PRELIMINARY SUBSURFACE EXPLORATION
I-40 MEGASITE
WEST MEMPHIS, ARKANSAS

Prepared for:

CITY OF WEST MEMPHIS
West Memphis, Arkansas

Prepared by:

GEOTECHNOLOGY, INC.
Memphis, Tennessee

Geotechnology Project No. J031019.01

June 1, 2018

GEOTECHNOLOGY INC
FROM THE GROUND UP

J031019.01

June 1, 2018

Mr. Phillip Sorrell, P.E.
City of West Memphis
205 South Redding
West Memphis, Arkansas 72301

PRELIMINARY SUBSURFACE EXPLORATION
I-40 MEGASITE
WEST MEMPHIS, ARKANSAS

Dear Mr. Sorrell:

Enclosed is the report of the preliminary subsurface exploration performed by Geotechnology, Inc. for the referenced project. The report includes our understanding of the project, observed site conditions, preliminary conclusions and/or recommendations, and support data as listed in the Table of Contents.

It has been our pleasure to provide these services to you, and we would welcome the opportunity to provide other services during the course of the project. Please contact us if you need further information or clarification about this document.

Very truly yours,

GEOTECHNOLOGY, INC.

Dale M. Smith, PE
Geotechnical Manager

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 17917
Dale M. Smith
6/1/18

John K. Henson, PG
Project Manager

JDM/DMS/JKH:jdm

Copies submitted: (2) Hard copies
(1) PDF copy

PRELIMINARY SUBSURFACE EXPLORATION
I-40 MEGASITE
WEST MEMPHIS, ARKANSAS

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PRELIMINARY SUBSURFACE EXPLORATION
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WEST MEMPHIS, ARKANSAS

SECTION I – PROJECT INFORMATION

AUTHORIZATION

The services documented in this report were provided in general accordance with the terms, conditions, and scope of services described in the Geotechnology's Proposal No. P031019.01, dated October 25, 2017. Our services were authorized by West Memphis Mayor William H. Johnson's signed acceptance of our proposal, dated April 6, 2018.

PURPOSE AND SCOPE OF SERVICES

The purpose of our services was to provide a preliminary evaluation of the subsurface conditions in the proposed construction area as defined in the scope of services of the referenced proposal. The services consisted of drilling 13 borings, laboratory testing, engineering analyses and preparation of this report. All recommendations presented within this report are preliminary in nature. An additional, design phase exploration is required to finalize geotechnical design parameters. Important Information prepared by The Geotechnical Business Council (GBC) of the Geoprofessional Business Association for studies of this type is presented in Appendix A for your review.

SITE AND PROJECT DESCRIPTION

The site is located in the northeast quadrant of the intersection of AR-147 and Interstate 40 in West Memphis, Arkansas as shown on Plate 1. The approximately 1,800 acre, rectangular site is relatively flat and currently used for agricultural purposes. Ponds are located beyond the southwest and eastern sides of the property boundary. It is our understanding this preliminary subsurface exploration is required for a due-diligence study for future development.

SECTION II - FIELD EXPLORATION AND LABORATORY TESTING

FIELD EXPLORATION

The field exploration consisted of drilling 13 borings, designated as Borings B-1 through B-13. The approximate locations of the borings are shown on Plate 2. The borings were located by personnel from Geotechnology by referencing existing site features. The client should retain a registered land surveyor to establish boring locations and elevations if more precise data are required.

The borings were drilled to depths of approximately 30 and 50 feet using a rotary drill rig (CME 550X and Diedrich D-50), $3^3/_4$-inch inner diameter hollow stem augers and wash rotary methods in select borings. Standard Penetration Tests (SPT's) were performed using an automatic

hammer. Blow counts, or 'N'-values, were recorded and are presented on the logs. Split-spoon samples and relatively undisturbed Shelby tube samples were obtained in general conformance with applicable ASTM standards at the depths indicated on the boring logs. The collected samples were visually reviewed by the drill crew and transported to the laboratory for further testing and for evaluation by a geotechnical professional from Geotechnology. The boring logs are presented in Appendix B. An explanation of the terms and symbols used on the boring logs is also provided in Appendix B.

The boring logs represent conditions observed at the time of exploration and have been edited to incorporate results of the laboratory test data, as appropriate. Unless noted on the logs, the lines designating the changes between various strata represent approximate boundaries. The transition between materials could be gradual or could occur between recovered samples. The stratification given on the logs, or described herein, is for use by Geotechnology in its analyses and should not be used as the basis of design or construction cost estimates without realizing that there can be variation from that shown or described.

The boring logs and related information depict subsurface conditions only at the specific locations and times where sampling was conducted. The passage of time could result in changes in conditions, interpreted to exist, at or between the locations where sampling was conducted.

LABORATORY TESTING

Soil samples collected from the borings were visually evaluated in the laboratory and subsequently classified in general accordance with the Unified Soil Classification System (USCS; ASTM D 2487 and D 2488).

Laboratory tests were performed on select soil samples to evaluate engineering and index properties. The testing consisted of moisture contents, Atterberg limits, grain size (sieve) analyses and unconsolidated-undrained triaxial compression (UU) tests. Most of the laboratory test results are presented on the boring logs in Appendix B. The Atterberg limits and UU test results are also included in Appendix C. The laboratory test and corresponding test method standard used are presented in the following table.

SUMMARY OF LABORATORY TESTS AND METHODS	
Laboratory Test	**Test Method**
Moisture Content	ASTM D 2216
Atterberg Limits	ASTM D 4318
Grain Size Analysis	ASTM D 422
Unconsolidated-Undrained Triaxial Compression	ASTM D 2850

SECTION III – GENERAL SUBSURFACE CONDITIONS

STRATIGRAPHY

The stratigraphy generally consisted of fine-grained soils that extend to approximate depths in the range of 28 to 33 feet or to the maximum depth of exploration (30 feet). The fine-grained soils in Borings B-2, B-7, B-8, B-10, and B-11 were underlain by coarse-grained soil to the depth of boring termination (30 to 50 feet).

The fine-grained strata were classified as lean clay, sandy lean clay (CL), silt, sandy silt (ML), and fat clay (CH). The sandy silt and sandy lean clay layers were predominantly encountered between approximate depths of 13 and 33 feet.

The coarse-grained soil was classified as sand (SP), silty sand (SM), and clayey sand (SC). The moisture contents of the tested samples ranged from approximately 15 to 55 percent. The liquid limits (LL) and plasticity indices (PI) of the tested samples ranged from 46 to 94 percent and 21 to 62 percent, respectively. The SPT N-values ranged from 2 blows per foot (bpf) to 13 bpf in the fine-grained soils and 6 bpf to 30 bpf in coarse-grained soils. The UU tests on relatively undisturbed samples yielded undrained shear strengths ranging from 900 to 1,880 pounds per square foot (psf). The results of the field and laboratory tests indicated soft to stiff consistencies in the fine-grained soils and loose to medium dense conditions in the coarse-grained soil.

GROUNDWATER

Groundwater was encountered in Borings B-3 through B-6 and B-9 through B-13 at approximate depths ranging from 23 to 29 feet. Groundwater levels might not have stabilized and could vary substantially over time due to the effects of seasonal variation in precipitation, recharge or other factors not evident at the time of exploration.

SECTION IV – PRELIMINARY DESIGN CONSIDERATIONS AND RECOMMENDATIONS

DESIGN SEISMIC INFORMATION

The site lies within the influence of the New Madrid Seismic Zone (NMSZ). It is our understanding that the structure(s) will be designed in accordance with the International Building Code (IBC 2012). Based on the preliminary borings, and per the general procedures of Section 1613.3 of IBC 2012, the seismic site class could be defined as Class F due to potentially liquefiable soil, as indicated in the following section. Spectral acceleration values must be determined by a site-specific seismic evaluation for Class F sites. However, if the proposed structure(s) will have a fundamental period of vibration equal to or less than 0.5 seconds, or if the estimated dynamic settlement within the upper 50 feet (see the next section) would not

substantially destabilize the building to collapse, the site class may be defined as Class D, Stiff Soil, in accordance with IBC 2012.

MAPPED DESIGN ACCELERATIONS			
EVENT	Peak Ground Acceleration	Short Period Acceleration (S_{DS})	1.0-Second Acceleration (S_{D1})
2% PE* in 50 Years	0.658g	0.827g	0.452g

*Probability of Exceedance

LIQUEFACTION AND DYNAMIC SETTLEMENT

A preliminary study was performed to determine the liquefaction and dynamic settlement potential at the site. Both field and laboratory data were used to perform the analysis. The field measurements include the depth of the water table and the SPT "N" values corrected for hammer efficiency. The laboratory data included USCS soil classification, soil unit weight and percent fines of soil samples obtained from various strata. An earthquake magnitude (M_w) of 7.7 (probability of exceedance of 2% in 50 years, or 2,500-year return interval) was considered. A corresponding peak ground acceleration of 0.658g was determined using information provided in IBC 2012 and ASCE 7-10. For this analysis, groundwater was assumed to be at a depth of approximately 28 feet.

Subsurface conditions (as characterized by the field and laboratory data) and earthquake characteristics were used to determine the safety factors against liquefaction in each soil layer, as well as the associated dynamic settlement during the design seismic event. The analysis results are presented in the following table. Please note that these settlement values are independent of and in addition to the static settlement resulting from structural loading.

Results of Liquefaction Analysis		
Boring	**Zones with Liquefaction Factor of Safety Less Than 1.0**	**Estimated Dynamic Settlement (in)**
B-7	33.5 to 50 feet	¼

Please note the presence of approximately 28 feet thick layer of fine-grained soil above the liquefiable soil may act as a cap and reduce the impact of the liquefiable soil. An additional, design-phase, subsurface exploration by means of deep borings or cone penetration soundings will be required to better define the liquefiable soil potential.

HIGH PLASTICITY CLAY

High plasticity soil was encountered near the ground surface to approximate depths ranging from 23 to 30 feet in Borings B-1 through B-2 and B-4 through B-13. High plasticity

clays are potentially expansive. Pavement, floor slabs, and lightly loaded structural features supported on high plasticity, potentially expansive clays can undergo heaving and distress unless these soils are mitigated. Removing and replacing the potentially expansive soil with a low plasticity material or other approved materials can be effective in reducing the swell potential by providing a buffer zone above the high plasticity clay. We recommend the following:

- 4 feet below foundation bearing level
- 3 feet below floor-slab subgrade
- 2 feet below pavement subgrade

The soil comprising the buffer zone should consist of natural soils classifying as lean clay, silty sand, or clayey sand (CL, SM, or SC), have a maximum LL of 45, and a PI of not more than 20.

PRELIMINARY FOUNDATION RECOMMENDATIONS

Shallow Foundations. Structures may be supported on a conventional shallow foundation system bearing on new, properly compacted fill or stable existing natural soils. Preliminary design of spread and strip footings can be based on net allowable bearing pressures of 2,500 and 2,000 pounds per square foot (psf), respectively. Settlement analyses can be provided once a design-phase subsurface exploration is performed.

Ground Improvement. Ground improvement techniques may be utilized to facilitate the use of shallow foundation systems bearing in existing soils, while limiting the settlement to tolerable values. Such techniques can generally be used to increase bearing capacities while controlling settlement. Specialty contractors can design and install these systems using the subsurface exploration data and specific details of column loads and layouts for the structures.

SECTION V – LIMITATIONS OF PRELIMINARY REPORT

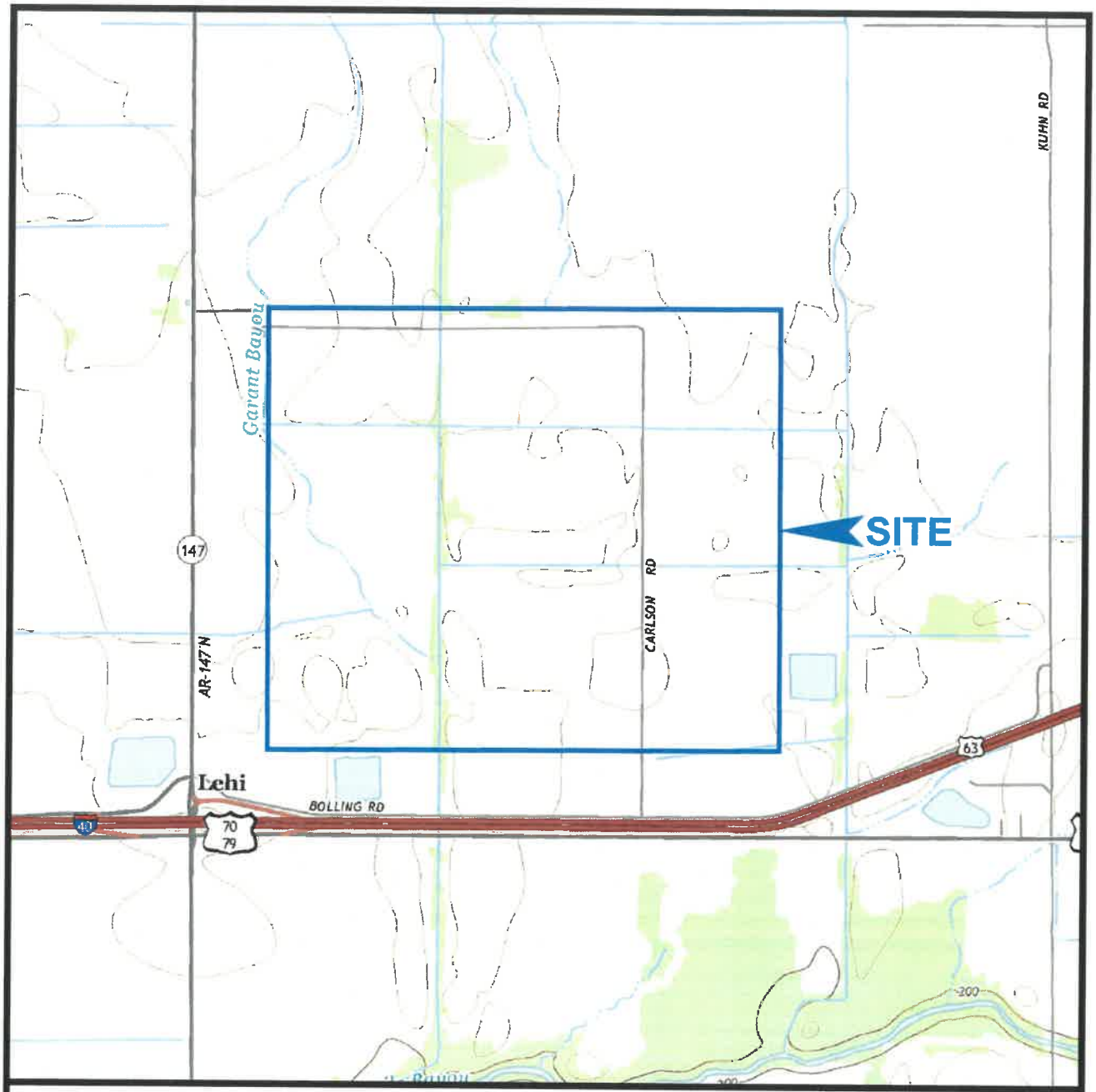
This preliminary report has been prepared on behalf of and for the exclusive use of the client for specific application to the named project as described herein. It is preliminary in nature and should not be used for purposes of design or construction.

Geotechnology has attempted to conduct the services reported herein in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions. The preliminary recommendations and conclusions contained in this report are professional opinions.

Unless specifically stated in our proposal or this report, the scope of our services for this phase of the project did not include any environmental assessment or investigation for the presence

or absence of wetlands or hazardous or toxic material in the soil, surface water, groundwater, or air, on or below or around this site. Any statements in this report or on the boring logs regarding odors noted or unusual or suspicious items or conditions observed are strictly for the information of our client. Our scope did not include: any services to investigate or detect the presence of mold or any other biological contaminants (such as spores, fungus, bacteria, viruses, and the by-products of such organisms) on and around the site; or any services, designed or intended, to prevent or lower the risk of the occurrence of an infestation of mold or other biological contaminants.

The analyses, conclusions, and recommendations contained in this report are preliminary. Additional exploration is required to develop recommendations for specific types of structures and pavements.



NOTES

1. Plan adapted from a 7.5 minute U.S.G.S. map for Crawfordsville, Arkansas quadrangle last revised in 2014.

0 2,000 4,000

SCALE IN FEET

N

Drawn By: WAH	Ck'd By:	App'vd By:
Date: 6-1-18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

SITE LOCATION AND TOPOGRAPHY

Project Number J031019.01

PLATE 1

NOTES

1. Plan adapted from a March 14, 2018 aerial photograph courtesy of Google Earth.
2. Borings were located in the field with reference to site features and are shown approximate only.

LEGEND

● Boring Location

0 400 800 1,600

SCALE IN FEET

N

Drawn By: WAH	Ck'd By:	App'vd By:
Date: 6-1-18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

AERIAL PHOTOGRAPH OF SITE AND BORING LOCATIONS

Project Number J031019.01

PLATE 2

APPENDIX A

IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL-ENGINEERING REPORT

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by:* the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

GEOTECHNICAL BUSINESS COUNCIL
of the Geoprofessional Business Association

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

APPENDIX B

BORING LOGS: B-1 THROUGH B-13
BORING LOG: TERMS AND SYMBOLS

Surface Elevation: _____ Completion Date: 5/15/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	TOPSOIL: 12 inches of brown silt.			
	Medium stiff, tan SILT, trace roots and organics - ML		3-3-4	SS1
5	Medium stiff to stiff, gray and tan to brown and gray, FAT CLAY - CH trace organics trace organics		2-3-4	SS2
			1-3-4	SS3
10			3-4-7	SS4
15	Medium stiff, brown and gray, sandy, LEAN CLAY - CLS		2-3-4	SS5
20	Soft, gray, LEAN CLAY - CL		2-1-1	SS6
25	Soft, gray, FAT CLAY - CH		1-1-2	SS7
30	Soft, gray, LEAN CLAY - CL		1-2-1	SS8
	Boring terminated at 30 feet.			
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

CAF DRILLER TJB LOGGER

CME 550X DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: JDM	Checked by:	App'vd. by:
Date: 5/17/18	Date:	Date:

GEOTECHNOLOGY INC

FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B- 1

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC.0638301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/15/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	TOPSOIL: 12 inches of brown silt.			
	Stiff to medium stiff, brown and gray to gray, FAT CLAY - (CH)		2-3-5	SS1
5			4-4-6	SS2
			95	ST3
10			3-3-4	SS4
			4-3-3	SS5
15			3-3-5	SS6
20			2-3-5	SS7
25			5-4-4	SS8
30	Loose, dark gray, silty SAND - SM Boring terminated at 30 feet.			
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

MMH DRILLER JAJ LOGGER

Diedrich D-50 DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 73 %

REMARKS:

Drawn by: JDM	Checked by:	App'vd. by:
Date: 5/17/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B- 2

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC 0638301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/15/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	TOPSOIL: 12 inches of brown silt.			
	Stiff, brown and gray, FAT CLAY - CH		3-5-5	*SS1
5			5-4-5	*SS2
			4-4-6	SS3
	Stiff to medium stiff, brown to gray, LEAN CLAY - CL		5-5-5	SS4
10				
			3-3-5	SS5
15				
	Medium stiff to soft, brown to gray, sandy, LEAN CLAY - CL		5-4-4	SS6
20				
		▽	6-6-7	SS7
25				
			2-1-2	SS8
30	Boring terminated at 30 feet.			
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 25 FEET ▽

DRILLING DATA

__ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM __ FEET

MMH DRILLER JAJ LOGGER

Diedrich D-50 DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 73 %

REMARKS:

Drawn by: JDM	Checked by:	App'vd. by:
Date: 5/17/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B- 3

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC 0638301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/14/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	TOPSOIL: 12 inches of brown silt.			
	Medium stiff, tan, LEAN CLAY, trace roots and organics - CL		2-2-3	SS1
5	Medium stiff, gray and brown, FAT CLAY - (CH)		1-2-3	SS2
			2-2-3	SS3
10			2-2-3	SS4
15	Soft, brown and gray, sandy, FAT CLAY - CH		2-2-2	SS5
20	Soft, gray, LEAN CLAY, trace organics - CL		1-1-1	SS6
25	Soft, gray, FAT CLAY - CH		1-2-2	SS7
30	Boring terminated at 30 feet.		2-2-2	SS8
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

94 >>

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 29 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

CAF DRILLER TJB LOGGER

CME 550X DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: JDM	Checked by:	App'vd. by:
Date: 5/17/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B- 4

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC 0638301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/14/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	TOPSOIL: 12 inches of brown silt.			
	Soft to medium stiff, brown and gray, FAT CLAY - CH		2-2-2	SS1
5			3-2-3	SS2
	Medium stiff to stiff, brown and gray to gray, LEAN CLAY - CL		3-4-4	SS3
10			4-5-6	SS4
15			4-5-5	SS5
20	Medium stiff, gray, sandy, LEAN CLAY - CL		6-4-4	SS6
25	Medium stiff, dark gray, FAT CLAY, trace sand - CH ▽		3-3-3	SS7
30	Stiff, dark gray, sandy, FAT CLAY - CH		4-4-5	SS8
	Boring terminated at 30 feet.			
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 27 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

HJW DRILLER JAJ LOGGER

Diedrich D-50 DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 73 %

REMARKS:

Drawn by: JDM	Checked by:	App'vd. by:
Date: 5/17/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B- 5

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC.0633301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/14/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	TOPSOIL: 12 inches of brown silt.			
	Medium stiff, tan, LEAN CLAY, trace roots and organics - CL		1-2-3	SS1
	Stiff to soft, tan to brown and gray, FAT CLAY - CH		2-2-4	SS2
5			2-4-5	SS3
			2-3-4	SS4
10				
			2-2-2	SS5
15				
	trace organics		1-1-2	SS6
20				
			1-2-1	SS7
25		▽		
			1-1-1	SS8
30	Boring terminated at 30 feet.			
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 28.5 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

CAF DRILLER TJB LOGGER

CME 550X DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: JDM	Checked by:	App'vd. by:
Date: 5/17/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B- 6

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC 0638301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/15/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	TOPSOIL: 12 inches of brown silt.			
	Medium stiff to stiff, brown to gray and brown, FAT CLAY - CH trace silt and organics trace sand		1-2-3	SS1
5			2-3-4	SS2
			2-3-5	SS3
10			3-5-6	SS4
	Medium stiff, gray and brown, sandy, FAT CLAY - CH		2-2-3	SS5
15				
	Soft to medium stiff, gray and brown, FAT CLAY - (CH) little sand		1-1-2	SS6
20				
	trace sand		1-2-3	SS7
25				
	Soft, gray, sandy, LEAN CLAY - CL		1-1-2	SS8
30				
	Medium dense, gray and white to gray and black, CLAYEY SAND - (SC)		7-10-10	SS9
35				
			7-14-16	SS10
40				
			10-13-17	SS11
45				
	Medium dense, gray SAND - (SP)		11-10-14	SS12
50	Boring terminated at 50 feet.			

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

60

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM 10 FEET

HJW DRILLER TJB LOGGER

Diedrich D-50 DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 73 %

REMARKS:

Drawn by: JDM	Checked by:	App'vd. by:
Date: 5/17/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B- 7

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC 0638301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/14/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	TOPSOIL: 12 inches of brown silt.			
	Stiff, brown to gray, FAT CLAY - (CH)		89	ST1
5			4-5-7	SS2
			4-6-6	SS3
	Stiff to soft, brown and gray to gray, LEAN CLAY - CL		3-4-5	SS4
10				
			2-3-4	SS5
15				
			2-2-1	SS6
20				
	Soft, gray, FAT CLAY - CH		3-2-2	SS7
25				
	Loose, dark gray SAND, trace clay - SP		3-4-3	SS8
30	Boring terminated at 30 feet.			
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

90 >>

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

__ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM __ FEET

HJW DRILLER JAJ LOGGER

Diedrich D-50 DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 73 %

REMARKS:

Drawn by: JDM	Checked by:	App'vd. by:
Date: 5/17/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B- 8

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC.0638301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/12/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	Medium stiff, brown and gray, FAT CLAY - CH			
	trace sand		3-3-4	SS1
	trace roots and sand		3-4-4	SS2
5				
	Medium stiff, brown and gray, LEAN CLAY - CL		2-2-3	SS3
	Medium stiff to soft, brown and gray, FAT CLAY - CH		3-3-3	SS4
10	little sand, trace organics			
				ST5
15				
	trace sand		0-1-1	SS6
20				
	Soft, gray SILT, little sand ▽		0-1-2	SS7
25				
	Medium stiff, gray, FAT CLAY - CH		1-2-3	SS8
30	Boring terminated at 30 feet.			
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 25 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

MMH DRILLER JAJ LOGGER

Diedrich D-50 DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 73 %

REMARKS:

Drawn by: ABM	Checked by:	App'vd. by:
Date: 5/14/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B- 9

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC 0638301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/12/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	Stiff to medium stiff, brown and gray, FAT CLAY - (CH)		3-4-5	SS1
5			2-4-5	SS2
			2-2-4	SS3
10	Medium stiff to soft, brown and gray, LEAN CLAY, little sand - CL		2-2-3	SS4
15			2-2-1	SS5
20	Soft, gray, sandy SILT, trace wood and gravel - ML ▽		2-2-1	SS6
25	Soft, gray, FAT CLAY - CH		2-2-2	SS7
30	Medium dense, gray, CLAYEY SAND - SC		1-5-6	SS8
	Boring terminated at 30 feet.			
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

88 >>

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 23 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

MMH DRILLER JAJ LOGGER

Diedrich D-50 DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 73 %

REMARKS:

Drawn by: ABM	Checked by:	App'vd. by:
Date: 5/14/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B-10

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC 0638301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/15/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	TOPSOIL: 12 inches of brown silt.			
	Stiff, brown, FAT CLAY, trace roots and organics - CH		2-5-8	SS1
5	Stiff, brown and gray, LEAN CLAY - CL		2-4-5	SS2
	Medium stiff to soft, brown and gray to gray, FAT CLAY - CH		2-3-4	SS3
10			1-3-3	SS4
15			1-2-1	SS5
20			1-2-2	SS6
25			2-2-3	SS7
30			1-2-2	SS8
	Boring terminated at 30 feet.			
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 29 FEET ▽

DRILLING DATA

___ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM ___ FEET

CAF DRILLER TJB LOGGER

CME 550X DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: JDM	Checked by:	App'vd. by:
Date: 5/17/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B-11

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC 0638301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/12/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	Medium stiff, brown and gray to gray, FAT CLAY - CH			
	trace roots		3-3-2	SS1
	trace roots		3-4-3	SS2
5	little sand		2-3-3	SS3
	Medium stiff, gray, LEAN CLAY - (CL)		93	ST4
10				
	Medium stiff to soft, brown to gray, FAT CLAY - CH		2-3-2	SS5
15				
	trace organics		1-1-2	SS6
20				
	trace organics		2-2-3	SS7
25	▽			
			1-1-1	SS8
30	Boring terminated at 30 feet.			
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 28 FEET ▽

DRILLING DATA

__ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM __ FEET

MMH DRILLER JAJ LOGGER

Diedrich D-50 DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 73 %

REMARKS:

Drawn by: ABM	Checked by:	App'vd. by:
Date: 5/14/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B-12

Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC 0638301.GPJ 6/1/18

Surface Elevation: _____ Completion Date: 5/14/18

Datum MSL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	DRY UNIT WEIGHT (pcf) SPT BLOW COUNTS CORE RECOVERY/RQD	SAMPLES
	TOPSOIL: 12 inches of brown silt.			
	Medium stiff, tan, LEAN CLAY - (CH)		1-2-3	SS1
5			83	ST2
	Medium stiff to soft, gray to gray and brown, FAT CLAY - CH		2-2-3	SS3
10			2-2-2	SS4
	Soft, gray and brown, LEAN CLAY - CL trace sand		1-1-2	SS5
15				
	trace organics		1-1-2	SS6
20				
	Medium stiff, gray, FAT CLAY, trace sand and organics - CH		1-2-3	SS7
25				
	Loose, dark gray, CLAYEY SAND - SC		2-1-5	SS8
30	Boring terminated at 30 feet.			
35				
40				
45				
50				

SHEAR STRENGTH, tsf

Δ - UU/2 O - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

86 >>

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

ENCOUNTERED AT 28.5 FEET ▽

DRILLING DATA

__ AUGER 3 3/4 HOLLOW STEM

WASHBORING FROM __ FEET

CAF DRILLER TJB LOGGER

CME 550X DRILL RIG

HAMMER TYPE Auto

HAMMER EFFICIENCY 90 %

REMARKS:

Drawn by: JDM	Checked by:	App'vd. by:
Date: 5/17/18	Date:	Date:

GEOTECHNOLOGY INC
FROM THE GROUND UP

I-40 Megasite
West Memphis, Arkansas

LOG OF BORING: B-13

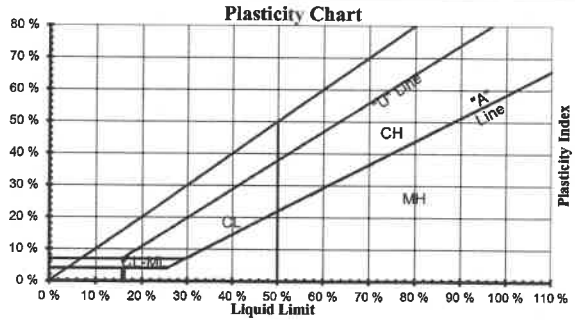
Project No. J031019.01

LOG OF BORING 2002 WL J031019.01.GPJ GTINC 0638301.GPJ 6/1/18

BORING LOG: TERMS AND SYMBOLS

LEGEND

CS	Continuous Sampler
GB	Grab Sample
NQ	NQ Rock Core
PST	Three-Inch Diameter Piston Tube Sample
SS	Split-Spoon Sample (Standard Penetration Test)
ST	Three-Inch Diameter Shelby Tube Sample
*	Sample Not Recovered
PL	Plastic Limit (ASTM D4318)
LL	Liquid Limit (ASTM D4318)
SV	Shear Strength from Field Vane (ASTM D2573)
UU	Shear Strength from Unconsolidated-Undrained Triaxial Compression Test (ASTM D2850)
QU	Shear Strength from Unconfined Compression Test (ASTM D2166)



SOIL GRAIN SIZE

US STANDARD SIEVE

12"	3"	3/4"	4	10	40	200		
BOULDERS	COBBLES	GRAVEL		SAND			SILT	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE		
300	76.2	19.1	4.76	2.00	0.42	0.074	0.005	

SOIL GRAIN SIZE IN MILLIMETERS

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions			Symbol	Description
Coarse-Grained Soils (More than 50% Larger than No. 200 Sieve Size)	Gravel and Gravelly Soil	Clean Gravels Little or no Fines	GW	Well-Graded Gravel, Gravel- Sand Mixture
			GP	Poorly-Graded Gravel, Gravel-Sand Mixture
		Gravels with Appreciable Fines	GM	Silty Gravel, Gravel-Sand-Silt Mixture
			GC	Clayey-Gravel, Gravel-Sand-Clay Mixture
	Sand and Sandy Soils	Clean Sands Little or no Fines	SW	Well-Graded Sand, Gravelly Sand
			SP	Poorly-Graded Sand, Gravelly Sand
		Sands with Appreciable Fines	SM	Silty Sand, Sand-Silt Mixture
			SC	Clayey-Sand, Sand-Clay Mixture
Fine-Grained Soils (More than 50% Smaller than No. 200 Sieve Size)	Silts and Clays	Liquid Limit Less Than 50	ML	Silt, Sandy Silt, Clayey Silt, Slight Plasticity
			CL	Lean Clay, Sandy Clay, Silty Clay, Low to Medium Plasticity
			OL	Organic Silts or Lean Clays, Low Plasticity
	Silts and Clays	Liquid Limit Greater Than 50	MH	Silt, High Plasticity
			CH	Fat Clay, High Plasticity
			OH	Organic Clay, Medium to High Plasticity
	Highly Organic Soils		PT	Peat, Humus, Swamp Soil

STRENGTH OF COHESIVE SOILS

Consistency	Undrained Shear Strength (tsf)	Unconfined Comp. Strength (tsf)
Very Soft	less than 0.125	less then 0.25
Soft	0.125 to 0.25	0.25 to 0.5
Medium Stiff	0.25 to 0.5	0.5 to 1.0
Stiff	0.5 to 1.0	1.0 to 2.0
Very Stiff	1.0 to 2.0	2.0 to 3.0
Hard	greater than 2.0	greater than 4.0

DENSITY OF GRANULAR SOILS

Descriptive Term	Approximate N_{60}-Value Range
Very Loose	0 to 4
Loose	5 to 10
Medium Dense	11 to 30
Dense	31 to 50
Very Dense	>50

N-Value (Blow Count) is the last two, 6-inch drive increments (i.e. 4/7/9, N = 7 + 9 = 16). Values are shown as a summation on the grid plot and shown in the Unit Dry Weight/SPT column.

RELATIVE COMPOSITION

Trace	0 to 10%
Little	10 to 20%
Some	20 to 35%
And	35 to 50%

OTHER TERMS

Layer - Inclusion greater than 3 inches thick.

Seam - Inclusion 1/8-inch to 3 inches thick

Parting - Inclusion less than 1/8-inch thick

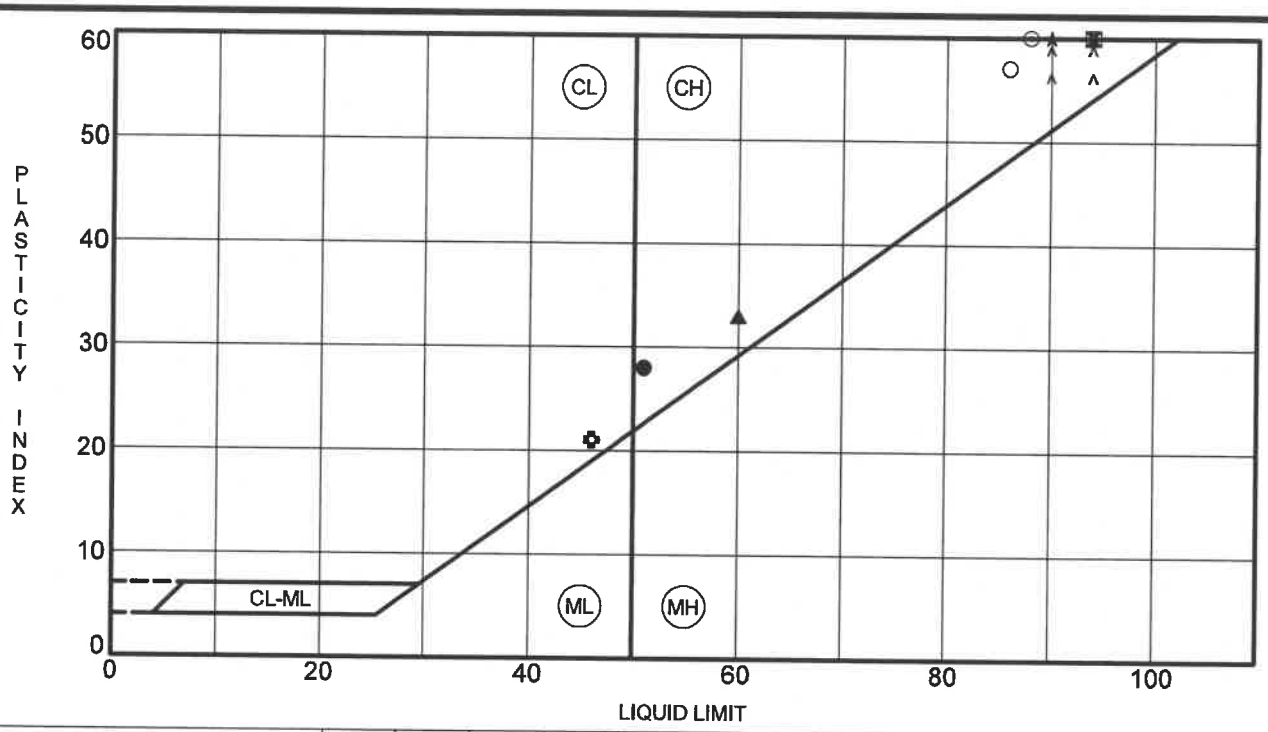
Pocket - Inclusion of material that is smaller than sample diameter

GEOTECHNOLOGY INC
FROM THE GROUND UP

Relative composition and Unified Soil Classification System (USCS) designations are based on visual descriptions and are approximate only. If laboratory tests were performed to classify the soil, the USCS designation is shown in parenthesis.

APPENDIX C

LABORATORY TEST RESULTS



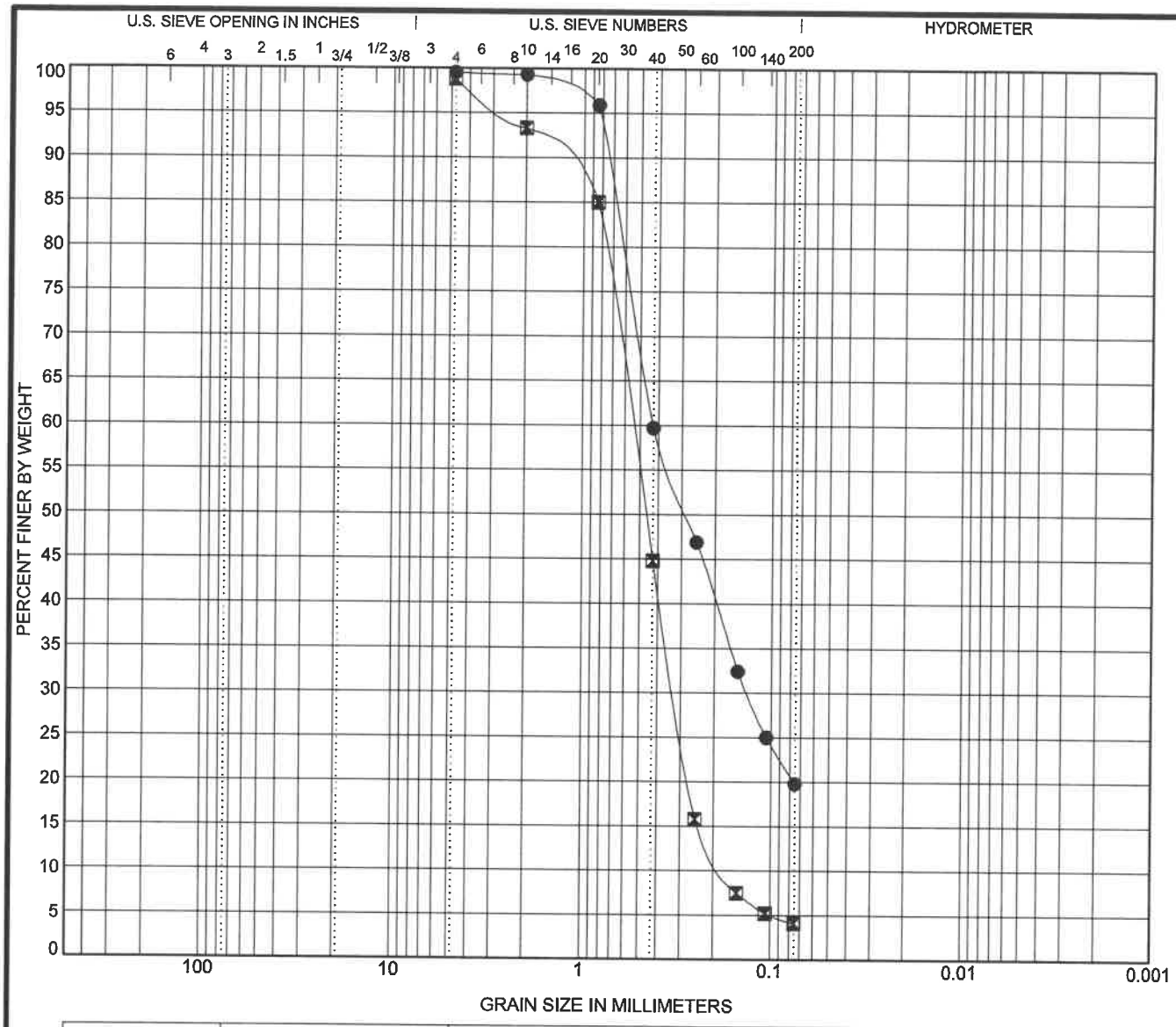
	Specimen Identification		LL	PL	PI	Fines	Classification
●	B- 2	6.0	51	23	28		FAT CLAY(CH)
⊠	B- 4	3.5	94	33	61		FAT CLAY(CH)
▲	B- 7	18.5	60	27	33		FAT CLAY(CH)
★	B- 8	1.0	90	28	62		FAT CLAY(CH)
⊙	B-10	1.0	88	28	60		FAT CLAY(CH)
✿	B-12	8.0	46	25	21		LEAN CLAY(CL)
○	B-13	3.0	86	29	57		FAT CLAY(CH)

GEOTECHNOLOGY INC
FROM THE GROUND UP

ATTERBERG LIMITS RESULTS

I-40 Megasite
West Memphis, Arkansas
J031019.01

US ATTERBERG LIMITS J031019.01.GPJ US LAB.GDT 6/1/18



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	B-7	33.5	CLAYEY SAND(SC)					
⊠	B-7	48.5	POORLY GRADED SAND(SP)				1.09	3.14

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-7	33.5	4.75	0.427	0.134		0.0	79.7	19.8	
⊠	B-7	48.5	4.75	0.55	0.324	0.175	0.0	94.7	4.1	

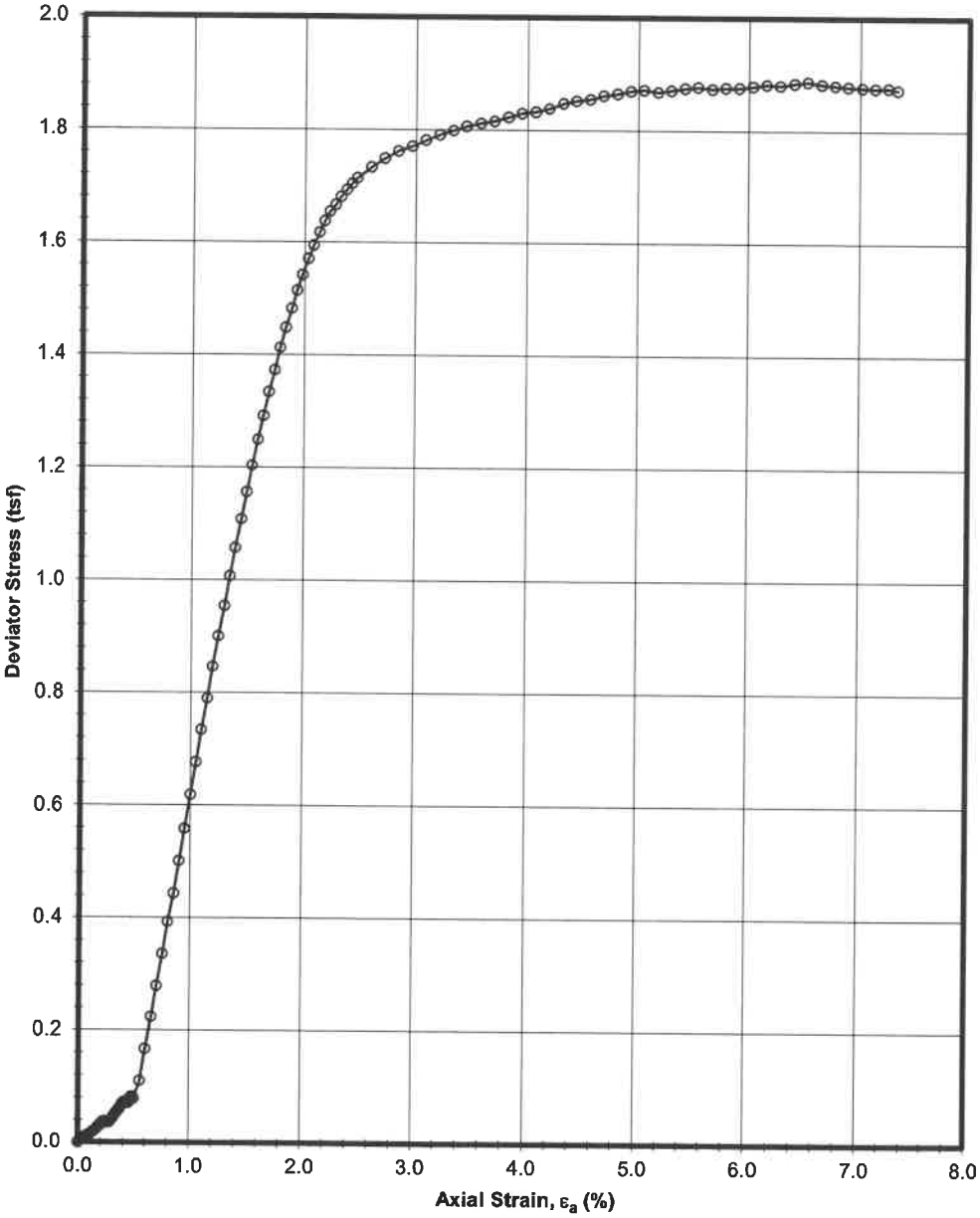
GEOTECHNOLOGY INC
FROM THE GROUND UP

GRAIN SIZE DISTRIBUTION

I-40 Megasite
West Memphis, Arkansas
J031019.01

US GRAIN SIZE J031019.01.GPJ US LAB.GDT 6/1/18

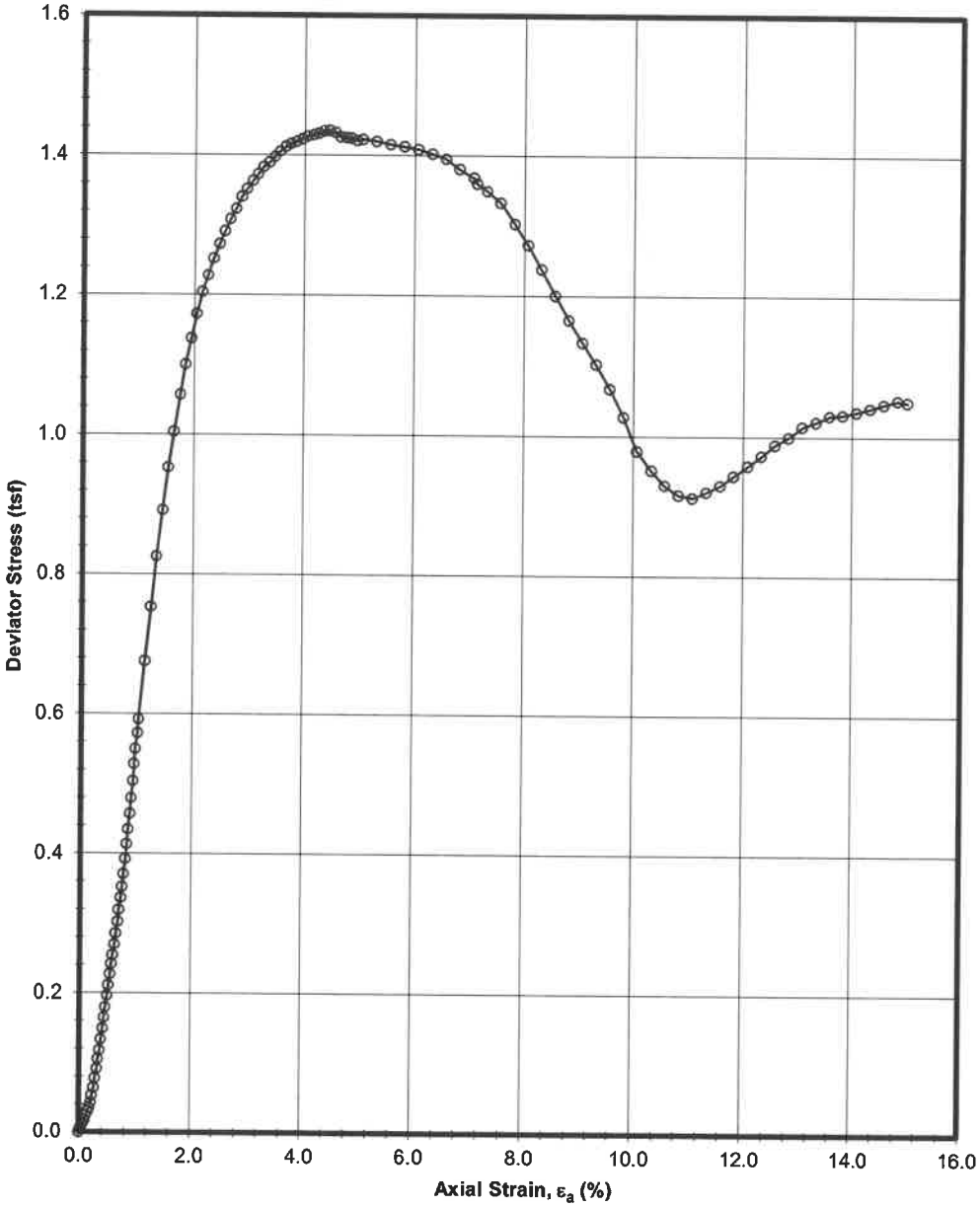
GEOTECHNOLOGY INC
FROM THE GROUND UP



UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

ASTM D 2850
Project No.: J031019.01
Boring: B-2
Sample: ST-3 - Depth: 6 ft.

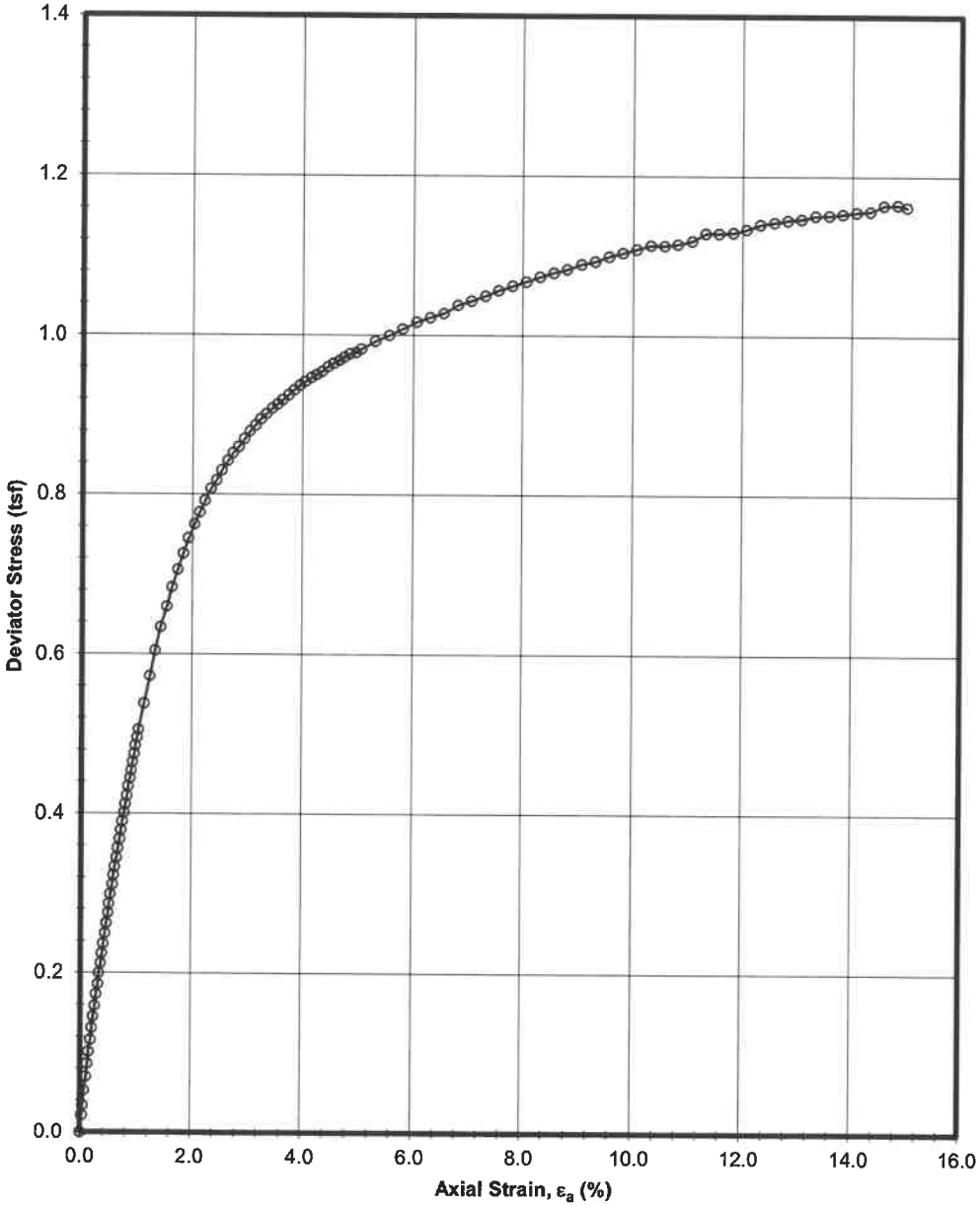
GEOTECHNOLOGY INC
FROM THE GROUND UP



UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

ASTM D 2850
Project No.: J031019.01
Boring: B-8
Sample: ST-1 - Depth: 1 ft.

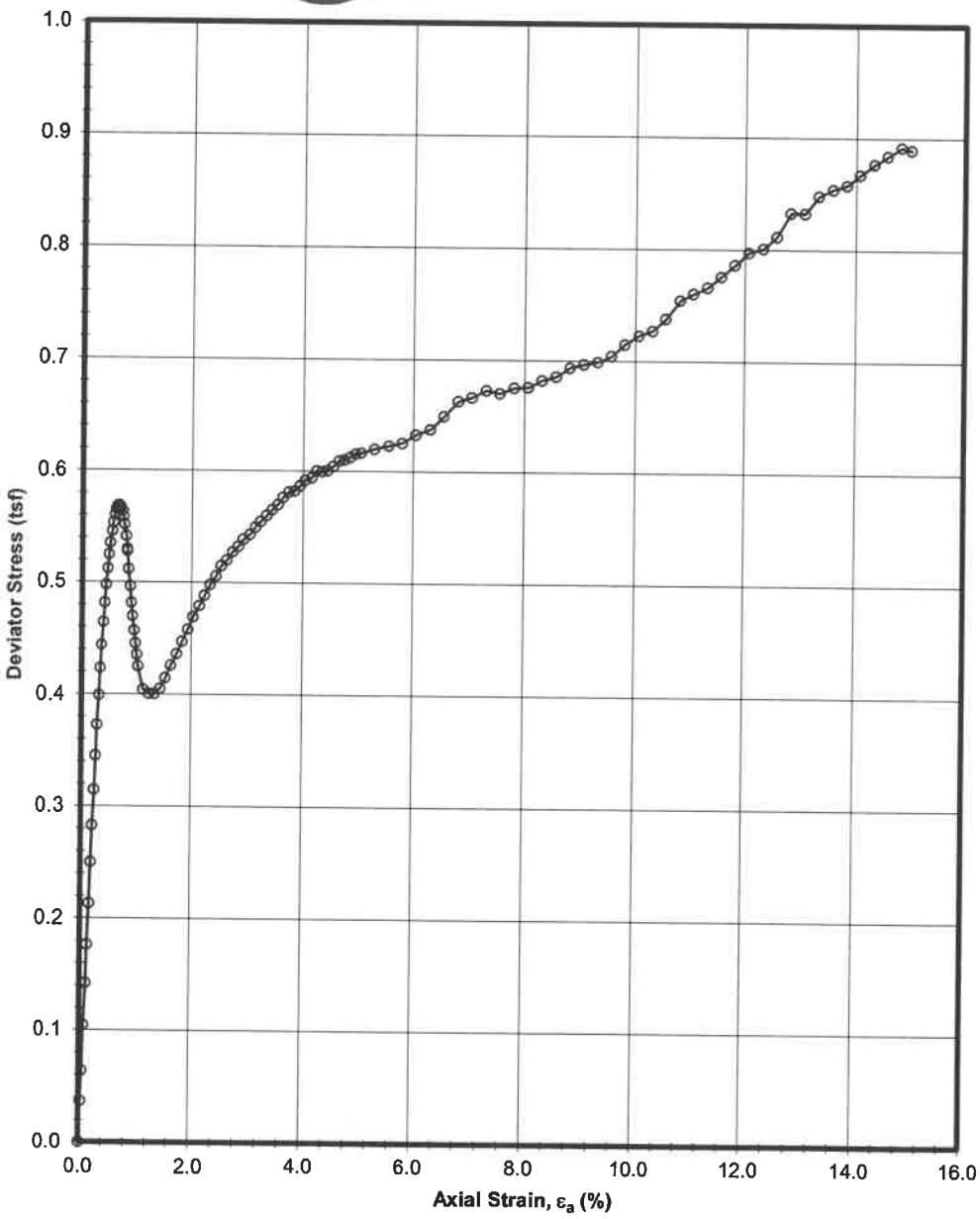
GEOTECHNOLOGY INC
FROM THE GROUND UP



UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

ASTM D 2850
Project No.: J031019.01
Boring: B-12
Sample: ST-4 - Depth: 8 ft.

GEOTECHNOLOGY INC
FROM THE GROUND UP



UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

ASTM D 2850
Project No.: J031019.01
Boring: B-13
Sample: ST-2 - Depth: 3 ft.