Haley & Aldrich, Inc.
1956 Webster Street
Suite 450
Oakland, CA 94612

Tel: 510.879.4544
Fax: 510.251.1304
HaleyAldrich.com

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ALDRICH

31 January 2014
File No. 39770-002

California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Attention: Mr. Max Shahbazian, PG

Subject: Fourth Five-Year Review Report
915 DeGuigne Drive
Sunnyvale, California

Dear Mr. Shahbazian:

Please find enclosed the Fourth Five-Year Review Report prepared by Haley & Aldrich, Inc. on behalf of Advanced Micro Devices, Inc. (AMD) for the former AMD facility located at 915 DeGuigne Drive in Sunnyvale, California. This five-year report has been prepared to address a requirement of the Site Cleanup Order (91-101) issued by the California Regional Water Quality Control Board – San Francisco Bay Region.

Please contact either of the undersigned if you have any questions about the report.

Sincerely yours,
HALEY & ALDRICH, INC.

Michael Calhoun, PG, CHG
Senior Technical Specialist

Peter Bennett, PG, CHG
Lead Hydrogeologist and Vice President

Enclosures

c: Advanced Micro Devices, Inc.; Attn: Do Cao
Advanced Micro Devices, Inc.; Attn: Brett Stringer
United States Environmental Protection Agency; Attn: Melanie Morash

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FOURTH FIVE-YEAR REVIEW REPORT
915 DEGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

by

Haley & Aldrich, Inc.
Oakland, California

for

Advanced Micro Devices, Inc.
Sunnyvale, California

File No. 39770-002
31 January 2014

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FOURTH FIVE-YEAR REVIEW REPORT

915 DeGuigne Drive

Sunnyvale, California

1. INTRODUCTION

This report, prepared by Haley & Aldrich, Inc. (Haley & Aldrich) on behalf of Advanced Micro Devices, Inc. (AMD), presents the Fourth Five-Year Review for the former AMD facility at 915 DeGuigne Drive, located in Sunnyvale, California (the Site; Figure 1). This Five-Year Review Report is submitted in response to Task 7 of Site Cleanup Requirements Order No. 91-101, issued by the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board). The three previous Five-Year Review Reports for the Site were submitted to the Water Board on behalf of AMD in June 1996, June 2001, and December 2008. The Water Board, on behalf of the United States Environmental Protection Agency, Region 9, submitted its previous 5-Year CERCLA Review for the Site on September 30, 2009 (EPA 5-Year Review; EPA, 2009); based on AMD's Third Five-Year Review Report, submitted in 2008 (AMEC, 2008).

The period of review for this Fourth Five-Year Review Report encompasses data collected at the Site from January 2009 through October 2013 (approximately 5 years).

1.1 Regulatory Orders

Site Cleanup Requirements Order Number 91-101 (the Order) was issued on June 25, 1991, by the Water Board. The Order documents the cleanup goals for Site groundwater, and designates groundwater extraction and treatment as the final remedy for the Site. Treated groundwater is discharged to an on-Site storm sewer under Water Board Order No. R2-2009-0059 and National Pollutant Discharge Elimination System (NPDES) Permit No. CAG912003.

1.2 Purpose of This Report

The purpose of the 5-Year Review is to determine whether the remedy at the Site is protective of human health and the environment (EPA, 2009). This Fourth Five-Year Review Report summarizes the assessment of the effectiveness and efficiency of the ongoing remediation program over the past five years, and addresses issues raised in the previous EPA 5-Year Review.

1.3 Issues Raised in the 2009 EPA 5-Year Review

The three issues and recommended follow-up actions presented in the 2009 EPA 5-Year Review (EPA, 2009) were as follows:

Issue #1*: Mass removal efficiency of the GWET system has declined over time and may not be capable of achieving groundwater cleanup standards.*

Recommendation and Follow-up Action*: AMD should continue to evaluate the effectiveness of its groundwater extraction and treatment system.*

Issue #2*: The vapor intrusion pathway has not been fully assessed at this Site.*

Recommendation and Follow-up Action*: To assess the potential for human health risk associated with the vapor intrusion pathway, soil gas and indoor air samples need to be collected, analyzed, and evaluated.*

Issue #3*: The existing covenant was recorded prior to the passage of California Civil Code section 1471, which established a framework for environmental restriction covenants in California.*

Recommendation and Follow-up Action*: A new restrictive covenant should be recorded consistent with current California law.*

AMD has implemented the recommended Follow-Up Actions described above. The programs implemented by AMD to address these issues are as follows:

Issue #1. AMD has continued to evaluate mass removal efficiency of its groundwater extraction and treatment system (GETS) on an annual basis as part of the annual monitoring and quarterly NPDES reporting programs. The information from the monitoring programs shows that recent mass removal efficiency (measured as pounds removed per million gallons of water [lb/Mgal]) have remained fairly consistent since the 2008 AMD Five-Year Review Report, although they are substantially lower than previous reporting periods (approximately $<50\%$ of 2001 rates, and $<40\%$ of 1997 initial rates). As reported previously, groundwater beneath the Site is impacted by off-Site sources and modifications to the GETS or other aggressive remedial actions such as in situ bioremediation will not expedite Site cleanup due to the ongoing impact from upgradient sources (AMEC, 2008 and Geomatrix, 2008). Haley & Aldrich will continue to evaluate the effectiveness of the GETS on behalf of AMD during the next review period of 2014-2018.

Issue #2. To evaluate the potential for vapor intrusion into the buildings at the Site, an indoor air investigation was conducted at the Site in 2011. Indoor air samples were collected in the main 915 DeGuigne building and the attached Submicron Development Center and analyzed for Site chemicals of concern (COCs). The results of the investigation determined that all detected compounds were at concentrations below applicable risk-based screening levels, indicating that potential vapor intrusion does not result in an unacceptable health risk.

Issue #3. AMD no longer owns the Site, and does not have the legal right to record a new deed restriction on the Site property. In compliance with the requirements of the last Five-Year Review, AMD prepared a revised deed restriction in consultation with the current owner (Spansion) and provided it to the Water Board and EPA in 2012. The Water Board and EPA took the draft deed restriction under review. In 2013, AMD worked with the current owner and Watt Investments at Sunnyvale (Watt), who purchased the Site from Spansion on 23 January 2014, to further revise the draft deed restriction at the request of Watt. AMD understands that Spansion or Watt will submit the revised deed restriction to the Water Board for its approval.

2. SITE BACKGROUND

The Site comprises approximately eight acres of relatively flat land, at an average elevation of approximately 40 feet above sea level, approximately 4 miles south of the southern end of San Francisco Bay. Single family residences occupy the area north of the Site, between Duane Avenue and Highway 101; outdoor recreational space (Fair Oaks Park) and City of Sunnyvale School District property are to the west; and light industrial/commercial properties lie to the south and east of the Site.

Two large low-rise buildings, connected by a hallway, exist at the Site (Figure 2): the former AMD 915 main building (the larger building with an east-west orientation), and the former AMD Submicron Development Center (a smaller building on the southwest portion of the Site). The western and eastern portions of the main building have basement dewatering systems which consist of a gravel layer that is drained by a network of 4-inch perforated PVC pipes terminating at nine basement dewatering sumps. The dewatering system is approximately 14 feet below ground surface (bgs; Engineering Science, 1988).

A network of nine groundwater extraction wells and 34 groundwater monitoring wells also exists at the Site, as well as a treatment system for removing COCs from extracted groundwater (Figure 2).

2.1 Site History and Chemical Use

A chronology for the Site is presented in Table 1. Prior to 1974, the land use at the Site was agricultural. AMD constructed a semiconductor fabrication and research and development facility at the Site in 1974 and operated it until 2003, when AMD transferred ownership of the property to Spansion LLC, a joint venture of Fujitsu and AMD. In December 2005, Spansion LLC became Spansion, Inc. (Spansion), a corporation separate from AMD specializing in flash memory devices. Spansion continues to operate at the Site, although it has sold the 915 DeGuigne Drive property (as of 23 January 2014) to Watt, who intends to redevelop the Site.

Chemicals historically used by AMD for semiconductor fabrication at the Site include solvents and corrosives (Engineering Science, 1984). Records of chemical use prior to 1980 are not available; however, it is has been inferred by others that TCE was used on-Site until 1979 (Engineering Science, 1984). Solvent waste between 1980 and 1989 included primarily n-butyl acetate and xylenes (stored in underground tanks) and Freon wastes (stored in drums at designated areas; Parsons ES, 1996).

Underground vaulted and un-vaulted storage tanks (USTs) with 1,500 to 3,000 gallon capacity were installed between 1974 and 1982 (Engineering Science, 1984). Below-grade acid neutralization systems (ANSs) with 1,500 to 4,700 gallon capacity were installed in 1974 and 1980 and upgraded in 1982 (Engineering Science, 1984). Of the 21 tanks documented at the Site, two of these appeared to have leaked: one of the three tanks comprising the former PAD C ANS and the PAD IV 712-D photoresist stripper tank (Parsons ES, 1996).

The primary on-Site source for TCE in groundwater beneath the Site appears to have been a leak from one of the three tanks comprising the PAD C ANS (Woodward-Clyde Consultants, 1983) (Figure 3). The ANS was removed in 1981, and in 1982, approximately 5,570 cubic yards of TCE-affected soil was excavated from the area surrounding the former PAD C ANS to a depth of up to 34 feet bgs.

A UST containing the 712-D photoresist stripper was installed in 1977 and removed in 1981. Approximately 300 cubic yards of soil affected by trichlorobenzene and xylenes were excavated to a depth of approximately 16 feet bgs (Parsons ES, 1996).

2.2 Nearby Off-Site VOC Release Sites

Three sites where VOCs have impacted groundwater exist south (upgradient) of the Site: 1) the former TRW Microwave (TRW) Site at 825 Stewart Drive; 2) the Philips Semiconductors (Philips) Site at 811 East Arques; and 3) the 901/902 Thompson Place Site. "The Companies Offsite Operable Unit" (OOU) extends north of the Philips, TRW and 901/902 Thompson Sites and defines an area where groundwater is impacted primarily by TCE. It is located immediately west (cross-gradient) of the 915 DeGuigne Site.

Other sources for regional COC contamination have been documented recently, including the Mohawk plume, composed predominantly of cDCE (Geomatrix, 2008; The Source Group, 2008). Because upgradient, off-Site sources cause ongoing TCE and cDCE contamination in groundwater beneath the Site, the progress of past and ongoing remediation efforts have been substantially compromised, and groundwater pumped from the Site's basement dewatering sumps will require on-Site treatment prior to discharge or re-use, likely for many decades (or until the main building is demolished).

2.3 Hydrogeologic Conditions

The Site is located within the confined portion of the Santa Clara Valley groundwater basin. Groundwater is encountered approximately 10 feet bgs and would naturally flow northward towards San Francisco Bay absent the influence of on-Site and off-Site groundwater extraction wells. Alluvial soils underlie the Site, where several relatively thin, channel-like deposits of sands and gravels comprise the water-bearing zones, which are both vertically and laterally separated by less permeable silty clays (Engineering Science, 1988). The major water-bearing zones beneath the Site have been classified, from shallowest to deepest (up to approximately 100 feet bgs), as the A-, B1-, B2-, and B3-zones. The depth intervals designated for each of the zones are not consistent among many of the early reports on Site hydrogeology; different interpretations of depth intervals for various zones likely occurred because of the complex nature of the alluvial system beneath the Site, where sand zones comprise elongated, channel-type deposits that can occur at various depths and widths, with a meandering three-dimensional configuration, rather than a series of horizontal, continuous layers. Nonetheless, A-zone wells are generally screened from 10 to 15 feet bgs; B1-zone wells are generally screened from 17.5 to 30 feet bgs; B2-zone wells are generally screened from 45 to 55 feet bgs; and the B3-zone depth interval is generally between 70 and 90 feet bgs (Engineering Science, 1988). An upward gradient from the B3-zone to the B2-zone is evident from water levels at 50-DDD and 18-DD, where B3-zone well 50-DDD generally has water levels a few feet higher than nearby B2-zone well 18-DD.

2.4 Distribution of COCs in Groundwater

The major COCs reported in groundwater samples above cleanup goals established in the Order are TCE and cDCE, both of which have been present in most groundwater samples from the A-, B1-, and B2-zone wells, but rarely in the B3-zone wells, likely because of the upward gradient from the B3- to the B2-zone. The highest concentrations of TCE and cDCE reported for groundwater samples collected during the 2013 sampling event were 200 and 310 micrograms per liter (μg/L), respectively. The maximum TCE concentration of 200 μg/L was reported in the groundwater sample from B1-Zone well 41-D, which is located upgradient of all known Site sources and operations; the maximum cDCE concentration (310 μg/L) was reported at B1-Zone well 10-D, located cross-gradient of the former PAD C ANS. In general, the ratio of cDCE to TCE is higher in shallow groundwater along the eastern half of the Site, reflecting the impact of the Mohawk plume (composed chiefly of cDCE) on groundwater quality. In general, a mixture of similar proportions of TCE and cDCE has been reported for

groundwater samples beneath the central and western portions of the Site. Perhaps most importantly, COC concentrations in groundwater samples collected upgradient of known on-Site release areas are within the same general range as those from within and downgradient of the release areas (Figures 7 through 9). This is an indication that source area remediation is complete at the Site. Migration beyond the Site boundary is curtailed by operation of the on-Site extraction wells.

A summary of the changes in the two main COCs, TCE and cDCE, during the reporting period of 2009 through 2013 is shown below:

	TCE (2009)	TCE (2013)	cDCE (2009)	cDCE (2013)
Max (μg/L)	230	200	348	310
Median (μg/L)	8.8	15	6.9	20
Number of Wells Exceeding MCL	15	17	14	17

These changes are relatively small and indicate generally stable conditions.

2.5 Groundwater Extraction and Treatment

The groundwater extraction and treatment system (GETS) at the Site is comprised of nine extraction wells (EW-1 through EW-9) intercepting the A- and B1- or B2-zones and transporting the extracted water to an on-Site treatment system, where COCs are removed from the extracted water by carbon adsorption, prior to permitted discharge to the storm sewer or on-Site for re-use. Well EW-3 was not operated during the reporting period of 2009 through 2013 due to its very low yield (0.05 gpm average extraction rate) and low COC concentrations (approximately 2 micrograms per liter [μg/L]), as proposed in a letter from Geomatrix to the Water Board (Geomatrix, 2006). Average total groundwater extraction flow rates for the other eight wells combined to approximately 55 to 65 gallons per minute (gpm) over this review period.

2.6 Basement Dewatering System

Nine basement dewatering sumps operate at the Site and are currently connected to the groundwater treatment system and may have historically discharged to the sanitary sewer. Treatment system readings collected in 2013 indicated that the total flow of water extracted from the basement sumps was greater than 20 gpm, with approximately 8.8 gpm extracted from a sump on the east side of the main building (BS-6). The combined flow from the other 8 sumps in 2013 was approximately 11.5 gpm. Groundwater from these sumps has been reported to contain COCs which are removed by the on-Site treatment system prior to discharge or re-use.

3. PROGRESS SINCE LAST REVIEW

The progress made over the review period (2009 through 2013) includes annual groundwater monitoring, operation and maintenance of the on-Site groundwater extraction wells, a vapor intrusion evaluation, and work completed by others at the Site. These activities are further discussed below.

3.1 Groundwater Monitoring Program

Each annual groundwater monitoring event includes measuring water levels and collecting groundwater samples from Site monitoring and extraction wells. The most recent monitoring event was conducted in October and November 2013, and the results will be summarized in the 2013 Annual Groundwater Monitoring Report to be submitted by Haley & Aldrich on behalf of AMD. Between 2009 and 2013, the monitoring program has included monitoring 37 wells for water levels and/or COC concentrations; monitoring well locations are shown in Figure 2. Table 2 summarizes the results from each year of monitoring. The monitoring program during this review period has shown the following:

- Water levels were generally stable, fluctuating by less than one foot in the A and B1 Zones, and by less than two feet in the B2 and B3 Zones;
- Interpreted horizontal hydraulic gradient directions generally have been towards the north or northeast in the A, B1, and B2 Zones, although localized gradients exist due to groundwater extraction (Figures 4 through 6);
- The number of wells where COC concentrations exceed cleanup goals established in the Order increased in the A Zone, but has remained stable in the B1 and B2 Zones, over this review period;
- Maximum TCE concentrations reported for A-Zone monitoring wells decreased from 230 to 190 μg/L over this review period; maximum concentrations for B1- and B2-Zone monitoring wells remained generally stable (only a 10 μg/L difference between 2009 and 2013);
- Maximum cDCE concentrations reported for A- and B1-Zone monitoring wells remained generally stable (equal to or less than a 10 μg/L difference between 2009 and 2013), and decreased in B2-Zone monitoring wells from 340 to 290 μg/L over this review period;
- Annual volume of groundwater extracted ranged from approximately 28 to 34 million gallons per year over this review period; and
- During this review period, the total mass of VOCs removed ranged from a minimum of 39 pounds in 2010 to a maximum of 51 pounds per year in 2012.

3.2 Groundwater Extraction and Treatment System

The GETS is composed of the following major components:

- A network of nine on-Site extraction wells, where EW-1 through EW-6 extract water from both the A and B1 Zones; EW-7 through EW-9 are B2-Zone extraction wells. As described above, well EW-3 is not operated. These wells extract groundwater at a combined average flow ranging from approximately 55 gpm to 65 gpm during this review period. Extraction well EW-

6 has consistently been pumped at the highest rates, ranging from approximately 24 to 25 gpm over this review period.

- Nine (9) basement dewatering sumps, with a recorded flow rate of up to 20 gpm or more. The highest flow is from BS-6, which has ranged from 6 to 10 gpm over this review period.

- An on-Site treatment system for removing COCs from extracted water. The treatment system includes three 2,000-pound granular activated carbon (GAC) vessels plumbed in series. Two packed-tower air-strippers plumbed in parallel act as a backup system during GAC changes.

- The NPDES discharge point is the on-Site storm drain, which ultimately discharges to Calabazas Creek.

Until 2011, off-Site extraction wells in the OOU, operated on behalf of Philips, had discharged to the on-Site treatment system pursuant to an agreement between Philips and AMD. In 2011, Philips ceased its use of the on-Site treatment system; since then, no groundwater from off-Site wells has been discharged to the on-Site treatment system.

In May 2012, the treatment system was modified to use GAC vessels in series to treat extracted groundwater, as described in the Engineering Certification Report for Treatment System Modification (AMEC, 2012). Previously two packed-tower air strippers and one 40,000-pound GAC vessel were used to treat extracted groundwater. The air strippers were retained as a backup treatment system.

Field Solutions, Inc. (FSI) conducts routine operation, maintenance, quarterly sampling and monitoring of the on-Site extraction wells on behalf of AMD.

3.3 Vapor Intrusion Evaluation

Indoor air sampling was conducted on behalf of AMD in August 2011 to evaluate the potential for vapor intrusion at the Site. The field and analytical methods employed and the results of the investigation are described in detail in the Report of Results – Indoor Air Sampling (AMEC, 2011), and are summarized below.

As part of the vapor intrusion evaluation, a building survey and Site walk was conducted with Water Board staff and U.S. EPA staff present to identify appropriate indoor and ambient air sampling locations. Observations of building exteriors and interiors, including factors related to chemical storage, presence of floor drains, conditions of the concrete slab (e.g., utility conduits or cracks), and presence of heating, ventilation and air conditioning (HVAC) units were evaluated. As part of pre-field activities, field screening was conducted to evaluate potential preferential vapor intrusion pathways using a ppbRAE, a low-level photoionization detector (PID) with a reporting limit of 1 part per billion. Building survey forms were also completed to inventory products that could potentially contain COCs.

Prior to sampling, Spansion was advised not to perform any activities that could bias the results of the indoor air sampling (e.g., indoor painting, solvent use) and remove cleaning products and construction supplies at least 48 hours prior to sample collection. Staff at the facility were asked to refrain from garment handling operations (i.e., avoid bringing dry-cleaned garments into the building), smoking, building maintenance, or cleaning inside the facility during the 48-hour period prior to or during implementation of the sampling program.

Spansion personnel provided information on the operational parameters of the HVAC units, the building foundation, and building plans, as well as activities of various types of regular workers in the

building. Spansion was asked to turn off all HVAC units, in order to provide a worst-case scenario of potential vapor intrusion; however, U.S. EPA personnel confirmed during the June 2, 2011, Site walk that it would not be necessary to adjust the HVAC settings in laboratory areas (e.g., clean rooms) that could be negatively impacted by turning off the HVAC unit.

Indoor air samples were collected over an approximately 12-hour sampling period on August 21, 2011. The sampling program included 5 ambient air samples, 10 breathing zone, 6 preferential pathway, and 2 duplicate samples. Samples intended to be representative of the breathing zone were placed on desks and/or other features such that the intake was at a level of approximately 3 to 5 feet above floor level. Preferential pathway samples were placed on the floor adjacent to the potential pathway intended for evaluation. Outdoor (ambient) air samples were placed on the ground north (i.e., upwind) of the building, on features within the equipment pad, and on the roof. Samples were collected into 6-liter Summa™ canisters fitted with designated, laboratory-supplied, 12-hour flow controllers, all of which were individually certified by the analytical laboratory to be clean and free of contamination

All results were below the applicable risk-based screening levels[1] (i.e., RSLs), indicating that vapor intrusion does not pose an unacceptable health risk. Concentrations of TCE in indoor air were highest in the western portion of the building, where TCE concentrations are highest in groundwater. Similarly, concentrations of cDCE were highest in the eastern portion of the building, where cDCE concentrations are highest in groundwater. Samples collected near the building's active basement dewatering sumps did not show higher levels of COCs than those collected near other preferential pathways.

3.4 Work Completed By Others

A Phase II Environmental Site Assessment (Phase II ESA) and Human Health Risk Assessment (HHRA) were completed for the Site by Treadwell & Rollo (T&R) on behalf of the Prometheus Real Estate Group, a prospective purchaser, to evaluate potential redevelopment of the Site for residential housing (T&R, 2012a and 2012b). The Phase II ESA included the collection of groundwater, soil, soil vapor, and sub-slab vapor samples in October, November, and December 2011. Analytical results as well as groundwater monitoring data collected by AMD were evaluated by T&R and are presented in a baseline HHRA (T&R, 2012b), which concluded that COCs in Site media do not pose an unacceptable risk for future residential and construction-related receptors.

In April 2013, a shallow soil and soil gas investigation was completed at the Site by Ground Zero Analysis, Inc. (Ground Zero) on behalf of the City of Sunnyvale as part of proposed redevelopment plans that included the dedication of approximately 5.8 acres of the Site to the City of Sunnyvale as a public park. The samples were collected to evaluate 1) the extent and potential source of the elevated level of cDCE in soil gas near a location previously completed by T&R (TR-20), 2) concentrations of organochlorine pesticides (OCPs) in shallow soil, and 3) if VOCs are present in soil beneath and adjacent to the 943 DeGuigne building (located at the far eastern portion of the Site). The analytical results for soil and soil gas samples indicated that 1) impacts to soil gas previously observed at location TR-20 are localized, 2) the OCP dieldrin was detected in native soil at depths up to 2.5 feet bgs at concentrations above the residential direct contact Environmental Screening Levels (ESLs), and 3) no VOCs were detected in any soil samples collected at the 943 DeGuigne building (Ground Zero, 2013).

In November 2013, soil and soil vapor samples were collected at the Site by ENGEO Inc. on behalf of (Watt) in support of the sale and proposed redevelopment of the property. The results of the additional soil and soil vapor sampling were not available at the time this report was prepared.

[1] All concentrations of TCE measured in indoor air also were below the interim TCE indoor air short-term response action level (RAL) of 7 $\mu g/m^3$ for commercial/industrial buildings with a 10-hour workday (USEPA, 2013).

4. REMEDIAL SYSTEM PERFORMANCE AND EFFECTIVENESS

4.1 Remedial Objectives

The objective of the remediation program for the Site is to limit the potential for COCs to migrate off-Site from on-Site sources. The cleanup goals for groundwater are the more stringent of the Federal or California maximum contaminant level (MCL) for drinking water for each of the COCs. The cleanup goals for groundwater are listed below:

Compound	Cleanup Goal (µg/L)
Benzene	1
Total Chromium	50
Chloroform	NA
Dichlorodifluoromethane	NA
1,1-Dichloroethane	5
1,1-Dichloroethene	6
cis-1,2-Dichloroethene	6
trans-1,2-Dichloroethene	10
Ethylbenzene	300
Freon 113	1,200
Tetrachloroethene	5
Toluene	150
1,2,4-Trichlorobenzene	5
1,1,1-Trichloroethane	200
Trichloroethene	5
Trichlorofluoromethane	150
Xylenes	1,750

4.2 Soil

No soil cleanup goals were established in the Order, and soil cleanup is complete at the Site. Therefore, no soil remediation has occurred during the reporting period of 2009 through 2013.

4.3 Groundwater

4.3.1 Evaluation of Hydraulic Containment

Water levels were measured in Site monitoring wells in October 2013. Groundwater elevation contours for the A, B1, and B2 Zones are shown on Figures 4 through 6, respectively. The general direction of the horizontal hydraulic gradient in the A- and B1-Zones is to the north-northeast. However, the interpreted potentiometric surface displays a depression surrounding extraction wells EW-2 through EW-6. Localized groundwater flow is towards these wells from the south, west, and east. The former source area (PAD C ANS system) is located within the expected capture zone of the A- and B1-Zone extraction wells, including the nearby wells EW-5 and EW-6, which pump at an average combined rate of approximately 37 gpm. Furthermore, it is expected that the former PAD C excavation area is physically contained by the excavation cutoff walls, as described in the Subsurface Investigation Report (Geomatrix, 2008). The

capture zone for the four extraction wells appears to be larger than the footprint of the existing building and the former source area, indicating that the wells effectively capture groundwater affected by COCs from both on-Site and off-Site sources.

The direction of the horizontal hydraulic gradient in the B2-Zone is generally to the northeast; however, a depression exists around extraction wells EW-7, EW-8 and EW-9, with the area surrounding EW-7 and EW-9 exhibiting a larger decrease in water levels. Well EW-9 appears to capture water from the eastern portion of the Site, with EW-7 and EW-8 affecting groundwater flow in the central portion of the Site north of the existing building.

4.3.2 Concentration Trends

Historical chemical concentrations detected in samples collected from Site monitoring wells are included as Appendix A. The concentration trend plots for the two main COCs (TCE and cDCE) are included as Figures 7 through 9; analytical results for cDCE are not available prior to 1992. The major conclusions from these trend analyses are discussed below.

A decreasing trend of TCE and cDCE in most wells since 1982, and a stable to decreasing trend over the current review period is observed. A rapid rate of decrease in TCE concentrations for groundwater samples from a number of monitoring wells adjacent to and downgradient of the former source area is observed between 1982 and 1997. This indicates that the soil excavation and dewatering program successfully removed TCE from the subsurface, and there was very little COC mass left to sustain higher COC concentrations in groundwater.

Several wells located adjacent to or downgradient of the former source area (e.g., 8-S, 11-S, 11-DD, 18-S, 18-DD, 19-S, and 45-DD) have concentrations of TCE near or below the Site cleanup goals.

Concentrations trends for monitoring wells farther away from the source area, including upgradient and cross-gradient wells, have comparable or higher concentrations than wells adjacent to or downgradient of the former source area. Furthermore, concentrations detected in grab groundwater samples collected at the upgradient (southern) edge of the property during the 2007 Site characterization (Geomatrix, 2008) are comparable to or higher than the downgradient wells. This indicates that source remediation at the site is complete, and Site wells are monitoring impacts from upgradient, off-Site sources.

A-zone well 8-S is nearest the former PAD C ANS (historical on-Site TCE source area). Concentrations of TCE and cDCE have decreased in this well by more than one order of magnitude since monitoring began in 1982 (Figure 7). Similar decreases have been observed in downgradient wells 11-S and 18-S, where concentrations of TCE and cDCE are currently below cleanup goals. The concentration trend for B1-zone well 20-D, and B2-zone wells 18-DD and 32-DD show similar trends, where concentrations initially greater than 1,000 μg/L have decreased to close to or less than 100 μg/L, with the greatest decrease occurring between approximately 1982 and 1995, and more or less leveling out in recent years. This decreasing trend for wells adjacent to and downgradient of the former source area is an indication that the excavation (completed in 1982), and subsequent groundwater extraction, have been successful in removing most of the TCE related to the former ANS leak from soil and groundwater beneath the Site.

The concentrations of TCE and cDCE for samples collected from a majority of other A-zone monitoring wells, have remained generally consistent, and greater than their cleanup

concentration goals, for the reporting period of 2009 to 2013. Wells 2-S, 40-S, 41-S, and 49-S on the western portion of the Site are likely affected by an upgradient, off-Site source of COCs (Geomatrix, 2008), and well 31-S on the eastern portion of the property is affected by COCs associated with the Mohawk Plume (Geomatrix, 2008a). In general, TCE is detected at higher concentrations than cDCE in the western portion of the Site, while cDCE is detected at higher concentrations than TCE in the central and eastern portions of the Site.

Concentrations of TCE and cDCE for groundwater samples from the B1-zone monitoring wells have remained low (below their cleanup goals) in monitoring wells 49-D and 51-D. In wells 19-D and 20-D, concentrations of these COCs had previously decreased to the point where they were near or below the cleanup goal during the last reporting period; however, a rebound was observed during this reporting period. Concentrations of TCE and cDCE have remained stable or decreased in the other B1-zone wells during this reporting period. As stated earlier, wells 10-D, 40-D, 41-D, and 49-D are likely affected by an upgradient, off-Site source of COCs (Geomatrix, 2008).

Concentrations of TCE and cDCE in samples collected from the B2-zone wells 43-DD, 45-DD and 49-DD generally remained stable or decreased, and are currently below the cleanup goals. In B2-zone well 18-DD, the concentrations are variable, alternating between detections above and below the cleanup goals. TCE and cDCE concentrations remained stable or decreased during the reporting period for wells 20-DD, 32-DD, and 42-DD, although all three wells contain COCs above the cleanup goals. In general, TCE was detected at a higher concentration than cDCE in all B2-Zone wells, with the exception of 42-DD.

In summary, the concentrations of COCs detected in wells and in depth-discrete groundwater samples (Geomatrix, 2008) both upgradient and downgradient of the former source area are similar, suggesting that the groundwater beneath the Site is impacted by several upgradient, off-Site sources of VOCs, and that the former PAD C ANS source area is no longer a significant impact to groundwater; the temporal trends in groundwater COC concentrations are consistent with this conclusion.

4.3.3 Extraction Mass Removal and Efficiency

During the reporting period of 2009 to 2013, approximately 158 million gallons of water were extracted and approximately 229 pounds of total VOCs were removed by the GETS (Table 3). Since groundwater extraction began in 1984, approximately 1 billion gallons of water were extracted and approximately 5,715 pounds of total VOCs were removed. Over time, the average mass removal efficiency has steadily decreased (Table 4), from approximately 3.8 pounds per million gallons (lbs/Mgal) in 1997 (the first year that accurate extraction well information is available) to 1.4 lbs/Mgal in 2013 (Figure 10).

4.4 Vapor Intrusion

Based on the results of the indoor air sampling, the vapor intrusion assessment concluded that there was no apparent unacceptable human health risk posed by groundwater at the Site (AMEC, 2011).

4.5 Institutional Control

In October 2013, Haley & Aldrich subcontracted with Environmental Data Resources, Inc. (EDR) of Milford, Connecticut to conduct a title search on the 915 DeGuigne property and identify any environmental liens, and other activity and use limitations such as engineering controls and institutional

controls. Institutional control in the form of a deed restriction prohibiting the extraction of groundwater from the Upper Aquifer (the A- through B3-zones) for use as a drinking water source was identified by EDR (Appendix B). This deed restriction is a risk management measure that eliminates the exposure of humans to TCE from drinking Site groundwater and is part of the overall remedy designated in the Order and Record of Decision for the Site. The deed restriction is dated August 6, 1992, and was recorded on August 7, 1992.

The existing restrictive covenant was prepared prior to passage of California Civil Code 1471. AMD no longer owns the property, and hence cannot record a new deed restriction that complies with current requirements. However, AMD has prepared a draft deed restriction, obtained the approval of the current owner (Spansion) and submitted it to the Regional Board and EPA for review. AMD has also worked with Spansion and Watt to revise the draft deed restriction at Watt's request.

4.6 Cost Evaluation

From 1981 to 2008, the total cost of addressing soil and groundwater contamination beneath the Site was reported to be $8,640,000 (AMEC, 2008). Since that time, AMD has spent $64,000 on capital expenditures and $648,000 on operation, maintenance, monitoring, investigation, and consulting fees (based on information provided by AMD), amounting to approximately $721,000 for this review period.

The total cost for remediation to date is: $ 9,425,000

A large increase in the annual costs occurred in 2012 (Table 4); this coincides with AMD taking over the operation and maintenance of the on-Site treatment system from Philips, as described in Section 3.2. Haley & Aldrich anticipates that the future annual remediation costs will be approximately $190,000 per year; an estimate of the total future remediation cost is not possible because the duration for operating the GETS is unknown.

COCs were removed between 1997 and 2013 through the GETS only, and the cost per year are presented in Table 4. Due to the decreased efficiency of the system to remove COCs from the subsurface, the cost per pound of COCs removed has steadily risen, from $899/lb in 1997 to $5,163/lb in 2013.

5. CONCLUSIONS

Based on the evaluation of historical data from the subject Site, as reported in Five Year Review, it appears that AMD's remediation of on-Site sources was substantially, if not fully, complete by the mid 1990's and the continued operation of the groundwater extraction and treatment system primarily addresses off-Site releases. The lines of evidence for this conclusion are:

As discussed in Section 2.1, the use of TCE at the Site was short-lived (1974 – 1979). The discharge of TCE was reported to have occurred at an underground tank, and it is likely that some time was required for the tank condition to degrade to the point of failure where constituents were released. AMD excavated COC-affected soil from this source area within nine years of AMD beginning operation at the Site; this likely was less than nine years after the initial TCE release had occurred. This short residence time for TCE in the subsurface explains the apparent limited TCE migration off-Site. Therefore, the timeframe for TCE contact with soil is relatively low; diffusion of TCE into fine-grained units would not be sufficient for long-term TCE-back diffusion to impact water quality.

Upon discovery of the TCE release in 1982, AMD quickly implemented an aggressive soil excavation and dewatering program that extended to depths greater than 30 feet bgs; the program included over-excavating the entire tank pit depth by more than 10 feet, and by several feet in all lateral dimensions. The shoring for the excavation remained in place as a physical containment system for residual VOCs immediately beneath the base of the excavation backfill (Geomatrix, 2008).

Rapid initial declines in TCE concentrations in groundwater samples from the vicinity of the release area, over the first five to 10 years of groundwater monitoring (Figures 7 through 9), is consistent with the cleanup of a relatively young release, where TCE has had little time to diffuse into fine-grained layers.

As discussed in Section 3.1, there has been little apparent progress in terms of concentration decreases in groundwater samples collected over this review period, although continued operation of the GETS has occurred over this time period. This observation likely is because upgradient, off-Site releases, as documented in Geomatrix (2008), have impacted groundwater beneath the Site. Continued operation of the GETS does not remediate the upgradient sources, but does provide hydraulic containment, such that the migration of COCs released at upgradient Sites is curtailed at the 915 DeGuigne Site, at AMD's expense. The maximum TCE and cDCE concentrations are reported in groundwater samples from the upgradient and western portions of the Site, not from the area near the former source zone.

Additional on-Site remediation will not result in meeting cleanup goals in the near future because of upgradient COC sources.

Because of the aforementioned COC impacts to groundwater quality from off-Site sources, the timeframe to reach cleanup goals depends on the progress of cleanup at upgradient Sites and the migration of clean groundwater to the 915 Site from those upgradient Sites once they have achieved cleanup goals. This is an important consideration in reviewing remediation progress, as the next Five Year Review Report (due in 2018) likely will have conclusions very similar to those in this current Five-Year report in terms of groundwater concentrations and overall conclusions.

The Site poses no unacceptable risk to human health and the environment.

The two primary exposure routes for human exposure from groundwater chemicals are ingestion (drinking water) and inhalation (by vapors off-gassing from groundwater). The ingestion pathway is

prevented with the deed restriction that prohibits the use of shallow groundwater beneath the Site as a drinking water source. An indoor air investigation and vapor intrusion evaluation performed at the Site concluded that compounds detected in indoor air samples were at concentrations below applicable risk-based screening levels, and that potential vapor intrusion does not result in an unacceptable health risk.

6. RECOMMENDATIONS

A substantial volume of the groundwater extracted by the on-Site extraction wells has been and continues to be affected by off-Site COC sources. If groundwater extraction were to cease entirely, a potential for COCs to migrate in groundwater in a northerly direction downgradient of the Site exists, which is not a desirable outcome. Groundwater is an important resource and the continuous pumping and discharge of treated groundwater to the storm sewer is not a valuable use of this resource. Therefore, it is recommended that the current groundwater extraction program be modified, such that hydraulic containment is sustained but at lower groundwater extraction rates. At the same time, AMD intends to promote and facilitate the increased use of treated water by Spansion and others, as appropriate, with the overall goal of putting all extracted water to some beneficial use, such that the net effect of groundwater extraction on the available resource is minimized.

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TABLES

TABLE I
SITE CHRONOLOGY[1]
915 DeGuigne Drive
Sunnyvale, California

Year	Activity
	Installation of 33 monitoring wells
	Soil Investigation near PAD IV photoresist stripper tank
1981	Removal of PAD IV photoresist stripper tank and soil excavation
1982	Initiation of groundwater monitoring
1982-1983	Removal of PAD C ANS and soil excavation
1983	Installation of of extraction wells EW-1 through EW-4
	Groundwater Extraction and Treatment System (GETS) begins operation
	Installation of extraction wells EW-5 and EW-6
1984	Monthly groundwater monitoring begins
1985	Groundwater monitoring moved to a bimonthly basis
1986	Installation of 2 additional monitoring wells (44-DD and 45-DD) and extraction well EW-7
	Installation of extraction well EW-8
1988	Groundwater monitoring moved to a quarterly basis
	Installation of 2 additional monitoring wells (51-D and 50-DDD)
1990	Additional Soil Investigation at former PAD IV photoresist stripper tank excavation is conducted
1991	Installation of 3 additional monitoring wells (49-S, 49-D, and 49-DD)
1992	Installation of extraction well EW-9
1996	Groundwater monitoring moved to a semiannual basis
1998	Groundwater monitoring moved to an annual basis
2000	Adjustments made to the GETS
2001	Monitoring well NMW-10 is installed on the site by The Source Group, Inc., consultants for Mohawk Laboratories.
2004	Monitoring well NMW-13 is installed on the site by The Source Group, Inc., consultants for Mohawk Laboratories.
2006	Extraction well EW-3 was shutdown because it was pumping at a very low rate, and VOC concentrations ranged from non-detect to less than 5 $\mu g/L$.
	Subsurface Investigation conducted in November 2007 to better delineate the distribution of VOCs in the subsurface.
2007	An assessment of the potential for VOCs in groundwater to impact indoor air is completed.
2008	Extraction wells EW-5 and EW-6 reclassified as A-/B1-Zone wells
2011	Indoor air investigation conducted in August 2011 to evaluate potential for vapor intrusion.

Notes
1. Site activities from 1981 through 2000 are compiled from the Five-Year report submitted by Arcadis in 2001.
2. Site activities from 2001 through 2008 are compiled from the Five-Year report submitted by AMEC in 2008.

TABLE II

SUMMARY OF GROUNDWATER MONITORING DATA2009 THROUGH 2013

915 DeGuigne Drive

Sunnyvale, California

	2009	2010	2011	2012	2013[1]
Maximum Water Level (A-zone well), feet msl	29.64	30.06	30.43	30.19	29.93
Minimum Water Level (A-zone well), feet msl	23.63	23.92	23.67	23.77	23.48
Maximum Water Level (B1-zone well), feet msl	29.68	30.09	30.47	30.26	29.96
Minimum Water Level (B1-zone well), feet msl	23.56	23.63	23.43	23.07	23.14
Maximum Water Level (B2-zone well), feet msl	27.22	25.98	27.11	26.91	26.96
Minimum Water Level (B2-zone well), feet msl	16.44	15.50	16.05	16.33	16.62
Water Level at 53-DDD (B3-zone), feet msl	26.71	27.20	28.41	28.29	27.85
Number of A-zone Wells with VOCs > MCL	6	7	7	8	8
Number of B1-zone Wells with VOCs > MCL	5	5	5	5	5
Number of B2-zone Wells with VOCs > MCL	5	5	5	5	5
Maximum TCE Concentration (A-zone well), µg/L	230	220	210	240	190
Maximum TCE Concentration (B1-zone well), µg/L	210	280	220	190	200
Maximum TCE Concentration (B2-zone well), µg/L	120	150	160	180	130
Maximum cDCE Concentration (A-zone well), µg/L	170	190	170	150	170
Maximum cDCE Concentration (B1-zone well), µg/L	320	390	350	370	310
Maximum cDCE Concentration (B2-zone well), µg/L	340	390	320	350	290
Gallons Pumped, millions of gallons	33.07	27.95	29.74	32.95	30.72
Annual VOCs Removed, pounds	49	39	41	51	44
Pounds of VOCs/million gallons	1.48	1.40	1.38	1.55	1.43

Note

1. Gallons pumped and pounds of VOCs removed is through November 2013. Data for December 2013 not available.

Abbreviations

VOCs = volatile organic compounds.
TCE = trichloroethene
cDCE = cis-1,2-dichloroethene
feet msl = feet above mean sea level
MCL = maximum contaminant level
µg/L = micrograms per liter

TABLE III
STATUS OF CHEMICALS REMOVED THROUGH 2013 [1]
915 DeGuigne Drive
Sunnyvale, California

Mechanism	Volume Extracted (gallons)	Average Influent VOCs (µg/L)	Estimated Total VOCs Removed (pounds)
1982/1983 Excavations	NA	NA	159 [2]
Groundwater Extraction			
1984 through 1996	477,463,020[3]	1,091 [3]	4,331
Groundwater Extraction			
1997	31,160,950	457	119
1998	26,785,990	384	85
1999	27,000,040	504	115
2000	27,590,000	477	110
2001	34,394,080	381	109
2002	37,239,480	323	99
2003	34,654,860	315	90
2004	30,208,790	264	66
2005	35,383,730	225	66
2006	27,312,510	233	53
2007	24,105,860	184	37
2008	30,090,510	183	46
2009	33,068,180	179	49
2010	27,947,860	168	39
2011	29,739,482	165	41
2012[4]	32,947,600	180	51
2013	34,340,400	173	49
Total	**1,001,433,342**		**5,715**

Notes

1. The extraction volumes above for 1997 through 2000 (and associated VOC mas removed) are based upon meter readings for individual extraction wells. The extraction volumes for 2001 through 2013 (and associated VOC mass removed) are based on readings taken from the Santa Clara Valley Water District totalizer that measures the combined influent from the nine on-site extraction wells located on the AMD 915 DeGuigne facility (does not include the volume extracted by Basement Sump 6). The extraction volumes for 2012 on are based on readings taken from the Santa Clara Valley Water District totalizer that measures the effluent from the treatment system.
2. Approximately 151 pounds of trichlorobenzene were excavated in 1982/1983 and are included in this VOC estimate.
3. Estimated value.
4. Effluent totalizer replaced by Santa Clara Valley Water District on October 31, 2012.

Abbreviations

µg/L = micrograms per liter.
NA = not available.
VOCs = volatile organic compounds.

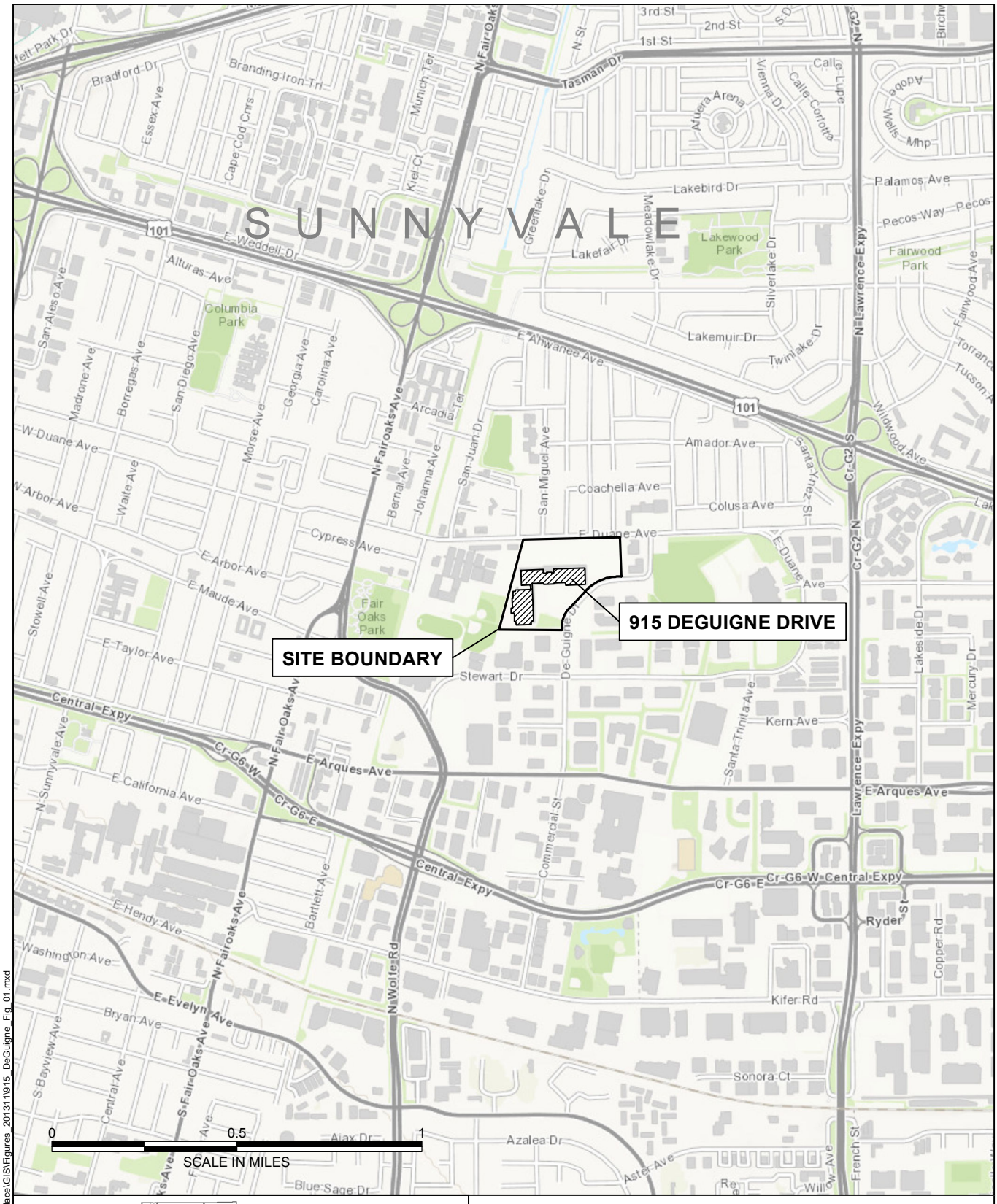
TABLE IV
GROUNDWATER EXTRACTION AND TREATMENT SYSTEM EFFICIENCY AND COST ANALYSIS
915 DeGuigne Drive
Sunnyvale, California

Year	Volume Extracted (gallons)	Estimated Total VOCs Removed (pounds)	Annual Cost[1] (USD)	VOC Removal Efficiency (pounds / Mgal)	Cost Per Pound of VOCs Removed (USD)
1997	31,160,950	119	$107,000	3.82	$899
1998	26,785,990	85	$151,000	3.17	$1,776
1999	27,000,040	115	$92,000	4.26	$800
2000	27,590,000	110	$85,000	3.99	$773
2001	34,394,080	109	$107,000	3.17	$982
2002	37,239,480	99	$76,000	2.66	$768
2003	34,654,860	90	$93,000	2.60	$1,033
2004	30,208,790	66	$87,000	2.18	$1,318
2005	35,383,730	66	$139,000	1.87	$2,106
2006	27,312,510	53	$93,000	1.94	$1,755
2007	24,105,860	37	$112,000	1.53	$3,027
2008	30,090,510	46	$112,000	1.53	$2,435
2009	33,068,180	49	$63,000	1.48	$1,286
2010	27,947,860	39	$72,000	1.40	$1,846
2011	29,739,482	41	$144,000	1.38	$3,512
2012[2]	32,947,600	51	$189,000	1.55	$3,706
2013[2]	34,340,400	49	$253,000	1.43	$5,163
TOTAL	**523,970,322**	**1224**	**$1,975,000**	**2.35**	**$1,613.56**

Notes
1. Costs do not include capital costs. Values are rounded to the nearest thousand dollars.
2. Estimated cost for 2012 and 2013.
3. Volume extracted and total COCs removed is through November 2013. No data for December is available.

Abbreviations
VOCs = volatile organic compounds.
µg/L = micrograms per liter.
NA = not available.

FIGURES



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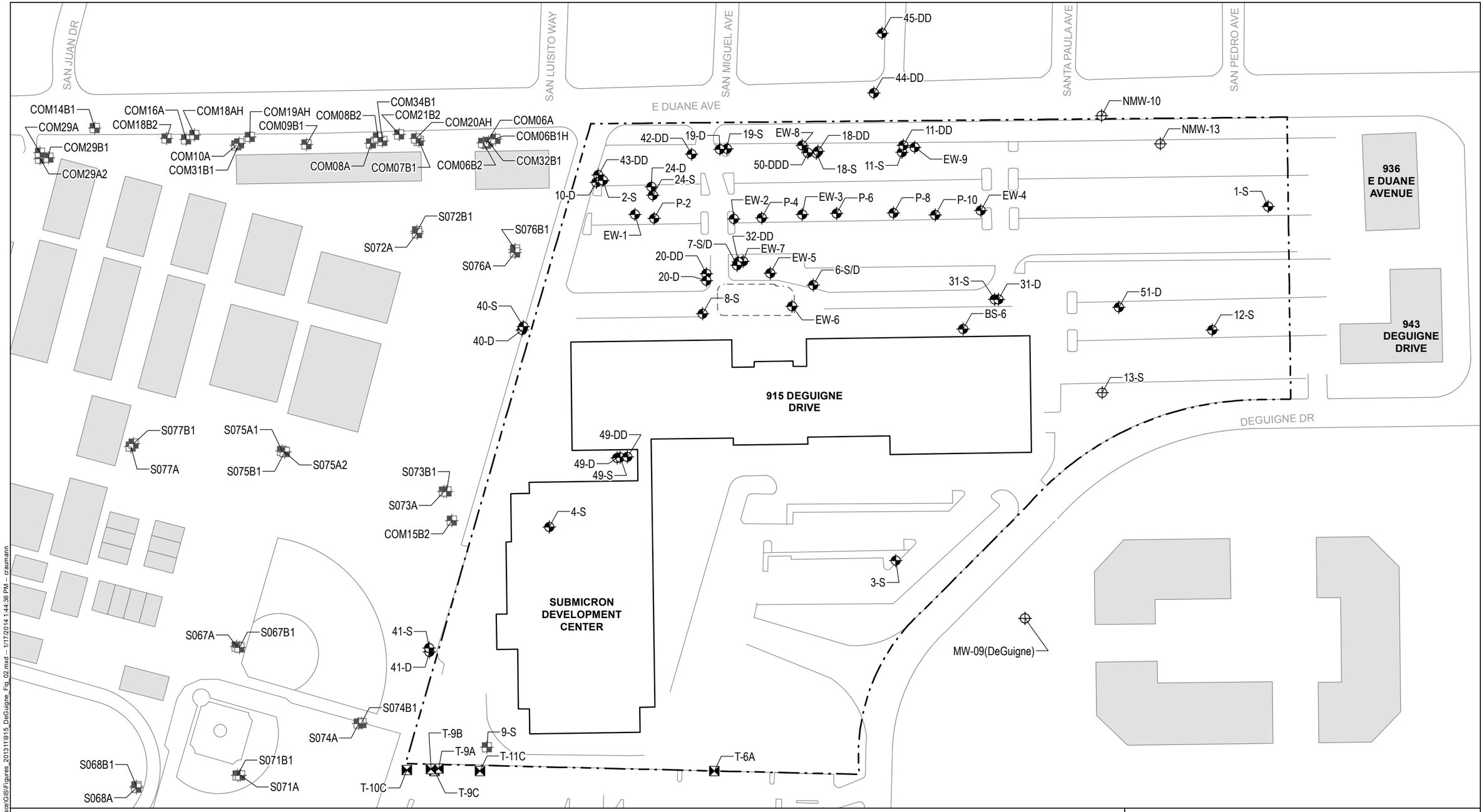
HALEY & ALDRICH

915 DEGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

SITE LOCATION MAP

JANUARY 2014

FIGURE 1



LEGEND

MONITORING WELLS

- AMD
- MOHAWK
- PHILIPS
- TRW MICROWAVE

- SITE BOUNDARY
- CURRENT ON-SITE BUILDING
- OTHER BUILDING
- APPROXIMATE EXTENT OF EXCAVATION AT FORMER PAD C ACID NEUTRALIZATION SYSTEM

N W E S

0 150 300

SCALE IN FEET 1 INCH = 150 FEET

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915 DEGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

SITE PLAN AND VICINITY

NOVEMBER 2013

FIGURE 2

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EW-7

EW-5

EW-6

Cutoff wall (trenched)

Cutoff wall (trenched)

Approximate extent of PAD C excavation, 1982.

Area excavated by open-cut method to approximately 18 feet bgs and backfilled with sand-cement

Approximate extent of PAD C excavation, 1982.

Area excavated by open-cut method to approximately 18 feet bgs and backfilled with sand-cement

Area excavated by shoring and trenching to approximately 28 feet bgs and backfilled with sand-cement

Area excavated by trenching to approximately 15 feet bgs and backfilled with sand-cement

915 DeGuigne Drive Building

NOTE: Basemap provided by Spansion, Inc.
Limits of excavation and cutoff wall drilled piers are approximate based on figures provided in Woodward-Clyde Consultants, Inc., 1983, *System C Soil Reclamation Project,* Advanced Micro Devices, Sunnyvale, California.
Figure modified from Geomatrix (2008) report.

Explanation

- Extraction Well
- Approximate location of cutoff wall drilled piers (1982).

N

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SCALE IN FEET

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915 DeGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

FORMER PAD C EXCAVATION

SCALE: AS SHOWN
JANUARY 2014

FIGURE 3

G:\39770_AMD_915 DEGUIGNE DRIVE\GLOBAL\CAD\DRAWINGS_FIG_03_01092014EDIT.DWG

SAN JUAN DR
SAN LUISITO WAY
SAN MIGUEL AVE
SAN PATRICIO AVE
SANTA PAULA AVE
SAN PEDRO AVE
E DUANE AVE
DEGUIGNE DR

COM29A 30.48
COM29A2 30.49
COM19AH 28.76
COM16A
COM10A
COM20AH 27.70
COM06A
S072A 25.22
S076A 25.08
S077A 27.45
S075A1 27.78
S075A2 27.92
S073A 26.03
S067A 33.00
S074A 30.69
S071A 30.81
S068A 29.56
T-9A 31.51
41-S 29.93
40-S 26.41
49-S 26.87
2-S 24.70
EW-1
19-S 23.48
EW-2
18-S 24.19
EW-3
11-S 24.73
EW-4
NMW-13 22.49
1-S 25.18
EW-5
EW-6
8-S 24.28
31-S 24.59
BS-6
3-S 28.23
MW-09(DeGuigne) 25.42

30
29
28
27
26
25
24
31

915 DEGUIGNE DRIVE
SUBMICRON DEVELOPMENT CENTER
936 E DUANE AVENUE
943 DEGUIGNE DRIVE

WELL ID
WATER LEVEL — A-ZONE MONITORING WELL WITH WATER LEVEL IN FEET (NAVD88)

WELL ID — EXTRACTION WELL

40 — GROUNDWATER ELEVATION CONTOUR

APPROXIMATE EXTENT OF EXCAVATION AT FORMER PAD C ACID NEUTRALIZATION SYSTEM

SITE BOUNDARY

CURRENT ON-SITE BUILDING

OTHER BUILDING

NOTES

1. *MOHAWK WELLS ARE SURVEYED TO A DIFFERENT VERTICAL DATUM (NGVD29), AND ARE OFFSET BY APPROXIMATELY 2.7 FEET.
2. WATER LEVELS IN PARENTHESIS, E.G., (43.29), WERE NOT USED IN GENERATING CONTOURS.
3. CONTOURS ARE BASED ON INTERPRETATION OF MONITORING-WELL DATA AND CURRENT UNDERSTANDING OF HYDROGEOLOGIC CONDITIONS. THEY ARE PROVIDED FOR CLARITY AND ARE NOT INTENDED TO IMPLY CERTAINTY.
4. EW-1 THROUGH EW-6 ARE SCREENED ACROSS BOTH THE A

N W E S

0 150 300
SCALE IN FEET 1 INCH = 150 FEET

HALEY & ALDRICH

915 DEGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

A-ZONE WATER LEVELS OCTOBER 2013

JANUARY 2014

FIGURE 4

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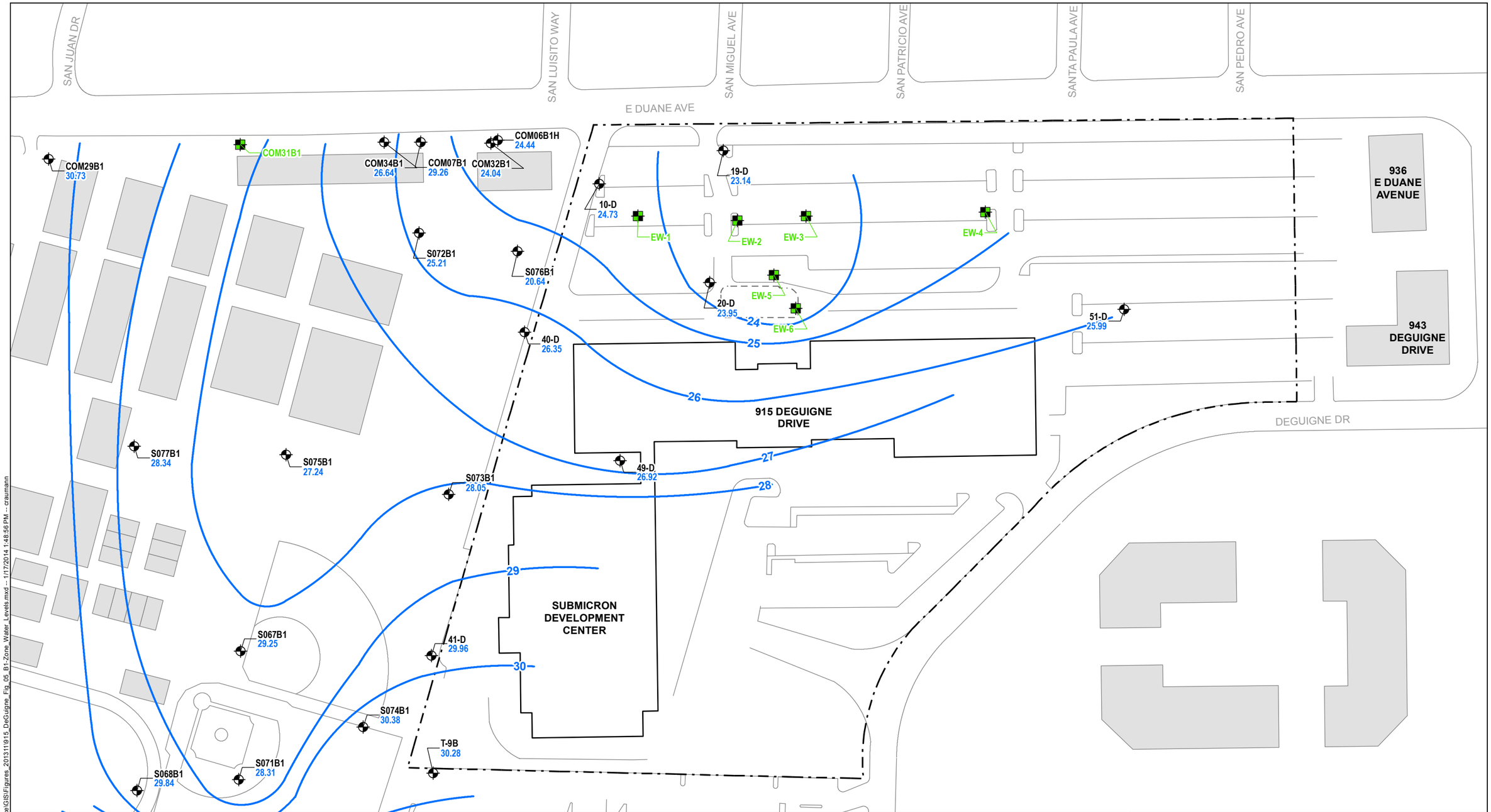

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WELL ID
WATER LEVEL — B1-ZONE MONITORING WELL WITH WATER LEVEL IN FEET (NAVD88)

WELL ID — EXTRACTION WELL

—40— GROUNDWATER ELEVATION CONTOUR

APPROXIMATE EXTENT OF EXCAVATION AT FORMER PAD C ACID NEUTRALIZATION SYSTEM

SITE BOUNDARY

CURRENT ON-SITE BUILDING

OTHER BUILDING

NOTES

1. WATER LEVELS IN PARENTHESIS, E.G., (43.29), WERE NOT USED IN GENERATING CONTOURS.
2. CONTOURS ARE BASED ON INTERPRETATION OF MONITORING-WELL DATA AND CURRENT UNDERSTANDING OF HYDROGEOLOGIC CONDITIONS. THEY ARE PROVIDED FOR CLARITY AND ARE NOT INTENDED TO IMPLY CERTAINTY.
3. EW-1 THROUGH EW-6 ARE SCREENED ACROSS BOTH THE A AND B1 ZONES.

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SCALE IN FEET 1 INCH = 150 FEET

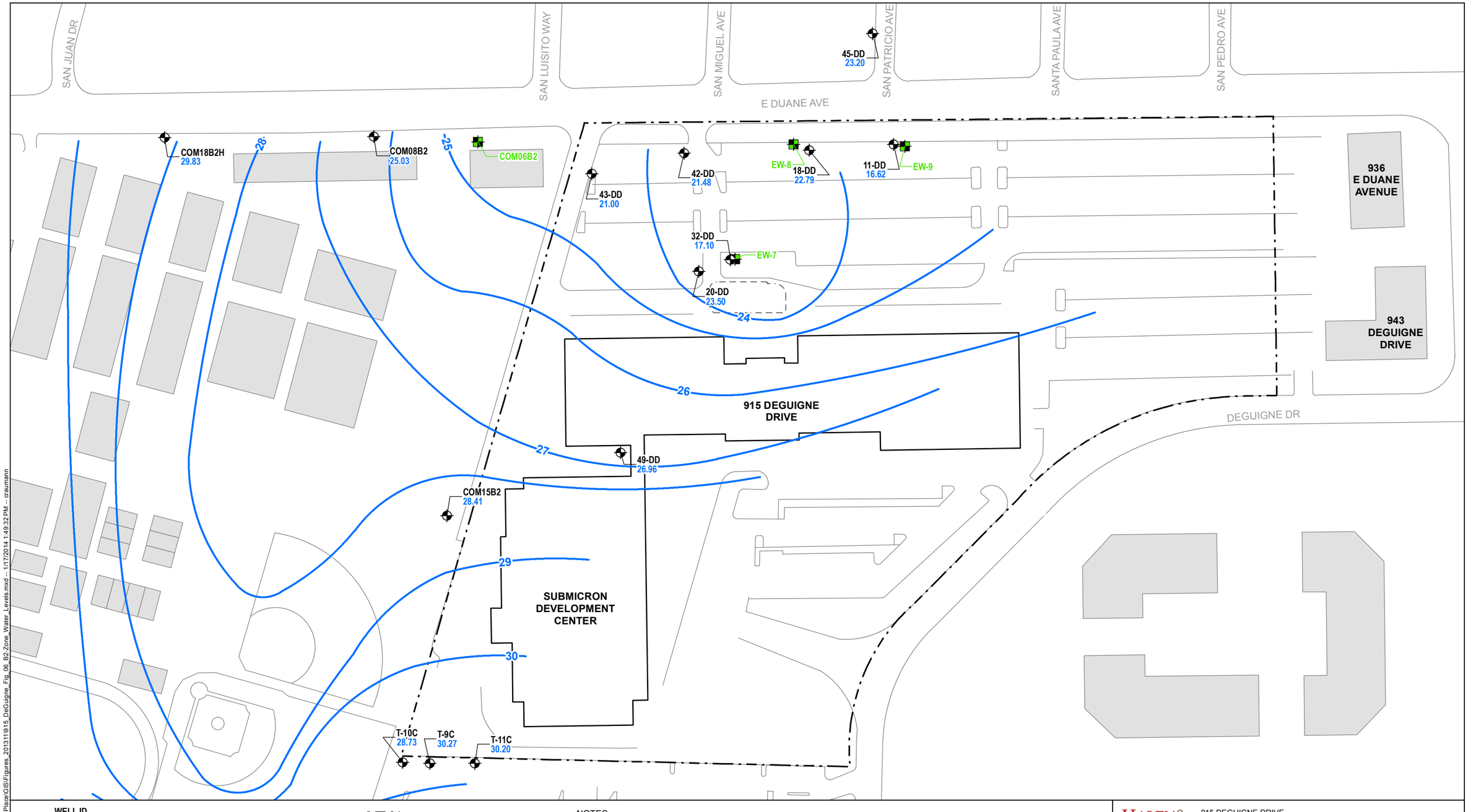
HALEY & ALDRICH

915 DEGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

B1-ZONE WATER LEVELS OCTOBER 2013

JANUARY 2014

FIGURE 5



WELL ID
WATER LEVEL — B2-ZONE MONITORING WELL WITH WATER LEVEL IN FEET (NAVD88)

WELL ID — EXTRACTION WELL

40 — GROUNDWATER ELEVATION CONTOUR

APPROXIMATE EXTENT OF EXCAVATION AT FORMER PAD C ACID NEUTRALIZATION SYSTEM

SITE BOUNDARY

CURRENT ON-SITE BUILDING

OTHER BUILDING

NOTES

1. WATER LEVELS IN PARENTHESIS, E.G., (43.29), WERE NOT USED IN GENERATING CONTOURS.
2. CONTOURS ARE BASED ON INTERPRETATION OF MONITORING-WELL DATA AND CURRENT UNDERSTANDING OF HYDROGEOLOGIC CONDITIONS. THEY ARE PROVIDED FOR CLARITY AND ARE NOT INTENDED TO IMPLY CERTAINTY.
3. EW-1 THROUGH EW-6 ARE SCREENED ACROSS BOTH THE A AND B1 ZONES.

N
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0 150 300
SCALE IN FEET 1 INCH = 150 FEET

HALEY & ALDRICH

915 DEGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

B2-ZONE WATER LEVELS OCTOBER 2013

JANUARY 2014

FIGURE 6

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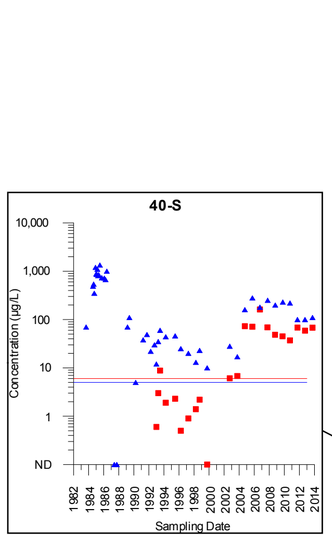

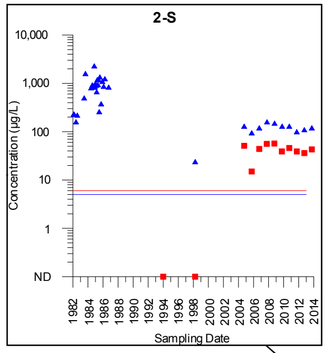

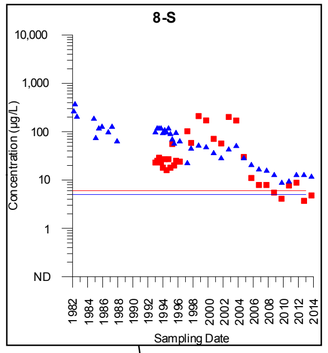

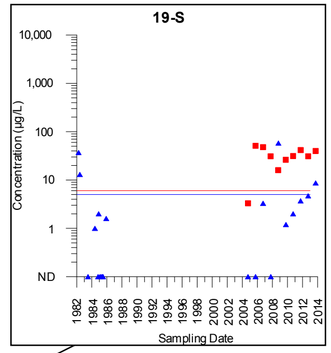

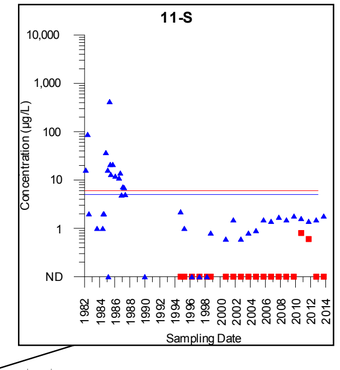

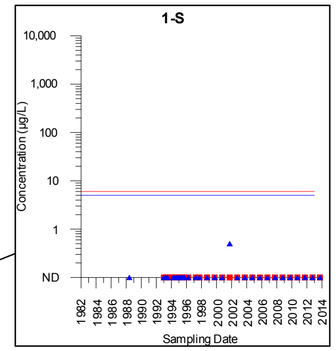

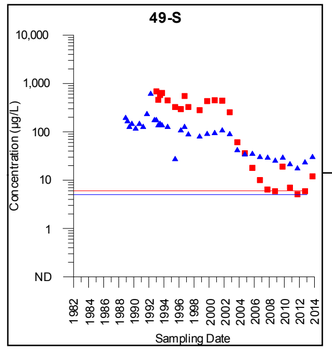

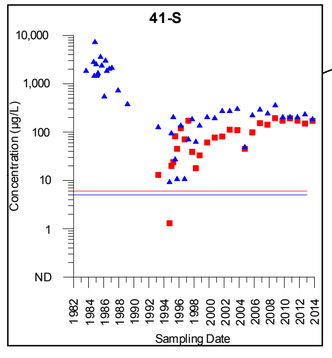

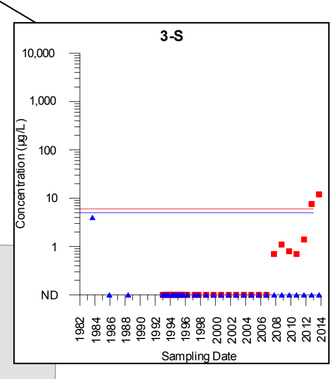

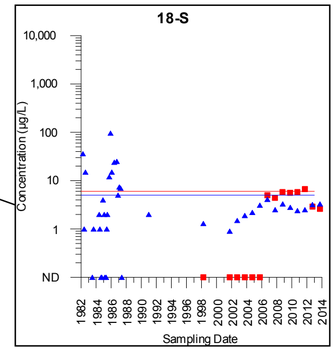

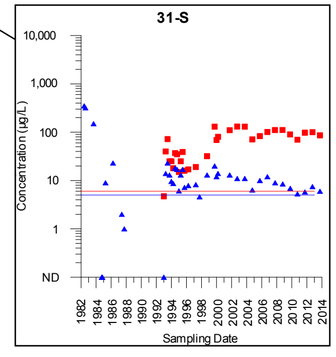

TCE
cDCE
Cleanup Goal for TCE
Cleanup Goal for cDCE

TCE = TRICHLOROETHENE
cDCE = CIS-1,2-DICHLOROETHENE
µg/L - MICROGRAMS PER LITER

LEGEND

- A-ZONE MONITORING WELL
- EXTRACTION WELL
- APPROXIMATE EXTENT OF EXCAVATION AT FORMER PAD C ACID NEUTRALIZATION SYSTEM
- SITE BOUNDARY
- CURRENT ON-SITE BUILDING
- OTHER BUILDING

N W E S

0 150 300
1 INCH = 150 FEET

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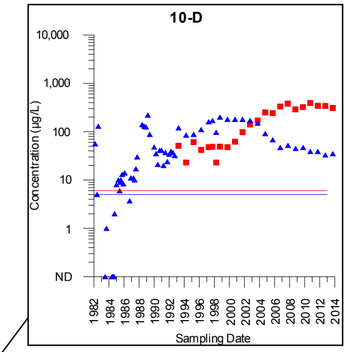
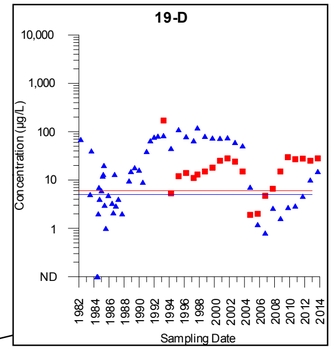
915 DEGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

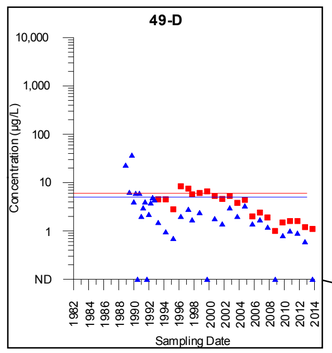
CONCENTRATION TRENDS FOR A-ZONE WELLS

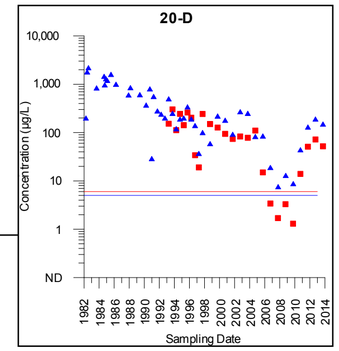
OCTOBER 2013

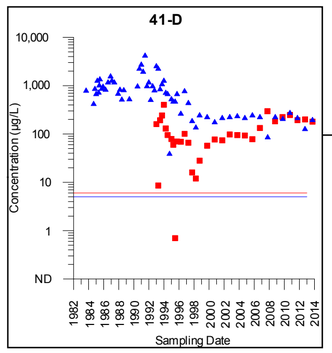
FIGURE 7

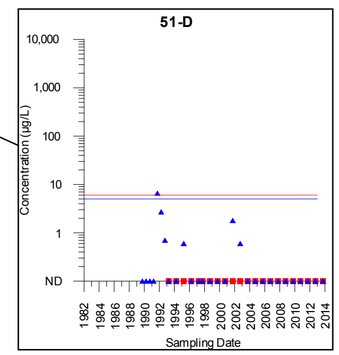


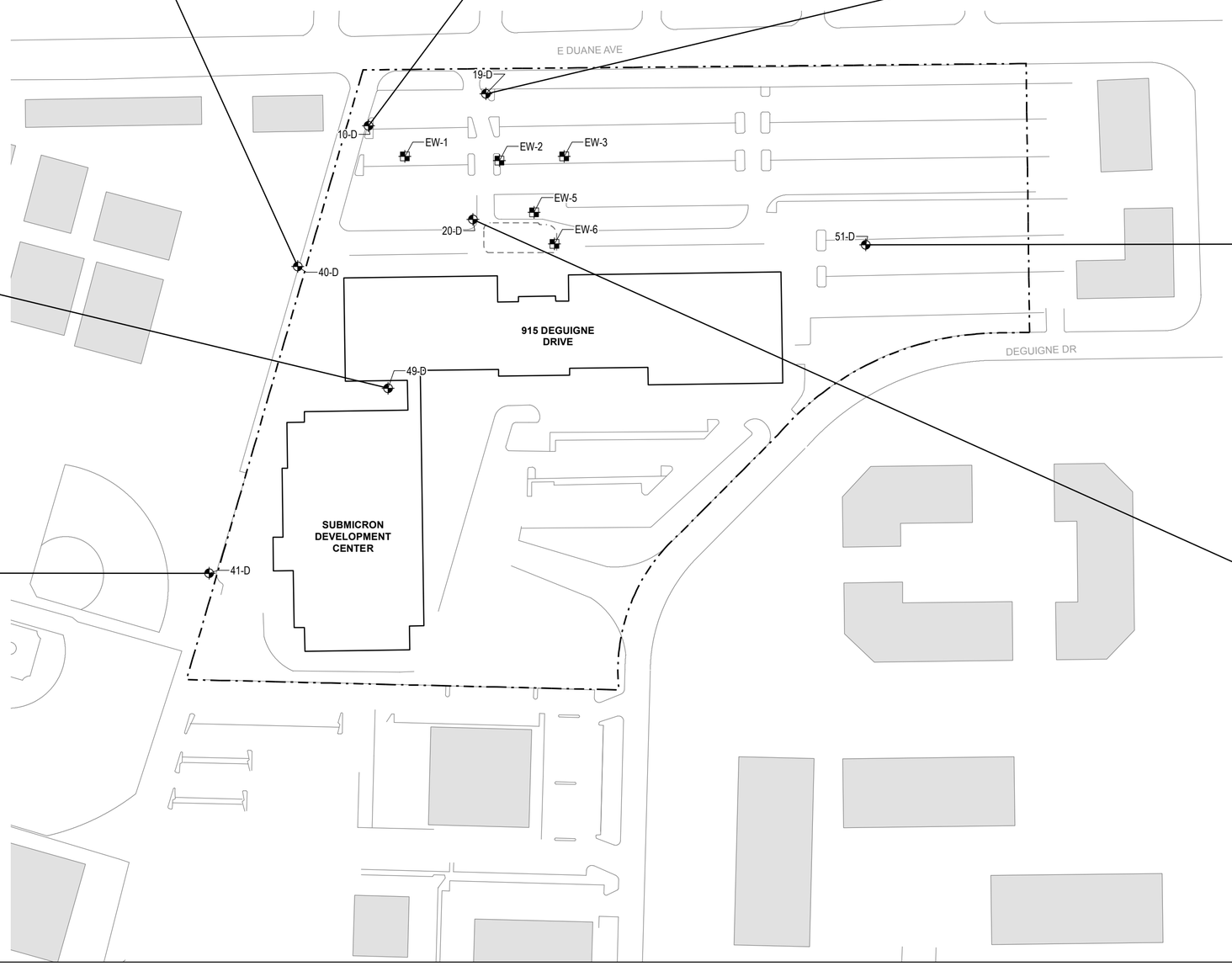












TCE
cDCE
Cleanup Goal for TCE
Cleanup Goal for cDCE

TCE = TRICHLOROETHENE
cDCE = CIS-1,2-DICHLOROETHENE
µg/L - MICROGRAMS PER LITER

LEGEND

- B1-ZONE MONITORING WELL
- EXTRACTION WELL
- APPROXIMATE EXTENT OF EXCAVATION AT FORMER PAD C ACID NEUTRALIZATION SYSTEM
- SITE BOUNDARY
- CURRENT ON-SITE BUILDING
- OTHER BUILDING

N W E S

0 150 300
1 INCH = 150 FEET

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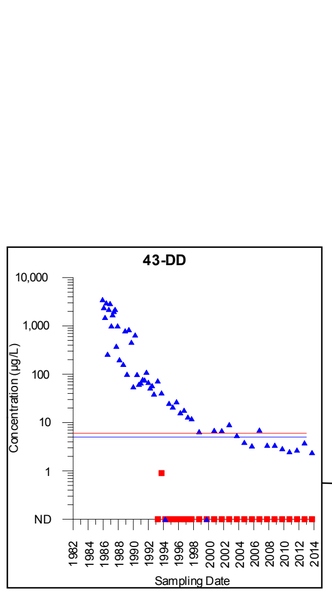
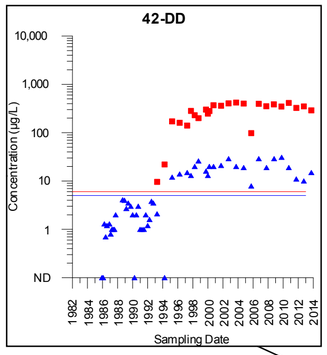
915 DEGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

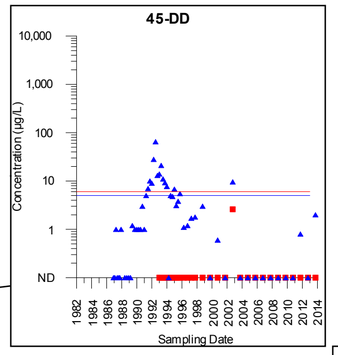
CONCENTRATION TRENDS FOR B1-ZONE WELLS

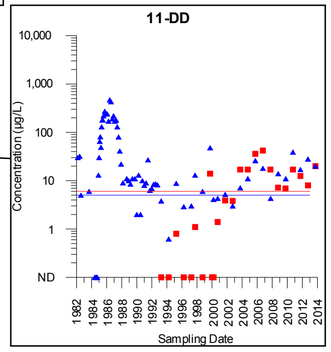
OCTOBER 2013

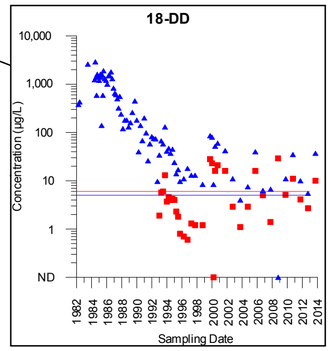
FIGURE 8

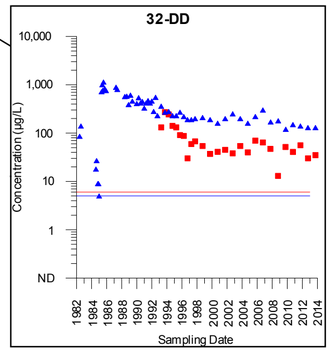


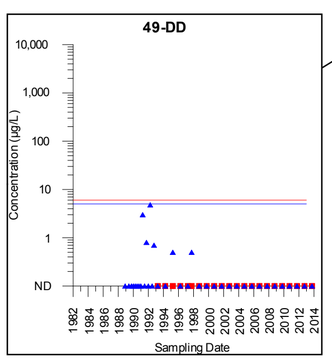


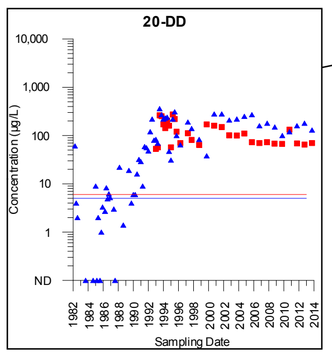












TCE
cDCE
Cleanup Goal for TCE
Cleanup Goal for cDCE

TCE = TRICHLOROETHENE
cDCE = CIS-1,2-DICHLOROETHENE
µg/L - MICROGRAMS PER LITER

LEGEND

- B2-ZONE MONITORING WELL
- EXTRACTION WELL
- APPROXIMATE EXTENT OF EXCAVATION AT FORMER PAD C ACID NEUTRALIZATION SYSTEM
- SITE BOUNDARY
- CURRENT ON-SITE BUILDING
- OTHER BUILDING

N
W E
S

0 150 300
1 INCH = 150 FEET

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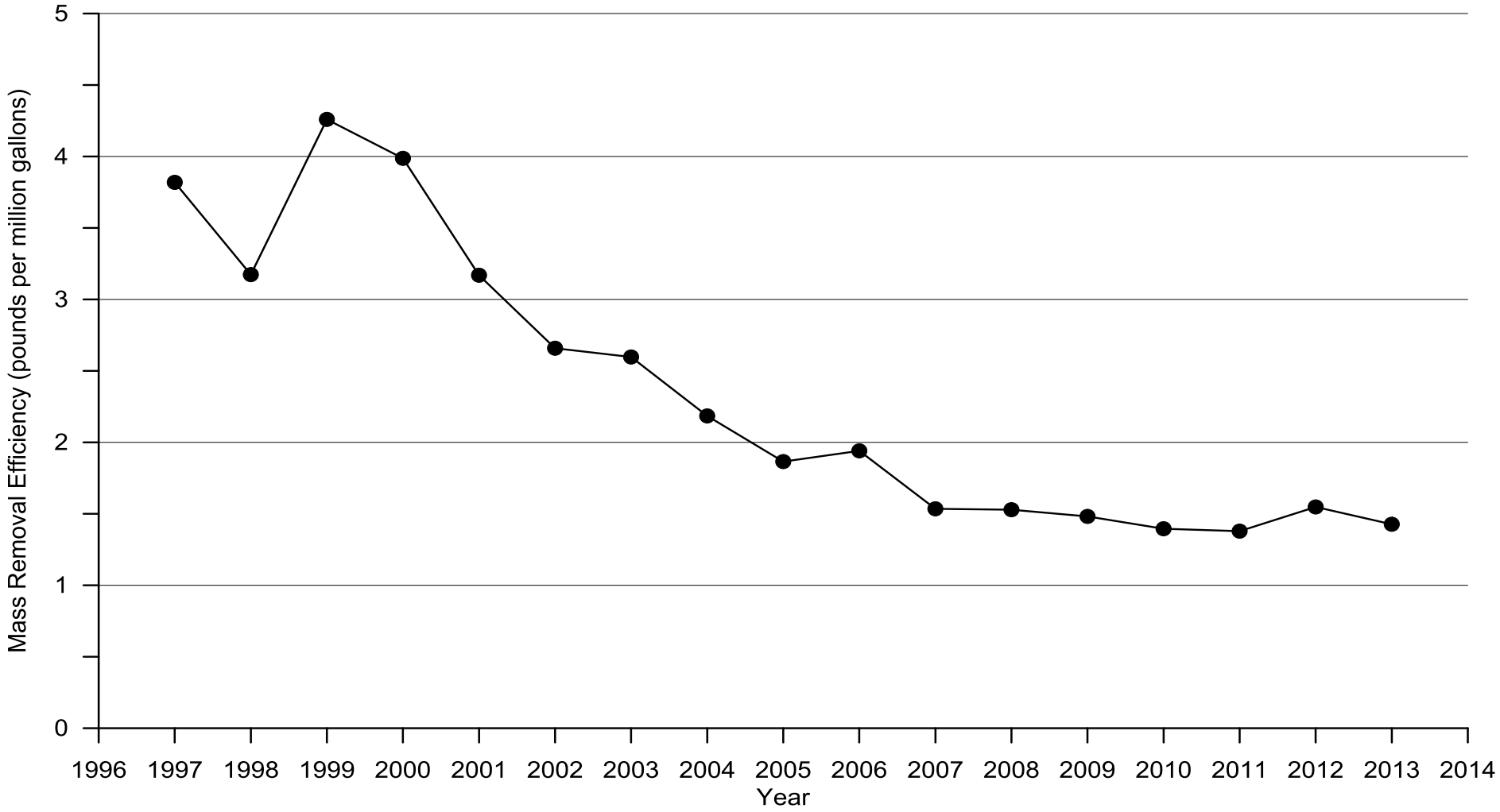
915 DEGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

CONCENTRATION TRENDS FOR
B2-ZONE WELLS

OCTOBER 2013

FIGURE 9

G:\39751_AMD_Former 901-902 Thompson Place\GIS\Figures_2013\11915_DeGuigne_Fig_09_B2-Zone.mxd - 1/17/2014 5:27 PM - craumann



HALEY & ALDRICH

915 DEGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

MASS REMOVAL EFFICIENCY
1997 - 2013

JANUARY 2014

FIGURE 10

APPENDIX A

Historical TCE, cDCE, and Total VOC Concentrations

APPENDIX A-1
HISTORICAL TRICHLOROETHENE CONCENTRATIONS
ADVANCED MICRO DEVICES - 915 DEGUIGNE DRIVE

Concentrations reported in micrograms per liter (µg/L)

	Extraction Wells									A-Zone Wells														
Date	**EW-1**	**EW-2**	**EW-3**	**EW-4**	**EW-5**	**EW-6**	**EW-7**	**EW-8**	**EW-9**	**1-S**	**2-S**	**3-S**	**4-S**	**8-S**	**9-S**	**11-S**	**12-S**	**18-S**	**19-S**	**24-S**	**31-S**	**40-S**	**41-S**	**49-S**
Feb-82	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	230	NS	490	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mar-82	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	230	NS	NS	270	1000	16	NS	NS	NS	NS	NS	NS	NS	NS
Apr-82	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	36	37	2	NS	NS	NS	NS
May-82	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	NS	NS	NS	380	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jun-82	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	160	NS	2000	NS	4100	88	NS	1	13	NS	350	NS	NS	NS
Aug-82	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	220	NS	2100	210	4800	2	NS	15	NS	NS	320	NS	NS	NS
May-83	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	NS	NS	1200	NS	3700	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jul-83	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	500	NS	NS	NS	NS	NS	NS	ND	ND	ND	NS	NS	NS	NS
Sep-83	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	1600	4	1700	NS	3500	1	NS	1	NS	3	150	70	1900	NS
Mar-84	21	ND	ND	ND	NS	NS	NS	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jun-84	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	810	NS	NS	NS	NS	1	NS	2	1	ND	NS	NS	NS	NS
Jul-84	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	846	NS	NS	NS	NS	2	NS	1	NS	1	NS	NS	NS	NS
Aug-84	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	930	NS	NS	NS	NS	2	NS	NS	NS	ND	NS	490	NS	NS
Sep-84	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	900	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	540	2900	NS
Oct-84	NS	NS	NS	NS	390	470	NS	NI	NI	NS	830	NS	NS	NS	NS	NS	NS	ND	NS	NS	ND	350	1500	NS
Nov-84	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	2300	NS	4100	190	NS	37	NS	NS	ND	NS	ND	NS	7500	NS
Dec-84	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	850	NS	1400	NS	NS	NS	NS	4	2	59	NS	1200	NS	NS
Jan-85	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	1000	NS	1100	NS	3500	NS	NS	NS	NS	105	NS	880	2600	NS
Feb-85	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	910	NS	NS	76	NS	16	NS	2	ND	140	NS	860	1500	NS
Mar-85	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	670	NS	1300	NS	NS	ND	NS	ND	NS	190	NS	1100	1600	NS
Apr-85	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	1200	NS	1100	NS	NS	NS	NS	NS	ND	23	9	810	1700	NS
May-85	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	940	NS	NS	NS	NS	420	NS	ND	NS	180	NS	850	NS	NS
Jun-85	410	NS	ND	4	NS	NS	NS	NI	NI	NS	1190	NS	NS	NS	NS	21	NS	1	ND	310	NS	NS	NS	NS
Jul-85	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	260	NS	1960	120	4300	13	NS	2	ND	430	NS	1340	NS	NS
Aug-85	NS	NS	NS	NS	NS	500	NS	NI	NI	NS	1360	NS	NS	NS	NS	NS	NS	NS	NS	400	NS	NS	3700	NS
Oct-85	474	NS	NS	NS	NS	NS	NS	NI	NI	NS	379	NS	NS	NS	NS	21	NS	12	NS	446	NS	732	2446	NS
Dec-85	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	1100	ND	NS	130	3900	NS	NS	96	1.6	460	NS	NS	NS	NS
Feb-86	NS	NS	NS	NS	410	490	NS	NI	NI	NS	870	NS	1100	NS	NS	12	NS	15	NS	520	NS	720	560	NS
Apr-86	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	1250	NS	NS	NS	1800	NS	NS	NS	NS	NS	23	670	3100	NS
Jun-86	NS	570	NS	NS	NS	NS	NS	NI	NI	NS	NS	NS	1500	NS	NS	NS	NS	24	NS	650	NS	1000	1900	NS
Aug-86	360	NS	NS	NS	NS	NS	76	NI	NI	NS	NS	NS	NS	NS	2000	11	NS	NS	NS	NS	NS	NS	NS	NS
Oct-86	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	840	NS	1400	100	1600	14	NS	25	NS	650	NS	NS	2100	NS
Dec-86	NS	NS	2.3	NS	NS	NS	560	NI	NI	NS	NS	NS	NS	NS	1500	4.9	NS	5	NS	NS	NS	NS	NS	NS
Feb-87	NS	420	NS	NS	NS	280	360	NI	NI	NS	NS	NS	NS	NS	1300	7.2	NS	7.4	NS	NS	NS	NS	2200	NS
Apr-87	NS	NS	NS	NS	NS	NS	400	NI	NI	NS	NS	NS	NS	130	1150	7	NS	7	NS	ND	NS	NS	NS	NS
Jun-87	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	NS	NS	NS	NS	1100	5	NS	ND	NS	NS	2	ND	NS	NS
Aug-87	NS	NS	NS	NS	NS	NS	340	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Oct-87	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	NS	NS	NS	NS	800	NS	NS	ND	NS	NS	1	ND	NS	NS
Dec-87	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	NS	NS	NS	65	NS	NS	NS	NS	NS	NS	NS	NS	750	NS
Mar-88	NS	500	NS	45	NS	150	ND	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jun-88	NS	NS	NS	8	NS	87	NS	NI	NI	ND	NS	ND	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS
Sep-88	NS	NS	NS	9.8	440	220	NS	NI	NI	NS	NS	NS	NS	NS	NS	NS	0.6	NS	NS	NS	NS	NS	NS	NS
Dec-88	NS	NS	NS	NS	NS	NS	340	NI	NI	NS	NS	NS	AB	NS	AB	NS	1	NS	NS	NS	NS	NS	NS	200
Mar-89	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	NS	NS	AB	NS	AB	NS	0.7	NS	NS	NS	NS	70	390	170
Jun-89	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	NS	NS	AB	NS	AB	NS	NS	NS	NS	NS	NS	110	NS	130
Oct-89	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	NS	NS	AB	NS	AB	NS	NS	NS	NS	NS	NS	NS	NS	150
Jan-90	NS	NS	NS	NS	NS	300	NS	NI	NI	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS
Apr-90	NS	NS	NS	28	190	190	NS	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5	NS	120
Jul-90	NS	NS	NS	NS	NS	NS	NS	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Oct-90	NS	NS	NS	44	210	180	NS	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	150
Jan-91	NS	NS	NS	NS	NS	NS	220	NI	NI	NS	NS	NS	NS	NS	NS	NS	ND	2	NS	NS	NS	NS	NS	NS
Apr-91	NS	NS	NS	NS	190	130	NS	NI	NI	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	38	NS	130
Jul-91	NS	NS	NS	NS	NS	NS	NS	NS	NI	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	NS	NS	NS
Oct-91	NS	520	NS	7.5	180	110	NS	NS	NI	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	49	NS	240
Jan-92	NS	NS	NS	NS	NS	NS	89	NS	NI	NS	NS	NS		NS		NS	1.4	NS	NS	NS	NS	NS	NS	NS
Apr-92	NS	NS	NS	NS	89	85	NS	NS	NI	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	22	NS	630
Jul-92	NS	NS	NS	NS	NS	NS	380	NS	NI	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	NS	NS	NS
Oct-92	NS	NS	NS	NS	120	150	NS	160	20	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	30	NS	180

APPENDIX A-1
HISTORICAL TRICHLOROETHENE CONCENTRATIONS
ADVANCED MICRO DEVICES - 915 DEGUIGNE DRIVE

Concentrations reported in micrograms per liter (µg/L)

	A/B1-Zone Wells		B1-Zone Wells										B2-Zone Wells									B3-Zone Well
Date	6-S/D	7-S/D	9-D	10-D	19-D	20-D	24-D	31-D	40-D	41-D	49-D	51-D	11-DD	18-DD	20-DD	32-DD	42-DD	43-DD	44-DD	45-DD	49-DD	50-DDD
Feb-82	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mar-82	18	620	1000	56	NS	NS	NS	NS	NS	NS	NS	NS	30	NS	NS	NS	NS	NS	NS	NS	NS	NS
Apr-82	NS	NS	NS	NS	69	200	5	NS	NS	NS	NS	NS	NS	380	61	NS	NS	NS	NS	NS	NS	NS
May-82	NS	NS	NS	NS	NS	NS	NS	29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jun-82	NS	NS	3100	5	NS	1800	NS	NS	NS	NS	NS	NS	32	430	4	86	NS	NS	NS	NS	NS	NS
Aug-82	31	560	6600	130	NS	2200	NS	61	NS	NS	NS	NS	5	NS	2	140	NS	NS	NS	NS	NS	NS
May-83	NS	NS	650	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jul-83	NS	NS	NS	ND	5	NS	NS	NS	NS	NS	NS	NS	NS	2600	NS	NS	NS	NS	NS	NS	NS	NS
Sep-83	60	NS	NS	1	40	840	NS	NS	30	810	NS	NS	6	NS	ND	NS	NS	NS	NS	NS	NS	NS
Mar-84	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jun-84	NS	NS	NS	ND	ND	NS	ND	NS	NS	NS	NS	NS	ND	1240	NS	NS	NS	NS	NS	NS	NS	NS
Jul-84	NS	NS	NS	ND	ND	NS	ND	NS	NS	NS	NS	NS	NS	2900	NS	NS	NS	NS	NS	NS	NS	NS
Aug-84	NS	1600	NS	ND	2	NS	ND	NS	12	NS	NS	NS	ND	1400	NS	18	NS	NS	NS	NS	NS	NS
Sep-84	220	NS	NS	ND	7	1460	NS	NS	NS	430	NS	NS	ND	590	ND	27	NS	NS	NS	NS	NS	NS
Oct-84	170	1100	NS	2	4	970	NS	NS	NS	NS	NS	NS	ND	1600	NS	NS	NS	NS	NS	NS	NS	NS
Nov-84	300	NS	NS	NS	NS	NS	NS	NS	4	880	NS	NS	NS	NS	NS	9	NS	NS	NS	NS	NS	NS
Dec-84	140	NS	NS	NS	NS	1300	NS	NS	6	NS	NS	NS	13	1400	NS	9	NS	NS	NS	NS	NS	NS
Jan-85	NS	NS	NS	8	6	NS	NS	NS	NS	690	NS	NS	30	1200	9	5	NS	NS	NS	NS	NS	NS
Feb-85	220	1400	NS	NS	NS	1200	70	NS	NS	NS	NS	NS	65	1500	NS	NS	NS	NS	NS	NS	NS	NS
Mar-85	NS	NS	NS	NS	12	NS	34	NS	5	1300	NS	NS	81	1600	ND	NS	NS	NS	NS	NS	NS	NS
Apr-85	147	1300	2800	10	13	NS	37	190	NS	NS	NS	NS	49	1400	NS	NS	NS	NS	NS	NS	NS	NS
May-85	NS	NS	NS	NS	20	NS	1000	200	NS	740	NS	NS	130	140	2	720	NS	NS	NS	NS	NS	NS
Jun-85	NS	NS	NS	6	3	NS	160	250	6	1040	NS	NS	180	1550	NS	1000	NS	NS	NS	NS	NS	NS
Jul-85	NS	NS	NS	9	NS	NS	250	NS	NS	1390	NS	NS	180	590	NS	770	NS	NS	NS	NS	NS	NS
Aug-85	NS	NS	3400	10	1	1600	330	NS	9	NS	NS	NS	220	1900	ND	1140	NS	NS	NS	NS	NS	NS
Oct-85	411	NS	NS	13	NS	NS	296	NS	NS	889	NS	NS	273	1308	1	828	NS	NS	NS	NS	NS	NS
Dec-85	NS	NS	4500	8.3	4.8	NS	160	NS	40	980	NS	NS	240	1200	3.3	760	ND	3500	NS	NS	NS	NS
Feb-86	NS	NS	NS	14	NS	NS	360	NS	NS	NS	NS	NS	240	1000	NS	NS	ND	2400	NS	NS	NS	NS
Apr-86	NS	NS	4000	NS	NS	1000	170	ND	23	850	NS	NS	170	1500	2.7	NS	1.3	1500	NS	NS	NS	NS
Jun-86	NS	1100	3000	NS	3.3	NS	470	250	NS	NS	NS	NS	470	1500	8.3	NS	0.7	3000	NS	NS	NS	NS
Aug-86	NS	NS	7200	NS	2.1	NS	390	270	83	1200	NS	NS	430	1800	4.9	NS	1.2	260	NS	NS	NS	NS
Oct-86	NS	NS	NS	3.7	13	NS	NS	NS	110	NS	NS	NS	190	1300	6.2	NS	NS	2200	NS	NS	NS	NS
Dec-86	NS	NS	NS	11	2.9	NS	490	NS	26	1600	NS	NS	220	830	5.2	NS	1.3	2900	ND	ND	NS	NS
Feb-87	18	NS	2400	NS	NS	NS	360	110	NS	1300	NS	NS	170	650	NS	NS	0.8	1000	ND	ND	NS	NS
Apr-87	NS	NS	3800	11	4	NS	550	NS	72	NS	NS	NS	180	610	NS	890	1	1700	ND	1	NS	NS
Jun-87	21	NS	3500	10	NS	NS	NS	NS	75	1200	NS	NS	130	500	3	800	1	2000	ND	ND	NS	NS
Aug-87	NS	NS	NS	17	NS	NS	660	100	NS	NS	NS	NS	80	320	ND	NS	1	2200	ND	ND	NS	NS
Oct-87	80	NS	2000	30	2	NS	420	27	110	NS	NS	NS	41	560	NS	NS	2	380	ND	ND	NS	NS
Dec-87	NS	NS	2200	NS	NS	600	NS	NS	NS	700	NS	NS	22	240	NS	NS	NS	1000	ND	1	NS	NS
Mar-88	NS	NS	2200	NS	NS	850	170	NS	42	850	NS	NS	9	120	22	NS	NS	200	NS	NS	NS	NS
Jun-88	NS	NS	1100	140	NS	NS	190	63	63	530	NS	NS	NS	180	NS	570	NS	NS	ND	ND	NS	NS
Sep-88	NS	NS	NS	130	9.6	NS	NS	NS	58	830	NS	NS	11	180	1.4	580	4.1	160	ND	ND	NS	NS
Dec-88	NS	NS	NS	125	15	NS	70	NS	42	NS	23	NS	10	130	NS	390	4	790	ND	ND	ND	NS
Mar-89	23	NS	NS	220	NS	NS	45	8.2	NS	NS	NS	NS	8.5	160	NS	610	2.7	100	ND	ND	NS	NS
Jun-89	20	1100	NS	88	18	610	NS	29	21	540	6.3	NS	11	260	19	460	3.5	840	0.8	1.2	ND	NS
Oct-89	14	NS	NS	NS	NS	NS	NS	NS	NS	NS	37	ND	11	450	4	NS	3	460	ND	1	ND	ND
Jan-90	NS	550	NS	48	16	NS	NS	NS	10	NS	4	NS	2	180	6	410	2	55	ND	1	ND	NS
Apr-90	20	NS	NS	35	NS	370	5	3	10	NS	6	ND	13	40	6	540	ND	650	ND	1	ND	ND
Jul-90	NS	850	NS	21	9	NS	NS	NS	11	990	ND	NS	2	140	16	420	2	99	1	1	ND	NS
Oct-90	24	ND	NS	41	NS	800	49	7	18	2300	6	ND	10	68	32	450	3	62	ND	3	ND	ND
Jan-91	NS	910	NS	41	39	29	NS	NS	12	2800	2	NS	8	200	29	330	1	66	ND	1	ND	NS
Apr-91	15	NS	NS	20	NS	560	54	9	15	2000	3	ND	9	98	9	420	1	78	ND	5	3	ND
Jul-91	NS	610		37	65	NS	NS	NS	25	4300	4	NS	27	26	59	470	1	76	ND	7	ND	NS
Oct-91	19	NS		24	NS	280	70	8.9	27	1000	ND	6.6	6.3	58	56	420	2	110	ND	10	0.8	0.6
Jan-92	NS	630		34	77	NS	NS	NS	18	1200	2.2	NS	6.9	82	48	460	1.2	68	ND	9	ND	NS
Apr-92	15	NS		39	NS	240	49	9.4	28	520	3.8	2.7	8.4	75	120	280	1.6	52	ND	28	4.8	ND
Jul-92	NS	660		37	81	NS	NS	NS	34	1000	4.9	NS	8.6	74	220	550	3.8	58	2.3	65	ND	NS
Oct-92	17	NS		32	NS	200	63	7.3	50	820	4.4	0.7	8.2	9.7	80	230	3.5	39	2.2	13	0.7	ND

APPENDIX A-1
HISTORICAL TRICHLOROETHENE CONCENTRATIONS
ADVANCED MICRO DEVICES - 915 DEGUIGNE DRIVE

Concentrations reported in micrograms per liter (µg/L)

	Extraction Wells									A-Zone Wells														
Date	**EW-1**	**EW-2**	**EW-3**	**EW-4**	**EW-5**	**EW-6**	**EW-7**	**EW-8**	**EW-9**	**1-S**	**2-S**	**3-S**	**4-S**	**8-S**	**9-S**	**11-S**	**12-S**	**18-S**	**19-S**	**24-S**	**31-S**	**40-S**	**41-S**	**49-S**
Jan-93	NS	NS	NS	NS	NS	NS	490	NS	6.1	ND	NS	ND		100		NS	NS	NS	NS	NS	ND	12	NS	180
Apr-93	NS	NS	NS	NS	NS	140	170	170	59	ND	NS	ND		120		NS	ND	NS	NS	NS	14	35	130	140
Jul-93	NS	NS	NS	NS	NS	NS	320	NS	62	ND	NS	ND		120		NS	ND	NS	NS	NS	23	60	NS	150
Oct-93	NS	280	NS	5	84	170	NS	170	44	NS	NS	ND		120		NS	NS	NS	NS	NS	13	NS	NS	140
Jan-94	NS	NS	2.6	NS	NS	NS	300	NS	66	NS	NS	NS		96		NS	NS	NS	NS	NS	9.6	NS	NS	NS
Apr-94	NS	140	NS	2.7	37	48	NS	140	58	ND	NS	ND		110		NS	NS	NS	NS	NS	8.7	44	NS	NS
Jul-94	5.6	NS	1.1	NS	NS	NS	270	NS	50	ND	NS	ND		99		NS	NS	NS	NS	NS	18	NS	NS	130
Oct-94	NS	240	NS	5	76	130	NS	170	67	ND	NS	ND		120		2.2	NS	NS	NS	NS	17	NS	9.5	NS
Jan-95	7.7	NS	ND	NS	NS	NS	190	NS	49	ND	NS	ND		92		NS	NS	NS	NS	14	6.1	NS	97	NS
Apr-95	NS	350	NS	5.3	72	120	NS	150	48	ND	NS	ND		71		1	NS	NS	NS	NS	13	NS	210	NS
Jul-95	12	NS	ND	NS	NS	NS	220	NS	NS	ND	NS	ND		58		NS	NS	NS	NS	NS	17	46	28	28
Oct-95	NS	270	NS	5.6	69	120	NS	150	60	ND	NS	ND		97		NS	NS	NS	NS	NS	7.2	NS	11	NS
Apr-96	6.9	300	ND	4.3	78	100	190	130	44	ND	NS	ND		65		ND	DRY	DRY	DRY	DRY	7.9	25	140	110
Oct-96	NS	350	NS	NS	55	100	240	140	39	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	NS	11	130
Apr-97	5.5	200	ND	4.6	73	140	160	120	34	ND	NS	ND		23		ND	NS	NS	NS	NS	8.2	20	73	91
Oct-97	8.4	200	0.61	4.7	80	110	200	120	32	ND	NS	ND		46		NS	NS	NS	NS	NS	4.6	NS	190	NS
Apr-98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	24	NS		NS		ND	NS	1.3	NS	NS	NS	13	65	NS
Oct-98	NS	NS	NS	NS	NS	110	NS	NS	NS	ND	NS	ND		53		0.8	NS	NS	NS	NS	13	23	140	82
Oct-99	NS	NS	NS	NS	110	86	250	160	41	ND	NS	ND		49		NS	NS	NS	NS	NS	20	10	210	93
Jan-00	NS	NS	NS	NS	NS	82	NS	140	NS	NS	NS	NS		NS		NS	NS	NS	NS	NS	12	NS	NS	NS
Mar-00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		NS		NS	NS	NS	NS	NS	14	NS	NS	NS
Jun-00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	NS	NS	NS
Oct-00	NS	NS	NS	NS	110	65	NS	110	33	ND	NS	ND		37		0.6	NS	NS	NS	NS	NS	NS	200	97
Oct-01	NS	NS	NS	NS	100	70	200	130	38	0.5	NS	ND		29		1.5	NS	0.9	NS	NS	13	NS	280	110
Oct/Nov-02	NS	NS	NS	NS	96	65	150	130	36	ND	NS	ND		44		0.6	NS	1.5	NS	NS	11	28	280	92
Oct-03	NS	NS	NS	NS	99	57	210	120	35	ND	NS	ND		52		0.8	NS	1.9	NS	NS	11	17	310	43
Oct-04	NS	NS	NS	NS	81	110	180	100	28	ND	130	ND		29		0.9	NS	2.2	ND	NS	6.4	160	50	35
Oct-05	96	200	0.8	15	61	69	160	100	42	ND	95	ND		21		1.5	NS	3.1	ND	NS	10	280	230	36
Oct-06	85	230	ND	5.7	200	51	200	110	36	ND	120	ND		17		1.4	NS	4.1	3.3	NS	12	180	300	31
Oct-07	69	250	ND	36	96	58	220	95	32	ND	160	ND		16		1.7	NS	2.5	ND	NS	9	250	250	30
Oct-08	77	170	1.6	6.9	70	57	230	90	35	ND	150	ND		13		1.5	NS	3.3	58	NS	8.5	200	370	26
Oct-09	89	170	0.8	5.9	68	52	140	110	34	ND	130	ND		9.0		1.8	NS	2.8	1.2	NS	6.9	230	210	30
Oct/Nov-10	65	140	ND	5.2	69	60	140	87	30	ND	130	ND		9.6		1.6	NS	2.4	2.0	NS	5.3	220	210	22
Oct/Nov-11	95	130	0.8	5.6	67	56	120	84	29	ND	100	ND		13		1.4	NS	2.5	3.7	NS	5.8	100	210	18
Oct/Nov-12	83	130	ND	7.4	62	58	120	98	32	ND	110	ND		13		1.5	NS	3.2	4.7	NS	7.5	100	240	24
Oct/Nov-13	93	130	1	4.6	55	57	120	97	33	ND	120	ND		12		1.8	NS	3.3	8.7	NS	6	110	190	31

APPENDIX A-1
HISTORICAL TRICHLOROETHENE CONCENTRATIONS
ADVANCED MICRO DEVICES - 915 DEGUIGNE DRIVE

Concentrations reported in micrograms per liter (µg/L)

	A/B1-Zone Wells		B1-Zone Wells										B2-Zone Wells									B3-Zone Well
Date	6-S/D	7-S/D	9-D	10-D	19-D	20-D	24-D	31-D	40-D	41-D	49-D	51-D	11-DD	18-DD	20-DD	32-DD	42-DD	43-DD	44-DD	45-DD	49-DD	50-DDD
Jan-93	NS	1400		NS	NS	NS	NS	NS	NS	2600	NS	NS	NS	34	83	NS	NS	NS	NS	14	NS	NS
Apr-93	NS	NS		120	83	500	85	5.5	78	2300	1.5	ND	3.8	67	69	360	2.1	73	0.7	21	ND	ND
Jul-93	NS	210		NS	NS	NS	NS	NS	NS	870	NS	NS	NS	58	360	NS	NS	NS	NS	11	NS	NS
Oct-93	17	NS		NS	NS	250	NS	5.8	NS	1100	NS	NS	NS	130	270	270	NS	41	ND	9.2	NS	1.8
Jan-94	NS	340		NS	NS	NS	NS	NS	NS	1300	NS	NS	NS	41	220	NS	NS	NS	ND	7.7	NS	NS
Apr-94	16	NS		85	45	120	30	ND	52	730	0.96	ND	0.62	47	230	280	ND	ND	ND	ND	ND	ND
Jul-94	NS	240		NS	NS	NS	NS	NS	NS	690	NS	NS	NS	37	240	NS	NS	NS	NS	5	NS	NS
Oct-94	NS	NS		NS	NS	190	NS	5	NS	40	NS	NS	NS	45	47	230	NS	25	ND	4.8	NS	ND
Jan-95	NS	170		NS	NS	NS	NS	NS	NS	540	NS	NS	NS	24	31	NS	NS	NS	NS	6.8	NS	NS
Apr-95	12	NS		88	110	200	64	7.7	70	480	0.7	0.6	8.8	14	220	230	12	21	0.7	3.1	0.5	ND
Jul-95	NS	420		NS	NS	NS	NS	NS	NS	480	NS	NS	NS	17	310	NS	NS	NS	NS	3.8	NS	NS
Oct-95	NS	NS		NS	NS	340	NS	6.8	NS	690	NS	NS	NS	9.7	100	270	NS	27	ND	5.5	NS	ND
Apr-96	12	220		110	79	190	39	4.9	32	270	2	ND	2.9	11	64	220	14	16	ND	1.1	ND	ND
Oct-96	NS	460		NS	NS	140	NS	NS	NS	790	NS	NS	NS	18	NS	190	NS	18	ND	1.2	NS	NS
Apr-97	9.1	230		160	65	37	39	5.5	31	450	2.8	ND	3	13	190	190	15	13	ND	1.7	ND	ND
Oct-97	11	81		170	120	100	28	9.1	22	190	1.7	ND	13	13	140	200	13	12	ND	1.8	0.5	ND
Apr-98	NS	NS		97	NS	NS	NS	NS	NS	140	NS	NS	NS	NS	NS	NS	20	NS	NS	NS	NS	NS
Oct-98	NS	NS		200	80	59	NS	NS	47	250	2.4	ND	6	8.4	83	210	26	6.5	NS	3	ND	ND
Oct-99	NS	NS		180	74	220	NS	NS	28	230	ND	ND	48	86	38	190	16	ND	NS	ND	ND	ND
Jan-00	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	80	NS	NS	13	NS	NS	NS	NS	NS
Mar-00	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	4.1 *	8.4	NS	NS	20	NS	NS	NS	NS	NS
Jun-00	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	52	NS	NS	NS	NS	NS	NS	NS	NS
Oct-00	NS	NS		180	73	180	NS	NS	51	180	1.8	ND	4.3	60	280	160	20	6.9	NS	0.6	ND	ND
Oct-01	NS	NS		180	75	92	NS	NS	45	220	1.4	1.8	5.2	42	280	200	21	6.8	NS	ND	ND	ND
Oct/Nov-02	NS	NS		170	60	270	NS	NS	56	230	3	0.6	3	11	210	250	29	9.1	NS	9.6	ND	ND
Oct-03	NS	NS		150	51	250	NS	NS	5	240	2	ND	7.1	4	220	200	20	5.4	NS	ND	ND	ND
Oct-04	NS	NS		91	7.1	83	NS	NS	32	220	3.3	ND	11	7.5	250	160	19	3.9	NS	ND	ND	ND
Oct-05	NS	NS		68	1.2	85	NS	NS	120	250	1.4	ND	26	40	270	220	7.9	3.3	NS	ND	ND	ND
Oct-06	NS	NS		47	0.8	19	NS	NS	65	230	1.7	ND	18	6.3	160	300	29	7	NS	ND	ND	ND
Oct-07	NS	NS		52	2.6	7.6	NS	NS	51	88	1.2	ND	4.3	6.7	180	170	19	3.4	NS	ND	ND	ND
Oct-08	NS	NS		45	1.6	13	NS	NS	40	230	ND	ND	14	ND	150	180	29	3.4	NS	ND	ND	ND
Oct-09	NS	NS		47	2.7	8.8	NS	NS	86	210	0.8	ND	11	11	100	120	31	2.9	NS	ND	ND	ND
Oct/Nov-10	NS	NS		39	2.9	44	NS	NS	55	280	1.0	ND	39	35	120	150	19	2.5	NS	ND	ND	ND
Oct/Nov-11	NS	NS		39	4.6	130	NS	NS	80	220	0.9	ND	17	10	160	140	11	2.7	NS	0.8	ND	ND
Oct/Nov-12	NS	NS		33	10	190	NS	NS	73	130	0.6	ND	28	5.5	180	130	10	3.8	NS	ND	ND	ND
Oct/Nov-13	NS	NS		35	15	150	NS	NS	73	200	ND	ND	20	37	130	130	15	2.4	NS	2	ND	ND

APPENDIX A-2
HISTORICAL cis-1,2-DICHLOROETHENE CONCENTRATIONS
915 DEGUIGNE DRIVE

Concentrations reported in micrograms per liter (µg/L)

	Extraction Wells									A-Zone Wells													
Date	EW-1	EW-2	EW-3	EW-4	EW-5	EW-6	EW-7	EW-8	EW-9	1-S	2-S	3-S	4-S	8-S	9-S	11-S	12-S	18-S	19-S	24-S	31-S	40-S	41-S
Jan-93	NS	NS	NS	NS	NS	NS	89	NS	ND	ND	NS	ND		23		NS	NS	NS	NS	NS	4.7	0.6	NS
Apr-93	NS	NS	NS	NS	NS	488.4	192.1	17	2.5	ND	NS	ND		25		NS	ND	NS	NS	NS	40	3	13
Jul-93	NS	NS	NS	NS	NS	NS	191.7	NS	5.1	ND	NS	ND		29		NS	ND	NS	NS	NS	72	8.8	NS
Oct-93	NS	182.3	NS	30	231.9	617.9	NS	18	5.7	NS	NS	ND		23		NS	NS	NS	NS	NS	25	NS	NS
Jan-94	NS	NS	ND	NS	NS	NS	141.4	NS	6.2	ND	ND	ND		18		NS	NS	NS	NS	NS	25	NS	NS
Apr-94	NS	104.4	NS	30	164.5	299.2	NS	16	6.4	ND	NS	ND		27		NS	NS	NS	NS	NS	18	1.9	NS
Jul-94	5.9	NS	ND	NS	NS	NS	101.6	NS	16	ND	NS	ND		16		NS	NS	NS	NS	NS	37	NS	NS
Oct-94	NS	172.4	NS	43.6	172.4	256.4	NS	21	7.8	ND	NS	ND		27		ND	NS	NS	NS	NS	35	NS	1.3
Jan-95	8.7	NS	ND	NS	NS	NS	24	NS	8.1	ND	NS	ND		18		NS	NS	NS	NS	ND	15	NS	20
Apr-95	NS	141.2	NS	44	132.4	441.8	NS	15	6.5	ND	NS	ND		55.6		ND	NS	NS	NS	NS	25	NS	24
Jul-95	14	NS	ND	NS	NS	NS	20	NS	7	ND	NS	ND		20		NS	NS	NS	NS	NS	39	2.3	82
Oct-95	NS	73	NS	43	100	420	NS	13	ND	ND	NS	ND		25		NS	NS	NS	NS	NS	16	NS	45
Apr-96	6.5	118.6	ND	37	131.2	496.1	24	15	5.9	ND	NS	ND		24		ND	NS	NS	NS	NS	17	0.5	120.5
Oct-96	NS	141.9	NS	NS	93	464.9	6.2	5.2	6	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	NS	70.7
Apr-97	9.4	120	ND	43	193.8	630	27	15	6.7	ND	NS	ND		102.2		ND	NS	NS	NS	NS	19	0.9	171.9
Oct-97	8.9	111.8	1.8	32	152	648	15	26	7.3	ND	NS	ND		58.6		NS	NS	NS	NS	NS	NS	NS	39
Apr-98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS		NS		ND	NS	ND	NS	NS	NS	1.4	18
Oct-98	NS	NS	NS	NS	NS	490	NS	NS	NS	ND	NS	ND		210		ND	NS	NS	NS	NS	32	2.2	33
Oct-99	NS	NS	NS	NS	180	600	18	23	11	ND	NS	ND		171		NS	NS	NS	NS	NS	130	ND	61
Jan-00	NS	NS	NS	NS	NS	486	NS	18	NS	NS	NS	NS		NS		NS	NS	NS	NS	NS	69	NS	NS
Mar-00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		NS		NS	NS	NS	NS	NS	80	NS	NS
Jun-00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	NS	NS
Oct-00	NS	NS	NS	NS	200	430	17	33	11	ND	NS	ND		71		ND	NS	NS	NS	NS	NS	NS	77
Oct-01	NS	NS	NS	NS	210	390	16	21	8.2	ND	NS	ND		57		ND	NS	ND	NS	NS	110	NS	81
Oct/Nov-02	NS	NS	NS	NS	243	356	13	25	20	ND	NS	ND		202		ND	NS	ND	NS	NS	131	6.1	112
Oct-03	NS	NS	NS	NS	180	210	19	23	23	ND	NS	ND		170		ND	NS	ND	NS	NS	130	6.8	110
Oct-04	NS	NS	NS	NS	150	140	17	21	24	ND	51	ND		30		ND	NS	ND	3.3	NS	71	73	45
Oct-05	50	112	ND	121	122	112	28	16	15	ND	15	ND		11		ND	NS	ND	51	NS	83	71	99
Oct-06	53	78	ND	112	22	113	19	18	16	ND	44	ND		7.9		ND	NS	5	48	NS	101	162	153
Oct-07	36.8	78.2	ND	28	66	101	15	14	13	ND	56	0.7		7.9		ND	NS	4.4	31	NS	111	69	142
Oct-08	48.7	56	1	171.3	143.2	76.4	8.8	23	13	ND	56.9	1.1		5.5		ND	NS	5.8	16	NS	111.1	48.5	194.5
Oct-09	45.8	50	0.6	233.8	132	77.5	11	15	16	ND	39	0.8		4.1		ND	NS	5.6	26.2	NS	90	45	173.1
Oct/Nov-10	34	38	ND	179.6	94.5	80.5	12	9.4	13	ND	46	0.7		7.7		0.8	NS	5.8	31.4	NS	70	37	192.9
Oct/Nov-11	40.8	39	0.8	243.6	152.1	70.4	11	9.7	13	ND	39	1.4		8.8		0.6	NS	6.7	41.7	NS	97.9	68.1	172.1
Oct/Nov-12	47	44	ND	220	140	75	12	13	13	ND	36	7.6		3.7		ND	NS	2.9	31	NS	100	59	150
Oct/Nov-13	40	39	1.1	160	110	63	13	8.9	16	ND	43	12		4.8		ND	NS	2.6	40	NS	86	68	170

ND	Not Detected
NI	Not Installed
NS	Not Sampled
	Well Destroyed

APPENDIX A-2
HISTORICAL cis-1,2-DICHLOROETHENE CONCENTRATIONS
915 DEGUIGNE DRIVE

Concentrations reported in micrograms per liter (µg/L)

		A/B1-Zone Wells		B1-Zone Wells					B1-Zone Wells					B2-Zone Wells								B3-Zone Well
Date	**49-S**	**6-S/D**	**7-S/D**	**9-D**	**10-D**	**19-D**	**20-D**	**24-D**	**31-D**	**40-D**	**41-D**	**49-D**	**51-D**	**11-DD**	**18-DD**	**20-DD**	**32-DD**	**42-DD**	**43-DD**	**44-DD**	**45-DD**	**49-DD**	**50-DDD**
Jan-93	686.2	NS	362.9		NS	NS	NS	NS	NS	NS	160	NS	NS	NS	1.9	53	NS	NS	NS	NS	ND	NS	NS
Apr-93	458.8	NS	NS		51	170	152.2	25	68	210	8.6	4.5	ND	ND	5.7	57	131.4	9.6	ND	ND	ND	ND	ND
Jul-93	576.8	NS	131.5		NS	NS	NS	NS	NS	NS	192.2	NS	NS	NS	6	262.5	NS	NS	NS	NS	ND	NS	NS
Oct-93	636.5	40	NS		NS	NS	302.5	NS	44	NS	241.7	NS	NS	NS	13	251.7	272	NS	0.9	ND	ND	NS	ND
Jan-94	NS	NS	281		NS	NS	NS	NS	NS	NS	402	NS	NS	NS	3.7	170	NS	NS	NS	ND	ND	NS	ND
Apr-94	NS	29	NS		23	5.3	112	13	78	160	130	4.5	ND	ND	4.6	143	243	22	ND	ND	ND	ND	ND
Jul-94	446.7	NS	270.5		NS	NS	NS	NS	NS	NS	95.1	NS	NS	NS	4	203.2	NS	NS	NS	NS	ND	NS	ND
Oct-94	NS	NS	NS		NS	NS	243.5	NS	49	NS	NS	NS	NS	NS	4.2	160	141.1	NS	ND	ND	ND	NS	ND
Jan-95	NS	NS	235.5		NS	NS	NS	NS	NS	NS	78.7	NS	NS	NS	4	57	NS	NS	NS	NS	ND	NS	NS
Apr-95	NS	51	NS		61	12	142	17	52.6	66	60	2.8	ND	0.8	2.3	273.4	131.3	171.5	ND	ND	ND	ND	ND
Jul-95	326	NS	253.9		NS	NS	NS	NS	NS	NS	0.7	NS	NS	NS	1.8	220	NS	NS	NS	NS	ND	NS	NS
Oct-95	NS	NS	NS		NS	NS	260	NS	54	NS	70	NS	NS	NS	0.8	120	91	NS	ND	ND	ND	NS	ND
Apr-96	295.3	42	175.2		42	14	202.9	15	46	62	69	8.4	ND	ND	0.7	70	87.5	160	ND	ND	ND	ND	ND
Oct-96	551	NS	365.4		NS	NS	34	NS	NS	NS	100.7	NS	NS	NS	0.6	NS	30	NS	ND	ND	ND	NS	NS
Apr-97	326.3	26	163.5		48	11	19	11	44	50	66	7.5	ND	ND	1.3	111.8	59.3	140	ND	ND	ND	ND	ND
Oct-97	NS	51	94.1		48.67	13	242.7	9.7	55	58	16	5.7	ND	1.1	1.2	81.1	67.53	281.9	ND	ND	ND	ND	ND
Apr-98	NS	NS	NS		23	NS	NS	NS	NS	NS	12	NS	NS	NS	NS	NS	NS	230	NS	NS	NS	NS	NS
Oct-98	280	NS	NS		49	15	150	NS	NS	62	28	6.1	ND	ND	1.2	64	54	200	ND	NS	ND	ND	ND
Oct-99	432	NS	NS		48	18	126.9	NS	NS	62	57	6.6	ND	14	28	170	37	300	ND	NS	ND	ND	ND
Jan-00	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	23	NS	NS	247.2	NS	NS	NS	NS	NS
Mar-00	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND	NS	NS	280	NS	NS	NS	NS	NS
Jun-00	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	16	NS	NS	NS	NS	NS	NS	NS	NS
Oct-00	450	NS	NS		62	25	94	NS	NS	NS	77	5.3	ND	1.4	21	160	41	370	ND	NS	ND	ND	ND
Oct-01	440	NS	NS		98	28	74	NS	NS	94	74	4.6	ND	3.9	16	150	45	360	ND	NS	ND	ND	ND
Oct/Nov-02	254	NS	NS		141	24	83	NS	NS	72	98	5.3	ND	3.8	2.9	101	38	404	ND	NS	2.6	ND	ND
Oct-03	61	NS	NS		170	15	78	NS	NS	76	95	3.8	ND	17	1.1	100	54	420	ND	NS	ND	ND	ND
Oct-04	36	NS	NS		250	1.9	110	NS	NS	40	93	4.4	ND	17	2.9	110	40	400	ND	NS	ND	ND	ND
Oct-05	18	NS	NS		242	2	15	NS	NS	75	78	2	ND	36	16	73	70	98	ND	NS	ND	ND	ND
Oct-06	10	NS	NS		332	4.7	3.4	NS	NS	55	133	2.4	ND	42	5	70	64	395	ND	NS	ND	ND	ND
Oct-07	6.4	NS	NS		380	6.6	1.7	NS	NS	85	296	1.9	ND	17	1.4	73	47	353	ND	NS	ND	ND	ND
Oct-08	5.9	NS	NS		290	15	3.3	NS	NS	66.8	183.5	1	ND	7.2	29.1	68	13	385.7	ND	NS	ND	ND	ND
Oct-09	19	NS	NS		323.2	29.8	1.3	NS	NS	53.9	224.1	1.5	ND	6.9	5.1	67.2	51.6	347.5	ND	NS	ND	ND	ND
Oct/Nov-10	7.0	NS	NS		392.8	26.9	14.0	NS	NS	37	246.7	1.6	ND	17	11	132.3	40.7	413	ND	NS	ND	ND	ND
Oct/Nov-11	5.1	NS	NS		342.9	27.7	51	NS	NS	44.8	193.8	1.6	ND	12.5	4.1	68.7	56	325.6	ND	NS	ND	ND	ND
Oct/Nov-12	5.9	NS	NS		340	25	72	NS	NS	33	200	1.2	ND	8	2.7	65	30	350	ND	NS	ND	ND	ND
Oct/Nov-13	12	NS	NS		310	28	52	NS	NS	47	180	1.1	ND	20	10	70	35	290	ND	NS	ND	ND	ND

ND	Not Detected
NI	Not Installed
NS	Not Sampled
	Well Destroyed

APPENDIX A-3
HISTORICAL TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS
915 DEGUIGNE DRIVE

Concentrations reported in micrograms per liter (µg/L)

	Extraction Wells									A-Zone Wells						A-Zone Wells								
Date	EW-1	EW-2	EW-3	EW-4	EW-5	EW-6	EW-7	EW-8	EW-9	1-S	2-S	3-S	4-S	8-S	9-S	11-S	12-S	18-S	19-S	24-S	31-S	40-S	41-S	49-S
Jan-91	NS	NS	NS	NS	NS	NS	220	NS	NI	NS	NS	NS		NS		NS	5	14	NS	NS	NS	NS	NS	NS
Apr-91	NS	NS	NS	NS	337	507	NS	NS	NI	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	62	NS	522
Jul-91	NS	NS	NS	NS	NS	NS	NS	NS	NI	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	NS	NS	NS
Oct-91	NS	710	NS	94.5	298	470	NS	NS	NI	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	60	NS	740
Jan-92	NS	NS	NS	NS	NS	NS	99	NS	NI	NS	NS	0.5		NS		NS	10.1	NS	NS	NS	NS	NS	NS	NS
Apr-92	NS	NS	NS	NS	187	265	NS	NS	NI	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	26	NS	764
Jul-92	NS	NS	NS	NS	NS	NS	567	NS	NI	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	NS	NS	NS
Oct-92	NS	NS	NS	NS	363	860	NS	207	28	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	48	NS	1043
Jan-93	NS	NS	NS	NS	NS	NS	829	NS	6.1	ND	NS	ND		123		NS	NS	NS	NS	NS	4.7	12.6	NS	910.8
Apr-93	NS	NS	NS	NS	NS	679	419.9	216.2	86.7	ND	NS	ND		148		ND	0.8	NS	NS	NS	72.4	39	143	654.6
Jul-93	NS	NS	NS	NS	NS	NS	553.4	NS	92.1	ND	NS	ND		150.7		NS	2.5	NS	NS	NS	111	69.9	NS	770.7
Oct-93	NS	484.6	NS	45.5	356.6	822.3	NS	215.1	68.3	NS	NS	ND		148.9		NS	NS	NS	NS	NS	50.7	NS	NS	806.6
Jan-94	NS	NS	ND	2.6	NS	NS	500.1	NS	89.4	ND	ND	ND		115.5		NS	NS	NS	NS	NS	39.8	NS	NS	NS
Apr-94	NS	259.1	NS	40	232.7	375.3	NS	177.5	80.7	ND	NS	ND		139.3		NS	NS	NS	NS	NS	31.1	45.9	NS	NS
Jul-94	13.6	NS	1.1	NS	NS	NS	576.2	NS	85.9	ND	NS	ND		118.7		NS	NS	NS	NS	NS	65.8	NS	NS	596.4
Oct-94	NS	432.1	NS	57.3	273.1	406.8	NS	214.7	92	ND	NS	ND		148.6		2.2	NS	NS	NS	NS	71.1	NS	20.3	NS
Jan-95	16.4	NS	ND	NS	NS	NS	233.9	NS	69	ND	NS	ND		111.3		NS	NS	NS	NS	14	25.5	NS	119	NS
Apr-95	NS	506.3	NS	58.1	230.1	582.7	NS	187.1	68.3	ND	NS	ND		128.9		1	NS	NS	NS	NS	47.4	NS	236.2	NS
Jul-95	31.6	NS	ND	NS	NS	NS	255	NS	61.8	ND	NS	ND		79.3		NS	NS	NS	NS	NS	69.6	48.3	110.5	432.9
Oct-95	NS	343	NS	55.8	169	540	NS	187	72	ND	NS	0.6		123.2		NS	NS	NS	NS	NS	30.4	NS	56.7	NS
Apr-96	13.4	431.1	ND	47.5	228	608.7	228.3	165	63.4	ND	NS	ND		89.6		ND	NS	NS	NS	NS	28.7	25.5	261.9	419.9
Oct-96	NS	504	NS	NS	156.5	578.4	253.2	145.2	52.6	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	NS	155.7	699.6
Apr-97	14.9	320	ND	53.2	291	781	210	150	48.7	ND	NS	ND		126.8		ND	NS	NS	NS	NS	36.5	20.9	247.6	426.1
Oct-97	17.3	317.78	2.41	40.8	236.65	771.49	215	163	45.3	1.1	NS	1.0		105.29		NS	NS	NS	NS	NS	23.02	NS	232	NS
Apr-98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	25.6	NS		NS		ND	NS	1.3	NS	NS	NS	14.4	83	NS
Oct-98	NS	NS	NS	NS	NS	606	NS	NS	NS	0.8	NS	ND		273		0.8	NS	NS	NS	NS	58	25	174	374
Oct-99	NS	NS	NS	NS	348.2	738	282	198.6	60.6	ND	NS	ND		220		NS	NS	NS	NS	NS	162.1	17.6	271	525
Jan-00	NS	NS	NS	NS	NS	640	NS	173	NS	NS	NS	NS		NS		NS	NS	NS	NS	NS	86.5	NS	NS	NS
Mar-00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		NS		NS	NS	NS	NS	NS	94	NS	NS	NS
Jun-00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		NS		NS	NS	NS	NS	NS	NS	NS	NS	NS
Oct-00	NS	NS	NS	NS	317.3	509	187	146.2	45.4	1.0	NS	1.0		109		1	NS	NS	NS	NS	NS	NS	281	575
Oct-01	NS	NS	NS	NS	316.8	475	216.6	152.9	46.9	1.8	NS	0.8		86.8		1.5	NS	0.9	DRY	NS	127.1	DRY	367.2	567
Oct/Nov-02	NS	NS	NS	NS	363	421	167	164	61	1.0	NS	1.0		247		1	NS	2	DRY	NS	147	37	395	352
Oct-03	NS	NS	NS	NS	320.1	276.3	237	151	62	ND	NS	ND		226.3		ND	NS	ND	DRY	NS	147.4	23.8	436.2	106.3
Oct-04	NS	NS	NS	NS	274.6	291.4	207	128.8	56.7	1.1	182	0.8		59.8		0.9	NS	2.2	3.3	NS	83.1	234.3	141	72.3
Oct-05	145.8	314.8	0.8	139.8	199.7	186.7	196.4	125.2	62.5	1.1	110	ND		32		1.5	NS	3.1	51.4	NS	95.7	350.7	342.9	54.7
Oct-06	138.1	307.7	ND	117.3	229	170.3	225.7	134.1	56.8	1.0	164	ND		24.9		1.4	NS	9.6	51.5	NS	117.8	342.2	462.4	41
Oct-07	105.8	330	ND	64.7	165.1	169.3	246	115.5	50.1	1.0	215.8	0.7		23.9		1.7	NS	6.9	31.1	NS	124.2	319.1	409.1	36.4
Oct-08	125.7	226	2.6	180.8	253.9	124.2	247	117	53	0.7	206.9	1.1		18.5		1.5	NS	9.1	77.4	NS	119.6	248.5	575.9	31.9
Oct-09	134.8	220	1.4	239.7	225	133.4	151	131.6	53.3	0.7	169	0.8		13.1		1.8	NS	8.4	27.4	NS	96.9	275	386.7	49.7
Oct/Nov-10	99	179.2	ND	184.8	199.5	147.8	156.6	100.8	45.6	0.6	176	0.7		17.3		2.4	NS	8.2	33.4	NS	75.3	257	411.1	29.0
Oct/Nov-11	135.8	169	1.6	249.2	400.9	210.8	131	98.6	44.7	0.6	139.9	1.4		21.8		2.0	NS	9.2	45.4	NS	104.3	168.1	387.2	23.1
Oct/Nov-12	130.8	175.9	ND	232.7	377.6	276.6	134.9	116.4	47.7	0.6	146	8.2		16.7		1.5	NS	7.6	36.7	NS	109.1	161.4	401.1	29.9
Oct/Nov-13	133.8	169	2.1	167.1	316.7	205	141.1	111.6	52.2	0.6	165.2	13.3		16.8		1.8	NS	6.7	50.3	NS	92.9	179	366.7	43.6

ND	Not Detected
NI	Not Installed
NS	Not Sampled
	Well Destroyed

APPENDIX A-3
HISTORICAL TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS
915 DEGUIGNE DRIVE

Concentrations reported in micrograms per liter (µg/L)

	A/B1-Zone Wells		B1-Zone Wells					B1-Zone Wells					B2-Zone Wells									B3-Zone Well
Date	6-S/D	7-S/D	9-D	10-D	19-D	20-D	24-D	31-D	40-D	41-D	49-D	51-D	11-DD	18-DD	20-DD	32-DD	42-DD	43-DD	44-DD	45-DD	49-DD	50-DDD
Jan-91	NS	1250		65	54	NS	NS	NS	62	3120	5	NS	13	200	139	390	3	66	2	2	ND	NS
Apr-91	59	NS		37	NS	760	73	85	65	2220	7	ND	14	98	47	502	3	79	1	17	8	ND
Jul-91	NS	919		61	84	NS	NS	NS	85	4910	9	NS	47	27	137	546	9	79	1	15	0	NS
Oct-91	79.7	NS		54	NS	440	100	87.8	102	1310	6.3	6.6	6.8	58	105.5	708	8.8	110	0	10	0.8	0.6
Jan-92	NS	890		62.6	NS	NS	NS	NS	73.8	1340	5.7	NS	11	83	85.9	640	21.3	68	0.9	18.1	0	NS
Apr-92	61	NS		65	NS	370	91	127	119	714	7	3	8	86	290	436	11	52	ND	35	5	1.0
Jul-92	NS	968		66	101	NS	NS	NS	107	1122	11	NS	13	78	334	845	61	61	5	85	ND	NS
Oct-92	86	NS		76	NS	271	97	108	235	1133	18	1	13	17	159	447	60	43	3	27	1	ND
Jan-93	NS	1864.9		NS	NS	NS	NS	NS	NS	2816.5	NS	NS	NS	35.9	136	NS	NS	NS	NS	34	NS	NS
Apr-93	NS	NS		180.5	262.7	669.9	114.7	98	291	2313.2	6	ND	6	72.7	133.5	519.8	12.9	75.5	1.9	33	ND	ND
Jul-93	NS	352		NS	NS	NS	NS	NS	NS	1188.7	NS	NS	NS	65.3	658.2	NS	NS	NS	NS	17.9	NS	NS
Oct-93	73.6	NS		NS	NS	570.3	NS	64	NS	1383.1	NS	NS	NS	150.1	540.7	598.2	NS	42.7	3.4	15.7	NS	1.8
Jan-94	NS	641.4		NS	NS	NS	NS	NS	NS	1731	NS	NS	NS	46.2	408	NS	NS	NS	ND	13.5	NS	NS
Apr-94	54.2	NS		112.6	52.8	242.2	43.6	90	212.7	867.6	5.5	ND	0.6	51.6	378.1	604.8	22	30	ND	ND	ND	ND
Jul-94	NS	532.2		NS	NS	NS	NS	NS	NS	798.7	NS	NS	NS	41.8	450.7	NS	NS	NS	NS	5.0	NS	NS
Oct-94	NS	NS		NS	NS	443.5	NS	67.6	NS	55.2	NS	NS	NS	50.5	210.6	519.5	NS	26.1	ND	10.3	NS	ND
Jan-95	NS	422		NS	NS	NS	NS	NS	NS	632.2	NS	NS	NS	28	90	NS	NS	NS	NS	9.0	NS	NS
Apr-95	77.5	NS		158.6	132.9	353.4	82.3	75.7	136.7	546.5	3.5	0.6	13	16.3	513.8	388.5	192.4	21	3	6.1	0.5	ND
Jul-95	NS	696.9		NS	NS	NS	NS	NS	NS	554.3	NS	NS	NS	18.8	554.9	NS	NS	NS	NS	7.2	NS	NS
Oct-95	NS	NS		NS	NS	600	NS	73	NS	760	NS	NS	NS	10.5	220	382	NS	27	ND	9.0	NS	ND
Apr-96	61.7	413.1		160.1	100.8	403.4	54	58.8	94	360	10.4	ND	2.9	11.7	136.3	325.5	176.4	16	ND	1.1	ND	ND
Oct-96	NS	845.2		NS	NS	175.6	NS	NS	NS	905.2	NS	NS	NS	18.6	NS	227.5	NS	18	ND	1.2	NS	NS
Apr-97	35.1	405.7		244	82.5	56	51	61	81	525.3	10.3	ND	3	14.3	312	265.7	160	13	ND	1.7	ND	ND
Oct-97	69.6	177.3		228.71	140.7	348.62	37.7	69.6	80	206.7	7.4	ND	15.5	14.2	224.57	269.33	303.9	12	ND	3.1	0.5	ND
Apr-98	NS	NS		120	NS	NS	NS	NS	NS	152	NS	NS	NS	NS	NS	NS	250	NS	NS	NS	NS	NS
Oct-98	NS	NS		255	98	212	NS	NS	109	281	8.5	ND	6	9.6	147	268	231	6.5	NS	7.7	ND	ND
Oct-99	NS	NS		228	92	346.9	NS	NS	90	287	6.6	ND	66	118.9	210.7	233.8	323	8.8	NS	ND	ND	ND
Jan-00	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	108.8	NS	NS	260.2	NS	NS	NS	NS	NS
Mar-00	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	8.4	NS	NS	300	NS	NS	NS	NS	NS
Jun-00	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS
Oct-00	NS	NS		247	100	277	NS	NS	139	253	7	ND	6	83	453	204	416	7	NS	1.0	ND	ND
Oct-01	NS	NS		283	103.5	167.6	NS	NS	140.2	301.1	6	1.8	9.1	58.7	434.7	247.1	395.4	6.8	NS	ND	ND	ND
Oct/Nov-02	NS	NS		316	85	359	NS	NS	128	334	8	1	7	14	315	293	437	9	NS	13	ND	ND
Oct-03	NS	NS		326	67.7	333.5	NS	NS	134.9	343.8	5.8	ND	24.1	5.1	329.4	266.2	452.4	5.4	NS	ND	ND	ND
Oct-04	NS	NS		342.6	9	197.6	NS	NS	79.9	316.1	7.7	ND	30.9	10.4	368	204.6	434	3.9	NS	ND	ND	ND
Oct-05	NS	NS		310.2	3	100.8	NS	NS	197.5	333.5	3.8	ND	57.6	57.2	346.6	296.8	106.2	3.3	NS	ND	ND	ND
Oct-06	NS	NS		379.2	5.5	22.4	NS	NS	122.1	365.1	4.1	ND	63.8	11.6	230	370.8	427.1	7	NS	ND	ND	ND
Oct-07	NS	NS		432	9.2	9.3	NS	NS	136.9	391.3	3.1	ND	23.1	8.8	257.7	225.7	372	3.4	NS	ND	ND	ND
Oct-08	NS	NS		335	16.6	16.3	NS	NS	107.7	427.1	1	ND	24.4	29.1	218	201.1	414.7	3.4	NS	ND	ND	ND
Oct-09	NS	NS		370.2	32.5	10.1	NS	NS	140.4	443.2	2.3	ND	17.9	16.1	168.7	175.5	378.5	2.9	NS	ND	ND	ND
Oct/Nov-10	NS	NS		431.8	29.8	58	NS	NS	92.7	536.7	2.6	ND	56	46	254.8	190.7	432	2.5	NS	ND	ND	ND
Oct/Nov-11	NS	NS		381.9	32.3	183.6	NS	NS	125.6	417.5	2.5	ND	29.5	14.1	228.7	200	336.6	2.7	NS	0.8	ND	ND
Oct/Nov-12	NS	NS		376.7	35.6	267	NS	NS	108	393.6	1.8	ND	38.5	10.1	249.8	161	370.9	3.8	NS	ND	ND	ND
Oct/Nov-13	NS	NS		347.8	43.9	204.1	NS	NS	123.1	386.7	1.1	ND	40	47.7	205.8	170.4	312.5	2.4	NS	2	ND	ND

ND	Not Detected
NI	Not Installed
NS	Not Sampled
	Well Destroyed

APPENDIX B

Title Search

915 DeGuigne Drive
915 DeGuigne Drive
Sunnyvale, CA 94085

Inquiry Number: 3752184.2
October 09, 2013

EDR Environmental Lien and AUL Search

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Environmental Lien and AUL Search

The EDR Environmental Lien and AUL Search Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

915 DeGuigne Drive
915 DeGuigne Drive
Sunnyvale, CA 94085

RESEARCH SOURCE

Source 1:

Santa Clara Recorder
Santa Clara, CA

PROPERTY INFORMATION

Deed 1:

Type of Deed:	deed
Title is vested in:	Spansion LLC
Title received from:	Spansion LLC
Deed Dated	11/1/2006
Deed Recorded:	12/7/2006
Book:	NA
Page:	na
Volume:	na
Instrument:	na
Docket:	NA
Land Record Comments:	
Miscellaneous Comments:	
Legal Description:	See Exhibit
Legal Current Owner:	Spansion LLC
Parcel # / Property Identifier:	205-21-001
Comments:	See Exhibit

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

EDR Environmental Lien and AUL Search

OTHER ACTIVITY AND USE LIMITATIONS (AULS)

AULs:	Found ☒	Not Found ☐

If found:

1st Party:	na
2nd Party:	na
Dated:	8/7/1992
Recorded:	8/7/1992
Book:	NA
Page:	na
Docket:	NA
Volume:	na
Instrument:	na
Comments:	
Miscellaneous Comments:	

Deed Exhibit 1

(11)

FATCO-NCS

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:
LATHAM & WATKINS LLP
633 West Fifth Street, #4000
Los Angeles, CA 90071
Attn: Andrew T. Kirsh

MAIL TAX STATEMENTS TO:
Spansion LLC
915 DeGuigne Drive
P.O. Box 3453
Sunnyvale, CA 94088

Attn: DARIO SACOMANI

NCS-262780-LA2

DOCUMENT: 19216236

Pages: 3

Fees .. 33.00
Taxes...
Copies .
AMT PAID 33 00

REGINA ALCOMENDRAS
SANTA CLARA COUNTY RECORDER
Recorded at the request of
Grantor

RDE # 012
12/07/2006
8:35 AM

(Space Above This Line For Recorder's Use Only)

Documentary Transfer Tax is $ NONE
Exempt – This conveyance confirms a change of name, and the grantor and grantee are the same party, California Revenue and Taxation Code 11911.

GRANT DEED

APN NO. 205-21-001

FOR VALUE RECEIVED, SPANSION LLC, formerly known as (and which acquired title as), FASL LLC, a Delaware limited liability company, ("Grantor"), does hereby grant to SPANSION LLC, a Delaware limited liability company ("Grantee"), all that certain real property situated in the City of Sunnyvale, County of Santa Clara, State of California, described on Exhibit A attached hereto and incorporated herein by this reference, including, without limitation, all buildings, structures, improvements and fixtures located on the real property, together with all easements, rights and appurtenances pertaining to such real property (collectively, the "Property").

This deed is being executed for the sole purpose of confirming a name change of the owner of the Property.

IN WITNESS WHEREOF, the undersigned has executed this Grant Deed dated as of November 1, 2006.

SPANSION LLC,
a Delaware limited liability company

By: _____
Dario Sacomani

Its: Chief Financial Officer

(ATTACH NOTARY ACKNOWLEDGMENT)

State of California)
) ss.
County of Santa Clara)

On, November 1, 2006, before me, Maura L. Burns, Notary Public, personally appeared Dario Sacomani, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

SEAL

EXHIBIT A

LEGAL DESCRIPTION

Real property in the City of Sunnyvale, County of Santa Clara, State of California, described as follows:

Parcel One:

All of Parcel A, as shown upon that certain Parcel Map filed for record in the Office of the Recorder of the County of Santa Clara, State of California on November 30, 1973 in Book 333 of Maps on page 30.

Parcel Two:

A non-exclusive easement for the installation, operation, maintenance, repair and replacement of computer data and telecommunications lines as granted in that certain Easement Agreement recorded June 16, 1997 as Instrument No. 13741332, Official Records.

APN: 205-21-001

ACTIVITY AND USE LIMITATIONS (AULS) EXHIBITS

M318PAGE116

FILED FOR RECORD
AT REQUEST OF
GRANTOR
AUG 7 8 15 AM '92
SANTA CLARA COUNTY

Recording Requested By:

Advanced Micro Devices, Inc.

When Recorded, Mail to:

Advanced Micro Devices, Inc.
901 Thompson Place, Mail Stop 68
P.O. Box 3453
Sunnyvale, California 94088-3000
Attn: Hollis M. Fitzgerald, Esq.,

with a certified copy to:

California Regional Water
Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612
Attn: Steven R. Ritchie, Executive Officer

REC FEE	9
RMF	7
MICRO	1
NTCF	6
LIEN	
BMFF	
3 PCOR	

COVENANT AND AGREEMENT TO RESTRICT USE OF PROPERTY AT
915 DeGUIGNE DRIVE
SUNNYVALE, CALIFORNIA

This Covenant and Agreement ("Covenant") is made on the 7th day of August, 1992 by and between Advanced Micro Devices, Inc., a California corporation ("Covenantor"), and the California Regional Water Quality Control Board, San Francisco Bay Region ("Regional Board").

RECITALS

A. Covenantor is the owner of that certain parcel of real property located at 915 DeGuigne Drive, City of Sunnyvale, County of Santa Clara, State of California and more particularly described in Exhibit "A", attached hereto and incorporated herein by this reference (the "Property").

B. Organic and inorganic chemicals have been detected in soil and groundwater at the Property. The Regional Board has issued Order 91-101, which provides for investigation of conditions at the Property and for remedial action.

C. Covenantor desires and intends that in order to protect the present or future public health and safety, the Property shall be used in such a manner as to avoid potential harm to persons or property which may result from contamination which has been detected in groundwater beneath the Property.

NOW, THEREFORE, Covenantor, for itself, its successors and assigns, hereby declares and agrees as follows:

ARTICLE I

DEFINITIONS

1.01 Occupant. "Occupant" shall mean any Person other than an Owner entitled by leasehold or other legal relationship to the exclusive right to occupy any portion of the Property.

1.02 Owner. "Owner" shall mean the Covenantor or its successors in interest, including heirs and assigns, who hold fee title to all or any portion of the Property.

1.03 Regional Board. "Regional Board" shall mean the California Regional Water Quality Control Board, San Francisco Bay Region, and shall include its successor agencies, if any.

1.04 Upper Water-Bearing Aquifer. "Upper Water-Bearing Aquifer" shall mean the potential water-bearing units occurring from ground surface to _____ feet below ground surface.

ARTICLE II

GENERAL PROVISIONS

2.01 Provisions to Run With the Land. The covenants, conditions and restrictions contained in this Covenant shall run with the land, and pass with each and every portion of the Property, and shall apply to and bind the respective successors-in-interest thereof. Each and all of the covenants, conditions, and restrictions are imposed upon the entire Property unless expressly stated to be applicable only to a specific portion of the Property. The covenants, conditions, and restrictions set out herein shall be incorporated by reference in each and all deeds and leases of appropriate portions of the Property.

2.02 Acceptance. Every Owner or Occupant, by acceptance of a deed conveying title to all or any portion of the subject Property, or by execution of a contract to purchase thereof, or by the acceptance of a lease, easement or license therefor, or by the taking of possession thereof, whether from Covenantor or any subsequent Owner or Occupant, shall accept such deed, contract, lease, easement, license or possession upon and subject to each and all of the covenants, conditions and restrictions contained in this Covenant, and by such acceptance shall for itself, its heirs, successors and assigns, covenant, consent and agree to and with Covenantor and the Regional Board, their heirs, successors and assigns, to keep, observe, comply with and perform the covenants, conditions and restrictions contained herein, whether or not any reference to this Covenant is contained in the instrument by which such person or entity acquired its interest in the subject Property. Every person or entity who now or hereafter owns or acquires any right, title or interest in and to any portion of the Property is and shall be conclusively deemed to have consented and agreed to the covenants, conditions and

restrictions contained herein, whether or not any reference to this Covenant is contained in the instrument by which such person or entity acquired an interest in the Property or whether or not such person or entity obtained such interest by operation of law.

ARTICLE III

DEVELOPMENT, USE, AND CONVEYANCE OF THE PROPERTY

3.01 Restrictions on Use. Until such restrictions are terminated in accordance with Section 4.02 hereof, Covenantor promises to restrict the use of the Property as follows:

a. The Owner or Occupant of the Property will not use or cause to be used the Upper Water-Bearing Aquifers as a source and/or supply of drinking water.

b. The Owner or Occupant of the Property will not drill, construct, install, inspect, maintain, replace, remove, use, or operate any groundwater extraction wells or groundwater monitoring wells on the Property; provided, however, that any such wells may be located on or operated on the Property as may be necessary to investigate, characterize and remediate groundwater contamination pursuant to any order of any local, state or federal governmental or regulatory agency.

3.02 Conveyance of Property. The Owner or Owners shall provide a thirty (30) day advance notice to the Regional Board of any sale, lease, or other conveyance of the Property or an interest in the Property to a third person. The Regional Board shall not, by reason of the Covenant, have authority to approve, disapprove, or otherwise affect any sale, lease, or other conveyance of the Property except as otherwise provided by law or by administrative order.

3.03 Notice in Agreements. All Owners and Occupants shall execute a written instrument which shall accompany each purchase, lease, sublease, or rental agreement relating to the Property. The instrument shall contain the following statement:

"The groundwater and subsurface soil beneath the Property described herein contain hazardous substances. The California Regional Water Quality Control Board has determined that metals and volatile organic chemicals are "chemicals of concern" with regard to groundwater, and that volatile organic chemicals are "chemicals of concern" with regard to soils. Pursuant to applicable provisions of Chapter 6.8 of Division 20 of the California Health and Safety Code and Chapter 5 of Division 2 of the California Water Code, the California Regional Water Quality Control Board is authorized to impose upon the Property and its owner(s) or occupant(s) appropriate conditions, restrictions and requirements necessary to control and/or remediate

contamination detected at the Property. Additional information may be obtained by reviewing the files of the California Regional Water Quality Control Board, San Francisco Bay Region, or its successor agency. This statement is not a declaration that a hazard exists."

3.04 Enforcement. Failure of the Owner to comply with any of the requirements set forth in paragraph 3.01 shall be grounds for the Regional Board, by reason of the Covenant, to require that the Owner modify or remove any improvements constructed in violation of that paragraph and/or to cease activities in violation of that paragraph. Violation of the Covenant shall be grounds for the Regional Board to pursue legal actions against the Owner to the extent provided by law.

ARTICLE IV

VARIANCE AND TERMINATION

4.01 Variance. Any Owner or, with the Owner's consent, any Occupant of the Property or any portion thereof may apply to the Regional Board for a written variance from the provisions of this Covenant. Any Occupant making such application shall concurrently provide to all Owners a complete copy of such application. A variance shall be granted if the Regional Board determines that such variance will not (1) create or increase a significant present or future hazard to public health; (2) significantly diminish the ability to mitigate any significant potential or actual hazard to public health; or (3) cause a long-term increase in the number of humans or animals exposed to significant hazards which affect the health, well-being or safety of the public.

4.02 Termination. Any Owner or, with the Owner's consent, any Occupant of the Property or a portion thereof may apply to the Regional Board for termination of all or any of the provisions of this Covenant as they apply to all or any portion of the Property. Any Occupant making such application for termination shall concurrently provide to all Owners a complete copy of such application. The Regional Board shall terminate the provisions of this Covenant if (1) groundwater cleanup standards have been achieved and pollutant levels have stabilized in onsite aquifers, or (2) if conditions at the Property are otherwise found not to present a significant existing or potential hazard to present or future public health or safety. In determining whether conditions at the Property have ceased to present a significant existing or potential hazard to present or future public health or safety, the Regional Board shall give consideration to any or all of the following: (a) whether the contamination detected in the groundwater has been altered or removed in a manner which precludes any significant existing or potential hazard to present or future public health; (b) whether new scientific evidence has become available since the imposition of the restriction on the

Property, concerning (i) the nature of the contaminant(s) which caused the Property to be restricted, or (ii) the geology or other physical environmental characteristics of the Property; or (c) other factors that indicate that the Property does not present a significant current or future hazard to human health or safety.

4.03 Term. Unless terminated in accordance with paragraph 4.02 above, by law or otherwise, this Covenant shall continue in effect in perpetuity.

ARTICLE V

MISCELLANEOUS

5.01 No Dedication Intended. Nothing set forth herein shall be construed to be a gift or dedication, or offer of a gift or dedication, of the Property or any portion thereof to the general public or for any purpose whatsoever.

5.02 Notices. Whenever any person gives or serves any notice, demand, or other communication with respect to this Covenant, each such notice, demand, or other communication shall be in writing and shall be deemed effective (1) when delivered, if personally delivered to the person being served or to an officer of a corporate party being served or official of a government agency being served, or (2) three (3) business days after deposit in the mail if mailed by United States mail, postage paid certified, return-receipt requested:

TO: Advanced Micro Devices, Inc.
901 Thompson Place
P.O. Box 3453
Sunnyvale, CA 94088-3000
Attn: General Counsel

COPY TO: California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street
Oakland, CA 94612

5.03 Partial Invalidity. If any provision contained in this Covenant is determined to be invalid for any reason, the remaining portion(s) of this Covenant shall remain in full force and effect as if such provision had not been included herein.

5.04 Headings. Headings at the beginning of each numbered article or paragraph of this Covenant are solely for the convenience of the parties and are not a part of the Covenant.

5.05 Recordation. This Covenant shall be executed by the Covenantor and by the Regional Board. This Covenant shall be recorded by the Covenantor in the County of Santa Clara within ten (10) days of the date of execution.

5.06 Counterparts. This Covenant may be executed in counterparts, each of which shall be deemed to be an original but which, taken together, shall constitute one and the same instrument.

5.07 References. All references to Code sections include successor provisions.

IN WITNESS WHEREOF, the parties execute this Covenant as of the date set forth above.

COVENANTOR
ADVANCED MICRO DEVICES, INC.

By: _____

Title: Vice President

Date: 8/3/92

REGIONAL WATER QUALITY CONTROL BOARD

By: _____

Title: _____

Date: _____

STATE OF CALIFORNIA)
)
COUNTY OF Santa Clara)

On August 5, 1992 before me, the undersigned, a Notary Public in and for said state, personally appeared Thomas R. Cahill, personally known to me or proved to me on the basis of satisfactory evidence to be the person who executed the within instrument as Vice President, of the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same pursuant to its bylaws or a resolution of its board of directors.

WITNESS my hand and official seal.

OFFICIAL SEAL
CAROL A. ANDREWS
Notary Public-California
SANTA CLARA COUNTY
My Commission Expires
July 7, 1995

Carol A. Andrews
Notary Public in and for said
County and State

STATE OF CALIFORNIA)
)
COUNTY OF ALAMEDA)

On August 12, 1992 before me, the undersigned, a Notary Public in and for said state, personally appeared STEVEN R. RITCHIE, personally known to me or proved to me on the basis of satisfactory evidence to be the person who executed the within instrument as EXECUTIVE OFFICER, of the Regional Water Quality Control Board, San Francisco Bay Region, the agency that executed the within instrument, and acknowledged to me that such agency executed the same.

WITNESS my hand and official seal.

OFFICIAL SEAL
REMEDIOS T. DEOCAMPO
NOTARY PUBLIC CALIFORNIA
ALAMEDA COUNTY
My Comm. Expires May 16, 1994

Remedios T. Deocampo
Notary Public in and for said
County and State