

**Responses to Letter 160 from Margaret Eckenfelder,  
British Columbia Ministry of Environment, Land, and Parks**

*Note: The responses listed below are numbered to correspond to the numbers shown  
in the right-hand margin of the preceding comment letter.*

1. The calculation of one foot of drawdown within a one-mile radius is a theoretical calculation, based on withdrawal of the total amount of water that would be pumped from the City well fields if they were pumped at their total allotments. Therefore, wells within a mile of the municipal well field could theoretically experience a total drawdown of up to a foot; only a portion of that theoretical drop could be attributed to withdrawals for S2GF. We agree that this drawdown could impact Canadian wells and have proposed that mitigation measures offered to Washington well owners should also be available to Canadians whose wells are impaired by groundwater withdrawal for operation of S2GF. Your point regarding Canadian production wells that have recently been taken out of operation has been included in the Final EIS, using pumping volumes reported in a letter from the City of Abbotsford to the City of Sumas (see Volume 1, Appendix J).
2. We agree that there is a risk of increased nitrate levels in well water that is used to mitigate a reduction in spring discharge. The City monitors this water on a regular basis as part of mitigation for groundwater pumping from the May Road well field. It will remain the City's responsibility to adjust water sources for this discharge to maintain acceptable nitrate levels in the stream.
3. Please see General Response I for a discussion of revisions to the plan for wastewater generation and disposal.
4. Please see Letter 3, Response to Comment 2 for a detailed discussion of potential air quality impacts in Canada. In addition, technical staff from Canadian Ministry of Environment, Land, and Parks has issued a separate assessment of the air quality impacts associated with the proposed project (Volume 1, Appendix K).
5. The Canadian/GVRD air quality objectives are listed in Table 3.1-2 of the Draft EIS.
6. The Draft PSD permit issued for public comment proposes that Best Available Control Technology (BACT) for NO<sub>x</sub> be selective catalytic reduction (Exhibit 170.2, page 12). With respect to PM<sub>10</sub>, Greater Vancouver Regional District records indicate there are times when the background PM<sub>10</sub> concentration in the area of Abbotsford is near or above the GVRD Maximum Desirable Air Quality Objective. If the proposed facility were to burn oil, the addition of its PM<sub>10</sub> emissions could contribute to, or exacerbate, an exceedance. GVRD staff have indicated that such high PM<sub>10</sub> periods rarely occur during the winter when the facility would be most likely to burn fuel oil. For example, the GVRD Maximum Desirable Objective was exceeded only four times from 1994 through 1998 during the November through February period. The proposed facility would only burn fuel oil during the winter months; therefore it is less likely that PM<sub>10</sub> emissions from the proposed facility would cause an exceedance of the GVRD Maximum Desirable Objective. (Exhibit 170.2, page 6)

7. Ammonia slip will be less than 10 ppmvd (15 percent O<sub>2</sub>) for all operating scenarios. Based on this proposed permit limit, an assumed operation worst-case scenario of 350 days of gas firing per year, and a maximum of 15 days of oil firing per year, it has been estimated that approximately 276 tons of ammonia would be emitted annually from the proposed facility. Modeling indicates that these emissions would result in maximum 24-hour and annual ammonia concentrations of 6 micrograms per cubic meter (µg/m<sup>3</sup>) and 0.6 µg /m<sup>3</sup>, respectively. The maximum 24-hour predicted ammonia concentration is much less than the 100 µg/m<sup>3</sup> screening criterion Washington State uses to protect public health.

In 1996, Environment Canada conducted a monitoring program in which ammonia concentrations were measured in Abbotsford. The measured annual ammonia concentration was 16.4 µg /m<sup>3</sup> during this period. The maximum predicted worst-case annual concentration attributable to the proposed facility is 0.6 µg /m<sup>3</sup> or about 4 percent of the monitored background concentration. (Exhibit 154.5, page 4)

8. The Draft BACT Fact Sheet and Draft EIS both note that S2GF would emit small quantities of organic toxic air pollutants. The Draft PSD permit issued for public comment proposes that BACT for NO<sub>x</sub> is selective catalytic reduction (SCR), catalytic combustion for CO, good combustion practice, and use of low-sulfur fuel for PM<sub>10</sub>. Under these control systems, when burning gas (or fuel oil) at the full design rate, ambient concentrations of all toxic air pollutants were well below the applicable regulatory standards. (Exhibit 170.2, page 15) For ammonia emissions, SCR manufacturers guarantee that leakage of unreacted ammonia would be less than 10 ppmvd. The Draft PSD fact sheet explains that proposed T-BACT (Toxic BACT) for ammonia emissions is SCR with an emission limit of 10 ppmvd (Exhibit 170.2, page 16).
9. Please see Letter 160, Response to Comment 8 (above).
10. The commentor is correct. During oil firing, sulfur will eventually poison the catalysts and reduce the performance of the SCR. Maintenance of the SCR and replacement of catalyst are operational costs of the proposed facility. The proposed facility would always be required to operate within emission limits set by its operating permit.
11. Fifteen days of oil firing was proposed by the applicant. The applicant has further proposed to reduce the maximum number of days of backup fuel operations to an average of 10 per year based on a 10-year rolling average (Exhibit 162.13, page 2).
12. As noted in Letter 3, Response to Comment 2 the proposed project would have small incremental impacts under both natural gas and oil-firing conditions. Because a limited oil-firing scenario does not result in significant air quality impacts, a discussion of alternatives is not warranted for the EIS.
13. This correction has been made.

14. The reference to the Abbotsford Airport monitoring station is incorrect. The reference should be to the monitoring station in downtown Abbotsford that was in operation from 1992 to 1998. This error has been corrected in the Final EIS.
15. The statement refers to common sources of PM10 emissions and was not meant to imply that all the sources contribute equally to all PM10 concentrations measured at Abbotsford.
16. The comment is noted.
17. Table 3.1-2 of the EIS has been revised accordingly.
18. The reference to the British Columbia MELP 1997 Report has been removed from this section.
19. Please see Letter 160, Response to Comment 14 (above).
20. The comment is noted.
21. A discussion of deposition impacts related to the proposed facility is included in the Draft EIS (“Assessment of Air Quality Related Values for Class I Areas”). As shown in Table 3.1-14 of the Draft EIS, the 24-hour maximum and annual estimates for the proposed facility are less than the applicable U.S. Forest Service (USFS) criteria. The highest annual and 24-hour concentrations occur in North Cascades National Park followed by the Pasayten Wilderness Area, east of the proposed site. For both SO<sub>2</sub> and NO<sub>x</sub>, the highest 24-hour concentrations would occur when the turbines are fired by oil during the winter.
22. The maximum values reported in Table 3.1-7 of the Draft EIS are the maximum modeled receptor locations that exceeded the significant impact level for the constituents of concern.
23. We are unclear as to what information the commentor believes is missing from Table 3.1-11.
24. Information about air emissions impacts to Canada resulting from this proposed project has been added to Section 3.1.4.2, and Appendix K of the Final EIS.
25. For a discussion of potential PM<sub>2.5</sub> impacts associated with the proposed facility, please see Letter 9, Response to Comment 1.
26. The comment concerning PSD increments is noted.
27. As noted in Letter 3, Response to Comment 2, the Canadian MELP concluded that annual emissions (for all criteria pollutants) from the proposed facility would account for less than 1.5 percent of all Lower Fraser Valley emissions, including those from Washington State. (Volume 1, Appendix K, page vii).

28. Please see Letter 160, Response to Comment 24 (above). As discussed in Letter 3, Response to Comment 2, the Canadian MELP concluded that air toxics or other regulated pollutants emitted from the proposed facility would not be expected to increase the frequency for exceeding British Columbia or Washington State air quality objectives or standards (Volume 1, Appendix K, page vii).
29. Please see Letter 160, Responses to Comments 24 and 28, above.
30. Please see Letter 160, Responses to Comments 24 and 28, above. For a discussion of potential deposition impacts associated with the proposed project please see Letter 5, Response to Comment 8.
31. Definitions of bdry and bsn have been added to Table 3.1-18 of the EIS.
32. Please refer to the PSD Application for a detailed discussion of the CALPUFF modeling system as it relates to the determination of extinction coefficients (Exhibit 22, page 6.1-68ff).
33. Please see Letter 49, Response to Comment 7 for a discussion of visibility impacts associated with the proposed project.
34. Please see Letter 65, Response to Comment 1 for a discussion of greenhouse gas emissions related to the proposed project.
35. S2GF would be operated as a “merchant” plant. Thus, BC Hydro may or may not purchase power from the facility.
36. Please see Letter 65, Response to Comment 1 for a discussion of greenhouse gas issues associated with the proposed facility.
37. The applicant has agreed to a number of measures to reduce emissions from the proposed facility and improve overall air quality throughout the region. These measures include reducing NOx emissions to 2 ppm, funding construction of an air monitoring station on Sumas Mountain, reducing the number of days of backup fuel operations to an average of 10 days per year on a 10-year rolling average, and discussing cooperative arrangements for curtailment of power generation during “bad air” episodes in the Lower Fraser Valley with the British Columbia MELP and BC Hydro. (Exhibit 162.13, page 2)
38. Please see Letter 3, Response to Comment 2 for a discussion of air quality impacts in Canada. The EIS concludes that when the facility is fired with fuel oil, PM10 and ozone emissions would contribute to degraded air quality and visibility in Canada.