

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: Benjamin Moore & Company

Facility Address: 880 West Roslyn Road, Colonial Heights, VA 23834

Facility EPA ID #: VAD 042 197 772

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 site is located at 880 West Roslyn Road, Colonial Heights, Chesterfield County, Virginia 23834. Benjamin Moore & Co. (Benjamin Moore) is an international manufacturer of paints. The site is located in a light industrial region, and covers approximately 560,000 square feet. The site is approximately 200 yards away from the nearest residence, and borders an unnamed creek to the east. Northstar Commercial Partners purchased the site and building from Benjamin Moore in June 2002. Northstar Commercial Partners then sold the property to another organization, most likely the IBC (International Bedding Co.). This transaction is believed to have occurred within a year's span of Northstar Commercial Partner's acquisition of the building and land.

As of May 2002, a commercial building occupied by Living World Outreach Center, Husky Hardwood Floors, and a vacant suite was located north of the Benjamin Moore site. West Roslyn Road followed by Interstate-95 is located east of the site, while a Goodyear Tire facility is located to the southern portion of the site. Railroad tracks followed by residential homes are located to the west of Benjamin Moore. The Quonset huts were utilized since the mid-1990's and used for the storage of paint pigments and packaging materials. The huts were located west of the main building. The fenced-in area is north of the Quonset huts and was used for the storage of liquid ammonia, silicon-based antifoaming agents, kelsol, ethylene glycol, glycerine and xylenes contained in tote containers. This fenced-in area was the former location of the aboveground storage tanks (ASTs) at the site.

Based on historical review, the facility site consisted of cultivated land from 1959 through 1964. Based on information presented in Terracon's April 2002, Phase I Report, and a facility site plan, dated August 11, 1986, the original property consisted of 6.47 acres, and a 50,800 square foot site building was constructed in 1965/1966. The adjoining property to the west of the original property consisting of 4.02 acres was purchased in 1984, and an approximately 40,000 square foot addition to the original building was completed in 1986. An area of 0.867 acres adjoining the original property to the east was also purchased in 1986.

Site operations have included paint manufacturing from 1966 until Benjamin Moore's on-site manufacturing activities ceased in 2001. The Benjamin Moore's facility operations consisted of six main areas including: Raw Materials Storage, Product Mixing and Thinning, Packaging, Warehouse/Shipping, Office Administrative and a QA/QC Laboratory. As of 2002, the site was undergoing decommissioning of the former site activities.

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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater		X		Groundwater sampling activities in 2002 and 2003 found concentrations below standards
Air (indoors) ²		X		Facility no longer operates at the site
Surface Soil (e.g., <2 ft)		X		No data to support contamination
Surface Water		X		No documentation of releases impacting unnamed creek (adjacent to site) or Appomattox River (3,000 feet south)
Sediment		X		No documentation of releases impacting unnamed creek (adjacent to site) or Appomattox River (3,000 feet south)
Subsurf. Soil (e.g., >2 ft)		X		No data to support contamination
Air (outdoors)		X		Facility no longer operates at the site

- 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):

Groundwater – Monitoring wells were installed near the eastern portion of the former tank house and sampled in May 2002 and June 2003 for TPH-DRO and TPH-GRO analysis. Based on two rounds of confirmatory groundwater sampling from MW-1 conducted in May 2002, and June 2003, and the fact that TPH did not exceed the 1.0 mg/l TPH regulatory limit under the Tank Program, the site’s consultant proposed, that no further action was required related to the low-level detections of TPH in MW-1 (in a June 27, 2003 letter to VDEQ).

Indoor and Outdoor Air – Facility no longer operates at the site

Sediment and Surface Water - No documentation of releases impacting unnamed creek (adjacent to site) or Appomattox River (3,000 feet south)

Surface and Subsurface Soil - During a 2002 site inspection, significant amounts of spilled paint were identified in areas within the batch mixing area, the tank house, and along the exterior of the building. Paint chips were also found on pallets near the tank house; however, none of the chip samples from these areas exhibited concentrations of lead above laboratory detection limits. The results of an April 2002 Limited Phase II Site Assessment indicated a release of petroleum hydrocarbons had occurred in the vicinity of the former tank house (interior of the building). Chromium, lead, and mercury concentrations were also identified in site soils,

but concentrations were also found across the site location and at levels suggesting these metals may be naturally occurring at the site.

Ten soil borings were advanced (deep borings B1 thru B4 were advanced to a depth of approximately 20 feet bgs while shallow borings B5S to B10S were advanced to 4 feet bgs). Soil samples from each of the 10 borings, and groundwater samples from the deep borings were analyzed for VOCs; chromium, cadmium, lead, and mercury; and TPH-GRO and TPH-DRO. In soil boring B-4 (located within the tank house on the northwestern portion of the warehouse area), variably elevated PID readings and petroleum odors were noted at depths of approximately 8 to 20 feet. Slight petroleum odors and staining were also noted boring B-10S (located at the western side of the compressor room and adjacent to a storm drain). Notwithstanding the field observations, based on the laboratory analyses, no other constituents were detected in any of the samples at levels exceeding applicable VDEQ criteria or USEPA Region III Risk-Based Concentrations.

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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>	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).

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 Benjamin Moore & Company, EPA ID # VAD 042 197 772, located at 880 West Roslyn Road, Colonial Heights, Virginia 23834. Specifically, this determination indicates that the migration of "contaminated" groundwater is 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:

US EPA Region III
Waste & Chemicals Management Division
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