

2.3.2.Required Mercury Removal Based on Lignite Coal Mercury Content

Based on the recent Hg fuel analyses, Hg control higher than 90% would actually be required based on the range of inlet coal Hg content expected to control to 1.2 lb/TBtu (i.e. keeping the outlet value calculated by the EPA constant). Note that control to this value does not offer any operating margin for potential exceedances that may occur due to response delays associated with coal variability. The following table identifies the required Hg control needed based on several different coal Hg content references. Based on these estimations, any Hg control approach would need to be able to accommodate a wide range of inlet Hg in order to optimize operating costs long-term.

Table 2-6 — Hypothetical Hg Emissions and Control Performance Based on Coal Analyses

Fuel Hg Content Reference	Coal Hg Inlet (lb/TBtu)	Est. Hg Control at 4.0 lb/TBtu (%)	Est. Hg Control at 1.2 lb/TBtu (%)
EPA Technical Memo			
2023 Table 11 Docket ID. No: EPA-HQ-OAR-2018-0794 ¹	7.81	48.8	84.6
2024 Table 10 Docket ID. No: EPA-HQ-OAR-2018-0794 ²	9.70	58.6	87.6
2024 MRY Unit 1 Test Campaign			
Average	10.1	60.4	88.1
Maximum	18.6	78.5	93.5
Minimum	4.9	18.4	75.5
Center Mine Forecast			
Average	8.41	52.4	85.7
Maximum	17.42	77.0	93.1
Minimum	4.79	16.5	75.0

2.3.3.Projected Mercury Removal Based 3.0 lb/MMacf BPAC

Based on the maximum BPAC rate that MRY Unit 1 was able to test due to current system limitations (185 lb/hr or 2.28 lb/MMacf), the figure below plots the estimated percent removal at the higher injection rate of 3.0 lb/MMacf BPAC using all measurements from the MRY Unit 1 March testing (with and without fuel additive usage). The plotted values demonstrate a trend line in which BPAC cannot even achieve 80% Hg removal efficiency.

¹ Benish S. et al. (January 2023). *2023 Technology Review for the Coal- and Oil-Fired EGU Source Category*. Environmental Protection Agency.

² Benish S. et al. (January 2024). *2024 Update to the 2023 Proposed Technology Review for the Coal- and Oil-Fired EGU Source Category*. Environmental Protection Agency.