Air Quality Advisory Committee
Frequently Asked Questions

Background:

In May 2014, Intel, Neighbors for Clean Air (NCA) and the Northwest Environmental Defense Center (NEDC) signed a Settlement Agreement with Intel resolving issues raised concerning the air emissions from Intel's Aloha Plant and Ronler Acres Plant.

The Settlement Agreement requires Intel to:

1. Prepare, in conjunction with Neighbors for Clean Air and the Northwest Environmental Defense Center, an inventory of Intel's emissions of pollutants into the air that may be a concern to the community;
2. Conduct a risk assessment of the pollutants Intel emits to the air;
3. Enhance Intel's stack emissions monitoring program where appropriate;
4. Fund an independent consultant to help Neighbors for Clean Air and the Northwest Environmental Defense Center review and comment on the emissions inventory, testing and risk assessment, and;
5. Provide resources to fund ambient air quality monitoring.

In addition, pursuant to the Settlement Agreement, Intel, Neighbors for Clean Air and the Northwest Environmental Defense Center have established an Air Quality Advisory Committee to implement the Settlement Agreement and negotiate a Good Neighbor Agreement.

Frequently Asked Questions:

Settlement Agreement

Q. Who signed the Settlement Agreement?

A:

Intel:

Intel designs and manufactures a variety of essential technologies, including microprocessors and chipsets and the additional hardware, software, and related services that together serve as the foundation for many of the world's computing devices. Headquartered in Santa Clara, Calif., Intel has more than 100,000 employees in 63 countries and serves customers in more than 120 countries.

Neighbors for Clean Air: NCA was founded in 2009 by residents of Northwest Portland who were concerned about the presence of air toxics in their local communities. Since its founding around concerns about air pollution in Northwest Portland, NCA has expanded the scope of its mission. NCA is dedicated to helping communities around Oregon understand and address the effects of air pollution, especially hazardous air pollutants, in their neighborhoods.

Northwest Environmental Defense Center: Founded in 1969, NEDC is a non-profit environmental organization dedicated to the preservation and protection of the natural resources of the Pacific Northwest. NEDC's members are lawyers, scientists, students, and citizens interested in protecting the environment of the Pacific Northwest.

Q. What is the purpose of the Settlement Agreement?

A. Intel, NCA and NEDC entered into the settlement agreement so that they could work cooperatively to improve livability and safety in Washington County, with the goals of improving air quality and communication with the public.

Q. What Does the Settlement Agreement Require?

A. Under the Settlement Agreement Intel has committed to:

1. Complete a risk assessment based on California's risk assessment rules. This will require Intel to complete an emissions inventory, including stack testing above and beyond what is being required by DEQ, as well as modeling to determine impact on the community from Intel's facilities.
2. Take further action if the risk assessment shows that Intel presents an unacceptable risk (more than 25 excess cancers in a million people),.
3. Provide up to $150k for third party ambient air monitoring in the community.
4. Pay up to $80k to support a community-contracted expert to offer advice to the AQAC on technical issues.

Under the Settlement Agreement, Intel, NCA and NEDC have also committed to negotiating a Good Neighbor Agreement to serve the following goals:

1. Provide the public with accurate information about emissions, impacts, and reductions;
2. Reduce emissions from the facility;
3. Ensure the air quality permits issued to Intel are consistent with and include elements of the Good Neighbor Agreement; and
4. Encourage open communications and understanding between Intel and its neighbors in Washington County.

To assist in creating a Good Neighbor Agreement, Intel, Neighbors for Clean Air and the Northwest Environmental Defense Center have established an Air Quality Advisory Committee. This committee holds regular meetings, which are open to the public, to discuss the implementation of the Settlement Agreement and the issues that will be addressed in the Good Neighbor Agreement.

Q. What is a Good Neighbor Agreement?

A. A Good Neighbor Agreement (sometimes called a "GNA") is a cooperative agreement in the form of a binding contract that will require that Intel take specific actions.

Q. Why is the Settlement Agreement limited to Ronler Acres and Aloha?

A. The Risk Assessment is limited to the two Intel facilities where chip manufacturing takes place. Intel operates two semiconductor-manufacturing facilities in the Hillsboro, Oregon area: specifically, the Ronler Acres Campus at 2501 NW 229th Ave, Hillsboro, OR 97124, and the Aloha Campus at 3585 SW 198th Ave, Aloha, OR 97007. The manufacturing at these facilities is interrelated, and therefore, the Oregon Department of Environmental Quality (DEQ) considers them one facility for Clean Air Act permitting purposes. Intel does not manufacture chips at its other Oregon facilities (e.g., Hawthorne Farm, Jones Farm), so those facilities do not have the type or amount of emissions found at Intel's Ronler Acres and Aloha campuses.

Q. Where can I find the Settlement Agreement?

A. The Settlement Agreement is posted at: http://www.oraqac.com/

Emissions Information

Q. Is there a source of information available to the public that shows actual emissions of specific pollutants?

A. Yes. For some pollutants, emissions information for Intel facilities is posted at www.exploreintel.com.

Stack Testing

Q. Who is conducting the stack testing at Intel?

A. Environmental Resources Management (ERM) is the company chosen by Intel and approved by The Oregon Department of Environmental Quality (DEQ) to perform the current stack testing. Future testing events may be performed through ERM or another qualified vendor. Neighbors for Clean Air/Northwest Environmental Defense Center hired consultant Dr. Ron Sahu to oversee the stack testing conducted by ERM. Neighbors for Clean Air (John Krallman), Dr. Sahu and DEQ have observed ERM's testing activities at Intel.

Ambient Air Monitoring

Q. Does the Air Quality Advisory Committee have input on how the ambient air monitoring is performed?

A. The Settlement Agreement requires Intel to provide up to $150,000.00 to a qualified third party to perform ambient air monitoring in the community. The Settlement Agreement commits Intel, Neighbors for Clean Air, and the Northwest Environmental Defense Center to work together to select a qualified third party and to develop a monitoring plan. The $150,000 figure was proposed by Neighbors for Clean Air and the Northwest Environmental Defense Center based on the anticipated cost of performing a robust ambient air monitoring study.

Risk Assessment

Q. How is the Risk Assessment performed?

A. There are three steps to performing the Risk Assessment: 1) Create an Emissions Inventory; 2) Perform a California Office of Environmental Health Hazard Assessment (OEHHA) Hotspots Analysis Reporting Program (HARP) Analysis; and 3) Assess the Risk Characterization of the results.

1. **Emissions Inventory**: The Emissions Inventory is created by using a number of inputs from scrubber testing, production data and chemical usage models to calculate emission rates. The emission rates represent the quantity of a particular chemical that Intel could potentially emit if the company operates at the maximum levels anticipated by the air permit application currently under consideration by DEQ. Emission rates are determined for each chemical evaluated as part of the Risk Assessment. The sum of all of the emission rates is referred to as the Emissions Inventory. Click here for more information.

2. **HARP Analysis**: The HARP Analysis is conducted by inputting the Emissions Inventory, plus meteorological data associated with the area (wind, topography, etc.), into the HARP Model. The HARP model is a computer program developed by OEHHA and the California Air Resources Board in consultation with California air agency representatives. The HARP model calculates both short term (acute) and long term (chronic) risk posed to people in the surrounding area. Both cancer and non-cancer risk is determined. The

HARP model assesses the aggregate risk posed by all of the pollutants evaluated instead evaluating each pollutant separately. Click here for more information.

3. **Risk Characterization**: The HARP model characterizes the risk posed by Intel's emissions at residential and sensitive receptors. This includes carcinogenic risks, chronic noncarcinogenic health effects, and acute non-carcinogenic health effects. The results of the HARP Analysis are compared to established acceptable risk levels stated in the Settlement Agreement. The acceptable risk levels in the Settlement Agreement mirror those established in California's risk assessment program. Click here for more information.

If, after performing the HARP Analysis, the aggregate risk from Intel's operations is below acceptable risk levels, then the Risk Assessment process is complete. If there are impacts that exceed acceptable risk levels, the next stage of the Risk Assessment is to evaluate means to decrease risk impacts.

For more information: http://www.arb.ca.gov/ab2588/ab2588.htm

Q. Why is a California risk assessment program (AB 2588) being used?

A. The California risk assessment program was selected by Neighbors for Clean Air and the Northwest Environmental Defense Center, because it represents what many consider to be the most stringent risk assessment program in the United States and because there is no comparable risk assessment program in Oregon.

Q. How does the Risk Assessment differ from the Oregon benchmarks?

A. There are several differences between the Oregon benchmarks and the Risk Assessment being performed by Intel, which, as noted above is a California risk assessment selected by Neighbors for Clean Air and the Northwest Environmental Defense Center . The primary differences between the Oregon benchmarks and a California risk assessment are:

- The number of pollutants covered by the California risk assessment program is substantially larger than the number subject to Oregon benchmarks.
- The Oregon benchmarks only consider long-term impacts while the California risk assessment process considers short-term and long-term impacts.
- The California risk assessment program assesses the aggregate impacts from all the toxics in the emissions inventory, while the Oregon benchmarks do not assess the aggregate impact.
- The California risk assessment program applies on a facility-specific basis while the Oregon benchmarks program applies on a regional basis.
- The California risk assessment program requires that sources reduce risk below the acceptable risk levels while the Oregon benchmark program does not.

For more information about California risk assessments or Oregon benchmarks, see web pages below: http://www.arb.ca.gov/ab2588/ab2588.htm
http://www.deq.state.or.us/aq/toxics/index.htm

Q. Why does the Risk Assessment use different risk screening values than those of the EPA program?

A. EPA does not have a risk assessment program that applies to individual sources of air pollutants. EPA does evaluate residual risk associated with air toxic rules and compares that risk to a standard

of 1-in-one-million lifetime excess cancer risk. The California program uses a threshold of 25-in-one-million lifetime excess cancer risk for determining whether additional controls are required. Reasons for the difference in approach include that the California program evaluates more pollutants that EPA, California often applies more conservative risk assumptions than EPA and California evaluates all emissions from a source at one time while EPA's evaluates different equipment categories present at a plant separately from one another. For these reasons, California decided that the 25-in-one-million lifetime excess cancer risk was a more appropriate threshold for its unique program.

For more information: http://www.arb.ca.gov/ab2588/ab2588.htm
http://www.epa.gov/ttn/atw/index.html

Q. Will the modeling examine all toxins emitted including proprietary substances?

A. All of the chemicals emitted by Intel and included in the California risk assessment program will be evaluated regardless of whether they are part of a proprietary substance.

Q. Will the Risk Assessment include all possible synergistic effects of the air toxins emitted by Intel?

A. The California risk assessment program does not address synergistic effects, but does analyze the aggregate impacts of emissions across multiple exposure pathways.

Q. How does the modeling being reviewed by DEQ differ from the modeling being reviewed by the Air Quality Advisory Committee?

A. DEQ is evaluating modeling performed to evaluate Intel's nitrogen oxides, carbon monoxide and particulate emissions in relation to the Oregon and federal ambient air quality standards. DEQ must conclude based on the modeling that Intel will not cause or contribute to a violation of the nitrogen dioxide, carbon monoxide or particulate ambient air quality standards. If DEQ determines that Intel's emissions will cause or contribute to a violation of these ambient air quality standards, it will not issue Intel an air permit. The Air Quality Advisory Committee is reviewing modeling of air toxic emissions. There are hundreds of air toxics evaluated as part of the Risk Assessment being reviewed by the Air Quality Advisory Committee. Carbon monoxide, nitrogen oxides and key types of particulate (e.g., diesel particulate matter) are evaluated in the Risk Assessment. However, DEQ compares Intel's ambient impacts to established maximum concentrations specific to each pollutant, while the Risk Assessment determines the aggregate risk posed by all of the pollutants evaluated and compares that risk value to an aggregate risk threshold. Therefore, there is a significant overlap in the pollutants being evaluated in the two different modeling exercises, but the way that the pollutants are evaluated differs.

Fluorides

Q. How are Fluoride emissions being assessed as part of the AQAC and/or DEQ processes?

A. Intel's Fluoride emissions are being assessed in two separate processes. Intel has requested authority from DEQ to emit up to an aggregate of 6.4 tons per year of Fluorides from its Ronler Acres and Aloha facilities. As part of the Mutual Agreement and Order entered into between Intel and DEQ, Intel has tested its Fluoride emissions and modeled those emissions to demonstrate that ambient levels will be below health based criteria from other states (Oregon has no health based criteria specific to Fluorides). Separate from the work Intel is doing with DEQ, Fluoride emissions are also being evaluated as part of the cumulative risk assessment being performed in conjunction with Neighbors for Clean Air and the Northwest Environmental Defense Center. If Fluorides cause or

contribute to unacceptable risk levels, then Intel will work with the Air Quality Advisory Committee to identify means to further reduce Fluoride emissions.

Q. Why are Fluorides regulated?

A. Fluoride regulation in the Pacific Northwest was driven based on concerns over emissions in the 1950's from aluminum smelters that were up to 100 times greater than what Intel is requesting in its air permit application. These extraordinarily high levels of soluble Fluoride emissions were implicated as causing harm to the bones and teeth of dairy cattle that ingested grass on which Fluorides were deposited. A famous 1958 court case regarding Fluoride deposition arose in relation to the Reynolds Aluminum plant in Troutdale, OR. The Reynolds plant emitted, on average, 2,845 pounds per day (519 tons per year) of fluorine]. An adjoining ranch owner sued Reynolds alleging that his family and his cattle were harmed by Fluorides coming from the plant.

The level of Reynolds' Fluoride emissions was significantly larger than Intel's requested emission limit, but it is still important to ensure that Intel's emissions will not pose a threat to the community. In order to demonstrate that Intel's emissions are safe, Intel will perform two different Fluorides risk assessments. One of these risk assessments is being performed for DEQ and will evaluate emissions of Fluorides. The other risk assessment is being performed in conjunction with Neighbors for Clean Air and the Northwest Environmental Defense Center and will assess the cumulative risk posed by Fluorides in addition to a variety of other air toxics.