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: **R.R. Donnelly and Sons Company**
Facility Address: **4201 Murray Place, Lynchburg, VA 24501**
Facility EPA ID #: **VAD 055 048 532**

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

The facility is located at 4201 Murray Place in Lynchburg, VA 24501. RRD is a rotogravure printing plant with eight presses. Facility operations began with two presses in 1971; another six were added since this time. The facility produces catalogs and advertising flyers (e.g., newspaper inserts) for major retail corporations. The facility has 515 employees on-site and operates 24 hours per day, 7 days per week. Facility representatives indicated that "Environment, Health, and Safety are a highest priority at the RRD facility."

The facility uses significant volumes of toluene and four colors of ink (black, blue, red, and yellow) in the production of colored advertising products on a daily basis. The facility stores and manages toluene and printing ink in a large Ink Tank Farm or Tank Storage Building that is separate from the facility's main production facility. The Ink Tank Farm is an engineered building with above ground storage tanks (ASTs) and concrete secondary containment, ventilation, liquid systems, and fire suppression systems. The Ink Tank Farm stores toluene in two 16,000 gallon tanks, and the four colors of ink are each stored in a 16,000 gallon tank. A varnish used in the printing process is also stored in a 16,000 gallon tank. (Seven 16,000 gallon ASTs in the Ink Tank Farm Building.) The facility loads the toluene and inks into the Toluene and Ink Storage Building from tankers under an engineered tanker unloading area, which is roof covered and includes concrete secondary containment in the event of any spills.

The facility was issued a Title V Air Permit by the VDEQ, SCRO, on September 10, 2007, for air emissions and air pollution control systems at the facility site. The facility has significant emission units and insignificant emission units listed in the Air Permit.

The facility was issued was issued a Virginia Pollutant Discharge Elimination System (VPDES) Pretreatment Permit by the City of Lynchburg for the industrial wastewater discharge to the City's sanitary sewer system and subsequent treatment at the publicly owned treatment works (POTW). In addition, the facility was issued a VPDES General Permit For Stormwater Discharges associated with the RRD Industrial Activity by the VDEQ, SCRO, with an effective date of July 1, 2004.

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 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 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"**[1] 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		Sampling indicates no exceedances of standards.
Air (indoors) [2]		X		
Surface Soil (e.g., <2 ft)		X		Sampling indicates no exceedances of standards.
Surface Water		X		Sampling indicates no exceedances of standards
Sediment		X		Sampling indicates no exceedances of standards.
Subsurf. Soil (e.g., >2 ft)		X		Sampling indicates no exceedances of standards.
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 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):

No evidence of indoor or outdoor air contamination was found in files reviewed or noted during the site visit.

No sampling was performed after a 1988 solvent release. Subsurface soil sampling was conducted at former UST locations in November 2007. No soil samples contained VOCs, TPH-DRO, or SVOCs above laboratory detection limits.

A surface soil/sediment sample was collected from a storm sewer culvert in November 2007 related to the 1988 solvent release. A toluene concentration of 8.9 ug/kg was detected, which is below the USEPA Region III RBC of 82,000 ppm (Industrial) and 6,300 ppm (residential).

No groundwater or surface water samples have been collected.

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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)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)							
Air (outdoors)							

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):

[3] 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"**[4] (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 "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):

[4] 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 "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.

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 (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 R.R. Donnelley and Sons Company facility, VAD 055 048 532, located at 4201 Murray Place, Lynchburg, VA 24501 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 (signature) _____ Date 1/22/09
(print) Denis Zielinski
(title) _____

Supervisor (signature) _____ Date 1/22/09
(print) Luis Pizarro
(title) _____
(EPA Region or State) _____

Locations where References may be found:

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