

**Comments of Suncor Energy (U.S.A.) Inc.
regarding
Supplementary Information for Four Factor Analysis for Selected Individual
Facilities in Colorado (Revised Draft Report – May 22, 2009)**

Suncor Energy (U.S.A.) Inc. (Suncor) appreciates the opportunity provided by the Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division (APCD) and the Western Regional Air Partnership (WRAP) regarding the May 22, 2009 draft reporting regarding the “Reasonable Further Progress” analysis for visibility reviews for Class 1 areas.

Suncor owns and operates Colorado’s only petroleum refinery complex, located in Commerce City, Colorado. As such, we have a direct interest in the accuracy of the information provided in Section 5 of the report and its use for future planning for the region. In particular, Suncor is providing comment regarding some of the data which is out of date, as well as general points regarding the discussion which may over-generalize the relevance of some control technologies discussed in the report. Please feel free to contact us with any questions.

Comments –

Page 5-1, 1st paragraph – The paragraph makes reference to the capacities of the two FCC Units at Suncor’s Commerce City Refinery. The capacities reported to the US DOE are in units of barrels per stream day. While this is accurate, Suncor believes for the purposes of this report that it may be more appropriate to reference the nominal capacities of the units; 21,000 barrels per day for the Suncor West FCCU and 9,500 barrels per day for the Suncor East FCCU.

Page 5-1, 3rd paragraph – This paragraph references the current permit limitations for the Suncor West FCCU. This data is no longer accurate. In January 2007, Suncor accepted SO₂ limits of 25 ppm SO₂ (at 0% O₂) 365-day rolling average, and 50 ppm SO₂ (at 0% O₂) 7-day rolling average. The refinery utilizes various means to achieve these limits, including gas oil feed hydrotreating and catalyst additive use. The reference to the 50 ppm SO₂ limit and the feed concentration limit of 0.3% is incorrect (these NSPS Subpart J limits are different options available for compliance, and the limits noted above also meet the compliance requirements). The general description of the mechanism of SO₂ additives to FCCU catalyst is generally accurate.

Page 5-1, 4th paragraph – as noted above, due to the new permit limits accepted in 2007, this paragraph does not appear to be relevant any longer, and Suncor suggests that it be deleted in its entirety.

Page 5-3, 1st paragraph – In general, Suncor believes that the data in this paragraph is no longer valid. In January 2007, the Suncor West FCCU proposed NO_x emission limits of 74 ppm (at 0% O₂) 365-day rolling average, and 99 ppm (at 0% O₂) 7-day rolling

average, pursuant to the catalyst additive testing required under the NSR Consent Decree applicable to this unit. NOx levels in FCC Units are highly variable, and in fact are negatively impacted by SO2 catalyst additives. Suncor is using both NOx reducing catalyst additives and a low-NOx CO promoter to meet the ongoing requirements for this unit, and the NOx reducing catalyst additive rate is 2%, consistent with USEPA's maximum recommended addition rate. We also note that while some FCC Units are able to achieve lower NOx emission concentrations noted in the paragraph cited, there are also numerous examples where FCCUs are not able to achieve concentrations in the 50-65 ppm levels noted. This is due to a variety of factors, including unit design, unit age, and feed composition. Suncor believes that the Suncor West FCCU is achieving the lowest NOx levels for this unit consistent with catalyst additive control approaches. Therefore, additional control effectiveness evaluations would need to start from the current emission limit, and determine the incremental cost of control associated with new control technologies.

Page 5-3, 2nd paragraph – Suncor is currently implementing an SO2 additive evaluation process as mandated under the NSR Consent Decree applicable to the Suncor East FCCU. Under the Consent Decree testing program, facilities conduct testing to determine appropriate emission levels based on a USEPA-designed approach to optimize SO2 reductions. This testing is currently in the Demonstration phase, and the final outcome is not known. While it is possible that 25/50 ppm SO2 limits may be established, it is premature to make this determination. SO2 limits for this unit are therefore being met by processing primarily ultra-low sulfur crude oil, as well as by using catalyst additives. Also, under the same Consent Decree, EPA has established a maximum 80 ppm (at 0% O2) 365-day rolling average NOx limit effective in 2011 that will apply to this FCCU. For the same reasons noted above, it is speculative to assume that all FCCUs can achieve the same emission limit.

This same paragraph also speculates about the effectiveness of scrubbing technologies to reduce emission levels. While scrubbing may be effective, there are numerous variables that must be considered for any particular scenario. For example, at 9,500 barrels per day capacity, the Suncor East FCCU is very small by industry standards. The cost-effectiveness of complex technology drops dramatically for smaller installations, and generic averages are likely inappropriate for these smaller units. The use of a scrubber also requires a significant physical footprint for the unit which is not available at our location. Finally, scrubber technology basically transfers pollutants from one media (air) to another (water), and also dramatically increases the consumption of water, a valuable resource in the semi-arid Western US. Suncor does not believe that scrubbing technology is a viable option for our facility.

Page 5-3, paragraph 3 – This paragraph references other NOx control technologies that could be applied to FCC Units. While the paragraph is generally accurate (although the refinery in Japan using SNCR is not configured similar to US refineries), Suncor believes that these technologies may not be viable for our facility. In particular, the cost of these approaches will likely demonstrate that they are not ultimately cost-effective approaches for the installation specifics at our facility.

Page 5-3, paragraph 4 – This paragraph references particulate control measures for FCCUs. The Suncor West FCCU is currently subject to 1.0 pounds PM/1000 coke burn (NSPS Subpart J and Petroleum Refinery MACT limits). Note that this limit is PM, not PM10 as noted in the write-up. While most of the PM is PM10 size material, the limits in EPA's rules are not written in that manner. The Suncor West FCCU controls particulate emissions by the use of a third-stage separator (TSS) technology (installed in 2006), essentially utilizing additional cyclones (beyond those included in the inherent design) to remove particulate matter. The Suncor East FCCU will be subject to the same emission limit as of 12/31/2009, and Suncor is currently constructing a TSS for this FCCU.

Page 5-3, paragraph 5 – This paragraph references costs for various control options. Suncor wishes to point out that generalizations regarding control costs, while useful for comparison purposes, need to ultimately be rationalized by site-specific design requirements. As noted previously, relatively small FCCUs, such as those operated by Suncor, tend not to have similar economies of scale in comparison to world-scale units elsewhere in the US. In addition, costs of construction in the Rocky Mountain region tend to be significantly greater than in other regions. Finally, these estimates do not take into consideration unique site-specific issues such as physical plot space to install such equipment, as well as unit specific conditions that could complicate installation. Therefore, while not specifically addressing any specific cost estimate, Suncor believes that by implementing the evaluations and requirements under the NSR Consent Decrees applicable to our facility, we are taking reasonable and appropriate steps to reduce SO₂ and NO_x emissions from our FCC Units consistent with EPA's national approach to achieve significant emission reductions from these refining process units.

Page 5-5, Section 5.2 – The report speculates that it may take up to one year for sources to procure necessary capital to purchase control equipment. Given the current economic environment and typical heavy industry capital planning processes, one year is not realistic. Suncor believes that a minimum of two years, and more realistically three years, is the appropriate planning horizon for capital procurement. Suncor also believes that ICAC's estimate of 13 months to design, fabricate, and install technologies such as SCR is not realistic. The other references noted in the text appear more realistic. Note that this timing sequence does not address permitting complexity and delays. Should a project trigger NSR PSD or Non-attainment NSR permitting, regulatory agencies advise that approximately 18 months may be required for permit processing. This time needs be added once the design is complete (necessary to submit the permit application), and before any installation work can commence. Hence, it is possible that the 6 ½ year estimate noted needs to be increased to at least 8 years.

Page 5-5, Section 5.3 – As there is no basis provided to evaluate the data presented, it is not possible to provide any comments in the values noted. There is a statement made that spent catalyst using SO₂ and NO_x reducing catalyst additives in FCCUs results in the need to dispose of this material as a hazardous waste. This is incorrect. Spent FCCU catalyst, including spent additives, is non-hazardous.

Page 5-7, Section 5.4 – This section addresses remaining equipment life, and the information presented only provides information, but does not draw any specific conclusion. Therefore, Suncor is not providing any specific comments on this section.