detected in any subsequent sampling events." However, on page 1 Western states that "[s]amples collected during the fourth quarter sampling event were inadvertently not analyzed for mercury due to laboratory error." The paragraph discussing mercury in the Analysis and Conclusion should include a statement indicating that mercury was not analyzed during the fourth quarter of 2008 due to laboratory error rather than stating that mercury was not detected in any subsequent sampling events.
- b. On page 2 (Analysis and Conclusions) Western states that, "[f]ield data indicates the bioventing system is continuing to enhance bioremedial activity within the river terrace area around TP-#1, TP-#2, TP-#5, TP-#6, and TP-#8. Soil gas concentrations collected in the field indicate that the bioventing system is providing enough oxygen to sustain optimal microbial activity (e.g., vapor-phase oxygen concentrations are at or above 5 percent)."

Western must specify the field data that indicates the bioventing system is enhancing the remedial activity. There are factors other than vapor-phase oxygen that affect the bioventing system. Western must discuss the field data that indicates the bioventing system is enhancing remediation in future reports.

- c. Western may indicate which section recommendations are made in, in the Cover Letter; however, as per Section X.D.10 of the July 27, 2007 Order recommendations are to be provided in the summary section of reports. Therefore, Western's request to change the monitoring schedule for the Eastern River Terrace wells from quarterly

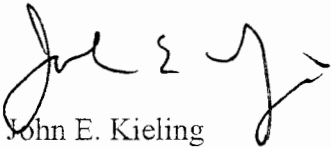
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to annually would be better addressed in Section 7 (Summary).

Western must address all requirements included in this letter in future reports. In accordance with Section V.B.1, item 3 of the Order; the annual report is due on or before March 1, 2010. Western must follow the sampling requirements established in the revised Table 1 (Groundwater Monitoring), and Attachment 1 and Table 2 (Soil Vapor Monitoring) Attachment 2 of this letter. If any anomalies (e.g., unexpected detections or concentrations, plume migration) are observed during the monitoring events, NMED and the OCD must be notified within 5 business days of discovering the anomaly.

If you have any questions regarding this letter, please contact Hope Monzeglio of my staff at (505) 476-6045.

Sincerely,



John E. Kieling
Program Manager
Permits Management Program
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
H. Monzeglio, NMED HWB
B. Jones, OCD
C. Chavez, OCD
File: GRCB 2009 and Reading
HWB-GRCB-09-002

Attachment 1

River Terrace Bioventing System Monitoring

Table 1 - Groundwater Monitoring

Location	Matrix	DTW/DTP	Temp	pH	Cond	DO	ORP	Sampling	Sampling
MW-49	GW	Q	Q	Q	Q	Q	Q	Q -B, GRO, DRO, Pb	A- Cr, Ba
DW-1	GW	Q	Q	Q	Q	Q	Q	Q, B, GRO, DRO, Pb, Hg	A- Cr, Ba
TP-1	GW	Q	Q	Q	Q	Q	Q	Q-B, GRO, DRO, Pb	A- Cr, Ba
TP-2	GW	Q	Q	Q	Q	Q	Q	Q-B, GRO, DRO, Pb	A- Cr, Ba
TP-3	GW	SIA	SIA	SIA	SIA	SIA	SIA	SIA-B, GRO, DRO, Pb	A- Cr, Ba
TP-5	GW	Q	Q	Q	Q	Q	Q	Q-B, GRO, DRO, Pb	A- Cr, Ba
TP-6	GW	Q	Q	Q	Q	Q	Q	Q-B, GRO, DRO, Pb	A- Cr, Ba
TP-7	GW	Q	Q	Q	Q	Q	Q	Q-B, GRO, DRO, Pb	A- Cr, Ba
TP-8	GW	Q	Q	Q	Q	Q	Q	Q-B, GRO, DRO, Pb	A- Cr, Ba
TP-9	GW	Q	Q	Q	Q	Q	Q	Q-B, GRO, DRO, Pb	A- Cr, Ba
TP-10	GW	SIA	SIA	SIA	SIA	SIA	SIA	SIA-B, GRO, DRO, Pb	A- Cr, Ba
TP-11	GW	SIA	SIA	SIA	SIA	SIA	SIA	SIA-B, GRO, DRO, Pb	A- Cr, Ba
TP-12	GW	SIA	SIA	SIA	SIA	SIA	SIA	SIA-B, GRO, DRO, Pb	A- Cr, Ba
TP-13	GW	SIA	SIA	SIA	SIA	SIA	SIA	SIA-B, GRO, DRO, Pb	A- Cr, Ba
GAC Inf	EW							Q-B, GRO, DRO	
GAC 1 Eff	EW							W*M - B, GRO, DRO	
GAC 2 Eff	EW							Q-B, GRO, DRO	

Field Parameters

DTW - depth to water measurement
DTP - depth to product measurement
T - temperature
Cond - electrical conductivity
DO - dissolved Oxygen
ORP - oxidation Reduction Potential

Analytical Analysis

B - BTEX and MTBE by EPA Method 8021B
GRO - gasoline range organics by EPA Method 8015B
DRO - diesel range organics by EPA Method 8015B
Pb & Cr - lead and chromium EPA Method 6010
Ba - barium

Sampling Frequency

Q - quarterly
SIA - Semi -annual (2 x a year during the high and low flows of the San Juan River)
A - annual
W*M - Weekly until breakthrough is detected; monthly thereafter

Matrix

GW - groundwater
EW -extracted groundwater

Attachment 2
River Terrace Bioventing System Monitoring
Table 2 - Soil Vapor Monitoring

Location	Matrix	* Injection Pressure	* Injection Flow Rate	% CO2	%O2	Organic Vapors PID	Pressure	Analytical
MW-49	A			Q	Q	Q	Q	Q-b, GRO
DW-1	A			Q	Q	Q	Q	Q-b, GRO
TP-1	A			Q	Q	Q	Q	Q-b, GRO
TP-2	A			Q	Q	Q	Q	Q-b, GRO
TP-3	A			SIA	SIA	SIA	SIA	SIA-b, GRO
TP-5	A			Q	Q	Q	Q	Q-b, GRO
TP-6	A			Q	Q	Q	Q	Q-b, GRO
TP-7	A			Q	Q	Q	Q	Q-b, GRO
TP-8	A			Q	Q	Q	Q	Q-b, GRO
TP-9	A			Q	Q	Q	Q	Q-b, GRO
TP-10	A			SIA	SIA	SIA	SIA	SIA-b, GRO
TP-11	A			SIA	SIA	SIA	SIA	SIA-b, GRO
TP-12	A			SIA	SIA	SIA	SIA	SIA-b, GRO
TP-13	A			SIA	SIA	SIA	SIA	SIA-b, GRO
BV-1	A	Q	Q					
BV-2	A	Q	Q					
BV-3	A	Q	Q					
BV-4	A	Q	Q					
BV-5	A	Q	Q					
BV-6	A	Q	Q					
BV-7	A	Q	Q					
BV-8	A	Q	Q					
BV-9	A	Q	Q					
BV-10	A	Q	Q					
BV-11	A	Q	Q					
BV-12	A	Q	Q					
BV-13	A	Q	Q					

Matrix

A - soil gas

Field Parameters

% CO₂ - percent carbon dioxide

% O₂ - percent oxygen

PID - photoionization detector

Analytical Analysis

b - BTEX by EPA Method 8021B

GRO - gasoline range organics by EPA Method 8015B

Sampling Frequency

Q - quarterly

SIA- Semi-annual (2 x a year during the high and low flows of the San Juan River)

*Pressure - Full system and individual well injection pressures and injection flow rates must be recorded during each monitoring event.

Perform In-SITU RESPIRATION TEST DURING 2009

Must be conducted under similar conditions as the 9/07 respiration test (e.g. similar groundwater levels and river levels)

Shutdown blowers and monitoring oxygen/carbon dioxide levels in TP-1, 2, 5, 6, 8, 9, and each of the 13 BV wells.

Monitor location	Analytes(s)	Frequency	Duration
TP-1, 2, 5, 6, 8, 9	O ₂ , CO ₂ , VOCs	every 1 hour	first 8 hours
TP-1, 2, 5, 6, 8, 9	O ₂ , CO ₂ , VOCs	every 12 hours	next 48 hours
All BV wells	O ₂	every 12 hours	first 72 hours

TP - Temporary Wells

VOCs - Volatile Organic Carbons

O₂ - Oxygen

CO₂ - Carbon Dioxide