

Light Non-Aqueous Phase Liquids (LNAPL) Workgroup

**Monday April 27
1 to 3 pm**

One Winter Street, 2nd floor Conf. “C”

Ken Marra, P.E.

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<http://www.mass.gov/dep/cleanup/lnaplwg.htm>



Permanent Solutions after 5 Years

Tier Classified Sites

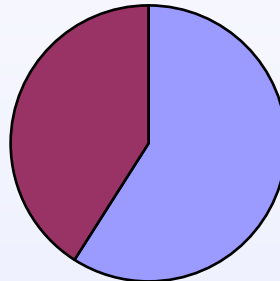
LNAPL > 1/2 inch



37.9%

162 of 427

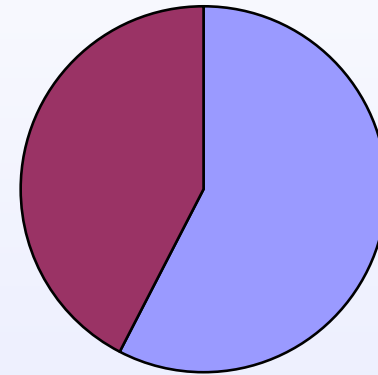
All Petroleum
Sites



59.1%

3279 of 5546

All Sites



57.4%

6101 of 10,628



LNAPL Workgroup Topics

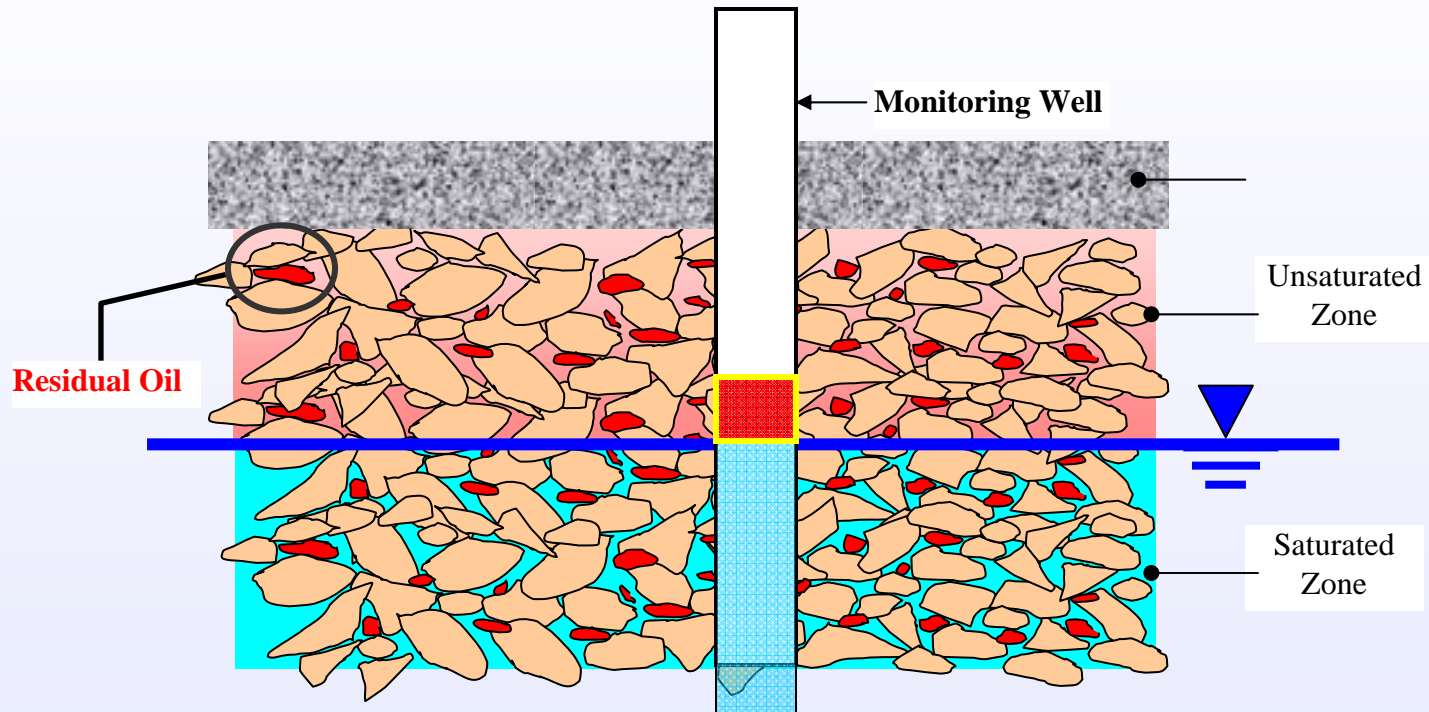
(as of 12/08)

- Conceptual Site Model
- Potential exposure pathways
- Principles of LNAPL mobility and “Residual Oil Saturation”
- Previous studies, existing empirical data sets, federal and state policies
- Analytical data requirements and methods
- Implementation under existing regulations
- Possible future regulatory changes



LNAPL Assessment

Monitoring Well vs “True” Formation



RISK

LNAPL Assessment

Thickness ?

Relative Permeability ?

Mobility ?

Exposure Pathway

Dissolved Phase

Continuous Separate Phase ?

Vapor Phase

Residual Saturation ?

Monitoring Well ?

Concentration ?

Direct Contact

Closure

Viscosity ?

Conceptual Site Model ?

Feasibility



LNAPL Workgroup

36 participants

LOTS of written & verbal follow-up comments
(e.g., scope, definitions, feasibility, risk)

HUGE AMOUNTS OF INFO:

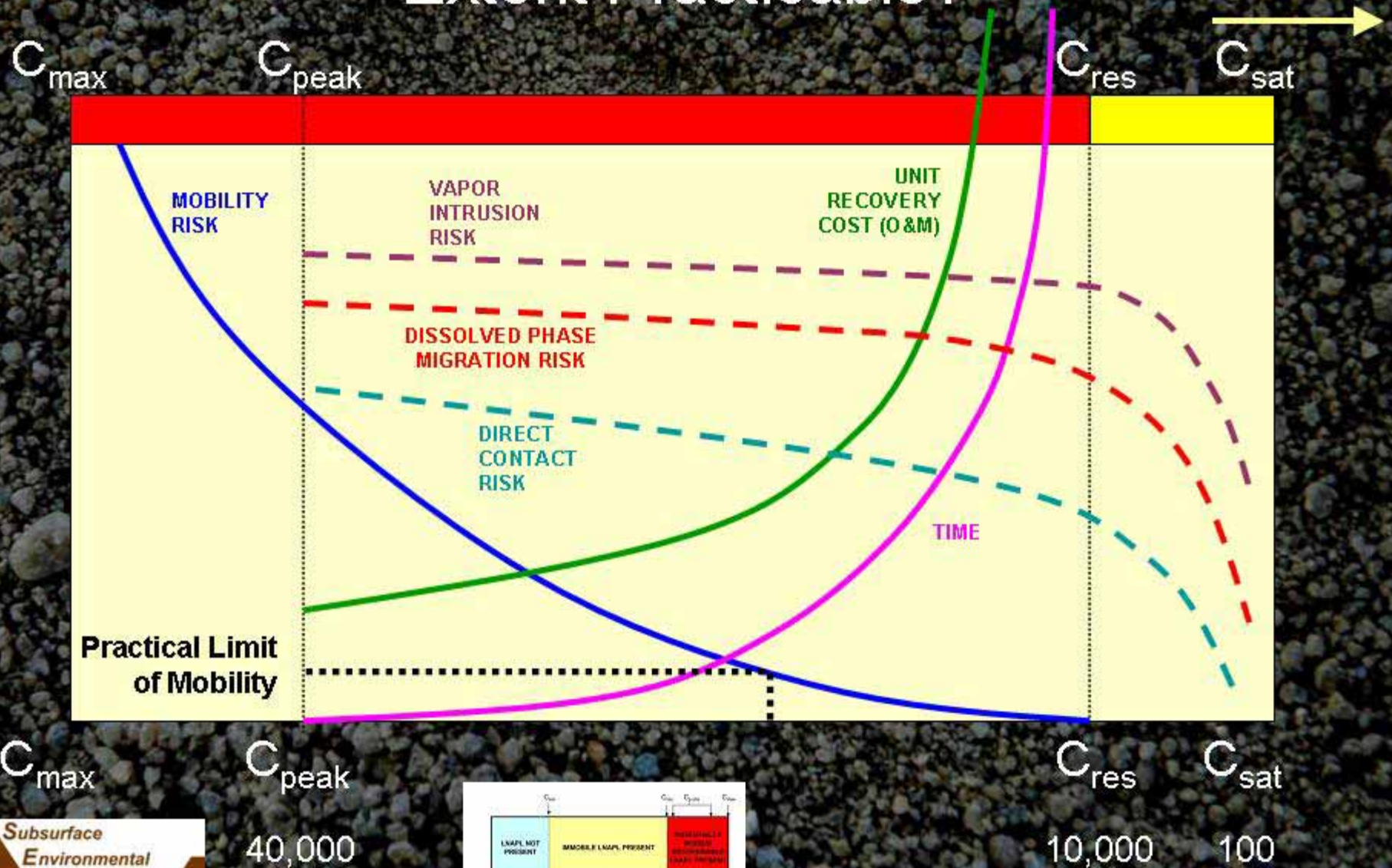
Mobility/recoverability/characterization of LNAPL phase

MUCH LESS INFO:

risk/exposure of LNAPL, dissolved and vapor phases



Should We Try to Recover to the Maximum Extent Practicable?



C_{max}

C_{peak}

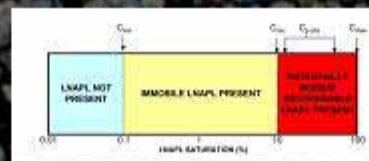
C_{res}

C_{sat}

40,000

10,000

100

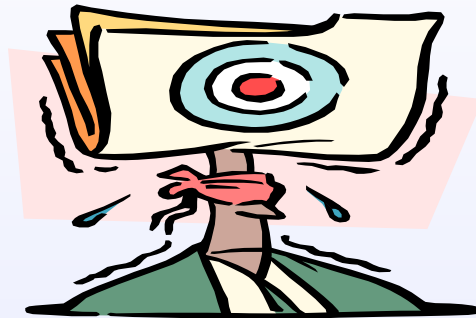


LNAPL Workgroup Objective ?

“Develop a regulatory approach....that is consistent with the risk-based framework of the MCP”



Questions?



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