

PRESS COVERAGE OF EPA 114 REPORT TO DATE

November 8, 2010

Email about the findings of the EPA report, from Jim Norton, Division Director for Environmental Protection, NMED, to the *Albuquerque Journal*:

The areas of concern relate to the adequacy of the terms and conditions of the Intel permit, which was issued 10 years ago and approved by the EPA before this administration. We will aggressively address issues of concern identified by EPA and Intel. That could result in revisions to the permit, including new permit requirements.

The findings in this report do not indicate a health danger; however, we do take the findings seriously and are committed to resolving the issues.

There is no deadline for resolving the findings but we would like to be expedient in addressing them. Due to the complexity of the issues, expedient in this case means we will probably take several months to finish the analysis.

The report did find one violation; Intel is required to fix the process that led to the violation.

Agency To Address Emissions

By Rosalie Rayburn
Journal Staff Writer

A state Environment Department official says the department will "aggressively address" concerns over emissions from Intel's Rio Rancho plant cited in a recently released federal report.

The report by an investigative arm of the U.S. Environmental Protection Agency was based on an inspection at the Rio Rancho plant between Dec. 7 and Dec. 11, 2009.

It found 15 areas of concern related to the terms and conditions of the permit governing chemical emissions at the site.

The report also cited a violation related to incorrect estimates of the emission of ethyl lactate, methanol and xylene, which are used in the plant's manufacturing process.

State Environment Department Environmental Protection Division Director Jim Norton said in an e-mailed statement that the department is taking the findings seriously and is committed to resolving the issues, which "could result in revisions to the permit, including new permit requirements." He said it could take months to address all the issues.

The department's air quality bureau chief Mary Uhl said the EPA regulates limits of the three chemicals involved in the violation because it has deemed them harmful to public health. Intel's permit requires the company to test emissions levels quarterly, she said.

Intel environmental engineer Sarah Chavez said the amount of emissions related to the violation was "significantly small" and well below the level currently permitted. She said Intel fixed the problem shortly after the EPA inspection.

Norton's statement said the EPA findings do not indicate a health danger.

But Marcy Brandenburg, a spokeswoman for Corrales Residents for Clean Air and Water, said the report supports the group's claims that the emissions have caused illnesses among Corrales residents, including pulmonary fibrosis, or scarring of the lungs.

"This is a total vindication. It confirms everything we've been saying for 16 years," Brandenburg said.

Norton said the state Environment Department issued the EPA-approved permit to Intel in 2000. The EPA report said the permit has been revised multiple times since then, the most recently in April 2009.

The report pointed out that limits set in 2009 for some chemicals are significantly higher than Intel could reach even running at maximum capacity.

Chavez said Intel is committed to working with the Environment Department to address the areas of concern. She said many of the changes involve record-keeping and the way calculations are done.

Intel Violation Probed

Chemical Release Reported by EPA

By ROSALIE RAYBURN
Journal Staff Writer

RIO RANCHO — The state Environment Department said it is investigating emissions deficiencies at the Intel Corp. plant here that were reported by the U.S. Environmental Protection Agency in an inspection from about a year ago.

State Environment Department's Environmental Protection Division Director Jim Norton said in an e-mail the department is taking the findings seriously and is committed to resolving the issues, which "could result in revisions to the permit." He said it could take months to address all the issues.

His statement said the EPA findings do not indicate a health danger.

Intel environmental engineer Sarah Chavez said the amount of emissions related to the violation was "significantly small" and well below the level currently permitted. She said Intel fixed the problem shortly after the EPA inspection. Chavez said Intel is committed to working with the Environment Department to address the areas of concern. She said many of the changes involve record-keeping and the way calculations are done.

The report by an investigative arm of the U.S. Environmental Protection Agency was based on an inspection at the Rio Rancho plant between Dec. 7 and Dec. 11, 2009. It found 15 areas of concern related to the terms and conditions of the permit governing chemical emissions at the site. The report also cited a violation related to incorrect estimates of the emission of ethyl lactate, methanol and xylene, which are used in the plant's manufacturing process.

The state Environment Department's air quality bureau chief Mary Uhl said the EPA regulates limits of the three chemicals involved in the violation because it has deemed them harmful to public health. Intel's permit requires the company to test emissions levels quarterly, she said.

Corrales Residents for Clean Air and Water says the report supports claims that the emissions have caused illnesses among nearby residents.

Rio Rancho Observer:

EPA finds concern in Intel emissions

Community Environmental Working Group meeting tonight in Corrales

Posted: Wednesday, October 20, 2010 12:00 am

By **CHRISTOPHER ORTIZ**

Observer staff writer | [0 comments](#)

There are concerns about the emissions at the Intel campus in Rio Rancho, according to a report by the federal government. The EPA conducted a focused Clean Air Act investigation at the Intel site Dec. 7 through Dec. 11 of 2009. The scope of the investigation was to evaluate Intel's emission rates.

Throughout the report, Intel is reported to have failed or underreported its emissions, such as EPA's claim that the company did not account for downtimes in its Hazardous Air Pollutant calculations. The report was released in June and made public recently. "Intel failed to account for the downtimes in its HAP emissions calculations in 2008 and 2009," the report reads. Later in the report, the EPA calls into question Intel's methodology used to calculate removal in its scrubber removal process.

The EPA said the areas of concern it noted in the report could result in environmental harm.

According to the report, Intel considers its Rio Rancho site as a minor source of air emissions and uses a minor source permit, which was originally issued in 2000. Since that time, there have been 22 revisions made. Intel does not consider the site to be subject to the National Emission Standards for Hazardous Air Pollutants for Semiconductor Manufacturing.

In noncompliance, the EPA writes, "Intel did not properly calculate the emissions for ethyl lactate. The emissions factors Intel developed underestimated the emissions of ethyl lactate by 36 percent. Intel also failed to account for the downtimes of the regenerative thermal oxidizers in its HAP emission calculations for methanol and xylene, according to the report."

This underestimates the emissions for both of these chemicals. Intel also overestimated the emissions of methanol by 8 percent, according to the report.

The federal agency noted eight areas of concern in the report.

- The EPA has questions about Intel's scrubber efficiency.
- Cannot assess the accuracy of Intel's stated scrubber removal efficiency of 70 percent for hydrogen fluoride without more extensive knowledge.
- Intel has not performed stack testing on the scrubbers since sodium hydroxide has been added to adjust the pH level of the scrubbing liquor medium. Without testing, it is unclear if the same control efficiencies are attainable or appropriate for each of the scrubbers.
- Intel's permits do not contain parametric monitoring requirements or operational ranges for any of the scrubbers. Without required continuous monitoring and specific operational requirements, the National Enforcement Investigations Center cannot verify that the scrubber is continuously operating properly and can meet any specific efficiency.
- Intel's permit conditions do not tie the minimum operational temperature of the Regenerative Thermal Oxidizers that controls volatile HAPs to a specific efficiency or specific emission rate.
- Intel's permits do not contain an accurate listing of units that are used at the facility. Intel's permits include scrubbers, a bead activated carbon system, and boilers that are not currently used at the facility. Without an accurate permit, it is unclear which units are specifically regulated and what conditions apply to each unit.
- The limits in the permit are significantly higher than emissions that have been reported by Intel or could be achieved by Intel running at maximum capacity. This indicated that Intel's permit does not reflect the true operational conditions at the site.
- Intel's permit does not contain short-term emission limits for Volatile Organic Compounds, VOCs, and HAPs. Without short-term limits, Intel can have spikes in its emission profile that can lead to acute exposure of these chemicals. Further, since the permit does not require monitoring and recordkeeping of emissions during upsets, NEIC could not accurately confirm Intel's minor source status.

Elizabeth Shipley, spokeswoman for Intel, said the company is reviewing the report.

"We are committed to working with the agencies to come up with cooperative solutions to address the areas of concern," Shipley said.

There will be a meeting of Intel's Community Environmental Working Group (CEWG) tonight at 7 in the Village of Corrales' Senior Center to discuss the report. Representatives from Intel will be at the meeting.

"The federal EPA is finally holding Intel and the New Mexico Environment Department (NMED) accountable for decades of releasing poisons into the air nearby residents must breathe," said Barbara Rockwell, of Corrales Residents for Clean Air and Water (CRAAW), in a statement.

Recently, Intel announced it was proposing changes to its air quality permit.

The company is submitting a permit application for the installation of five additional thermal oxidizers. Intel says the additional units will provide control redundancy for the VOC exhaust system from the plant's manufacturing operations.

The thermal oxidizers treat the exhaust from the factory, turning it into relatively harmless gases.

It is also proposing a raise in the height of its factory smokestacks from 30 meters to 40 meters. Earlier in August, Intel erected a nearly 40 meter-high scaffolding with a flag on top onsite to see if that would draw attention from neighbors.

EPA Inspection REport Slams Intel Air Pollution Permit



Written by Jeff Radford

Corrales Comment

Friday, 22 October 2010

First in a series

Intel's operations on the mesa above Corrales may violate the federal Clean Air Act in a fundamental way. The State-issued air pollution permit under which Intel is regulated is apparently unenforceable and therefore illegal.

That conclusion is drawn, but not stated directly, from the report finally released by the Dallas regional office of the U.S. Environmental Protection Agency (EPA) October 14 on its surprise inspection at the Intel facility here December 7-11, 2009.

In an October 13 cover letter to Intel Environmental Manger Frank Gallegos, EPA-Dallas Air Enforcement Chief Steve Thompson states that the inspection and subsequent investigation found "There are 15 Areas of Concern and one Area of Non-compliance noted in the combined reports" by the EPA Region 6 team and inspectors from the Boulder-based National Enforcement Investigations Center (NEIC).

So far no indication has been given that Intel will be fined or have its air quality permit revoked. The letter states simply that "EPA is committed to working with the N.M. Environment Department and Intel toward a cooperative solution to resolve these issues."

In response to a series of questions about the report submitted to Intel, corporate spokesperson Elizabeth Shipley replied: "Intel received a copy of the report and has met with EPA and the New Mexico Environment Department to discuss their concerns. Intel is committed to working with the EPA and NMED over the next six months to find cooperative solutions to address these areas of concern including additional testing of our abatement systems."

Shipley encouraged members of the public to attend monthly meetings of Intel's Community Environmental Working Group at the Corrales Senior Center to follow improvements.

The voluminous EPA report vindicates many of the criticisms that Corrales residents have stressed for the past 16 years.

It notes, for example, that the emissions factors upon which Intel calculates its releases of toxic chemicals may be wrong or unreliable, leading to chronic under-reporting of some dangerous chemicals such as hydrogen fluoride.

The NEIC report pointed out it reviewed two emission factor calculations for Intel Hazardous Air Pollutants during the December inspection and found both to be wrong.

For one of the toxic chemicals, ethyl lactate, the NEIC investigators noted that "Intel has under-reported emissions released by the [inspected] process by 36 percent since second quarter 2008."

For that Intel is cited with non-compliance.

Regarding the other chemical emissions factor that was checked during the inspection, methanol, it turns out Intel has reported releasing more than may have actually been emitted.

"Using the correct emission factor," the investigators found, "Intel has over-reported emissions

of methanol by 8 percent since second quarter 2008.”

The combined report details numerous instances in which Intel’s air pollution reporting was inadequate or possibly misleading. It states, for example, that NEIC reviewed Intel’s accounting for emissions that occur during downtimes for the incinerators that burn off volatile organic compounds (VOCs) and organic Hazardous Air Pollutants (HAPs). “Intel included the downtimes in its volatile organic compound calculations, but did not account for downtimes in its Hazardous Air Pollutant calculations.... Intel failed to account for the downtimes in its Hazardous Air Pollutant emissions calculations in 2008 and 2009,” the report notes.

The citizens group Corrales Residents for Clean Air and Water (CRCAW) has always distrusted Intel’s use of emissions factors to report its toxic emissions, insisting that releases to the air be continuously monitored and measured rather than calculated using what they regard as phony, unverifiable multipliers.

Steve Martinez, a CRCAW member and professional data analyst, made that point when he reviewed the EPA report. “During their brief investigation last December, the EPA readily found two emission factors that were in error.

“If two emission factors were easily found to be erroneous in such a short period of time, one has to wonder how many of the dozens of other emission factors are also in error?”

“And what is the true impact of all of the potentially erroneous emission factors on the total pollution volume emitted by Intel?”

Over and over, the EPA and NEIC teams slammed Intel’s data which “may not be valid for use in calculating Hazardous Air Pollutant emissions.”

One of those “areas of concern” cited by EPA involved the possible under-estimation of a particularly dangerous chemical, the acid gas hydrogen fluoride (HF). “Intel uses an average [acid gas] scrubber removal efficiency that was calculated from stack test results that do not relate to pH of the scrubber water liquid or water addition to the scrubber at the time of testing. Intel may be under-estimating HF emissions when the pH of the scrubber liquid is low.”

Scrubbers are chambers of high intensity water spray through which waste acidic gases pass before being released to the air.

Another “area of concern” cited was that “Intel has changed its processes and chemical usage many times since the scrubber testing in 1995 and 1996. The facility continues to use scrubber efficiency testing from outdated processes for calculating current Hazardous Air Pollutant emissions, which could result in inaccuracies.”

Elsewhere EPA alleges that “Intel continues to use the results of the unapproved and potentially inaccurate testing to calculate HAP emissions from scrubbers at the facility.”

The two agencies give considerable attention to the inadequacy of the air pollution permit issued by the N.M. Air Quality Bureau. Reinforcing the criticism voiced for years by CRCAW members and homeowners near Intel, the NEIC team stated, “The N.M. Environment Department permit does not contain short-term (hourly, daily, monthly) emissions limits for volatile organic compounds and Hazardous Air Pollutants. Without short-term limits, Intel can have spikes in its emission profile that can lead to acute exposures of these chemicals.”

That situation is listed as one of the 15 “areas of concern” spelled out in the report.

The investigators documented the inadequacy of the permit noting that “NMED has set emissions limits in the permit that cannot be exceeded by Intel under any circumstances.” In essence, what critics have called a “bust proof” permit.

CRCAW member Fred Marsh, a retired Los Alamos National Laboratories chemist, said that assessment backs up what the group has claimed for years. “This shocking finding alone

confirms what we have long claimed.”

The report includes in full the 1989 EPA “Guidance on Limiting Potential to Emit in New Source Permitting.” Referring to that guidance, the inspectors point out that the State air pollution permit under which Intel operates is not federally enforceable. It states, “The permit must contain federally and practically enforceable limits.”

The NEIC concludes that “The ‘potential to emit’ of HAPs is not practically limited by Intel’s permit.”

The second article in this series will examine in more detail the agencies’ findings regarding the State air pollution permit and what changes may be triggered by the EPA and NEIC investigations.

“This report by the EPA goes a long way toward exonerating affected residents and concerned citizens that have tried in vain for years to get Intel to care as much about the air we breathe as the profits they make from one of the largest chip manufacturing plants in the world,” said CRCAW’s Martinez who several years ago relocated his family from their home near the Intel plant.

In an October 18 statement from CRCAW, the group noted that “The report found multiple deficiencies in Intel’s operations relating to public health.

“The most shocking finding confirms what CRCAW has long claimed, that Intel’s minor source air permit is a sham and needs to be replaced. ‘Sham permit’ is an official EPA term for a permit that is essentially unenforceable.”

CRCAW member Marcy Brandenburg, a Rio Rancho businesswoman, reacted to the EPA report by pointing out that “For decades residents of Corrales have complained of air pollution-related illnesses, all upon the deaf ears of Governor Richardson, NMED, the Department of Health and, yes, even EPA Region 6. Dozens, if not hundreds of appeals were made over the years to elected officials, state agencies, the Environmental Improvement Board, task forces, EPA, county and city commissioners, mayors and the local media.

“The Corrales residents and their partner in these efforts, Southwest Organizing Project, never received any satisfaction from any of these agencies, and during most of their efforts, were considered to be ‘crazy’ or were accused of ‘trying to get rid of Intel.’”

Brandenburg called on elected officials and citizens to demand that regulators “do what is right: immediately begin the process of requiring Intel to operate under a major source air pollution permit.”

The report offers no evaluation of the health issue of most public concern at this time: the possible link between elevated occurrences of the relatively rare lung disease pulmonary fibrosis here and Intel’s release of silica dust night and day.

Two more Corrales residents have reported they are diagnosed with pulmonary fibrosis, bringing the total of known cases here to ten.

The N.M. Health Department’s epidemiology section is now investigating.

The latest cases, who also reside relatively near Intel’s microchip factories, reported their condition to the woman coordinating the newly formed Corrales pulmonary fibrosis support group, Mary Daitz.

Daitz can be reached by calling 897-0515.

Last December, when the known local cases of pulmonary fibrosis stood at five, Marsh calculated that, “For a population of only 10,000, the expected PF rates would be 0.74 for women and 1.07 for men,” based on a technical article published in Advance magazine.

“Thus the actual rate experienced by Corrales residents is approximately five times higher that

the PF rates of people who live elsewhere,” Marsh concluded.

That same ratio suggests Corrales residents are coming down with pulmonary fibrosis ten times more than might be expected.

In pulmonary fibrosis, the tiny air sacs in the lung become progressively scarred for some reason, so that eventually the fibrous scar tissue no longer absorbs oxygen. In most cases, the cause of pulmonary fibrosis is unknown; those cases are referred to as idiopathic pulmonary fibrosis.

When silica is known to be the cause, the disease is called silicosis.

Corrales Comment has submitted a map of Corrales showing the location of residences where the relatively rare lung disease are reported to a member of the American Lung Association’s Albuquerque chapter.

The American Lung Association’s Hugh Church serves on the Community Environmental Working Group (CEWG) focusing on improvements to air quality concerns at the Intel plants.

Inhalation of silica dust, especially sharp-edged crystalline silica, is a known cause of pulmonary fibrosis. Since Intel has released tons of silica dust into the air Corrales breathe day and night since the mid-1990s, those emissions from Intel’s stacks have been suspect.

While it admits routinely dumping silica dust into the air, Intel has asserted those emissions are only smooth-edged amorphous silica, which is far less dangerous.

Ironically, the silica dust is a byproduct of air pollution abatement equipment installed at CRCAW’s request in 1994.

Much of what came out of Intel’s stacks back then were industrial solvents known as volatile organic compounds. Typically those waste chemicals are abated by incineration; when the solvent fumes are sucked away from the microchip making stations, they pass through burners before going out the stacks.

But at least one of those solvents, hexamethyldisilazane (HMDS), decomposes to silica dust when burned.

In recent years, Intel has reduced its use of HMDS, but in past years, it has reported emitting more than 11 tons a year of silica particulate into the air.

Since shortly after it was convened by Intel in 2004, the CEWG has explored ways to test the silica released to prove conclusively whether it is crystalline or amorphous. Earlier this year, the group created a Silica Testing Task Force to set up sample-taking and lab analysis that would be trusted by concerned citizens.

The “citizen protocol” developed is intended to be free of Intel influence: samples were not to be taken by Intel contractors nor analyzed by laboratories that might have an incentive to keep lucrative contracts.

Those precautions are to be implemented next year, but Intel intends to test silica emissions in December using some, but not all of those guidelines.

Intel is replacing the incinerators (called thermal oxidizers) it installed in the 1990s with similar units from a different manufacturer expected to be more reliable. Company officials have said they want to test silica coming out of the old Durr incinerators to demonstrate they have not been releasing the crystalline form. The Durrs are scheduled to be pulled out by the end of this year.

At the September 29 Silica Testing Task Force meeting, Intel’s Thom Little said the window for testing the old equipment is closing fast. He said the sampling would have to be done during the week starting December 6.

The task force, chaired by Jim Tritten of Corrales, discussed prospects that the silica samples

would be analyzed by a leading authority on such testing, Rosa Key-Schwartz of the National Institute for Occupational Safety and Health (NIOSH).

(See Corrales Comment Vol.XXIX, No. 15, September 25, 2010 “Expert on Crystalline Silica Looks at Intel Emissions Testing”)

But samples taken as the silica dust leaves the incinerators present a problem for Key-Schwartz and her NIOSH lab team. The silica-grabbing filters on which her lab usually works can't withstand the Intel incinerators' high heat.

Little explained that NIOSH usually works with sampling filters attached to workers' clothing. CRCAW's Fred Marsh, the retired Los Alamos chemist, is also skeptical about getting accurate sampling and analysis. “First of all, ERM [the Intel contractor that will take the silica samples] has shown itself to be highly biased in favor of Intel.

“Second, the glass in the fiberglass filters is amorphous silica.

“Third, Teflon [the alternative filter considered] also decomposes at elevated temperatures to release fluorine that can react with silica to form volatile silicon tetrafluoride, which would then evaporate, rather than remain as particulates.

“Fourth, as I have already said many, many times, even unbiased information about the silica Intel is releasing now tells us nothing about what they were releasing earlier when eight nearby residents were contracting pulmonary fibrosis.

“At that time Intel was using different facilities to produce different products with different processes that used (and released) different chemicals. The only purpose of new silica tests is to give Intel an opportunity to stack the deck to produce low readings they can then use to exonerate themselves from their earlier releases.”

The EPA report hits at a time when Intel corporate officers are considering expanding the manufacturing plant here. In recent weeks, Intel hired the public opinion firm Research and Polling to conduct a telephone survey gathering attitudes toward Intel and the possibility it might expand here.

Intel's Shipley explained that such a testing of public attitudes does not imply Intel has plans to expand operations here. “As we have always communicated, our site, like every Intel manufacturing site in the world, continuously positions itself for future investments.

“The decision for future investments involving our site is not made at the local level but rather among our corporate leadership. Intel has not announced any future plans for expansion of the New Mexico site.”