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: **Blue Ridge Talc Co**
Facility Address: **3800 Original Henry Road, Henry, VA 24102**
Facility EPA ID #: **VAD003124625**

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 Blue Ridge Talc facility is comprised of four parcels of property totaling 20 acres and is located at the intersection of State Routes 605 and 606 in Henry County, VA. The northern portion of the site is located in Franklin County. The facility was owned by the Kitson family and was active from the late 1800's to 2002. Activities included the processing of pigments and manufacturing of paint. Facility operations were shutdown in 2002. Blue Ridge Solvents currently owns the northern most parcel of the site, Mr. Prillaman owns the parcel adjacent to Blue Ridge Solvents, and the Kitson family still maintains ownership of the remainder of the facility properties. In 2007, the EPA and DEQ conducted a site visit and identified 13 solid waste management units (SWMUs). SWMUs include drum storage areas, satellite accumulation areas, underground storage tanks (USTs), septic tanks, and two disposal areas that were cleaned up in accordance with the Virginia Hazardous Waste Management Regulations.

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			
Air (indoors)[2]		X		
Surface Soil (e.g., <2 ft)		X		
Surface Water		X		
Sediment		X		
Subsurf. Soil (e.g., >2 ft)		X		
Air (outdoors)		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:

Soil:

The facility performed RCRA regulated closure activities for soil and groundwater at solid waste management units (SWMU) 1 and 2, the Back Fenceline Area and the Southeastern Fenced Area respectively. The cleanup activities achieved the conservative closure requirements and both SWMUs were certified and verified as "clean closed" on January 20, 2004 by the DEQ. In addition, the facility performed cleanup activities associated with three tank locations under the UST program by removing petroleum contaminated soil. These cleanup activities occurred in 1996, 2003, and 2005 and achieved program goals for soil. In 1999, the facility collected soil samples from the seeps area (SWMU 3) as part of a site characterization in accordance with the Voluntary Remediation Program (VRP). Sample results indicated concentrations of ethylbenzene, toluene, and xylenes in subsurface soil (>5ft below ground surface). A risk assessment was conducted at that time, which indicated that no unacceptable risks were present under the current use of the property.

As a follow up in 2014, shallow and subsurface soil samples were collected to evaluate current soil conditions at the seeps area under the RCRA Corrective Action program. Results indicated that concentrations have decreased, which demonstrates attenuation over time. One subsurface soil sample (6-6.5 ft below ground surface) contained concentrations of VOCs and SVOCs. Naphthalene was observed at 6.96 mg/kg, which is above residential Regional Screening Levels (RSLs) for direct contact, but below the industrial RSL and is within EPA's acceptable risk range of 1 x 10-6 to 1 x 10-4 for unrestricted land use. Ethylbenzene was observed at 89.4 mg/kg, which is above residential and industrial RSLs for direct contact, but is also within EPA's acceptable risk range for unrestricted land use. Additional VOCs and SVOCs detected in the sample were below RSLs for unrestricted land use.

Groundwater:

Petroleum related contaminants were observed during the facility's 2003 heating oil UST cleanup activities. In response, cleanup activities included corrective measures for groundwater. Free phase LNAPL was recovered to the extent practicable and bioremediation was implemented as a follow-on remedy. In 2007, the facility achieved cleanup standards and met the requirements of the UST program. In 2014, groundwater samples were collected site-wide from existing monitoring wells as part of site assessment under the Corrective Action program. Results indicated that shallow

groundwater contained concentrations of petroleum related contaminants above groundwater protection standards within the former heating oil UST location including PAHs, SVOCs, and limited VOCs. A follow up sampling event occurred in 2015. Results of this event were similar, which confirmed the presence of contaminants. In addition, residual free phase LNAPL was observed in monitoring well MW-13 during the 2015 event, which is located within the location of the former UST. LNAPL appeared degraded and is not present in significantly recoverable amounts.

Surface Water, Sediment, Air:

Surface water samples were collected from an unnamed tributary south of the site during the Corrective Action site assessment sampling events. Sample results indicated that VOCs, SVOCs, and PAHs were not detected above laboratory method detection limits. There is no evidence that indicates sediment and air have been impacted by VOCs, SVOCs, and PAHs.

Reference:

1. DEQ Tank Program Case Files: PC1991-1004, PC2003-2062, PC2005-2032
2. VRP Files: Site Characterization/Remedial Action Plan for the Seep Area, Olver Laboratories Inc., 1999
3. Trip Report-Groundwater and Soil Sampling, US Army Corps of Engineers, September 12, 2014
4. Trip Report-Groundwater and Soil Sampling, US Army Corps of Engineers, April 6, 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	NO	YES	NO	NO	NO
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:
Soil associated with the former USTs was removed during cleanup activities. Soil associated with the Seeps area was assessed under VRP and Corrective Action. Results indicated that petroleum contaminant concentrations within the Seeps area were found to be within EPA's acceptable risk range of 10-6 to 10-4 for unrestricted land use. No site related contaminants were detected in surface water as demonstrated during Corrective Action site assessment activities and there is no evidence that suggests sediment and air have been impacted.

Shallow groundwater within the former heating oil UST is the only media found to contain petroleum related contamination including limited free phase LNAPL in MW-13 and dissolved phase PAHs, SVOCs, and limited VOCs. Current use of the property is industrial and shallow groundwater is not used for any purpose. Therefore complete exposure pathways are

limited to construction worker. Considering that the extent of contamination is limited to the former UST cleanup area and is encountered approximately 11-15 feet below ground surface, it is unlikely that significant exposure could occur.

Based on previous cleanup activities and site assessments, there are no complete exposure pathways for residents, worker, and potential trespassers. In addition, the facility maintains two deep groundwater wells for potable water and production water. The production water well is approximately 190 feet deep and is located approximately 100 feet down gradient of the former UST area. This well was sampled during each Corrective Action site assessment event. Results for each event indicated that no site related contaminants were detected. The potable water well is approximately 400 feet deep and is located approximately 1,000 feet side gradient from the former UST area and facility. This well was installed under the direction of the Tank Program as an additional measure of protectiveness.

Reference:

1. DEQ Tank Program Case Files: PC1991-1004, PC2003-2062, PC2005-2032
2. VRP Files: Site Characterization/Remedial Action Plan for the Seep Area, Olver Laboratories Inc., 1999
3. Trip Report-Groundwater and Soil Sampling, US Army Corps of Engineers, September 12, 2014
4. Trip Report-Groundwater and Soil Sampling, US Army Corps of Engineers, April 6, 2015

[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:
Based on the information provided above in sections 2 and 3, complete exposure pathways are limited to a construction worker to petroleum related contaminants in shallow groundwater within the former UST clean up area. Shallow groundwater is encountered approximately 11-15 feet below ground surface and is not used for any purpose. Construction activities are not currently occurring and are not planned or anticipated for the foreseeable future. Therefore, under the current industrial use of the property any potential exposures are considered insignificant.

Reference:

1. DEQ Tank Program Case Files: PC1991-1004, PC2003-2062, PC2005-2032
2. VRP Files: Site Characterization/Remedial Action Plan for the Seep Area, Olver Laboratories Inc., 1999
3. Trip Report-Groundwater and Soil Sampling, US Army Corps of Engineers, September 12, 2014
4. Trip Report-Groundwater and Soil Sampling, US Army Corps of Engineers, April 6, 2015

[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 Blue Ridge Talc facility, EPA ID #VAD003124625, located at 3800 Original Henry Road, Henry, Virginia 24102 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) Brett Fisher Date: 5-29-2015
(print) Brett Fisher, P.G.
(title) Technical Reviewer – CA/GW

Supervisor (signature) Jutta Schneider Date 5-29-2015
(print) Jutta Schneider
(title) Acting Director - ORP
(EPA Region or State) VA

Locations where References may be found:

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