INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
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Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

September 13, 2024

Tia Cauley
East Chicago Housing Authority
4444 Railroad Avenue
East Chicago, Indiana 46312

Re: **Comment Letter**
El Patio Restaurant
(a.k.a Lakeshore Manor, LP Development)
3524 & 3526 Main Street
East Chicago, Lake County
Brownfield #4121203

Neri Construction
3521 Main Street
East Chicago, Lake County
Brownfield #4121206

Rainbow Lounge
3508 Main Street
East Chicago, Lake County
Brownfield #4121205

Dear Ms. Cauley:

Indiana Department of Environmental Management (IDEM) staff have reviewed multiple investigations funded by a United States Environmental Protection Agency (US EPA) Brownfield Revolving Loan Fund (RLF) grant awarded to the Northwest Indiana Regional Development Authority and the Indiana Brownfields Program (Program) Petroleum Orphan Site Initiative (POSI).

Site Description and History

The 4.6-acre Site is comprised of 11 parcels further described on Table 1, below, and depicted on the attached Site map. The Lakeshore Manor Senior Residential Building 1 (3516 Main Street) and Building 2 (3517 Main Street) were constructed on the Site between 2022 and 2024. The Site consists of triangular-shaped land bisected by Main Street from north to south, bounded by Guthrie Street to the north and east; 136th Street to the south; and an alley/utility right-of-way to the west of Building 1 followed by Our Lady of Guadaloupe Church.

TABLE 1
Parcel Information

Parcel Number	Street Address	Brownfield Site	Former Use	Acreage
45-03-22-182-015.000-024	3502 Main St.	*	Retail, Restaurant, Apartments Former Dry Cleaner, Automotive & Parts Store	4.6
45-03-22-182-022.000-024	3516 Main St.	Rainbow Lounge BFD #4121205[1] & El Patio Restaurant BFD #4121203[2]		
45-03-22-183-006.000-024	3524 Guthrie St.	*		
45-03-22-183-009.000-024	3530 Guthrie St.			
45-03-22-183-017.000-024	3550-56 Guthrie St.			
45-03-22-183-018.000-024	3515–17 Main St.			
45-03-22-183-019.000-024	3521 Main St.	Neri Construction BFD #4121206		
45-03-22-183-020.000-024	3523 Main St.	*		
45-03-22-183-021.000-024	3525-27 Main St.			
45-03-22-183-023.000-024	2216 136th St.			
45-03-22-183-003.000-024	3518 Guthrie St.			

*= Additional parcels included in the redevelopment not issued a Brownfield Site number.

Environmental Conditions

Program staff reviewed the following documents which may be viewed electronically by searching online by the noted document number in IDEM's Virtual File Cabinet (VFC) accessible through IDEM's website.

- *Further Site Investigation and Groundwater Monitoring Report (FSI & GWMR) – 3rd Quarter 2021*, dated December 14, 2021, prepared by Heartland Environmental Associates Inc. (Heartland) (Document #83279240)
- *Further Site Investigation and Groundwater Monitoring Report – 4th Quarter 2021*, dated February 11, 2022, prepared by Heartland (Document #83279240)
- *Groundwater Monitoring Report 1st Quarter 2022*, dated June 6, 2022,

[1] Since the issuance of the 2013 Comment Letter for the Rainbow Lounge site, the address and state parcel identification number have changed.
[2] Since the issuance of the 2014 Comment Letter for the El Patio Restaurant site, the address and state parcel identification number have changed.

prepared by Heartland (Document #83328510)
- *Groundwater Monitoring Report 2nd Quarter 2022*, dated June 7, 2022, prepared by Heartland (Document #83328511)
- *Groundwater Monitoring Report 3rd Quarter 2022*, dated December 26, 2022, prepared by Heartland (Document #83688569)
- *Groundwater Monitoring Report 4th Quarter 2022*, dated December 31, 2022, prepared by Heartland (Document #83687677)
- *Underground Storage Tank Closure Report (UST Closure Report)*, dated January 30, 2023, prepared by Heartland (Document #83569766)
- *Groundwater Monitoring Report 1st Quarter 2023*, dated May 23, 2023, prepared by Heartland (Document #83480155)
- *Groundwater Monitoring Report 2nd Quarter 2023*, dated October 7, 2023, prepared by Heartland (Document #83542800)
- *Groundwater Monitoring Report 3rd Quarter 2023*, dated October 9, 2023, prepared by Heartland (Document #83542801)
- Remediation Summary Report, dated December 21, 2023, prepared by SME (Document #83594586)
- *Groundwater Monitoring Report 4th Quarter 2023*, dated March 5, 2023, prepared by Heartland (Document #83619136)
- *Groundwater Monitoring Report 1st Quarter 2024*, dated May 29, 2024, prepared by Heartland (Document #83647184)
- *Groundwater Monitoring Report 2nd Quarter 2024*, dated May 30, 2024, prepared by Heartland (Document #83647185)
- *Soil Gas Mitigation Plan*, dated August 7, 2024, prepared by Radon Environmental Inc (Document #83680228)
- *Vapor Intrusion Sampling Confirmatory Event – July 2024*, dated August 14, 2024, prepared by CTL Engineering, Inc. (CTL) (Document #83682289)

For purposes of this letter, sample analytical results from on-Site investigations were compared to IDEM's *Risk-based Closure Guide* (R2) (July 8, 2022 and applicable revisions) published levels as follows: soil samples collected at depths between 0 and 10 feet below ground surface (bgs) were compared to R2 residential and commercial soil published levels (RSPLs and CSPLs, respectively) soil samples collected between 0 and 15 feet bgs were compared to the excavation worker soil published levels (XSPLs); and, soil samples collected at depths greater than 15 feet bgs were not evaluated unless a subsurface structure was anticipated to extend to depth greater than 15 feet bgs because of the unlikely risk of exposure to soil at that depth. Groundwater samples were compared to groundwater published levels (GWPLs). Indoor air samples were compared to residential indoor air published levels (RIAPLs) and commercial indoor air published levels (CIAPLs) as well as calculated residential and commercial indoor air action levels (RIAALs and CIAALs, respectively).

UST Closure Report – January 2023

In November 2022, Heartland removed three unregistered and unregulated underground storage tanks (USTs) which were uncovered during construction activities at the Site. Two 1,500-gallon USTs and one 1,000-gallon UST formerly containing

heating oil and/or fuel were removed along with associated product piping. The USTs were situated in two separate excavation cavities located in the northwestern and southwestern portions of the Site. The USTs and associated piping were removed and cleaned and then disposed of at Shelbyville Auto Parts recycling facility in Shelbyville, Indiana. No evidence of product lines extending from the UST pits was noted during removal activities.

Approximately 1,200 gallons of residual tank contents and eight drums of residual liquid and sludge materials were disposed off-Site by GFL Environmental Services USA Inc. (d.b.a. Future Environmental, Inc.) of Mokena, Illinois.

No evidence of contamination was observed in soil in the UST excavation cavities during the UST removal activities and, therefore, soil was not removed as part of the closure activities. After completing the excavation activities, confirmation soil samples were collected within the extents of both UST cavities. A total of 18 confirmatory soil samples (SW-1 through SW-12 and PB-1 through PB-6) were collected; these included six bottom samples and 12 sidewall soil confirmation samples. Soil confirmation samples were analyzed for volatile organic compounds (VOCs), polyaromatic hydrocarbons (PAHs), and lead. No constituents analyzed in soil were detected at levels above applicable R2 published levels. The UST excavation cavities were not backfilled as the excavation cavities were located within the footprint of ongoing construction activities.

Groundwater was not encountered during the UST removal activities. Groundwater samples had historically been collected at the Site during subsurface environmental assessment activities; therefore, groundwater confirmation samples were not collected as part of UST closure activities.

Remediation Summary Report – December 2023

In September 2022, SME excavated 147.27 tons of soil containing chlorinated solvents near the southwestern portion of the Site that were directly loaded onto tri-axle dump trucks and transported to Wayne Disposal, Inc. in Belleville, Michigan as an F002 Hazardous Waste. Additionally, 15 tons of soil containing chlorinated solvents (with detected concentrations exceeding US EPA land disposal restrictions) were loaded into a lined roll-off container and transported to US Ecology in Belleville, Michigan, for pre-treatment and disposal as an F002 Hazardous Waste.

Following the completion of excavation activities, confirmation sidewall samples were collected and analyzed to compare residual contaminant levels to then-applicable IDEM soil direct contact screening levels. SME submitted six soil (SW1(1-2.5), SW1(3.5-4), SW2(1-2.5), SW2(3.5-4), SW3(1-2.5), and SW3(3.5-4)) and four quality assurance and quality control (QA/QC) samples (DUP-1)[3], trip blank, matrix spike (MS) and matrix spike duplicate (MSD)[4]) for analysis of one or more of the following parameters: total VOCs and/or toxicity characteristic leaching procedure (TCLP) VOCs.

[3] The DUP-1 was collected from SW2 (3.5-4 feet bgs) sidewall soil sample location.
[4] The MS/MSD was collected from SW1 (3.5-4 feet bgs) sidewall soil sample location.

Soil samples were collected from the western sidewall. The area near the western sidewall had not been previously characterized. Base samples were not collected because the excavation extents were bounded by soil characterized during pre-excavation activities. No constituents analyzed in soil were detected at levels above applicable R2 published levels.

After detecting an elevated PCE concentration in an exterior soil gas sample in the Our Lady of Guadalupe church parking lot west of the Site during an August 2020 investigation (Document #83049811), SME proposed installation of a soil vapor extraction (SVE) system along the western/southwestern boundary of the Site to prevent off-Site migration of chlorinated solvents in soil gas and protect potential receptors west of the Site.

SME had an SVE system designed and built that would provide sufficient extraction capacity to achieve the remediation objective (prevent westward off-Site migration of chlorinated solvent vapors). Prior to finalization of the SVE system design, a pilot test was completed to hone system requirements based on the subsurface characteristics of the Site. In March 2022, SME mobilized to the Site to install a single, 2-inch diameter polyvinyl chloride (PVC) extraction well for use in a pilot test, as well as four observation wells offset at various distances from the extraction well to monitor the effects of vacuum applied at the extraction well (i.e., radius of influence). In May 2022, SME observed as Onion Equipment Company mobilized a portable blower and vacuum truck to the Site to perform the SVE pilot test, the results of which were compiled by Onion Equipment Company and used to complete the design of the SVE system.

The pilot test determined that an array of five extraction wells with 50 foot spacing along the western Site boundary would provide sufficient coverage (i.e., overlapping radii of influence) to prevent off-Site migration of chlorinated solvents onto the west-adjacent church parking lot parcel. In July 2022, SME oversaw installation of four additional PVC soil vapor extraction wells along the western Site boundary. Each extraction well was screened from approximately 2 to 7 feet below ground surface (i.e., above the water table) and was protected at the surface with a flush mount completion.

After installation of the extraction wells, each well required independent conveyance piping to a single location where the SVE system housing was to be permanently staged. In mid-October 2023, the construction contractor Wright Construction Management (WCM), completed the trenching and plumbing from each extraction well to the southwestern corner of the Site where a concrete pad was poured to stage the SVE system housing. The conveyance piping was constructed using high density polyethylene (HDPE) piping for long-term durability. The SVE system has been operational since July 2024.

FSI & GWMR: 3rd Quarter 2021 – 2nd Quarter 2024

In June 2021, August 2021, and November 2021 respectively, Heartland installed twelve soil borings (B-1 through B-12), one geologic boring (GB-1), six vertical aquifer profile (VAP) borings (VAP-1 through VAP-6) and seven new permanent groundwater

monitoring wells (A-MW-03D, B-MW-01D, A-MW-B01D, A-MW-B01I, B-MW-03D, B-MW-03I, and A-MW-08D) to develop the groundwater monitoring well network and define the horizontal and vertical extents of groundwater contamination (shallow interval: screened between approximately 4 to 14 feet bgs, intermediate interval: screened between approximately 14 to 19 feet bgs, and deep interval: screened between approximately 19 to 24 feet bgs). Heartland also used nine permanent monitoring wells (A-MW-B01, A-MW-03, B-MW-01, B-MW-02, B-MW-03, B-MW-04, B-MW-05, A-MW-09, and A-MW-09I) that were installed during previous on-Site investigations to create a monitoring well network. Twelve consecutive groundwater monitoring events have occurred as part of long-term groundwater monitoring at the Site. Due to ongoing construction activities, several groundwater monitoring wells were abandoned, could not be located or appeared to have been destroyed prior to the onset of the 2nd Quarter 2023 sampling event. These wells included monitoring wells A-MW-09D, B-MW-02, B-MW-04, and B-MW-05, as well as nested monitoring well A-MW-B01 (which historically exhibited contamination above GWPLs).

The most recent (2nd Quarter of 2024) groundwater monitoring event is summarized below. The groundwater monitoring well network was sampled utilizing low-flow sampling methodology and samples were analyzed for VOCs. Shallow groundwater analytical results detected concentrations of tetrachloroethylene (PCE) and trichloroethylene (TCE) at A-MW-09 above their respective GWPLs. No other constituents analyzed in shallow groundwater were detected at levels above applicable R2 published levels.

Intermediate groundwater analytical results detected concentrations of PCE and/or TCE at A-MW-09I and A-MW-B01I above their respective GWPLs. No other constituents analyzed in intermediate groundwater were detected at levels above applicable R2 published levels. Refer to Table 2, below, for a summary of groundwater analytical data above applicable R2 published levels.

No constituents analyzed in deep groundwater were detected at levels above applicable R2 published levels.

TABLE 2
May 2024 Groundwater Concentrations Exceeding IDEM R2 Published Levels

Contaminant Detected	Sample Location & Results (parts per billion (ppb))			GWPL
	A-MW-B01I	A-MW-09	A-MW-09I	
Tetrachloroethylene	**278**	**183**	**30.7**	5
Trichloroethylene	**17.7**	**6.0**	ND	5

Notes: **bold** = above R2 Groundwater Published Level
ND = not detected

A review of sampling results for the past 12 sampling events indicates that contamination, particularly chlorinated VOC (cVOC) contamination in both shallow and intermediate groundwater intervals, is limited to the southwestern portion of the Site and the plume appears stable.

Soil Gas Mitigation Plan – August 2024

In August 2024, a Soil Gas Mitigation Plan was prepared by Radon Environmental (RE) to document the installation of the passive mitigation and subslab depressurization systems (SSDS) at the Lakeshore Manor Senior Residential Building 1 and Building 2. During building construction, an SSDS was installed in each building that included a network of Vapormat™ air channeling plenum connected to vent stacks that were run up through the poured concrete slab floor and up through walls to vent above the roofline of each building. Prior to the pre-slab pour, air channeling systems were installed around the entire perimeter of the footprints of each building every 20 feet in cross sections. A 20 mil vapor barrier was installed with VaporBlock Plus® over backfill and air channeling system. To achieve the optimal performance for the SSDS in each building, the vapor barrier was overlapped, taped, and sealed around all penetrations through the slab. Six schedule 40 4-inch PVC pipe passive vent stacks were installed to address the footprint of each building (12 total). The venting terminus of each vent stack is no less than 18 inches above the roof membrane. The top of the vent stacks will remain vertical with a varmint guard to prevent debris, or animals from falling into the piping. The PVC vent stack and fan have proper labeling to identify them as part of an SSDS. These vapor mitigation systems were designed to function passively but can be turned into active systems with blower fans, if needed, depending on results of future sampling to confirm system effectiveness.

Vapor Intrusion Sampling Confirmatory Event July 2024 – August 2024

In July 2024, vapor sampling was conducted at Lakeshore Manor Senior Residential Building 1 (3516 Main Street) and Building 2 (3517 Main Street). The SVE system along the southwestern border of the Site and Building 1 was operational during the two days of indoor air sampling. Vapor samples were collected during summer "worst case" conditions. Construction of the buildings was nearing completion and construction workers were finishing final tasks. Painting was completed within the prior week, but all windows were closed, the heating, ventilation and air conditioning (HVAC) central air was operating with individual thermostats in units registering around 68°Farenheit during the testing period.

Vapor sampling in Building 1 consisted of collecting eight indoor air samples with Summa canisters (named according to the rooms/units they were placed in: IA1-102, IA1-103, IA1-104, IA1-108, IA1-111, IA1-114, IA1-119, and IA1-122) with one ambient/outdoor air sample (Ambient-1). Vapor sampling in Building 2 consisted of collecting eight indoor air samples with Summa canisters (named according to the rooms/units they were placed in: IA2-101, IA2-104, IA2-107, IA2-111, IA2-115, IA2-120, IA2-121, and IA2-124) with one ambient/outdoor air sample (Ambient-2). Indoor air samples were collected in breathing zone heights, typically on some part of the kitchen counter, to evaluate indoor air quality conditions in several locations spatially spread throughout the Site buildings.

Indoor air and ambient/outdoor air samples were analyzed for an IDEM-approved "short list" of VOCs relevant to the Site history: PCE, TCE, cis-1,2-dichloroethylene (cis-

DCE), trans-1,2-dichloroethylene (trans-DCE), vinyl chloride, benzene, chloroform and naphthalene.

No constituents analyzed in indoor air or ambient/outdoor air samples were detected at levels above RIAPLs.[5]

Comments

In order to evaluate environmental conditions on the Site for possible closure through issuance of a Site Status Letter, the following must take place:

Subslab Depressurization Systems

- Submittal of an operation, monitoring, and maintenance (OM&M) plan for the SSDS in each on-Site building drafted in accordance with IDEM's R2 requirements stated in Section 4.2.3.2. Each OM&M Plan should follow Schedule 2 (annual vapor sampling of indoor air during winter worst-case conditions during the first, second, and fourth year, and every other year thereafter until such time as IDEM determines mitigation is no longer required).
- The SSDS OM&M Plans should include performance metrics, including the range and/or rate at which each system should operate for best performance.

Soil Vapor Extraction System

- Submittal of a detailed narrative of how the SVE system was installed (e.g., as-built specifications, etc.).
- Submittal of an OM&M plan for the SVE system. The OM&M Plan must include performance metrics for the system including, but not limited to, air flow rates, vacuum applied, air emission analytical data, vacuum monitoring point analytical data, and contaminant removal estimates.
- Installation of SVE system vacuum monitoring points and annual monitoring (after a sampling round to establish a baseline and in accordance with the OM&M Plan) to verify that a vacuum curtain is maintained at an appropriate depth and length to capture boundary vapors and to assess the vapor risk for the properties located to the west of the Site.
- SVE system decommissioning sampling in accordance with the approved OM&M Plan including soil gas sampling between the Site and the west adjacent church property and a round of confirmation sampling in the on-Site buildings to confirm the effectiveness of the SSDS/vapor barrier under conditions when the SVE system is not operational (e.g., has been shut off for 30 days). Sampling of indoor air at the off-Site church may also be needed if indicated by soil gas sample results.

[5] Sample IA1-102in Building 1 appeared to have an issue with the canister used to collect the sample as the final vacuum reading after 23 hours was only -25 inches of mercury (Hg). Laboratory detection limits in this sample were higher than the RIAPLs; and, therefore, this data is inconclusive.

The Program will develop a sampling plan for additional groundwater monitoring to evaluate whether the groundwater plume remains stable while the SVE system is in operation. And, at such time as SVE system operation is ceased, the Program will determine whether any additional groundwater monitoring is needed.

Institutional Controls

Potential exposure to detected contamination on the Site is currently being mitigated several ways. In June 2014, two environmental restrictive covenants (ERCs) instrument numbers 2014033625 (Document #70462633) and 2014033626 (Document #70462631) were recorded, one on each of the two parcels comprising the portion of the Site then known as El Patio Restaurant. ERC instrument number 2014033625 (formerly 3526 East Main Street) addresses vapor mitigation and ERC instrument number 2014033626 (formerly 3524 East Main Street) prohibits groundwater use and addresses vapor mitigation. In addition, the City of East Chicago Municipal Code (52.003) (Ord. 20-0013, passed 8-24-2020) prohibits the use of groundwater as potable water supply and the Site and surrounding area are served by municipal water. As part of closing environmental conditions on the Site under the R2, the Program anticipates terminating the existing ERCs and issuing a replacement ERC for the Site that reflects current ownership/parcel information, prohibits groundwater use and addresses vapor mitigation, as indicated by current environmental conditions.

Conclusion

IDEM has determined based on the July 2024 summer "worst case" indoor air sampling results that the vapor barriers and passive SSDS in each building are currently effectively mitigating vapor intrusion into the newly-constructed buildings on-Site, satisfying residential published levels for multi-tenant residential occupancy.

To be able to issue a Site Status Letter concluding that environmental conditions on the Site meet applicable IDEM R2 closure criteria, the Program will need to approve an OM&M Plan for each building SSDS, review annual indoor air sampling results, review a detailed narrative of the SVE system installation, approve an OM&M Plan for the SVE system, review annual SVE system monitoring data, and review any groundwater monitoring results that may be obtained by the Program.

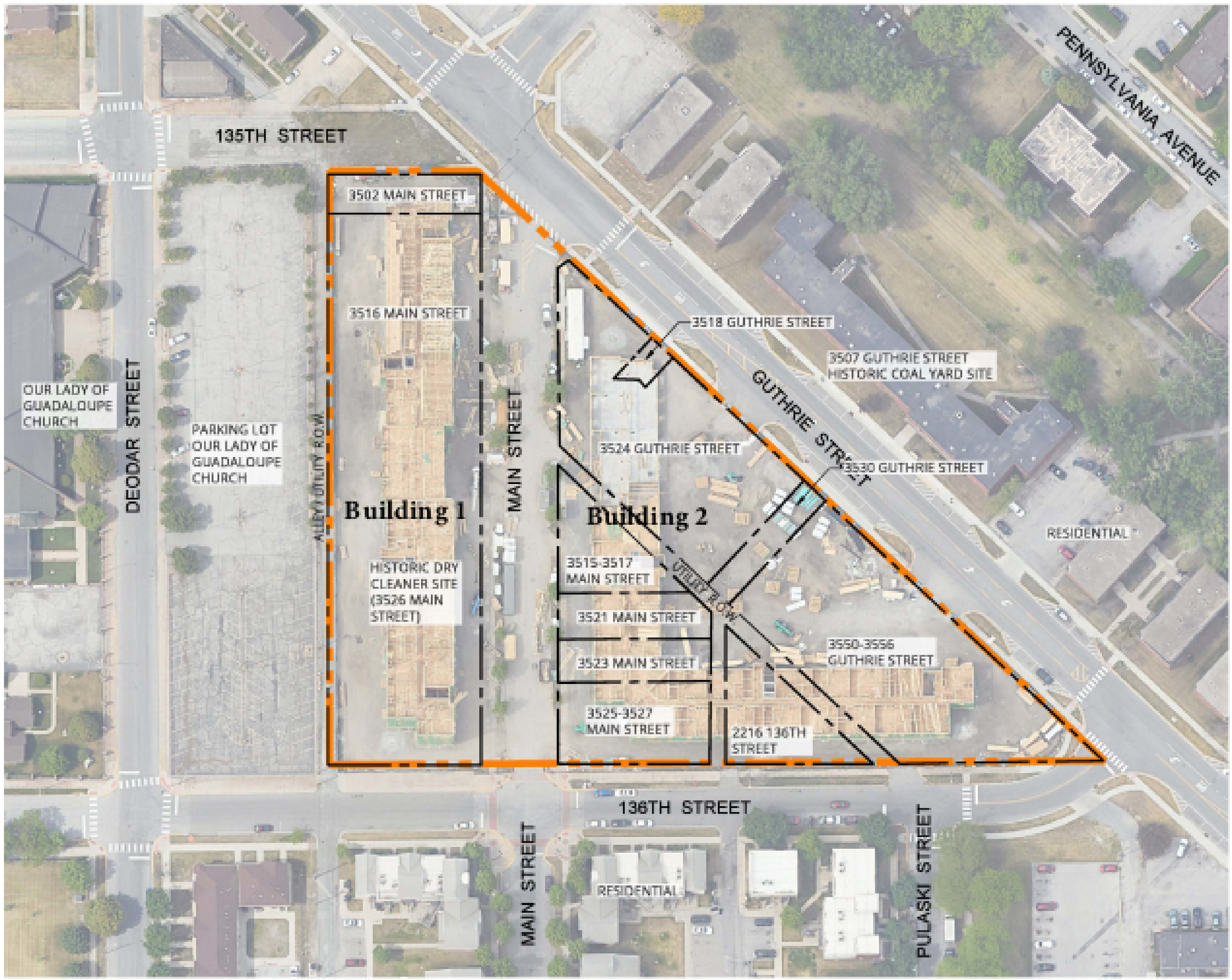
Should you have any questions or comments about this correspondence, please contact Dawn Andershock at 317-234-4861. She can also be reached via email at: dandershock@ifa.in.gov.

Sincerely,

Andrea Robertson Habeck
Technical Staff Coordinator
Office of Land Quality

Attachment [Map]

cc: Ashley Green, U.S. EPA Region 5
Meredith Gramelspacher, Indiana Brownfields Program
Dawn Andershock, Indiana Brownfields Program
Rob Walker, SME
Mitch Cline, SME
Kathy Luther, NIRPC
Gerald Turner, Heat Collective
Frank Rivera, East Chicago Department of Redevelopment
Joe Allegretti, East Chicago Attorney
Nivas Vijay, Heartland
Sean Hall, Heartland
Chris Jaros, CTL
Lake County Health Department



N W E S

0' 100' 200'

GRAPHIC SCALE: 1" = 100'

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE PARCEL BOUNDARY

NOTE:
BASE DRAWING INFORMATION TAKEN FROM GOOGLE EARTH PRO WITH IMAGE DATE 5-25-2023 AND SITE RECONNAISSANCE.

SME
www.sme-usa.com

Project
LAKESHORE MANOR REDEVELOPMENT

Project Location
EAST CHICAGO, INDIANA

Sheet Name
PROPERTY FEATURES DIAGRAM

No.	Revision Date

Date 12-15-2023

CADD JAB

Designer MDC

Scale AS NOTED

Project 082574.00

Figure No. 2

PLOT DATE: Dec 15, 2023 - 10:46am - julie.blake