



South Coast Air Quality Management District

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AQMD Refinery Pilot Project Working Group

Meeting #2 Summary

The second meeting of the AQMD Refinery Pilot Project Working Group was held on August 18, 2005. Elaine Chang welcomed the Working Group and introduced the facilitator, Greg Bourne, who also prepared this meeting summary. Working Group members then introduced themselves. A list of participants is included as Attachment 1.

Comments on July Meeting Summary

The only comment on the July 13, 2005 meeting summary was the request to include a list of participants. It was noted that this would be added to future meeting summaries.

Discussion of Requested Refinery Data

Elaine Chang, AQMD, provided an overview of several handouts compiled to characterize various facets of refinery emissions. This included an emissions inventory by refinery, a cancer risk assessment summary, aerial photos of refineries, maps with wind rose of local impact areas and a summary of other toxic emissions in the communities around refineries.

The emission inventory covers emission trends for the last five years. It was noted that emission increases occurred in the last couple years due to increased through-puts. A question was posed about how data were collected. AQMD noted this occurs primarily by use of AQMD forms by process, equipment and field type. Emission factors used are typically based on source test data. AQMD, when developing emission factors, bases them on conservative assumptions.

When asked about the number of source tests, AQMD responded that every component is tested every quarter. Components include individual pieces, such as valves, pipes, compressors, pipe fittings, etc. It was also noted that for NO_x and SO_x continuous emission monitoring is conducted, using direct measurements rather than source testing. A refinery representative added that 280,000 components are test quarterly.

Another working group member reflected that this is a complex system and therefore difficult to understand. For example, how much is tested by direct monitoring v. source testing? Also, how long are emission factors considered valid, even though estimated conservatively?

AQMD responded that the “potential to emit” is developed by taking a statistically representative sample of valves in the field which are incorporated into emission factors based on direct testing. Some rules have required refineries to use lower emitting valves, compressors, etc. Monitoring is conducted to determine when a valve needs to be repaired or replaced. Variability has narrowed over time due to regulations/monitoring. In short, AQMD believes these concerns are well addressed, as extensive work has been undertaken to calculate emission factors, and industry has incentive to address these concerns as well.

Another working group member expressed concern, however, that emissions during break downs are not incorporated into these analyses. AQMD responded that break down forms must account for these emissions and they are incorporated. If further detail is desired, AQMD suggested community members provide some specific examples of break downs and AQMD will research the situation and show how the information was incorporated.

The question was posed as to whether AQMD accepts industry claims or has other means for ascertaining emissions from breakdowns. AQMD representatives responded that emissions during releases must be tested so the total emissions can be estimated. There is also a variance process that must be followed.

The question was posed about how much variability could be expected if 100 valves were measured. AQMD responded there is little variability – perhaps only one or two percent. But if a leaky valve is found it is assumed the leak began one day after last test (quarterly) for purposes of estimating emissions from the leak. These will then be incorporated into statistical analyses for determining emission factors which will be applied to entire facility.

Another participant added that the BP lawsuit had raised concerns about how the system was working. AQMD noted that everything keys off the inventory of valves, and that the accuracy of the inventory was the subject of the lawsuit. If a component is not in the inventory it would not be inspected.

The question was raised as to whether scheduled maintenance and shut down/start-up emissions are included in emission factor analyses? AQMD responded that they are.

The issue of reporting flares was reiterated as a major concern. Specific occurrences were cited where emissions were occurring yet neither inspectors nor the industry reported any problems. The larger issue is what constitutes a violation? A refinery representative asked the community representative to identify the event and that he would look into the circumstances. The event cited was October 2003. AQMD added that it would prepare a “case-study” using the case noted (Conoco Phillips), working with both community and refinery representatives.

A community representative expressed the concern of being “less than comfortable” with self-reporting of data. AQMD has identified issues in past, so how can AQMD be confident that data being received are accurate? AQMD responded that it is not in the interest of industry to have leaking emissions, which can create fires and other dangers. So they do have a strong motive. AQMD has been regulating refineries for about five decades and has no sense there are major problems estimating emissions. There is a long track record of monitoring, assessing and confirming conditions in refineries.

A refinery representative confirmed the assertion of refineries motives to comply. Refineries are concerned about the health of community members and workers, many of whom live in surrounding communities. While not perfect, refineries certainly feel an obligation to fill any gaps.

AQMD acknowledged that a key issue for communities is that they dislike self-inspections. But after the recent lawsuit, which created additional incentives, perhaps this can be considered the beginning of a new era. Additionally, AQMD has made some internal changes to improve monitoring and new Title 5 regulations will also help.

A community representative reflected they have yet to sense the dawning of a new era. Another community representative added that she appreciated the dialogue and found value in gaining greater understanding of refinery operations, and that questions were not meant to be taken “personally.”

AQMD then continued with an overview of the remaining materials. It was noted that on the Summary Table, differences between Acute/Chronic levels are based on OEHA data. Acute thresholds are short duration, high concentration, whereas chronic thresholds are longer duration, lower concentration. Concerning the mobile sources summary table, it was noted that the cancer risk is much higher from mobile than stationary sources.

After lunch, a refinery representative noted that a list of about 30 possible pilot projects had been identified. Today, the working group would hear a presentation on a potential pilot project involving a new 2-stroke engine that recently won EPA’s 2004 Clean Air Award for advances in 2-stroke engine technology. The engine greatly reduces VOCs and ozone, with some particulate reduction benefits as well.

The presentation (available electronically as a PowerPoint) was made by Fernando Garica. He noted California has the largest boat population in United States. Of these, about 65 percent are old carbureted 2-stroke engines. And since they last a long time new regulations have yet to make a major impact. Large engines (greater than 40 hp) last 12-14 years, whereas smaller engines can last 20 years. Two-stroke engines are desired because they are simple and lightweight. Large engines in the 40 to 200 hp range are what will primarily be replaced.

The presentation included a map showing where the greatest impacts of the potential pilot project would be achieved, including areas impacted by refineries. When asked about particulate reductions, Mr. Garcia noted that the new engine produces about 1/10 of old

carbureted 2-stroke engines. At idle, it produce about 1/50 the amount of carbon monoxide. Oil in this engine is burned, not used primarily for lubrication, so it is biodegradable. The engine uses 25-40 percent less fuel, and perhaps most notably provides large reductions in NOx and hydrocarbons. Finally, the engine is CARB certified, and can be used on Lake Tahoe with its restrictions.

Upon completion of the presentation on this new two-stroke engine, working group members returned to issues of clarification on the meeting materials distributed by AQMD. A dissertation prepared by Todd Sax on refinery emissions was highlighted for discussion. It was noted that refineries are too complex to be able to compare. The request was made that some of the findings in that document, related to the use of emission factors, be explored and discussed at the next meeting. AQMD agreed to do so.

Two other concerns were raised related to inventory data. One, many emissions factors are old, and concern exists with using these factors. Two, information gained from breakdown reports is often inconsistent and not thorough. Continuous emissions monitors have been found disconnected. These are some of the instances that create skepticism on part of communities. Then when information is presented as “good as gold” it adds to concerns. A refinery representative noted that breakdown reports differ from start-up/shut down reports.

The issue of using risk assessment as an approach to identifying acceptable emission levels was raised again. A community representative noted that even though presumably conservative, they do not account for susceptibility of individuals, children, synergistic or cumulative impacts, or non-cancer impacts.

AQMD noted that risk assessment is not likely a critical issue to this “black box reductions” pilot project. A refinery representative added that industry understands the concerns and assumes there will be an ongoing conversation to get to a better point of understanding risk. The proposed pilot project is not going to limit the ongoing evaluation of emissions factors, risk assessment, etc. by AQMD and the potential new directions that may come from that inquiry. The issue of auditing was raised, noting that there are various kinds of auditing. There are also field inspections and fields audits to ensure accuracy of through put data.

As the final agenda topic, action items from the meeting, and the date and potential agenda items for the next meeting were briefly discussed. Action items are included as Attachment 2. A brief discussion ensued about the possibility of a community meeting to discuss the pilot project, raised at the first meeting of the working group. The group decided community meetings would probably be most productive after the next working group, or at such time when more detailed information is available about the pilot project. The facilitator indicated he would follow-up with community members to discuss future community meetings.

The meeting was then adjourned.

Attachment 1- Working Group Participants at August 2005 Meeting

Cynthia Babich, Del Amo Action Committee
Barbara Baird, AQMD
Todd Campbell, Coalition for Clean Air
Elaine Chang, AQMD
Miles Heller, Conoco Phillips
Stan Holm, Exxon Mobil
Ken Hudson, BP
Debra Jordon, EPA, Region 9 (via telephone)
Bob Lucas, Lucas Advocates, Inc.
Joe Lyou, California Environmental Rights Alliance
Jesse Marquez, Coalition for a Safe Environment, Wilmington
Bill Quinn, CCEEB
Chris Rathbun, Shell Oil Products
Rod Spackman, Chevron
Lynn Terry, CARB
Jesus Torres, CBE (for Bahram Fazelli)
Barry Wallerstein, AQMD
Jane Williams, California Communities Against Toxics
Paul Wuebben, AQMD
Bob Wyman, Latham and Watkins

Attachment 2 – Action/Agenda Items from the August 2005 Working Group Meeting

1. Evaluate the breakdown report and related materials associated with the October 2003 event cited at the Conoco Phillips refinery. Assess the range of issues related to reporting events at refineries. The exact date of the event will be supplied by Jesse to Miles, who will work with AQMD on this issue.
2. Put the 2-stroke PowerPoint presentation on the Website and make a couple CDs available for distribution to Working Group participants.
3. Look at the issues raised in the dissertation by Todd Sax, focusing on the issues highlighted beginning on Page 59. This relates to how actual emissions are calculated.
4. Use data from refineries the last few years to analyze the extent to which, and how, default emission factors have been used in reporting by refineries.
5. Conduct a gap analysis of toxics. Joe will follow-up with AQMD to provide more clarity on what information is being sought.
6. Update the maps provided at the August meeting to include legends and correct a couple facility boundary inaccuracies; then post on the Website.
7. Focus more on understanding the relative contributions of stationary versus mobile sources to cancer risk for the purpose of clarifying the context for the proposed pilot initiative.
8. Add marine vessel hoteling to the agenda for a presentation and discussion at the next meeting as another example of a possible pilot project.
9. Provide an overview of how the “1 in a million” threshold is determined, and its meaning.
10. Contact Jesus and Jesse concerning a possible community meeting in Wilmington, and clarify the relationship of the meeting to the activities of the Working Group.