

5-Minute SO₂ Concentrations

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Exposures to SO₂

Averaging times considered by EPA:

- 3 HR (NAAQS)
- 24 HR (NAAQS)
- Annual (NAAQS)
- 5-minute (Proposed Guideline)

5-Minute Exposures

- Level of concern = 1,572 $\mu\text{g}/\text{m}^3$
- Proposed to address special case circumstances such as localized exposures to high rise structures
- Evaluated measured data:
 - Relative to the 5-minute level of concern
 - Compared hourly resolved data to regional data

Data Reviewed

- 16-month period of April 2007 through July 2008
- 90 percent data recovery (good)
- 6 sites in network
- Compared with two regional monitors:
 - 517 N. St. Asaph Street, Alexandria, VA
 - 34th and Dix Street, Washington, DC

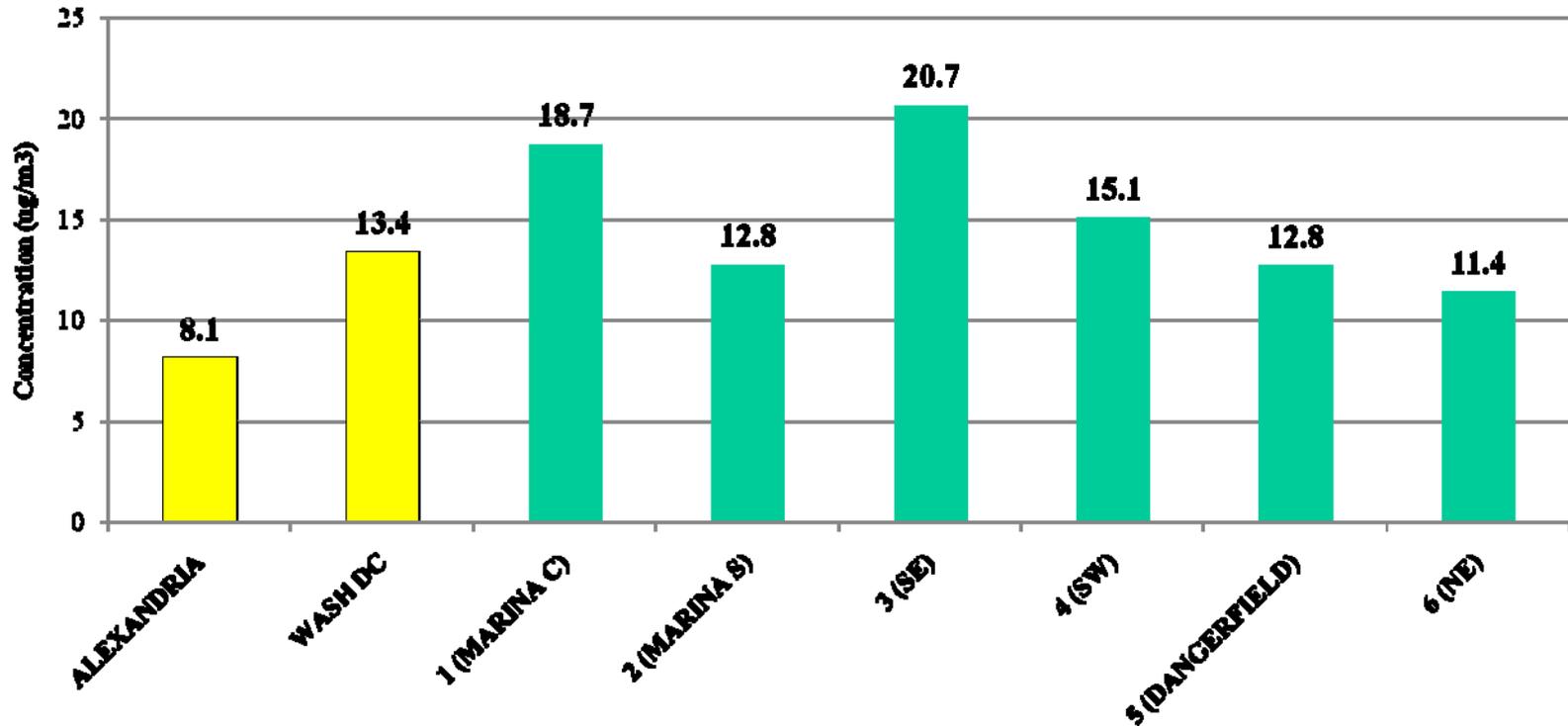
Mirant SO₂ Monitoring Network

Figure 4-1 SO₂ and Meteorological Monitoring Sites around Potomac River Power Plant



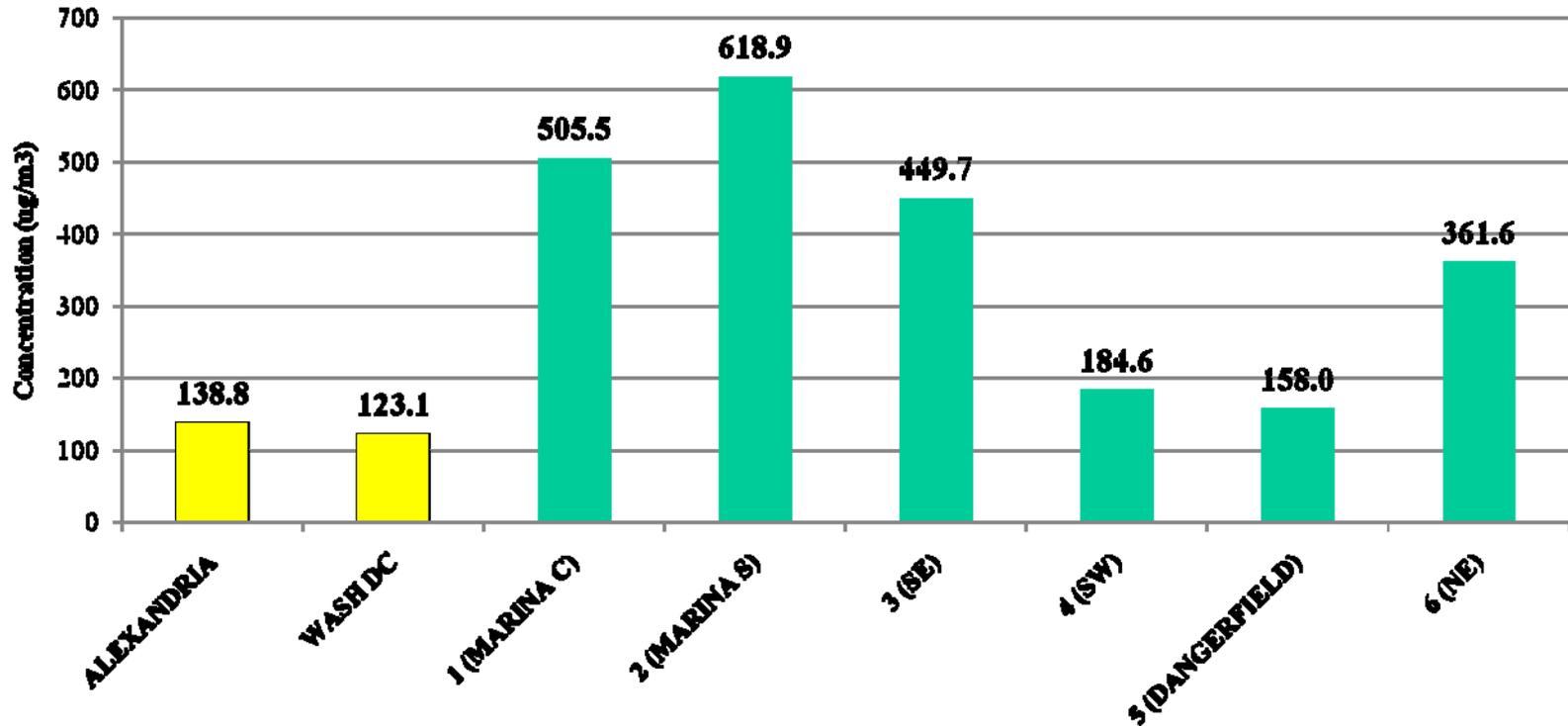
Summary of Mean Hourly SO₂ Data

Mean Hourly SO₂ Concentrations



Summary of Maximum Hourly SO₂ Data

Maximum Hourly SO₂ Concentrations



Observations on Hourly Basis

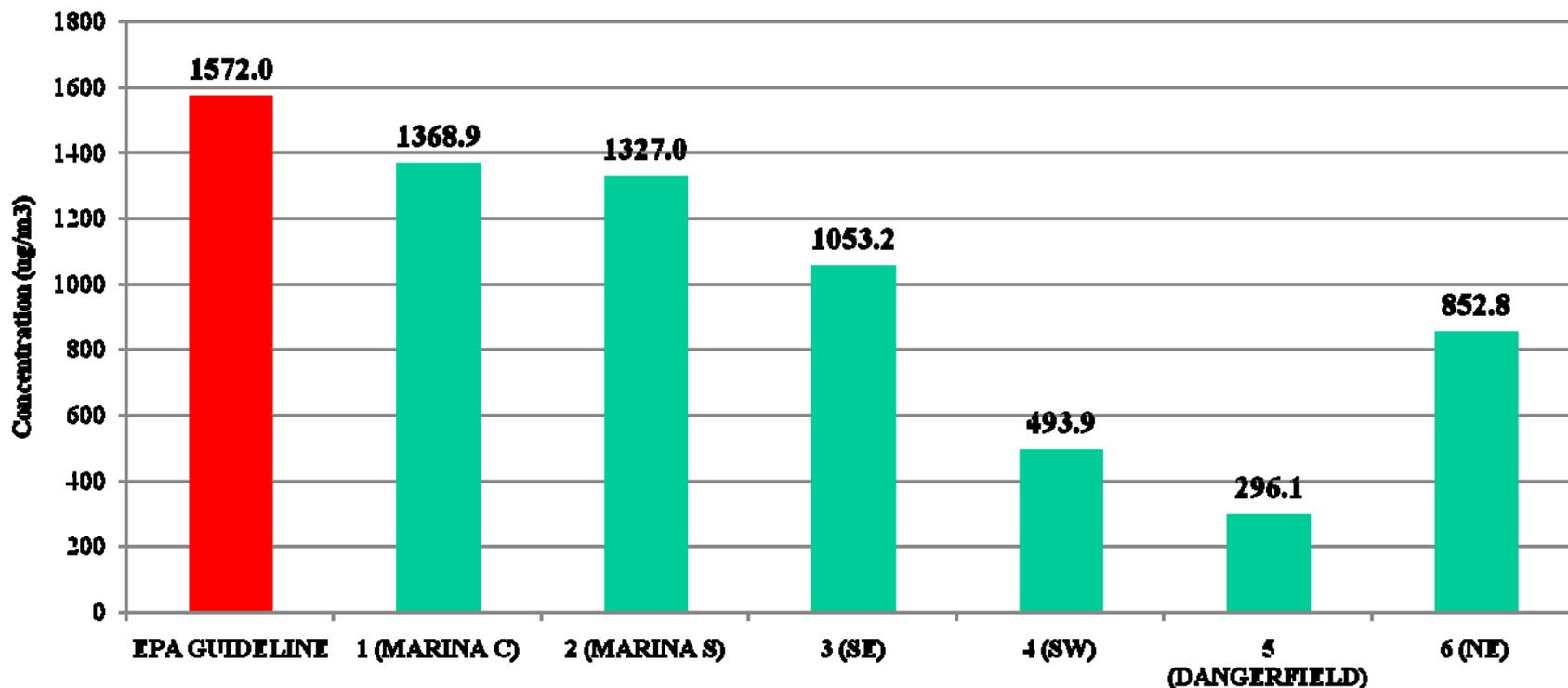
- Localized exposures substantially higher than regional data
- Maximum hourly values were up to five times higher than regional data

5-Minute Concentration Summary

- Peak 5-minute SO₂ concentrations were aligned with flow from the Mirant facility
- Peak concentrations were generally associated with relatively moderate to strong wind speeds, especially for Marina Towers sites

5-Minute Concentration Summary (Cont.)

Maximum 5-Minute SO₂ Concentrations



Conclusions

- Based on 16 months of data reviewed, EPA proposed guideline was approached, but not exceeded
- Highest (Marina Towers) was 87 percent of EPA proposed guideline
- When planned upgrades come on line, the margin of safety should be further increased
- Concentrations are sufficiently close to the 5-minute guideline that monitoring should continue for the foreseeable future @ the two Marina Towers sites, and the NE and SE monitoring sites