

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action  
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Corning Asahi Video Products-State College Picture Tube Plant  
Facility Address: 3500 East College Avenue, State College, PA 16801  
Facility EPA ID #: PAD 043 891 530

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**

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

Environmental Indicators (EI) 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 EI 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 Controls" 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 EI 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 RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale/Key Contaminants</u>
Groundwater	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Strontium slightly above tap water
Air (indoors) <sup>2</sup>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Surface Soil (e.g., <2 ft)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Surface Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sediment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Subsurface Soil (e.g., >2 ft)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Air (outdoors)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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

     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 and Reference(s):**

**Background**

Corning Asahi Video Products (CAV) manufactured glass products for the television industry from 1966 to June 2003, when CAV closed the plant. The site was 96.36 acres and was comprised of seven operational areas. After shut-down, CAV sold its assets and completed facility-wide investigation and clean-up activities under Pennsylvania's Act 2 Program and an industrial cleaning project to facilitate property transfer. PADEP approved Corning's Act 2 Report and provided relief of liability on January 8, 2007.

A metal-bearing glass cullet was used in the manufacturing process and caused soil contamination over portions of a 48-acre area immediately surrounding the plant. The results of the Phase I and Phase II Site Characterization projects showed that significant contamination was limited to shallow soils (within the top two feet) proximal to heavy industrial use areas. The primary contaminants were found to be lead, arsenic, barium and strontium. Based on the generally immobile nature of the heavy metal contaminants in soils, the transport pathways were limited to movement along surface water and stormwater pathways. Transport of constituents via groundwater was found to be negligible as only strontium was detected slightly above health-based levels in groundwater. Groundwater is not used for potable purposes on site. The investigation and clean-up are detailed below:

**Groundwater**

<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.

## **Rationale & References cont.**

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A groundwater investigation comprised of the installation of three monitoring wells and use of a fourth existing well, evaluated groundwater for two rounds of sampling, taken approximately 10 months apart. Results indicate that all constituents are below drinking water standards and Pennsylvania's Medium Specific Concentrations (MSCs). Levels of chloride, manganese, iron and aluminum slightly exceeded their respective Secondary Maximum Contaminant Levels (SMCLs), however these are aesthetic standards, not health standards. Dissolved strontium slightly exceeded EPA's Risk Based Concentration level for tap water (9.3 mg/L) for groundwater at downgradient MW-6, at 25.7mg/L. Strontium is relatively immobile in the environment and is not expected to migrate beyond the facility boundary. The source of strontium in soil was localized and removed during the excavation phase of the site cleanup.

Relief of liability under the Act 2 program was not sought for groundwater, as relief is not available for this medium in this case. Groundwater results have never shown contaminants above MSCs. PADEP does not have an MSC value for strontium. The slightly elevated SMCLs are not considered above the Act 2 MSCs since there were no downgradient groundwater users identified and the point of compliance for a secondary MCL is the point of use.

#### **Air (indoor and outdoor)**

Corning has historically had problems with air emissions from the facility. PADEP fines have totaled more than \$2 million for past violations. However, the facility ceased operations on June 27, 2003 and no longer has sources of air contamination.

#### **Soil (surface and subsurface)**

Under the Act 2 Program, site characterization sampling identified 14 sub-areas within the former manufacturing areas that were found to have soil lead, arsenic, barium and/or strontium concentrations exceeding nonresidential MSCs. MSC values for these constituents are consistent with EPA's risk-based clean-up levels. Several other sub-areas were each characterized for specific parameters of concern, including metals, PCB's, PAH's and BTEX, and determined to meet MSCs for those parameters without remediation.

Soil remediation was conducted in the Hot End, the cullet storage areas, railroad related areas (Current Active Loop, North Loop, Railroad Staging Area), in the former Roll-off Container Area, and in two stormwater management areas (East Detention Basin and East Ditch). Systematic random soil attainment samples were collected, based on the volume of soil excavated. Where attainment sampling indicated that MSC's were not attained, additional soil was excavated and additional attainment samples were collected and the process repeated until attainment was demonstrated within each soil remediation area. Excavations went down to depths between 1 and 2.5 feet as attainment sampling showed contamination did not extend to greater depths. In all, 4,976 tons of contaminated soil were disposed. 1435 tons of soil were disposed as hazardous waste and 3541 tons of soil were disposed as residual waste.

All remediated soil areas attained the residential MSCs for the target constituents lead and barium, and attained the nonresidential MSCs for the target constituent arsenic. Sub-areas characterized with strontium were among the 14 sub-areas addressed through remediation of the lead contamination and achieved EPA's industrial soil standard for strontium.

#### **Surface Water and Sediment**

In the early 1990s Corning began negotiations with PADEP and the Pennsylvania Fish and Boat Commission (PA F&BC) to investigate the presence and extent of lead impacted sediments within a drainage channel (which is an NPDES outfall) to Logan Branch as well as the area along Logan Branch to the Pleasant Gap Hatchery. In March 1995 Corning entered into a Consent Order and Agreement to address sediment contamination. Corning installed two sediment collection structures for long-term monitoring and removal. The cleanup standard for the Pleasant Gap Basin was 115 mg/kg. The cleanup standard for the Cullen Basin was 200 mg/kg. Corning is required to clean out the basins when significant sediment accumulation is measured. As the facility is no actively using lead-contaminated materials and site soils have been remediated to below health-based levels for lead, lead-contaminated sediments are not expected to accumulate in the collection structures.

## **Rationale & References cont.**

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A 1994 investigation concluded that fish tissue, sediment toxicity, and water leachate sampling suggested that sediment quality in the lower portion of the channel had not significantly affected the water quality or fish in Logan Branch.

### **Brick and Block Landfill**

The permitted, closed construction and demolition landfill at the facility is located on approximately 4.3 acres at the eastern end of the site. The landfill was closed in two stages. During November 1987, PADER (now PADEP) approved the closure of a portion of the landfill used to dispose excavation materials for a plant expansion. The remainder of the landfill was closed in 1990 in accordance with an approved Closure Plan. PADEP inspected the closed landfill and approved the closure in a letter dated July 16, 1990. No Post-closure requirements were specified in the Closure Plan, however Corning and PADEP conducted inspection of the landfill during the post closure care period. On April 26, 2005, a final inspection of the landfill was conducted by PADEP. On May 16, 2006, PADEP provided a letter of Final Closure Certification, stating that no further remedial action or other activity is necessary, provided compliance with the land-use plan submitted by Corning on July 21, 2005. This land-use plan proposes the area of the landfill be used only for non-invasive open area or athletic play fields. Only shallow root vegetation will be used, in order to keep the integrity of the soil cover and underlying material.

Routine maintenance and repairs may be needed at the landfill cover soils or vegetation in accordance with an approved post-closure land use plan.

### **Ownership**

The site is currently owned by Dale Summit Acquisitions, L.P., and has been re-named Summit Park. The property is being used for light industry, warehousing and office space. Currently, there are no engineering controls requiring post-remediation inspection and care. A deed notice is in place, restricting future land use to nonresidential in all portions of the remediation area where the residential Statewide Health Standards for arsenic was not attained. A post-remediation care plan consists of a requirement for the property owner to submit notification to the Department if there is any planned change to the deed notice restriction or change from nonresidential to residential use within the remediation area.

### **References:**

Facility Closure Program, Act 2 Final Report and Industrial Cleaning Program Final Report, dated November 2006, submitted by N.A. Water systems on behalf of Corning Asahi Video Products Co.

Act 2 Technical Memo Summary, Corning Asahi Video Products Company, College Township, Centre County, dated January 9, 2007.

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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

Potential Human Receptors (Under Current Conditions)

<u>"Contaminated Media"</u>	<u>Residents</u>	<u>Workers</u>	<u>Day-Care</u>	<u>Construction</u>	<u>Trespassers</u>	<u>Recreation</u>	<u>Food</u> <sup>3</sup>
Groundwater	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Air (indoors)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soil (surface, e.g., <2 ft)	NO	NO	NO	NO	NO	NO	NO
Surface Water	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sediment	NO	NO	NO	NO	NO	NO	NO
Soil (subsurface e.g., >2 ft)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Air (outdoors)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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.

Rationale and Reference(s):

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

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4. Can the exposures from any of the complete pathways identified in #3 be reasonably expected to be "significant" (i.e., potentially<sup>4</sup> "unacceptable" levels) 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 "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.

Rationale and Reference(s):  
\_\_\_\_\_

<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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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 a "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 a "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.

Rationale and Reference(s): \_\_\_\_\_

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6. Check the appropriate RCRIS 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):

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 Corning Asahi Video Products-State College Picture Tube Plant facility, EPA ID PAD 043 891 530, located at 3500 East College Avenue, State College, PA 16801 under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

X

NO – "Current Human Exposures" are NOT "Under Control."

IN - More information is needed to make a determination.

Completed by: (signature) *Linda Matyskiela* Date 3/26/2013  
(print) Linda Matyskiela  
(title) Project Manager

Supervisor: (signature) *Paul Gotthold* Date 4/22/2013  
(print) Paul Gotthold, Associate Director  
(title) Office of PA Remediation  
(EPA Region or State) EPA Region III

Locations where References may be found:

US EPA Region III  
Land and Chemicals Division  
1650 Arch Street  
Philadelphia, PA 19103

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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.**