

1R - 424

APPROVALS

YEAR(S):

2009

Hansen, Edward J., EMNRD

From: Hansen, Edward J., EMNRD
Sent: Tuesday, September 22, 2009 11:21 AM
To: 'Hack Conder'
Cc: Leking, Geoffrey R, EMNRD; 'Marvin Burrows'; Scott Curtis; 'r@rthicksconsult.com'
Subject: Remediation Plan (1R-424) Termination (ROC EME M-5 Redwood Tanks Site)

**RE: ICP Report and Termination Request for the Rice Operating Company's
EME M-5 Redwood Tanks Site
Unit Letter M, Section 5, T20S, R37E, NMPM, Lea County, New Mexico
Remediation Plan (1R-424) Termination**

Dear Mr. Conder:

The New Mexico Oil Conservation Division (OCD) has received Rice Operating Company's report and request to close the above-referenced site (dated April 4, 2008). The report is acceptable to the OCD. However, the material used to plug the groundwater monitoring well must be a cement grout with 1% to 3% bentonite or other plugging material approved by the OCD. Please submit to the OCD a final plugging report within one year of receipt of this notice.

The above-referenced report, submitted in accordance with 19.15.29 NMAC (Part 29; formally, Rule 116), indicates that Rice Operating Company has met the requirements of 19.15.29 NMAC; therefore, the OCD approves the report and hereby notifies you that the remediation plan (1R-424) is terminated in accordance with 19.15.29 NMAC.

Please be advised that OCD approval of this report does not relieve the owner/operator of responsibility should operations pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the owner/operator of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

If you have any questions regarding this matter, please contact me at 505-476-3489.

Edward J. Hansen
Hydrologist
Environmental Bureau

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U. S. ENVIRONMENTAL PROTECTION AGENCY
EXPOSURE ASSESSMENT

MULTIMEDIA MODEL

MULTIMED (Version 1.01, June 1991)

1

Run options

*Performed by Edward J. Hansen, OCB
for Review on 9-22-09*

1R424 1m to GW, Ksat of $4e-3$ cm/sec

50 year ave. - sandy loam cov no liner - 15.1 mg/L Xs- 10' mixing zone 100' from ^{former} tanks
Chemical simulated is DEFAULT CHEMICAL

Option Chosen Saturated and unsaturated zone models
Run was DETERMIN

Infiltration input by user
Run was transient
Reject runs if Y coordinate outside plume
Do not reject runs if Z coordinate outside plume
Gaussian source used in saturated zone model

1
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UNSATURATED ZONE FLOW MODEL PARAMETERS
(input parameter description and value)
NP - Total number of nodal points 240
NMAT - Number of different porous materials 1
KPROP - Van Genuchten or Brooks and Corey 1
IMSHGN - Spatial discretization option 1
NVFLAYR - Number of layers in flow model 1

OPTIONS CHOSEN

Van Genuchten functional coefficients
User defined coordinate system
1

Layer information

LAYER NO.	LAYER THICKNESS	MATERIAL PROPERTY
1	1.00	1

DATA FOR MATERIAL 1

VADOSE ZONE MATERIAL VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
0.100E-10	0.100E+05	Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.
0.100E-08	0.990	Unsaturated zone porosity	--	CONSTANT	0.250	-999.
0.000E+00	-999.	Air entry pressure head	m	CONSTANT	0.700	-999.
0.100E-08	-999.	Depth of the unsaturated zone	m	CONSTANT	1.00	-999.

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

LIMITS	VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
				MEAN	STD DEV
MIN	MAX				

0.100E-08	Residual water content	--	CONSTANT	0.116	-999.
	1.00				
0.000E+00	Brook and Corey exponent, EN	--	CONSTANT	0.000E+00	-999.
	10.0				
0.000E+00	ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.
	1.00				
1.00	Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.
1					

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used	1
NTSTPS	- Number of time values concentration calc	40
DUMMY	- Not presently used	1
ISOL	- Type of scheme used in unsaturated zone	1
N	- Stehfest terms or number of increments	18
NTEL	- Points in Lagrangian interpolation	3
NGPTS	- Number of Gauss points	104
NIT	- Convolution integral segments	2
IBOUND	- Type of boundary condition	2
ITSGEN	- Time values generated or input	1
TMAX	- Max simulation time	0.0
WTFUN	- Weighting factor	1.2

OPTIONS CHOSEN

 Stehfest numerical inversion algorithm
 Nondecaying pulse source
 Computer generated times for computing concentrations

1

DATA FOR LAYER 1

 VADOSE TRANSPORT VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV

0.100E-08	Thickness of layer	m	CONSTANT	1.00	-999.
0.100E-02	Longitudinal dispersivity of layer	m	DERIVED	1.00	-999.
0.000E+00	Percent organic matter	--	CONSTANT	0.000E+00	-999.
0.100E-01	Bulk density of soil for layer	g/cc	CONSTANT	1.73	-999.
0.000E+00	Biological decay coefficient	1/yr	CONSTANT	0.000E+00	-999.

CHEMICAL SPECIFIC VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
0.000E+00		Solid phase decay coefficient	1/yr	DERIVED	-999.	-999.
	0.100E+11					
		Dissolved phase decay coefficient	1/yr	DERIVED	-999.	-999.
0.000E+00	0.100E+11					
		Overall chemical decay coefficient	1/yr	DERIVED	-999.	-999.
0.000E+00	0.100E+11					
		Acid catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000E+00	-999.
0.000E+00	-999.					
		Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000E+00	-999.
0.000E+00	-999.					
		Base catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000E+00	-999.
0.000E+00	-999.					
		Reference temperature	C	CONSTANT	20.0	-999.
0.000E+00	100.					
		Normalized distribution coefficient	ml/g	CONSTANT	0.000E+00	-999.
0.000E+00	-999.					
		Distribution coefficient	--	DERIVED	-999.	-999.
0.000E+00	0.100E+11					
		Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000E+00	-999.
0.000E+00	-999.					
		Air diffusion coefficient	cm2/s	CONSTANT	0.000E+00	-999.
0.000E+00	10.0					
		Reference temperature for air diffusion	C	CONSTANT	20.0	-999.
0.000E+00	100.					
		Molecular weight	g/M	CONSTANT	0.000E+00	-999.
0.000E+00	-999.					
		Mole fraction of solute	--	CONSTANT	0.000E+00	-999.
0.100E-08	1.00					
		Vapor pressure of solute	mm Hg	CONSTANT	0.000E+00	-999.
0.000E+00	100.					

0.100E-09	Henry's law constant	atm-m ³ /M	CONSTANT	0.000E+00	-999.
	1.00				
0.000E+00	Overall 1st order decay sat. zone	1/yr	DERIVED	0.000E+00	0.000E+00
	1.00				
0.000E+00	Not currently used		CONSTANT	-999.	-999.
	1.00				
0.000E+00	Not currently used		CONSTANT	-999.	-999.
	1.00				
0.000E+00					
1					

SOURCE SPECIFIC VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
0.100E-09	0.100E+11	Infiltration rate	m/yr	CONSTANT	0.298E-01	-999.
0.100E-01	-999.	Area of waste disposal unit	m ²	CONSTANT	167.	-999.
0.100E-08	-999.	Duration of pulse	yr	CONSTANT	50.0	-999.
0.100E-08	-999.	Spread of contaminant source	m	DERIVED	-999.	-999.
0.100E-08	0.100E+11	Recharge rate	m/yr	CONSTANT	0.000E+00	-999.
0.000E+00	0.100E+11	Source decay constant	1/yr	CONSTANT	0.000E+00	-999.
0.000E+00	-999.	Initial concentration at landfill	mg/l	CONSTANT	15.1	-999.
0.000E+00	-999.	Length scale of facility	m	DERIVED	-999.	-999.
0.100E-08	0.100E+11	Width scale of facility	m	DERIVED	-999.	-999.

	Near field dilution	DERIVED	1.00	0.000E+00
0.000E+00	1.00			

AQUIFER SPECIFIC VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
0.100E-08	100.	Particle diameter	cm	CONSTANT	0.500E-01	-999.
0.100E-08	0.990	Aquifer porosity	--	CONSTANT	0.300	-999.
0.100E-01	5.00	Bulk density	g/cc	CONSTANT	1.70	-999.
0.100E-08	0.100E+06	Aquifer thickness	m	CONSTANT	31.0	-999.
0.100E-08	0.100E+06	Source thickness (mixing zone depth)	m	CONSTANT	3.05	-999.
0.100E-06	0.100E+09	Conductivity (hydraulic)	m/yr	CONSTANT	0.100E+04	-999.
0.100E-07	-999.	Gradient (hydraulic)		CONSTANT	0.500E-02	-999.
0.100E-09	0.100E+09	Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.
1.00	0.100E+09	Retardation coefficient	--	DERIVED	1.00	-999.
0.100E-02	0.100E+05	Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.
-999.	-999.	Transverse dispersivity	m	FUNCTION OF X	-999.	-999.
0.100E-02	0.100E+05	Vertical dispersivity	m	FUNCTION OF X	-999.	-999.

0.000E+00	Temperature of aquifer	C	CONSTANT	20.0	-999.
	100.	--	CONSTANT	7.00	-999.
0.300	pH				
	14.0				
0.100E-05	Organic carbon content (fraction)		CONSTANT	0.000E+00	-999.
	1.00	m	CONSTANT	30.5	-999.
1.00	Well distance from site				
	-999.	degree	CONSTANT	0.000E+00	-999.
0.000E+00	Angle off center				
	360.				
0.000E+00	Well vertical distance	m	CONSTANT	0.000E+00	-999.
1					

TIME	CONCENTRATION
0.500E+01	0.76876E-03
0.100E+02	0.95359E-01
0.150E+02	0.17083E+00
0.200E+02	0.17731E+00
0.250E+02	0.17734E+00
0.300E+02	0.17734E+00
0.350E+02	0.17734E+00
0.400E+02	0.17734E+00
0.450E+02	0.17732E+00
0.500E+02	0.17730E+00
0.550E+02	0.17554E+00
0.600E+02	0.73617E-01
0.650E+02	0.61903E-02
0.700E+02	0.11443E-02
0.750E+02	0.87383E-03
0.800E+02	0.63037E-03
0.850E+02	0.38790E-03
0.900E+02	0.14504E-03
0.950E+02	0.00000E+00
0.100E+03	0.00000E+00

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U. S. ENVIRONMENTAL PROTECTION AGENCY
EXPOSURE ASSESSMENT

MULTIMEDIA MODEL

MULTIMED (Version 1.01, June 1991)

1

Run options

1R424

1m to GW, Ksat of ~~4~~e-3 cm/sec

50 year ave. - sandy loam cov no liner - 15.1 mg/L Xs- 10' mixing zone
Chemical simulated is DEFAULT CHEMICAL

~33' from former tanks

Option Chosen

Run was

Infiltration input by user

Run was transient

Reject runs if Y coordinate outside plume

Do not reject runs if Z coordinate outside plume

Gaussian source used in saturated zone model

1

UNSATURATED ZONE FLOW MODEL PARAMETERS

(input parameter description and value)

NP - Total number of nodal points 240

NMAT - Number of different porous materials 1

KPROP - Van Genuchten or Brooks and Corey 1

IMSHGN - Spatial discretization option 1

NVFLAYR - Number of layers in flow model 1

Saturated and unsaturated zone models
DETERMIN

OPTIONS CHOSEN

Van Genuchten functional coefficients
User defined coordinate system
1

Layer information

LAYER NO.	LAYER THICKNESS	MATERIAL PROPERTY
1	1.00	1

DATA FOR MATERIAL 1

VADOSE ZONE MATERIAL VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
0.100E-10	0.100E+05	Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.
0.100E-08	0.990	Unsaturated zone porosity	--	CONSTANT	0.250	-999.
0.000E+00	-999.	Air entry pressure head	m	CONSTANT	0.700	-999.
0.100E-08	-999.	Depth of the unsaturated zone	m	CONSTANT	1.00	-999.

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS
MIN	MAX				MEAN STD DEV
0.100E-08	1.00	Residual water content	--	CONSTANT	0.116 -999.
0.000E+00	10.0	Brook and Corey exponent, EN	--	CONSTANT	0.000E+00 -999.
0.000E+00	1.00	ALFA coefficient	1/cm	CONSTANT	0.500E-02 -999.
1.00	5.00	Van Genuchten exponent, ENN	--	CONSTANT	1.09 -999.
1					

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used	1
NTSTPS	- Number of time values concentration calc	40
DUMMY	- Not presently used	1
ISOL	- Type of scheme used in unsaturated zone	1
N	- Stehfest terms or number of increments	18
NTEL	- Points in Lagrangian interpolation	3
NGPTS	- Number of Gauss points	104
NIT	- Convolution integral segments	2
IBOUND	- Type of boundary condition	2
ITSGEN	- Time values generated or input	1
TMAX	- Max simulation time	0.0
WTFUN	- weighting factor	1.2

OPTIONS CHOSEN

Steepest numerical inversion algorithm
 Nondecaying pulse source
 Computer generated times for computing concentrations

1

DATA FOR LAYER 1

VADOSE TRANSPORT VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV

0.100E-08	-999.	Thickness of layer	m	CONSTANT	1.00	-999.
0.100E-02	0.100E+05	Longitudinal dispersivity of layer	m	DERIVED	1.00	-999.
0.000E+00	100.	Percent organic matter	--	CONSTANT	0.000E+00	-999.
0.100E-01	5.00	Bulk density of soil for layer	g/cc	CONSTANT	1.73	-999.
0.000E+00	-999.	Biological decay coefficient	1/yr	CONSTANT	0.000E+00	-999.

CHEMICAL SPECIFIC VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
0.000E+00		Solid phase decay coefficient	1/yr	DERIVED	-999.	-999.
0.100E+11		Dissolved phase decay coefficient	1/yr	DERIVED	-999.	-999.
0.000E+00		Overall chemical decay coefficient	1/yr	DERIVED	-999.	-999.
0.000E+00		Acid catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000E+00	-999.
0.000E+00		Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000E+00	-999.
0.000E+00		Base catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000E+00	-999.
0.000E+00		Reference temperature	C	CONSTANT	20.0	-999.
0.000E+00		Normalized distribution coefficient	ml/g	CONSTANT	0.000E+00	-999.
0.000E+00		Distribution coefficient	--	DERIVED	-999.	-999.
0.000E+00		Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000E+00	-999.
0.000E+00		Air diffusion coefficient	cm2/s	CONSTANT	0.000E+00	-999.
0.000E+00		Reference temperature for air diffusion	C	CONSTANT	20.0	-999.
0.000E+00		Molecular weight	g/M	CONSTANT	0.000E+00	-999.
0.100E-08		Mole fraction of solute	--	CONSTANT	0.000E+00	-999.
0.000E+00		Vapor pressure of solute	mm Hg	CONSTANT	0.000E+00	-999.

0.100E-09	Henry`s law constant	atm-m ³ /M	CONSTANT	0.000E+00	-999.
1.00	Overall 1st order decay sat. zone	1/yr	DERIVED	0.000E+00	0.000E+00
0.000E+00	1.00				
0.000E+00	Not currently used		CONSTANT	-999.	-999.
1.00	Not currently used				
0.000E+00	1.00		CONSTANT	-999.	-999.
1	Not currently used				
0.000E+00	1.00				

SOURCE SPECIFIC VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
0.100E-09	0.100E+11	Infiltration rate	m/yr	CONSTANT	0.298E-01	-999.
0.100E-01	-999.	Area of waste disposal unit	m^2	CONSTANT	167.	-999.
0.100E-08	-999.	Duration of pulse	yr	CONSTANT	50.0	-999.
0.100E-08	-999.	Spread of contaminant source	m	DERIVED	-999.	-999.
0.100E-08	0.100E+11	Recharge rate	m/yr	CONSTANT	0.000E+00	-999.
0.000E+00	0.100E+11	Source decay constant	1/yr	CONSTANT	0.000E+00	-999.
0.000E+00	-999.	Initial concentration at landfill	mg/l	CONSTANT	15.1	-999.
0.000E+00	-999.	Length scale of facility	m	DERIVED	-999.	-999.
0.100E-08	0.100E+11	Width scale of facility	m	DERIVED	-999.	-999.

0.000E+00	Near field dilution	DERIVED	1.00	0.000E+00
1				

AQUIFER SPECIFIC VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
0.100E-08	Particle diameter	100.	cm	CONSTANT	0.500E-01	-999.
0.100E-08	Aquifer porosity	0.990	--	CONSTANT	0.300	-999.
0.100E-01	Bulk density	5.00	g/cc	CONSTANT	1.70	-999.
0.100E-08	Aquifer thickness	0.100E+06	m	CONSTANT	31.0	-999.
0.100E-08	Source thickness (mixing zone depth)	0.100E+06	m	CONSTANT	3.05	-999.
0.100E-06	Conductivity (hydraulic)	0.100E+09	m/yr	CONSTANT	0.100E+04	-999.
0.100E-07	Gradient (hydraulic)	-999.		CONSTANT	0.500E-02	-999.
0.100E-09	Groundwater seepage velocity	0.100E+09	m/yr	DERIVED	-999.	-999.
1.00	Retardation coefficient	0.100E+09	--	DERIVED	1.00	-999.
0.100E-02	Longitudinal dispersivity	0.100E+05	m	FUNCTION OF X	-999.	-999.
-999.	Transverse dispersivity	-999.	m	FUNCTION OF X	-999.	-999.
0.100E-02	Vertical dispersivity	0.100E+05	m	FUNCTION OF X	-999.	-999.

0.000E+00	Temperature of aquifer	C	CONSTANT	20.0	-999.
	100.				
0.300	pH	--	CONSTANT	7.00	-999.
	14.0				
0.100E-05	Organic carbon content (fraction)		CONSTANT	0.000E+00	-999.
	1.00				
1.00	Well distance from site	m	CONSTANT	10.0	-999.
	-999.				
0.000E+00	Angle off center	degree	CONSTANT	0.000E+00	-999.
	360.				
0.000E+00	Well vertical distance	m	CONSTANT	0.000E+00	-999.
1					

TIME	CONCENTRATION
0.500E+01	0.14291E-01
0.100E+02	0.43373E+00
0.150E+02	0.58376E+00
0.200E+02	0.59334E+00
0.250E+02	0.59332E+00
0.300E+02	0.59332E+00
0.350E+02	0.59332E+00
0.400E+02	0.59331E+00
0.450E+02	0.59324E+00
0.500E+02	0.59316E+00
0.550E+02	0.54588E+00
0.600E+02	0.16971E+00
0.650E+02	0.83110E-02
0.700E+02	0.37330E-02
0.750E+02	0.29208E-02
0.800E+02	0.21089E-02
0.850E+02	0.12971E-02
0.900E+02	0.48522E-03
0.950E+02	0.00000E+00
0.100E+03	0.00000E+00

Hansen, Edward J., EMNRD

From: Hansen, Edward J., EMNRD
Sent: Thursday, January 08, 2009 9:40 AM
To: 'Hack Conder'
Cc: Price, Wayne, EMNRD; Johnson, Larry, EMNRD; 'Katie Lee'
Subject: Suspension of laboratory analyses for BTEX
Attachments: ROC_BTEX Summary.xls

Dear Mr. Conder:

Upon review of the requests for suspension of laboratory analyses for BTEX, dated December 16, 2008, the New Mexico Oil Conservation Division (OCD) hereby approves the suspension of laboratory analyses for BTEX at the specified groundwater monitoring wells on the attached list.

[The well at the Hobbs SWD O-5 site (1R428-69) needs one additional groundwater sampling event with BTEX analytical results indicating that the respective standards have been met. Please resubmit your request for this well to the OCD once the results are available.]

The above approval is based on either eight consecutive sampling events that indicate that the respective standards have been met or that the four initial sampling events have indicated that there has been no detection of BTEX. However, the OCD may require additional sampling on a case-by-case basis (e.g., increasing concentration trend or elevated concentrations of BTEX in the vadose zone). Therefore, future requests for suspension of laboratory analyses for BTEX must be submitted to the OCD on a case-by-case basis, which include a table of all soil and groundwater monitoring results.

Please be advised that this OCD approval does not relieve the owner/operator of responsibility should operations pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the owner/operator of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

If you have any questions regarding this matter, please contact me at 505-476-3489.

Edward J. Hansen
Hydrologist
Environmental Bureau

System	Site	NMOCD case #	Last Submission	MWs where BTEX is ND, # of Quarters	# wells to stop BTEX Analysis
BD	B-29	1R426-169	Status Report	MW1&2: BTEX 4Q	2
EME	M-5 SWD	1R424	Final Closure Report	1: BTEX 13Q, 2: BTEX 22Q	2
EME	K-33-1	1R0427-92	Stage 1 AP	1: BTEX 22Q, 2: BTEX 7Q, 3: BTEX 8Q, 4: BTEX 4Q	4
Hobbs	ict. E-33-1	1R428-67	Corrective Action Plan	BTEX: 10Q	1
Hobbs	O-5	1R428-69	Status Report	EX 7Q, BT 3Q	1
Hobbs	M-4 vent	1R428-76	CAP	BTEX 4Q	1
Hobbs	F-29 SWD	AP-64	Stage 1 & 2	2: BTEX 5Q, 3: BTEX 8Q, 4: BTEX 26Q, 5: BTEX 5Q	4
Vacuum	F-35 SWD	AP-59	AP Amendment Proposal	2: BTEX 10Q, 3D & 3S: BTEX 6Q	3
Vacuum	G-35 SWD	AP-59	AP Amendment Proposal	2: BTEX 10Q, 3D: BTEX 8Q, 3S: BTEX 7Q	3

Total Wells with Proposed BTEX Suspension

21

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

December 16, 2008

Edward J. Hansen
NMOCD Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
Via E-mail and Hand Delivery

RE: ROC EME M-5 NMOCD: 1R0424
Plans to discontinue lab analysis of Benzene, Toluene, Ethyl benzene, & Xylenes
Section 5, 20S, 37E, Unit M

Dear Mr. Hansen:

When Rice Operating Company observes three consecutive quarters of laboratory analysis showing any constituent of concern below detection limits, ROC will request from NMOCD a discontinuation of laboratory analysis for that constituent during quarterly sampling, unless evidence suggests that conditions have changed.

At the above referenced site, in both the deep and shallow monitoring wells, laboratory analyses for Benzene, Toluene, Ethyl benzene and Xylenes have been below detection limits from December 2003 to the most recent sampling event in August 2008. As such, ROC requests discontinuation of laboratory analysis for these constituents beginning in our next quarter of data collection.

The attached table presents all ground water data for the site. If you have questions, please contact us or ROC.

Sincerely,
R.T. Hicks Consultants, Ltd.



Katie Lee
Project Scientist

Copy: Rice Operating Company

ROC EME M-5 SWD

MW	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene (mg/L)	Total Xylenes	Sulfate	Comments
d= deep									
1d	12/11/2003	6198	11736	<0.002	<0.002	<0.002	<0.006	XXX	Deep
1D	11/28/2005	5590	11400	<0.001	<0.001	<0.001	<0.001	XXX	Deep
1D	2/20/2006	6830	14400	<0.001	<0.001	<0.001	<0.001	503	Deep
1D	2/20/2006	6830	14400	<0.001	<0.001	<0.001	<0.001	503	
1D	5/16/2006	7000	13100	<0.001	<0.001	<0.001	<0.001	752	Deep
1D	11/10/2006	5840	12000	<0.001	<0.001	<0.001	<0.001	421	Clear no odor
1D	3/6/2007	7300	10700	<0.001	<0.001	<0.001	<0.001	595	Clear/ No Odor
1D	6/7/2007	6110	16600	<0.001	<0.001	<0.001	<0.001	371	clear no odor
1D	8/27/2007	6898	14776	<0.002	<0.002	<0.002	<0.006	394	Clear No Odor
1D	11/9/2007	7100	12247	<0.001	<0.001	<0.001	<0.003	435	Clear No odor
1D	2/21/2008	6800	12100	<0.001	<0.001	<0.001	<0.003	422	Clear No odor
1D	5/15/2008	6900	13700	<0.002	<0.002	<0.002	<0.006	684	Clear No odor
1D	8/20/2008	8400	13300	<0.001	<0.001	<0.001	<0.003	510	Clear No odor
s= shallow									
1s	12/11/2003	6198	10784	<0.002	<0.002	<0.002	<0.006	99.8	Shallow
1s	2/20/2004	5320	14500	<0.001	<0.001	<0.001	<0.001	454	Shallow
1s	5/6/2004	5940	12400	<0.001	<0.001	<0.001	<0.001	420	Shallow
1s	8/10/2004	6910	17300	<0.001	<0.001	<0.001	<0.001	470	Shallow
1s	11/10/2004	7090	14000	<0.001	<0.001	<0.001	<0.001	614	Shallow
1s	2/8/2005	6710	13200	<0.001	<0.001	<0.001	<0.001	1450	Shallow
1s	5/3/2005	6560	16500	<0.001	<0.001	<0.001	<0.001	595	XXX
1s	8/13/2005	6070	13800	<0.001	<0.001	<0.001	<0.001	574	XXX
1s	11/28/2005	4500	12300	<0.001	<0.001	<0.001	<0.001	1470	Shallow
1s	2/20/2006	5660	12400	<0.001	<0.001	<0.001	<0.001	596	Shallow
1s	2/20/2006	5660	12400	<0.001	<0.001	<0.001	<0.001	596	
1s	5/16/2006	7870	14300	<0.001	<0.001	<0.001	<0.001	626	Shallow
1s	11/10/2006	5840	10500	<0.001	<0.001	<0.001	<0.001	622	Clear no odor
1s	3/6/2007	5440	9190	<0.001	<0.001	<0.001	<0.001	595	Clear/
1s	6/7/2007	4960	11700	<0.001	<0.001	<0.001	<0.001	539	clear no odor
1s	8/27/2007	4499	10095	<0.002	<0.002	<0.002	<0.006	554	Clear No Odor
1s	11/9/2007	4400	8193	<0.001	<0.001	<0.001	<0.003	549	Clear No odor
1s	2/21/2008	4200	8640	<0.001	<0.001	<0.001	<0.003	474	Clear No odor
1s	5/15/2008	4200	8540	<0.002	<0.002	<0.002	<0.006	750	Clear No odor
1s	8/20/2008	5400	8030	<0.001	<0.001	<0.001	<0.003	524	Clear No odor