


**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
INDIANAPOLIS**

**OFFICE MEMORANDUM**

DATE: November 18, 2025

TO: Breanna Tabor  
BrownfieldsTHRU: Jeff Bahling, Chief  
Geological Services SectionFROM: Scott Johanson, LPG #1813  
Geological Services Section11-18-25 **ESJ**11-18-2025 SUBJECT: Phase II ESA – dated July 3, 2019 (VFC #[83887144](#)), and  
Supplemental Phase II ESA – dated September 30, 2024 (VFC #[83887146](#))  
College Square  
Bloomington, Monroe County  
Site #4190505, AI #124066

Geological Services has reviewed the referenced documents submitted by BCA Environmental Consultants (BCA). The documents have been reviewed in their entirety regarding all technical hydrogeological aspects and Geological Services finds the work performed and information provided acceptable unless noted otherwise in the comments below. If requested, this review also includes focused comments to address specific site- or project-related questions. Aspects beyond Geological Services' expertise that need further attention are noted as such and suggested for additional review by other IDEM technical staff when needed.

**GEOLOGIC SETTING**

Soil borings showed subsurface materials consist of 10.5 to 18.5 feet of silty clay overlying limestone bedrock. The limestone is known to form karst. Water levels were not provided, and a groundwater flow direction was not determined. Based on topography in the vicinity of the site and regional surface drainage, Geological Services infers groundwater flow is to the south. The site is not within a WHPA.

**GENERAL COMMENTS Phase II Investigation**

During the supplement Phase II investigation BCA collected soil and groundwater samples from seven soil and groundwater sampling probes (permanent monitoring wells have not been installed). At each of the soil and groundwater probes, at least one (1) soil VOC sample was collected from the interval with the highest PID reading observed during field screening. If no PID readings were observed during field screening, a VOC sample was collected at the interval directly above the water table. Shallow soil samples were collected from some probes and were analyzed for PAHs. Soil intervals with indications of impacts, such as visual or olfactory, were also collected and analyzed for PAHs. **Since the document does not provide depths to groundwater, BCA needs to clarify how the depth of the water table was identified.**

A total of 8 soil samples were analyzed for VOCs, and 12 soil samples were analyzed for PAHs. Groundwater samples from probes from SP-7 through SP-11 were collected and analyzed for VOCs and PAHs. Additional groundwater samples from probes SP-7 through SP-11 and SP-3R were collected and analyzed for arsenic and lead.

Soil sampling showed none of the release related chemicals (RRCs) were present above soil direct contact PLs. While IDEM no longer uses migration to groundwater SLs (MTGSLs), benzene, 1-methylnaphthalene, and naphthalene were present above legacy MTGWSLs. Groundwater sampling showed benzene (42.5 to 540.0 ppb), 1-methylnaphthalene (14.4 to 23.0 ppb), naphthalene (2.7 to 8.8 ppb), arsenic (11.8 to 101.0 ppb), and lead (22.5 to 240.0 ppb) were present above GWPLs. **Given the concentrations of RRCs detected in soils, Geological Services concludes RRCs in soils are delineated. Additional delineation RRCs in groundwater is needed.**

This document reflects the opinions of technical staff based on information presented in the report under review addressing the condition of the site, including other relevant information available at the time of the investigation. It is intended for use in agency decision making and does not contain final determinations regarding potential remedial actions. Information in subsequent tech memos may diverge from information contained in this document based on changing site conditions or the discovery of additional relevant information.

BCA concluded RRCs in soils are not an exposure risk. None of the RRCs detected exceeded residential PLs. **Geological Services agrees.**

Based on the results of this Supplemental Phase II ESA conducted at the Subject Property located at 216 S. College Ave. Bloomington, Indiana, BCA recommends the following:

- Further investigation to delineate petroleum impacts in soil and groundwater. **Geological Services agrees additional delineation of RRCs in groundwater is needed. RRCs in soil is delineated.**
- Further investigation to confirm the groundwater metal impacts detected at SP-10 and SP-11 are in a dissolved or mobile phase. **A site specific groundwater flow direction has yet to be provided. The additional proposed investigation needs to provide a potentiometric surface map that clearly provides a groundwater flow direction. This information is needed to characterize contamination at the site.**
- If future land use includes a building on the northeast corner of the Subject Property, conduct a limited soil gas survey in that area. **Geological Services agrees.**
- In lieu of further investigation, develop a plan for site remediation. Remediate impacts or restrict future land-use through an Environmental Restrictive Covenant (ERC) with a Soil Management Plan (or another administrative tool) to eliminate potential exposure pathways to impacted soil and groundwater. **Geological Services agrees an ERC would control exposure to residual RRCs. Additional sampling is needed to determine the extent of RRCs in groundwater and where ERCs will be needed. Plume maps that delineate RRCs to GWPLs is needed to determine where ERCs will be needed.**

**Summary of Site Conditions**

Soil Contamination is Delineated	<b>Yes</b>		
Groundwater Contamination is Delineated		<b>No*</b>	
Soil Gas Contamination is Delineated		<b>No*</b>	
Remedy is Acceptable			<b>Not applicable</b>

\*See comments for full explanation

**CONCLUSIONS**

Geological Services agrees an ERC would control exposure to residual RRCs. Additional sampling is needed to determine the extent of RRCs in groundwater (this includes plume maps) and where ERCs will be needed.

cc: James Cain, Risk Services Section  
 Unassigned, Engineering  
 Matthew Acker, Chemistry Services Section