May 23, 2007

Saddleback Group LLC
555 Round Rock West Drive, Suite 390
Round Rock, Texas 78681

Attn: Mr. Mark Fritz

RE: Geotechnical Recommendations for Grading and Foundations
Sundance Nursing Center, New Braunfels, Texas
Kleinfelder Project No. 82926

Dear Mr. Fritz:

At your request, Kleinfelder is pleased to submit this report for professional geotechnical recommendations for revised grading and foundations for the Sundance Nursing Center. The project site is located at the northeast corner of Sundance Parkway and Common Street in New Braunfels, Texas.

INTRODUCTION

During a meeting on April 9, 2007, Kleinfelder presented a possible alternative to over-excavating and replacement with structural fill which included the use of lime stabilization and Roadbond EN-1 soil stabilizer product to reduce the plasticity index and shrink/swell potential of the native fat clay soils at the site. Based on recent publications available at the time of the meeting, we were confident that this was a feasible solution. At this meeting we discussed the need for additional testing to determine the most economical percentage of lime mixed with the onsite soils and sulfate testing to determine the likelihood of adverse reactions between the soil and the lime mixture. We have concluded the essential portions of our testing and presented the data in the following sections of this addendum report. Based on the laboratory test results, this alternative appears to be a feasible solution for reducing the plasticity and expansive potential of the on-site clay soils. We have also provided revised foundation recommendations associated with using lime and Roadbond EN-1 mixed with over-excavated on-site soils. Subsequently, we are also providing revised foundation recommendations for thickened slabs with beam type foundations.

PROJECT UNDERSTANDING

We understand that this proposed nursing home facility will be a lightly loaded one-story building with wood frame and masonry/brick veneer. Grading plans show that the finished floor elevation will be at approximately 689 feet, and that the existing native soil will be approximately

3 feet below proposed grade on the southern portions of the site and 7 feet below the proposed grade on the northern portions of the site. Currently, the site has been rough graded, the mounds from the golf course have been leveled and the site is graded to drain. We understand that approximately up to 4 feet of additional fill may be required at the site to bring it up to the finished floor elevation.

We understand a thickened slab with interior beams is the preferred foundation system for this structure and that either the Building Research Advisory Board (BRAB) or Post Tensioning Institute (PTI) methods will be used to design the foundation system.

An asphalt concrete paved parking lot is also proposed within the development. Recommendations for the asphalt and concrete parking areas have been addressed in a separate report produced by Terracon titled "Geotechnical Engineering Study, Nursing Home FM 306 and Commons Street", dated March 12, 2007. These recommendations as well as others not addressed by this report have been reviewed and considered valid for this project by Kleinfelder.

SITE CONDITIONS

On April 16, 2007, Kleinfelder personnel performed 6 test pits at various locations throughout the site. At the time of our field investigation, the site was approximately 4 feet shy of the finished floor elevation; the mounds from the golf course had been leveled and the material spread out across the site. The site was relatively flat with a gentle slope towards the proposed pond. No vegetation was observed within the property limits.

With the aid of a small backhoe excavator, a total of 6 test pits were excavated to a depth of approximately 4 feet below the new site grade. These test pit locations are shown on attached Figure 1 Test Pit Location Map. The material observed within the test pits consisted of native fat clay soil on the southern limits of the property to lean to fat clay soil fill overlaying native fat clay soil. The fill soil ranged from about 1 to 3 feet in thickness. Bulk samples were collected; descriptions documented and taken to our laboratory for further testing.

LABORATORY PROCEDURES AND RESULTS

Samples of soil from the test pits were tested for various physical and chemical properties. Clay soils were then tested for Atterberg Limits. Considering that the subgrade would need to be over-excavated, processed and recompacted, a composite sample consisting of 60% dark brown fat clay soil and 40% fill soil were blended together and submitted as a composite sample for testing. All samples, native and composite were then air dried before testing was started. The clay balls were then pulverized into smaller manageable pieces. The samples were then split into three test specimens:

1. Dark gray to black Native Fat Clay,
2. Dark gray native Fat Clay sample with 3% Roadbond EN-1 and 5% Lime,
3. Composite Sample Clay,
4. Composite Sample Clay with 3% Roadbond EN-1 and 5% Lime.

Tests performed on the specimens include: Atterberg limits (ASTM D 4318), pH (ASTM G51), moisture-density relationship (ASTM D698), unconfined compressive tests (ASTM D 5102) and sulfate and chloride content (TEX 620 J).

Plasticity Index Results

The main intent of this study was to determine whether the plasticity index of the material could be reduced from the in-situ state considering the expansive/contractive potential of the fat clay soils encountered at the site. Atterberg Limits were performed to determine the plasticity index of the samples from various locations and depths. Test Pit No. 1 and 2B which represents the natural existing conditions at the site, exhibited a high plasticity index of 57 and 54 percent, respectively. The remaining samples, indicated low to moderate plasticity indices. The results are shown below.

Atterberg Limits Test Result Before Lime and Roadbond Mixture

Sample No.	Material Discription	Liquid Limit (LL)	Plastic Limit (PL)	Plasticity Index (PI)
TP 1A	Native: Fat Clay – Dk. Gray	78	21	57
TP 1B*	Combo – Fat Clays	66	16	50
TP 2A*	Fill: Fat Clay - Orange	52	15	37
TP 2B	Native: Fat Clay – Dk. Gray	74	20	54
TP 3*	Fill: Lean Clay - Lt. Gray	47	15	32
TP 4A*	Fill: Lean Clay - Orange	42	13	29
TP 4B*	Native: Fat Clay – Dk. Gray	60	16	44
TP 5*	Fill: Lean Clay - Tan	49	18	31

* - Samples were mixed for Composite Sample (50% from Hole 1, 10% from Holes 2A, 3, 4A, 4B, and 5)

Test Result
After 5%Lime and 3% Roadbond Mixture

Sample No.	Liquid Limit (LL)	Plastic Limit (PL)	Plasticity Index (PI)	Average Unconfined Compressive Strength (psi)
TP 1	87	49	38	106.8
Composite	72	42	30	98.6

Permeability Test Results

Falling head permeability tests were performed on two remolded specimens. Test results indicate that the remolded specimens have permeability on the order of $1.9x10^{-5}$ cm/s. These tests were completed using the US Army Corps of Engineer's test procedures.

Sulfate Test Results

Standard procedures for lime stabilization of clay soils require that chemical tests be performed to determine the corrosion attack and sulfate induced heave potential of treated soil mixture.

Chemical test results also indicate that the soluble sulfate and chloride content in the natural soil are on the order of 39 to 164 ppm (parts per million) and 27.4 to 124 ppm, respectively.

The sulfate in the Fat Clay at site could be considered as "low risk" for Lime treatment since the reported sulfate contents are less than 3000 ppm.

Percent Heave

Samples from TP-1 and the Composite sample treated with Roadbond and 5% Lime were remolded to 95% of the maximum dry density and optimum moisture content and tested for heave potential using a standard consolidometer and load frame. Each sample was placed into a consolidation apparatus and subjected to a seating load of 0.1 tsf. The samples were then loaded to ½ tsf and the value of settlement was recorded. Then the specimen were subjected to water saturation and allowed to swell to a point at which no more swell was recorded. Another reading was performed to measure the amount of settlement or heave. Loads of 1 and 2 tsf were added to record the subsequent and final loads.

Conclusion of Test Results

Our tests results validate previous tests performed by Henley Johnston and Associates dated April 1, 2004. That particular study was sanctioned by the City of Dallas Public Works

department for the benefit of using Roadbond EN-1 and lime to stabilize fat clay subgrade beneath roadways. The Henley Johnston and Associated indicated that with the combined use of Roadbond EN-1 and lime, the plasticity index reduced from 47 in the natural state to 15 in the mixed state. That report also stated that the overall swell potential was significantly reduced.

REVISED FOUNDATION RECOMMENDATIONS

A reduction in the plasticity index of the soil indicates that the revised PVR is approximately 1-inch with 6 feet of over-excavation and treatment with 5% lime and 3% Roadbond EN-1. Therefore, we present the following revised foundation recommendations for slab with stiffened beam foundation system.

POST-TENSIONED FOUNDATIONS

The slabs should be properly designed (stiffened and reinforced) to tolerate the potential expansive soil movements previously discussed. The foundation grade beams may be designed based on a net allowable soil bearing pressure of 4,500 pounds per square foot on lime/roadbond treated soil. The foundation bearing value has been selected to include a factor of safety of at least 3 for shear failure. The beams should extend at least eighteen (18) inches into modified subgrade soils or select fill. This beam depth is given in regard to bearing capacity, and is not a structural recommendation regarding stiffness.

The PTI method was developed for the design of stiffened slabs-on-ground that utilize post-tensioning tendons as the principal reinforcement method. The PTI procedure has many assumptions associated with its use, which if ignored may result in a design too flexible for the site conditions. The principle assumption is that "..site conditions have been corrected so that soil moisture conditions are controlled by the climate alone" and "..is invalid when influenced to any significant degree by other conditions". Thus, the PTI procedure should be used only by structural engineers familiar with these limitations and knowledgeable of local soil conditions and slab performance.

Moisture variations in expansive clay soils are the principle cause of volume changes within those soils. Thus, if the soil moisture content remained constant, then moisture-induced soil volume changes would not occur. Realistically, it is difficult and practically impossible to prevent soil moisture variations beneath a slab. However, it is practical and possible to limit these fluctuations by proper grading and drainage techniques as discussed in this report. Vegetation that produces extensive root systems should be kept away from the foundation a distance of at least one-half the mature plant height.

Based on the new PTI design method (2004, Third Edition), the revised design parameters for Post-Tensioned flat slab are presented in the following Table.

POST TENSIONING SLAB DESIGN PARAMETERS

PTI Method:	Modified Subgrade
Potential Vertical Rise (PVR)	1 inch
Predominant Soil Type	Clay, Lime & Roadbond EN-1 Mixture
Thornthwaite Moisture Index (I_m)	-10
Depth of Constant Soil Suction	8
Constant Soil Suction pF	3.78
Net Allowable Bearing Pressure-Total Load	4,500
Edge Moisture Variation Distance Center (e_m):	6 ft
Edge Moisture Variation Distance Edge (e_m):	3.3 ft
Differential Soil Movement Center (y_m):	0.5 inch
Differential Soil Movement Edge (y_m):	1.35 inch
Coefficient of Slab-Subgrade Friction (μ)	0.35

Note: Based on PTI Method 3rd Edition

By providing post-tensioning design parameters, it is not the intent of Kleinfelder to recommend in any manner a particular design procedure for the structural engineer, nor is it our intent to recommend or concur with the PTI design procedure. There are apparently numerous design variations being used with the PTI procedure that have been developed by individuals and firms. If the structural engineer believes design adjustments are needed, then his experience must be included in the design.

STRUCTURAL SUPPORT USING A STIFFENED SLAB

Shallow foundations bearing entirely on the select fill or lime/roadbond treated subgrade soils may utilize an allowable bearing capacity of 4,500 pounds per square foot (psf) which includes a factor of safety of 3 against a shear failure of the underlying soil. A Modulus of Subgrade Reaction, (k), of 200 pounds per cubic inch (pci) may be utilized for the design of floor slabs on modified subgrade material. The Modulus of Subgrade Reaction value assumes the preceding sections are followed.

The excavation of the foundation elements should carefully be implemented to limit disturbance of the native material and/or select fill and allow for proper mixing of lime and Roadbond with the soils. Prior to placement of the reinforcing steel within the foundation locations, compaction of the bearing surface should be verified. Compaction should be at least 98% of the ASTM D 698 maximum dry density at minus two (-2) and plus three (+3) percent of the optimum moisture content. We recommend that all footings or grade beams extend a minimum of 18 inches below final grade. This recommendation is to reduce surface water migration below the

foundation elements and develop proper end bearing and is not based on structural considerations.

A monolithic mat/stiffened-beam type foundation will also be suitable for supporting the structure, provided the recommendations contained herein are followed. Beams around the perimeter and criss-crossing the interior provide stiffness, creating a rigid slab system. The beam depth, spacing, and reinforcement must be determined by a structural engineer, based on slab configuration, loading, and the support characteristics of the underlying soils.

The Building Research Advisory Board (BRAB) contains published design procedures for slabs on expansive soils. These procedures are intended for residential type structures, but may be used as a guide for other small structures. This method utilizes an effective PI of the subsurface soils and a Regional Climatic Index. The recommended design values for the building pad if prepared as recommended in Section 3.3, "Building Pad Preparation" are as follows:

BRAB Properties	Modified Subgrade
Climatic Rating (Cw):	17
Allowable Bearing Pressure (psf)	4,500
Effective PI:	21
Support Index ©	0.94
P.V.R. (inches)	1 inch

A reinforced and stiffened slab distributes loads over a large area giving low contact stresses and a high factor of safety against shear failure for the slab as a unit. A conservative approach to design of the grade beams from the standpoint of soil-structure interaction is to consider them to be continuous footings, in which case a maximum allowable bearing pressure of 4,500 psf should be used to design beams supported by the Select Fill or compacted modified subgrade materials. The beams should be at least 12 inches wide and should extend at least 18 inches below the surrounding ground surface.

Post construction settlements for shallow foundations should be about one (1) inch, provided that the site is prepared in accordance with the recommendations contained in this report. Settlement response of the foundation system will be influenced more by the quality of construction than by soil-structure interaction.

If moisture sensitive flooring is to be used within this building, we recommend placing a moisture barrier consisting of polyethylene sheeting, 20 mil thickness directly on top of the prepared treated subgrade and the slab-on-grade flooring. Special precautions will be required of the concrete contractor to prevent edges of the slab from curling.

OVER-EXCAVATION AND LIME TREATMENT RECOMMENDATIONS

As indicated previously, 6 feet of over-excavation and modification of the native fat clay soil will be required to reduce the PVR to 1-inch. We recommend that the excavation extend 5 feet beyond the building plan area to incorporate any exterior slabs so that tripping hazards are minimized.

Particular attention is required in the processing of the onsite fat clay soil with lime and Roadbond EN-1. Based on our experience and research, we recommend the following.

The onsite soils should be over-excavated to a depth of 6 feet and placed on a nearby construction area. The clay soils should be allowed to dry sufficiently so that the clay balls can be pulverized to ½ inch or less. We recommend laying the clay out in thicknesses of no more than 10 inches, so the mixing process can be thorough.

Hydrated or slurried lime equating to 6 percent by weight should be added to the clay. Pre-mixed water and Roadbond mixture should be added to the clay and lime such that the moisture content is approximately 4 percent above the optimum moisture content. The clay, lime and roadbond should then be mixed by a pulverizer, or bladed equipment combined with sheep's-foot compactors. This will require numerous passes to get an adequate mixture.

The lime/soil/roadbond mixture should be left in place and allowed to mellow for a minimum of 24 hours. This mellowing period is extremely important for the pozzolanic reaction to take place. Once the material has had sufficient time to mellow, it can be placed in 8-inch loose horizontal lifts into the excavation compacted to 98% of the maximum dry density and within 2% of the optimum moisture content determined by the standard proctor (ASTM D-698). Generally one field density per lift for each 2,000 square feet of compacted area should be required.

OTHER DESIGN CONSIDERATIONS

Flexible Connections for Utilities and Pipes

Due to the possible differential movement potential between the prepared building pad and the untreated native fat clay soil, we recommend the use of flexible pipes and couplings for all utilities and pipes.

Temporary Excavations

All excavations must comply with applicable local, state, and federal safety regulations including the current Occupational Safety and Health Administration (OSHA) Excavation and Trench Safety Standards. In general, construction site safety is the sole responsibility of the Contractor, who shall also be solely responsible for the means, methods, and sequencing of construction operations. We are providing the information below solely as a service to our client. Under no

circumstances should the information provided be interpreted to mean that Kleinfelder is assuming responsibility for construction site safety or the Contractor's activities; such responsibility is not being implied and should not be inferred.

The Contractor should be aware that slope height, slope inclination, or excavation depths (including underground tank excavations) should in no case exceed those specified in local, state, and/or federal safety regulations (e.g., OSHA Health and Safety Standards for Excavations, 29 CFR Section 1926, Subpart P, or successor regulations; see following chart). Such regulations are strictly enforced and, if they are not followed, the Owner, Contractor, and/or earthwork and utility subcontractors could be liable for substantial penalties.

The on site soils are anticipated to consist predominately of clay soils. These soils are considered a Type B material due to their consistencies based on the OSHA Standards. OSHA recommends the following maximum temporary slope inclinations for excavations 20 feet or less in depth.

- Type B OSHA Soil - Maximum temporary slope inclination of 1(h):1(v) or flatter.

Steeper cut slopes may be utilized for excavations less than 5 feet deep depending on the strength, moisture content, and homogeneity of the soils as observed in the field. Flatter slopes and/or trench shields may be required if loose, cohesionless soils and/or groundwater are encountered along the slope face. Actual safe slope conditions should be determined and monitored in the field at the time of construction by an OSHA-qualified "competent person", employed by the contractor. This "competent person" should have numerous years of experience with slope stability and OSHA classification.

Landscaping and Drainage

The owner and design team should be made aware that placing large bushes and trees adjacent to the structure may contribute to future distress to the foundation system. Above grade planter boxes should be considered in lieu of landscape beds and islands. If this landscape approach is not acceptable, vegetation placed in landscape beds adjacent to the structure should be limited to plants and shrubs that will not exceed a mature height of about 3 to 4 feet. Large bushes and trees that will generally exceed these heights should be planted at a reasonable distance away from the structure so that their canopy or "drip line" does not extend over the structure when the tree reaches maturity. Cut-off walls or barriers may be considered to prevent roots from existing trees and vegetation from affecting the foundations of the proposed structure. Watering of vegetation should be performed in a timely and controlled manner and prolonged watering should be avoided.

Final grades should be sloped at a minimum of 5% away from the building in insure that water does not pond within the building footprint.

Settlements

Estimated total settlement is 1 inch for the maximum anticipated loads, and differential movement should not exceed ½ inch across a horizontal distance of 50 feet. Additional movements of foundation or floor slabs may occur if the moisture content of the subgrade soils changes after construction is complete.

Settlement response of a grade supported foundation is influenced more by the quality of construction than by soil-structure interaction. Therefore, it is essential that the recommendations for foundation construction be strictly followed throughout the building pad and foundation construction phases. Kleinfelder must observe the foundation excavations before reinforcing steel and concrete are placed. Any foundations containing soft, loose or unacceptable materials should be cleaned and re-inspected.

Select Fill Specifications

Imported select fill should be used above the rough graded elevations to come up to design grades. This material should conform to that specified in the previously referenced Terracon report.

LIMITATIONS

The recommendations contained in this report are based on our field explorations, laboratory tests, and our understanding of the proposed construction. The subsurface data used in the preparation of this report was obtained from the borings advanced during the field investigation. It is anticipated that some variations in the soils will exist between the boring locations. The nature and extent of variations may not be evident until construction occurs. If any conditions are encountered during construction that are significantly different from those described in this report, we should be immediately notified so that we may make revisions to recommendations contained in this report. In addition, if the scope of the proposed construction changes from that described in this report, our firm should also be notified.

This report was prepared in accordance with generally accepted standards of practice at the time the report was written. No warranty, express or implied, is made. It is the Client's responsibility to see that all parties to the project including the Designer, Contractor, and Subcontractors are made aware of this report in its entirety. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk. Other standards or documents referenced in any given standard cited in this report, or otherwise relied upon by the authors of this report, are only mentioned in the given standard; they are not incorporated into it or "included by reference" as that latter term is used relative to contracts or other matters of law.

This report may be used only by the client and only for the purposes stated within a reasonable time from its issuance, but in no event later than one year from the date of the report. Land or facility use, on and off-site conditions, regulations, or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify Kleinfelder of such intended use. Based on the intended use of the report, Kleinfelder may require that additional work be performed and that an updated report be issued. Non- compliance with any of these requirements by the client or anyone else will release Kleinfelder from any liability resulting from the use of this report by any unauthorized party and client agrees to defend, indemnify, and hold harmless Kleinfelder from any claim or liability associated with such unauthorized use or non-compliance.

The scope of this investigation does not include specific activities and investigations designed to reveal whether a solid waste landfill exists upon the subject land tract other than what may be determined through incidental encounter in the soil borings. Such investigations designed for this specific purpose are described and required by TCEQ rules (30 TAC 330.961-330.963) in accordance with HB 2537 (1993). The scope of this investigation does not include environmental evaluations of surface and subsurface conditions, and the lack of that information in this report does not indicate an absence of potential environmental problems.

CLOSURE

The recommendations presented herein are only valid if Kleinfelder personnel are engaged to observe and test materials during the field activities during construction phase of this project.

Please call us if you have any questions or need additional information.

Sincerely,
KLEINFELDER

Yanfeng LI, Ph.D., P.E.
Project Manager

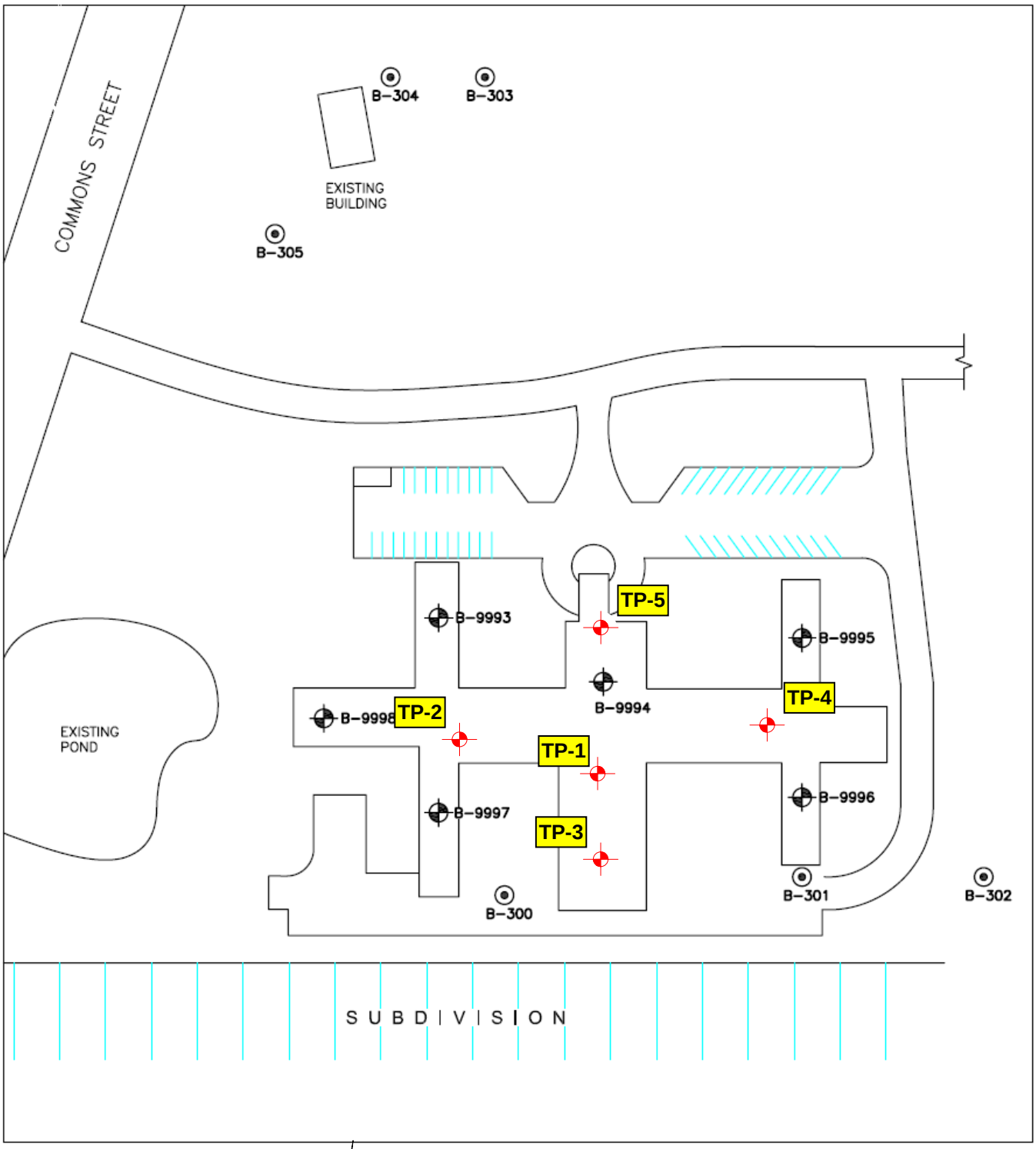
Clint J. Harris, P.E.
Regional Manager

5/23/07

KLEINFELDER

SUNDANCE NURSING HOME
NEW BRAUNFELS, TEXAS
Kleinfelder Project No. 82926

TEST PIT LOCATION MAP



All Test Pit Locations are Approximate

N

BASE DRAWING PROVIDED BY CLIENT
No Known Scale

FIGURE 1

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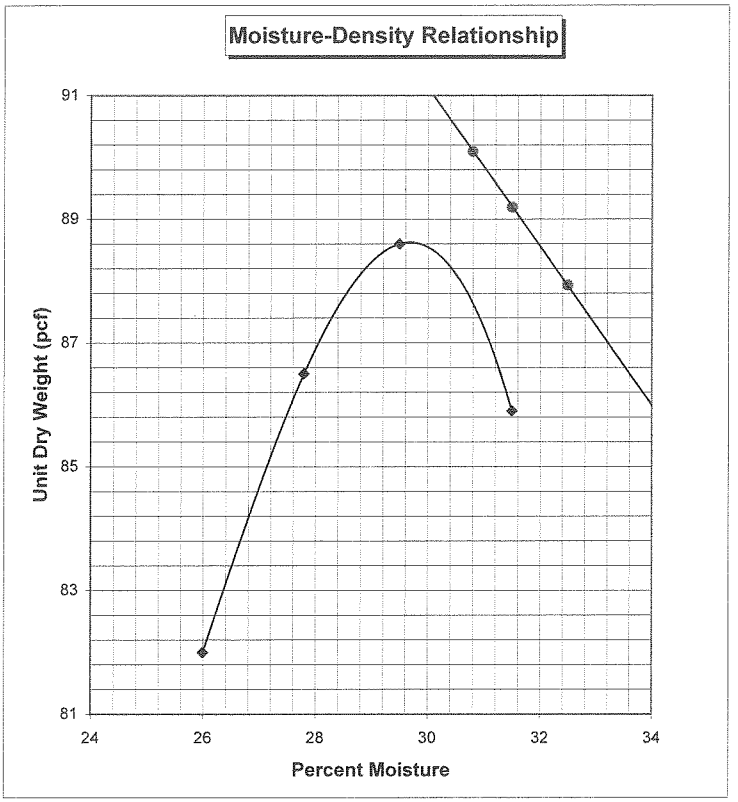
TO: Saddleback Group, LLC
Attn.: Mr. Mark Fritz
555 Round Rock West Dr., Suite 390
Round Rock, Texas 78681

PROJECT: Sundance Nursing Center

PROJECT NO.: 82926
DATE: 5-21-07
CONTROL NO.: 041723 B

Test Method:	**ASTM D 698-00**
Sample Number:	S-16619 'Straight'
Sample Location:	TP 1
Sampled By:	D. Potteiger
Date Sampled:	4-17-07
Test Method:	**ASTM D 4318-00** **ASTM D 2487-00** **ASTM D 1140-00**
Material Description:	Dark Gray Fat Clay
Liquid Limit:	78
Plastic Limit:	21
Plasticity Index:	57
Retained on 3":	0
Retained on #4:	0
Retained on #40:	1.3
Retained on #200:	5.0
Group Symbol:	CH
Preparation Method:	Moist
Rammer:	Mechanical
Compaction Method:	A
Oversize Sieve :	#4
% By Weight Oversize:	NA
Bulk Specific Gravity:	NA



Compaction Test

Lab Compacted Samples (Finer Fraction)
Maximum Dry Unit Weight (pcf): 88.6
Optimum Moisture Content (%): 29.6

COPIES TO: 1-Above

Reviewed By: _____

Clint Harris, P.E.

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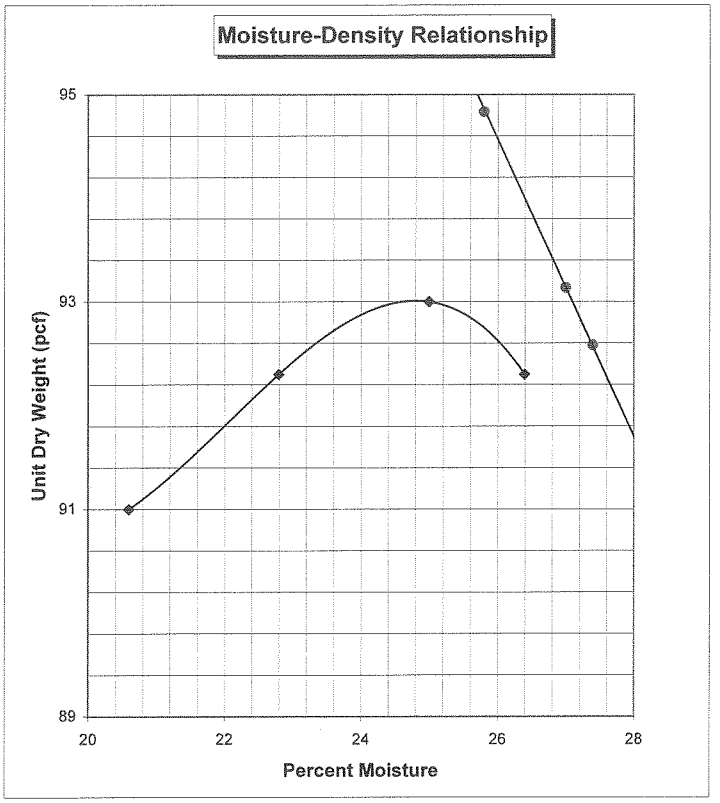
PROJECT: Sundance Nursing Center

PROJECT NO.: 82926
DATE: 5-21-07
CONTROL NO.: 041723 C

Test Method:	**ASTM D 698-00**
Sample Number:	S-16619 'Combo'
Sample Location:	50% TP1 & 50% TP 2 thru 5
Sampled By:	D. Potteiger
Date Sampled:	4-17-07
Test Method:	**ASTM D 4318-00** **ASTM D 2487-00** **ASTM D 1140-00**
Material Description:	Fat Clay -- Mixed Colors Dark Gray, Orange, Tan
Liquid Limit:	66
Plastic Limit:	16
Plasticity Index:	50
Retained on 3":	0
Retained on #4:	1.0
Retained on #40:	3.0
Retained on #200:	7.0
Group Symbol:	CH
Preparation Method:	Moist
Rammer:	Mechanical
Compaction Method:	A
Oversize Sieve :	#4
% By Weight Oversize:	NA
Bulk Specific Gravity:	NA



Compaction Test

Lab Compacted Samples (Finer Fraction)
Maximum Dry Unit Weight (pcf): 93.0
Optimum Moisture Content (%): 25.0

COPIES TO: 1-Above

Reviewed By: MH

Clint Harris, P.E.

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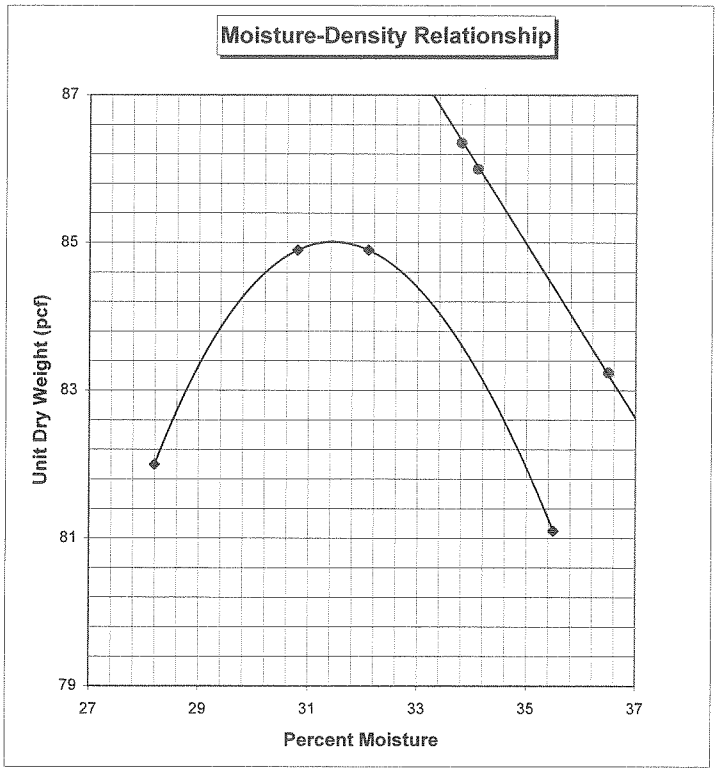
PROJECT: Sundance Nursing Center

PROJECT NO.: 82926
DATE: 5-21-07
CONTROL NO.: 041723 D

Test Method:	**ASTM D 698-00**
Sample Number:	S-16619 'Straight' With 5% Lime and 3% Road Bond
Sample Location:	TP 1
Sampled By:	D. Potteiger
Date Sampled:	4-17-07
Test Method:	**ASTM D 4318-00** **ASTM D 5102-96**
Material Description:	Lime and Road Bond Treated Dark Gray Clay
Liquid Limit:	87
Plastic Limit:	49
Plasticity Index:	38
Preparation Method:	Moist
Rammer:	Mechanical
Compaction Method:	A
Oversize Sieve :	#4
% By Weight Oversize:	NA
Bulk Specific Gravity:	NA



Strength Specimens

	Compressive Strength (psi)
#1	111.8
#2	99.8
#3	103.8
#4	110.8
#5	107.8
Average:	*106.8*

Initial mellowing time: 24 hrs. 4"x4.5" specimens compacted according to Procedure B to approximately 95% of Maximum Dry Unit Weight and then cured for 7 days.

Compaction Test

Lab Compacted Samples (Finer Fraction)
Maximum Dry Unit Weight (pcf): 85.0
Optimum Moisture Content (%): 31.5

Reviewed By: _____

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COPIES TO: 1-Above

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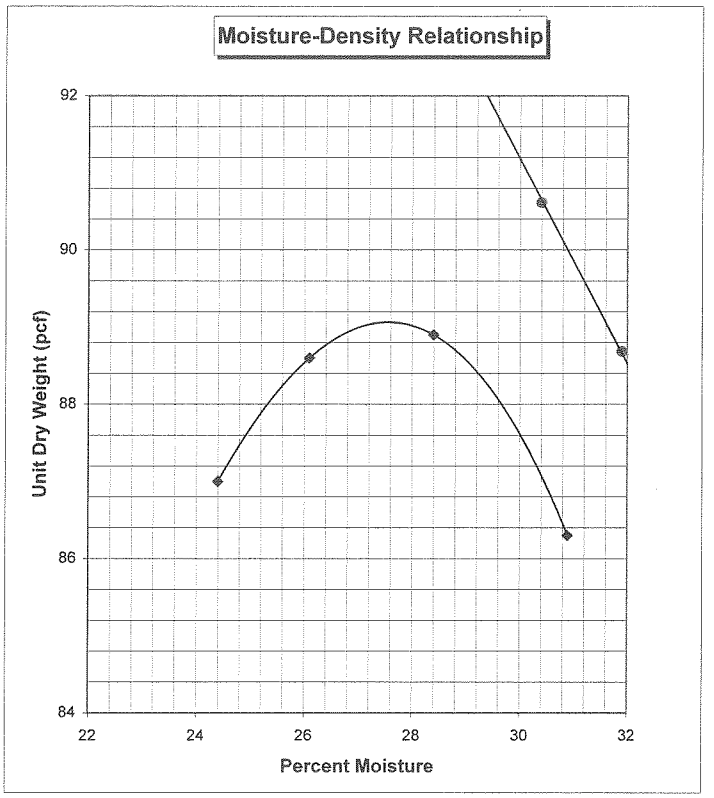
CONTROL NO.: 041723 E

Test Method:	**ASTM D 698-00**
Sample Number:	S-16619 'Combo' With 5% Lime and 3% Road Bond
Sample Location:	50% TP1 & 50% TP 2 thru 5
Sampled By:	D. Potteiger
Date Sampled:	4-17-07
Test Method:	**ASTM D 4318-00** **ASTM D 5102-96**
Material Description:	Lime and Road Bond Mixed Dark Gray Orange, and Tan Clay
Liquid Limit:	72
Plastic Limit:	42
Plasticity Index:	30
Preparation Method:	Moist
Rammer:	Mechanical
Compaction Method:	A
Oversize Sieve :	#4
% By Weight Oversize:	NA
Bulk Specific Gravity:	NA



Strength Specimens

	Compressive Strength (psi)
#1	97.8
#2	104.8
#3	91.8
#4	92.8
#5	105.8
Average:	*98.6*

Compaction Test

Lab Compacted Samples (Finer Fraction)
Maximum Dry Unit Weight (pcf): 89.1
Optimum Moisture Content (%): 27.6

Initial mellowing time: 24 hrs. 4"x4.5" specimens compacted according to Procedure B to approximately 95% of Maximum Dry Unit Weight and then cured for 7 days.

Reviewed By: _____

Clint Harris, P.E.

COPIES TO: 1-Above

KLEINFELDER
An Employee Owned Company
3601 Manor Road Austin, Texas 78723 (512)926-6650

TO: Saddleback Group, LLC
Attn.: Mr. Mark Fritz
555 Round Rock West Dr., Suite 390
Round Rock, Texas 78681

PROJECT: Sundance Nursing Center

PN NO.: 82926
DATE: 5-21-07
CONTROL NO.: 041723 F

Report of: Determining Stabilization Ability of Lime by Soil pH

Test Methods: TEX-121-E Part III, TEX-128-E

Sample Location: TP 1

Lime Source: Chemical Lime - New Braunfels, TX

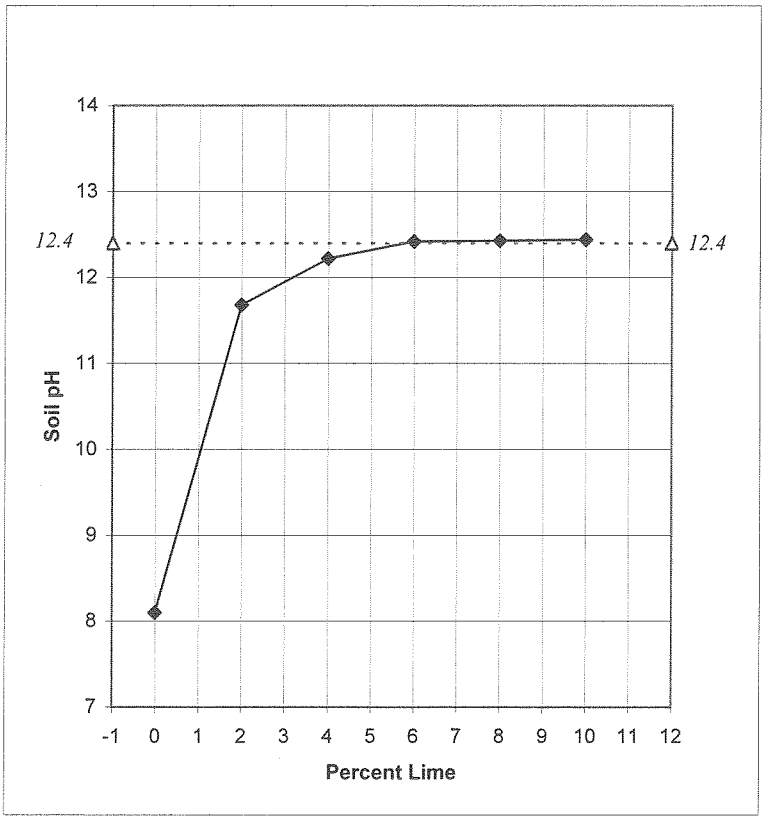
Sample Number: S-16619

Sampled By: D. Potteiger

Date Sampled: 4-17-07

Material: Dark Gray Fat Clay

% Lime	pH
0	8.10
2	11.68
4	12.22
6	12.42
8	12.43
10	12.44



Reviewed By: MH

Copies To: 1-Above

Clint Harris, P.E.

KLEINFELDER
An Employee Owned Company
3601 Manor Road Austin, Texas 78723 (512)926-6650

TO: Saddleback Group, LLC
Attn.: Mr. Mark Fritz
555 Round Rock West Dr., Suite 390
Round Rock, Texas 78681

PROJECT: Sundance Nursing Center

PN NO.: 82926
DATE: 5-21-07
CONTROL NO.: 041723 G

Report of: Determining Stabilization Ability of Lime by Soil pH

Test Methods: TEX-121-E Part III, TEX-128-E

Sample Location: 50% TP1 & 50% TP 2 thru 5

Lime Source: Chemical Lime - New Braunfels, TX

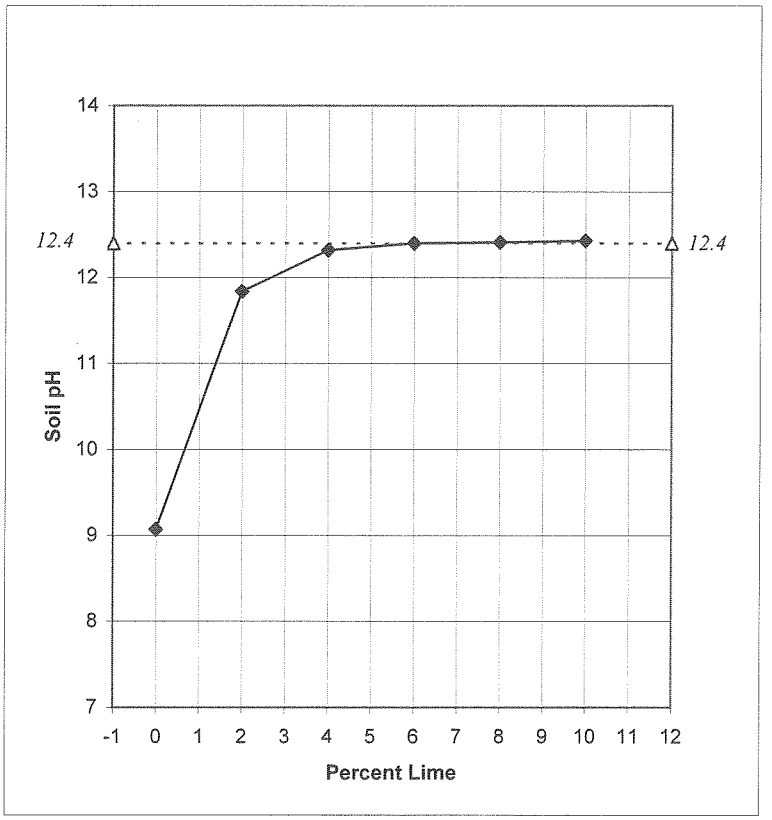
Sample Number: S-16619 Combo

Sampled By: D. Potteiger

Date Sampled: 4-17-07

Material: Mixture of all Material

% Lime	pH
0	9.07
2	11.84
4	12.32
6	12.40
8	12.41
10	12.43



Reviewed By:

Clint Harris, P.E.

Copies To: 1-Above

KLEINFELDER

16619 Natural 5% Lime/3% Road Base

3601 Manor Road Austin, Texas 78723 (512)926-6650

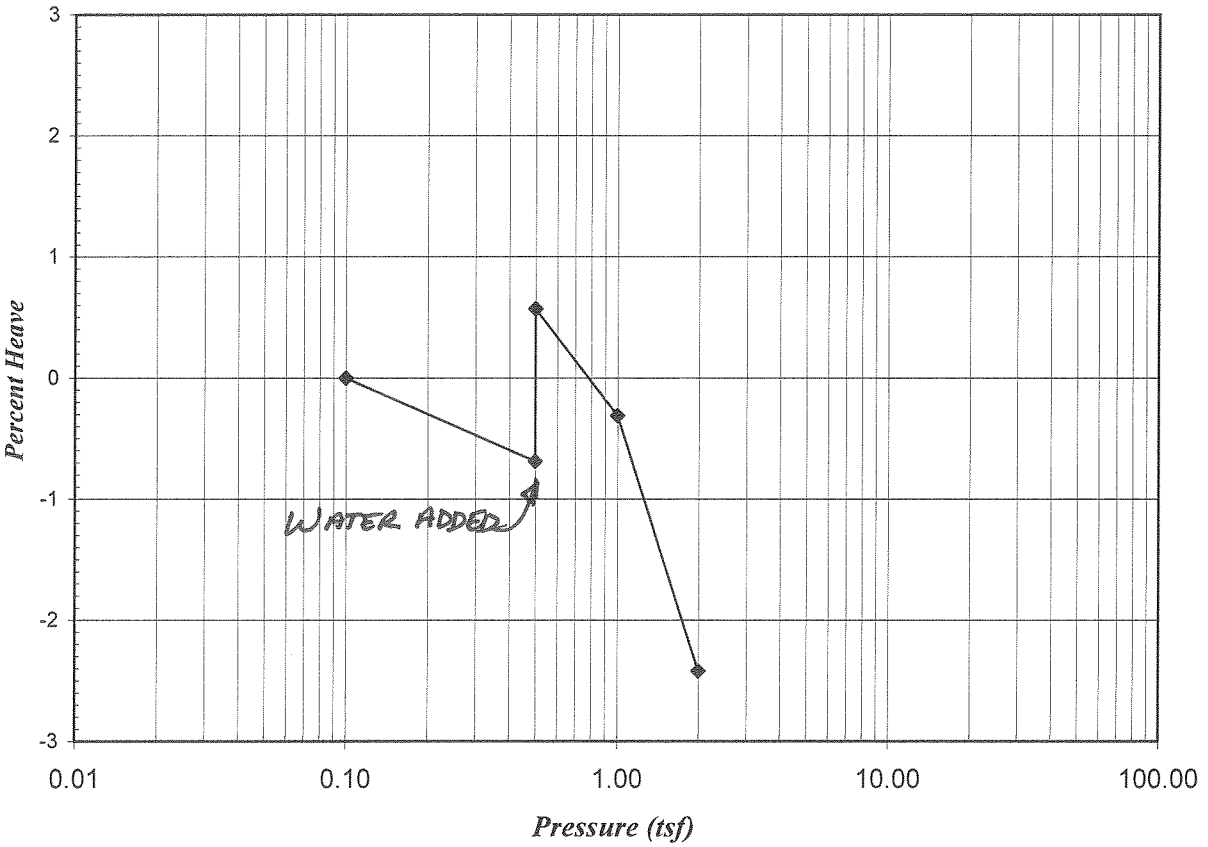
TO: Saddleback Group, LLC
Attn.: Mr. Mark Fritz
555 Round Rock West Dr., Suite 390
Round Rock, Texas 78681

PROJECT: Sundance Nursing Center

PN NO.: 82926
DATE: 5-21-07
CONTROL NO.: 041723 H

REPORT OF: Consolidation (Denver Method)
MATERIAL: Dark Gray Fat Clay (PI = 57)
LOCATION: TP 1
SAMPLE ID: S-16619

Percent Heave vs. Log(P)



Reviewed By: _____

Clint Harris, P.E.

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KLEINFELDER

16619 Natural 5% Lime/3% Road Base

3601 Manor Road Austin, Texas 78723 (512)926-6650

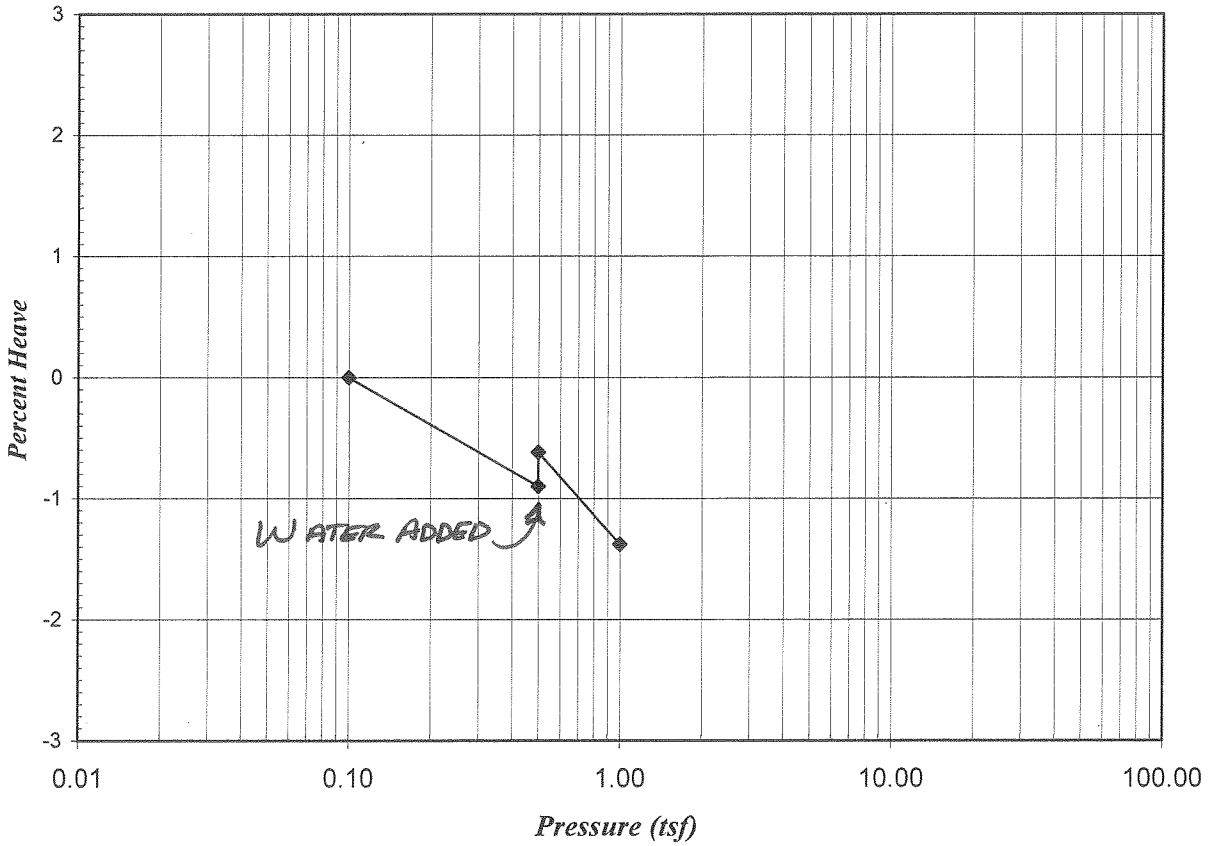
TO: Saddleback Group, LLC
Attn.: Mr. Mark Fritz
555 Round Rock West Dr., Suite 390
Round Rock, Texas 78681

PROJECT: Sundance Nursing Center

PN NO.: 82926
DATE: 5-21-07
CONTROL NO.: 041723 I

REPORT OF: Consolidation (Denver Method)
MATERIAL: Fat Clay -- Mixed Dark Gray, Orange, Tan
LOCATION: Combo 50% TP 1 & 50% TP 2 thru 5
SAMPLE ID: S-16619 thru S-16622

Percent Heave vs. Log(P)



Reviewed By: MK

Clint Harris, P.E.

Copies To: 1-Above

KLEINFELDER

16619 Natural 5% Lime/3% Road Base

3601 Manor Road Austin, Texas 78723 (512)926-6650

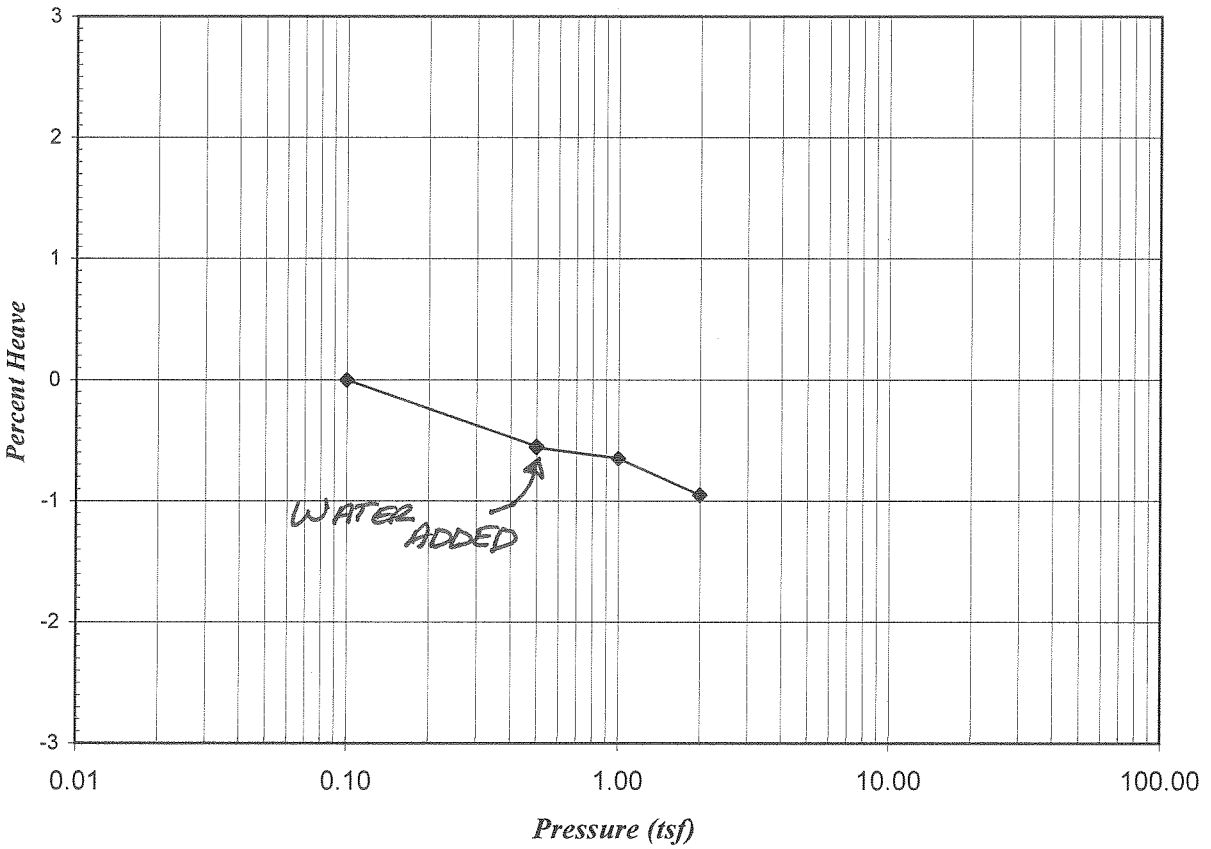
TO: Saddleback Group, LLC
Attn.: Mr. Mark Fritz
555 Round Rock West Dr., Suite 390
Round Rock, Texas 78681

PROJECT: Sundance Nursing Center

PN NO.: 82926
DATE: 5-21-07
CONTROL NO.: 041723 J

REPORT OF: Consolidation (Denver Method)
MATERIAL: Fat Clay -- Mixed Dark Gray, Orange, Tan with 5% Lime and 3% Road Bond
LOCATION: Combo 50% TP 1 & 50% TP 2 thru 5
SAMPLE ID: S-16619 thru S-16622

Percent Heave vs. Log(P)



Reviewed By: MHF

Copies To: 1-Above

Clint Harris, P.E.

KLEINFELDER

16619 Natural 5% Lime/3% Road Base

3601 Manor Road Austin, Texas 78723 (512)926-6650

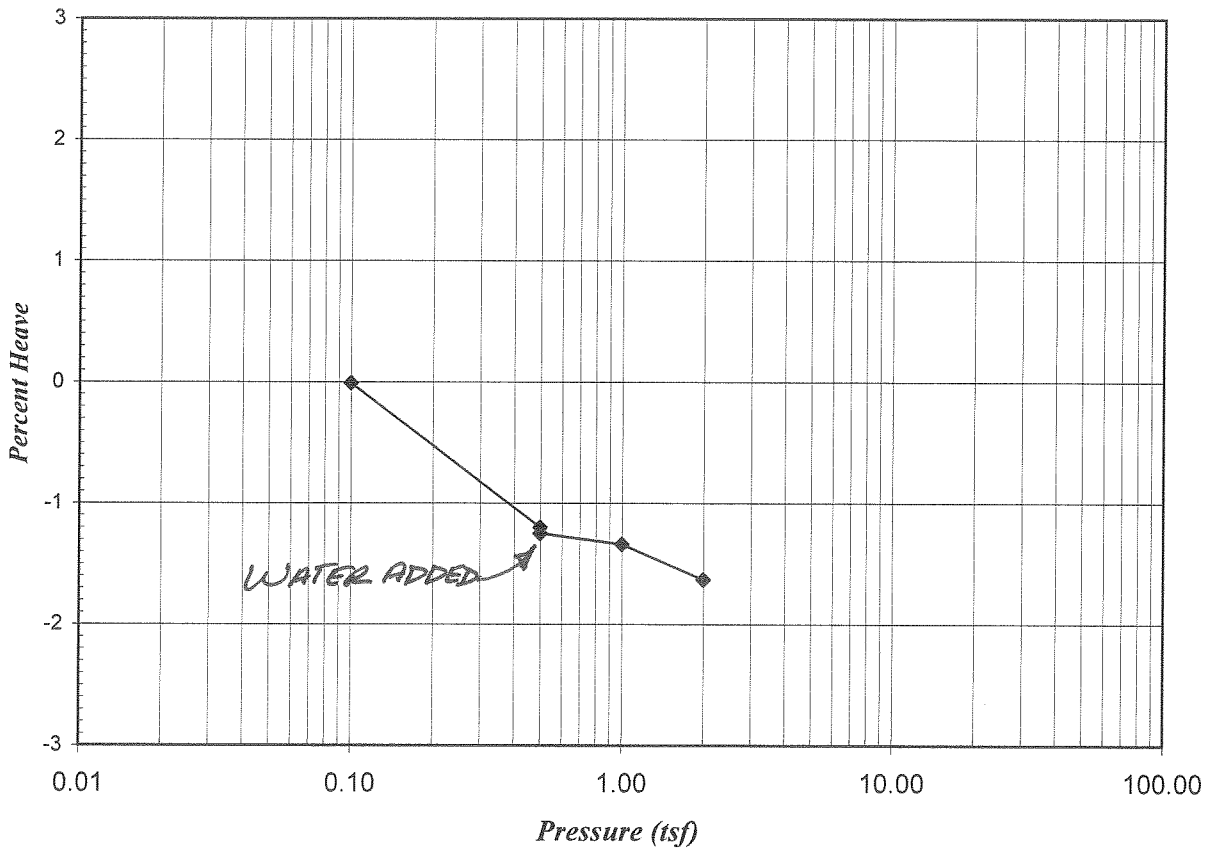
TO: Saddleback Group, LLC
Attn.: Mr. Mark Fritz
555 Round Rock West Dr., Suite 390
Round Rock, Texas 78681

PROJECT: Sundance Nursing Center

PN NO.: 82926
DATE: 5-21-07
CONTROL NO.: 041723 K

REPORT OF: Consolidation (Denver Method)
MATERIAL: Dark Gray Fat Clay with 5% Lime and 3% Road Bond
LOCATION: TP 1
SAMPLE ID: S-16619

Percent Heave vs. Log(P)



Reviewed By:

Clint Harris, P.E.

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KLEINFELDER
An Employee Owned Company
3601 Manor Road Austin, Texas 78723 (512)926-6650

FALLING HEAD, CONSTANT TAILWATER FLEXIBLE WALL PERMEABILITY TEST

Client: Saddleback Group, LLC
Attn.: Mr. Mark Fritz
555 Round Rock West Drive, Suite 390\
Round Rock, Texas 78681

Project: Sundance Nursing Center

Sample No.: S-16619
Project No.: 82926
Report No.: 041723 M

Tested by: Austin
Report Date: May 21, 2007
Page: 1 of 1

Sample Description: Dark Gray Fat Clay with 5% Lime and 3% Road Bond
Sample Location: TP 1
Test Method: Corps of Engineer's Manual

Sampled By: D. Potteiger
Date Sampled: 4-17-07

Initial Set-up Date: May 9, 2007

Sample: remolded
Permeant: Tap Water

Final Moisture Content

Wt. of Can (gm)	101.68
Wt. of Can and Wet Soil (gm)	1765.75
Wt. of Can and Dry Soil (gm)	1418.92
Water Content (%)	26.3

Test Conditions

Inflow Pressure (psi) (P2)	10.0
Outflow Pressure(psi) (P3)	0.0
Confining Pressure (psi) (P1)	15.0
Inflow Pipette Area (cm²) (a)	0.8772
Outflow Pipette Area (cm²) (a)	0.8772
Height out (cm) (Hout)	22.1

Equations

Z = datum height above table (cm)
Z = 48.0 - 1.14 * (R)
R = pipette reading
h = head
h = (P2) * 70.3cm/psi + Z - (H out)
K = hydraulic conductivity
K = (a * L * ln (h in / h out)) / (A * (t2 - t1))

Sample Characteristics

	Initial	Final
Total Weight (gm)	1620.50	1664.07
Diameter (cm) (d)	10.10	10.10
Area (cm2)	80.1	80.1
Height (cm) (L)	11.40	11.60
Specific Gravity		2.60
Dry Weight (gm)		1317.24

	Initial	Final
Volume (cc)	913.35	929.37
Moisture Content (%)	23.0	26.3
Void Ratio	0.80	0.83
Saturation (%)	75	82
Total Unit Wt. (pcf)	110.7	111.7
Dry Unit Wt. (pcf)	90.0	88.4

Initial						Final						Elapsed	Total	Total	Outflow	Hydraulic
Day	Time (t1)	Temp (°C)	Inflow Reading (R)	Outflow Reading	Head (cm)	Day	Time (t2)	Temp (°C)	Inflow Reading (R)	Outflow Reading	Head (cm)	Time (t2 - t1) (s)	Inflow (cc)	Outflow (cc)	Inflow O/I	Conductivity (cm/s)
135	08:54	23.5	0.6	2.2	728.6	135	08:56	23.5	12.4	18.9	715.2	120	10.4	14.6	1.42	1.8E-05
135	08:58	23.5	0.8	2.8	728.4	135	09:00	23.5	13.7	15.0	713.7	120	11.3	10.7	0.95	2.0E-05
135	09:02	23.5	0.3	2.4	729.0	135	09:04	23.5	1.7	14.8	727.4	120	1.2	10.9	8.86	2.1E-06
135	09:06	23.5	0.8	2.2	728.4	135	09:08	23.5	13.1	14.7	714.4	120	10.8	11.0	1.02	1.9E-05
135	09:10	23.5	0.8	2.4	728.4	135	09:12	23.5	13.0	14.8	714.5	120	10.7	10.9	1.02	1.9E-05
135	09:14	23.5	0.7	2.3	728.5	135	09:16	23.0	12.8	14.5	714.7	120	10.6	10.7	1.01	1.9E-05
136	09:15	22.5	1.3	0.0	727.8	136	09:17	22.5	13.2	12.0	714.3	120	10.4	10.5	1.01	1.9E-05
136	09:19	22.5	0.8	0.0	728.4	136	09:21	22.5	14.0	12.8	713.3	120	11.6	11.2	0.97	2.1E-05
136	09:25	22.5	2.7	0.0	726.2	136	09:27	22.5	14.7	12.6	712.5	120	10.5	11.1	1.05	1.9E-05
136	09:30	22.5	3.1	0.0	725.8	136	09:32	22.5	15.2	12.4	712.0	120	10.6	10.9	1.02	1.9E-05
136	09:33	22.5	3.1	0.0	725.8	136	09:35	22.5	14.7	12.0	712.5	120	10.2	10.5	1.03	1.8E-05

Hydraulic Conductivity at 20 ° C, cm/s (average of the last 4 readings) 1.9E-05
Average Hydraulic Gradient 63

Reviewed By: DP
KLEINFELDER
Cliff Harris, P.E.

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KLEINFELDER

An Employee Owned Company

3601 Manor Road Austin, Texas 78723 (512)926-6650

FALLING HEAD, CONSTANT TAILWATER FLEXIBLE WALL PERMEABILITY TEST

Client: Saddleback Group, LLC
Attn.: Mr. Mark Fritz
555 Round Rock West Drive, Suite 390\
Round Rock, Texas 78681

Project: Sundance Nursing Center

Sample No.: S-16619 Combo **Tested by:** Austin
Project No.: 82926 **Report Date:** May 21, 2007
Report No.: 041723 L **Page:** 1 of 1

Sample Description: Dark Brown Fat Clay with 5% Lime and 3% Road Bond (combo)
Sample Location: 50% TP 1 & 50% TP2 thru 5
Test Method: Corps of Engineer's Manual

Sampled By: D. Potteiger
Date Sampled: 4-17-07

Initial Set-up Date: May 9, 2007

Sample: remolded
Permeant: Tap Water

Final Moisture Content

Wt. of Can (gm)	107.80
Wt. of Can and Wet Soil (gm)	1808.85
Wt. of Can and Dry Soil (gm)	1457.24
Water Content (%)	26.1

Test Conditions

Inflow Pressure (psi) (P2)	10.0
Outflow Pressure(psi) (P3)	0.0
Confining Pressure (psi) (P1)	15.0
Inflow Pipette Area (cm²) (a)	0.8772
Outflow Pipette Area (cm²) (a)	0.8772
Height out (cm) (Hout)	21.5

Equations

Z = datum height above table (cm)
Z = 48.0 - 1.14 * (R)
R = pipette reading
h = head
h = (P2) * 70.3cm/psi + Z - (H out)
K = hydraulic conductivity
K = (a * L * ln (h in / h out)) / (A * (t2 - t1))

Sample Characteristics

	Initial	Final
Total Weight (gm)	1642.35	1701.05
Diameter (cm) (d)	10.10	10.10
Area (cm2)	80.1	80.1
Height (cm) (L)	11.50	11.50
Specific Gravity		2.60
Dry Weight (gm)		1349.44

	Initial	Final
Volume (cc)	921.36	921.36
Moisture Content (%)	21.7	26.1
Void Ratio	0.78	0.78
Saturation (%)	73	87
Total Unit Wt. (pcf)	111.2	115.2
Dry Unit Wt. (pcf)	91.4	91.4

Initial						Final						Elapsed	Total	Total	Outflow	Hydraulic
Day	Time (t1)	Temp (°C)	Inflow Reading (R)	Outflow Reading	Head (cm)	Day	Time (t2)	Temp (°C)	Inflow Reading (R)	Outflow Reading	Head (cm)	Time (t2 - t1) (s)	Inflow (cc)	Outflow (cc)	Inflow O/I	Conductivity (cm/s)
136	08:56	22.5	1.0	0.0	728.8	136	08:56	22.5	13.3	23.0	714.7	45	10.8	20.2	1.87	5.1E-05
136	08:58	22.5	0.8	0.0	729.0	136	08:58	22.5	12.3	21.6	715.9	45	10.1	18.9	1.88	4.8E-05
136	09:00	22.5	0.6	0.0	729.2	136	09:01	22.5	16.3	20.0	711.3	60	13.8	17.5	1.27	4.9E-05
136	09:02	22.5	0.6	0.0	729.2	136	09:03	22.5	21.0	23.0	706.0	60	17.9	20.2	1.13	6.4E-05
136	09:06	22.5	1.0	0.0	728.8	136	09:07	22.5	17.2	19.0	710.3	60	14.2	16.7	1.17	5.1E-05
136	09:08	22.5	1.0	0.0	728.8	136	09:09	22.5	20.8	21.5	706.2	60	17.4	18.9	1.09	6.2E-05
136	09:15	2.5	1.3	0.0	728.4	136	09:17	22.5	13.2	12.0	714.9	120	10.4	10.5	1.01	2.3E-05
136	09:19	22.5	0.8	0.0	729.0	136	09:21	22.5	14.0	12.8	713.9	120	11.6	11.2	0.97	2.1E-05
136	09:25	22.5	2.7	0.0	726.8	136	09:27	22.5	14.7	12.6	713.1	120	10.5	11.1	1.05	1.9E-05
136	09:30	22.5	3.1	0.0	726.4	136	09:32	22.5	15.2	12.4	712.6	120	10.6	10.9	1.02	1.9E-05
136	09:33	22.5	3.1	0.0	726.4	136	09:35	22.5	14.7	12.0	713.1	120	10.2	10.5	1.03	1.8E-05

Hydraulic Conductivity at 20 ° C, cm/s (average of the last 4 readings) **1.9E-05**

Average Hydraulic Gradient 63

Reviewed By:

KLEINFELDER

Clint Harris, P.E.

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