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June 30, 1995

Regulatory Reinvention Pilot Projects
FRL-5197-9
Water Docket
Mail Code 4101
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

SUBJECT: ***FACILITY-BASED PROJECT XL***
INTEL FAB 12
INTEL CORPORATION
CHANDLER, ARIZONA

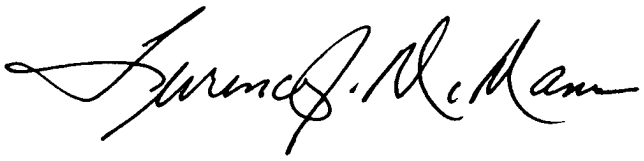
Dear Sir or Madam:

Intel Corporation (Intel) respectfully submits to the U.S. Environmental Protection Agency a proposal to implement a facility-based Project XL for the Intel Fab 12 (semiconductor wafer fabrication facility), located in Chandler, Arizona. This facility is classified SIC 3674.

Intel is pleased to submit this proposal to EPA in continuance of our successful partnership for the development of innovative alternative compliance pathways that are cleaner, cheaper and smarter. Following on the groundbreaking success of the P4 permit developed for our Aloha campus in Oregon, Intel strongly believes that development of an XL project at our newest Fab in Arizona is the logical next step. While the P4 project provides both operational flexibility and additional environmental benefits, it addresses only one media - air. Project XL provides an opportunity to demonstrate innovative processes that foster efficiency, economic and environmental benefits on a much larger scale.

We hope that you find the enclosed proposal acceptable for inclusion as one of the first six projects selected under Project XL. If you have any questions or would like to discuss this proposal, please contact me at (602) 554-4812 or Intel's Washington representative, Tim Mohin at (202) 973-0285.

Sincerely,



Terrence J. McManus, PE, DEE
Manager, Corporate Environmental Affairs

CC: Felicia Marcus, EPA Region 9
Vivian Daub, EPA CSI
Ed Fox, AZ DEQ
Tim Mohin, Intel

INTEL FAB-12 - FACILITY BASED PROJECT XL
INITIAL PROPOSAL

INTEL CORPORATION
CHANDLER, ARIZONA

THE FACILITY.

Intel is completing the construction of a new, state-of-the-art, semiconductor wafer fabrication facility known as "FAB-12." The estimated capital cost for this project is $1.3 billion. It is the largest private construction project in the State of Arizona and one of the five largest in the United States. The facility is designed to manufacture Pentium® microprocessors and other state-of-the-art computer chips. The manufacturing process will use Intel's 0.35 micron manufacturing process on 8" silicon wafers. This manufacturing technology is currently the most advanced in the world.

The facility is a Class 1 clean room, with a capacity of 100,000 square feet of manufacturing. Overall, the facility will cover approximately 1,500,000 square feet of building and initially employ over 2,000 high skill, high wage workers. This multiple building complex is located on 720 acres in the southwestern section of the City of Chandler, Arizona (part of the Phoenix metropolitan area). Intel will begin installation of the manufacturing equipment in early 1996, with first production in the second half of 1996. The facility will quickly ramp up manufacturing capacity, with increases in each subsequent quarter.

PROJECT XL OVERVIEW.

It is proposed that Project XL for Intel FAB-12 focus on the development and implementation of a multi-media operating contract that defines the environmental performance for the facility. A performance-based contract would be established between Intel FAB-12 and the state of Arizona Department of Environmental Quality (AZ DEQ). With the exception of air quality permitting, which comes under Maricopa County jurisdiction, all of the other major environmental programs are operated through the AZ DEQ It is anticipated that within this multi-media operating contract, the AZ DEQ would act as the primary regulatory agency and would thus act as the lead agency for air quality.

No disproportionate environmental burdens to any of the communities surrounding FAB-12 will occur as a result of participation in Project XL. In addition, because the project that Intel will propose will exceed or, at a minimum, fully comply with applicable emissions standards, the project is guaranteed not to shift risk between media or affected populations. Moreover, the project is anticipated to produce cost savings and environmental benefits exceeding those possible under the current regulatory regime.

The initial contract envisioned under this proposal would be developed solely for the FAB-12 campus. However, once the feasibility and the operating system for FAB-12 have been established, Intel would propose to expand the contract to cover the other appropriate Intel operations in the Chandler area.

The contract would establish the operating framework which would include the following key components:

(1) Environmental policy and management commitment to achieve or exceed compliance with applicable emission standards.
(2) Objective and measurable environmental goals and performance measurements.
(3) Public accountability procedures and methods.
(4) Cross-media pollution prevention/design for the environment program.
(5) Environmental audits.
(6) Evaluative reporting regarding the results of the project.

The overall objective of this proposal is to establish a facility-specific contract that provides for both environmental protection and operational flexibility. The nature of the semiconductor manufacturing process is such that frequent and numerous process changes are necessary to provide continuous improvement/performance of the manufacturing process. To achieve these improvements, dozens of changes to manufacturing equipment and the process chemistry are implemented every year. Most of these changes have no impact on the environment.

Public accountability is the keystone of this proposal. To Intel, public accountability includes both public reporting regarding environmental performance and engagement of the community into Intel's environmental programs. Intel has achieved these objectives through community advisory panels at our major facilities. In Arizona, Intel has an existing community advisory panel which addresses all of our Chandler, Arizona operations, including FAB-12. This existing mechanism is a major advantage for Project XL because it provides a higher degree of public engagement and accountability.

RELATIONSHIP TO OTHER EPA INITIATIVES.

Intel has recently completed the Pollution Prevention in Permitting Pilot (P4) Project, which developed a model air permit for the Intel Aloha, Oregon campus under Title V of the Clean Air Act. This innovative model permit provided for both pollution prevention and operating flexibility. The participants in this project included Oregon Department of Environmental Quality, EPA Region 10, EPA Headquarters (OAQPS), Pacific Northwest Pollution Prevention Research Center, and Intel.

The P4 experience demonstrates Intel's ability to invest the time, resources and experienced personnel needed to work successfully with stakeholders to develop innovative alternatives that provide additional environmental benefits, optimize operational flexibility, and save resources. Notably, this permit is now being used as a national model for development of Title V permits and the P4 method is being proposed for inclusion in EPA air permitting regulations.

Intel is also participant in EPA's Permit Improvement Team (PIT) process. Participation includes both formal meetings to review EPA's approach and the development and submittal of written comments to Lance Miller, Executive Director of EPA's PIT program.

Intel is representing the semiconductor industry on the Electronics and Computer Subcommittee of the Common Sense Initiative. In addition, Intel is the industry representative from the Electronics and Computer Subcommittee to the CSI Council.

Intel believes that the above activities help to ensure that there is broader integration of Project XL with other EPA initiatives and, in particular, with CSI. This is a unique feature which Intel brings to Project XL.

PROJECT CRITERIA.

The following presents a brief summary of how the FAB-12 Project XL addresses the eight project criteria set forth in EPA's Notice of Regulatory Reinvention.

1. ENVIRONMENTAL RESULTS.

Intel proposes an operating contract to establish long-term and short-term environmental performance goals for the facility that achieve greater environmental benefits than compliance with current regulatory requirements. As part of this contract, Intel would measure environmental performance against our goals on a regular basis and report progress publicly. For example, one of the environmental goals for the City of Chandler is reduced per-capita water consumption. To help address this goal, the FAB-12 facility has installed and will operate a novel concept of water recycle. The standard model for semiconductor manufacturing is to purchase city water, use the water, and then discharge the effluent after pH adjustment to a POTW. FAB-12 will instead purchase effluent from a secondary wastewater treatment plant for cooling towers and landscaping. In this manner, a wastewater effluent source will be used for the major consumptive water uses for FAB-12. Also, a major portion of the process water effluent from FAB-12 will be directed to a special reverse osmosis treatment facility to provide a much higher level of

treatment and allow reinjection of the treated effluent into the groundwater supply.

The example above focuses on a local concern because one of the primary benefits of the Project XL approach is the ability to tailor environmental performance to the issues relevant to the local community. In addition to this example, it is anticipated that several improvement opportunities involving Federally mandated programs, such as the Clean Air Act, will also be integrated into the final agreement.

2. COST SAVINGS AND PAPERWORK REDUCTION.

One of the primary objectives of the contract approach is to reduce the administrative component of the environmental management system. Using the lessons learned in the P4 project, Intel would propose significant reductions in paperwork and administrative burdens including consolidation and automation of reporting and recordkeeping requirements. The P4 permit cuts out a huge amount of paperwork and administrative burden by granting advance approval of minor changes such that permit revisions are no longer required for each minor process modification. Under project XL, Intel would propose to take this concept a step further by addressing similar burden issues across all environmental media, as well as consolidating and streamlining reporting, recordkeeping and monitoring requirements and working with AZ DEQ to develop an automated reporting system that is accessible to the public.

Cost savings from this project are anticipated to be significant. The primary source of cost savings will be through reduced administrative burden and increased operational flexibility. The primary impact of these savings will be realized through shifting staff resources from administrative tasks such as minor permit revisions and duplicative reporting to more value added tasks such as developing and implementing pollution prevention projects. Intel will track and report the cost impacts as well as shifts in staff activities achieved under Project XL.

Although difficult to quantify, a potentially more significant area of cost savings will be in costs avoided by mitigating the negative impacts of the current regulatory structure. The current system can lead to delays in increasing production or implementing process changes that can severely impact the profitability of the company. The larger payoff of a Project XL's more flexible regulatory approach is in avoidance of such delays. Intel will work with EPA in an effort to quantify this area of cost savings.

3. STAKEHOLDER SUPPORT.

As previously described, Intel currently has a community advisory panel (CAP) operating for our Chandler facilities. The panel currently consists of area homeowners, area medical personnel, city fire department, local social service, local education, community activists and other related stakeholders. This group has participated in site master plan development for both Intel campuses, facility permitting (all media), surface transportation, and other activities related to the growth of Intel's Chandler operations. As part of Project XL, Intel would use the current CAP structure and coordinate with the State, County and City regulatory authorities to participate in development and review of proposals for alternative compliance plans. The ability to bring an existing, active CAP to the XL process will reduce startup time for this project and greatly increase the likelihood of success.

State Support: Intel has contacted the AZDEQ regarding this Project XL proposal. The AZ DEQ Director, Mr. Edward Fox, has reviewed this proposal and supports its approval. (Support of this proposal from AZDEQ is conveyed in a separate letter from Mr. Fox to EPA). Again, a central theme of this proposal is to work with the AZ DEQ as the lead regulatory agency with responsibility for establishing the environmental contract.

Federal Support: Ms. Felicia Marcus, Administrator of EPA's Region 9 office, has also been contacted in regard to this proposal and supports its approval.

4. INNOVATION AND MULTI-MEDIA POLLUTION PREVENTION.

The proposed operating contract will be a multi-media approach that will focus on measurable environmental goals and will substitute for individual media permits. For this initial proposal, it is premature to commit to specific cross media reduction targets or pollution prevention strategies, however, our experience with the P4 project provides a direct and objective indication of how Intel would approach an XL project.

Because the contract will be based on environmental goals, it will differ from the established applicable requirements. Notwithstanding these differences, Intel will demonstrate compliance with all substantive emission limits as well as additional environmental benefits which accrue from the XL approach.

Unique to Intel, is the proven ability to conduct a facility specific project - the P4 project - that provides both increased operational flexibility and

augmented environmental protection through pollution prevention. Under Project XL, Intel would propose additional operational flexibility measures such as reduced or eliminated permit revision procedures for process changes while simultaneously proposing pollution prevention approaches that will improve overall environmental performance. The key advantage of the Project XL approach is that it allows for these proven cost effective, environment beneficial techniques to be expanded across all environmental media.

Intel has a long standing commitment to design for the environment (DFE) and pollution prevention. Recently the White House National Environmental Technology Strategy recognized Intel for successes in pollution prevention. The specific example highlighted in the report was our new Ronler Acres facility in Oregon. This new facility will double the production capacity of our existing facility in Aloha, Oregon but will emit 83% less air pollution. This decrease was achieved through pollution prevention and DFE.

Our commitment to DFE and pollution prevention will drive the development of our XL contract. In fact, one of the primary reasons for submitting this proposal is that we anticipate the flexibility afforded by Project XL will greatly enhance our ability to develop and implement pollution prevention approaches.

5. TRANSFERABILITY.

The concept of the operating contract, as well as the non-proprietary[1] specific solutions developed within the contract, should be transferable to other facilities. Intel, by virtue of being the world's largest semiconductor manufacturer is in a unique position to transfer the results of the project. Our leading role in this fast paced, technologically dynamic industry greatly enhances the likelihood that other semiconductor companies will adopt similar approaches.

Intel has previously demonstrated its ability to transfer environmentally efficient technology. After developing a safer substitute for TCA in the diffusion process, Intel voluntarily shared this information with other semiconductor manufacturers and it was quickly adopted.

Intel is proposing to demonstrate the transferability of the lessons learned in the FAB-12 project by expanding the initial contract to other Intel facilities in the Chandler area. Specifically, Intel operates another FAB in the Chandler area along with several other types of facilities. Intel

[1] As part of negotiations with EPA on the final Project XL agreement, Intel will specify data considered to be confidential and appropriate methods for handling such data.

proposes to expand the contract to cover these facilities, as appropriate, after the initial FAB-12 contract is established.

In addition to the natural market pull of an industry leader, Intel would commit to publicize non-proprietary details of the contract and contract process. Notably, Intel's membership and active role in trade associations such as the Semiconductor Industry Association, the Electronics Industry Association, the American Institute for Pollution Prevention, Semiconductor Equipment & Materials International, Sematech and similar organizations will facilitate the transfer of the lessons learned from this project.

6. FEASIBILITY.

The unique aspect of this proposal is that it is based on a facility that is currently under construction. Because this facility has yet to begin production, the opportunities for development of innovative pollution prevention and cross media strategies are optimized. Rather than retro-fitting existing processes, FAB-12 would allow a Project XL contract to "start fresh" from the very beginning of operations. In addition, because FAB-12 is a state-of-the-art high technology facility, the approaches developed will have a longer useful life in the fast paced world of semiconductor manufacturing.

In addition to being a new facility, other factors that make this proposal especially feasible are:

(1) Up and running community advisory panel.
(2) Demonstrated corporate ability to conduct successful facility specific
innovation and pollution prevention project (the P4 project).
(3) Ability to coordinate with the Arizona Environmental Strategic Alliance.
(4) State and Regional EPA support.
(5) Experienced and competent team.
(6) Policy and resource commitment from senior management.

7. MONITORING, REPORTING AND EVALUATION.

The contract will include specific monitoring, reporting and evaluation criteria. Intel is committed to the concept of public accountability. The contract will include specific goals and indicators of progress toward these goals. All indicators will be reviewed with the stakeholders on a regular basis. In addition, Intel envisions an audit process that would produce the information necessary to track progress and develop new innovative

approaches. All non-proprietary information relevant to this contract will be made publicly available.

As part of this project, Intel would commit to the development of, and/or demonstration of, an automated reporting and recordkeeping system. Such a system would not only streamline and consolidate reporting, but also increase access and provide more information then existing reporting mechanisms.

In addition to periodic reporting, Intel would develop and submit annual progress reports specifically targeted to evaluation of alternative compliance approaches embodied in the FAB-12 XL project. Similar to periodic reporting, the annual reports will measure success against pre-defined, objective indicators. These reports will also contain an objective evaluation of success and areas for improvement as well as suggestions for how to disseminate successful aspects of the project.

8. SHIFTING OF RISK BURDEN.

No disproportionate environmental burdens to any of the communities surrounding FAB-12 will occur as a result of participation in Project XL. In addition, because the project that Intel will propose will exceed or, at a minimum, fully comply with applicable emissions standards, the project is guaranteed not to shift risk between media or affected populations.

Beginning with the initial planning stages, Intel has developed and maintained a close working relationship with the community surrounding FAB-12. The facility is located in the Ocotillo Community, a master planned community of residential, commercial and light industrial development in South Chandler. Immediately adjacent to the site, South, is another large master planned and separately incorporated retirement community called Sun Lakes. Bordering the western boundary, Memorial Airfield a semi-active airport/industrial park owned and operated by the Gila River Indian Community. Thus, the area from a land use development standpoint is viewed as stable and compatible with manufacturing operations like FAB-12.

In addition to protecting against community risks, Intel is committed to a high level of protection for employee safety. In fact, the semiconductor industry is the third safest of all industries, based upon OSHA statistics for over 250 durable goods manufacturing industry segments. Moreover, Intel's lost day case rate is lower than the average for the semiconductor industry.

IMPLEMENTATION.

If selected, Intel envisions a flexible program centered around a living contract. The first stage of the project would involve development of a regulatory and emissions baseline for the facility. Again, because FAB-12 is a new facility, this aspect of the project should not be a major hurdle.

With the baseline conditions in hand, Intel would work with stakeholders including the CAP and AZ DEQ to identify areas that are duplicative or costly and suggest improvements. Working with the stakeholders, it is anticipated that initiatives based on local, regional and national environmental concerns will also be identified and addressed.

In an iterative process, Intel will propose alternative compliance plans that will be reviewed and ratified. Each alternative compliance plan will:

(1) Identify any existing regulatory requirements to be modified.
(2) Propose alternative plans and/or additional prevention or abatement measures.
(3) Demonstrate additional environmental benefits and/or costs savings.
(4) Propose verifiable accountability procedures.

Once ratified, each alternative compliance plan would be added to the contract and replace otherwise applicable environmental requirements and/or define a new applicable requirements and accountability procedures.

Working with the stakeholders, this process will produce a streamlined, results-based, accountable system of measurable environmental goals for FAB-12. As issues change and mature, the contract will be amended. Stakeholder parties would be able to suggest revisions at any time. Progress toward goals will be measured on an objective basis and evaluative reports will be generated and submitted to the Agency annually. Building upon the anticipated success from the FAB-12 contract, Intel anticipates proposing expansion of the contract to eventually encompass other Intel operations in the Chandler area.

CONCLUSION.

Intel welcomes the opportunity to propose an alternative compliance system under Project XL. Based on the facts presented above, Intel is uniquely positioned to manage one of the first 6 projects awarded this summer under Project XL. This project would begin where the P4 project ended by taking the demonstrated benefits from that successful effort and expanding them to cover other environmental media and issues. Also, the opportunity to develop an XL project at a brand new state-of-the art, high technology facility within a market

leading company is truly unique and greatly increases the feasibility and transferability of this project. It is our fervent hope that this project, like the P4 project, will become a model for public-private cooperation.

Thank you for this opportunity to present Intel's general approach to an alternative environmental management system. We would welcome the opportunity to brief the Agency on specific details of our vision for this project.