APPENDIX B
DEVELOPMENT OF RISK-BASED TARGET LEVELS

A. Introduction B-2
B.1 Target Risk Levels B-2
B.2 Quantitative Toxicity Factors B-3
B.3 Physical and Chemical Properties of the Chemicals of Concern B-6
B.4 Exposure Factors B-6
B.5 Fate and Transport Parameters B-6
B.6 Mathematical Models B-7
B.7 Risk-Based Target Levels B-7
B.8 Target Levels for Lead B-7
B.9 Target Level Calculation for LNAPL B-8
B.10 Models/Equations for Calculating DTLs, RBTLs, and SSTLs (Figures B.1 to B-30) B-10

Figure B.1 Indoor Inhalation of Vapors (Child and Adult Resident, and Non-Residential Worker) B-10
Figure B.2 Outdoor Inhalation of Vapors (Construction Worker) B-11
Figure B.3 Dermal Contact with Chemicals in Water (Child and Adult Resident; Non-Residential Worker; and Construction Worker) B-12
Figure B.4 Domestic Water Use (Child and Adult Resident) (Only for Chemicals Without Maximum Contaminant Levels) B-14
Figure B.5 Dermal Contact with Chemicals in Soil (Child and Adult Resident; Non-Residential Worker; and Construction Worker) B-16
Figure B.6 Ingestion of Chemicals in Soil (Child and Adult Resident; Non-Residential Worker; and Construction Worker) B-17
Figure B.7 Inhalation of Vapors and Particulates of Chemicals in Soil (Child and Adult Resident; Non-Residential Worker; and Construction Worker) B-18
Figure B.8 Inhalation of Vapors and Particulates, Dermal Contact With, and Ingestion of Chemicals in Soil (Child and Adult Resident; Non-Residential Worker; and Construction Worker) B-19
Figure B.9 Indoor Inhalation of Vapors (Age-Adjusted Resident) B-21
Figure B.10 Dermal Contact with Chemicals in Water (Age-Adjusted Resident) B-23
Figure B.11 Domestic Water Use (Age-Adjusted Resident) (Only for Chemicals Without Maximum Contaminant Levels) B-25
Figure B.12 Dermal Contact with Chemicals in Soil (Age-Adjusted Resident) B-28
Figure B.13 Ingestion of Chemicals in Soil (Age-Adjusted Resident) B-30
Figure B.14 Inhalation of Vapors and Particulates of Chemicals in Soil (Age-Adjusted Resident) B-32
Figure B.15 Inhalation of Vapors and Particulates, Dermal Contact With, and Ingestion of Chemicals in Soil (Age-Adjusted Resident) B-34
Figure B.16 Subsurface Soil Vapor Concentrations Protective of Indoor Vapor Inhalation B-35
Figure B.17 Subsurface Soil Concentrations Protective of Indoor Vapor Inhalation B-36
Figure B.18 Groundwater Concentration Protective of Indoor Vapor Inhalation B-37
Figure B.19 Groundwater Concentration Protective of Outdoor Vapor Inhalation B-38
Figure B.20.A Volatilization Factors (Surficial Soil to Outdoor Air) B-39
Figure B.20.B Volatilization Factors (Particulate Emissions from Surficial Soil) B-40
Figure B.20.C Volatilization Factors (Subsurface Soil Vapor to Indoor Air) B-41
Figure B.20.D Volatilization Factors (Subsurface Soil to Indoor Air) B-42
Figure B.20.E Volatilization Factors (Groundwater to Indoor Air) B-43
Figure B.20.F Volatilization Factors (Groundwater to Outdoor Air) B-44
Figure B.21 Effective Diffusion Coefficients B-45
Figure B.22 Subsurface Soil Concentrations Protective of Leaching to Groundwater B-46
Figure B.23 Leaching Factor from Subsurface Soil to Groundwater B-47
Figure B.24 Soil Concentration at which Dissolved Pore Water and Vapor Phases Become Saturated B-48
Figure B.25 Soil Vapor Concentration at which Vapor Phase Becomes Saturated B-49
Figure B.26 Domenico Model: Dilution Attenuation Factor (DAF) in the
Appendix B Tables

Table B-1 Toxicological Properties of Chemicals of Concern
Table B-2 Physical and Chemical Properties of Chemicals of Concern
Table B-3 Exposure Factors (3 pgs.)
Table B-4 Fate and Transport Parameters (2 pgs.)
Table B-5 Effective/Saturated Soil, Solubility/Effective Solubility, and Saturated Vapor Concentrations (2 pgs)