

Due Diligence 101

Karen T. Rieken, P.E.

Site Investigation Group Manager – St. Louis

11600 Lilburn Park Rd

St. Louis, MO 63146

(314) 692-8811

Karen.Rieken@terracon.com

Melissa Dowling

Site Investigation Group Manager – Lenexa

15620 W. 113th St

Lenexa, KS 66219

(913) 998-7476

Melissa.Dowling@terracon.com

Phase I Environmental Site Assessment (Phase I ESA)

A Phase I ESA includes the collection and interpretation of information about past activities and levels of chemical contamination that may be present on the site. Research of historical uses and activities of the site.

A Phase I is performed by an environmental professional (EP). An EP is defined as any one of the following.

- PE/RG with at least 3 years relevant experience.
- BS in engineering or science with at least 5 years relevant experience
- At least 10 years relevant experience

- The historical research usually includes the following:
 - Inspecting the property.
 - Identifying past owners and the property use during time of ownership.
 - Reviewing governmental records to determine past use and use or disposal of hazardous substances.
 - Interviewing past property owners and or employees.
 - Reviewing aerial photographs of the site.
 - Reviewing state and federal databases that list contaminated sites.
 - Reviewing adjacent properties to evaluate potential sources of off-site contamination.

Common Environmental Concerns

- Chemical storage/use (drums, USTs or ASTs)
- Automobile repair shops
- Dry cleaners
- Industrial properties
- Unpermitted landfills

OUTSIDE THE STANDARD ASTM ESA SCOPE OF WORK

- Asbestos
- Wetlands
- Compliance audits
- Mold

Evaluating Environmental Risks

- Types of Risks
 - Potential CERCLA liability
 - Other regulatory liability
(e.g., enforcement potential from local, state or other Federal agencies)
 - Business risks
(e.g., construction cost concerns, protection for property used as collateral, third-party claim concerns, etc.)

Regulatory Background

- CERCLA / Superfund law (Comprehensive Environmental Response & Liability Act-1980)
- Innocent purchaser/landowner defense but did not define the process to build the defense
- Brownfield Reauthorization Act 2002 said to qualify for CERCLA defense as an Innocent Landowner you must have done “All Appropriate Inquiry” (AAI)...a Phase I ESA
- Two additional defenses were established to encourage the acquisition and redevelopment of Brownfields:
 - Bonafide Perspective Purchaser that did AAI, contamination occurred prior to their ownership, complied with continuing obligations, and had no affiliation with responsible party; or
 - Contiguous Property Owner that conducted AAI, did not cause or contribute to release, complies with continuing obligations, and has no affiliation with responsible party and did not know/suspect of a release from another property impacting their property

Viability

- Shelf life: 180 days with certain items updated between 180 days and 1 year to still be a viable ESA.
- Version
 - ASTM E1527-93
 - ASTM E1527-05
 - ASTM E1527-13
 - ASTM E1527-21

ASTM Definitions for Three types of Recognized Environmental Conditions (RECs)

- Recognized Environmental Condition (REC)
- Historical REC (HREC)
- Controlled REC (CREC)

RECOGNIZED ENVIRONMENTAL CONDITION (REC)

The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property:

- 1) due to any release
- 2) under conditions indicative of a release; or
- 3) under conditions that pose a material threat of a future release
...to the environment



During the Phase I interview process, a site tenant reported that a forklift pierced a 55-gallon drum of xylene. Employees flushed the contents to a floor drain which is connected to an on-site septic tank and leach field.



A dry-cleaner has been in operation at the site since the 1970s. The site had been a drop-off only location since the mid 1990s, when the current owner purchased the site. During the site visit, several empty 5-gallon buckets of dry-cleaning solvent and staining were noted in the basement.

HISTORICAL REC (HREC)

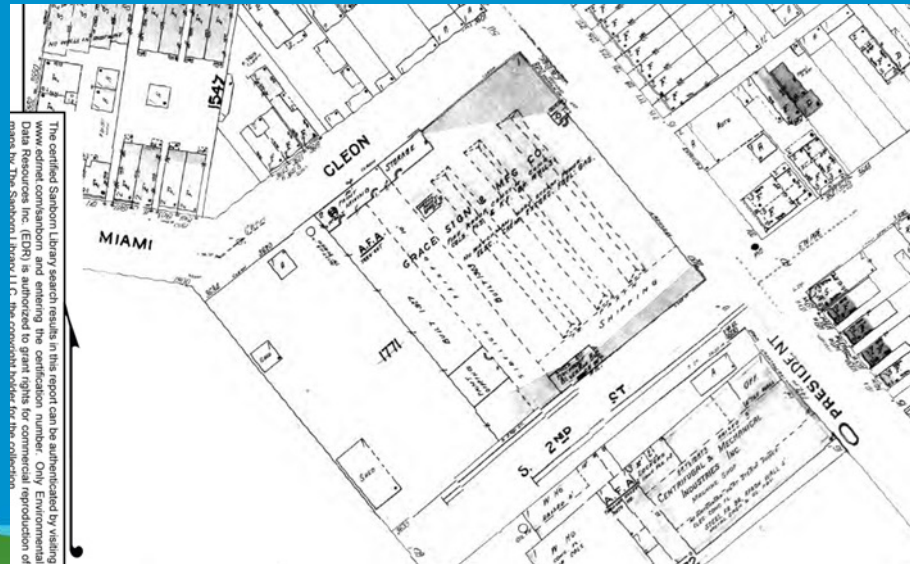
A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls.)

Note: In order to tell whether a scenario is an HREC, the Environmental Professional should consider whether standards have changed since the release was addressed. If standards have changed, the scenario may be a REC if the cleanup does not meet the current most restrictive standards.

- In 2001, a former on-site service station was issued an NFA for leaking USTs.
- Residual concentrations of benzene remain in on-site soils.
- The benzene concentrations are **below the state's current-day most restrictive cleanup levels and there are no restrictive covenants or engineered controls stipulated for the NFA to remain in effect.**



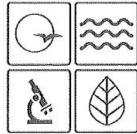
- A sign manufacturing plant historically operated on the site.
- The site surface soils were excavated and transported off-site to a landfill for disposal.
- There was no regulatory oversight during the removal; however, confirmatory samples collected during the excavation identified residual levels of metals in soil. **The levels were below the state's current most restrictive cleanup levels considered to be protective of human health and the environment.**



Controlled REC (CREC)

A REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)

CREC



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

MAY 27 2022

Steve Cameron
SBC Holdings LLC
2501 West 20th Street
Granite City, IL 62040

No Further Action Letter – Non Residential

RE: 4170 Gravois Avenue, 4170 Gravois Avenue, St. Louis, St. Louis County, ST0022326, R009667

Dear Steve Cameron:

Congratulations on the completion of this underground storage tank (USTs) Closure Report dated March 1, 2022, submitted by Terracon for the above referenced facility. The Missouri Department of Natural Resources' Environmental Remediation Program Section, thanks you for your efforts to responsibly address the permanent closure of the following UST:

- Tank ID#1, one 1,600-gallon, steel, unknown content UST.

The Department has reviewed the Missouri Risk-Based Corrective Action (MRBCA) Closure Report dated March 1, 2022, submitted by Terracon for the above referenced facility. The closure report evaluates risks to human health and the environment resulting from a possible petroleum release from the tank system during its operation and summarizes corrective actions taken to address those risks.

The closure report indicates Terracon evaluated these risks and the closure requirements for the tanks listed above, using MRBCA non-residential target levels.

No Further Action Letter - Non Residential

RE: Station Plaza, 1922 Pine Road, St. Louis, St. Louis City, MO - ST0006139, R00: (Easting: 743054.134, Northing: 4279571.887)

Dear Mr. Keenan:

Congratulations on the completion of this remediation project! The Missouri Department Natural Resources' Hazardous Waste Program, Tanks Section, thanks you for your effort responsibly address this petroleum release.

The Department has reviewed the Groundwater Monitoring and Plume Stability Evaluation Report, and the Response Report dated December 12, 2018, submitted by Terracon Consulting Inc. for the above referenced facility. The Department also previously reviewed a Quarterly Monitoring, Plume Stability, and Tier 1 Risk Assessment Report dated January 25, 2018 Site Characterization Report dated January 29, 2018. The reports evaluate the risks to human health and the environment from one or more petroleum release(s) and summarize corrective actions taken to address those risks. The reports conclude that there is no unacceptable risk to human health and the environment for the exposure model presented in the risk assessment.

Based upon a review of the site information and these reports, the Department has determined that 'No Further Action' is required related to the chemicals of concern identified in the environmental site assessment reports. This determination is contingent upon the following conditions being met now and in the future:

1. Current and continued non-residential use of the property indicated above. In other words, prior to construction of a residential building on the property, further investigation and evaluation is needed.
2. No current or future domestic consumption of the groundwater at the property indicated above. In other words, prior to construction of a drinking water well on the property, further investigation and evaluation is needed.

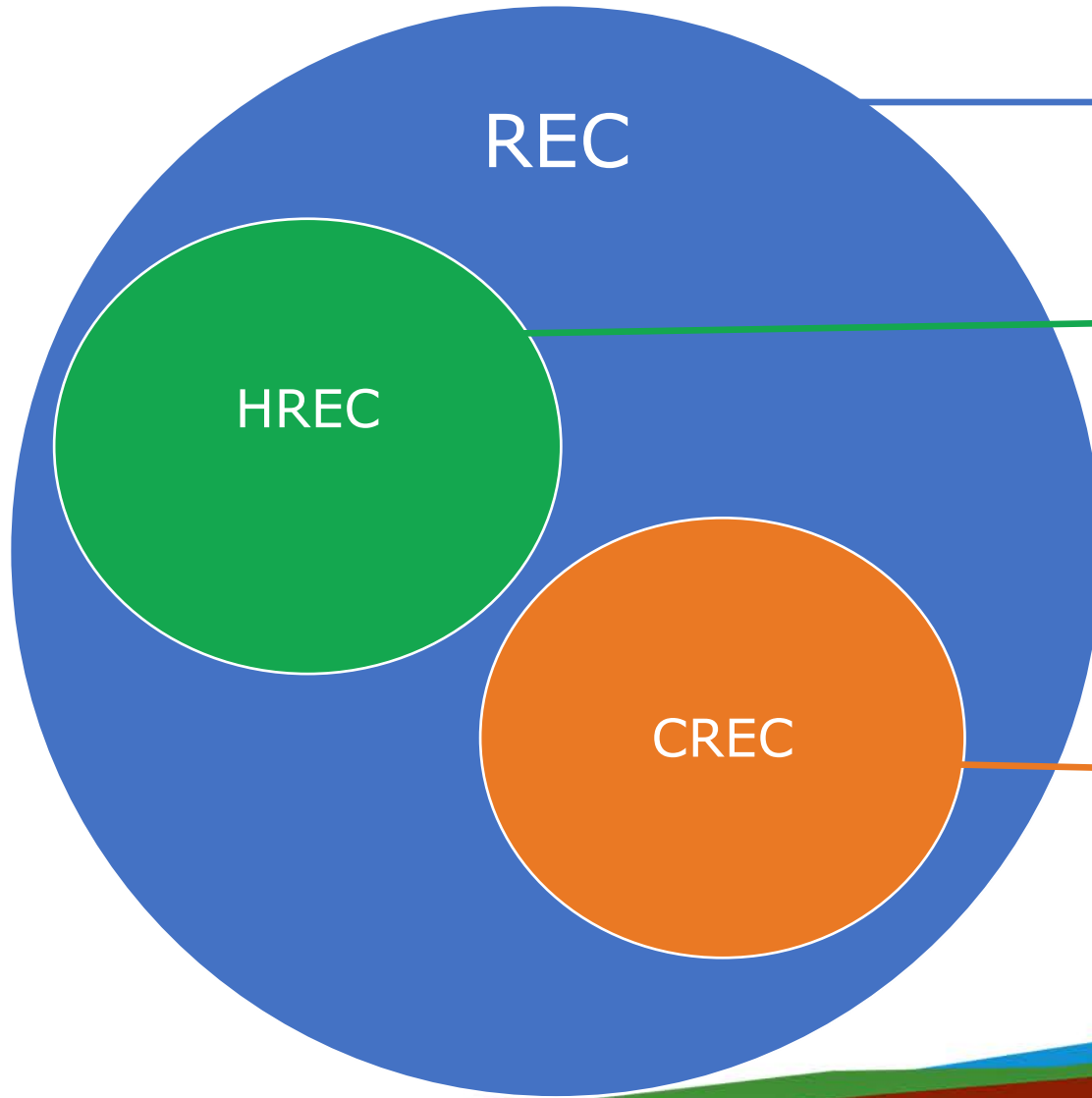
2. **Activity and Use Limitations.**
Pursuant to the DERT Fund statutes and regulations, Owner hereby subjects the Property to, and agrees to comply with, the following activity and use limitations:

A. **Non-Residential Land Use:** The Property currently meets the Department standards for restricted use (Non-residential Land Use) and, based on reports on file at the Department offices in Jefferson City, Missouri, the chemicals present pose no significant present or future risk to human health or the environment based on restricted use of the Property. No further response action for the Property is required by the Department as long as the Property is not to be used for Residential Land Use or other purposes constituting unrestricted use. The Property shall not be used for purposes other than commercial or industrial uses. If any person desires in the future to use the Property for residential or other purposes constituting unrestricted use, the Department must be notified 120 days in advance and further analyses and, as necessary, response actions will be necessary prior to such use. The Property may not be used in a manner such that the definition of Residential Land Use would define the use of the site.

B. **No Drilling or Use of Groundwater:** The groundwater beneath the Property contains chemicals at concentrations exceeding applicable cleanup standards. The owner and operator of the Property shall prevent: use of and exposure to the groundwater; any artificial penetration of the groundwater-bearing unit(s) containing chemicals which could result in cross-contamination of clean groundwater-bearing units; installation of any new groundwater wells on the Property, except those used for investigative purposes; use of groundwater for drinking or other domestic purposes and the use of groundwater for purposes other than domestic purposes; release of groundwater to surface water bodies, whether such release is the result of human activities or is naturally occurring. Should a release of contaminated groundwater occur, the owner must take action to contain and properly dispose of such groundwater.

3. **Running with the Land.**
This Environmental Covenant shall be binding upon Owner and his/her/its heirs, successors, assigns, and Transferees in interest, and shall run with the land, as provided in Section 260.1012, RSMo, subject to amendment or termination as set forth herein. The term "Transferee," as used in this Environmental Covenant, shall mean any future owner of any interest in the Property or any portion thereof, including, but not limited to, owners of an interest in fee simple, mortgagees, easement holders, and/or lessees.

4. **Location of File for the Environmental Response Project.**
Further information regarding the environmental response project for the Property may be obtained from the Department through a written request under the Missouri Open Records Law, Chapter 610 RSMo, by providing the Department



Presence or likely presence

- Past release
- Addressed to unrestricted use, often by a regulatory agency
- Meets CURRENT unrestricted regulatory use

- Past release
- Regulatory closure
- Restricted
- Currently meets restriction

Cyclonic Building







Conclusions

Potential impact to the site from both its historical uses and the general various types of auto servicing historically provided in the area, present the potential for petroleum and hazardous substance impact at the site. Additionally, USTs may be present at the site. The potential impact from these activities and USTs are all considered RECS.

Recommendations

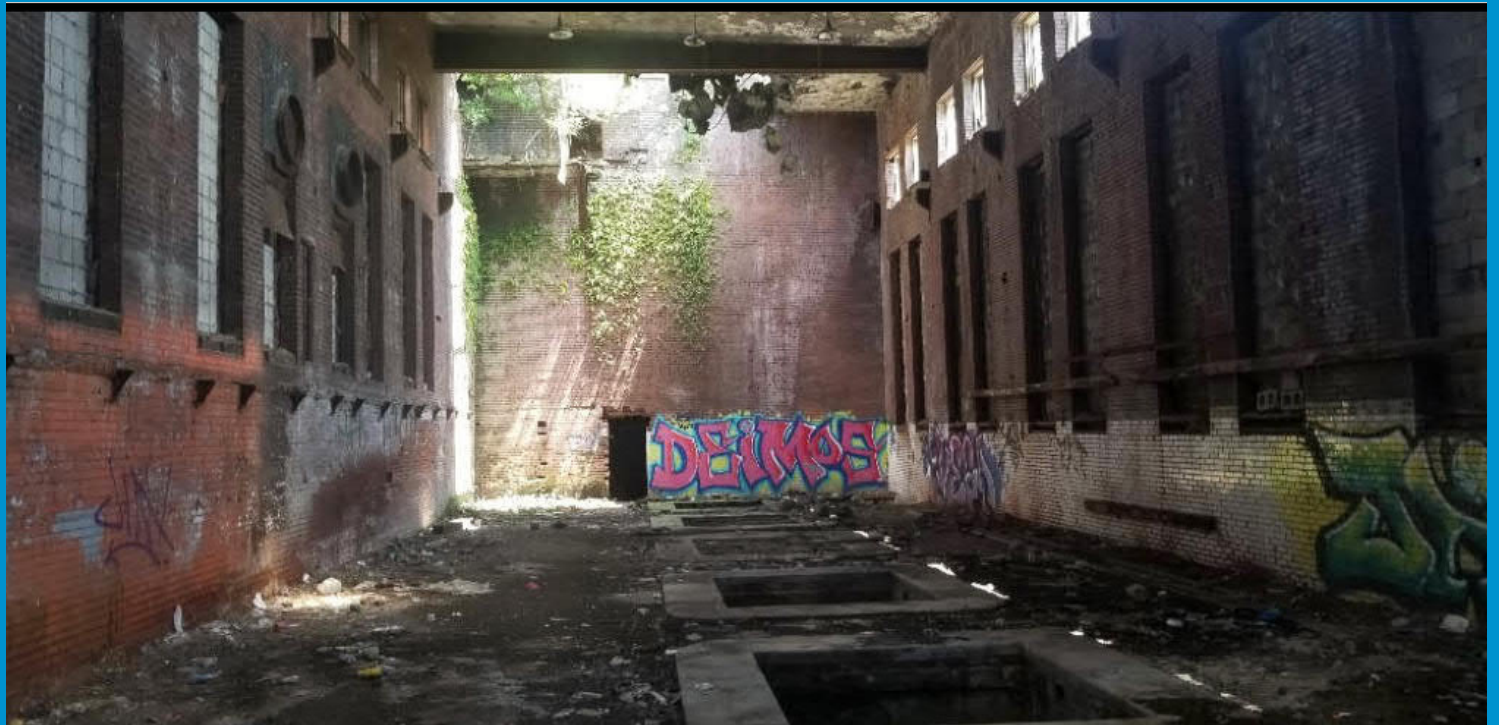
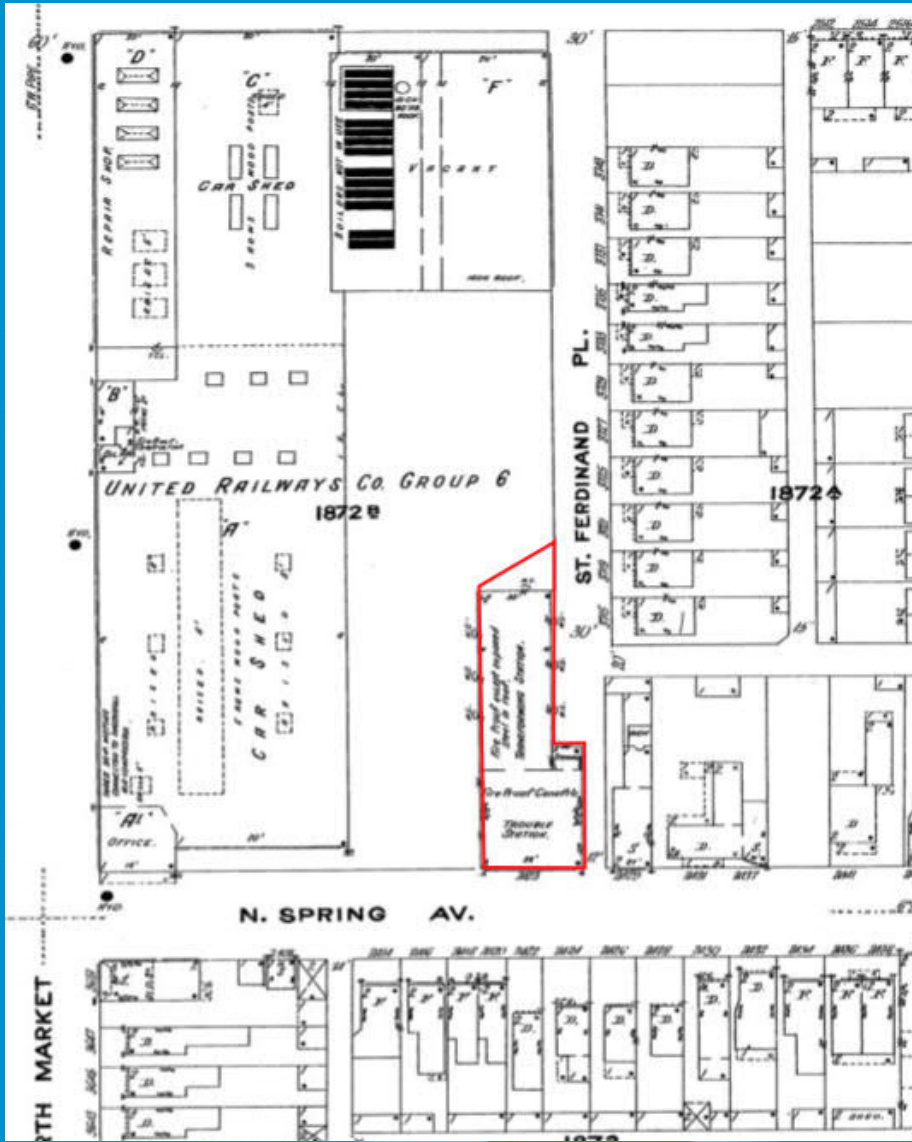
Terracon recommends conducting additional investigation to evaluate subsurface conditions associated with the identified RECs, including subsurface imaging to determine whether or not USTs may be present.

To the best of our knowledge, previous asbestos and/or LBP sampling activities have not been conducted at the site, nor have asbestos or LBP operation and maintenance (O&M) plans been prepared for the site. Terracon recommends conducting a thorough asbestos survey prior to disturbance of suspect ACM during planned renovations or building demolition. Suspect LBP should also be properly managed.

North Spring

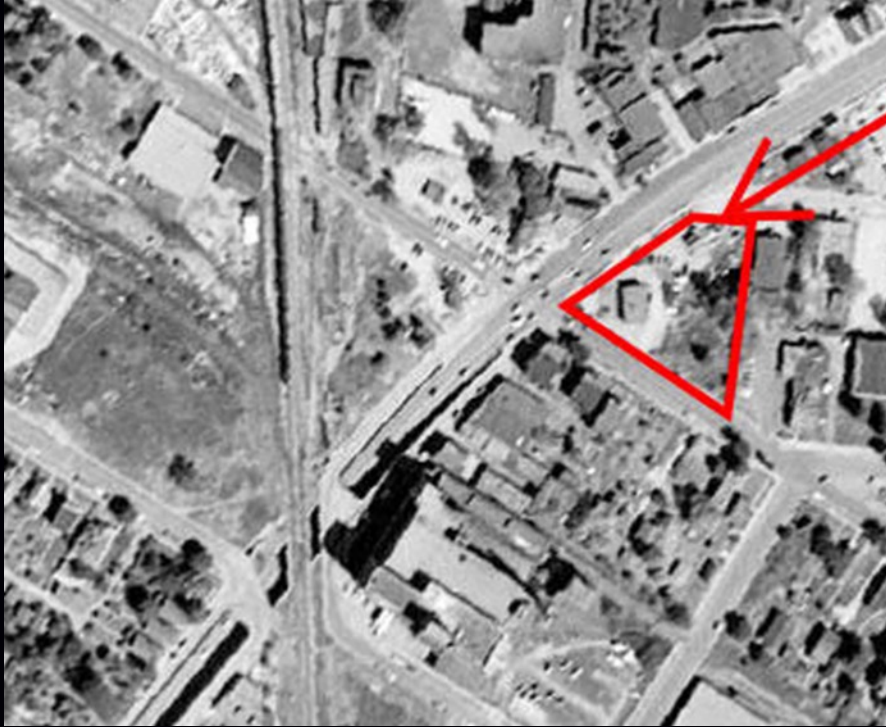






Warehouse





Address 1

Kuna Meat Co. (1965-1991)

Affinity Food Corporation (2001-2017)

Address 2

Coryell L L Marketing Co filling station* (1935)

Eissler Albert J filling station* (1939)

Coryell L L & Son filling station* (1948)

Huebschmann Louis R used cars (1955)

Globe Auto Sls used cars (1960)

Address 3

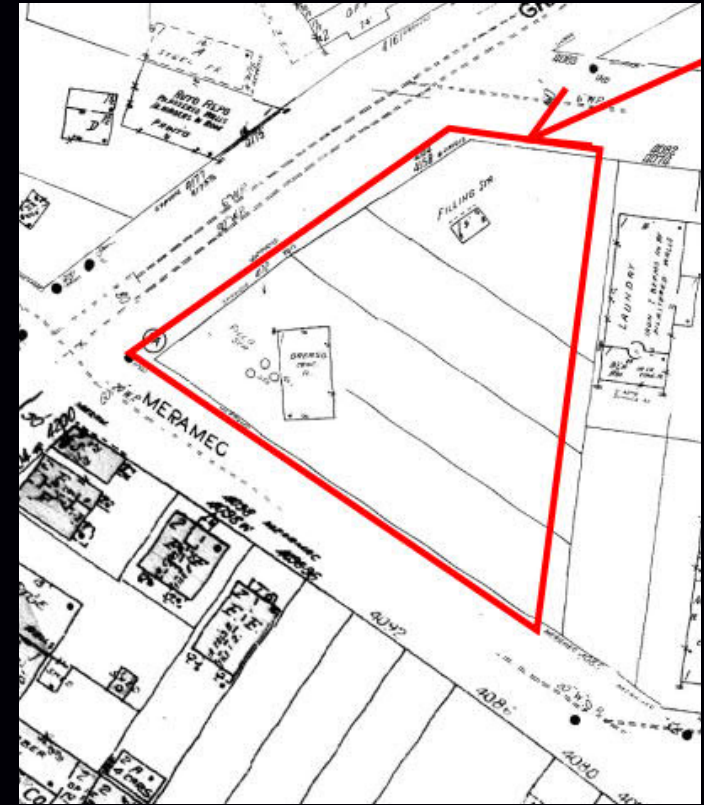
Phillips Petroleum Corp filling station* (1935)

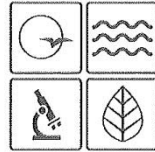
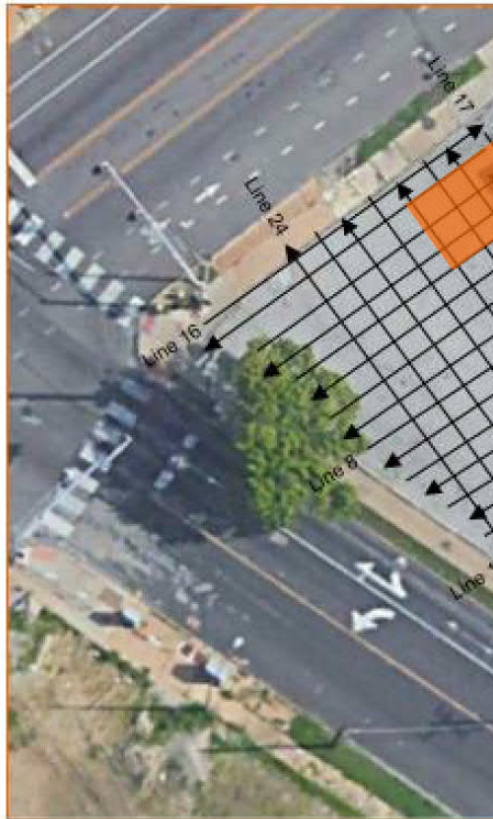
Zulauf Milton filling station* (1939)

Freymark John J filling station* (1944-1948)

Tahacchi Marshall P gas station* (1955)

G&M Super Serv Sta gas station* (1960)





MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Michael L. Parson
Governor

Dru Buntin
Director

MAY 27 2022

Steve Cameron
SBC Holdings LLC
2501 West 20th Street
Granite City, IL 62040

No Further Action Letter – Non Residential

RE: 4170 Gravois Avenue, 4170 Gravois Avenue, St. Louis, St. Louis County, MO -
ST0022326, R009667

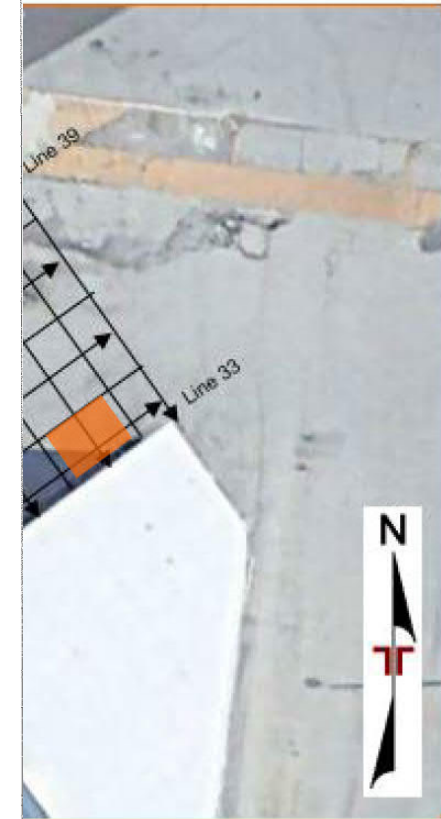
Dear Steve Cameron:

Congratulations on the completion of this underground storage tank (USTs) Closure Project! The Missouri Department of Natural Resources' Environmental Remediation Program, Tanks Section, thanks you for your efforts to responsibly address the permanent closure by removal, of the following UST:

- Tank ID#1, one 1,600-gallon, steel, unknown content UST.

The Department has reviewed the Missouri Risk-Based Corrective Action (MRBCA) Closure Report dated March 1, 2022, submitted by Terracon for the above referenced facility. The closure report evaluates risks to human health and the environment resulting from a possible petroleum release from the tank system during its operation and summarizes corrective actions taken to address those risks.

The closure report indicates Terracon evaluated these risks and the closure requirements for the tanks listed above, using MRBCA non-residential target levels.



Creative Research



No Further Action Letter

RE: Pace Redevelopment Site, 10941 Boulevard, Creve Coeur, St. Louis County, MO
ST0021801

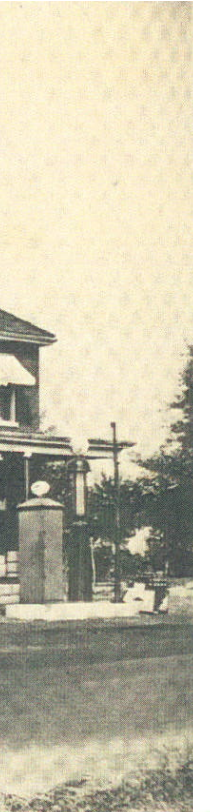
Dear Mr. Heitz:

Congratulations on the completion of this underground storage tank (UST) closure project! The Department thanks you for your efforts to responsibly address the permanent closure by removal of one, 550-gallon, steel, gasoline UST at this facility.

The Missouri Department of Natural Resources' Hazardous Waste Program, Tanks Section, has reviewed the Missouri Risk-Based Corrective Action (MRBCA) closure report dated December 1, 2010, submitted by ATC Associates Incorporated (ATC) for the above referenced facility. The closure report evaluates risks to human health and the environment resulting from a possible petroleum release from the tank system during its operation and summarizes corrective actions taken to address those risks. The closure report indicates ATC adequately evaluated these risks and the closure requirements for the tank listed above using MRBCA default target levels.

Based upon a review of the site information and the closure report, the Department has determined that "No Further Action" is required regarding the chemicals of concern evaluated in the environmental site assessment conducted during the permanent closure of the tank at this site.

Please be aware that 10 CSR 20-10.068 (3)(B) provides: *"if subsequent information becomes available to indicate that contamination may be present at the site at levels which may threaten human health or the environment, the Department may require additional investigation or site characterization and/or corrective action."*





No Further Action Letter

RE: Former Council Plaza 66 Service Station/Del Taco, 212 South Grand Boulevard,
St. Louis, St. Louis City, MO – ST0021868, R0008728

Dear Mr. Yackey:

Congratulations on the completion of this underground storage tank (UST) closure project! The Missouri Department of Natural Resources' Hazardous Waste Program, Tanks Section, thanks you for your efforts to responsibly address the permanent closure by removal of two, 6,000-gallon, steel, gasoline USTs and one, 500-gallon, steel, waste oil UST at this facility.

The Department has reviewed the Missouri Risk-Based Corrective Action (MRBCA) closure report dated May 9, 2012, and a closure response dated August 7, 2012, both submitted by Lafser & Associates (Lafser), for the above referenced facility.

The closure report evaluated risks to human health and the environment resulting from a possible petroleum release from the tank system during its operation and summarized corrective actions taken to address those risks. The analytical data indicates that concentrations of chemicals of concern (COCs) in the vicinity of the previous tank pit, product lines, and dispensers do not exceed the MRBCA Guidance for Tier 1, non-residential, Soil Type 1 risk-based target levels.





So you have a REC. . .

Now What?

Continuing Your Due Diligence Investigation

Conclusions

Potential impact to the site from both its historical uses and the general various types of auto servicing historically provided in the area, present the potential for petroleum and hazardous substance impact at the site. Additionally, USTs may be present at the site. The potential impact from these activities and USTs are all considered RECS.

Recommendations

Terracon recommends conducting additional investigation to evaluate subsurface conditions associated with the identified RECs, including subsurface imaging to determine whether or not USTs may be present.

To the best of our knowledge, previous asbestos and/or LBP sampling activities have not been conducted at the site, nor have asbestos or LBP operation and maintenance (O&M) plans been prepared for the site. Terracon recommends conducting a thorough asbestos survey prior to disturbance of suspect ACM during planned renovations or building demolition. Suspect LBP should also be properly managed.

Phase II ESA

VS

Limited Site Investigation



specify appropriate techniques and methods for collecting representative samples of *environmental media* in accordance with standard practices and the objectives of the Phase II investigation.

7.5.6 *Field Screening*—In some instances, the selection of optimal sampling locations can be aided by *field screening* techniques that can detect, among other things, surface physical anomalies, potential *migration pathways*, and *groundwater VOC plumes*.

7.5.7 *Quality Assurance/Quality Control (QA/QC) Sampling and Chemical Testing*—The sampling plan must include a *quality assurance/quality control (QA/QC) plan*. The plan does not have to be in the form of a written document, but the *QA/QC* provisions must be known to and followed by the *Phase II Assessor*. A *QA/QC* plan shall be followed to provide assurance that the samples collected are representative of the *environmental media* and locations specified in the sampling plan, that sample integrity is not compromised with regard to *target analyte presence* and level.

Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process¹

This standard is issued under the fixed designation E1903; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last revision. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1.1 *Scope*—This standard covers a process for conducting a Phase II Environmental Site Assessment (ESA) of a parcel of property to determine the presence or the likely presence of substances not limited to those within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (e.g., hazardous substances, petroleum and petroleum products).

the property to be investigated, the degree of confidence in the results, the degree of investigatory testing needed to achieve such confidence, the time and resource constraints. The Phase II activities be conducted so that the assessment is performed, and the stated objectives are met in a technically sound manner.

Site Investigation

How to determine what to sample for and where to sample for it . . .

1: Petroleum UST

2: Drycleaner

3: Manufacturing

4: Smelter



PETROLEUM USTS

When were they installed

What was the material of construction

What did they store

Where are the dispensers

Where there releases

What is the gradient

What is the future site use

(Petroleum floats on the water table)

(Vapor)

Former Filling Station with USTs

Where is it located: commercial, residential

USTs were installed in 1977

How many: One basin/pit

USTs were removed in 1993

Closure report

Database notes benzene concentrations in soil were left in place

Where on site: Concentration: Dimensions:

MDNR issued a NFA stating closure if non-residential and no water use

Closure under Guidance at that time

No AUL or Restrictive Covenant filed on property deed

What is future use



DRYCLEANER

Dry store vs Cleaner

Age of store

Location (strip mall, industrial area. . .)

Gradient

Drycleaning solvents sink in the water table

Daughter Products

Case History

Site History indicates 1940s (1940 to 1953) for solvent use and/or release (WWII), so **80 years** ago. Army uniforms were treated with **“Impregnate I”** to make them mustard gas resistant (laundered and treated)

Shallow groundwater plume distance from source is 1,300 feet to east (CVS), and about 850 to the northeast (Price Chopper).

Deep groundwater plume distance from just upgradient of the site to just before the graveyard (just past library) is about 2,750 feet.



Where do we sample?



§ Utility Locates / GPR

§ Around UST/AST/Tanks (between tank and building, downgradient, nearby drains)

§ Along product piping/dispensers

§ Through concrete floor for in-ground lifts/pits/OWS

§ Outside back door of drycleaners, downgradient of drycleaner

§ Through concrete floor near drycleaner machinery

What do we sample?

Soil (surficial vs subsurface)

Groundwater

Soil Vapor/Gas (sub-slab, vapor implants)



What do we sample for?

Petroleum:

Volatile organic compounds (VOCs) BTEX

Total petroleum hydrocarbons (TPHs) State Method?

Polycyclic aromatic hydrocarbons (PAHs)

Metals / Lead (total or dissolved)

Drycleaner:

Volatile organic compounds (VOCs) Solvents/ daughter products

Manufacturing/Agricultural/Airports:

Pesticides

Herbicides

Polychlorinated biphenyls (PCBs)

Per- and polyfluoroalkyl substances (PFAs) Emerging Contaminant



You have lab results –
Now What?

APPENDIX A - KDHE TIER 2 RISK-BASED SUMMARY TABLE

Contaminant	CAS No.	Residential Scenario						Non-residential Scenario			
		Soil Pathway mg/kg		Groundwater mg/L		Soil-to-Gw mg/kg	Indoor air ug/m ³		Soil Pathway mg/kg	Groundwater mg/L	
Acenaphthene	83-32-9	3.42E+03	ns	0.253	n	255	219	n	30600	ns	0.521
Arochlor	34256-82-1	1220	ns	0.303	n	19.3			17600	ns	1.96
Acetone	67-64-1	50300	n	11.5	n	51.6	32300	n	406000	ns	45.5
Acetophenone	98-86-2	5200	ns	0.494	n	7.1	365	n	31300	ns	0.926
Acrylamide	107-02-8	0.192	n	4.15E-05	n	0.000175	0.0209	n	0.27	n	5.83E-05
Acrylonitrile	79-06-1	15.9	c	0.0017	c	0.00874			49.3	c	0.00571
Acrylonitrile	107-13-1	3.18	c	0.000491	c	0.0028	0.413	c	5.93	c	0.000978
Acrylonitrile	15972-60-8	142	c	0.002	m	0.133			440	c	0.002
Acrylonitrile	116-06-3	61.1	n	0.0156	n	0.139			881	n	0.102
Acrylonitrile	309-00-2	0.468	c	4.95E-05	c	0.812			1.45	c	0.000166
Acrylonitrile	7718-82-2	367	n	2.99E-02	n	0.179	21.9				
Acrylonitrile	62-53-3	428	n	0.108	n	1.95					
Acrylonitrile	120-12-7	18000	ns	1.15	n	3770	1100				
Acrylonitrile	7440-36-0	31.3	n	0.006	m						
Acrylonitrile	7440-38-2	18.9	c	0.01	m						
Acrylonitrile	1912-24-9	34.6	c	0.003	m	0.147					
Acrylonitrile	7440-39-3	15300	n	2	m						
Acrylonitrile	25057-89-0	1830	ns	0.462	n	2.77					
Acrylonitrile	71-43-2	15.9	c	0.005	m	0.168	3.6				
Acrylonitrile	92-87-5	0.0346	c	3.67E-06	c	0.000887					
Acrylonitrile	56-55-3	10.9	c	0.000223	c	7.89					
Acrylonitrile	205-99-2	10.9	cs	0.00016	c	19.2					
Acrylonitrile	207-08-9	109	cs	0.00162	c	190					
Acrylonitrile	50-32-8	1.09	c	0.0002	m	23.5					
Acrylonitrile	100-44-7	14.6	c	0.000817	c	0.0762	0.573				

Table B-1
Lowest Default Target Levels
All Soil Types and All Pathways

Chemicals of Concern	Soil [mg/kg]		Groundwater [mg/L]	
	Soil	Groundwater	Soil	Groundwater
VOCs and SVOCs				
Acenaphthene	1.74E+02	GWP	1.65E-01	DWG
Acenaphthylene	1.75E+02	GWP	1.70E-01	DWG
Acetone	4.20E+00	GWP	2.97E+00	DWG
Acetonitrile	2.06E-01	GWP	5.64E-02	DWG
Acrylamide	1.31E-03	GWP	1.49E-04	DWG
Acrylic acid	1.16E+01	GWP	7.77E+00	DWG
Acrylonitrile	6.92E-04	GWP	4.68E-04	DWG
Allyl alcohol	4.45E-01	GWP	7.78E-02	DWG
Allyl chloride	3.86E-02	GWP	4.40E-03	DWG
Aniline	2.90E-01	GWP	1.08E-01	DWG
Anthracene	3.06E+03	GWP	6.96E-01	DWG
Arochlor 1016	3.86E+00	SDC	1.96E-04	DWG
Arochlor 1221	9.75E-02	GWP	1.13E-04	DWG
Arochlor 1242	5.57E-02	GWP	5.93E-05	DWG
Arochlor 1248	1.08E+00	SDC	3.50E-05	DWG
Arochlor 1254	1.10E+00	SDC	3.06E-05	DWG

THANK YOU