



State of Oregon  
Department of  
Environmental  
Quality

Oregon Department of Environmental Quality  
Underground Storage Tank Program

**HEATING OIL TANK CONTRACTOR BULLETIN  
HEATING OIL TANK PROGRAM UPDATE**

**UPDATED RISK BASED CONCENTRATIONS FOR ETHYLBENZENE  
AND NAPHTHALENE**

December 2008

*Our mission is to be an active leader in restoring, maintaining and enhancing the quality of Oregon's air, water and land.*

**Carcinogen Reclassification Lowers RBCs**

The Environmental Protection Agency (EPA) has issued updated screening levels for 1,1-Dichloroethane, ethylbenzene, and naphthalene that significantly reduce OR DEQ's Risk Based Concentrations (RBCs) for these contaminants. The rationale for the RBC decrease was the reclassification of these contaminants from non carcinogens to carcinogens. The table below compares the RBCs published in July 4, 2007 with the updated RBCs for ethylbenzene and naphthalene. 1,1-Dichloroethane was omitted from the table as it is not a contaminant that the HOT Program requires in sample analysis during assessment and cleanup.

Soil (mg/kg) *	July 2007 RBC	Updated RBC
<b><i>Soil Ingestion, Dermal Contact, and Inhalation</i></b>		
Ethylbenzene	4,000	27
Naphthalene	34	3.8
<b><i>Leaching to Groundwater</i></b>		
Ethylbenzene	160	0.14
Naphthalene	3.8	0.072
<b><i>Volatilization to Indoor Air</i></b>		
Ethylbenzene	No previous RBC	0.69
Naphthalene	290	5.5
<b><i>Volatilization to Outdoor Air</i></b>		
Ethylbenzene	No previous RBC	26
Naphthalene	240	4.5
<b><i>Groundwater (ug/L) *</i></b>		
<b><i>Ingestion and Inhalation from tapwater</i></b>		
Ethylbenzene	1,300	1.2
Naphthalene	6.2	0.12
<b><i>Volatilization to Indoor Air</i></b>		
Ethylbenzene	No previous RBC	410
Naphthalene	29,000	560
<b><i>Volatilization to Outdoor Air</i></b>		
Ethylbenzene	No previous RBC	6,800
Naphthalene	No previous RBC	2,600
<b><i>Groundwater in Excavation</i></b>		
Ethylbenzene	110,000	4,200
Naphthalene	680	470
<b><i>AIR (ug/m3)</i></b>		
Ethylbenzene	1,100	0.82
Naphthalene	3.1	0.06

\* Values listed are for the residential receptor scenario

A link to the updated abridged Tank Program RBC table is available at:  
<http://www.deq.state.or.us/lq/pubs/docs/RBDMTableTankAbridged.pdf>

**DEPARTMENT OF ENVIRONMENTAL QUALITY – Heating Oil Tank Program**

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<http://www.deq.state.or.us/wmc/tank/ust-lust.htm>



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The HOT Program is in the process of implementing the updated RBCs and will require all responsible parties and licensed HOT Service Providers to begin using the updated RBCs beginning **January 1, 2009**. This means that any assessment or sampling work performed on or after January 1, 2009 must use the updated RBCs for ethylbenzene and naphthalene in all of the applicable exposure pathways of concern. This also means that any work that is required of the Service Provider after the site is certified must also adhere to the new RBCs. Please be sure your lab is aware of the requirement for lower detection limits for both of these contaminants when submitting samples for analysis.

### **Generic Remedy Option 2**

The HOT Program is currently in the process of determining the applicability of the Generic Remedy given the lower RBCs for naphthalene and ethylbenzene. Currently, Option 2 requires benzene analysis on any TPH-Dx sample above 2,500 ppm. Beginning **January 1, 2009**, all samples above 2,500 ppm for TPH-Dx must also be analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), and naphthalene. If the BTEX and/or naphthalene concentrations are above their respective RBCs, then the contaminated soil must be removed or a risk based assessment must be performed on the site. Benzene concentrations of 0.1 ppm or below will still be allowed as part of the Generic Remedy.

### **Pockets of Remaining Contamination Unable To Be Removed**

The lower RBCs for ethylbenzene and naphthalene will undoubtedly require serious consideration of removing contaminated soil. For cases where additional removal of soil cannot be conducted and the remaining contamination is above RBCs for the volatilization to indoor and/or outdoor air pathways, soil gas and/or indoor air sampling will be required. As both of these sampling techniques have not been widely utilized by HOT Service Providers in the past, please contact HOT Project Managers prior to conducting sampling activities for the volatilization to indoor and/or outdoor air pathways.

Oregon DEQ is in the process of developing guidance on assessing the Vapor Intrusion pathway. The OR DEQ guidance is being modeled on the Interstate Technology and Regulatory Council (ITRC) Vapor Intrusion guidance document that is available online at: [http://www.itrcweb.org/teamresources\\_49.asp](http://www.itrcweb.org/teamresources_49.asp)

The VolScreen model that has been used for the volatilization to indoor air pathway can still be used for modeling benzene concentrations in soil. This model can also be used for naphthalene and ethylbenzene provided that the appropriate slope factors (listed in the table below) are used for each of these contaminants.

Contaminant of Concern	Slope Factor
Ethylbenzene	.0088
Naphthalene	0.12

### **Report Submittal Requirement**

As per OAR 340-177-0055(6), final cleanup reports and certifications must be submitted to the Department within 60 days of the work being completed. An extension to the 60 day requirement may be granted provided prior Department approval. Failure to comply with this requirement may result in formal enforcement action.

### **Future Guidance and Information**

The HOT Program will inform Service Providers of any new guidance and information when it becomes available. A Service Provider's bulletin and meeting are tentatively scheduled for early spring of 2009. In the meantime, thank you for all of your cooperation and good work!