Table 5-1. Comparison of Facility-Wide Potential Emissions to Minimum Emission Rate

Pollutant	CAS No.	Total Potential Emissions (tpy)	(lb/yr)	MER[1] (lb/yr)	Above MER (Y/N)
1,3-Butadiene	106990	2.05E-05	4.11E-02	7.30E+00	No
Acetaldehyde	75070	1.93E+00	3.87E+03	1.11E+03	Yes
Acrolein	107028	4.29E-01	8.57E+02	4.87E+00	Yes
Arsenic	7440382	1.00E-04	2.00E-01	5.67E-02	Yes
Beryllium	7440417	3.59E-06	7.17E-03	9.73E-01	No
Benzene	71432	5.21E-04	1.04E+00	3.16E+01	No
Cadmium	7440439	3.26E-04	6.52E-01	1.35E+00	No
Chromium	7440473	4.15E-04	8.30E-01	5.84E+01	No
Cobalt	7440484	2.49E-05	4.98E-02	1.17E+01	No
Formaldehyde	50000	2.88E+00	5.75E+03	2.67E+02	Yes
Hexane	110543	2.67E-02	5.33E+01	1.70E+05	No
Lead	7439921	1.48E-04	2.96E-01	5.84E+00	No
Manganese	7439965	1.13E-04	2.25E-01	1.22E+01	No
Methanol	67561	2.16E+00	4.32E+03	3.01E+04	No
Mercury	7439976	7.70E-05	1.54E-01	7.30E+01	No
Naphthalene	91203	5.36E-05	1.07E-01	7.30E+02	No
Nickel	7440020	6.22E-04	1.24E+00	3.86E+01	No
Phenol	108952	4.80E-01	9.60E+02	2.20E+03	No
Propionaldehyde	123386	4.73E-01	9.46E+02	1.95E+03	No
Selenium	7782492	7.11E-06	1.42E-02	2.34E+01	No
Toluene	108883	2.65E-04	5.30E-01	1.22E+06	No
Xylene (o)	108383	1.50E-04	2.99E-01	2.43E+04	No

1. MER - Minimum Emission Rate obtained from Georgia EPD's Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions: Appendix A (Revised May 2017)

Acetaldehyde, acrolein, arsenic and formaldehyde had emissions rates above the respective MER, therefore, modeling for acetaldehyde, acrolein, arsenic and formaldehyde was completed. Due to the number of stacks and variable stack parameters, refined modeling techniques were selected for this compliance assessment.[11] The latest version (19191) of the AERMOD modeling system was used to estimate maximum ground-level concentrations.

AERMOD is a refined, steady-state, multiple source, Gaussian dispersion model. The AERMOD model has the Plume Rise Modeling Enhancements (PRIME) incorporated in the regulatory version, so the direction-specific building downwash dimensions used as inputs are determined by the Building Profile Input Program, PRIME (BPIP PRIME), version 04274. BPIP PRIME is designed to incorporate the concepts and procedures expressed in the Good Engineering Practice (GEP) Technical Support document, the Building Downwash Guidance document, and other related documents, while incorporating the PRIME enhancements to improve prediction of ambient impacts in building cavities and wake regions.

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[11] Per recent conversation with EPD, EPD is in process of removing ISCST3 as an option for refined modeling techniques from the Guideline. Therefore, AREMOD is selected for this modeling demosntration.