Instructions for the New Jersey Johnson & Ettinger (J&E) Spreadsheets
NJ-GW-SCREEN and NJ-GW-ADV
(September 2016)

Introduction

The New Jersey versions of the USEPA J&E Spreadsheets are adapted from the USEPA version 3.1 spreadsheet formulations of the Johnson and Ettinger model (see http://www.epa.gov/oswer/riskassessment/airmodel/johnson_ettinger.htm for additional information). The GW-SCREEN and GW-ADV spreadsheets have been adapted for New Jersey use (NJ-GW-SCREEN and NJ-GW-ADV). The following modifications have been made to the USEPA versions of the spreadsheets:

- The VLOOKUP database was changed to contain the current New Jersey contaminant list.
- Chemical properties for the contaminants were updated.
- Toxicity factors for the contaminants were updated.
- Default soil/groundwater temperature is set to 13°C.
- Default depth to groundwater is set to 11.5 feet (352.5 cm).

General Guidelines for Using the New Jersey J&E Spreadsheets

- The only J&E parameters allowed to be adjusted site-specifically are soil texture and depth to groundwater.
- A soil/groundwater temperature of 13°C must be used.
- The standard values for soil properties associated with each soil texture that are built into the spreadsheet database must be used. The use of field or laboratory-measured values for soil moisture, soil bulk density and soil porosity is not allowed.
- **For hydrocarbons (benzene, ethyl benzene, toluene, xylene, naphthalene, 2-methylnaphthalene, styrene, 1,3-butadiene, hexane, and cyclohexane), a multiplication factor of ten may be applied to the calculated screening level to allow for contaminant degradation.**
- **Methylene chloride, trichloroethene, and vinyl chloride must have an adjustment factor applied because they are considered mutagens and USEPA applies different calculations to these three chemicals. The factors are: methylene chloride, 0.40; trichloroethene, 0.72; vinyl chloride, 0.29. For these three chemicals, the J&E result is multiplied by the chemical specific factor.**

Site-Specific Adjustments Using the New Jersey J&E Spreadsheets

Using an alternate soil texture (no soil layers) (NJ-GW-SCREEN or NJ-GW-ADV)

- If a soil texture other than sand is to be used, collect soil core(s) and submit samples to laboratory for texture analysis as described in the NJDEP Vapor Intrusion Technical

Guidance, Version 4 (August 2016). The median USDA soil texture should be determined. A median soil texture means that half of the vertical soil column height should exhibit a texture coarser than or equal to the selected soil texture, and the other half of the soil column should have a texture finer than or equal to the selected soil texture.

- Select the appropriate soil texture in the spreadsheet.
- Select the built-in soil properties for the soil texture.

Using site-specific soil texture layers (NJ-GW-ADV spreadsheet only)

- Layers must be continuous across the site and may not be fractured, as demonstrated by soil borings.
- Enter the depth range of each soil layer in the advanced version of J&E spreadsheet (NJ-GW-ADV). Select the built-in soil properties for each layer.

Modifying the depth to ground water (NJ-GW-SCREEN or NJ-GW-ADV)

- Enter the depth of the water table on either the screening (NJ-GW-SCREEN) or advanced (NJ-GW-ADV) spreadsheet.