

## DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

### RCRA Corrective Action Environmental Indicator (EI) RCRAInfo code (CA725) Current Human Exposures Under Control

**Facility Name:** Marlborough Press (formerly Three Dimensional Circuits)  
**Facility Address:** 31 Commercial Street, Plainview, NY 11803  
**Facility EPA ID #:** NYD990774184

#### **BACKGROUND**

##### **Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EIs) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

##### **Definition of "Current Human Exposures Under Control" EI**

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

##### **Relationship of EI to Final Remedies**

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EIs are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

##### **Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo status codes must be changed when the regulatory authorities become aware of contrary information).

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1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

If yes - check here and continue with #2 below.

If no - re-evaluate existing data, or

If data are not available skip to #6 and enter "IN" (more information needed) status code.

**Background:**

This site was operated as the Three Dimensional Circuits Site from 1970-1984. In 1980, the company submitted a Part A Application, and obtained an EPA ID number. In 1984 the company ceased operations. In October 1987, the permit request was withdrawn and the site was referred to State Superfund. Cleanup actions at this site are documented under the Three Dimensional Circuits name.

The Three Dimensional Circuits site is located in an industrial park in Plainview, Nassau County, New York. The company manufactured electronic circuit boards from 1970 until 1984. During its operation, the site discharged metal plating solutions into an on-site leaching pool system. Soil samples collected in May 1986 and a Phase II investigation conducted in 1987 revealed that soil and groundwater at the site had become contaminated with lead and copper. Soil samples showed a maximum lead concentration of 6820 ppm and a maximum copper concentration of 46000 ppm. During the 1987 investigation, 1,1,1 trichloroethane was found in an up-gradient well (MW-2) at 50 ppb.

A Consent Order was executed in April 1995 for a Remedial Investigation (RI). In 1998, an Interim Remedial Measure (IRM) was undertaken to address the soil contamination. During the IRM, the leaching pools and a storm drain were excavated and 204 tons of lead and copper contaminated soil removed from the site. The leaching pools and storm drain were backfilled with clean sand and the area was re-paved, effectively capping the area.

The Remedial Investigation was completed in April 1999. Groundwater monitoring was performed during the RI and perchloroethylene was found in MW-2 (upgradient) and MW-5 (downgradient) well. The levels of perchloroethylene ranged from 3.7 to 5.4 ppb and was unrelated to site activities. The groundwater standard is 5 ppb. Lead and copper levels in downgradient well MW-4 were greatly reduced from July 1997 (pre-source removal) to April 1999 (post-source removal). Copper levels decreased from 1480 ppb to 206 ppb; lead levels decreased from 483 ppb to 110 ppb. The groundwater standard for copper is 200 ppb; for lead the standard is 25 ppb.

A Record of Decision was issued in March 2000, which required groundwater monitoring for inorganics on a quarterly basis for two years. Over the duration of the groundwater monitoring program, the concentrations of copper and lead in groundwater downgradient of the former source area continued to decrease as a result of source remediation and met the remedial goal ( NYS Ambient Water Quality Standards for Class GA groundwater). The site was delisted in August 2004.

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References:

1. NYS Department of Environmental Conservation, Division of Environmental Remediation. Record of Decision - Three Dimensional Circuits Site. March 2000
  2. Henderson & Bodwell LLP. Letter dated November 21, 2003. Re: 31 Commercial Street. Final Groundwater Sampling Results
  3. NYSDOH Letter dated April 19, 2004. Concurrence to De-list Three Dimensional Circuits
  4. NYS Department of Environmental Conservation Letter dated August 6, 2004. Deletion of Site from NYS Registry of Inactive Hazardous Waste Disposal Sites
2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be "**contaminated**"<sup>1</sup> above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	YES	NO	?	Rationale/Key Contaminants
Groundwater		X		
Air (indoors) <sup>2</sup>		X		
Surface Soil (e.g., <2 ft)		X		
Surface Water		X		
Sediment		X		
Subsurface Soil (e.g., >2 ft)		X		
Air (outdoors)		X		

X If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not known or reasonably expected to be exceeded.

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<sup>1</sup>"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

<sup>2</sup>Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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\_\_\_\_\_ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

\_\_\_\_\_ If unknown (for any media) - skip to #6 and enter "IN" status code.

**Rationale:**

On-site soil samples were contaminated with metals, and contaminated soil and sediments were excavated and removed. Groundwater contamination has declined since the Interim Remedial Measure (IRM) soil removal. The area is served by public water and no private drinking water wells have been identified within the area. The Plainview Water District public water supply wells one half mile from the site currently show no evidence of site-related contamination. The site is not fenced and entrance to the property is not controlled, but all soils above DEC soil remediation guidelines that were subsurface have been removed. There are no nearby residential areas and no evidence of on-site trespassing.

Quarterly groundwater monitoring for 2 years indicated that lead and copper concentrations in downgradient monitoring wells were below NYS Ambient Water Quality Standards for Class GA Groundwater. Although perchloroethylene was found in up-gradient and downgradient wells just at the groundwater standard, this contaminant is not related to site activities. As part of the ROD, NYSDEC and NYSDOH concluded that the Site had not discharged significant levels of VOCs to the groundwater, and vapor intrusion was not an issue at this site. In 2004, NYSDOH reviewed and concurred with the decision to delist the site. The site was delisted in August 2004.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

<b>"Contaminated" Media</b>	<b>Potential Human Receptors (Under Current Conditions)</b>						
	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater	NO	NO	NO	NO	—	—	NO
Air (indoors) —	NO	NO	NO	—	—	—	—
Surface Soil — (e.g., <2 ft)	NO	NO	NO	NO	NO	NO	NO
Surface Water	NO	NO	—	—	NO	NO	NO
Sediment	NO	NO	—	—	NO	NO	NO
Subsurface Soil — (e.g., >2 ft) —	—	—	—	NO	—	—	NO
Air (outdoors) —	NO	NO	NO	NO	NO	—	—

<sup>3</sup> Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.
2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

**Note:** In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces (" \_ \_ \_ "). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

\_\_\_\_\_ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

\_\_\_\_\_ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

\_\_\_\_\_ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be "**significant**"<sup>4</sup> (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

\_\_\_\_\_ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

\_\_\_\_\_ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially

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<sup>4</sup> If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

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“unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

\_\_\_\_\_ If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

5. Can the “significant” **exposures** (identified in #4) be shown to be within **acceptable** limits?

\_\_\_\_\_ If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

\_\_\_\_\_ If no (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.

\_\_\_\_\_ If unknown (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

6. Check the appropriate RCRA Info status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

  X   YE - Yes, “Current Human Exposures Under Control” has been verified. Based on a review of the information contained in this EI Determination, “Current Human Exposures” are expected to be “Under Control” at the Marlborough Press facility, EPA ID # NYD990774184, located at 31 Commercial Street, Plainview, New York under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

\_\_\_\_\_ NO - “Current Human Exposures” are NOT “Under Control.”

\_\_\_\_\_ IN - More information is needed to make a determination.

Completed by:   Ruth Curley   Date:   1/14/10    
Ruth Curley, P.E., Environmental Engineer  
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Supervisor:   Daniel Evans   Date:   1/19/10    
Daniel Evans, P.E., Section Chief  
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Director:



Date: 1/19/10

Robert J. Phaneuf, P.E. - Acting Director  
Bureau of Hazardous Waste and Radiation Management  
Division of Solid and Hazardous Materials

**Locations where References may be found:**

New York State Department of Environmental Conservation, Central Office  
Division of Solid and Hazardous Materials  
625 Broadway 9<sup>th</sup> Floor  
Albany, New York 12233-7252

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**FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**

**TABLES AND FIGURES**

**THREE DIMENSIONAL CIRCUITS  
31 COMMERCIAL STREET  
PLAINVIEW, NY 11803**



Three Dimensional Circuits  
 Site #1-30-026  
 Figure #1

SCALE: 1"=2000'

SOURCE: USGS QUAD  
 HUNTINGTON, NY

Multi Tenant Facility

Commercial Street



Micro Connections, Inc

CenDec, Inc

Former PRECO Site #1-30-044 Delisted 1995

Skylines Drive

Pharmaceutical Company

Former Parex Transmissions Facility

MW-1

LP-14

SD

LP-13

LP-12

Former Three Dimensional Circuits Facility

Former SPDES pools LP-1 through LP-11

American Casting and Manufacturing Corp.

MW-4

MW-2

MW-5

MW-3

Groundwater flow direction

Three Dimensional Circuits Site #1-30-026 Figure #1

**LEGEND**

- Fence Line or Property Boundary
- ⊕ Monitoring Well
- Leaching Pool or Storm Drain

**Three Dimensional Circuits  
Plainview, NY 11803  
NYD 990774184**

- Groundwater monitoring conducted 2002-2003 as part of ROD
- Found copper in upgradient monitoring well. Summary of Results below:

**COPPER**

	8/87	7/96	6/97	4/99	1/02	4/02	7/02	10/02	1/03	4/03	7/03	10/03
MW-1	142	234	--	6	6.6	6.4	0.6	10	1.9	9.3	5.2	0.78
MW-2	1115	867	--	169	325	599	594	390	632	344	762	400
MW-3	--	3	--	4	1.5	2.7	0.5	2	3	3.4	1.4	1.1
MW-4	--	--	1480	206	29	13	42	6	8.6	8.2	4.5	7.9
MW-5	--	--	--	33	62	160	2	5	21.5	3.2	2	13

Standard for copper in groundwater is 200 ppb

**LEAD**

	8/87	7/96	6/97	4/99	1/02	4/02	7/02	10/02	1/03	4/03	7/03	10/03
MW-1	60	240	--	2.5	3	4	2	3	4	3	2	3
MW-2	16	1	--	1.7	3	4	2	4	4	5	2	0.5
MW-3	--	1	--	1.4	3	4	2	5	4	3	3	4
MW-4	--	--	483	110	17	6	30	6	5	4	5	3
MW-5	--	--	--	24.6	50	90	2	7	23	3	2	7

Standard for lead in groundwater is 25 ppb

MW-2 determined to be upgradient well  
 -- means no sample  
 ROD issued March 2000