UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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DATE: April 29, 1980

SUBJECT: ARCO SOHIO Data Review

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We have completed a review assessing the quality and quantity of 2 quarters ambient air quality data generated by Radian's Prudhoe Bay monitoring network, operated on behalf of the Prudhoe Bay Operators in support of their PSD permit application. On the basis of the 2 quarterly monitoring and quality assurance reports, the network appears to have achieved adequate figures for both data quality and quantity. These figures reflect the effectiveness which was realized from the network quality assurance plan. Those few instances when results were less than adequate are discussed below.

EPA Region X has established a policy requiring PSD monitoring networks to return valid data for a minimum 85% of the total monitoring time available during each quarter. The Prudhoe Bay network failed to attain this level three times, all in the first quarter and including:

1) TSP at site 041

2) TSP at site 042

3) THC/CH_4 at 042

While the cause of unreported TSP March data for both sites is not documented in the monitoring report's down time summary, it may be reasonably assumed that these instruments exhibited the same timer-related difficulties that led to data invalidation in April, or encountered some other typical kind of problem attendant to the start-up of a monitoring network.

Concerning the data quality aspect of the review, it appears that the procedures by which the precision and accuracy functions were performed, were consistent with applicable guidelines and regulations, with one exception. Radian chose to use the daily span check as its precision check, at a concentration approximately 20% of the operating range. This is not routine practice. The criteria embodied in Appendix B of 40 CFR Part 58, and guidances provided by 2.0.9 of the QA Handbook, Volume II, state that span checks should be regularly performed at concentrations between 70 and 90 percent

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of the operating range, and precision checks at approximately 20% of full scale. While these elements were not implemented in Radian's network, it is felt that appropriate measures were imposed to generally ensure data of adequate precision.

The precision of the monitoring instruments were fairly impressive, with the exception of the following (all in the first quarter):

1) SO_2 at site 041

2) TSP at site 041

3) SO_2 at site 042

4) NO/NO_x at site 042

However, in all but one instance, TSP at 041, audit results confirm the accuracy of these instruments which reported poor precision.

Poor accuracy figures resulted from first quarter audits for:

1) TSP at 041

2) NO_2 at site 042

3) CO at site 042

4) THC/CH_4 at sites 041 and 042

In all instances, appropriate measures were taken to identify and correct the causative defect, and reasonable methods were employed to selectively invalidate data where necessary.

It should be noted that 2nd quarter precision and accuracy results indicate data of high quality.

On balance, ambient air quality data generated by the network during the first two quarters of monitoring, are largely considered to be of adequate quality and quantity. This, in recognition of the near-baseline concentrations report ed throughout the bulk of the interval by most of the instruments, and the relatively minor impact that even the larger errors in precision and accuracy would exert on resultant values.

cc: Bob Courson
Mike Johnston