

TABLE 1
NJDEP MASTER TABLE
GENERIC VAPOR INTRUSION SCREENING LEVELS

| Chemical | Ground Water Screening Levels | Soil Gas Screening Levels | | | | Indoor Air Screening Levels | | | |
|--|-------------------------------|---------------------------|-------------------|----------------|-------------------|-----------------------------|-------------------|----------------|-------------------|
| | | Residential | | Nonresidential | | Residential | | Nonresidential | |
| | | $\mu\text{g/L}$ | $\mu\text{g/m}^3$ | ppbv | $\mu\text{g/m}^3$ | ppbv | $\mu\text{g/m}^3$ | ppbv | $\mu\text{g/m}^3$ |
| METHOD TO-15 PARAMETERS | | | | | | | | | |
| Acetone (2-propanone) | 1,900,000 | 160,000 | 69,000 | 230,000 | 97,000 | 3,300 | 1,400 | 4,600 | 1,900 |
| Benzene | 15 | 16 | 5 | 26 | 8 | 2 | 0.5 | 2 | 0.5 |
| Bromodichloromethane | 5 | 34 | 5 | 34 | 5 | 3 | 0.5 | 3 | 0.5 |
| Bromoethene (vinyl bromide) | 0.1 | 22 | 5 | 22 | 5 | 2 | 0.5 | 2 | 0.5 |
| Bromoform | 370 | 80 | 8 | 180 | 18 | 5 | 0.5 | 5 | 0.5 |
| Bromomethane (methyl bromide) | 29 | 260 | 66 | 360 | 92 | 5 | 1 | 7 | 2 |
| 1,3-Butadiene (vinyl ethylene) | 0.01 | 11 | 5 | 11 | 5 | 1 | 0.5 | 1 | 0.5 |
| 2-Butanone (methyl ethyl ketone) | 2,700,000 | 260,000 | 87,000 | 360,000 | 120,000 | 5,100 | 1,700 | 7,200 | 2,400 |
| Carbon disulfide | 710 | 36,000 | 12,000 | 51,000 | 16,000 | 730 | 230 | 1,000 | 330 |
| Carbon tetrachloride | 1 | 31 | 5 | 31 | 5 | 3 | 0.5 | 3 | 0.5 |
| Chlorobenzene | 640 | 2,600 | 550 | 3,600 | 780 | 51 | 11 | 72 | 16 |
| Chloroethane (ethyl chloride) | 4 | 110 | 41 | 250 | 93 | 2 | 0.8 | 5 | 2 |
| Chloroform | 70 | 24 | 5 | 24 | 5 | 2 | 0.5 | 2 | 0.5 |
| Chloromethane (methyl chloride) | 240 | 4,700 | 2,300 | 6,600 | 3,200 | 95 | 46 | 130 | 64 |
| 3-Chloropropene (allyl chloride) | 0.8 | 16 | 5 | 34 | 11 | 2 | 0.5 | 2 | 0.5 |
| 2-Chlorotoluene (o-chlorotoluene) | 1,200 | 3,600 | 700 | 5,100 | 990 | 73 | 14 | 100 | 20 |
| Cyclohexane | 1,200 | 310,000 | 90,000 | 430,000 | 130,000 | 6,200 | 1,800 | 8,700 | 2,500 |
| Dibromochloromethane | 9 | 43 | 5 | 43 | 5 | 4 | 0.5 | 4 | 0.5 |
| 1,2-Dibromoethane (ethylene dibromide) | 0.4 | 38 | 5 | 38 | 5 | 4 | 0.5 | 4 | 0.5 |
| 1,2-Dichlorobenzene (o) | 5,900 | 7,300 | 1,200 | 10,000 | 1,700 | 150 | 24 | 200 | 34 |
| 1,3-Dichlorobenzene (m) | 600 | 550 | 91 | 770 | 130 | 11 | 2 | 15 | 3 |
| 1,4-Dichlorobenzene (p) | 75 | 30 | 5 | 32 | 5 | 3 | 0.5 | 3 | 0.5 |
| Dichlorodifluoromethane (Freon 12) | 1,000 | 9,100 | 1,800 | 13,000 | 2,600 | 180 | 37 | 260 | 52 |
| 1,1-Dichloroethane | 3,600 | 26,000 | 6,300 | 36,000 | 8,800 | 510 | 130 | 720 | 180 |
| 1,2-Dichloroethane | 2 | 20 | 5 | 20 | 5 | 2 | 0.5 | 2 | 0.5 |
| 1,1-Dichloroethene | 250 | 11,000 | 2,800 | 15,000 | 3,900 | 220 | 55 | 310 | 77 |
| ** 1,2-Dichloroethene (cis) | 350 | 1,800 | 460 | 2,600 | 640 | 36 | 9 | 51 | 13 |
| 1,2-Dichloroethene (trans) | 300 | 3,600 | 920 | 5,100 | 1,300 | 73 | 18 | 100 | 26 |
| 1,2-Dichloroethene (total) ^d | 190 | 1,600 | 410 | 2,300 | 580 | 33 | 8 | 46 | 12 |
| 1,2-Dichloropropane | 1 | 23 | 5 | 23 | 5 | 2 | 0.5 | 2 | 0.5 |
| 1,3-Dichloropropene (total) ^d | 1 | 31 | 7 | 72 | 16 | 2 | 0.5 | 2 | 0.5 |
| Ethylbenzene | 61,000 | 53,000 | 12,000 | 74,000 | 17,000 | 1,100 | 240 | 1,500 | 340 |
| Hexachlorobutadiene | 1 | 53 | 5 | 53 | 5 | 5 | 0.5 | 5 | 0.5 |

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| Chemical | Ground Water Screening Levels | Soil Gas Screening Levels | | | | Indoor Air Screening Levels | | | |
|---|-------------------------------|---------------------------|---------|-------------------|---------|-----------------------------|-------|-------------------|-------|
| | | Residential | | Nonresidential | | Residential | | Nonresidential | |
| | $\mu\text{g/L}$ | $\mu\text{g/m}^3$ | ppbv | $\mu\text{g/m}^3$ | ppbv | $\mu\text{g/m}^3$ | ppbv | $\mu\text{g/m}^3$ | ppbv |
| n-Hexane | 30 | 36,000 | 10,000 | 51,000 | 14,000 | 730 | 210 | 1,000 | 290 |
| Methylene chloride (dichloromethane) | 53 | 190 | 55 | 430 | 120 | 4 | 1 | 9 | 2 |
| 4-Methyl-2-pentanone (MIBK) | 880,000 | 160,000 | 38,000 | 220,000 | 54,000 | 3,100 | 770 | 4,400 | 1,100 |
| MTBE (methyl tert butyl ether) | 78 | 78 | 22 | 180 | 50 | 2 | 0.5 | 4 | 1 |
| Styrene | 18,000 | 52,000 | 12,000 | 73,000 | 17,000 | 1,000 | 250 | 1,500 | 340 |
| Tertiary butyl alcohol (TBA) | 170,000 | 3,300 | 1,100 | 4,600 | 1,500 | 66 | 22 | 92 | 30 |
| 1,1,2,2-Tetrachloroethane | 4 | 34 | 5 | 34 | 5 | 3 | 0.5 | 3 | 0.5 |
| Tetrachloroethene (PCE) | 1 | 34 | 5 | 36 | 5 | 3 | 0.5 | 3 | 0.5 |
| Toluene | 310,000 | 260,000 | 68,000 | 360,000 | 95,000 | 5,100 | 1,400 | 7,200 | 1,900 |
| 1,2,4-Trichlorobenzene | 2,800 | 1,800 | 250 | 2,600 | 340 | 36 | 5 | 51 | 7 |
| 1,1,1-Trichloroethane | 2,300 | 51,000 | 9,400 | 72,000 | 13,000 | 1,000 | 190 | 1,400 | 260 |
| 1,1,2-Trichloroethane | 5 | 27 | 5 | 27 | 5 | 3 | 0.5 | 3 | 0.5 |
| Trichloroethene (TCE) | 1 | 27 | 5 | 27 | 5 | 3 | 0.5 | 3 | 0.5 |
| Trichlorofluoromethane (Freon 11) | 2,000 | 36,000 | 6,500 | 51,000 | 9,100 | 730 | 130 | 1,000 | 180 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 2,400 | 1,600,000 | 200,000 | 2,200,000 | 290,000 | 31,000 | 4,100 | 44,000 | 5,700 |
| Vinyl chloride | 1 | 13 | 5 | 48 | 19 | 1 | 0.5 | 1 | 0.5 |
| Xylenes (total) ^a | 7,000 | 5,500 | 1,300 | 7,700 | 1,800 | 110 | 25 | 150 | 35 |
| ADDITIONAL PARAMETERS | | | | | | | | | |
| ** Mercury (elemental) ^b | NA | NA | NA | NA | NA | 0.3 | NA | 0.4 | NA |
| NOTES | | | | | | | | | |
| ** Values updated from previous Table 1(dated May 2006) based on the latest USEPA Region III RBC Table (10/31/2006) toxicity factors or latest NJDEP GWQS. | | | | | | | | | |
| ^a The concentrations of each isomer are added if multiple isomers are present and the results compared to the total screening level. | | | | | | | | | |
| ^b Indoor Air Screening Level is health-based and does not consider the analytical reporting limit due to varying collection-specific factors. The analytical method and collection procedures used should attempt to attain a reporting limit as close as possible to the health-based criteria. The laboratory, in consultation with the environmental consultant, must submit their reporting limit prior to sampling. | | | | | | | | | |
| NA = Not available | | | | | | | | | |
| Screening levels are unavailable for six NJDEP state contract Method TO-15 chemicals (1,2-dichlorotetrafluoroethane, 4-ethyl toluene, n-heptane, 2,2,4-trimethylpentane, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene) due to the absence of toxicity information. | | | | | | | | | |
| See Appendix G of the NJDEP Vapor Intrusion Guidance for details on the development of the screening levels. | | | | | | | | | |
| When comparing site data with the screening levels, the data and the screening levels must be in the same units (i.e., ppbv or $\mu\text{g/m}^3$). | | | | | | | | | |
| Due to routine updates to the table, the user should refer to the NJDEP website for the latest information. | | | | | | | | | |

TABLE 2
NJDEP ACTION LEVELS FOR INDOOR AIR

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| Chemical | Cancer/ Noncancer ^a | Residential Screening Levels ^b | | Rapid Action Levels ^c (RAL) | | Health Department Notification Levels ^d (HDNL) | |
|---|-----------------------------------|--|-------|---|----------------|--|----------------------|
| | | $\mu\text{g}/\text{m}^3$ | ppbv | $\mu\text{g}/\text{m}^3$ | ppbv | $\mu\text{g}/\text{m}^3$ | ppbv |
| Acetone (2-propanone) | N | 3,300 | 1,400 | 6,600 | 2,800 | 31,000 ^e | 13,000 ^e |
| ** Benzene | C | 2* | 0.5* | 14 ^j | 4 ^j | 14 ^e | 4 ^e |
| Carbon tetrachloride | C | 3* | 0.5* | 10 | 2 | 100 | 20 |
| Chloroform | C | 2* | 0.5* | 8 | 2 | 80 | 20 |
| 1,2-Dichloroethene (total) ⁱ | N | 33 | 8 | 66 | 16 | 400 ^e | 100 ^e |
| Ethylbenzene | N | 1,100 | 240 | 2,200 | 480 | 4,300 ^f | 1,000 ^f |
| Methylene chloride (dichloromethane) | C | 4 | 1 | 400 | 100 | 1,000 ^e | 300 ^e |
| MTBE (methyl tert-butyl ether) | C | 2* | 0.5* | 200 | 40 | 2,000 | 400 |
| Tetrachloroethene (PCE) | C | 3* | 0.5* | 30 | 5 | 300 | 50 |
| Toluene | N | 5,100 | 1,400 | 10,000 | 2,800 | > 5,100 ^h | > 1,400 ^h |
| Trichloroethene (TCE) | C | 3* | 0.5* | 20 ^g | 3 ^g | 20 | 3 |
| Vinyl chloride | C | 1* | 0.5* | 7 | 3 | 70 | 30 |
| ** Xylenes (total) ⁱ | N | 110 | 25 | 220 | 50 | 4,300 ^e | 1,000 ^e |

NOTES

* Screening level is based on the higher analytical reporting limit.

** Values updated from previous Table 2 (dated May 2006) based on the latest USEPA Region III RBC Table (10/31/2006) toxicity factors.

^a Values based on cancer (C) or noncancer (N) effects.

^b Levels represent the higher of the health-based value or the Method TO-15 analytical reporting limit.

^c Levels are based on a factor of 100x for carcinogens and a factor of 2x for noncarcinogens, using the Table G-4 residential health-based values.

^d Levels are based on one-half the Agency for Toxic Substances Disease Registry (ATSDR) acute Minimum Risk Level (MRL) or 1,000x the the cancer health-based residential value in Table G-4, whichever is lower. The intermediate MRL is used in the absence of an acute MRL.

^e HDNL is based on one-half the ATSDR acute MRL.

^f HDNL is based on the ATSDR intermediate MRL.

^g The RAL for TCE is set at the HDNL due to the current controversy over the appropriate toxicity factor for the chemical.

^h The HDNL for toluene is set at exceedence of the residential screening level to reflect recent updates in the reference concentration (RfC) toxicity factor not yet incorporated in the ATSDR acute MRL value.

ⁱ The concentrations of each isomer are added if multiple isomers are present and the results compared to the total screening level.

^j The benzene RAL has been set at the lower HDNL.

Values are based on residential exposure. Due to routine updates, the user should refer to the NJDEP website for the latest information.

TABLE 3
NJDEP

GROUND WATER SCREENING LEVELS FOR ALTERNATE SOIL TEXTURES

| Chemical | NJDEP Ground Water Quality Standards (µg/L) | LOAMY SAND: Ground Water Screening Level (µg/L) | SANDY LOAM: Ground Water Screening Level (µg/L) | LOAM: Ground Water Screening Level (µg/L) |
|--|--|--|--|--|
| Acetone (2-propanone) | 6,000 | 2,000,000 | 2,200,000 | 2,700,000 |
| Benzene | 1 | 33 ^b | 81 ^b | 120 ^b |
| Bromodichloromethane | 1 | 10 | 17 | 24 |
| Bromoethene (vinyl bromide) | NA | 0.3 | 0.7 | 1 |
| Bromoform | 4 | 440 | 550 | 770 |
| Bromomethane (methyl bromide) | 10 | 66 | 160 | 250 |
| 1,3-Butadiene (vinyl ethylene) | NA | 0.02 | 0.06 | 0.09 |
| 2-Butanone (methyl ethyle ketone) | 300 | 2,900,000 | 3,300,000 | 4,100,000 |
| Carbon disulfide | 700 | 1,600 | 4,000 | 6,200 |
| Carbon tetrachloride | 1 | 1 ^a | 1 ^a | 1 ^a |
| Chlorobenzene | 50 | 1,400 | 3,400 | 5,100 |
| Chloroethane (ethyl chloride) | NA | 7 | 17 | 25 |
| Chloroform | 70 | 70 ^a | 70 ^a | 70 ^a |
| Chloromethane (methyl chloride) | NA | 510 | 1,300 | 2,000 |
| 3-Chloropropene (allyl chloride) | NA | 2 | 4 | 6 |
| 2-Chlorotoluene (o) | NA | 2,800 | 6,400 | 9,600 |
| Cyclohexane | NA | 2,700 | 7,100 | 11,000 |
| Dibromochloromethane | 1 | 13 | 18 | 26 |
| 1,2-Dibromoethane (ethylene dibromide) | 0.03 | 0.6 | 0.7 | 1 |
| 1,2-Dichlorobenzene (o) | 600 | 12,000 | 26,000 | 39,000 |
| 1,3 Dichlorobenzene (m) | 600 | 600 ^a | 980 | 1,500 |
| 1,4-Dichlorobenzene (p) | 75 | 75 ^a | 75 ^a | 75 ^a |
| Dichlorodifluoromethane (Freon 12) | 1,000 | 1,000 ^a | 1,000 ^a | 1,000 ^a |

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|--|--|--|--|--|
| 1,1-Dichloroethane | 50 | 8,100 | 20,000 | 30,000 |
| 1,2-Dichloroethane | 2 | 4 | 9 | 12 |
| 1,1-Dichloroethene | 1 | 570 | 1,500 | 2,300 |
| ** 1,2-Dichloroethene (cis) | 70 | 780 | 1,800 | 2,800 |
| 1,2-Dichloroethene (trans) | 100 | 700 | 1,800 | 2,700 |
| 1,2_Dichloroethene (total) ^d | NA | 440 | 1,100 | 1,600 |
| 1,2-Dichloropropane | 1 | 3 | 7 | 10 |
| 1,3-Dichloropropene (total) ^d | 1 | 3 | 8 | 12 |
| Ethylbenzene | 700 | 140,000 ^b | — ^c | — ^c |
| Hexachlorobutadiene | 1 | 2 | 4 | 6 |
| n-Hexane | 30 | 30 ^a | 45 | 67 |
| Methylene chloride (dichloromethane) | 3 | 110 | 240 | 360 |
| 4-Methyl-2-pentanone (MIBK) | NA | 1,100,000 | 1,400,000 | 1,900,000 |
| MTBE (methyl tert butyl ether) | 70 | 140 | 250 | 350 |
| Styrene | 100 | 41,000 | 92,000 | 140,000 |
| Tertiary butyl alcohol (TBA) | 100 | 180,000 | 190,000 | 220,000 |
| 1,1,2,2-Tetrachloroethane | 1 | 6 | 9 | 13 |
| Tetrachloroethene (PCE) | 1 | 2 | 5 | 7 |
| Toluene | 1,000 | — ^c | — ^c | — ^c |
| 1,2,4-Trichlorobenzene | 9 | 5,200 | 8,400 | 12,000 |
| 1,1,1-Trichloroethane | 30 | 5,300 | 14,000 | 22,000 |
| 1,1,2-Trichloroethane | 3 | 10 | 18 | 26 |
| Trichloroethene (TCE) | 1 | 1 ^a | 1 ^a | 1 ^a |

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| Chemical | NJDEP Ground Water Quality Standards (µg/L) | LOAMY SAND: Ground Water Screening Level (µg/L) | SANDY LOAM: Ground Water Screening Level (µg/L) | LOAM: Ground Water Screening Level (µg/L) |
|---|--|--|--|--|
| Trichlorofluoromethane (Freon 11) | 2,000 | 2,000 ^a | 2,000 ^a | 2,300 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF) | NA | 5,500 | 15,000 | 23,000 |
| Vinyl chloride | 1 | 1 ^a | 1 ^a | 1 ^a |
| Xylenes (total) ^d | 1,000 | 16,000 ^b | 40,000 ^b | 61,000 ^b |
| NOTES | | | | |
| ** Values updated from previous Table 3 (dated May 2006) based on the latest USEPA Region III RBC Table (10/31/2006) toxicity factors or latest NJDEP GWQS. | | | | |
| ^a Value is based on the higher GWQS/PQLs. | | | | |
| ^b Screening level multiplied by a factor of ten to reflect degradation of chemical in the unsaturated soil zone. | | | | |
| ^c Calculated GWSL is above the water solubility limit, indicating that the indoor air screening level cannot be exceeded at any concentration. | | | | |
| ^d The concentrations of each isomer are added if multiple isomers are present and the result compared to the total screening level. | | | | |
| Screening levels are unavailable for six NJDEP state contract Method TO-15 chemicals (1,2-dichlorotetrafluoroethane, 4-ethyl toluene, n-heptane, 2,2,4-trimethylpentane, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene) due to the absence of toxicity information. | | | | |
| NA = Not available. | | | | |