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Branch
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Registry
Atlanta, GA 30333

April 2, 2009

#### Dear Mr. Kowalski and Ms Gable:

The management of the Intel Corporation – New Mexico Facility, Rio Rancho, Sandoval County, New Mexico – is pleased to have the opportunity to comment on the "Public Health Consultation, Review of Air Quality Data (Public Comment Release)" dated February 2, 2009. This letter, and the attached material, will serve to document our views on the Report. We offer these science-based comments anticipating they will provide a basis for developing a revised report that more accurately and completely summarizes the past and current impacts of operation of the Intel-Rio Rancho facility on nearby residents.

It is Intel's view that within the ATSDR Categories of Public Health Hazard, the Intel-Rio Rancho facility should be placed in Category D: No Apparent Public Health Hazard. This categorization is based on substantial scientific and technical documentation including the comprehensive risk assessment conducted by the New Mexico Environment Department (NMED) and completed in June 2004 (attachment 1). Voluntary continuous improvement actions taken by Intel since 2004 to reduce air emissions and engage with the community through monthly working group meetings

serve to reinforce the position that current Intel-Rio Rancho operations do not pose a public health hazard.

Intel appreciates the substantial efforts made by ATSDR to develop the February 2, 2009 document, including dialogue with local citizens, the NMED staff and Intel staff and consideration of the extensive documentation related to the Intel-Rio Rancho facility. However, it is our view that the content of the present report does not adequately reflect consideration of all of the available information and has not adequately synthesized and integrated that large body of information to inform the public of the absence of any public health hazards related to the Intel-Rio Rancho operations (see attachment 2).

# History of Responsible Operation, Community Involvement and Continuous Improvement

The draft ATSDR report does not adequately convey the nature of the Intel-Rio Rancho operations, the continuing attention given to responsible operation of the facility to avoid environmental and public health impacts, the attention given to involving the local community and the emphasis given to continuous improvement. Micro-electronic product production facilities are very sophisticated and complex operations. The Intel-Rio Rancho facility was designed and constructed to meet all applicable federal and state emissions regulations and standards including a voluntary commitment to operate as a minor source of air emissions as defined under the US EPA Clean Air Act. Moreover, from its beginning in the early 1980's the plant has operated with rigorous quality control procedures, including periodic measurements of emissions to verify that plant emissions are within specified limits. Continuous upgrading of facilities and processes is an inherent part of the fabric of the micro-electronics industry. Process upgrades,

advancements, and innovations occur primarily for competitive and product related reasons. All these activities are done pursuant to Intel's "Design for Environment" and "Pollution Prevention" programs and as a result, these process activities typically involve low or no emissions increases and often result in emissions decreases.

Since the start of operations, Intel-Rio Rancho reached out to the local community. This included creation of a Community Advisory Panel in 1993 which has evolved into today's Community Environmental Working Group.

Continuous improvement is an inherent part of Intel-Rio Rancho operations. The site has made improvements in emissions control systems whether or not they were required to achieve compliance with all State and Federal Regulations and Standards. Since the 1990's these activities and other environmental, health, and safety goals and performance metrics have been shared in annual site reports, web site postings and newsletters to the local community.

#### **Intel Focused Environmental Health Risk Assessments**

The Intel-Rio Rancho facility recognized from the beginning that it is important to conduct periodic risk assessments as a way to acquire, integrate and synthesize information on plant emissions during normal operations and anticipate the potential health consequences of accidents. Such periodic assessments help in evaluating the adequacy of operating procedures and provide a basis for continual improvement. The initial assessment included specifications and controls to guide construction of the facility and its operation. A second assessment was conducted by an external contractor (Radian Corporation) in 1997. That assessment evaluated overall short- and long-term health and safety risks to the community from the facility. The assessment was revised and updated,

also by an external contractor (ERM), as a third assessment during 2003. (Both assessment reports are and have been available at the Ro Rancho and Corrales Public Libraries.) The fourth assessment, coordinated by the NMED, was begun in 2002 and completed in 2004. We believe that ATSDR should describe the NMED study more thoroughly in the final report and rely on its results as a basis for the ATSDR evaluation of the Intel-Rio Rancho facility and its potential health impacts.

#### NMED Corrales Environmental Health Evaluation (2002-2004)

In response to a request from the Mayor of Corrales in October 2001, the NMED initiated in 2002 a comprehensive health risk assessment to identify and analyze potential air quality health risks due to air pollution in the Village of Corrales. The NMED used a stakeholder-based health risk assessment process conducted in accordance with EPA guidelines (see www.epa.gov/oar/oaqps/air\_risc/3\_90\_024.html). This involved numerous facilitated public meetings and forums to provide community input for the direction and focus of the work plan. Intel actively participated in the process as a key stakeholder; however, the project was managed by NMED with data collection completed by highly qualified professional scientists and external experts. Results were shared with the public through open meetings and all reports and data from this study continue to be posted on the NMED web site (see www.nmenv.state.nm.us/aqb/projects/Corrales/).

The project involved:

- Initial <u>air quality monitoring</u> to help focus the scope of the inventory, identifying potential hot spots and specific air toxics of concern
- The development of an <u>emissions inventory</u> including air toxics emissions for the area
- A <u>modeling analysis</u>

- A <u>refined monitoring</u> study to estimate exposure levels
- A toxicological <u>risk characterization</u> considering the monitored and modeled results and dose-response assessment

The integrated nature of the NMED-managed project is depicted schematically in Figure 1. This figure would be a useful addition to the ATSDR report.

### **CORRALES AIR QUALITY STUDY**

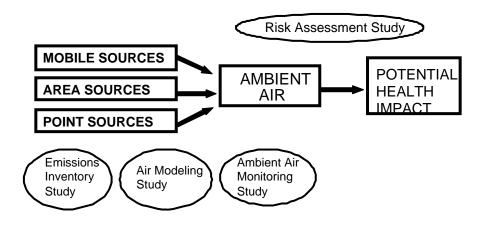


Figure 1.

The "Corrales Environmental Health Evaluation Community Process Summary Report (June 2004)" prepared by NMED (attachment 1), is quite similar to the kind of efforts ATSDR frequently recommends as a follow-up to an ATSDR Health Consultation. However, the NMED project was conducted <u>before</u> ATSDR offered its advice.

Mary Uhl, who led the NMED project, in her recent email to ATSDR, commented: "The State of New Mexico, in conducting the Corrales/Rio Rancho Air Quality Study, exceeded the analysis for air quality that is conducted around 99% of the industrial facilities in the U.S." Her comments are based on the NMED Summary Corrales Air Quality Study Report, June 2004 (attachment 1). We concur with her

statement and urge that ATSDR provide more adequate coverage of the NMED project and its results in any revision of the ATSDR Report. The data in attachments 1-9 of this comment letter provide the basis for the statement by Mary Uhl, and the document prepared by Intel, "Statement and Integrated Summary and Evaluation of Corrales Air Quality Study (attachment 2) complements the summary prepared by NMED.

#### **Corrales and Rio Rancho Emissions Inventory**

A comprehensive emissions inventory was developed by Henderson Consulting for all mobile and area sources within 5 km and all point sources within 10 km of Intel (see attachment 3). This was a critical part of the NMED project. The results are summarized in Figure 2. It may be noted that Intel's maximum emissions (93.2 pounds/day) were less than 5% of the total air pollution emissions. The major source of emissions in the vicinity of the Intel facility was mobile sources (1148.1 pounds/day) and area sources (618.9 pounds/day). This informative graph should be included within a revised ATSDR Report.

## <u>DAILY HAZARDOUS AIR POLLUTANT EMISSIONS</u> (Ibs/day)

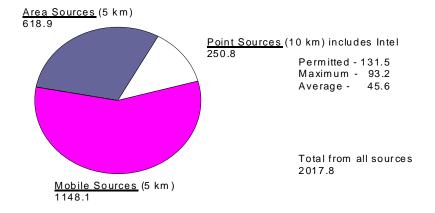


Figure 2.

#### **Ambient Air Monitoring**

The air monitoring conducted as part of the NMED project included extensive monitoring by the NMED and complementary work performed by Arcadis (Dr. Robert Kagann, funded by EPA grant) and TRC Environmental Corporation (funded by Intel). These efforts made substantial use of Fourier Transform Infrared-Open Path (FTIR-OP) spectroscopy, which was selected because of demands of the local citizens who were key stakeholders in the design and conduct of the NMED project (see attachment 4). While Intel would have preferred to have used some other methods, we accepted the views of the local citizens and worked with NMED to ensure that the FTIR-OP work was conducted in accord with appropriate standards (e.g. EPA TO-16) and yielded valid results (see attachment 5 and attachment 6). The ATSDR report should clearly reflect the community stakeholder process that led to the use of the FTIR-OP methods.

A number of chemicals were detected in the course of the ambient air monitoring. Not surprisingly based on the emissions inventory, the large majority of the chemicals detected in highest concentration and most frequently are those associated with vehicle emissions. Twenty-one chemicals detected in the ambient monitoring, some only sporadically and typically at low concentrations, also were detected in the monitoring of Intel's scrubber and thermal oxidizer stacks using FTIR spectroscopy.

Nine of those chemicals detected in monitoring Intel's stacks arise primarily from Intel. Eight other chemicals detected in monitoring Intel's stacks, may come from other sources. For example, ammonia, while detected in Intel's stack emissions, is also emitted from municipal waste water treatment, livestock waste and catalyst-equipped motor

vehicles. A few chemicals, principally the fluorine containing compounds are relatively unique to operations conducted by Intel at the Rio Rancho facility. As will be discussed later, monitoring of these chemicals proved useful in validating the air dispersion models. For a few of the chemicals identified in the monitoring data, it was not feasible to identify the sources.

Intel collects meteorological data from a 10m weather station at the south end of the Intel facility and this data was available for use in evaluating and interpreting the ambient air monitoring data. Specifically, an analysis was done on wind direction and ambient chemical levels monitored at different times of the day (see attachment 7). Many of the chemicals typically associated with motor vehicles frequently were found in high concentrations at the Sara Road and Highway 528 monitoring site at the northwest corner of the Intel site. However, the ubiquitous distribution of motor vehicle emissions resulted in these chemicals being detected on many occasions irrespective of wind direction. This included frequent detection of these chemicals at high concentrations at the monitoring site at the Southeast Boundary of the Intel facility. These vehicle emissions indicators included chemicals such as carbon monoxide and the aldehydes. On some occasions it was apparent that wind from the south was carrying motor vehicle associated emissions up the Rio Grande Valley representing emissions from elsewhere in the Greater Albuquerque Air Shed. Some chemicals arising from multiple sources, such as carbon tetrachloride, were detected rather uniformly irrespective of wind direction. A few chemicals, such as the fluorine-containing compounds unique to Intel's operations, were detected when the wind was blowing from the Intel facility toward the monitor.

To aid in interpreting the air monitoring data, Intel, at the request of NMED, conducted a tracer gas study (see attachment 8) in which measured quantities of sulfur hexafluoride were purposefully released from the Intel site when the wind was blowing toward the monitoring site. Knowledge of the quantities of sulfur hexafluoride released and the concentrations measured in ambient air were used to calculate dilution coefficients and for comparison to modeled concentrations of Intel's emissions. In our review of ATSDR Health Consultations, we did not identify any air quality evaluations that used similar tracer gas methodology to help validate the air monitoring data and relate it to a specific facility. This added data is significant and should be included in ATSDR's report since ATSDR's own guidance for evaluating modeled data recommends this type of validation (see www.atsdr.cdc.gov/HAC/PHAmanual/ch5.html#5.2).

#### **Air Dispersion Modeling**

As part of the NMED study, Darko Koracin and John Watson, scientists associated with Desert Research Institute, conducted air dispersion modeling of Intel's emissions. Because of resource constraints, the air dispersion modeling was not conducted for emissions from non-Intel sources even though Intel's emission represented less than 5% of the pollution emissions in this local area (according to the NMED Source Inventory). It is necessary to have modeled air concentration if there are any potential sources other than Intel contributing to what is monitored.

Three chemicals (sulfur hexafluoride, tetrafluoromethane, and hexofluoroethane) emitted from the Intel facility, unlikely to be emitted from other sources, were detected in the FTIR-OP ambient monitoring. This provided the opportunity to compare the maximum 1-hour modeled concentrations and the maximum 1-hour monitored

concentrations. The results are shown in Table 1. (Copied from Table 5 in attachment 2) The agreement between the modeled and monitored concentrations (7 of 8 comparisons) is remarkably good. In our review of other ATSDR Health Consultations we could not identify any similar rigorous comparison of monitored versus modeled air concentrations.

Table1. Comparison of Modeled (Koracin and Watson) and Monitored (TRC)
Ambient Concentrations of Four Intel-Specific Fluorine-Containing Chemicals

	Modeled*	Monitored		
	1-hour	NMED/TRC	Modeled*	Monitored
	Maximum	1-hour	Maximum	Average 18-
	Concentration	Maximum	Annual	Day
Compound	(ppb)	Concentration	Concentration	Concentration
		(ppb)	(ppb)	(ppb)
Sulfur Hexafluoride	0.26	0.39	0.004	0.007
Tetrafluoromethane	1.30	1.62	0.020	0.037
Hexafluoroethane	6.00	1.73	0.092	0.003
Hydrogen Fluoride	3.30	4.56	0.051	0.038

<sup>\*</sup>Modeled data from Koracin and Watson Report corrected for revised emission rates per memo Intel to NMED, May 28, 2004.

#### **Integrated Risk Assessment**

As a final stage of the NMED project the results from the emissions inventory component, the ambient air monitoring, and the air dispersion modeling components were used in conjunction with standard health hazard/risk guidance values to evaluate the potential health impact on residents of the local community. That evaluation conducted by Gradient Corporation included (1) acute health risks based on ambient air measurements of chemicals originating from multiple sources, (2) acute health risks based on modeled ambient air concentrations to receptor locations for only Intel emissions, and (3) chronic health hazards based on modeled ambient air concentrations over a 1-year period for only Intel emissions. The risk assessment results can best be

summarized in one sentence from the Gradient Report – "In conclusion, this risk assessment did not find evidence that any of the measured or modeled chemicals are associated with increased acute or chronic health risks." It is the view of Intel that the comprehensive nature of the NMED-managed project provides strong support for the validity of this statement (see attachment 9).

#### **Source Attribution**

As discussed earlier, only a small portion (less than 5%) of the pollutants emitted in the vicinity of the Intel-Rio Rancho facility are attributable to Intel. The comprehensive nature of the NMED study, the results of the Intel-conducted tracer gas study and the detailed inventory and meteorological data available for the Intel facility provide input for evaluating the potential health impact of Intel-Rio Rancho emissions versus emissions from other sources. Mobile sources are the largest contributor to potential health impacts from ambient air in the vicinity of Intel-Rio Rancho. In contrast, Intel is a small potential contributor. We believe the revised ATSDR report should relate the relative importance of other sources, including mobile sources, compared to the minor role of Intel's emissions. This conclusion is important to help local residents interpret the findings in the ATSDR Report. This conclusion is equally important for contemplating any future monitoring activities. Any future ambient monitoring in the vicinity of the Intel-Rio Rancho facility must anticipate the very high likelihood that measurable quantities of chemicals in ambient air, even very near the Intel facility, will be dominated by chemicals arising from other sources.

#### **Adequacy of Data and Past Evaluations**

The ATSDR staff raised questions as to the adequacy of the NMED-managed project and how it might have been improved. While funding for the NMED managed study was not limitless, \$141,000 in EPA grant funds, and \$89,000 in NMED funds were used to conduct the study, primarily for funding of contractors. It should also be noted that the intensive involvement of key NMED staff over more than two years clearly resulted in NMED personnel costs equal to or exceeding the cost of the contracted studies. In addition, the Intel self-funded efforts involved substantial costs over and above the approximately \$500,000 per year Intel expends to validate the effectiveness of its emission controls. Moreover, it is not possible to place a monetary value on the thousands of hours of citizens' time that was necessary to ensuring stakeholder involvement in the NMED study. If additional funding had been available, it might have been possible to have secured even better integration of the several components of the NMED project. This could have been accomplished by bringing the several contractors together for face-to-face meetings at various times as the activities were planned and conducted, and the results interpreted. In the absence of such funding, the NMED staff expended special effort to facilitate the transfer of data among the contractors for the various components of this overall study and to ensure integrated interpretation of the findings.

If additional funds had been available, it might also have been possible to conduct additional monitoring at more locations, however, in retrospect; the comprehensive nature of what was done indicates that all of the critical data were acquired in the NMED

study. Additional monitoring and modeling data would have been unlikely to change the key conclusions of the NMED study.

It is the view of Intel that the ATSDR Report requires revision to more adequately interpret and convey the results of the NMED-managed Corrales Air Quality project.

Intel is concerned that ATSDR perhaps focused on individual components of the NMED project and has not adequately evaluated the substantial strengths of the comprehensive, integrated risk assessment conducted by NMED.

Accordingly, Intel does not believe the ATSDR recommendations for additional ambient monitoring are well founded. The emissions inventory, modeling and monitoring data already in hand strongly support the conclusion that there is no basis for air quality health concerns in the vicinity of the Intel-Rio Rancho facility. Moreover, the data from the emissions inventory, the air modeling and the ambient monitoring components of the NMED study clearly indicate that Intel emissions have a minor role in influencing air quality in this local area. Thus, it is the view of Intel that conducting additional ambient monitoring, focused solely on Intel emissions, would not be a wise use of either public or private resources.

#### **Conclusion**

As noted, Intel believes the draft ATSDR report provides an incomplete and limited perspective on the entire data set available to the ATSDR on the potential public health hazard posed by the Intel-Rio Rancho facilities operations. While the draft report does provide some valid criticism of the various studies that have been conducted, it does so in an unconnected fashion and fails to take into account the comprehensive nature of the data collection and analysis that has taken place over the past two decades,

particularly with the NMED study (see attachment 1). None of these studies have found any evidence of health effects, nor does the draft ATSDR report. Specific recommendations for changes to the draft ATSDR report are set forth below.

Attached to this letter are more detailed documents that contain valuable information concerning the NMED Corrales Air Quality Study as well as other information on Intel-Rio Rancho emissions. For the public NMED also maintains an active website for the Corrales Air Quality Study so that interested parties can have ready access to this and other information at various levels of detail.

Please do not hesitate to contact us for additional information on these important matters.

Sincerely,

John C. Painter

New Mexico Corporate Services Site Manager

**Intel Corporation** 

Rio Rancho, New Mexico

John C Painter

Attachments (1-10): (Also publically available on NMED web site <a href="http://www.nmenv.state.nm.us/aqb/projects/Corrales/">http://www.nmenv.state.nm.us/aqb/projects/Corrales/</a>, except for #7 and #10)

1) NMED Summary Corrales Air Quality Study Report, June 2004



2) Intel Summary of NMED CAQTF Study, June 2004



3) NMED Corrales Emissions Inventory, September 2003



4) NMED Memo on Citizen Committee's Decision for FTIR Monitoring, May 2003



5) FTIR Testing Methodology (Including QAQC), December 2003



6) NMED Review of Prior Ambient Chemicals for Selecting FTIR Monitored Chemicals, June 2004



7) Wind Direction versus FTIR Monitoring Results, June 2007



8) Tracer Gas Release and FTIR Monitoring Correlation Study, December 2003



9) Intel Review of Gradient Health Risk and NM Department of Health Position Statement, May 2004



10) ATSDR Table 2 Corrections to calculated FTIR values highlighted in yellow.



#### Page Specific Comments and Corrections for Draft ATSDR Report

**Page 5:** Change...approximately 15 miles north of Albuquerque to "....approximately 15 miles north of downtown Albuquerque".

**Page 7:** Add to end of first paragraph "The current permit, consistent with past permits requires specific pollution control equipment operation, emissions testing and reporting and numerous other onsite recordkeeping and monitoring requirements."

**Page 9:** ATSDR should add to the third paragraph, second sentence a statement that method of survey was also not released. New full sentence should read "These organizations have not released a formal report or description of methodologies on their efforts."

Page 18: Include a statement that says modeling is a legitimate, recommended way to estimate facility specific ground level concentrations of chemicals that can also come from multiple sources. The ATSDR report should state that a high degree of correlation was reported between Intel specific chemical modeling done by Koracin and Watson and FTIR monitoring for SF6, CF4, C2F6, and HF in the NMED study. This cross validation strengthens the characterization of ambient chemicals and subsequent interpretation of health risks in the study.

Page 21: QAQC section- Detection limit variability is inherent in the Open Path FTIR methodology. Because OP-FTIR's generate real-time results with a varying detection limits for each frame, it has often been the topic of discussion. However, experts and the equipment manufacturers have generally accepted data handling methods. It should be mentioned on this page that more detailed data are available for analysis that would take advantage of the results obtained for shorter periods of time, such as frame by frame spectral co-added scans, daily summaries supporting minimum, maximum, and average concentrations and companioned MDL's that would avoid the shortfalls ATSDR encountered by using summarized average ranges for MDL values for each monitoring period evaluated.

Page 21: Last sentence says ".....fence line monitoring may underestimate exposure to residents living next to plant's eastern border". Replace with ".....fence line monitoring

may underestimate or overestimate exposure to residents living next to plant's eastern border". The physics of trace chemical compounds in the air and the increased distance make decreasing concentrations with distance not only possible, but much more likely.

Page 22: In the discussion box, the third sentence says "The primary limitation of the technology is its inability to measure low levels of multiple air contaminants over time."

This refers to OP-FTIR monitoring; however the method was actually chosen by NMED and the Citizens group because of its ability to measure low concentrations of many chemicals of concern (see attachment 4 and attachment 6) for extended periods of time (18 days). ATSDR should add a statement that says something to the effect of:

"However, OP-FTIR was state of the art and valid methodology for the purpose of the NMED study which had other elements that assisted with the characterization of airborne chemicals in the community (i.e. emissions inventory, modeling, canister sampling, and facility stack test results)."

Pages 23-30: The source of the "MDL Data Set Range" values presented in Table 2 appear to be the minimum and maximum of the three or five "Mean MDL" values listed in the TRC summary tables for the OP-FTIR monitoring at the five locations (NW-S, NW-E, SE, Mariquita, & CUB/SE). The TRC values in the original data report are in units of ppb whereas the ATSDR values are in units of ug/m3. When comparing ATSDR's listed values against TRC's values a sizeable number of what appear to be transcription and/or calculation errors for the ug/m3 values are listed. Intel has prepared a spreadsheet (see attachment 10) with the apparently incorrect numbers highlighted in yellow for many of the substances. Please review and correct these numbers. Also note,

if ATSDR confirms our calculations as being correct, it appears nitric acid should no longer be listed as exceeding the CV.

**Page 31:** Provide the name of the "…commercial software program used to plot the pollution rose in graphical depiction" referenced in first paragraph.

Page 33: Discussion of aldehydes and combustion related chemicals detected at monitoring site on NW corner of Intel property less than 100 feet from Sara Road and Highway 528 intersection makes no mention of possibility of vehicles as source of combustion related chemicals even though the southern section of Highway 528 is also upwind of the monitor during the peak 1 hour measurement. Wind direction is listed in the text as southwest. This would make the monitor location more upwind or crosswind from Intel. More extensive review of the monitoring results for acetaldehyde and formaldehyde would show the relationship to mobile sources due to time of detection and wind directions. (For example, the detection activity of acetaldehyde during the 1.5 hours prior to the 19:00 - 20:00 interval reported in table 3; when the FTIR monitoring was generally upwind of the site and at a similar concentration (784 ppb versus 813 ppb). The same is seen when reviewing the detection activity of formaldehyde during the one hour prior to the 19:00 - 20:00 interval reported in table 3; the FTIR monitoring was generally upwind of the site and at a similar concentration (27 ppb versus 46 ppb). Page 35: In second paragraph add to end of third sentence ".... for Munters units and

Page 41: In the first paragraph ATSDR states that "several opportunities are available to gather additional data..." Given that there are 201 documents posted in the Technical Report & Data section and 289 documents posted in the Background Information section

1360 degrees F for Durr units."

of the NMED Corrales Air Quality Study web page

(www.nmenv.state.nm.us/aqb/projects/Corrales/), the final ATSDR report should state that more extensive review of existing data could also be done. Intel and NMED have reviewed that extensive body of data as a basis of the comments made elsewhere in this Intel review.

Page 42: ATSDR's recommends ".....public health and environmental agencies explore the possibility of conducting additional sampling or monitoring to characterize residential exposures, specifically in the community and particularly immediately southeast of Intel-New Mexico." This recommendation is not supported by the data available from the NMED Corrales Air Quality Study web page. The NMED data for sampling and monitoring shows: 1) a lack of significant Intel specific directional gradient or health effect concerns based on SE perimeter FTIR monitoring, 2) No correlation with odor complaints and rapid capture Summa canister sampling results, and 3) No acute health effects associated with 18 day continuous Summa canister monitoring levels during Intel warm down and ramp up periods. The NMED data also shows that the modeling conducted by Desert Research Institute for the project supported the monitoring results and did not identify health risks associated with Intel as a point source or Intel specific chemical emissions.

**Table 2:** ATSDR should add ozone monitoring results to the table. Ozone represents one of several substances showing significantly greater daytime detection activity; such behavior generally implicates sources other than Intel. ATSDR should add the information on ozone monitoring, including information on the time-of-day detection patterns.

**Tables 2 and 3:** Add explanation in the document on the derivation and/or on the rationale and the limitations for the use of the values listed in Tables 2 & 3.

**Table 3:** There is no explanation or definition of the wind directions that are considered to be upwind or downwind of Intel site for the three OP-FTIR monitoring locations. This applies by extension, for the evaluation of the pollution roses in the appendices. ATSDR is encouraged to explain and define the wind directions that it considers to be upwind or downwind of Intel site for the three OP-FTIR monitoring locations.

**Table 3:** Acetaldehyde concentration actually was 813 ppb (instead of the 81 ppb listed).

**Table 3:** Correct the typographical errors on the dates for the three substances (n-butyl alcohol, n-hexane, and PGME) in Table 3 that are listed as 2007 instead of 2003.

**Table 3:** For ethanol FTIR location is classified as "downwind" and "crosswind".

Change the classification to "upwind" since both of the listed wind directions (i.e., 202 & 142 degrees) actually are consistent with the monitor (SE location) being upwind of the Intel site.

**Table 3:** For methanol FTIR location is classified as "upwind". Change the classification to "downwind" since both of the listed wind directions (i.e., 223 & 195 degrees) actually are consistent with the monitor (SE location) being downwind of the Intel site.

**Table 3:** Detection activity in 2nd column (# of detections per number of frames) should be 37/56 for carbon tetrafluoride versus the 53/56 listed, and 48/55 for n-butyl alcohol versus the 55/55 listed.

**Appendix 1-1, 1-2, 1-3, 1-4, and 1-5:** All pages of the appendixes are labeled "Intel Pollution Rose" which suggests Intel as the source of the chemicals presented on the

graphs. This is wrong and needs to be changed. The description of how this data was generated is on page 31 of the draft report. It says ".....pollution rose is a graphical depiction of the level of individual air contaminants detected in relation to the direction from which the wind was blowing". It is incorrect to label these tables as "Intel Pollution" since concentrations were monitored in the open air near the edge of Intel property and subjected to contribution from all sources in the area, not just Intel. ATSDR should provide a more accurate labeling of all graphs and remove "Intel" from the titles of all the pages in all the appendices. An example of a correct title would be: "Pollution Rose Acetaldehyde by Wind Direction" for page 1, Appendix 1-1.