Storage Tanks[1]

Fixed roof tanks: Model fixed roof tanks as a single point source placed where the vent is located, often at the center. Use a stack diameter equivalent to the total area of the vent. Represent the tank itself as a structure for downwash calculations.

Floating roof tanks: Even though emissions may come from points all around the floating roof, treat them generally as with grain bin vents (except emissions are vertical). Therefore, model floating roof tanks similar to the fixed roof tanks, placing the single point source at the center. This is the more conservative and time-efficient approach, rather than modeling the floating roof tank as a ring of point sources equally distributed around the edge of the tank roof, as some references recommend.[2] Set the stack diameter equal to the tank diameter. Represent the tank itself as a structure for downwash calculations.

All storage tanks: There is virtually no plume rise from storage tanks. Therefore, the stack gas exit velocity should be set to 0.001 m/sec in accordance with EPA guidance.[3] In addition, DNR recommends the stack temperature be set equal to the ambient (outside) air temperature since storage tank interiors are generally not heated or air-conditioned. This is done in AERMOD by inputting a value of 0.0 ºK (-459.67 ºF) for the stack exit temperature.[4]

[1] Portions excerpted from http://www.weblakes.com/modeling_tips.html.
[2] Ibid.
[3] EPA Model Clearinghouse Memorandum, dated July 9, 1993, *"Proposal for Calculating Plume Rise for Stacks with Horizontal Releases or Rain Caps for Cookson Pigment, Newark, New Jersey."* This memo appears in Appendix D of the Addendum to the User's Guide for the AMS/EPA Regulatory Model – AERMOD, EPA-454/B-03-001, September 2004.
[4] User's Guide for the AMS/EPA Regulatory Model – AERMOD, EPA-454/B-03-001, September 2004, p. 3-18.