

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 89-064

SITE CLEANUP REQUIREMENTS FOR:

INTEL CORPORATION
INTEL SANTA CLARA 3 FACILITY
2800 NORTHWESTERN PARKWAY
SANTA CLARA
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. Facility Description Intel Corporation's Santa Clara 3 Facility (SC3) performs quality control of chemicals and electrical testing of semiconductors at a site located at 2800 Northwestern Parkway, Santa Clara, Santa Clara County (Figure 1). SC3 has been in operation since 1976.
2. Subsurface Investigation In early 1982, the Board initiated a leak detection program to define the extent of leakage from underground storage tanks and pipes in the South Bay area. As a result of these efforts, subsurface investigations at SC3 detected trichloroethylene (TCE), trichloroethane (TCA), 1,1 dichloroethylene (1,1 DCE), dichloroethane (DCA), and Freon-113 in the A water bearing zone (the shallowest or first encountered aquifer below the ground surface) at the facility.

Since 1982, Intel has installed nine A zone monitoring wells and four B zone monitoring wells to define the vertical and horizontal extent of the plume. The oval shaped plume covers an area approximately 400 feet by 300 feet. The vertical extent of groundwater pollution in the A zone extends to the bottom of well SC3-3 at a depth of 27.5 feet. No significant groundwater pollution has been found to date in any of the B zone monitoring wells.

To date, investigations to determine the source of SC3's plume have been inconclusive. A nearby underground tank contained only diesel, and can therefore be ruled out as a source. Likewise, a small above ground solvent storage facility with double containment does not appear to represent a source. An acid waste neutralization system was located in a concrete vault and contained rinse waters from the processing and lab activities inside SC3. Both the nature of the chemicals in the plume and the location of the plume seem to rule out the acid waste system as a source. However, accidental dumping of solvents into the neutralization tank was suspected in the past, and on a few occasions the tank had overflowed into the

vault. It is also possible that solvents were used to clean out pipes put in place during the construction of the SC3 building.

A soil gas survey was conducted during August, 1988, in an attempt to locate any sources of the pollution which may be present in the vadose zone. The results of this investigation show that no sources of volatile organic compounds are identifiable in the surveyed area.

3. Hydrogeology Two water bearing layers, designated as the A and B zones, have been identified at SC3. The shallowest, or A zone, has its upper boundary at about 10 to 18 feet deep, and lower boundary about 25 to 27 feet deep. The top of the B zone is 29 to 36 1/2 feet deep, and the bottom of the B zone is between 35 1/2 to 43 feet deep. The A and B water bearing zones are separated by an aquitard of 5 to 10 feet of silty clay to clayey silt. A one to two foot higher hydraulic head in the B zone indicates that the silty clay layers separating the A and B zone acts as a continuous confining layer.

Shallow groundwater flow in both the A and B zones beneath the SC3 facility is generally to the northeast. This flow regime is consistent with the northerly regional flow towards the San Francisco Bay.

4. Interim Remedial Actions Intel has been extracting A zone groundwater from two extraction wells since February 1985. A general decline in groundwater pollution levels has been observed in all but one of the wells at SC3 since pumping started. Prior to implementing Interim Remedial Actions, the groundwater contained levels of TCE up to 490 parts per billion (ppb), TCA up to 810 ppb, 1,1 DCE up to 84 ppb, and Freon 113 up to 560 ppb. Currently TCE, at 140 (ppb), is the only pollutant found in the groundwater exceeding State Action Levels.

Pumped groundwater is treated and then discharged to a storm sewer system tributary of San Tomas Aquino channel as specified under NPDES Permit #CA0028941.

5. Workplan Intel submitted a workplan for the completion of a Remedial Investigation/Feasibility Study (RI/FS) on September 8, 1988, and a revised workplan on February 21, 1989.
6. Scope of This Order This Order adopts the RI/FS Workplan and contains tasks for Intel to prepare a Baseline Public Health Evaluation, and complete the RI/FS. In addition, this Order outlines the requirements for a Self-Monitoring Program at SC3 and requires Intel to assist the Regional Board in the preparation of the Administrative Record.

7. Intel is hereinafter referred to as a discharger because of the releases of hazardous wastes that have occurred at its facility. Intel is also a Responsible Party under the Federal Superfund (CERCLA/SARA). Intel is a Superfund site on the National Priorities List (NPL).
8. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives and beneficial uses for South San Francisco Bay and contiguous surface and ground waters.
9. The existing and potential beneficial uses of the groundwater underlying and adjacent to the facility include:
 - a. Industrial process water supply
 - b. Industrial service water supply
 - c. Municipal and Domestic water supply
 - d. Agricultural water supply
10. The discharger has caused or permitted, and threatens to cause or permit waste to be discharged or deposited where it is or probably will be discharged to waters of the State and creates or threatens to create a condition of pollution or nuisance.
11. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.
12. Ongoing interim containment and cleanup measures need to be continued to alleviate the threat to the environment posed by the migration of pollutants and to provide a substantive technical basis for designing and evaluating the effectiveness of final cleanup alternatives.
13. The Board has notified the discharger and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.
14. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.
2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.
3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

B. SPECIFICATIONS

1. The storage, handling, treatment or disposal of soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050(m) of the California Water Code.
2. The discharger shall conduct monitoring and investigatory activities as needed to define the current local hydrogeologic conditions, and the lateral and vertical extent of soil and groundwater pollution. Should monitoring results show evidence of pollutant migration, additional characterization of pollutant extent may be required.

C. PROVISIONS

1. The discharger shall submit to the Board acceptable monitoring program reports containing results of work performed according to a program as attached.
2. The discharger shall comply with Prohibitions A.1., A.2., and A.3., and Specifications B.1. and B.2. above, in accordance with the following time schedule and tasks:

COMPLETION DATE/TASK

- a. COMPLETION DATE: May 15, 1989

TASK: ADMINISTRATIVE RECORD: Submit a technical report acceptable to the Executive Officer containing a proposal for developing the Administrative Record as outlined in EPA's guidance on Administrative Records.

b. COMPLETION DATE: May 15, 1989

TASK: BASELINE PUBLIC HEALTH EVALUATION: Submit a technical report acceptable to the Executive Officer containing a baseline public health evaluation prepared in accordance with the Superfund Baseline Public Health Evaluation Manual (EPA 540/1-86/060, October 1986).

c. COMPLETION DATE: November 16, 1989

TASK: PROPOSED FINAL CLEANUP OBJECTIVES AND ACTIONS: Submit a technical report acceptable to the Executive Officer pursuant to the work plan described in Finding 6 as revised, and approved by the Executive Officer, containing the results of the remedial investigation; an evaluation of the installed interim remedial measures; a feasibility study evaluating alternative final remedial measures; and a separate technical report acceptable to the Executive Officer containing the recommended measures necessary to achieve final cleanup objectives; and the tasks and time schedule necessary to implement the recommended final remedial measures.

3. The RI/FS workplan, as described in Finding 5, is hereby approved.
4. The submittal of technical reports evaluating immediate, interim and final remedial measures will include a projection of the cost, effectiveness, benefits, and impact on public health, welfare, and environment of each alternative measure. The remedial investigation and feasibility study must be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300); Section 25356.1 (c) of the California Health and Safety Code; CERCLA guidance documents issued by April 1, 1989 with reference to Remedial Investigation, Feasibility Studies, and Removal Actions; and the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California".
5. Any proposal for the discharge of extracted groundwater included in the technical report required in Provision C.2.c. must initially consider the feasibility of reclamation, reuse, or discharge to a publicly owned treatment works (POTW), as specified in Board Resolution No. 88-160. If it can be demonstrated that reclamation, reuse, or discharge to a POTW is technically and

economically unfeasible, a proposal for discharge to surface water shall be considered.

6. If the discharger is delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.
7. Technical reports summarizing the status of compliance with the Prohibitions, Specifications, and Provisions of this Order shall be submitted on a quarterly basis, according to the schedule below, commencing with the report for the second quarter 1989, due July 31, 1989.

Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Period	Jan.-March	April-June	July-Sept.	Oct.-Dec.
Due Date	April 30	July 31	October 31	January 31

The quarterly reports shall include;

- a. a summary of work completed since the previous quarterly report, and work projected to be completed by the time of the next quarterly report,
 - b. appropriately scaled and labeled maps showing the location of all monitoring wells, extraction wells, and existing structures,
 - c. cross sections depicting subsurface geologic information and corresponding correlations based on boring data,
 - d. updated water table and piezometric surface maps for all affected water bearing zones, and isoconcentration maps for key pollutants in all affected water bearing zones,
 - e. a cumulative tabulation of all well construction data, groundwater levels and chemical analysis results for site monitoring wells specified in the sampling plan,
 - f. identification of potential problems which will cause or threaten to cause noncompliance with this Order and what actions are being taken or planned to prevent these obstacles from resulting in noncompliance with this Order, and
 - g. in the event of noncompliance with the Provisions and Specifications of this Order, the report shall include written justification for noncompliance and proposed actions to achieve compliance.
8. All hydrogeological plans, specifications, reports, and documents shall be signed by or stamped with the seal of a registered geologist, engineering geologist or professional engineer.

9. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.
10. The discharger shall maintain in good working order, and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.
11. Copies of all reports pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be provided to the following agencies:
 - a. Santa Clara Valley Water District
 - b. Santa Clara County Health Department
 - c. City of Santa Clara
 - d. State Department of Health Services/TSCD
 - e. State Water Resources Control Board
 - f. U. S. Environmental Protection Agency, Region IX

The Executive Officer shall receive three copies of all correspondence, reports and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order.

12. The discharger shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:
 - a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
 - b. Access to copy any records required to be kept under the terms and conditions of this Order.
 - c. Inspection of any monitoring equipment or methodology implemented in response to this Order.
 - d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.
13. The discharger shall file a report on any changes in site occupancy and ownership associated with the facility described in this Order.

14. If any hazardous substance, as defined pursuant to Section 25140 of the Health and Safety Code, is discharged in or on any waters of the state, or discharged and deposited where it is, or probably will be discharged in or on any waters of the state, the discharger shall report such discharge to this Regional Board, at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-business hours. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to: the nature of waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control, and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effect, corrective measures that have been taken or planned, and a schedule of these activities, and persons/agencies notified.
15. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 19, 1989.



Steven R. Ritchie
Executive Officer

Attachments
Self-Monitoring Program
Figure 1

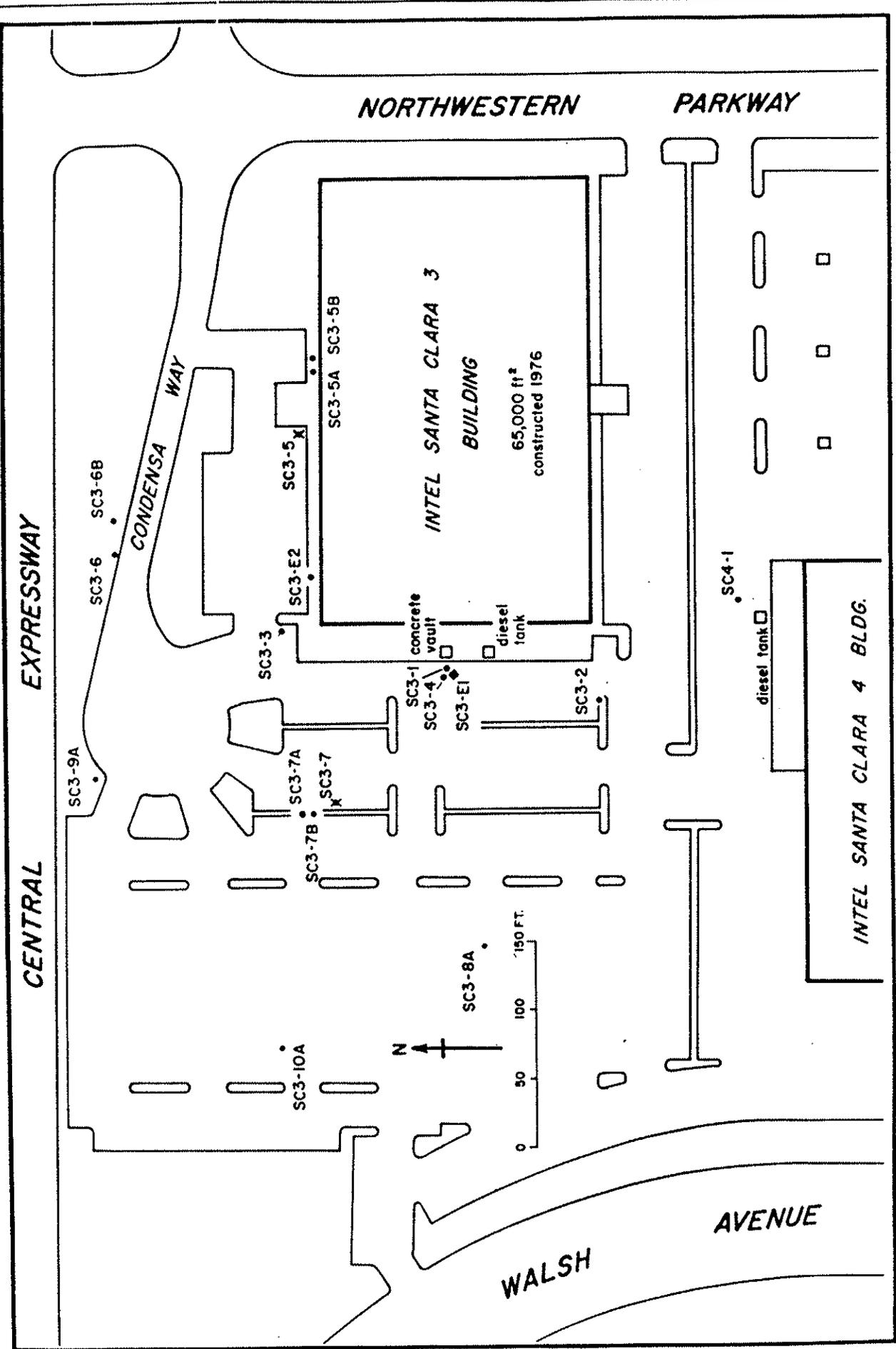


Figure 1. Intel Santa Clara 3 - Facility Map

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

Intel Corporation
Intel Santa Clara 3 Facility
2800 Northwestern Parkway
Santa Clara, Santa Clara County

ORDER NO. 89-064

CONSISTS OF

PART A, Dec. 1986
As Modified by SBTD, 1/23/87
With Appendices A-E

and

PART B, adopted 4/19/89

PART B

Intel Corporation
Intel Santa Clara 3 Facility
2800 Northwestern Parkway
Santa Clara, Santa Clara County

I. DESCRIPTION OF SAMPLING STATIONS

All existing and future A, B, and deeper zone monitoring and extraction wells as appropriate. See Table 1 (attached) for list of monitoring wells.

II. MISCELLANEOUS REPORTING. None.

III. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis shall be that given in Table 1 (attached).

IV. MODIFICATIONS TO PART A.

A. Delete Sections B, D, E, F.2, F.3, G.1, G.2, G.4.b, G.4.d.2., G.4.e, G.4.f.1), and G.4.g.

B. The first paragraph of Section G.4 shall be changed to read as follows:

Written reports shall be filed with the Regional Board regularly for each calendar quarter (unless otherwise specified) and filed no later than the last day of the month following the quarter for which the report covers. The reports shall be comprised of the following:

C. Section G.4.a.1.) shall be changed to read as follows:

1) Identification of all violations of the site cleanup order and self-monitoring program found during the reporting period.

D. The first paragraph of Section G.4.d. should be changed to read as follows:

Tabulations of the results from each required analysis specified in Part B by date, time, type of sample and detection limit and station.

E. Section G.4.d.4) shall be changed to read as follows:

4) Lab results shall be signed by the laboratory director, copied, and submitted as an appendix to the regular report.

F. Section G.5 shall be changed to read as follows:

By January 30 of each year, the discharger shall submit an annual report to the Regional Board covering the previous calendar year. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year. In addition, the report shall contain a comprehensive discussion of the compliance record and all corrective action taken or planned which may be needed to bring the discharger into full compliance with the site cleanup Order and self-monitoring requirements.

G. "The first sentence of Section F.1. shall be changed to read as follows:

Written reports, strip charts, calibration and maintenance records, and other records shall be maintained by the discharger or the analytical laboratory, and retained for a minimum of three years".

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with site cleanup requirements established in Regional Board Order No. 89-064.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer or Regional Board.
3. Was adopted by the Board on April 19, 1989.

April 19, 1989
DATE



Steven R. Ritchie
Executive Officer

Attachments: Table I

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

SAMPLING STATION >>>>	SC3-1, 2, 3, 4, 5A, 5B, 6A, 6B, 7A, 7B, 8A 9A, 10A, E1, and E2.			
TYPE OF SAMPLE	G			
EPA 8010/8020 for: purgeable priority pollutants and Freon-113	Q			
GC/MS (EPA 8240) Open Scan	1/Y*			

LEGEND FOR TABLE 1

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- G = grab sample
 - Q = quarterly
 - 1/Y = once per year

* EPA 8010/8020 not required for months when EPA 8240 is performed.