



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

CERTIFIED MAIL 7000 0520 0025 3711 8102  
RETURN RECEIPT REQUESTED

**February 10, 2006**

In Reply Refer To: CWA-307-9-06-008

Doug Scrimmes, Director  
Pioneer Circuits, Incorporated  
3000 South Shannon Street  
Santa Ana, California 92704

Dear Mr. Scrimmes:

This administrative order establishes a schedule of corrective actions to achieve consistent compliance with new source Federal standards. EPA made the initial findings in an inspection report last October regarding the affirmative application of new source Federal standards to Pioneer Circuits and the resulting violations in the sample record for copper. Most of these violations previously were not identified because the Orange County permit did not correctly apply new source standards.

The Order requires Pioneer Circuits to achieve consistent compliance with the new source standards and local limits, to provide continuous monitoring of pH and flow, and to self-monitor for one year. The key dates are as follows:

KEY DATES	ADMINISTRATIVE ORDER CWA-307-9-06-008
03/28/06	1. Submit preliminary engineering plans for achieving consistent compliance with the new source Federal standards and local limits for copper. 3. Submit preliminary engineering plans for continuous monitoring.
04/01/06	5-8. Begin one year of self-monitoring under this Order. Daily pH measurements. Monthly sampling for copper, lead, and flow. Twice per year self-monitoring for toxic organics, cyanide, other metals. Continuous pH and flow monitoring beginning in July 2006.
06/28/06	2. Achieve consistent compliance with new source Federal standards and local limits for copper – Submit a notice of completion. 4. Provide continuous monitoring for pH/flow – Submit notice of completion
03/31/07	End self-monitoring under this Administrative Order.
* * *	Self-monitoring reports are due on the 28th day of each month for the samples collected during the previous calendar month.

The enclosed Finding of Violation and Administrative Order is issued pursuant to Sections 308(a) and 309(a)(3), (a)(4) and (a)(5)(A) of the Clean Water Act ("the Act") as amended [33 U.S.C. Sections 1318(a) and 1319(a)(3), (a)(4) and (a)(5)(A)]. Any violation of the terms of this Administrative Order or pretreatment standards could subject Pioneer Circuits to a civil action for appropriate relief pursuant to Section 309(b) of the Act [33 U.S.C. Section 1319(b)] and/or penalties under Section 309(d) of the Act [33 U.S.C. Section 1319(d)] of up to \$31,500 per day of violation. In addition, under Section 309(g) of the Act [33 U.S.C. Section 1319(g)], any violation of the pretreatment standards could also subject Pioneer Circuits to an administrative penalty action of up to \$12,000 per day of violation not to exceed \$157,500. Sections 309(c)(1), (c)(2) and (c)(4) of the Act [33 U.S.C. Section 1319(c)(1), (c)(2) and (c)(4)] also provide penalties for negligent violations, knowing violations and knowingly making false statements.

The request for information included in this Administrative Order is not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act because it is not an "information collection request" within the meaning of 44 U.S.C. Sections 3502(4), 3502(11), 3507, 3512, and 3518. Furthermore, it is exempt from OMB review under the Paperwork Reduction Act because it is directed to fewer than ten persons [44 U.S.C. Section 3502(4), 3502(11) and 5 CFR Section 1320.5(a)].

EPA has promulgated regulations to protect the confidentiality of the business information it receives. These regulations are set forth in 40 CFR Part 2, Subpart B and in the Federal Register at 41 F.R. 36902 (September 1, 1976) and 43 F.R. 40000 (September 8, 1978). A claim of business confidentiality may be asserted in the manner specified by 40 CFR Section 2.203(b) for part or all of the information requested. EPA will disclose business information covered by such a claim only as authorized under 40 CFR Part 2, Subpart B. If no claim accompanies the business information at the time EPA receives it, EPA may make it available to the public without further notice. Pioneer Circuits may not withhold from EPA any information on the grounds that it is confidential.

If you have any questions regarding this matter, please contact Greg V. Arthur of my staff at (415) 972-3504 or at [arthur.greg@epa.gov](mailto:arthur.greg@epa.gov).

Sincerely,

*Original signed by:  
Alexis Strauss*

Alexis Strauss  
Director, Water Division

Enclosure

cc: Chris Pelletier, Orange County Sanitation District  
Julio Lara, RWQCB-Santa Ana

UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION 9

In the Matter of	)	
	)	
Pioneer Circuits, Incorporated	)	FINDING OF VIOLATION
Santa Ana, California	)	
	)	AND ORDER
Proceedings under Section 308(a) and 309(a)(3),	)	
(a)(4) and (a)(5)(A) of the Clean Water Act, as	)	Docket No. CWA-307-9-06-008
amended, 33 U.S.C. Section 1318(a) and	)	
1319(a)(3), (a)(4) and (a)(5)(A)	)	

**STATUTORY AUTHORITY**

The following Finding of Violation and Order (Docket No. CWA-307-9-06-008) is issued under the authority vested in the Administrator of the U.S. Environmental Protection Agency (EPA) pursuant to Sections 308(a) and 309(a)(3), (a)(4) and (a)(5)(A) of the Clean Water Act [33 U.S.C. Sections 1318(a) and 1319(a)(3), (a)(4) and (a)(5)(A)] (hereinafter the Act). This authority has been delegated by the Administrator and the Regional Administrator of EPA Region 9 to the Director of the Water Division of EPA Region 9.

**FINDING OF VIOLATION**

The Director of the Water Division of EPA Region 9 finds that Pioneer Circuits, Incorporated (“Pioneer Circuits”) in Santa Ana is in violation of Section 307(d) of the Act [33 U.S.C. Section 1317(d)]. This Finding is made on the basis of the following facts:

1. Section 307(d) of the Act [33 U.S.C. Section 1317(d)] prohibits any owner or operator of any source from introducing pollutants into publicly owned treatment works (POTWs) in violation of any effluent standard or prohibition or pretreatment standard promulgated under Section 307 of the Act.
2. Under Section 307(b) of the Act [33 U.S.C. 1317(b)], EPA promulgated the following general pretreatment regulations and categorical pretreatment standards:

- a. The Federal categorical pretreatment standards for electroplating in 40 CFR 413 which require existing source printed circuit board manufacturing operations, discharging over 10,000 gallons per day (“gpd”), to comply with the daily-maximum and four-day-average standards for cadmium, chromium, copper, lead, nickel, silver, zinc, total cyanide, toxic organics, and total metals in 40 CFR 413.84(c)(g);
  - b. The Federal categorical pretreatment standards for metal finishing in 40 CFR 433 which require the new source printed circuit board manufacturing operations to comply with the daily-maximum and monthly-average standards for cadmium, chromium, copper, lead, nickel, silver, zinc, total or amenable cyanide, and toxic organics, in 40 CFR 433.17;
  - c. The national pretreatment requirements in 40 CFR 403.6(e) for categorical industrial users into POTWs which require alternative limits to be applied using the combined wastestream formula to combined effluents with dilution waters or wastewaters subject to differing Federal standards;
  - d. The national pretreatment standards in 40 CFR 403.12(e)(g) for all industrial dischargers into POTWs which require categorical industrial users to submit, at least twice per year, periodic reports of sampling that is representative of the discharge to the sewers and indicate both the concentration of the discharge for all Federally-regulated parameters and the flow rate of the discharge.
3. Pioneer Circuits is a corporation and therefore a person within the meaning of Section 502(5) of the Act, [33 U.S.C. Section 1362(5)]. Pioneer Circuits owns and operates a printed circuit board manufacturing facility at 3010 South Shannon Street in Santa Ana, California. Pioneer Circuits is a non-domestic source and introduces pollutants within the meaning of Section 502(6) of the Act [33 U.S.C. Section 1362(6)], into the City of Santa Ana domestic sewer system and Orange County wastewater treatment plants, which

together are a POTW within the meaning of Section 307(b) and the pretreatment regulations in 40 CFR 403.3(o). Pioneer Circuits is therefore subject to the provisions of the Act, [33 U.S.C. Section 1251 et seq., including Section 307, 33 U.S.C. Section 1317].

4. On June 21, 2005, EPA, the Regional Water Quality Control Board (“RWQCB-Santa Ana”), and the Orange County Sanitation District (“Orange County”) conducted a compliance evaluation inspection of Pioneer Circuits, and determined the following:

a. Facility Description: Pioneer Circuits owns and operates a printed circuit board manufacturing facility in Santa Ana:

1. The manufacturing operations include template photo development, board scrubbing (acid, mechanical), photo resist, inner layer etching (cupric etch, resist strip, acid activation), board lay-up (bonding, dry punching, cutting vacuum lamination), hole drilling and plating, (solvent cleaning, permanganate desmearing, acid activation, caustic cleaning, glass etching, acid etching, microetching, palladium catalyst, electroless-copper plating), microetching, acid-copper plating, acid-tin/lead solder plating, ammonium oxidation etching line, and a solder line (acid solder strip, solder mask, hot-air leveling, hot-oil reflow);

2. The operations began in 1981, however, significant changes in the configuration and capabilities have been instituted since then. In particular, a new cupric etch line was installed in 2001, a new ammonium etch line was added in 1993, and the plating room was installed in the early 1990s;

b. Wastewater Discharges to the Sewer: Pioneer Circuits discharges process-related wastewater into the domestic sewers feeding into the Orange County wastewater treatment plants for discharge into the Pacific Ocean and for reuse and reclaim:

1. The printed circuit board manufacturing operations generate spents, rinses,

- and wash waters from image developers and metal finishing steps, as well as blowdowns and reverse osmosis brine;
2. The process-related wastewaters from Pioneer Circuits discharge under Orange County permit No. 1-1-262 through one sewer connection, designated in this Order the permit number as IWD-11262;
  3. The process-related wastewaters that discharge through IWD-11262 consist of treated copper-bearing spents and rinses from a batch treatment unit (metals precipitation, coagulation, flocculation, settling, sludge dewatering), ion exchange treated low-copper rinses, and untreated rinses related to soldering, board preparation, and photo resist;
  4. Pioneer Circuits reports that the flow rates of treated and untreated process-related wastewater discharges to the sewers average ~35,000 gpd from IWD-11262;
  5. The discharges of process-related wastewater to the sewers are monitored at an outside underground final clarifier, designated in this Order and the October 26, 2005 EPA inspection report as sample point IWD-11262;
- c. Categorical Standards: The Federal categorical pretreatment standards in 40 CFR 433 for new source metal finishing operations apply to all of the process-related wastewater discharges from the printed circuit board manufacturing operations at Pioneer Circuits installed, rebuilt, moved, or converted to do new operations after August 31, 1982. The Federal categorical pretreatment standards in 40 CFR 413 for existing source printed circuit board manufacturing operations discharging more than 10,000 gpd apply to all of the remaining process-related wastewater discharges from the printed circuit board manufacturing operations at Pioneer Circuits operating unchanged in configuration since August 31, 1982:

1. 40 CFR 433 Applicability: Because Pioneer Circuits performs printed circuit board manufacturing, the Federal categorical pretreatment standards in 40 CFR 433 apply to all process wastewaters from the new source printed circuit board manufacturing operations installed, rebuilt, moved or converted to do new operations since August 31, 1982.
2. 40 CFR 413 Applicability: Because Pioneer Circuits manufactures printed circuit boards to order for customers, the Federal printed circuit board manufacturing standards in 40 CFR 413 apply to all process wastewaters from the printed circuit board manufacturing operations at Pioneer Circuits that were in operation in their present configuration before August 31, 1982, and that together discharge more than 10,000 gpd;
3. Adjustments: The Federal categorical pretreatment standards in 40 CFR 413 and 40 CFR 433 must be adjusted in a number of ways using the combined wastestream formula in 40 CFR 403.6(e) in order to be applied at Pioneer Circuits to the discharges into the sewers:
  - i. The Federal standards applied to IWD-11262 must be adjusted to account for dual Federal regulation under 40 CFR 433 and 413;
  - ii. The Federal standards applied to IWD-11262, must be adjusted to account for dilution of the Federally-regulated wastewater discharges with the dilution waters, such as cooling waters and demineralizer brines, specifically listed in 40 CFR 403.6(e);
  - iii. Domestic sewage discharges into the Santa Ana sewers downstream of the compliance sampling points.
5. Pioneer Circuits violated Section 307(d) of the Act [33 U.S.C. Section 1317(d)] in that:
  - a. The following Federal categorical pretreatment standards and local limits apply to the discharges from Pioneer Circuits at IWD-11262:

Regulated Pollutants (mg/l)	Fed Categorical Standards		Local Limits
	daily-max	month-avg	instant-max
Cd cadmium	0.58	0.25	1.0
Cr chromium	4.26	1.81	2.0
Cu copper	3.38	1.64	3.0
Pb lead	0.55	0.31	2.0
Ni nickel	3.44	1.76	10.0
Ag silver	0.71	0.32	5.0
Zn zinc	2.93	1.40	10.0
CNt total cyanide	1.62	0.47	5.0
TTO total toxic organics	1.81	-	0.58
TM total metals	8.93	4.68	-

- b. EPA reviewed the 2003-2005 Orange County sample record for Pioneer Circuits at IWD-11262 and determined that Pioneer Circuits violated effluent limits on at least the following six occasions:

Violations of Effluent Limits @ IWD-11262 January 2003 – June 2005							
sample date	type	sampler	standards and limits (mg/l) violation				viol days
Mar 2005	24-hour	OCSD	Fed	Cu mo-avg	1.64	1.83	31
08/16/04	grab	OCSD	local	Cu inst-max	3.0	3.79	1
Dec 2003	24-hour	OCSD	Fed	Cu mo-avge	1.64	2.56	31
Jan 2003	24-hour	OCSD	Fed	Cu mo-avg	1.64	8.13	31
01/22/03	24-hour	OCSD	Fed	Cu d-max	3.38	8.13	
			local	Cu inst-max	3.0		
<u>Index Key</u>							
mo-avg	• Monthly-averages are calculated by averaging all samples in a calendar month, even if there is just one.						
d-max	• Daily-maximums based on 24-hr automatic or manual composites.						
inst-max	• Instantaneous-maximums based on samples of any duration.						
24-hour	• Automatic 24-hour composite sampling.						

6. The October 26, 2005 EPA report of the inspection of Pioneer Circuits is by reference made part of this Finding of Violation and Administrative Order.



### **ADMINISTRATIVE ORDER**

Taking these Findings into consideration and considering the potential environmental and human health effects of the violations and all good faith efforts to comply, EPA has determined that compliance in accordance with the following requirements is reasonable. Pursuant to Section 308(a) and 309(a)(3), (a)(4) and (a)(5)(A) of the Act [33 U.S.C. Section 1318(a) and 1319(a)(3), (a)(4) and (a)(5)(A)], IT IS HEREBY ORDERED that Pioneer Circuits comply with the following requirements:

#### *Achieve Consistent Compliance*

1. By **MARCH 28, 2006**, Pioneer Circuits shall submit a preliminary engineering plan of the steps to be taken to achieve consistent compliance with all Federal categorical pretreatment standards and local limits. This preliminary engineering plan shall include:
  - a. A detailed description of all plant, equipment, hardware, management plans and operating procedures to be used to achieve consistent compliance. This detailed description shall address for consideration the following recommendations first made in the October 26, 2005 EPA inspection report:
    1. Batch treated wastewaters should be discharged only after verifying compliance through water quality testing;
    2. Batch treated wastewaters found in compliance through testing should be metered for discharge, or if found to be in non-compliance, hauled off-site;
    3. The ion exchange should be retrofitted with automatic alarms indicating the pending breakthrough of contaminants and with automated switching and regeneration;
    4. Testing to allow the return of off-spec wastewaters for re-treatment should be instituted through the installation of equalization either before or after ion exchange;

- b. A schedule of all corrective actions to be made in order to achieve consistent compliance with Federal standards and local limits, not to extend beyond the deadlines specified in Item 2 of this Order.
2. By **JUNE 28, 2006**, Pioneer Circuits shall complete the necessary steps to achieve consistent compliance with all Federal categorical pretreatment standards and local limits, and submit a notice of completion.

*Installation of Continuous pH and Flow Monitoring*

3. By **MARCH 28, 2006**, Pioneer Circuits shall submit a preliminary engineering plan of the steps to be taken in order to provide continuous monitoring for pH and the discharge flow rate of all process-related wastewater discharges to the sewers. This preliminary engineering plan shall include:
  - a. A description of all equipment and operating procedures to be used to provide continuous monitoring for pH and the discharge flow rate of all process-related wastewater discharges to the sewers;
  - b. A schedule of all actions to be made to provide continuous monitoring for pH and the discharge flow rate of all process-related wastewater discharges to the sewers, not to extend beyond the deadline specified in Item 4 of this Order.
4. By **JUNE 28, 2006**, Pioneer Circuits shall complete the steps necessary to provide continuous monitoring for pH and the discharge flow rate of all process-related wastewater discharges to the sewers, and submit a notice of completion.

*Self-Monitoring*

5. Sampling Schedule: For a year, from **APRIL 1, 2006 THROUGH MARCH 31, 2007**, Pioneer Circuits shall self-monitor the process-related wastewater discharges at IWD-11262, in accordance with the following schedule:

- a. **ONCE EVERY DAY**, Pioneer Circuits shall self-monitor the process-related wastewater discharges to the sewers for pH;
  - b. **ONCE EVERY MONTH**, Pioneer Circuits shall self-monitor all process-related wastewater discharges to the sewers for copper, lead, and discharge flow rate;
  - c. **ONCE EVERY SIX MONTHS** (before June 28, 2006 and December 28, 2006, Pioneer Circuits shall self-monitor the process-related wastewater discharges to the sewers for cadmium, chromium, nickel, silver, zinc, total cyanide, total metals, and total toxic organics;
  - d. **CONTINUOUSLY BEGINNING JULY 1, 2006**, Pioneer Circuits shall self-monitor the process-related wastewater discharges for pH and discharge flow rate.
6. pH Self-Monitoring Summaries: **ONCE EACH MONTH**, Pioneer Circuits shall prepare summaries of the pH self-monitoring required by Items 5(a) and 5(d) of this Order above, for IWD-11262, in accordance with the following schedule:
- a. **THROUGH JUNE 30, 2006**, Pioneer Circuits shall summarize all pH measurements by date, time, and sampling location;
  - b. **BEGINNING JULY 1, 2006**, Pioneer Circuits shall summarize continuous pH meter strip charts by date and sampling location to reflect the following:
    1. The number of minutes each day in which the pH is below 2.0;
    2. The number of minutes each day in which the pH is below 5.0;
    3. The number of minutes each day in which the pH is below 6.0;
    4. The number of minutes each day in which the pH is above 12.0;
    5. The number of minutes each day in which the pH is above 12.5.
7. Sampling and Analysis: Pioneer Circuits shall self-monitor and analyze using the sampling protocols listed below, and the EPA approved analytical methods (or equivalent) necessary to achieve the detection limits indicated below:

Parameters And Pollutants	Sampling Method Protocols	Detection Limits
cadmium	24-hour composite	10 µg/l
chromium	24-hour composite	10 µg/l
copper	24-hour composite	10 µg/l
lead	24-hour composite	10 µg/l
nickel	24-hour composite	10 µg/l
silver	24-hour composite	10 µg/l
zinc	24-hour composite	10 µg/l
total cyanide	24-hour manual composite grabs	10 µg/l
total toxic organics	grab	1 mg/l
discharge flow rate (gpd)	water meter (continuous after 7/01)	-
pH (s.u.)	field grabs (continuous after 7/01)	0.1 s.u.

8. Self-Certifications: The toxic organics self-monitoring required by Item 5(b), above, may be replaced by self-certifications after approval, by EPA or Orange County, of a toxic organics management plan as provided for in 40 CFR 433.12(a) and 40 CFR 413.03(a).

*Submittals*

9. By the **TWENTY-EIGHTH (28<sup>th</sup>) DAY OF EACH MONTH**, Pioneer Circuits shall submit all self-monitoring results for the previous month. The first monthly report is due on May 28, 2006 for the April 2006 self-monitoring. The 12th-and-last monthly report is due on April 28, 2007 for the March 2007 self-monitoring.
10. For each sample, Pioneer Circuits shall record the following:
- a. The sample results;
  - b. The EPA analytical methods used;
  - c. The date, time, location of sampling;
  - e. The type of sample (ie. 24-hour composite, grab);
  - f. The name of the laboratory used; and
  - g. Self-certifications in lieu of self-monitoring as allowed by Item 8 of this Order.
11. All reports submitted pursuant to this Order shall be signed by a principal executive officer of Pioneer Circuits and shall include the following self-certifying statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that all wastewater samples analyzed and reported herein are representative of the ordinary process wastewater flow from this facility. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

12. This Order is not and shall not be interpreted to be an NPDES permit under Section 402 of the Act [33 U.S.C. Section 1342], nor an Orange County or RWQCB-Santa Ana sewer discharge permit under 40 CFR 403.8(f)(iii), nor shall it in any way relieve Pioneer Circuits of obligations imposed by the Act, or any other Federal, State or local law, including the Orange County sewer use ordinances.

13. All submittals shall be mailed to the following addresses:

U.S. ENVIRONMENTAL PROTECTION AGENCY  
75 Hawthorne Street  
San Francisco, California 94105  
Attn: Greg V. Arthur (WTR-7)

REGIONAL WATER QUALITY CONTROL BOARD  
3737 Main Street, Suite 500  
Riverside, California 92501-3348  
Attn: Julio Lara

ORANGE COUNTY SANITATION DISTRICT  
10844 Ellis Avenue  
Fountain Valley, California 92708-7018  
Attn: Chris Pelletier

14. This Order takes effect upon signature.

*Original signed by:*  
*Alexis Strauss*

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Alexis Strauss  
Director, Water Division

**February 10, 2006**

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Dated