

March 16, 2023 - *revised*

Patrick Schloss
Economic Development Executive Director
City of West Allis
7525 W. Greenfield Avenue
West Allis, WI 53214



Subject: Proposal for Preliminary Geotechnical Consulting Services
Morgan City Yards
3601 S. 116th Street, West Allis, Wisconsin

Dear Mr. Schloss,

In accordance with your request, GeoTest, Inc. presents this revised proposal to provide preliminary geotechnical consulting services related to the above-referenced project.

PROJECT DESCRIPTION

It is our understanding that the City of West Allis is preparing to facility the development of their property located at 3601 S. 116th Street in the city of West Allis, Wisconsin. The property 14.7-acre property has been used as a yard waste drop-off facility and contains one building in the northeast corner. The ground surface is slightly undulating due to the presence of waste piles, but generally slopes downward from the southwest corner to the northeast corner with a elevation difference of about 30 feet.

Environmental information provided by the city included general geologic profiles. These profiles indicated the presence of about 20 to 30 feet of mixed soil fills overlying native clay, sand, and gravel soil layers.

The purpose of this investigation is to evaluate the property on a preliminary basis and determine if it is suitable for development and what efforts would be needed to support a variety of structures. Therefore, a grid-pattern soil exploration program was developed.

SCOPE OF WORK

Geotechnical Subsurface Exploration

GeoTest will contact Digger's Hotline, who will notify member firms of the intention to drill exploratory soil borings. The member firms will mark their underground utilities before the start of the subsurface exploration program.

GeoTest could also perform a ground penetrating radar (GPR) survey at all proposed boring locations. GPR is a non-destructive investigation method that produces two-dimensional and three-dimensional images in real time that is utilized to identify the presence of underground features (e.g., buried utilities, foundations). The GPR results



would be evaluated to determine if the boring locations specifically are clear of buried features.

The geotechnical exploration program will consist of ten borings drilled to depths of an estimated 35 to 45 feet. The goal will be to drill seven of the borings to depths of 10 feet below the fill/native soil interface and three borings to depths of 20 feet below the fill/native soil interface. The proposed boring locations are illustrated on the attached diagram.

The borings will be drilled using a truck-mounted rig and hollow-stem augers. The borings will be located by GeoTest by referencing existing site features and marked with stakes prior to drilling. The surface elevations at the boring locations will be estimated using Google Earth.

Soil samples will be obtained at 2.5-foot intervals to a depth of 10 feet, (or deeper if soil conditions warrant) and at 5-foot intervals thereafter. Soil samples will be obtained by split-barrel sampling procedures, in general accordance with ASTM D1586. Water level information will be noted during drilling.

Upon completion of the subsurface exploration program, the boreholes will be abandoned as per applicable Wisconsin Department of Natural Resources ("WDNR") regulations. All drilling spoils will be disposed on-site at areas identified by the client.

Laboratory Testing

The laboratory testing program will include:

- Water content testing of all samples.
- Calibrated penetrometer strength of all cohesive (clay) soils.
- Unconfined compressive strength testing on three select cohesive samples.

In conjunction with the laboratory testing program, an experienced GeoTest geotechnical engineer will examine each soil sample and visually classify the soil, based on texture and plasticity, in accordance with the Unified Soil Classification System ("USCS"). The engineer will group like soil samples into strata which will be illustrated on soil boring logs and cross-sections.

Analyses and Report

GeoTest will perform analyses to provide preliminary recommendations for:

1. Foundation support of structures.
2. Allowable soil/foundation contact stress(s) for various soil types.
3. Seismic Site Classification, as defined by the IBC 2015.
4. Soil design parameters for floor slabs and pavements.
5. General stormwater design parameters.
6. Site preparation and construction considerations.

A geotechnical engineering report will be prepared for the project. The report will describe pertinent details of the project, the subsurface exploration and laboratory testing program, and an interpretation of the results. Boring logs, cross-sections, and a boring location plan will be presented in the report. The report will include preliminary recommendations regarding the design and construction of foundations required to support structures. The report will also provide preliminary design parameters for floor slabs, pavements, and storm water management.

The report will be authored and reviewed by a professional engineer registered in Wisconsin. The report will be provided electronically.

ESTIMATED COST

The services described above will be invoiced on a Time & Expense basis in accordance with the attached spreadsheet. Based on the scope described in this proposal, the cost is estimated to be \$13,574. This cost estimate does not include additional charges related to challenging or unexpected drilling conditions, or alterations to the scope as requested by you. Pre-approved additional services will be invoiced on a Time and Material basis.

SCHEDULE

The drilling services can be initiated within five to seven business days after authorization to proceed, weather and access permitting. The field activities will take an estimated five business days to complete. Preliminary results can be provided verbally as the drilling is completed. Typically, draft reports are provided within one week after the field activities have been completed. If expedited results or reports are required, please let us know.

CLOSING

We trust this information is sufficient for your present requirements. Should you have any questions regarding this proposal, we ask that you contact us. Should this proposal meet with your favorable approval, we ask that you contact us to complete a written agreement for our services. We thank you for requesting our services and look forward to working with you on your project.

Sincerely,

Michael D. Frede, P.E.

Michael D. Frede, P.E.
Technical Director/Senior Engineer



LEGEND	
	PROPERTY BOUNDARY (APPROXIMATE)
	SOIL BORING/TEMPORARY MONITORING WELL
	MONITORING WELL
	APPROXIMATE EXTENT OF VOC RCL EXCEEDANCES

Parameters	WAC NR 720 RCLs		
	Non-Industrial Direct Contact	Industrial Direct Contact	Groundwater Pathway
Benzene	1,600	7,070	5.1
1,4-Dichlorobenzene	3,740	16,400	144
Naphthalene	5,520	24,100	658
1,2,4-Trimethylbenzene ¹	219,000	219,000	493.9
1,3,5-Trimethylbenzene ¹	182,000	182,000	493.9

Notes:
 Results shown in micrograms per kilogram (µg/kg)
 VOCs = Volatile Organic Compounds
 RCL = Residual Contaminant Level
 ND = Not detected above laboratory detection limits
 -- No RCL established.

¹ Groundwater Pathway RCL listed is for 1,2,4- and 1,3,5-Trimethylbenzenes combined.

- A** Parameter exceeds NR 720 Residual Contaminant Level (RCL) for Non-Industrial Direct Contact.
- B** Parameter exceeds NR 720 RCL for Industrial Direct Contact.
- C** Parameter exceeds NR 720 RCL for Groundwater Pathway.
- J** Estimated concentration at or above the LOD and below the LOQ.

Direct contact RCL exceedances apply to soil from 0 to 4 feet below ground surface.

Soil RCLs established by the WDNR RR program using the EPA's RSL web-calculator with WAC NR 720 default parameters (WDNR PUB-RR-890, June 2014 - updated RCL spreadsheet, December 2018).

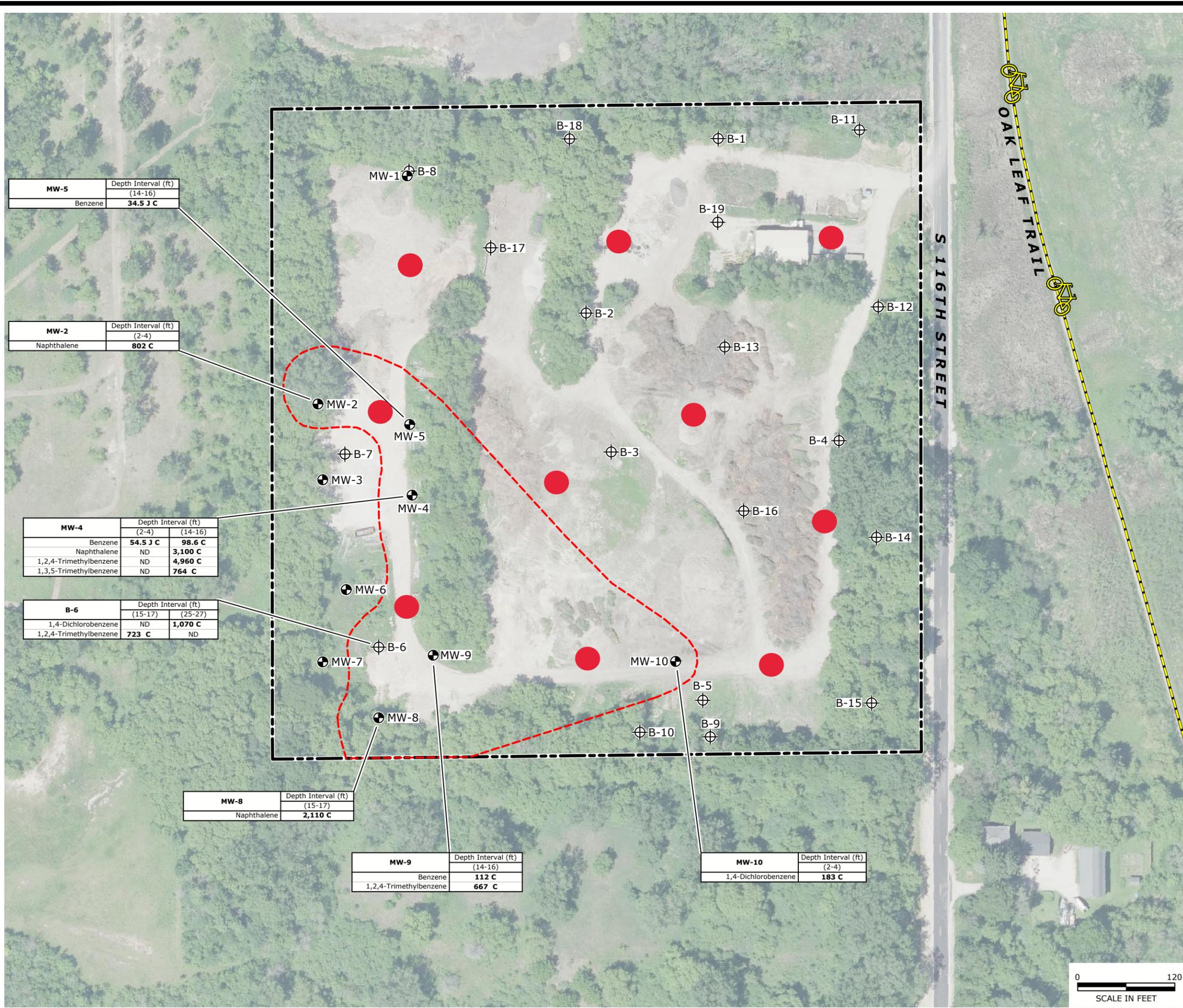
Only detections exceeding soil standards are depicted.

Methylene Chloride was detected but is common laboratory contaminant and not a contaminant of concern for the site and is therefore not included on this figure.

VOCs IN SOIL RCL EXCEEDANCES
 3601 SOUTH 116TH STREET
 WEST ALLIS, WISCONSIN



FIGURE
5A



MW-5	Depth Interval (ft)
	(14-16)
Benzene	34.5 J C

MW-2	Depth Interval (ft)
	(2-4)
Naphthalene	802 C

MW-4	Depth Interval (ft)	
	(2-4)	(14-16)
	Benzene	54.5 J C 98.6 C
	Naphthalene	ND 3,100 C
	1,2,4-Trimethylbenzene	ND 4,960 C
1,3,5-Trimethylbenzene	ND 764 C	

B-6	Depth Interval (ft)	
	(15-17)	(25-27)
	1,4-Dichlorobenzene	ND 1,070 C
1,2,4-Trimethylbenzene	723 C	ND

MW-8	Depth Interval (ft)
	(15-17)
Naphthalene	2,110 C

MW-9	Depth Interval (ft)
	(14-16)
	Benzene
1,2,4-Trimethylbenzene	667 C

MW-10	Depth Interval (ft)
	(2-4)
1,4-Dichlorobenzene	183 C



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Cost Estimate for Geotechnical Services

Project: Morgan City Yard
Location: 3601 S. 116th Street, West Allis, Wisconsin

Proposal Date: March 16, 2023

Description / Test	Estimated Quantity	Unit Rate	Extended Rate
Field Services			
Task - Miscellaneous			
GPR Survey, each site visit		\$ 823.00	\$ -
Concrete Coring, each site visit		\$ 899.00	\$ -
Double-Ring Infiltration Testing, per test		\$ 602.00	\$ -
Geotechnical Technician, per hour on-site		\$ 65.00	\$ -
Staff Engineer, per hour portal-to-portal		\$ 95.00	\$ -
Technician Trip Charge (vehicle and travel time), per visit		\$ 142.00	\$ -
Staff Engineer Trip Charge (vehicle only), per visit		\$ 38.00	\$ -
		Subtotal	\$ -

Assumptions: none

Task - Drilling			
Geotechnical Technician, per hour		\$ 65.00	\$ -
Staff Engineer, per hour portal-to-portal	12	\$ 95.00	\$ 1,140.00
Subcontracted Drilling Services, subcontracted services	1.10	\$ 7,750.00	\$ 8,525.00
Technician Trip Charge (vehicle and travel time), per visit		\$ 142.00	\$ -
Staff Engineer Trip Charge (vehicle only), per visit	3	\$ 38.00	\$ 114.00
		Subtotal	\$ 9,779.00

Assumptions: 10 borings using hollow-stem augers to 35-45 feet (380 linear feet total)

Task - Test Pits			
Geotechnical Technician, per hour on-site		\$ 65.00	\$ -
Staff Engineer, per hour portal-to-portal		\$ 95.00	\$ -
Subcontract Excavating Services, subcontracted services	1.10	\$ -	\$ -
Certified Technician Trip Charge (vehicle and travel time), per visit		\$ 142.00	\$ -
Staff Engineer Trip Charge (vehicle and travel time), per visit		\$ 38.00	\$ -
		Subtotal	\$ -

Assumptions: none

Laboratory Testing			
Visual Classification, per hour	10	\$ 95.00	\$ 950.00
USDA Classification, per hour		\$ 65.00	\$ -
Calibrated Penetrometer, each	48	\$ 5.00	\$ 240.00
Water Content, each	96	\$ 10.00	\$ 960.00





Cost Estimate for Geotechnical Services

Project: Morgan City Yard
Location: 3601 S. 116th Street, West Allis, Wisconsin

Proposal Date: March 16, 2023

Description / Test	Estimated Quantity	Unit Rate	Extended Rate
Atterberg Limits - Liquid and Plastic, each		\$ 95.00	\$ -
Sieve Analysis, each		\$ 75.00	\$ -
Unconfined Compression, each	3	\$ 125.00	\$ 375.00
Consolidation, each		\$ 500.00	\$ -
		Subtotal	\$ 2,525.00

Assumptions: 12 boring log, cross-sections, sample testing estimated above

Engineering / Project Management

Project Manager, per hour		\$ 85.00	\$ -
Staff Engineer, per hour	2	\$ 95.00	\$ 190.00
Senior Engineer, per hour	8	\$ 135.00	\$ 1,080.00
Engineer Trip Charge (vehicle only), per visit		\$ 38.00	\$ -
		Subtotal	\$ 1,270.00
		Total	\$ 13,574.00

Testing will be provided in accordance with ASTM standards and project specifications.

GeoTest is accredited by CMEC to meet the requirements of ISO/IEC 17025:2017 and ASTM E329

