



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

**Five-Year Review (Type I, Policy Review)
Intersil/Siemens Superfund Site**

MEMORANDUM

SUBJECT: Five-Year Review for the Intersil/Siemens Superfund Site, 10900 Tantau Avenue, Cupertino, CA

Belinda Wei
FROM: Belinda Wei, Remedial Project Manager

THRU : Tom Kremer, Chief *Tom Kremer 9/22/95*
Site Restoration Section
Nathan W. Lau
Nathan W. Lau, Acting Chief
Site Cleanup and Contracts Branch

TO: Keith A. Takata, Acting Director
Hazardous Waste Management Division

I. INTRODUCTION

Attached, please find a copy of the Intersil/Siemens Five Year Review prepared by the California Regional Water Quality Control Board. EPA has reviewed their Five Year Review and adopts their recommendations as written. The Regional Board's Five Year Review is summarized below.

Because contaminant levels will allow for unlimited use and unrestricted exposure upon achieving ROD goals, this Five-Year Review is not required by the statute (section 121(c) of CERCLA, as amended) or Section 300.430(f)(4)(ii) of the NCP, which implements CERCLA. However, because clean-up will take five or more years to attain, this Five-Year Review must be conducted as a matter of Agency policy (OSWER Directive 9355.7-02, "Structure and Components of Five-Year Reviews", 5/31/91, p.2). This review (Type I) is applicable to a site at which construction is complete (OSWER Directive 9355.7-02A, "Supplemental Five-Year Review Guidance", 7/26/94, p.4-5).

II. FIVE YEAR REVIEW SUMMARY

The Intersil/Siemens Superfund site was listed on the NPL on August 30, 1990. Siemens and Intersil found contaminated soil and groundwater upon initiating investigations in 1982 and 1983 respectively. The main contaminants of concern were TCE and 1,1,1-TCA for the Siemens property, and TCE for Intersil and the off-site commingled groundwater plume. Siemens began interim remedial actions in 1983 and Intersil in 1986. Interim remedial actions included the excavation of soils, tanks and other equipment, and the installation and operation of soil vapor extraction and treatment (SVE) systems and groundwater extraction and treatment systems. The Record of Decision

was signed on September 27, 1990, selecting the following remedies: soil removal, SVE, and groundwater extraction and treatment. The ROD prescribed contaminated soils to be removed from the on-site Siemens property, operation of an SVE system and groundwater extraction and treatment system for each of the Siemens and Intersil on-site properties, and operation of a groundwater extraction and treatment for the off-site commingled plume.

The selected remedies have been effective at containing contaminants and reducing concentration levels. In one case, the selected remedy was successful at reaching the clean-up level. For the entire site (on-sites and off-site included), the following lbs of VOCs have been removed by the listed selected remedies: 1,500 lbs with excavation, 19,300 lbs with SVE, and 1,890 lbs with groundwater extraction and treatment. For the Siemens facility, the groundwater extraction and treatment system was able to reduce concentrations from approximately 3500 ppb to approximately 500 ppb; the Intersil system, from approximately 8000 ppb to approximately 200 ppb. Intersil's SVE system reached the soil clean-up level of 1 ppm, and consequently the system was decommissioned in 1993. The sites may be reaching asymptotic levels in groundwater and soil concentrations.

No ARARs have changed since the clean-up standards were set in the ROD.

The Regional Board conducted a site visit, as required by EPA guidance for Type I reviews. The Regional Board found the Intersil facility in full compliance. Siemens was in compliance with their NPDES permit, but was in violation of their Site Cleanup Requirements order. However, this violation was considered minor and the State will not take action. Copies of the inspection report are attached.

III. CONCLUSION

The response actions as selected in the ROD remain effective at protecting human health and the environment (OSWER Directive 9355.7-02, Attachment I, p.2).

Future Policy Five Year Reviews shall be conducted every five years from the approval of the previous Review, until ROD cleanup levels are achieved, assuming they will remain at levels that allow for unlimited use and unrestricted exposure (OSWER Directive 9355.7-02, Attachment I, p.5). Therefore, the next Five Year Review shall be written five years from the signature date of this Review.

Approved by:

 Date: 9/29/95
Keith Takata, Acting Director
Hazardous Waste Management Division
Region IX

Attachment: Intersil/Siemens, Cupertino, Santa Clara County - Status Report on Five-Year Effectiveness Evaluation

Facilities Inspection Reports for Intersil and Siemens

cc: Intersil/Siemens Site File, RWQCB (San Francisco Bay Region)
Hugo Fleischman, EPA HQ

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

EXECUTIVE OFFICER SUMMARY REPORT
MEETING DATE: September 13, 1995

ITEM: 5M

SUBJECT: **INTERSIL/SIEMENS, CUPERTINO, SANTA CLARA COUNTY - Status Report on Five-Year Effectiveness Evaluation**

CHRONOLOGY: August 15, 1990 - Board adopted site cleanup requirements.
May 4, 1995 - Executive Officer amended site cleanup requirements.

DISCUSSION: Intersil/Siemens is a federal Superfund site in the South Bay, overseen by the Board under an agreement with the U.S. EPA. In accordance with its 1990 site cleanup requirements, Intersil/Siemens has evaluated the remedial activities performed at the site to determine if the selected cleanup plans are working. The results were submitted in a report titled "*Five-Year Remedial Action Status Report and Effectiveness Evaluation*" dated July 31, 1995.

Siemens initiated investigations at its property in 1982 and Intersil in 1983. Both sites had VOC contamination in soil and groundwater. Groundwater contamination from the two sites is commingled and has migrated offsite.

Siemens installed the first soil vapor extraction system in the Bay Area, and began groundwater extraction in 1986. In addition to the soil vapor extraction remedy, Siemens also excavated some of the contaminated soil. The onsite groundwater extraction system has effectively contained groundwater beneath the site and has reduced chemical concentrations in groundwater. It extracts approximately 23 million gallons of groundwater annually. Total VOC concentrations in the influent to the treatment system have reduced from approximately 3500 $\mu\text{g/l}$ to less than 500 $\mu\text{g/l}$. Groundwater cleanup standard for TCE is 5 $\mu\text{g/l}$. Siemens reuses a portion of the extracted groundwater for on-site irrigation and manufacturing operations.

At Intersil soil and groundwater were contaminated with VOCs and primarily TCE. Intersil removed underground tanks in 1986 and 1988, and installed groundwater and soil vapor extraction and treatment systems in 1987 and 1988, respectively. The soil vapor extraction system at Intersil reduced VOC concentrations in soil to below the cleanup level of 1 ppm, and was decommissioned in 1993. The groundwater extraction system has operated since 1987, and was expanded in 1991. The system has effectively contained groundwater beneath the facility and has reduced chemical concentrations. Concentrations of TCE in the influent groundwater to the treatment system have reduced from initial concentration of approximately 8000 $\mu\text{g/l}$ to 200 $\mu\text{g/l}$, and have remained at that since 1991. The system extracts approximately 23 million gallons of water annually.

Groundwater investigation in the offsite area began in 1986, and groundwater extraction began in 1990-91. TCE concentrations have been successfully reduced. This system extracts approximately 40 million gallons of groundwater annually.

Summaries of VOC removal and costs at Siemens, Intersil and the offsite area are given in Tables 1 and 2 respectively.

TABLE 1 - VOC REMOVAL (lbs) BY AREA

<u>Cleanup method</u>	<u>Siemens</u>	<u>Intersil</u>	<u>Offsite</u>	<u>Total</u>
Excavation	1,500	---	---	1,500
SVE	16,300	3,000	---	19,300
<u>Groundwater Ext.</u>	<u>1,400</u>	<u>140</u>	<u>350</u>	<u>1,890</u>
TOTAL	19,200	3,140	350	22,690

TABLE 2 - PROJECT COST (\$ MILLION) BY AREA

<u>Period</u>	<u>Siemens</u>	<u>Intersil</u>	<u>Offsite</u>	<u>Total</u>
To date	7.6	10.3	2.8	20.7
<u>Future</u>	<u>3.5</u>	<u>1.7</u>	<u>3.1</u>	<u>8.3</u>
TOTAL	11.1	12.0	5.9	29.0

Groundwater extraction systems at Intersil, Siemens and the offsite area provide hydraulic containment and remove chemicals from groundwater. VOC concentrations in groundwater are reaching asymptotic conditions and are generally stable but they are still higher than cleanup standards established in the order. All three systems are pumping significantly more groundwater, but the chemical removal efficiency has decreased considerably since startup. It appears that groundwater extraction technology may not achieve some of the cleanup standards specified in the order. The criteria used to establish the cleanup standards in the order have not changed, and therefore cleanup standards remain the same. However, at some point in the future it may be appropriate to adjust the amount of pumping such that hydraulic containment is maintained while reducing energy consumption, the amount of water extracted, and operating costs. An evaluation of the operation of the soil vapor extraction and groundwater extraction systems at Siemens is currently underway. No alternative remediation technologies are presently available that would significantly improve the effectiveness of the remedial systems which are in place.

In conclusion the approved cleanup plan is working. Neither we nor the dischargers recommend any changes to the order at this time.

**RECOMMEN
DATION:**

No action needed - status report only.

File Nos.

2189.8181 & 2189.8124 (RM)

Appendix:

A - Location Map

OFFICE NO: 2

FACILITIES INSPECTION REPORT

INSPECTOR: R M

SWRCB 001 (REV. 5-91)

PCA System Task No.

2 438124002

SIEMENS COMP, INC

NPD MIN-SIEMENS

WDS NUMBER

NAME OF AGENCY OR PARTY RESPONSIBLE FOR DISCHARGE

NAME OF FACILITY

CA0029190

19000 HOMESTEAD ROAD

19000 HOMESTEAD ROAD

NPDES NUMBER

AGENCY STREET

FACILITY STREET

94 03 B1

CUPERTINO, CA 94014

CUPERTINO, CA 94014

(YY) (MM) (TYPE)

AGENCY CITY AND STATE

FACILITY CITY AND STATE

SCHEDULED INSPECTION DATA

JOHN WYSS

JOHN WYSS

AGENCY CONTACT PERSON

ONSITE FACILITY CONTACT PERSON

95-8-28 (YYMMDD)

ACTUAL INSPECTION DATE

415 / 725 - 3505

415 / 725 - 3505

AGENCY PHONE NO.

FACILITY PHONE NO.

Inspection agency (State = S, State / EPA Joint = J)

N

If this inspection is a Compliance Inspection of an NPDES facility, send a copy of this report to SWRCB's Division of Water Quality, Program Support Unit.

INSPECTION TYPE (Check One)

- A1 "A" type compliance -- Comprehensive inspection in which samples are taken. (EPA Type S)
- B1 "B" type compliance -- A routine nonsampling inspection. (EPA type C)
- 02 Noncompliance follow-up -- Inspection made to verify correction of a previously identified violation.
- 03 Enforcement follow-up -- Inspection made to verify that conditions of an enforcement action are being met.
- 04 Complaint -- Inspection made in response to a complaint.
- 05 Pre-requirement -- Inspection made to gather info. relative to preparing, modifying, or rescinding requirements.
- 06 Miscellaneous -- Any inspection type not mentioned above.

If this is an EPA inspection not mentioned above, please note type. (e.g.--biomonitoring, performance audit, diagnostic, etc.)

(Type)

NO Were VIOLATIONS noted during this inspection? (Yes/No/Pending Sample Results)

NO Was this a Quality Assurance-Based Inspection? (Y/N)

NO Were bioassay samples taken? (N = No) If YES, then S = Static or F = Flowthrough.

INSPECTION SUMMARY (REQUIRED) (100 character limit)

The facility was in violation of their site cleanup requirements because both the groundwater extraction system & the soil vapor extraction system were down. The groundwater ex. system was down because of a broken coupling between the transfer tank & the airstripper. The SVE system was down to replace the

INSPECTOR'S DATA:

INITIALS Rm SIGNATURE R M Wyss

DATE 8/25/95 Carbon

For Internal Use: Reviewed by: (1) SAH (2) MAB (3) DH
Reg. WDS Coordinator

WDS Data Entry Date: _____

Regional Board File Number: 2189.8124

OFFICE NO. 2

FACILITIES INSPECTION REPORT

INSPECTOR: R M

SWRCB 001 (REV. 5-91)

PCA System Task No. [] [] [] [] [] []

2 438181002
WDS NUMBER

INTERSIL, INC., EMBARCADERO CTR
NAME OF AGENCY OR PARTY RESPONSIBLE FOR DISCHARGE

NPD MIN-INTERSIL-10900 N TANT
NAME OF FACILITY

CA0029262
NPDES NUMBER

275 BATTERY ST., 23RD FLOOR
AGENCY STREET

10900 NORTH TANTAU AVENUE
FACILITY STREET

94 06 B1
(YY) (MM) (TYPE)

SAN FRANCISCO, CA 94111
AGENCY CITY AND STATE

CUPERTINO, CA 95014
FACILITY CITY AND STATE

SCHEDULED INSPECTION DATA

DEBORAH HANKINS
AGENCY CONTACT PERSON

DEBORAH HANKINS
ONSITE FACILITY CONTACT PERSON

895 28 28 (YYMMDD)
ACTUAL INSPECTION DATE

415 274 - 1904
AGENCY PHONE NO.

415 274 - 1904
FACILITY PHONE NO.

Inspection agency (State = S, State / EPA Joint = J)

N If this inspection is a Compliance Inspection of an NPDES facility, send a copy of this report to SWRCB's Division of Water Quality, Program Support Unit.

INSPECTION TYPE (Check One)

- A1 "A" type compliance -- Comprehensive inspection in which samples are taken. (EPA Type S)
- B1 "B" type compliance -- A routine nonsampling inspection. (EPA type C)
- 02 Noncompliance follow-up -- Inspection made to verify correction of a previously identified violation.
- 03 Enforcement follow-up -- Inspection made to verify that conditions of an enforcement action are being met.
- 04 Complaint -- Inspection made in response to a complaint.
- 05 Pre-requirement -- Inspection made to gather info. relative to preparing, modifying, or rescinding requirements.
- 06 Miscellaneous -- Any inspection type not mentioned above.

If this is an EPA inspection not mentioned above, please note type. (e.g., biomonitoring, performance audit, diagnostic, etc.)

(Type)

NO Were VIOLATIONS noted during this inspection? (Yes/No/Pending Sample Results)

NO Was this a Quality Assurance-Based Inspection? (Y/N)

NO Were bioassay samples taken? (N = No) If YES, then S = Static or F = Flowthrough.

INSPECTION SUMMARY (REQUIRED) (100 character limit)

The facility was in full compliance.

INSPECTOR'S DATA:

INITIALS Rm

SIGNATURE R M

DATE 8/28/95

For Internal Use: Reviewed by: (1) SAH

(2) MAB

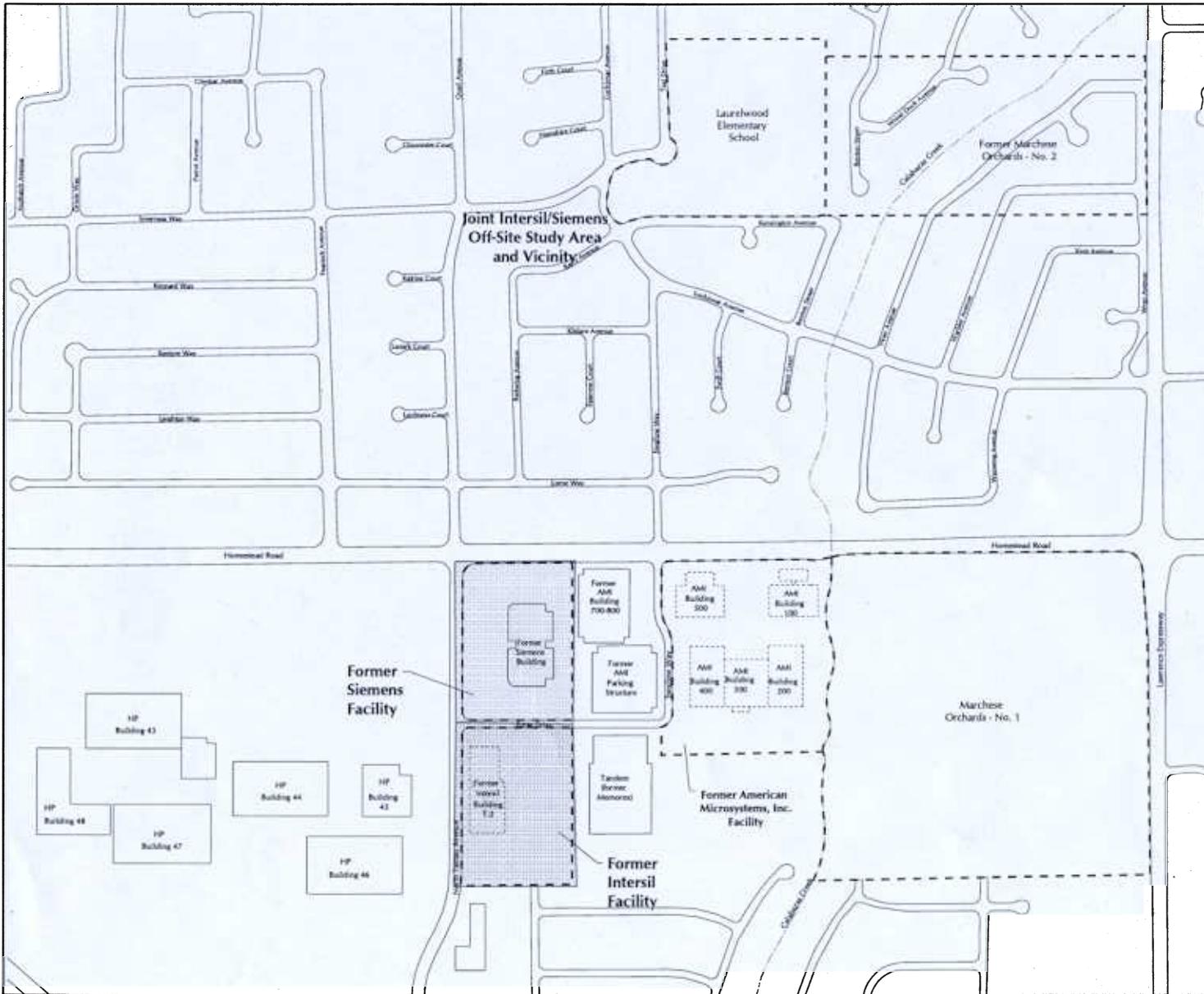
(3) DH

Reg. WDS Coordinator

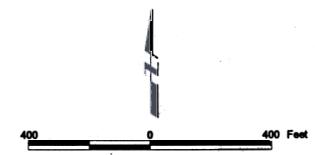
WDS Data Entry Date: _____

Regional Board File Number: 7189. 8181

Siemens_Department/ISS/Projects/AIR_2004Annual2004_issmapsp.ap 04/22/2005



- LEGEND**
- Property boundary
 - - - - - Creek
 - Existing building
 - Demolished building
 - ▒ Former Siemens Facility
 - ▒ Former Intersil Facility



Site Location Map
Intersil/Siemens Site, Cupertino, California



Figure 1