DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: CCL (Harrisonburg) Inc.
Facility Address: 810 North Main Street, Harrisonburg, Virginia
Facility EPA ID #: VAD 000485078

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 #8 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 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	Yes			TCE and breakdown products
Air (indoors)[2]	Yes			TCE
Surface Soil (e.g., <2 ft)		No		
Surface Water	Yes			
Sediment		No		
Subsurface. Soil (e.g., >2 ft)		No		
Air (outdoors)		No		

☐ 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 *: Groundwater is contaminated from a former above ground storage tank containing trichloroethylene (TCE) that leaked during filling operations. The Storage tank was located on east side of the building, close to the building exterior. Well MW-1, which is located near the former above ground storage tank location has had the highest TCE concentrations. In 2009, the initial groundwater sampling results for MW-1 for TCE were at 12.8 ppm, which was well above the drinking water standard (MCL) of 0.005ppm. After a pump and treat system was installed in MW-1 in late 2009, the analytical results started to decrease. In January 2015, the last round of sampling showed MW-1 had TCE levels at 400ppb of TCE. One perimeter well, MW-4 had initial results above the MCL for TCE at 2600ppb in 2012, but recent results have shown it slightly above the MCL at 15ppb.

CCL conducted a tracer study in 2010 to determine where groundwater discharged, and the results indicated that the site groundwater came out near a spring in downtown Harrisonburg, approximately a mile away. Surface water sampling at the discharge point showed TCE at levels below the MCL of 5ppb.

Indoor Air *: Indoor air sampling was first taken in February 2012 at 7 locations throughout the building. One sub slab was also taken at that time. Indoor air results indicated exceedances of the Regional Screening Level (RSL) for TCE for industrial air of 3.0 ug/m^3 at 5 locations. Additional sample locations for indoor as well as sub-slab were added in the November 2012 sampling event. As of January 2015, there have been a total of 10 sampling events. Recent indoor air results have been below the RSL industrial value for TCE. In 2015, CCL conducted an extensive Heating Ventilation and Air-Conditioning equipment survey to better understand air movement that would affect indoor air results.

* Groundwater and Indoor air results are from Draft RCRA Facility Investigation Report dated March 30, 2015.

Footnotes:

[1] "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).

[2] 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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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	No	No					
Air (indoors)		Yes					
~~Soil~~ (surface, e.g., <2 ft)							
Surface Water	No						
~~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):

Groundwater: Groundwater is not used on the Facility property or the immediate area as a drinking water source. Drinking water is supplied by City of Harrisonburg. Harrisonburg gets its water from two nearby rivers (Dry River and North River) and not from groundwater. A spring and well survey was conducted in 2010, and the results can be found in the Shield Report dated July 13, 2010.

Surface Water: While TCE was detected in a spring called "Big Spring" in downtown Harrisonburg, the TCE levels were below the MCL for drinking water. Water from Big Spring discharges to Blacks Run, which meanders thru the City of Harrisonburg.

Indoor Air: Indoor air results have shown exceedances of the RSL for TCE for industrial air in the initial sampling event in February 2012. Indoor air sampling results since the February 2012 event have generally been below the RSL of 3.0 ug/m^3. In one sampling event in 2014, TCE was found at 5.1 ug/m^3 in sample AS-2, which is slightly above the RSL of 3.0 ug/m^3.

[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):

Indoor Air: Indoor air and sub-slab air has been sampled 10 times at various indoor and sub-slab locations within the facility building since February 2012. Indoor air sampling results since the February 2012 event have generally been below the RSL of 3.0 ug/m^3. In one sampling event in 2014, TCE was found at 5.1 ug/m^3 in sample AS-2, which is slightly above the RSL of 3.0 ug/m^3. No other indoor air sampling location has exceeded the RSL for TCE since 2012.
In 2015, CCL did an extensive survey of the Heating, Ventilation and Air Conditioning systems to better understand air movement in relationship to indoor air results.

[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 CCL Harrisonburg Inc. facility, EPA ID # 000485078, located at 810 North Main Street, Harrisonburg, Virginia 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 7-15-15
(print) Michael Jacobi
(title) EPA Project Manger

Supervisor (signature) -s- Date 7/15/15
(print) Luis Pizarro
(title) Associate Director
(EPA Region or State) EPA Region III

Locations where References may be found:

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