5.1.4 Modeling Protocol

The following provides a brief summary of the protocol of methods used to determine the maximum ground-level concentration (MGLC) of Formaldehyde, Acrolein, Phenol, and Propionaldehyde:

- AERMOD (v19191) was used;
- The regulatory default model option was used;
- Consideration was given to both simple and complex terrain;
- Rural dispersion coefficients were used as discussed previously;
- The direction-specific building dimensions used as input to the AERMOD model were calculated using the U.S. EPA sanctioned Building Profile Input Program, PRIME version (BPIP PRIME), version 04274, as incorporated in the BREEZE®AERMOD Pro software, developed by Trinity;
- The North American Datum of 1983 (NAD83) was used to specify receptor and source locations;
- 25 m spaced receptors were placed along the property line, 100 meter spaced receptors were placed extending out to 2 km, and 250 meter spaced receptors were placed extending from 2 km to 5 km;
- Receptor and source elevations were determined by processing their respective NAD83 UTM coordinates in AERMAP using 1-arc second National Elevation Dataset (NED) data obtained from the USGS National Seamless Map Server; and
- Five-years of AERMET Adjusted USTAR meteorological data for the Valdosta surface (No. 93845) and Tallahassee upper air (No. 93805) stations for calendar years 2012, 2014, 2016 through 2018 were used (anemometer height of 60.3 meters). This meteorological data was downloaded from the EPD website.

5.1.5 Modeling Results

Using the source parameters, emission rates, and the protocol described above, AREMOD was executed for five-years of meteorological data to determine the maximum 1-hr and annual concentrations as applicable for acetaldehyde, acrolein, arsenic and formaldehyde at each receptor location. Table 5-6 summarizes the results of the MGLC for each TAP. MGLC for each TAP is below the AAC for each TAP.