TSÉHOOTSOOÍ NAHATA'DZIIL NIHI DINE'É BÁ
Medical Center Health Center Wellness Center
Facilities of Fort Defiance Indian Hospital Board, Inc.

PO BOX 649 FORT DEFIANCE, AZ 86504 PHONE: 928.729.8000 FAX: 928.729.8224 WEBSITE: WWW.FDIHB.ORG
A FACILITY OF FORT DEFIANCE INDIAN HOSPITAL BOARD, INC.

Fort Defiance Indian Hospital Board, Inc.
RFP #26-001 Nihi Dine'é Bá Wellness Center Vestibule Project
Amendment # 1
Date issue Date: August 3, 2026

This AMENDMENT #1, effective August 3, 2026 is issued to modify, explain or correct the original specifications and is hereby made a part of the contract documents. Attach is the questions to the RFP. Each bidder shall read the entire Amendment.

Inquiries submitted to FDIHB, Inc. for the Nihi Dine'é Bá Wellness Center Vestibule Project are as follows:

1. **Is there is an estimated cost of construction known for the following?**
   Unfortunately, this number is unknown; several scope increases occurred after this estimate was received in May of 2025. Scope increases included additional civil scope for accessible routes and site improvements and the addition of a structural canopy at the vestibule entry.
2. **Is there a list of potential bidders available?**
   Unfortunately, there is no list of potential bidders.
3. **I am inquiring to ask if there is a construction cost estimate or budget associated with the Nihi Dine' B Wellness Center Vestibule Project.**
   See the response in question #1.
4. **Can you please provide a copy of the Geotechnical report for the Nihi Dine' E' Ba' Wellness Center? I found the 221 pages of the Engineer calculations but no Geotech report.**
   See Enclosures; Geotech Soil Report and Geotech Evaluation Report.
5. **Can you please tell me where I can find the Advertisement for Bids in the Manual? Or can you tell me where bids are to be submitted. When are questions due? Is there a Pre-Bid Meeting, if so where is it being held? Is there a bid security?**
   ARI Graphix & Signs will provide a link to their website. Otherwise, the RFP proposal is on the Fort Defiance Indian Hospital Board, Inc. website. The URL address is provided for your review. https://www.fdihb.org/rfp-rfq
6. **I would like to schedule a site visit at the wellness center. Please let me know when the best date and time.**
   Unfortunately, there will be no walk-through or pre-bid meeting for the RFP No. 26-001 Nihi Dine'e Ba' Wellness Center Vestibule Project. The RFP proposal is available on our FDIHB website, or you can obtain plans and specifications from ARI Graphix and Signs, Albuquerque, New Mexico.

7. **I found this project at the Construction Reporter, no GC's are currently listed as bidding, do you have a list yet?**
   The General Contractor selection will not be determined until September 2026, and there is no listing at this time.

ENCLOSURES:
Item 1. Geotech Soil Report
Item 2. Geotech Evaluation Report

All other terms and conditions contained in RFP#26-001 Nihi Dine'é Bá Wellness Center Vestibule Project shall remain unchanged.

IN WITNESS WHEREOF, the parties have caused this Amendment to be executed by their authorized representatives as of the Amendment Effective Date.

Prepared by:

Verlena Hale, Buyer II — 8/4/26 Date

Approved by:

Melwin Young, Purchasing Manager — 8/4/26 Date

CERTERRA
WESTERN TECHNOLOGIES

November 21, 2025

SPS+ Architects, LLP
8681 East Via De Negocio
Scottsdale, Arizona 85258

Re: TMC Wellness Center – Report Update
NWC of Indian Route 7 and 12
Fort Defiance, Arizona

Job No. 11-252083-0

In accordance with our Proposal No. 11-252083-P, we have completed a geotechnical evaluation report update for the above referenced project. The purpose of these services was to provide updated information to our previous report for the TMC Wellness Center (WT Report No. 3125JS003 dated February 19, 2015). A site visit was conducted on November 18, 2025. Based on the conditions observed and after review of our original report, it is our opinion that all of the recommendations contained in the original report remain applicable for the proposed construction. It should be noted that mix bearing conditions (footings bearing in existing engineered fill and native soils should be avoided. All new foundations should bear on a minimum of 3 feet (36 inches) of new placed engineered fill following recommendations provided in the original geotechnical evaluation. If you have any questions concerning this information, or require additional consultation, observation, or testing services, please contact us.

Sincerely,
WESTERN TECHNOLOGIES INC.
dba CERTERRA WESTERN TECHNOLOGIES
Geotechnical Engineering Services

REGISTERED PROFESSIONAL GEOLOGIST
CERTIFICATE NO.
77341
JACOB
QUINLAN
DATE SIGNED
ARIZONA, U.S.A.

11/21/25

Jacob T. Quinlan, R.G.
Geotechnical Project Manager

REGISTERED PROFESSIONAL ENGINEER (CIVIL)
CERTIFICATE NO.
79669
GREGORY
BURR
DATE SIGNED
ARIZONA, U.S.A.

11/21/25

Gregory L. E. Burr, P.E., R.G.
Geotechnical Department Manager

Copies to: Addressee (emailed)

Western Technologies Inc.

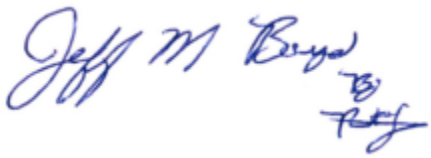
GEOTECHNICAL EVALUATION REPORT

PROPOSED TMC WELLNESS CENTER

Fort Defiance, Arizona
WT Reference No. 3125JS003

PREPARED FOR:
Orcutt Winslow
3003 N. Central Avenue, 16th Floor
Phoenix, Arizona 85012

February 19, 2015



Roger K. Southworth, P.E.
Managing Director

Reviewed By: Jeff M. Boyd, P.E.
Senior Geotechnical Engineer

Western Technologies Inc.
The Quality People
Since 1955

400 South Lorena Avenue
Farmington, New Mexico 87401-5943
(505) 327-4966 • fax 327-5293

February 19, 2015

Orcutt Winslow
3003 North Central Avenue, 16th Floor
Phoenix, Arizona 85012

Re: Geotechnical Evaluation
Proposed TMC Wellness Center
Fort Defiance, Arizona

Job No. 3125JS003

Western Technologies Inc. (WT) has completed the geotechnical evaluation for the above-referenced project. This study was performed in general accordance with our proposal number 3125PS001 dated January 8, 2015. The results of our study, including the boring location diagram, boring logs, laboratory test results, and the geotechnical recommendations are attached.

We have appreciated being of service to you in the geotechnical engineering phase of this project and are prepared to assist you during the construction phases as well. Please do not hesitate to contact us if the design conditions change or if you have any questions concerning this report. We look forward to working with you on future projects.

Sincerely,
WESTERN TECHNOLOGIES INC.

Roger K. Southworth, P.E.
Managing Director

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

APPENDIX A

APPENDIX B

GEOTECHNICAL EVALUATION
PROPOSED TMC WELLNESS CENTER
FORT DEFIANCE, ARIZONA

JOB NO. 3125JS003

1.0 PURPOSE

This report contains the results of our geotechnical evaluation for the proposed Wellness Center that will be constructed in Fort Defiance, Arizona.. The purpose of these services is to provide information and recommendations regarding:

- Foundation Design
- Floor Slab Support
- Pavement Design
- Seismic Design Parameters
- Drainage
- Earthwork

The results of the field exploration and laboratory tests are presented in the Appendix.

2.0 PROJECT DESCRIPTION

The facility will be constructed on an eight-acre parcel located adjacent to the hospital. The project is currently in its preliminary design stage and therefore the proposed building location and finish site grades were not available. It is understood that the building will consist of a two-story structure and that it will not contain a basement. It was assumed that the maximum wall loads will be less than 4 kips per lineal foot and that the maximum column loads will be less than 150 kips. The development will also include site grading, infrastructure, and parking lot and drive pavement. It was assumed that cuts and fills of less than about 5 feet would be required to develop the proposed finish site grades. We should be notified immediately if any of our assumptions are incorrect since a revision of the recommendations presented herein could then be necessary.

3.0 SCOPE OF SERVICES

3.1 Field Exploration

Six borings were drilled for this project using a truck-mounted drill rig to depths about 20 feet. The borings were drilled at the approximate locations indicated on the attached Boring Location Diagram (Plate 1). The GPS coordinates and approximate ground surface elevation

at each boring location is indicated on the boring logs. This information was determined using a hand-held GPS devise.

A WT geotechnical engineer monitored the drilling operations and prepared a field log for each boring. These logs contain visual classifications of the materials encountered during drilling as well as interpolation of the subsurface conditions between samples.

The final boring logs, included in Appendix A, represent our interpretation of the field logs and may include modifications based on laboratory observations of the recovered samples. The final logs describe the materials encountered, their thicknesses, and the depths at which samples were obtained.

The Unified Soil Classification System was used to classify the soil. The soil classification symbols appear on the boring logs and are briefly described in Appendix A.

3.2 Laboratory Testing

Laboratory tests were performed on representative samples to aid in material classification and to estimate the pertinent engineering properties of the soil. Testing was performed in general accordance with applicable ASTM methodologies. The following tests were performed and the results are presented in Appendix B.

- Water Content
- Compression
- Percent Passing the No. 200 Sieve
- Dry Unit Weight
- Liquid and Plastic Limit

The laboratory test results were used in the development of the recommendations contained in this report.

3.3 Analyses and Report

Analyses were performed and this report was prepared for the exclusive purpose of providing geotechnical engineering information and recommendations. The scope of services for this project does not include, either specifically or by implication, any environmental assessment of the site or identification of contaminated or hazardous materials or conditions. If the owner is concerned about the potential for such

contamination, other studies should be undertaken. We are available to discuss the scope of such studies with you.

This geotechnical engineering report includes a description of the project, a discussion of the field exploration and laboratory testing programs, a discussion of the subsurface conditions, and design recommendations as required to satisfy the purpose previously described.

4.0 SITE CONDITIONS

4.1 Surface

The project site is currently a vacant grass-covered field. The site slopes down from the northeast towards the southwest. The near-surface soil was very loose, and the drill rig became stuck in the loose sand at numerous locations during the field exploration.

4.2 Subsurface

The borings typically encountered interbedded layers of very loose to medium dense silty sand and poorly graded sand to depths of about 9 to 18 feet, underlain by firm to hard lean clay with variable sand content. The lean clay extended to the boring termination depths.

4.3 Groundwater

Groundwater was not encountered in the borings during drilling operations. The level of the groundwater table will fluctuate seasonally with variations in the amount of precipitation, evaporation, and surface water runoff. The observations made during this investigation must be interpreted carefully because they are short-term and do not constitute a groundwater study.

5.0 GEOTECHNICAL PROPERTIES & ANALYSIS

5.1 Laboratory Tests

Compression tests were performed to evaluate the collapse potential of the soil (see Appendix B). The test results indicated compression values of 2.4 to 6.4 percent when the samples were subject to a load approximating the load that will be induced by the building foundations. The compression increased to 3.9 to 8.1 percent when the samples were inundated with water.

These test results indicate that the soils have a moderate to high potential for a decrease in volume when the soil water content is increased.

5.2 Field Tests

Penetration tests were performed in general accordance with ASTM test methods D1586 and D3550 to assist in evaluating the relative density/consistency of the soil. The test results indicate that the deposits within the upper 10 feet of the ground surface have a low penetration resistance.

6.0 RECOMMENDATIONS

6.1 General

The recommendations contained in this report are based on our understanding of the project criteria described in Section 2.0, **Project Description**, and the assumption that the subsurface conditions are those disclosed by the test borings. Others may change the plans, final elevations, number and type of structures, foundation loads, and floor levels during design or construction. Substantially different subsurface conditions from those described herein may be encountered or become known. Any changes in the project criteria or subsurface conditions shall be brought to our attention in writing.

6.2 Foundations

The proposed buildings can be supported by spread footings. However, the site soil exhibits low strength characteristics and some hydrocollapse potential. The foundations should therefore be underlain by engineered fill in order to distribute the foundation loads over a larger area in order to reduce foundation movements. The thickness of the engineered fill beneath the foundations should be a minimum of one foundation width or 36 inches, whichever is greater. The depth and lateral extent of the engineered fill is discussed in greater detail in the **Earthwork** section of this report.

Foundations bearing on the newly placed engineered fill can be designed for a maximum net allowable bearing capacity of up to 2,000 pounds per square foot (psf). The allowable bearing capacity applies to dead load plus design live load conditions.

The foundations should bear a minimum of 24 inches below the final adjacent site grade for frost considerations. Strip footings should have a minimum width of 16 inches and isolated column pad foundations should have a minimum dimension of 24 inches.

We estimate that the total post-construction settlement of foundations supported as recommended herein will be on the order of 1 inch or less. We estimate that the differential settlement between comparably sized and loaded foundations could be on the order of one-half the total foundation settlement. Additional foundation settlement can occur if water from any source infiltrates the foundation subgrade. Therefore, proper drainage should be provided in the final design and during construction.

All footings, stem walls, and masonry walls should be reinforced to reduce the potential for distress caused by differential foundation settlement. The use of joints at openings and other discontinuities in masonry walls is recommended. Joints should also be closely spaced along the length of masonry site retaining walls and screen walls to accommodate minor differential foundation settlement.

We recommend that the geotechnical engineer or a representative of the engineer observe the footing overexcavations before backfilling operations. This observation is to assess whether the exposed bearing stratum is similar to that anticipated for indirect support of the footings. Any loose, soft, or disturbed material should be undercut to a suitable bearing subgrade.

6.3 Slab-on-Grade Support

The floor slab can be designed as a slab-on-grade. The floor slab subgrade should be prepared in accordance with the procedures outlined in the **Earthwork** section of this report.

A minimum four-inch-thick layer of drainage aggregate should be provided beneath at-grade floor slabs to prevent the capillary rise of water beneath the slab and a damp slab. The drainage aggregate should consist of sand, sand-gravel, crushed stone, or a combination of these materials. The granular fill should have a maximum particle diameter of no more than one-half the granular fill thickness and should contain no more than 5 percent passing the No. 200 sieve. In addition, the granular fill should have a maximum plasticity index of 6.

The use of vapor retarders is desirable for any slab-on-grade where the floor will be covered by products using water-based adhesives, wood, vinyl-backed carpet, impermeable floor coatings (urethane, epoxy, acrylic terrazzo, etc.). When used, the design and installation should be in accordance with the recommendations presented in ACI 302.2R-06. Final determination on the use of a vapor retarder should be left to the slab designer.

All concrete placement and curing operations should follow the American Concrete Institute manual recommendations. Improper curing techniques and/or high slump (high water-

cement ratio) could cause excessive shrinkage, cracking, or curling of the floor slab. Concrete slabs should be allowed to cure adequately before placing vinyl or other moisture-sensitive floor covering.

6.4 Seismic Considerations

Structural design criteria based upon the 2012 International Building Code is provided below.

- Site Soil Classification: Site Class D
- Risk Category: I/II/III

S_s = 0.161 g	S_{MS} = 0.257 g	S_{DS} = 0.172 g
S_1 = 0.048 g	S_{M1} = 0.116 g	S_{D1} = 0.077 g

6.5 Drainage

Properly functioning foundations and floor slabs require appropriately constructed and maintained site drainage conditions. Therefore, it is extremely important that positive drainage be provided during construction and maintained throughout the life of the structure. It is also important that proper planning and control of landscape and irrigation be performed.

The building should be provided with downspouts extensions to direct water away from the structure. The downspouts should discharge into drainage swales or into the storm sewer system.

In areas where sidewalks, patios, or driveways do not immediately adjoin the structure, the ground surface adjacent to the structure should slope down at a grade of about five percent for a distance of at least 10 feet from the perimeter walls. Planters or other surface features that could retain water adjacent to the structure should be avoided. If planters and/or landscaping are adjacent to or near the structure, we recommend the following:

- Grades should slope away from the structure.
- Planters should slope away from the structure and should not pond water. Drains should be installed in enclosed planters to facilitate flow out of the planters.
- Watering should be kept to a minimum. Irrigation systems should be situated on the far side of any planting and away from the building to reduce the potential for infiltration beneath foundations from possible leaks.

It should be understood that these recommendations will help reduce the potential for soil movement and resulting distress, but will not eliminate this potential.

6.6 Pavements

It was assumed that the parking lot would be subject to both passenger vehicles and small- to medium-size delivery trucks. On this basis, a daily traffic value of two Equivalent 18-kip Single Axle Loads (ESAL) was assumed for passenger car parking areas and drives (light duty), and a traffic value of 10 ESALs was assumed for the access drives. It was assumed that this traffic volume is an average for the life of the pavement and that it includes any anticipated traffic growth. The design period for the pavement was 20 years.

A revision of the recommended pavement sections may be necessary if the expected traffic loading conditions are different than assumed. An evaluation of the type and volume of traffic that each portion of the parking lot will experience should be conducted to determine if the pavement sections presented herein are appropriate.

The pavement subgrade is expected to consist of silty sand. Silty sand is considered a fair quality material for pavement support. A resilient modulus (M_r) of 8,000 pounds per square inch was used for pavement design.

A reliability value of 70 percent was assumed for pavement design. This parameter assumes that the pavement will be subject to occasional interruption of traffic for pavement repairs. Based upon these parameters, the resulting pavement sections according to the AASHTO procedure are:

Traffic Area	Asphalt Concrete Pavement (inches)	Base Course (inches)
Light Duty	2.5	6.0
Access Drives	3.0	7.0

The "design life" of a pavement is defined as the expected life at the end of which reconstruction of the pavement will need to occur. Normal maintenance, including crack sealing, slurry sealing, and/or chip sealing, should be performed during the life of the pavement.

Due to the high static loads imposed by parking trucks in loading and unloading areas and at dumpster locations, we recommend a rigid pavement section for these areas. A minimum six-inch thick Portland cement concrete pavement is recommended.

Bituminous pavement should be constructed of dense-graded, central plant-mix, asphalt concrete. Base course, Portland cement, and asphalt concrete should conform to Federal Highway Administration (FHWA) or Arizona Department of Transportation (ADOT) specifications.

Material and compaction requirements should conform to recommendations presented in the **Earthwork** section of this report. The pavement should be sloped to ensure positive drainage. Water should not pond in areas directly adjoining paved sections.

7.0 EARTHWORK

7.1 General

The conclusions contained in this report are contingent upon compliance with recommendations presented in this section. Any excavating, trenching, or disturbance that occurs after completion of the earthwork must be backfilled, compacted, and tested in accordance with the recommendations contained herein. It is not reasonable to rely upon our conclusions and recommendations if any future unobserved and untested trenching, earthwork activities, or backfilling occurs.

7.2 Site Clearing

Strip and remove any vegetation, debris, and other deleterious materials from the building and pavement areas. The building area is defined as the area within the building footprint plus five feet beyond the perimeter of the footprint. All exposed surfaces should be free of mounds and depressions that could prevent uniform compaction.

7.3 Building Pad and Pavement Subgrade Preparation

The building pad should be cut as required to the design finish grade. The subgrade should then be scarified to a minimum depth of 8 inches and recompacted in accordance with the recommendations presented in Section 7.6. The building pad can then be raised to the design finish grade with engineered fill.

The foundation areas should be overexcavated to a minimum depth of 36 inches or one foundation width, whichever is greater, below the planned bottom of the foundations. The foundation overexcavations should extend a minimum of two feet beyond the footing edges. The foundation overexcavations should be backfilled to the design finish grade with non-

expansive fill placed and compacted in accordance with the recommendations presented in Section 7.6.

7.4 Pavement Subgrade Preparation

Following site clearing operations, cut the pavement subgrade as required to the design finish subgrade elevation. The subgrade should be scarified to a minimum depth of 8 inches and recompacted in accordance with the recommendations presented in Section 7.6. The pavement area can then be raised to the design finish grade with engineered fill.

7.5 Materials

The on-site sand and silty sand can be used as fill in the planned building and pavement areas. Imported fill soils should conform to the following:

- Gradation (ASTM C136):

	percent finer by weight
6"	100
4"	85-100
¾"	70-100
No. 4 Sieve	50-100
No. 200 Sieve	30 (max)

- Maximum expansive potential (%)* 1.5
- Maximum soluble sulfates (%) 0.10

* Measured on a sample compacted to approximately 95 percent of the ASTM D698 maximum dry density at about three percent below the optimum water content. The sample is confined under a 100 psf surcharge and submerged.

Imported fill should be approved by WT prior to placement.

7.6 Placement and Compaction

a. Place and compact fill in horizontal lifts, using equipment and procedures that will produce recommended water contents and densities throughout the lift.

b. Uncompacted fill lifts should not exceed 10 inches.

c. No fill should be placed over frozen ground nor should frozen fill or backfill be used.

d. Materials should be compacted to the following:

Material	Minimum Percent Compaction (ASTM D698)
• Fill in the building and pavement areas	95
• Nonstructural backfill	90

Fill should be compacted within a water content range of –3 to +3 percent of the optimum water content.

7.7 Compliance

Recommendations for foundation, slab-on-grade, and pavement elements supported on compacted fill or prepared subgrade depend upon compliance with the **Earthwork** recommendations. To assess compliance, observation and testing should be performed under the direction of the project geotechnical engineer.

8.0 LIMITATIONS

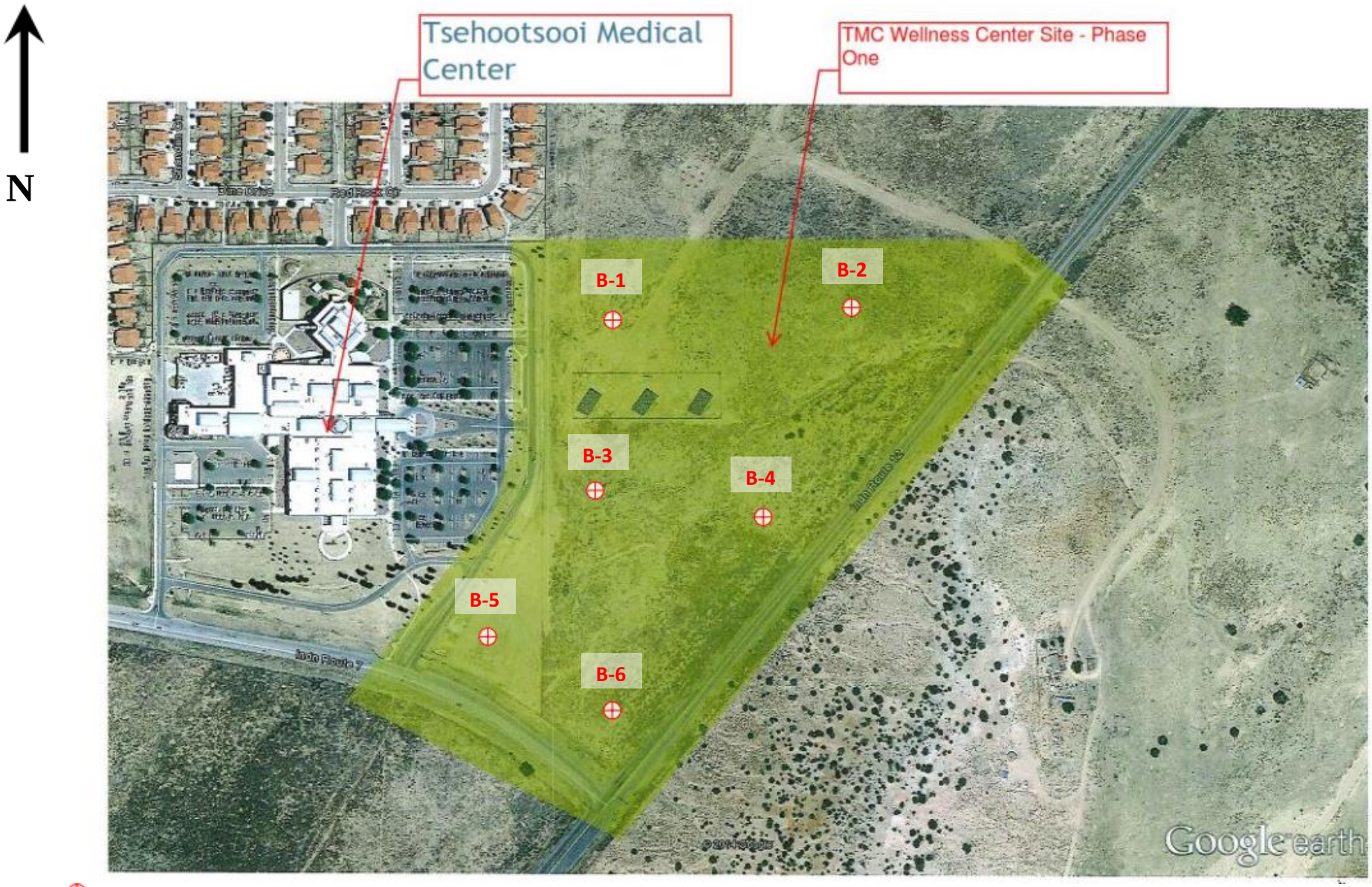
This report has been prepared assuming the project criteria described in Section 2.0. If changes in the project criteria occur, or if different subsurface conditions are encountered or become known, the conclusions and recommendations presented herein shall become invalid. In any such event, WT should be contacted in order to assess the effect that such variations may have on our conclusions and recommendations.

The recommendations presented are based entirely upon data derived from a limited number of samples obtained from widely spaced borings. The attached logs are indicators of subsurface conditions only at the specific locations and times noted. This report assumes the uniformity of the geology and soil structure between borings, however variations can and often do exist. Whenever any deviation, difference or change is encountered or becomes known, WT should be contacted.

This report is valid for the earlier of one year from the date of issuance, a change in circumstances, or discovered variations. After expiration, no person or entity shall rely on this report without the express written authorization of WT.

9.0 CLOSURE

We prepared this report as an aid to the designers of the proposed project. The comments, statements, recommendations and conclusions set forth in this report reflect the opinions of the authors. These opinions are based upon data obtained at the location of the borings, and from laboratory tests. Work on your project was performed in accordance with generally accepted standards and practices utilized by professionals providing similar services in this locality. No other warranty, express or implied, is made.



⊕ APPROXIMATE BORING LOCATION

Geotechnical Environmental Inspections Materials

Western Technologies Inc.
The Quality People
Since 1955
wt-us.com

PROJECT: PROPOSED TMC WELLNESS CENTER
JOB NO.: 3125JS003

BORING LOCATION DIAGRAM

PLATE 1

Allowable Soil Bearing Capacity	The recommended maximum contact stress developed at the interface of the foundation element and the supporting material.
Backfill	A specified material placed and compacted in a confined area.
Base Course	A layer of specified aggregate material placed on a subgrade or subbase.
Base Course Grade	Top of base course.
Bench	A horizontal surface in a sloped deposit.
Caisson/Drilled Shaft	A concrete foundation element cast in a circular excavation which may have an enlarged base (or belled caisson).
Concrete Slabs-On-Grade	A concrete surface layer cast directly upon base course, subbase or subgrade.
Crushed Rock Base Course	A base course composed of crushed rock of a specified gradation.
Differential Settlement	Unequal settlement between or within foundation elements of a structure.
Engineered Fill	Specified soil or aggregate material placed and compacted to specified density and/or moisture conditions under observations of a representative of a soil engineer.
Existing Fill	Materials deposited through the action of man prior to exploration of the site.
Existing Grade	The ground surface at the time of field exploration.
Expansive Potential	The potential of a soil to expand (increase in volume) due to absorption of moisture.
Fill	Materials deposited by the actions of man.
Finished Grade	The final grade created as a part of the project.
Gravel Base Course	A base course composed of naturally occurring gravel with a specified gradation.
Heave	Upward movement.
Native Grade	The naturally occurring ground surface.
Native Soil	Naturally occurring on-site soil.
Rock	A natural aggregate of mineral grains connected by strong and permanent cohesive forces. Usually requires drilling, wedging, blasting or other methods of extraordinary force for excavation.
Sand and Gravel Base Course	A base course of sand and gravel of a specified gradation.
Sand Base Course	A base course composed primarily of sand of a specified gradation.
Scarify	To mechanically loosen soil or break down existing soil structure.
Settlement	Downward movement.
Soil	Any unconsolidated material composed of discrete solid particles, derived from the physical and/or chemical disintegration of vegetable or mineral matter, which can be separated by gentle mechanical means such as agitation in water.
Strip	To remove from present location.
Subbase	A layer of specified material placed to form a layer between the subgrade and base course.
Subbase Grade	Top of subbase.
Subgrade	Prepared native soil surface.

COARSE-GRAINED SOILS

LESS THAN 50% FINES

GROUP SYMBOLS	DESCRIPTION	MAJOR DIVISIONS
GW	WELL-GRADED GRAVEL OR WELL-GRADED GRAVEL WITH SAND, LESS THAN 5% FINES	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE
GP	POORLY-GRADED GRAVEL OR POORLY-GRADED GRAVEL WITH SAND, LESS THAN 5% FINES	
GM	SILTY GRAVEL OR SILTY GRAVEL WITH SAND, MORE THAN 12% FINES	
GC	CLAYEY GRAVEL OR CLAYEY GRAVEL WITH SAND, MORE THAN 12% FINES	
SW	WELL-GRADED SAND OR WELL-GRADED SAND WITH GRAVEL, LESS THAN 5% FINES	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE
SP	POORLY-GRADED SAND OR POORLY-GRADED SAND WITH GRAVEL, LESS THAN 5% FINES	
SM	SILTY SAND OR SILTY SAND WITH GRAVEL, MORE THAN 12% FINES	
SC	CLAYEY SAND OR CLAYEY SAND WITH GRAVEL, MORE THAN 12% FINES	

NOTE: Coarse-grained soils receive dual symbols if they contain 5% to 12% fines (e.g., SW-SM, GP-GC).

FINE-GRAINED SOILS

MORE THAN 50% FINES

GROUP SYMBOLS	DESCRIPTION	MAJOR DIVISIONS
ML	SILT, SILT WITH SAND OR GRAVEL, SANDY SILT, OR GRAVELLY SILT	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50
CL	LEAN CLAY OF LOW TO MEDIUM PLASTICITY, SANDY CLAY, OR GRAVELLY CLAY	
OL	ORGANIC SILT OR ORGANIC CLAY OF LOW TO MEDIUM PLASTICITY	
MH	ELASTIC SILT, SANDY ELASTIC SILT, OR GRAVELLY ELASTIC SILT	SILTS AND CLAYS LIQUID LIMIT MORE THAN 50
CH	FAT CLAY OF HIGH PLASTICITY, SANDY FAT CLAY, OR GRAVELLY FAT CLAY	
OH	ORGANIC SILT OR ORGANIC CLAY OF HIGH PLASTICITY	
PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS

NOTE: Fine-grained soils may receive dual classification based upon plasticity characteristics (e.g. CL-ML).

SOIL SIZES

COMPONENT	SIZE RANGE
BOULDERS	Above 12 in.
COBBLES	3 in. – 12 in.
GRAVEL	No. 4 – 3 in.
Coarse	¾ in. – 3 in.
Fine	No. 4 – ¾ in.
SAND	No. 200 – No. 4
Coarse	No. 10 – No. 4
Medium	No. 40 – No. 10
Fine	No. 200 – No. 40
Fines (Silt or Clay)	Below No. 200

NOTE: Only sizes smaller than three inches are used to classify soils

CONSISTENCY

CLAYS & SILTS	BLOWS PER FOOT
VERY SOFT	0 – 2
SOFT	3 – 4
FIRM	5 – 8
STIFF	9 – 15
VERY STIFF	16 – 30
HARD	OVER 30

RELATIVE DENSITY

SANDS & GRAVELS	BLOWS PER FOOT
VERY LOOSE	0 – 4
LOOSE	5 – 10
MEDIUM DENSE	11 – 30
DENSE	31 – 50
VERY DENSE	OVER 50

NOTE: Number of blows using 140-pound hammer falling 30 inches to drive a 2-inch-OD (1⅜-inch ID) split-barrel sampler (ASTM D1586).

PLASTICITY OF FINE GRAINED SOILS

PLASTICITY INDEX	TERM
0	NON-PLASTIC
1 – 7	LOW
8 – 20	MEDIUM
Over 20	HIGH

DEFINITION OF WATER CONTENT

DRY
SLIGHTLY DAMP
DAMP
MOIST
WET
SATURATED

The number shown in **"BORING NO."** refers to the approximate location of the same number indicated on the "Boring Location Diagram" as positioned in the field by pacing or measurement from property lines and/or existing features, or through the use of Global Positioning System (GPS) devices. The accuracy of GPS devices is somewhat variable.

"DRILLING TYPE" refers to the exploratory equipment used in the boring wherein **HSA = hollow stem auger**, and the dimension presented is the outside diameter of the HSA used.

"N" in "BLOW COUNTS" refers to a 2-inch outside diameter split-barrel sampler driven into the ground with a 140 pound drop-hammer dropped 30 inches repeatedly until a penetration of 18 inches is achieved or until refusal. The number of blows, or "blow count", of the hammer is recorded for each of three 6-inch increments totaling 18 inches. The number of blows required for advancing the sampler for the last 12 inches (2nd and 3rd increments) is defined as the Standard Penetration Test (SPT) "**N**"-Value. Refusal to penetration is considered more than 50 blows per 6 inches. (Ref. ASTM D1586).

"R" in "BLOW COUNTS" refers to a 3-inch outside diameter ring-lined split barrel sampler driven into the ground with a 140 pound drop-hammer dropped 30 inches repeatedly until a penetration of 12 inch is achieved or until refusal. The number of blows required to advance the sampler 12 inches is defined as the "**R**" blow count. The "**R**" blow count requires an engineered conversion to an equivalent SPT N-Value. Refusal to penetration is considered more than 50 blows per foot. (Ref. ASTM D3550).

"CS" in "BLOWS/FT." refers to a 2½-in. outside diameter California style split-barrel sampler, lined with brass sleeves, driven into the ground with a 140-pound hammer dropped 30 inches repeatedly until a penetration of 18 inches is achieved or until refusal. The number of blows of the hammer is recorded for each of the three 6-inch increments totaling 18 inches. The number of blows required for advancing the sampler for the last 12 inches (2nd and 3rd increments) is defined as the "CS" blow count. The "CS" blow count requires an engineered conversion to an equivalent SPT N-Value. Refusal to penetration is considered more than 50 blows for a 6-inch increment. (Ref. ASTM D 3550)

"SAMPLE TYPE" refers to the form of sample recovery, in which **N** = Split-barrel sample, **R** = Ring-lined sample, **"CS"** = California style split-barrel sample, **G** = Grab sample, **B** = Bucket sample, **C** = Core sample (ex. diamond bit rock coring).

"DRY DENSITY (LBS/CU FT)" refers to the laboratory-determined dry density in pounds per cubic foot. The symbol **"NR"** indicates that no sample was recovered.

"WATER (MOISTURE) CONTENT" (% of Dry Wt.) refers to the laboratory-determined water content in percent using the standard test method ASTM D2216.

"USCS" refers to the "Unified Soil Classification System" Group Symbol for the soil type as defined by ASTM D2487 and D2488. The soils were classified visually in the field, and where appropriate, classifications were modified by visual examination of samples in the laboratory and/or by appropriate tests.

These notes and boring logs are intended for use in conjunction with the purposes of our services defined in the text. Boring log data should not be construed as part of the construction plans nor as defining construction conditions.

Boring logs depict our interpretations of subsurface conditions at the locations and on the date(s) noted. Variations in subsurface conditions and characteristics may occur between borings. Groundwater levels may fluctuate due to seasonal variations and other factors.

The stratification lines shown on the boring logs represent our interpretation of the approximate boundary between soil or rock types based upon visual field classification at the boring location. The transition between materials is approximate and may be more or less gradual than indicated.

DATE DRILLED: **2-16-15**
LOCATION: **See Boring Location Diagram**
ELEVATION: **6873**

BORING NO. B-1

EQUIPMENT TYPE: **CME 75**
DRILLING TYPE: **7" HSA**
FIELD ENGINEER: **R.Southworth**

MOISTURE CONTENT (% OF DRY WT.)	POCKET PEN (TSF)	SAMPLE TYPE	SAMPLE	BLOWS/FT.	DEPTH (FEET)	USCS	GRAPHIC	SOIL DESCRIPTION
		G				SP-SM		POORLY GRADED SAND; with silt, light brown, loose, damp
1.8		R		13				
						SM		SILTY SAND; light brown, loose, damp
2.9		R		11	5			
		R		10				
		N		7	10			
		N		8	15			
						CL		SANDY LEAN CLAY; brown to dark brown, stiff to very stiff, damp
		N		16	20			
								Boring terminated at 21.5 feet

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

N- STANDARD PENETRATION TEST
R- RING SAMPLE
NR- NO SAMPLE RECOVERY
G- GRAB SAMPLE
B- BUCKET SAMPLE
BN- BLUNT NOSE PENETROMETER

NOTES: **Groundwater not encountered during drilling**

GPS Coordinates: 35.76027N, 109.45643W

WESTERN TECHNOLOGIES INC.

PROJECT: **Proposed TMC Wellness Center**
REF. NO.: **3125JS003**

PLATE **A-4**

BORING LOG

DATE DRILLED: **2-16-15**
LOCATION: **See Boring Location Diagram**
ELEVATION: **6885**

BORING NO. B-2

EQUIPMENT TYPE: **CME 75**
DRILLING TYPE: **7" HSA**
FIELD ENGINEER: **R.Southworth**

MOISTURE CONTENT (% OF DRY WT.)	POCKET PEN (TSF)	SAMPLE TYPE	SAMPLE	BLOWS/FT.	DEPTH (FEET)	USCS	GRAPHIC	SOIL DESCRIPTION
		G				SM		SILTY SAND; light brown, loose, damp
2.1		R		14				
2.7		R		11	5			
		R		10				
		N		12	10			changing to red-brown, mediun dense
						CL		LEAN CLAY; with sand, red-brown, firm, damp
		N		7	15			
		N		6	20			
								Boring terminated at 21.5 feet

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

N- STANDARD PENETRATION TEST
R- RING SAMPLE
NR- NO SAMPLE RECOVERY
G- GRAB SAMPLE
B- BUCKET SAMPLE
BN- BLUNT NOSE PENETROMETER

NOTES: **Groundwater not encountered during drilling**

GPS Coordinates: 35.76019N, 109.04332W

WESTERN TECHNOLOGIES INC.

PROJECT: **Proposed TMC Wellness Center**
REF. NO.: **3125JS003**

PLATE **A-5**

BORING LOG

DATE DRILLED: **2-16-15**
LOCATION: **See Boring Location Diagram**
ELEVATION: **6868**

BORING NO. B-3

EQUIPMENT TYPE: **CME 75**
DRILLING TYPE: **7" HSA**
FIELD ENGINEER: **R.Southworth**

MOISTURE CONTENT (% OF DRY WT.)	POCKET PEN (TSF)	SAMPLE TYPE	SAMPLE	BLOWS/FT.	DEPTH (FEET)	USCS	GRAPHIC	SOIL DESCRIPTION
		G				SP-SM		POORLY GRADED SAND; with silt, light brown, loose, damp
2.2		R		16				
						SM		SILTY SAND; light brown, very loose to medium dense, damp
2.9		R		7	5			
4.3		R		20				
		N		9	10			
		N		7	15			
						CL		LEAN CLAY; with sand, red-brown, firm, damp
22.1		N		6	20			
								Boring terminated at 21.5 feet

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

N- STANDARD PENETRATION TEST
R- RING SAMPLE
NR- NO SAMPLE RECOVERY
G- GRAB SAMPLE
B- BUCKET SAMPLE
BN- BLUNT NOSE PENETROMETER

NOTES: **Groundwater not encountered during drilling**

GPS Coordinates: 35.75865N, 109.04578W

WESTERN TECHNOLOGIES INC.

PROJECT: **Proposed TMC Wellness Center**
REF. NO.: **3125JS003**

PLATE **A-6**

BORING LOG

DATE DRILLED: **2-16-15**
LOCATION: **See Boring Location Diagram**
ELEVATION: **6877**

BORING NO. B-4

EQUIPMENT TYPE: **CME 75**
DRILLING TYPE: **7" HSA**
FIELD ENGINEER: **R.Southworth**

MOISTURE CONTENT (% OF DRY WT.)	POCKET PEN (TSF)	SAMPLE TYPE	SAMPLE	BLOWS/FT.	DEPTH (FEET)	USCS	GRAPHIC	SOIL DESCRIPTION
		G				SM		SILTY SAND; light red-brown, loose, damp
7.3		R		12				
						SM-ML		SILTY SAND to SANDY SILT; red-brown, loose, damp
		R		12	5			
9.7		R		14				
		N		8	10			
						CL		SANDY LEAN CLAY; red-brown, very stiff to hard, damp
		N		17	15			
		N		33/6"	20			
								Boring terminated at 20.5 feet

N- STANDARD PENETRATION TEST
R- RING SAMPLE
NR- NO SAMPLE RECOVERY
G- GRAB SAMPLE
B- BUCKET SAMPLE
BN- BLUNT NOSE PENETROMETER

NOTES: **Groundwater not encountered during drilling**

GPS Coordinates: 35.75857N, 109.04432W

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

WESTERN TECHNOLOGIES INC.

PROJECT: **Proposed TMC Wellness Center**
REF. NO.: **3125JS003**

PLATE **A-7**

BORING LOG

DATE DRILLED: **2-16-15**
LOCATION: **See Boring Location Diagram**
ELEVATION: **6860**

BORING NO. B-5

EQUIPMENT TYPE: **CME 75**
DRILLING TYPE: **7" HSA**
FIELD ENGINEER: **R.Southworth**

MOISTURE CONTENT (% OF DRY WT.)	POCKET PEN (TSF)	SAMPLE TYPE	SAMPLE	BLOWS/FT.	DEPTH (FEET)	USCS	GRAPHIC	SOIL DESCRIPTION
		G				SP-SM		POORLY GRADED SAND; with silt, light brown, very loose, damp
9.0		R		5				
						SP		POORLY GRADED SAND; light brown, very loose, damp
		R		7	5			
3.2		R		6				
						CL		SANDY LEAN CLAY; brown to red-brown, firm to stiff, moist
21.2		N		8	10			
		N		8	15			changing to brown to dark yellow-brown, damp
		N		17	20			changing to red-brown, very stiff
								Boring terminated at 21.5 feet

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

N- STANDARD PENETRATION TEST
R- RING SAMPLE
NR- NO SAMPLE RECOVERY
G- GRAB SAMPLE
B- BUCKET SAMPLE
BN- BLUNT NOSE PENETROMETER

NOTES: **Groundwater not encountered during drilling**

GPS Coordinates: 35.75753N, 109.04676W

WESTERN TECHNOLOGIES INC.

PROJECT: **Proposed TMC Wellness Center**
REF. NO.: **3125JS003**

PLATE **A-8**

BORING LOG

DATE DRILLED: **2-16-15**
LOCATION: **See Boring Location Diagram**
ELEVATION: **6865**

BORING NO. B-6

EQUIPMENT TYPE: **CME 75**
DRILLING TYPE: **7" HSA**
FIELD ENGINEER: **R.Southworth**

MOISTURE CONTENT (% OF DRY WT.)	POCKET PEN (TSF)	SAMPLE TYPE	SAMPLE	BLOWS/FT.	DEPTH (FEET)	USCS	GRAPHIC	SOIL DESCRIPTION
		G				SP-SM		POORLY GRADED SAND; with silt, light brown, vey loose to loose, damp
7.9		R		7				
8.7		R		12	5			
		R		14				
		N		6	10			
						CL		SANDY LEAN CLAY; red-brown, hard, damp
11.2		N		33	15			
		N		60	20			
								Boring terminated at 21.5 feet

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

N- STANDARD PENETRATION TEST
R- RING SAMPLE
NR- NO SAMPLE RECOVERY
G- GRAB SAMPLE
B- BUCKET SAMPLE
BN- BLUNT NOSE PENETROMETER

NOTES: **Groundwater not encountered during drilling**

GPS Coordinates: 35.75699N, 109.04571W

WESTERN TECHNOLOGIES INC.

PROJECT: **Proposed TMC Wellness Center**
REF. NO.: **3125JS003**

PLATE **A-9**

BORING LOG

Boring No.	Depth (ft.)	USCS Class.	Initial Dry Density (pcf)	Initial Water Content (%)	Compression Properties			Expansion Properties		Plasticity		Percent Passing #200	Remarks
					Surcharge (ksf)	Total Compression (%)		Surcharge (ksf)	Expansion (%)	Liquid Limit	Plasticity Index		
						In-Situ	After Saturation						
B-1	2 – 3	SP-SM	100	1.8	1.03	3.0					NP	8.4	1
					2.06	3.3	6.8						2
B-1	5 – 6	SM	97	2.9	1.03	1.7						16.9	1
					2.06	2.4	6.3						2
B-2	2 – 3	SM	94	2.1	1.03	2.3						16.8	1
					2.06	2.9	3.9						2
B-2	5 – 6	SM		2.7								12.8	
B-3	2 – 3	SP-SM	93	2.2								10.6	
B-3	5 – 6	SM	99	2.9								12.3	
B-3	7 – 8	SM		4.3								22.0	
B-3	20 – 21½	CL		22.1								79.9	
B-4	2 – 3	SM		7.3							NP	43.4	
B-4	7 – 8	CL	94	9.7								55.1	
B-5	2 – 3	SP-SM		9.0								9.8	
B-5	7 – 8	SP		3.2								3.2	
B-5	10 – 11½	CL		21.2								69.5	
B-6	2 – 3	SP-SM		7.9	1.03	5.4							1
					2.06	6.4	8.1						2

Note: Initial Dry Density and Initial Water Content are in-situ values unless otherwise noted.
NP = Non-Plastic

Remarks

1. Submerged to approximate saturation.
2. Sample disturbance observed.

Geotechnical Environmental Inspections Materials

Western Technologies Inc.
The Quality People
Since 1955

wt-us.com

PROJECT: PROPOSED TMC WELLNESS CENTER
JOB NO.: 3125JS003

SOIL PROPERTIES

PLATE
B-1

Boring No.	Depth (ft.)	USCS Class.	Initial Dry Density (pcf)	Initial Water Content (%)	Compression Properties			Expansion Properties		Plasticity		Percent Passing #200	Remarks
					Surcharge (ksf)	Total Compression (%)		Surcharge (ksf)	Expansion (%)	Liquid Limit	Plasticity Index		
						In-Situ	After Saturation						
B-6	5 – 6	CL	97	8.7									
B-6	15 – 16½	CL		11.2								65.4	

Note: Initial Dry Density and Initial Water Content are in-situ values unless otherwise noted.
NP = Non-Plastic

Remarks

1. Submerged to approximate saturation.
2. Sample disturbance observed.

Geotechnical Environmental Inspections Materials
Western Technologies Inc.
The Quality People
Since 1955
wt-us.com

PROJECT: PROPOSED TMC WELLNESS CENTER
JOB NO.: 3125JS003

SOIL PROPERTIES

PLATE
B-2