GEOTECHNICAL EXPLORATION
DAYTON MIAMI WELL FIELD EXPANSION
DAYTON, OHIO

Prepared for:

TETRA TECH
CINCINNATI, OHIO

Prepared by:

UES
CINCINNATI, OHIO

Date:

APRIL 25, 2024

Geotechnology Project No.:

J045355.01

SAFETY
TEAMWORK
RESPONSIVENESS
INTEGRITY
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April 25, 2024

Mr. James M. Brescol, PE
Tetra Tech
250 W. Court Street
Suite 200W
Cincinnati, Ohio 45202

Re: Geotechnical Exploration
Dayton Miami Well Field Expansion
Dayton, Ohio
Project No. J045355.01

Dear Mr. Brescol:

Presented in this report are the results of our geotechnical exploration completed for the Dayton Miami Well Field Expansion located in Dayton, Ohio. Our services were performed in general accordance with our Proposal No. P045355.01, which was dated February 20, 2024, and authorized by the Subconsultant Services Agreement, dated February 22, 2024.

We appreciate the opportunity to provide the geotechnical services for this project. If you have any questions regarding this report, or if we may be of any additional service to you, please do not hesitate to contact us.

Respectfully submitted,
UES

Daniel A. Furgason, PE
Senior Project Manager

Suraj Khadka, PE
Project Manager

DAF/SK:daf/tmk

Copies submitted: Tetra Tech (email)

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DAYTON, OHIO

April 25, 2024 | Project No. J045355.01

1.0 INTRODUCTION

Geotechnology, LLC, DBA UES (UES) prepared this geotechnical exploration report for Tetra Tech for the Dayton Miami Well Field Expansion Project located in Dayton, Ohio.

The purposes of the geotechnical exploration were: to evaluate the general subsurface profile at the site and the engineering properties of the soils; and to develop recommendations for the geotechnical aspects of the design and construction of the project, as defined in our proposal. Our scope of services included site reconnaissance, geotechnical borings, field infiltration testing, laboratory testing, engineering analyses, and preparation of this report.

2.0 PROJECT INFORMATION

The following project information was derived from:

- The “Dayton Miami Well Field Expansion-Bore Locations”, undated, prepared by Tetra Tech;
- The Proposed Pond Detail and Section plan, undated, prepared by Tetra Tech; and,
- Correspondence with Tetra Tech.

The project will involve construction of twelve (12) new ponds. Each pond will have a 20-foot-wide by 25-foot-deep trench to be backfilled with aggregate. Changes in site grading adjacent to the ponds is assumed to be minimal with cuts and fills less than 3 feet. The site terrain is relatively flat with elevations at El. 770+/- 15 feet. An equipment vault will be constructed at each pond location with plan dimensions of approximately 6 feet by 10 feet and height of 9 feet above the foundation.

3.0 SUBSURFACE EXPLORATION

The subsurface exploration consisted of twenty (20) borings (numbered B-1 through B-20). Borings B-1, B-4, B-6, B-11, and B-19 were drilled to an approximate depth of 91.5 feet below existing ground surface. The remaining fifteen (15) borings were drilled to approximate depth of 41.5 feet below existing ground surface.

The boring locations were selected by Tetra Tech, and were staked in the field by UES using a handheld Trimble Geo7X GPS unit. The locations of Borings B-11 through B-14 were offset a few feet to provide clearance from trees and vegetation for our drilling equipment. Coordinates and elevations at the boring locations are summarized in Table 1. In addition, Borings B-5, B-13, B-

14, B-15, B-17 and B-19 were all moved a few feet from the staked locations shown in Table 1. below, to avoid utilities identified by the private utility locator. The location of the borings are shown on our Exploration Plan, which is included in Appendix A.

Table 1. Summary of Boring Locations, as Drilled.

Boring	Northing	Easting	Elevation (feet) [1]
B-1	663064.5578	1501712.8977	757.9
B-2	663551.9858	1502063.6171	758.4
B-3	663786.5996	1501046.5028	766.5
B-4	664870.0031	1500901.2278	768.9
B-5	664235.9258	1502633.9630	759.2
B-6	664539.8771	1502692.0122	762.0
B-7	664593.7967	1502121.7283	766.0
B-8	664785.6929	1502178.0831	766.9
B-9	665249.7859	1501863.7897	767.9
B-10	665147.1715	1501728.2527	768.7
B-11	664572.8851	1499935.6295	764.2
B-12	664657.3101	1499677.0914	763.3
B-13	665114.2676	1500016.9089	766.8
B-14	665155.7598	1500212.5575	763.6
B-15	665494.3156	1500078.6589	765.1
B-16	665678.4569	1500125.4771	765.6
B-17	665469.2742	1500836.5730	765.4
B-18	665636.5340	1500664.4563	766.0
B-19	666128.7789	1500893.3147	766.0
B-20	665962.1561	1501256.9586	767.4

1. Elevation based on Trimble Geo7X GPS Unit.

The borings were drilled between March 4 and March 15, 2024. A UES field engineer was on site to log the test borings and performed the infiltration testing. Drilling was performed with a CME-55LC track-mounted drill rig with advancing hollow-stem augers. Drill rod energy ratio (ER) for the drill rig is 93% but has been limited to 90% to calculate N60 values.

Sampling of the overburden soils was accomplished ahead of the augers at the depths indicated on the boring logs, with a 2-inch-outside-diameter (O.D.) split-barrel sampler in accordance with procedures outlined by ASTM D1586. Standard Penetration Tests (SPTs) were performed with

the split-barrel sampler to obtain the standard penetration resistance or N-value[1] of the sampled material.

Observations for groundwater were made in the borings during drilling, and before backfilling the boring holes.

As each boring was advanced, the UES field engineer kept a field log of the subsurface profile noting the soil types and stratifications, groundwater, SPT results, and other pertinent data.

Representative portions of the split-barrel samples were placed in glass jars with lids to preserve the in-situ moisture contents of the samples. The glass jars were marked and labeled in the field for identification when returned to our laboratory.

4.0 LABORATORY REVIEW AND TESTING

Upon completion of the fieldwork, the samples recovered from the borings were transported to our Soil Mechanics Laboratory, where they were visually reviewed and classified by the Project Geotechnical Engineer.

Laboratory testing was performed on selected soil and rock samples to estimate engineering and index properties. Laboratory testing of the selected soil samples included various combinations of the following tests: moisture content, Atterberg limits, gradation (particle-size) analyses. The results of these tests are summarized in Section 5.0 of this report and copies of the Laboratory Test results are included in Appendix D.

The boring logs, which are included in Appendix B, were prepared by the Project Geotechnical Engineer on the basis of the field logs, the visual classification of the soil in the laboratory, and the laboratory test results. Soil Classification Sheets are also included in Appendix B, which describe the terms and symbols used on the boring logs. The dashed lines on the boring logs indicate an approximate change in strata as estimated between samples, whereas a solid line indicates that the change in strata occurred within a sample where a more precise measurement could be made. Furthermore, the transition between strata can be abrupt or gradual.

5.0 INFILTRATION TESTING

Infiltration testing was performed from March 19 through March 22, 2024, at four (4) locations selected in consultation with client. New boreholes were drilled for field infiltration testing purpose in proximity to the boring locations (B-5, B-6, B-11, and B-19). The test depth for infiltration testing

[1] The standard penetration resistance, or N-value, is defined as the number of blows required to drive the split-barrel sampler 12 inches with a 140-pound hammer falling 30 inches. Since the split-barrel sampler is driven 18 inches or until refusal, the blows for the first 6 inches are for seating the sampler, and the number of blows for the final 12 inches is the N-value, which is reported as blows per foot (or bpf). Additionally, “refusal” of the split-barrel sampler occurs when the sampler is driven less than 6 inches with 50 blows of the hammer.

at each borehole were chosen upon review of the field logs and discussion with Tetra Tech. The boring locations are shown on the Exploration Plan in Appendix A.

A falling head infiltration test was performed at the test location. Each borehole was drilled to the planned test depth to run infiltration testing. Separate offset holes were drilled as required to run infiltration testing at different depths. Boring B-5 was drilled to a depth of 25 feet to run infiltration testing. Four (4) separate offset holes were drilled around Boring B-6, and then around B-11 to different test depths ranging from 20 to 40 feet for infiltration testing purposes. Boring B-19 was drilled to a depth of 35 feet to run infiltration testing. A total of ten (10) infiltration testing was performed during our field exploration.

The following test procedure was used for the falling head infiltration tests:

- A borehole was augered to the planned depth below grade with a 6.25-inch-diameter hollow-stem auger.
- A 4-inch-diameter PVC pipe was inserted in the borehole to prevent the sidewalls from collapsing, and the pipe length was recorded.
- Bentonite chips were placed around the outside of the PVC pipe.
- The auger was removed from the hole.
- The PVC pipe was filled with water, and the level of water was measured relative to the top of the respective pipe with time.

The measurements from the infiltration tests are recorded on the forms and included in Appendix C.

The data from the infiltration test was used in conjunction with correlations presented in Hvorslev (1951). Based on the setup of the tests, which allows the water to infiltrate through the bottom of the boreholes, Case C from Hvorslev (1951) was used to estimate the permeability.

The permeability of the soils tested during our field infiltration test were computed and are summarized in Table 2.

Table 2. Summary of Infiltration Testing.

Boring	Depth Below Existing Ground (feet)	Soil Type at Test Depth	Infiltration Rate		Approximate Permeability	
			v (in./hr.)	*V* (cm/hr.)	*k* (in./hr.)	*k* (cm/sec.)
B-5	25	Silty Clay (CL)	0.1	0.2	$2.0x10^{-4}$	$1.7x10^{-7}$
B-6	20	Sand with Gravel (SP)	6.0	15.2	$3.1x10^{-2}$	$2.2x10^{-5}$
B-6	25	Sand with Gravel (SP)	13.2	33.5	$6.2x10^{-2}$	$4.4x10^{-5}$
B-6	30	Silt with Sand, Clay (ML)	4.8	12.2	$3.0x10^{-2}$	$2.1x10^{-5}$
B-6	40	Sand with Gravel (SW-SM)	12.0	30.5	$4.4x10^{-2}$	$3.1x10^{-5}$
B-11	20	Sand with Gravel, Floaters (SW-SM)	960	2438	$2.5x10^{1}$	$1.8x10^{-2}$
B-11	25	Sand with Gravel, Floaters (SW-SM)	1200	3048	$2.5x10^{1}$	$1.8x10^{-2}$
B-11	30	Sand with Gravel (SP-SM)	14.4	36.6	$5.0x10^{-2}$	$3.5x10^{-5}$
B-11	40	Sand (SW-SM)	23.4	59.4	$1.0x10^{-1}$	$6.9x10^{-5}$
B-19	35	Sand with Gravel (SW-SM)	12.6	32.0	$3.7x10^{-2}$	$2.6x10^{-5}$

Figure 1 shows typical soil permeability values (from Table 5-10 in FHWA-NHI 06-088) for reader's reference. The computed permeabilities from our field tests for different soil types are generally consistent with the typical soil permeability values. The soils in the test interval of 20 and 25 feet at Boring B-11 encountered sand and gravel with limestone floaters, and resulted in higher permeability than sand and gravel at other locations.

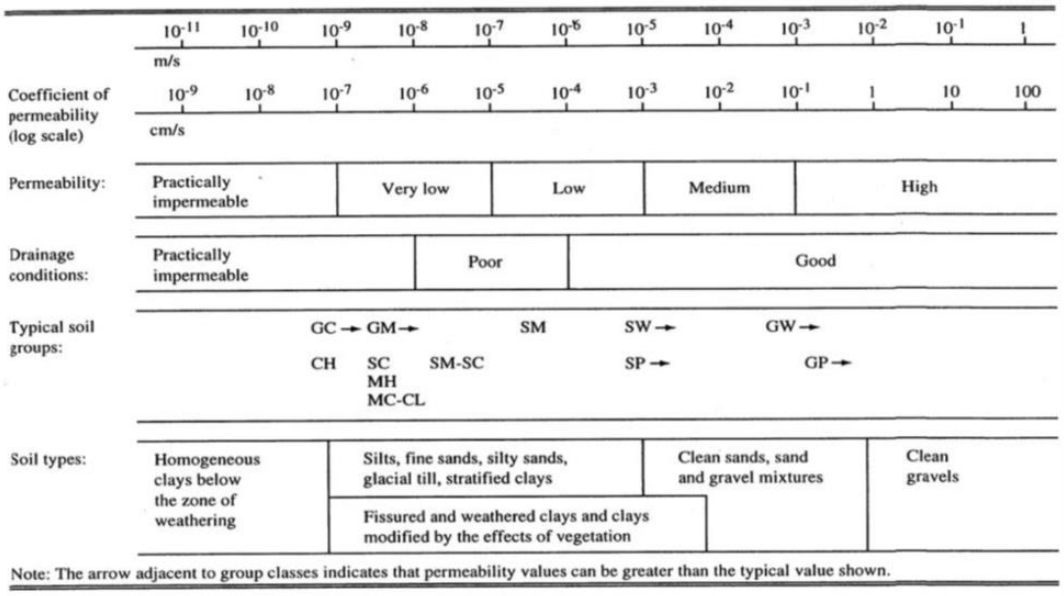

Figure 1. Typical Soil permeability values (from Table 5-10 in FHWA NHI-06-088).

Regarding the infiltration rate (v) of the soils, it can be approximated from the permeability (k) using Darcy's Law as follows:

$$v = ki = k(\Delta h/L)$$

where i is the hydraulic gradient; Δh is the average head loss; and L is the length over which the head loss occurs. According to Massman (2003), the hydraulic gradient for an infiltration basin is approximately 1, which would indicate that the infiltration rate equals the permeability.

It should be noted that sediment and siltation from fines[2] can quickly clog relatively permeable soils (including the amended soils) such that they will not function as designed. Consequently, temporary, and permanent erosion control measures should be implemented to prevent the degradation of the infiltration rate with time. Furthermore, regular maintenance should be planned to maintain the design infiltration rate of the basins throughout their design life, which may require undercutting sediments that have deposited on the retention pond bottom.

[2] Fines are soil particle sizes passing the No. 200 sieve (i.e., clay- and silt-size particles).

6.0 SUBSURFACE CONDITIONS

6.1 Stratification

Generally, the topsoil was underlain by sand and gravel soils which extended to the depths of the borings. The soil became more silty with depth at some locations and clayey silt was present within certain depth intervals in a few borings. More specific descriptions of the subsurface strata are provided below, and the boring logs containing detailed material descriptions are included in Appendix B.

6.1.1 Topsoil

Topsoil was encountered at the ground surface in all of the borings, generally to a depth of 12 inches.

6.1.2 Soil Stratigraphy

Generally, the subsurface soils included alluvium consisting primarily of sand and gravel over glacial outwash sand and gravel with random layers of clayey silt and silt. More specifically, below the topsoil and a thin layer of sandy or clayey silt, or clayey sand (extending to a depth of 2.5 feet or less), all test boring encountered sand and gravel. The sand and gravel was generally loose to medium dense at shallow depths, becoming dense to very dense with increasing depth. Exceptions to this stratigraphy include the following:

- Very stiff silty clay/clayey silt from 22.5 to 27.5 feet at Boring B-3;
- Hard clayey silt from 67.5 to 91.5 feet at Boring B-4;
- Very stiff clayey silt from 17.0 to 28.0 feet at Boring B-5;
- Hard silt at 23.0 to 28.0 feet at Boring B-6;
- Hard clayey silt from 62.5 to 72.5 feet and hard silt from 72.5 to 91.5 feet at Boring B-11; and,
- Hard clayey silt from 57.5 to 62.5 feet at Boring B-19.

A summary of the laboratory test results is included in Appendix data for the granular soils is included in Appendix D.

6.2 Groundwater Conditions

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As mentioned in Section 3.0, groundwater observations were made in the borings during drilling, and before backfilling the boreholes. Water levels during drilling ranged from 12.5 to 30 feet below the ground surface. Most of the borings encountered water seepage at depths of 20 to 25 feet. Most of the soils encountered were granular and the holes generally caved when the augers were removed. Water levels are shown on the Boring Logs in Appendix B.

Groundwater levels are expected to vary with time, location, season of the year, and amounts of precipitation.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our engineering reconnaissance of the site, the borings, the visual examination of the recovered samples, the laboratory test results, our understanding of the proposed project, and our experience as Geotechnical Engineers in the Greater Dayton Area, the following conclusions and recommendations are presented.

7.1 Excavation Support

Excavation support should be the responsibility of the Contractor. Excavation support should be designed and implemented such that excavations are adequately ventilated and braced, shored, and/or sloped in order to protect and ensure the safety of workers within and near the excavations and to protect adjacent ground, slopes, structures, and infrastructure. Federal, state, and local safety regulations should be satisfied. The analyses, discussions, conclusions, and recommendations throughout this report are not to be interpreted as pre-engineering compliance with any safety regulation.

The soils at the site are predominantly sand and gravel with lesser components of silt and clay. Based on the dominant presence of granular soils within the test borings, the OSHA soil classification for soil excavations at this site is expected to be Type C. OSHA recommends maximum allowable backslope for temporary cut slopes of 20 feet of less in height to be 1.5H:1V for Soil Type C. Protection for excavations more than 20 feet in depth must be designed by a registered professional engineer. All excavation should comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P “Excavations” and its appendices, as well as other applicable codes.

7.2 Site Preparation and Earthwork

As stated in Section 2.0 earthwork for this project will involve cuts and fills of 3 feet or less.

The initial preparation of the site for grading should include the removal of vegetation, heavy root systems, and topsoil from the proposed cut, fill, pavement, and any structure areas. The topsoil may be stockpiled for future use on the completed cut and fill slopes or in landscaped areas, if permitted by specification, whereas the vegetation, including the heavy root systems, should be disposed of off-site in accordance with applicable regulations.

Following clearing the construction areas of the existing vegetation and topsoil, we recommend that very soft to medium stiff soils present at the ground surface be removed and replaced with stiff to very stiff clayey or suitable granular soils.

Fill materials for embankments or general earthwork should consist of approved on-site, non-organic, clayey soils, or approved borrow material that are relatively free of topsoil, vegetation,

trash, construction or demolition debris, frozen materials, particles over 6 inches in maximum dimension, or other deleterious materials.

The fill should be placed in shallow level lifts (or layers), 6 to 8 inches in loose thickness. Each lift should be moisture-conditioned to within the acceptable moisture content range provided in Table 3, and compacted with a sheepsfoot roller or self-propelled compactor to at least the minimum percent compaction indicated in the same table. Moisture-conditioning may include: aeration and drying of wetter soils; wetting of drier soils; and/or thoroughly mixing wetter and drier soils into a uniform mixture.

Table 3. Percent compaction and moisture-conditioning recommendations for fill and backfill.

Area	Minimum Percent Compaction[a]	Acceptable Moisture Content Range[b]
Structural[c]	98% of SPMDD	-2% to +3% of OMC
Non-structural	95% of SPMDD	±3% of OMC
Pavement subgrade: ≤ 12 inches	98% of SPMDD	±2% of OMC

Notes:

[a] SPMDD = standard Proctor maximum dry density determined from ASTM D698.

[b] OMC = optimum moisture content determined from ASTM D698.

[c] Structural fill and backfill for foundations are defined as fill and backfill located within the zones of influence of structures. The zone of influence of a structure is defined as the area below the footprint of the structure and 2H:1V outward and downward projections from the bearing elevation of the structure.

7.3 Foundations

Foundation loads for the equipment vaults were not available for preparation of this report. Loads are anticipated to be light to moderate. Loose sand was present to an approximate depth of 4.5 feet at Borings B-5, B-6, B-11 and B-16. Medium dense sand was present below the topsoil at all other boring locations. As the soils are likely to vary across the site, it is recommended that spread foundations be proportioned for a maximum net allowable bearing pressure of 2,000 pounds per square foot full dead and full live load. We recommend that the minimum lateral dimensions for continuous wall footings and isolated column footings be at least 18 and 24 inches, respectively.

Based on the assumed maximum net allowable footing bearing pressure, we anticipate total and differential settlements less than 1 inch and ½ inch, respectively.

Exterior footings and footings in unheated interior areas should bear at least 32 inches below the lowest adjacent exterior/unheated grade for protection from frost penetration. Additionally, the foundation bearing elevations should not be located higher than a relationship of 2H:1V above proposed adjacent foundations or the inverts of nearby existing or proposed utilities that parallel

or nearly parallel the foundations, without a site-specific evaluation of the conditions by the Project Geotechnical Engineer.

Where shallow foundations will be subjected to lateral loads, resistance to overturning and sliding may be evaluated using the parameters provided in Table 4. Furthermore, lateral resistance to sliding may be provided by a combination of friction and passive resistance; however, passive resistance should be ignored above the frost penetration depth of 32 inches. It also should be noted that the passive resistance parameters assume a level ground surface. The frictional force should be based on dead normal loads only. A FOS of 1.5 should be applied to the sliding resistance.

Table 4. Design parameters for laterally loaded shallow foundations.

Soil unit weight, γ (pcf)	125
Internal angle of friction, ϕ (°)	26
Cohesion, c (psf)	0
Ultimate coefficient of static friction, μ_{ult}	0.35 for concrete cast on stiff in-situ clayey soils
	0.49 for concrete cast on 12-inch-thick compacted granular base
	0.40 for formed precast concrete on compacted granular leveling base

We recommend that foundation excavations be cut to neat lines and grades so that concrete may be placed directly against the banks of the excavations without forming. Loose, soft, wet, frozen, or otherwise disturbed materials should be removed from the bearing surfaces of the foundations prior to the placement of reinforcing steel and concrete. Foundation excavations should be observed by the geotechnical engineer or his representative to determine if unsuitable soils are present and should be removed. If a crusted or saturated surface develops at the bearing surface for a foundation, we recommend that it be skimmed to expose a fresh surface before reinforcing steel and concrete are placed. Foundation concrete should be placed the same day as the excavation is made to prevent saturation or desiccation of the bearing surfaces.

If concrete mud mats are utilized, the concrete should have a minimum compressive strength of 1,500 psi and a minimum thickness of 3 inches. The excavated bearing surface should be lowered at least the thickness of the mud mat, and the top of the mud mat should be at or below the design bearing elevation of the foundation. Prior to the placement of the concrete mud mat, the bearing surfaces should be cleaned of loose, soft, wet, frozen, or otherwise disturbed material.

Water should not be allowed to pond on top of either bearing soils or bedrock within footing excavations, or on or around completed footings, in order to reduce potential softening or swelling of the bearing materials.

We recommend that foundation steps have a maximum height of 2 feet and a corresponding minimum length of 4 feet. Reinforcing steel and concrete should remain continuous through the foundation steps.

We recommend that foundation excavations be reviewed by the Project Geotechnical Engineer, or a representative thereof, prior to placing concrete in order to confirm that the bearing materials and surfaces are consistent with the design recommendations of this report.

8.0 RECOMMENDED ADDITIONAL SERVICES

The conclusions and recommendations given in this report are based on: UES's understanding of the proposed design and construction, as outlined in this report; site observations; interpretation of the exploration data; and our experience. Since the intent of the design recommendations is best understood by UES, we recommend that UES be included in the final design and construction process, and be retained to review the project plans and specifications to confirm that the recommendations given in this report have been correctly implemented. We recommend that UES be retained to participate in prebid and preconstruction conferences to reduce the risk of misinterpretation of the conclusions and recommendations in this report relative to the proposed construction of the subject project.

Since actual subsurface conditions between boring locations may vary from those encountered in the borings, our design recommendations are subject to adjustment in the field based on the subsurface conditions encountered during construction. Therefore, we recommend that UES be retained to provide construction observation services as a continuation of the design process to confirm the recommendations in this report and to revise them accordingly to accommodate differing subsurface conditions. Construction observation is intended to enhance compliance with project plans and specifications. It is not insurance, nor does it constitute a warranty or guarantee of any type. Regardless of construction observation, contractors, suppliers, and others are solely responsible for the quality of their work and for adhering to plans and specifications.

9.0 LIMITATIONS

This report has been prepared on behalf of, and for the exclusive use of, Tetra Tech for specific application to the named project as described herein. If this report is provided to other parties, it should be provided in its entirety with all supplementary information. In addition, Tetra Tech should make it clear that the information is provided for factual data only, and not as a warranty of subsurface conditions presented in this report.

UES 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 recommendations and conclusions contained in this report are professional opinions. The report is not a bidding document and should not be used for that purpose.

Our scope 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 materials 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 an assessment of the effects of flooding and erosion of creeks or rivers adjacent to or on the project site.

The analyses, conclusions, and recommendations contained in this report are based on the data obtained from the subsurface exploration. The field exploration methods used indicate subsurface conditions only at the specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Consequently, subsurface conditions may vary gradually, abruptly, and/or nonlinearly between sample locations and/or intervals.

The conclusions or recommendations presented in this report should not be used without UES's review and assessment if the nature, design, or location of the facilities is changed, if there is a substantial lapse in time between the submittal of this report and the start of work at the site, or if there is a substantial interruption or delay during work at the site. If changes are contemplated or delays occur, UES must be allowed to review them to assess their impact on the findings, conclusions, and/or design recommendations given in this report. UES will not be responsible for any claims, damages, or liability associated with any other party's interpretations of the subsurface data or with reuse of the subsurface data or engineering analyses in this report.

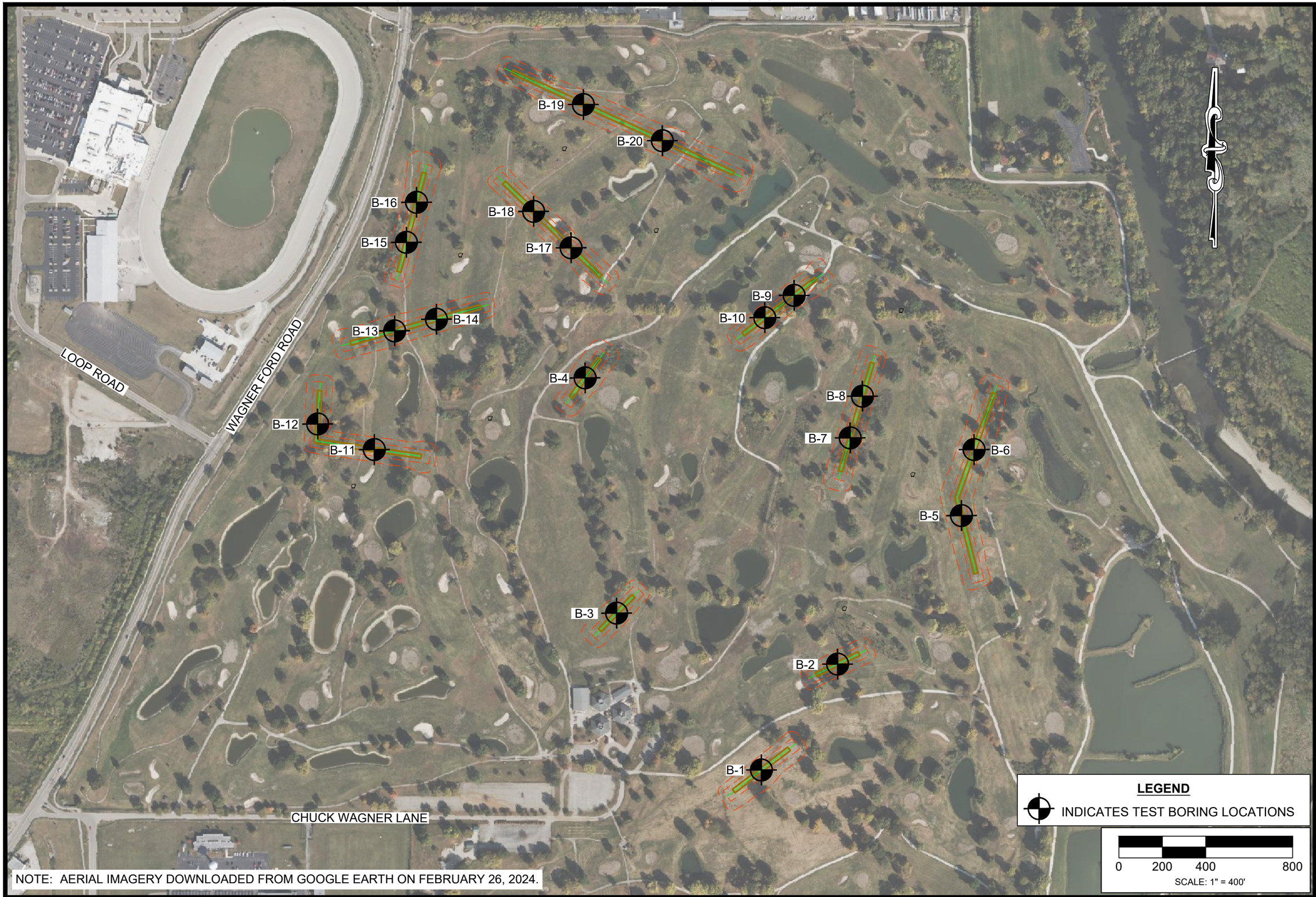
The recommendations included in this report have been based in part on assumptions about variations in site stratigraphy that may be evaluated further during earthwork and foundation construction. UES should be retained to perform construction observation and continue its geotechnical engineering service using observational methods. UES cannot assume liability for the adequacy of its recommendations when they are used in the field without UES being retained to observe construction.

A copy of "Important Information about This Geotechnical-Engineering Report" that is published by the Geotechnical Business Council (GBC) of the Geoprofessional Business Association (GBA) is included in Appendix E for your review. The publication discusses some other limitations, as well as ways to manage risk associated with subsurface conditions.

APPENDIX A – PLANS

Exploration Plan, Sheet No. 1

Date Printed: 3/15/2024 2:55 PM Path: \\10.1.12.10\cin\Data\Projects\J045\J045355.01-Dayton Miami Well Field Expansion\Draw\J045355.01 Exploration Plan (Single sheet).dwg



NOTE: AERIAL IMAGERY DOWNLOADED FROM GOOGLE EARTH ON FEBRUARY 26, 2024.

UES

Project: DAYTON MIAMI WELL FIELD EXPANSION

Location: DAYTON, OHIO

Title: EXPLORATION PLAN

Client: TETRA TECH

Date: 3/15/2024

Project No.: J045355.01

Sheet No.: 1

APPENDIX B – BORING INFORMATION

Boring Logs

Soil Classification Sheet

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-1
PROJECT #: J045355.01
PAGE #: 1 of 3
LAT,LON: 39.80870 ,-84.16165

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
757.9	Ground Surface	0.0	0					
756.9	TOPSOIL (12 INCHES).	1.0		SS-1	1-2-2 *N=4*	6	83	
	Brown, moist, loose, Silty Sand, little clay, gravel and root hairs.			SS-2	3-5-4 *N=9*	13	100	
753.4		4.5	5	SS-3	7-12-12 *N=24*	36	78	
	Brown, moist, medium dense, Sand with Silt and Gravel (SP-SM), trace limestone floaters. Gravel=42.8%, Sand=41.9%, Silt & Clay=9.3% on SS-4			SS-4	8-9-15 *N=24*	36	94	
748.4		9.5	10	SS-5	4-9-13 *N=22*	33	67	
	Brown and Gray, moist, medium dense, Gravel with Sand.			SS-6	10-11-14 *N=25*	37	83	
740.4		17.5	15	SS-7	13-13-19 *N=32*	47	72	
	Gray and Brown, wet, dense to very dense, Sand with Gravel.		20 ▽	SS-8	7-13-29 *N=42*	62	100	
			25	SS-9	10-16-29 *N=45*	67	78	
			30	SS-10	8-18-49 *N=67*	99	89	

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 757.9 ft.
Date Started/Completed: 3/15/2024-3/15/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 20' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-1
PROJECT #: J045355.01
PAGE #: 2 of 3
LAT,LON: 39.80870 ,-84.16165

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
715.4	Gray and Brown, wet, very dense, Gravel with Sand.	42.5	35	SS-11	10-32-36 *N=68*	101	89	
			40	SS-12	13-29-33 *N=62*	92	89	
			45	SS-13	20-43-40 *N=83*	123	100	
			50	SS-14	20-29-21 *N=50*	74	100	
			55	SS-15	14-24-30 *N=54*	80	100	
			60	SS-16	12-26-32 *N=58*	86	100	
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 757.9 ft.
Date Started/Completed: 3/15/2024-3/15/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 20' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-1
PROJECT #: J045355.01
PAGE #: 3 of 3
LAT,LON: 39.80870 ,-84.16165

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
			65	SS-17	3-15-50/5"		100	
			70	SS-18	20-30-35 *N=65*	96	100	
			75	SS-19	10-25-35 *N=60*	89	100	
			80	SS-20	40-44-25 *N=69*	102	100	
			85	SS-21	23-39-40 *N=79*	117	100	
670.4		87.5						
	Gray, wet, very dense, Sand with Gravel.		90	SS-22	28-41-50/5"		100	
666.5		91.4						
	Bottom of test boring at 91.4 feet.		95					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 757.9 ft.
Date Started/Completed: 3/15/2024-3/15/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 20' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-2
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81007 ,-84.16044

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
758.4	Ground Surface	0.0	0					
757.4	TOPSOIL (12 INCHES).	1.0		SS-1	1-2-2 *N=4*	6	67	
753.9	Gray to brown, moist, medium dense, Sand with gravel, trace root hairs .	4.5		SS-2	6-9-8 *N=17*	25	6	
751.4	Brown and gray, moist, medium dense, Sand with Gravel.	7.0	5	SS-3	9-9-19 *N=28*	42	89	
748.9	Brown and gray, moist, dense, Gravel with Sand.	9.5		SS-4	10-16-16 *N=32*	47	72	
746.4	Brown, moist, dense, Sand, trace gravel.	12.0	10	SS-5	8-13-21 *N=34*	50	100	
	Brown, wet, medium dense, Gravel with Sand.		▽	SS-6	7-12-15 *N=27*	40	61	
			15	SS-7	5-8-11 *N=19*	28	100	
	Bottom of trench 740			SS-8	4-6-10 *N=16*	24	100	
			20	SS-9	5-7-7 *N=14*	21	100	
735.9		22.5						
733.9	Brown to gray, wet, very dense, Fine Sand with Gravel, little silt.	24.5		SS-10	15-25-26 *N=51*	76	100	
731.4	Gray, wet, very dense, Sandy Silt, little gravel.	27.0	25	SS-11	45-50/5"		100	
728.9	Gray, wet, very dense, Gravel with Sandy Silt.	29.5		SS-12	30-38-17 *N=55*	82	100	
	Gray to brown, wet, dense, Sand with Gravel.		30	SS-13	5-7-22 *N=29*	43	100	

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 758.4 ft.
Date Started/Completed: 3/4/2024-3/4/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 12.5' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-2
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81007 ,-84.16044

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
723.4		35.0	35	SS-14	17-35-46 *N=81*	120	100	
	Gray, wet, very dense, Sand with Gravel.		40					
716.9		41.5		SS-15	25-28-36 *N=64*	95	67	
	Bottom of test boring at 41.5 feet.		45 50 55 60 65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 758.4 ft.
Date Started/Completed: 3/4/2024-3/4/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 12.5' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-3
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81065 ,-84.16407

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
766.5	Ground Surface	0.0	0					
765.5	TOPSOIL (12 INCHES).	1.0		SS-1	1-2-3 *N=5*	7	83	
	Brown, moist, medium dense to dense, Gravel with Sand, trace limestone fragments.			SS-2	4-6-6 *N=12*	18	61	
			5	SS-3	10-14-14 *N=28*	42	72	
759.5		7.0		SS-4	5-10-24 *N=34*	50	50	
	Brown and gray, moist, dense, Gravel with Sand, trace limestone fragments.		10	SS-5	7-10-10 *N=20*	30	0	
				SS-6	10-13-20 *N=33*	49	44	
			15	SS-7	11-12-12 *N=24*	36	33	
			20	SS-8	13-13-13 *N=26*	39	72	
744.0		22.5						
	Brown, moist, hard, Silty Clay (CL-ML), some sand, little gravel. LL=22%, PL=15%, PI=7% on SS-9.							
			25	SS-9	12-14-17 *N=31*	46	100	
739.0		27.5						
	Brown, wet, dense, Gravel with Sand.							
			30	SS-10	23-21-19 *N=40*	59	39	
734.0		32.5						

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 766.5 ft.
Date Started/Completed: 3/15/2024-3/15/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 30' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-3
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81065 ,-84.16407

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
	Brown, wet, very dense, Sand with Gravel, trace limestone fragments.		35	SS-11	10-20-50/5"		100	
725.0		41.5	40	SS-12	25-17-34 ***N=51***	76	100	
	Bottom of test boring at 41.5 feet.		45					
			50					
			55					
			60					
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 766.5 ft.
Date Started/Completed: 3/15/2024-3/15/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 30' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-4
PROJECT #: J045355.01
PAGE #: 1 of 3
LAT,LON: 39.81363 ,-84.16466

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
768.9	Ground Surface	0.0					
767.9	TOPSOIL (12 INCHES).	1.0	SS-1	2-2-3 *N=5*	7	67	
766.9	Brown, moist, loose, Sandy Silt, trace root hairs.	2.0					
764.4	Brown, moist, medium dense, Sand with Gravel.	4.5	SS-2	5-5-6 *N=11*	16	61	
761.9	Brown, moist, dense, Gravel with Sand, trace limestone fragments.	7.0	SS-3	18-18-17 *N=35*	52	39	
754.4	Brown, moist, medium dense, Sand with Gravel (SP-SM), trace silt. Gravel=31%, Sand=62.5%, Silt & Clay=6.5% on SS-4.	14.5	SS-4	6-10-12 *N=22*	33	100	
			SS-5	6-10-14 *N=24*	36	67	
			SS-6	7-7-7 *N=14*	21	72	
746.4	Gray to brown, moist, medium dense to dense, Gravel with Sand, trace limestone fragments.	22.5	SS-7	13-20-21 *N=41*	61	72	
			SS-8	7-10-12 *N=22*	33	61	
741.4	Brown, wet, dense, Gravel with Sand.	27.5	SS-9	11-13-16 *N=29*	43	61	
	Gray to Brown, wet, dense, Sand with Gravel.		SS-10	11-13-14 *N=27*	40	100	

Depth Scale (feet): 0, 5, 10, 15, 20, 25, 30

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 768.9 ft.
Date Started/Completed: 3/7/2024-3/7/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-4
PROJECT #: J045355.01
PAGE #: 2 of 3
LAT,LON: 39.81363 ,-84.16466

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
726.4	Gray to brown, wet, very dense, Gravel with Sand.	42.5	35	SS-11	7-16-20 ***N=36***	53	100	
			40	SS-12	6-20-26 ***N=46***	68	100	
			45	SS-13	12-26-31 ***N=57***	85	100	
			50	SS-14	10-24-30 ***N=54***	80	100	
			55	SS-15	6-26-30 ***N=56***	83	100	
			60	SS-16	10-8-25 ***N=33***	49	61	
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 768.9 ft.
Date Started/Completed: 3/7/2024-3/7/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-4
PROJECT #: J045355.01
PAGE #: 3 of 3
LAT,LON: 39.81363 ,-84.16466

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
701.4		67.5	65	SS-17	11-15-17 *N=32*	47	78	4.5
	Gray to brown, wet, hard, Clayey Silt with Sand, little gravel.		70	SS-18	11-29-41 *N=70*	104	100	4.5
			75	SS-19	15-25-35 *N=60*	89	100	4.5
			80	SS-20	15-21-32 *N=53*	79	100	4.5
			85	SS-21	14-15-30 *N=45*	67	100	4.5
677.4		91.5	90	SS-22	11-26-30 *N=56*	83	100	4.5
	Bottom of test boring at 91.5 feet.		95					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 768.9 ft.
Date Started/Completed: 3/7/2024-3/7/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 25' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-5
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81197 ,-84.15845

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
759.2	Ground Surface	0.0	0					
758.2	TOPSOIL (12 INCHES).	1.0		SS-1	1-1-2 ***N=3***	4	72	
	Brown, moist, loose, Sand with Gravel.			SS-2	2-4-4 ***N=8***	12	72	
754.7		4.5	5	SS-3	8-9-10 ***N=19***	28	72	
	Brown, moist, medium dense, Sand with Gravel.			SS-4	6-6-8 ***N=14***	21	78	
			10	SS-5	4-6-8 ***N=14***	21	89	
744.7		14.5		SS-6	6-7-8 ***N=15***	22	72	
	Brown, wet, medium dense, Sand with Gravel.		15 ▽	SS-7	6-10-12 ***N=22***	33	72	
742.2		17.0						
	Gray, wet, very stiff, Silty Clay, trace sand and gravel. Gravel=10.2%, Sand=28.8%, Silt=30.4%, Clay=30.6% on SS-9		20	SS-8	7-14-21 ***N=35***	52	67	3.5
			25	SS-9	2-11-17 ***N=28***	42	100	3.0
731.2		28.0						
	Gray, wet, medium dense to dense, Sand and Gravel.		30	SS-10	4-8-12 ***N=20***	30	100	

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 759.2 ft.
Date Started/Completed: 3/14/2024-3/14/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 15' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-5
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81197 ,-84.15845

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
			35	SS-11	4-12-18 *N=30*	44	100	
			40	SS-12	10-15-17 *N=32*	47	100	
717.7	Bottom of test boring at 41.5 feet.	41.5	45					
			50					
			55					
			60					
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 759.2 ft.
Date Started/Completed: 3/14/2024-3/14/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 15' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-6
PROJECT #: J045355.01
PAGE #: 1 of 3
LAT,LON: 39.81281 ,-84.15827

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
762.0	Ground Surface	0.0	0					
761.0	TOPSOIL (12 INCHES).	1.0		SS-1	1-1-2 ***N=3***	4	67	
757.5	Brown, moist, loose, Silty Sand, trace gravel.	4.5		SS-2	3-3-4 ***N=7***	10	72	
755.0	Brown, moist, medium dense , Silty Gravel (GM), trace limestone fragments. Gravel=55.7%, Sand=28.0%, Silt & Clay=16.3% on SS-3	7.0	5	SS-3	6-9-11 ***N=20***	30	44	
744.5	Gray to brown, moist, medium dense , Gravel with Sand, trace limestone fragments.	17.5		SS-4	8-8-10 ***N=18***	27	78	
			10	SS-5	10-11-13 ***N=24***	36	67	
				SS-6	10-11-13 ***N=24***	36	44	
			15	SS-7	10-10-7 ***N=17***	25	33	
734.5	Brown, wet, medium dense, Sand with Gravel (SP). Gravel=25.8%, Sand=69.4%, Silt & Clay=4.8% on SS-8	27.5	▽20	SS-8	9-9-9 ***N=18***	27	100	
			25	SS-9	4-7-7 ***N=14***	21	50	
729.5	Gray, wet, very stiff, Clayey Silt , some sand, trace gravel. W=12.7%, Gravel=1.2%, Sand=29.6%, Silt=43.1%, Sand =26.1% on SS-10	32.5	30	SS-10	5-11-18 ***N=29***	43	56	3.5

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 762.0 ft.
Date Started/Completed: 3/14/2024-3/14/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 20' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-6
PROJECT #: J045355.01
PAGE #: 2 of 3
LAT,LON: 39.81281 ,-84.15827

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
	Gray, wet, medium dense , Sand, trace gravel.							
724.5		37.5						
	Brown, wet, dense, Sand with Gravel and Silt (SW-SM). Gravel=40.2%, Sand=50.3%, Silt & Clay=9.5% on SS-12							
719.5		42.5						
	Gray to Brown, wet, very dense, Sand with Gravel.							
714.5		47.5						
	Brown, wet, dense to very dense, Gravel with Sand.							
709.5		52.5						
	Gray, wet, very dense, Sand with Gravel.							
704.5		57.5						
	Brown, wet, very dense, Gravel with Sand, trace limestone fragments.							
699.5		62.5						
	Gray, wet, dense to very dense, Sand with Gravel.		35	SS-11	7-12-18 *N=30*	44	83	
			40	SS-12	10-12-18 *N=30*	44	89	
			45	SS-13	6-21-32 *N=53*	79	72	
			50	SS-14	20-35-50/5"		100	
			55	SS-15	40-25-28 *N=53*	79	100	
			60	SS-16	14-26-20 *N=46*	68	100	
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 762.0 ft.
Date Started/Completed: 3/14/2024-3/14/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 20' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-6
PROJECT #: J045355.01
PAGE #: 3 of 3
LAT,LON: 39.81281 ,-84.15827

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
			65	SS-17	6-18-30 *N=48*	71	61	
			70	SS-18	40-17-25 *N=42*	62	100	
689.5		72.5						
	Brown, wet, dense to very dense , Gravel with Sand.		75	SS-19	11-30-35 *N=65*	96	100	
			80	SS-20	4-10-18 *N=28*	42	50	
			85	SS-21	19-17-31 *N=48*	71	100	
670.5		91.5	90	SS-22	19-16-24 *N=40*	59	89	
	Bottom of test boring at 91.5 feet.		95					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 762.0 ft.
Date Started/Completed: 3/14/2024-3/14/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 20' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-7
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81293 ,-84.16031

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
766.0	Ground Surface	0.0						
765.0	TOPSOIL (12 INCHES).	1.0						
	Brown, moist, medium dense to dense, Sand with Gravel, trace limestone fragments.			SS-1	1-4-6 ***N=10***	15	67	
				SS-2	9-16-16 ***N=32***	47	89	
			5	SS-3	9-12-11 ***N=23***	34	72	
				SS-4	3-4-5 ***N=9***	13	11	
			10	SS-5	5-6-11 ***N=17***	25	78	
				SS-6	17-25-25 ***N=50***	74	67	
			15	SS-7	10-13-22 ***N=35***	52	72	
			20	SS-8	15-25-22 ***N=47***	70	78	
741.0		25.0						
	Gray, moist, hard, Silt.		25	SS-9	31-50/5"		100	4.5
736.0		30.0						
	Brown, wet, dense to very dense, Sand with Gravel.		30	SS-10	9-16-22 ***N=38***	56	100	

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 766.0 ft.
Date Started/Completed: 3/13/2024-3/13/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 30' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-7
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81293 ,-84.16031

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
			35	SS-11	16-35-49 *N=84*	125	100	
			40	SS-12	21-38-48 *N=86*	128	100	
724.5	Bottom of test boring at 41.5 feet.	41.5	45					
			50					
			55					
			60					
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 766.0 ft.
Date Started/Completed: 3/13/2024-3/13/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 30' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-8
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81346 ,-84.16011

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
766.9	Ground Surface	0.0	0					
765.9	TOPSOIL (12 INCHES).	1.0		SS-1	2-3-4 *N=7*	10	44	
762.4	Brown, moist, medium dense to dense, Sand with Gravel.	4.5		SS-2	9-6-5 *N=11*	16	61	
759.9	Brown, moist, dense, Gravel with Sand, trace limestone fragments.	7.0	5	SS-3	14-19-18 *N=37*	55	72	
749.9	Gray and brown, moist, medium dense, Gravel with Sand.	17.0		SS-4	7-9-8 *N=17*	25	61	
			10	SS-5	6-12-21 *N=33*	49	56	
				SS-6	6-10-18 *N=28*	42	61	
			15	SS-7	7-12-17 *N=29*	43	61	
747.4	Gray and brown, moist, very dense, Sand with Gravel, trace limestone fragments.	19.5		SS-8	26-42-26 *N=68*	101	72	
739.9	Gray and brown, moist, dense, Gravel with Sand.	27.0	20	SS-9	14-20-26 *N=46*	68	89	
				SS-10	10-21-26 *N=47*	70	100	
			25	SS-11	14-17-28 *N=45*	67	100	
737.4	Gray and brown, wet, dense, Gravel with Sand.	29.5		SS-12	4-16-16 *N=32*	47	89	
734.4	Gray and brown, moist, dense, Sand with Gravel.	32.5	30	SS-13	16-25-18 *N=43*	64	100	

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 766.9 ft.
Date Started/Completed: 3/4/2024-3/4/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 27' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-8
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81346 ,-84.16011

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
	Gray and brown, moist, dense to very dense, Gravel with Sand.		35	SS-14	17-22-29 *N=51*	76	100	
725.4		41.5	40	SS-15	18-19-21 *N=40*	59	100	
	Bottom of test boring at 41.5 feet.		45					
			50					
			55					
			60					
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 766.9 ft.
Date Started/Completed: 3/4/2024-3/4/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 27' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-9
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81472 ,-84.16126

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
767.9	Ground Surface	0.0	0					
766.9	TOPSOIL (12 INCHES).	1.0		SS-1	1-2-4 ***N=6***	8	67	
	Brown, moist, medium dense, Clayey Sandy Silt, trace root hairs.			SS-2	3-4-6 ***N=10***	13	100	
763.4		4.5	5	SS-3	6-5-7 ***N=12***	16	6	
	Brown, moist, medium dense to dense, Gravel with Sand, trace limestone fragments.			SS-4	7-7-7 ***N=14***	18	39	
			10	SS-5	5-8-12 ***N=20***	26	56	
				SS-6	12-16-24 ***N=40***	53	72	
			15	SS-7	6-12-14 ***N=26***	34	61	
			20	SS-8	21-15-17 ***N=32***	42	100	
745.4		22.5						
	Brown, wet, dense to very dense, Gravel with Silty Sand.		▽25	SS-9	9-15-21 ***N=36***	47	100	
			30	SS-10	15-25-33 ***N=58***	76	100	

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 767.9 ft.
Date Started/Completed: 3/13/2024-3/13/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55 LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-9
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81472 ,-84.16126

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
730.4	Brown, wet, very dense, Sand with Gravel.	37.5	35	SS-11	9-17-26 *N=43*	57	100	
726.4		41.5	40	SS-12	20-34-28 *N=62*	82	100	
	Bottom of test boring at 41.5 feet.		45, 50, 55, 60, 65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 767.9 ft.
Date Started/Completed: 3/13/2024-3/13/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55 LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 25' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-10
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81440 ,-84.16174

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
768.7	Ground Surface	0.0	0					
767.7	TOPSOIL (12 INCHES).	1.0		SS-1	1-2-4 *N=6*	8	100	
764.2	Brown, moist, medium dense, Sand with Gravel.	4.5		SS-2	6-8-10 *N=18*	24	72	
761.7	Gray, moist, dense, Sand with Gravel.	7.0	5	SS-3	9-17-19 *N=36*	47	50	
759.2	Brown, moist, medium dense, Sand, trace gravel.	9.5		SS-4	5-5-12 *N=17*	22	67	
756.7	Gray to brown, moist, dense, Gravel with Sand, trace limestone fragments.	12.0	10	SS-5	12-19-18 *N=37*	49	44	
751.2	Brown, moist, medium dense, Gravel with Sand.	17.5		SS-6	6-12-13 *N=25*	33	33	
746.2	Brown, wet, medium dense, Gravel with Sand, trace limestone fragments.	22.5	15	SS-7	11-13-12 *N=25*	33	67	
736.2	Brown, wet, very dense, Sand with Gravel.	32.5	20 ▽	SS-8	14-15-10 *N=25*	33	61	
			25	SS-9	20-35-40 *N=75*	99	56	
			30	SS-10	17-20-30 *N=50*	66	100	

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 768.7 ft.
Date Started/Completed: 3/6/2024-3/6/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55 LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 20' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-10
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81440 ,-84.16174

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
	Brown, wet, very dense, Sand.		35	SS-11	20-33-39 *N=72*	95	100	
731.2		37.5						
	Brown, wet, very dense, Sand with Gravel.		40	SS-12	7-19-24 *N=43*	57	100	
727.2		41.5						
	Bottom of test boring at 41.5 feet.		45					
			50					
			55					
			60					
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 768.7 ft.
Date Started/Completed: 3/6/2024-3/6/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55 LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 20' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-11
PROJECT #: J045355.01
PAGE #: 1 of 3
LAT,LON: 39.81274 ,-84.16807

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
764.2	Ground Surface	0.0	0					
763.2	TOPSOIL (12 INCHES).	1.0		SS-1	1-2-3 *N=5*	7	100	
	Brown, moist, loose, Silty Sand with Gravel.			SS-2	3-2-3 *N=5*	7	67	
759.7		4.5	5	SS-3	10-19-17 *N=36*	53	61	
	Brown, moist, dense, Gravel with Sand and Silt (GW-SM), trace limestone fragments. Gravel=53.0%, Sand=39.2%,Silt & Clay=7.8% on SS-3.			SS-4	11-13-25 *N=38*	56	67	
			10	SS-5	9-16-24 *N=40*	59	78	
749.7		14.5		SS-6	15-19-18 *N=37*	55	72	
	Brown, moist, very dense, Sand with Gravel, trace limestone fragments.		15	SS-7	13-30-50/2"		64	
746.7		17.5						
	Brown, wet, dense, Sand with Gravel (GS-SM), trace limestone fragments. Gravel=31.1%, Sand=58.8%, Silt & Clay=10.1% on SS-8.		20 ▽	SS-8	10-19-17 *N=36*	53	89	
			25	SS-9	6-16-20 *N=36*	53	100	
736.7		27.5						
	Brown, wet, medium dense to dense , Sand with Gravel (SP-SM). Gravel=34.5%, Sand=65.6%, Silt & Clay=9.9% on SS-10.		30	SS-10	12-11-14 *N=25*	37	72	

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 764.2 ft.
Date Started/Completed: 3/7/2024-3/7/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 20' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-11
PROJECT #: J045355.01
PAGE #: 2 of 3
LAT,LON: 39.81274 ,-84.16807

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
726.7		37.5	35	SS-11	9-18-21 *N=39*	58	67	
	Brown, wet, dense , Sand with Silt (SW-SM). Gravel=1.1%, Sand=86.9%, Silt & Clay=12% on SS-12.		40	SS-12	5-12-23 *N=35*	52	61	
721.7		42.5						
	Brown, wet, dense to very dense , Sand with Gravel, trace limestone fragments.		45	SS-13	10-20-38 *N=58*	86	100	
711.7		52.5	50	SS-14	15-20-28 *N=48*	71	100	
	Gray, wet, very dense, Gravel with Sand.		55	SS-15	4-13-26 *N=39*	58	67	
701.7		62.5	60	SS-16	22-32-32 *N=64*	95	100	
	Gray, wet, hard, Clayey Silt (CL-ML), some sand and gravel. LL=20%, PL=13%, PI=7% on SS-18.		65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 764.2 ft.
Date Started/Completed: 3/7/2024-3/7/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 20' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-11
PROJECT #: J045355.01
PAGE #: 3 of 3
LAT,LON: 39.81274 ,-84.16807

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
			65	SS-17	13-26-42 *N=68*	101	100	4.5
			70	SS-18	25-36-45 *N=81*	120	100	4.5
691.7		72.5						
	Gray, moist, very dense, Silt.		75	SS-19	16-27-38 *N=65*	96	100	4.5
			80	SS-20	16-28-42 *N=70*	104	100	4.5
			85	SS-21	14-21-46 *N=67*	99	100	4.5
			90	SS-22	16-46-34 *N=80*	119	100	4.5
672.7		91.5						
	Bottom of test boring at 91.5 feet.		95					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 764.2 ft.
Date Started/Completed: 3/7/2024-3/7/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 20' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-12
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81296 ,-84.16901

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
763.3	Ground Surface	0.0					
762.3	TOPSOIL (12 INCHES).	1.0	SS-1	1-1-2 ***N=3***	4	67	
761.3	Brown, moist, soft, Clayey Silt, trace limestone fragments.	2.0					
758.8	Brown, moist, medium dense, Sand with Gravel.	4.5	SS-2	4-5-8 ***N=13***	17	72	
756.3	Brown, moist, medium dense, Sand, trace limestone fragments.	7.0	SS-3	16-15-13 ***N=28***	37	6	
753.8	Brown to gray, moist, medium dense, Gravel with Sand.	9.5	SS-4	8-7-7 ***N=14***	18	67	
748.8	Gray to brown, moist, very dense, Gravel with Sand, trace limestone fragments.	14.5	SS-5	14-31-29 ***N=60***	79	89	
			SS-6	8-16-21 ***N=37***	49	67	
	Gray to brown, moist, dense, Gravel with Sand.		SS-7	7-12-10 ***N=22***	29	78	
			SS-8	9-13-20 ***N=33***	43	100	
			SS-9	9-14-20 ***N=34***	45	61	
735.8	Gray to brown, moist, dense, Sand with Gravel.	27.5	SS-10	21-15-21 ***N=36***	47	89	

Depth Scale (feet): 0, 5, 10, 15, 20, 25, 30

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 763.3 ft.
Date Started/Completed: 3/6/2024-3/6/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55 LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-12
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81296 ,-84.16901

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
			35	SS-11	12-17-15 *N=32*	42	89	
			40	SS-12	30-19-21 *N=40*	53	100	
721.8		41.5						
	Bottom of test boring at 41.5 feet.		45					
			50					
			55					
			60					
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 763.3 ft.
Date Started/Completed: 3/6/2024-3/6/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55 LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 25' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-13
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81426 ,-84.16781

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
766.8	Ground Surface	0.0	0					
765.8	TOPSOIL (12 INCHES).	1.0		SS-1	1-2-2 *N=4*	6	67	
764.8	Brown, moist, soft, Clayey Silt, trace root hairs.	2.0						
	Gray to brown, moist, loose, Sand, trace gravel and root hairs.			SS-2	3-4-5 *N=9*	13	83	
759.8		7.0	5	SS-3	4-5-5 *N=10*	15	83	
	Gray to brown, moist, medium dense, Gravel with Sand, trace limestone fragments.			SS-4	11-14-11 *N=25*	37	61	
757.3		9.5						
	Gray to brown, moist, loose, Sand, trace gravel and limestone fragments.		10	SS-5	3-4-3 *N=7*	10	33	
754.8		12.0						
	Gray to brown, moist, medium dense, Sand with Gravel.			SS-6	4-8-8 *N=16*	24	44	
752.3		14.5						
	Brown, moist, very dense, Gravel with Sand, trace limestone fragments.		15	SS-7	7-24-31 *N=55*	82	72	
749.3		17.5						
	Gray to brown, moist, dense, Sand with Gravel.		20	SS-8	12-20-23 *N=43*	64	89	
744.3		22.5						
	Brown, wet, medium dense, Silty Sand with Gravel.		25	SS-9	8-9-10 *N=19*	28	56	
739.3		27.5						
	Brown, moist, medium dense to dense, Gravel with Sand.		30	SS-10	9-13-16 *N=29*	43	100	

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 766.8 ft.
Date Started/Completed: 3/12/2024-3/12/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-13
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81426 ,-84.16781

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
			35	SS-11	15-22-26 *N=48*	71	100	
			40	SS-12	18-20-22 *N=42*	62	100	
725.3		41.5						
	Bottom of test boring at 41.5 feet.		45					
			50					
			55					
			60					
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 766.8 ft.
Date Started/Completed: 3/12/2024-3/12/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 25' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-14
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81436 ,-84.16713

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
763.6	Ground Surface	0.0					
762.6	TOPSOIL (12 INCHES).	1.0	SS-1	1-1-3 *N=4*	6	100	
	Brown, moist, medium dense, Sand, trace root hairs.		SS-2	3-3-7 *N=10*	15	33	
759.1		4.5					
	Brown, moist, medium dense, Gravel with Sand, trace limestone fragments.		SS-3	6-9-8 *N=17*	25	56	
			SS-4	4-4-10 *N=14*	21	61	
754.1		9.5					
	Gray to brown, moist, dense, Gravel with Sand, trace limestone fragments.		SS-5	7-15-18 *N=33*	49	78	
			SS-6	10-16-14 *N=30*	44	56	
			SS-7	11-17-15 *N=32*	47	72	
746.1		17.5					
	Brown, wet, medium dense, Gravel with Sand, trace limestone fragments.		SS-8	13-13-13 *N=26*	39	72	
			SS-9	7-9-16 *N=25*	37	100	
736.1		27.5					
	Brown to gray, wet, medium dense, Sand, trace gravel.		SS-10	13-11-17 *N=28*	42	100	

Depth Scale (feet): 0, 5, 10, 15, 20, 25, 30

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 763.6 ft.
Date Started/Completed: 3/11/2024-3/11/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 20' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-14
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81436 ,-84.16713

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
726.1	Brown to gray, wet, very dense, Sand with Gravel.	37.5	35	SS-11	13-22-20 *N=42*	62	72	
722.1	Bottom of test boring at 41.4 feet.	41.4	40	SS-12	15-30-50/5"		100	
			45					
			50					
			55					
			60					
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 763.6 ft.
Date Started/Completed: 3/11/2024-3/11/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 20' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-15
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81529 ,-84.16765

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
765.1	Ground Surface	0.0					
764.1	TOPSOIL (12 INCHES).	1.0	SS-1	1-3-4 ***N=7***	10	67	
763.1	Brown, moist, loose, Silty Sand, trace root hairs.	2.0					
	Brown, moist, loose, Sand, trace gravel.		SS-2	3-4-5 ***N=9***	13	61	
			SS-3	4-4-5 ***N=9***	13	61	
758.1		7.0					
	Gray to brown, moist, medium dense, Sand, trace gravel.		SS-4	4-4-16 ***N=20***	30	61	
755.6		9.5					
	Gray to brown, moist, medium dense to dense, Gravel with Sand.		SS-5	10-11-13 ***N=24***	36	72	
			SS-6	8-12-13 ***N=25***	37	72	
			SS-7	12-10-10 ***N=20***	30	56	
			SS-8	12-14-24 ***N=38***	56	72	
742.6		22.5					
	Brown, wet, dense, Sand with Gravel.		SS-9	6-14-20 ***N=34***	50	100	
737.6		27.5					
	Brown, wet, medium dense, Sand, some gravel.		SS-10	23-11-17 ***N=28***	42	100	

Depth Scale (feet): 0, 5, 10, 15, 20, 25, 30

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 765.1 ft.
Date Started/Completed: 3/11/2024-3/11/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-15
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81529 ,-84.16765

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
			35	SS-11	23-9-17 *N=26*	39	100	
			40	SS-12	12-11-16 *N=27*	40	100	
723.6	Bottom of test boring at 41.5 feet.	41.5	45					
			50					
			55					
			60					
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 765.1 ft.
Date Started/Completed: 3/11/2024-3/11/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 25' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-16
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81580 ,-84.16748

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
765.6	Ground Surface	0.0					
764.6	TOPSOIL (12 INCHES).	1.0	SS-1	1-2-3 *N=5*	7	72	
763.6	Brown, moist, Sandy Clayey Silt, trace root hairs.	2.0					
761.1	Gray to brown, moist, loose, Sand.	4.5	SS-2	2-2-3 *N=5*	7	100	
758.6	Gray to brown, moist, medium dense, Sand with Gravel, trace limestone fragments.	7.0	SS-3	7-8-6 *N=14*	21	100	
	Gray to brown, moist, medium dense, Sand with Gravel.		SS-4	3-9-7 *N=16*	24	100	
			SS-5	3-6-7 *N=13*	19	100	
			SS-6	8-12-13 *N=25*	37	100	
			SS-7	4-7-8 *N=15*	22	72	
746.1		19.5	SS-8	8-9-15 *N=24*	36	100	
743.6	Brown, wet, medium dense, Gravel with Sand, trace limestone fragments.	22.0	SS-9	12-13-11 *N=24*	36	72	
	Gray to brown, wet, dense, Gravel with Sand, trace limestone fragments.		SS-10	8-16-20 *N=36*	53	67	
			SS-11	11-19-12 *N=31*	46	89	
			SS-12	9-13-19 *N=32*	47	100	
736.1		29.5					
	Brown, wet, dense to very dense, Sand with Gravel.		SS-13	9-12-19 *N=31*	46	67	

Depth Scale (feet): 0, 5, 10, 15, 20, 25, 30

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 765.6 ft.
Date Started/Completed: 3/5/2024-3/5/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 22.5' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-16
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81580 ,-84.16748

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
			35	SS-14	18-19-31 *N=50*	74	100	
			40	SS-15	19-15-22 *N=37*	55	72	
724.1		41.5						
	Bottom of test boring at 41.5 feet.		45					
			50					
			55					
			60					
			65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 765.6 ft.
Date Started/Completed: 3/5/2024-3/5/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 22.5' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-17
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81527 ,-84.16493

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
765.4	Ground Surface	0.0	0					
764.4	TOPSOIL (12 INCHES).	1.0		SS-1	1-3-2 *N=5*	7	67	
763.4	Brown, moist, loose, Sandy Silt, trace root hairs.	2.0						
	Brown, moist, medium dense, Gravel with Sand, trace limestone fragments.			SS-2	6-6-5 *N=11*	16	61	
			5	SS-3	11-10-9 *N=19*	28	0	
758.4		7.0						
	Gray to Brown, moist, medium dense to dense, Gravel with Sand, trace limestone fragments.			SS-4	5-10-15 *N=25*	37	100	
			10	SS-5	12-15-17 *N=32*	47	56	
753.4		12.0						
	Gray to Brown, moist, dense to very dense, Gravel with Sand, trace limestone fragments.			SS-6	12-27-27 *N=54*	80	100	
			15	SS-7	12-17-16 *N=33*	49	100	
			20	SS-8	12-17-16 *N=33*	49	33	
742.9		22.5						
	Brown, wet, medium dense, Gravel with Sand.		▽25	SS-9	8-12-14 *N=26*	39	67	
737.9		27.5						
	Brown, wet, dense to very dense, Sand with Gravel.		30	SS-10	11-10-26 *N=36*	53	83	
732.9		32.5						

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 765.4 ft.
Date Started/Completed: 3/17/2024-3/17/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-17
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81527 ,-84.16493

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
	Brown, wet, very dense, Gravel with Sand.		35	SS-11	10-30-25 *N=55*	82	100	
723.9		41.5	40	SS-12	6-18-26 *N=44*	65	100	
	Bottom of test boring at 41.5 feet.		45 50 55 60 65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 765.4 ft.
Date Started/Completed: 3/17/2024-3/17/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 25' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-18
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81571 ,-84.16555

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
766.0	Ground Surface	0.0					
765.0	TOPSOIL (12 INCHES).	1.0	SS-1	1-2-2 *N=4*	6	89	
764.0	Brown, moist, loose, Sandy Clayey Silt, trace root hairs.	2.0					
	Gray to Brown, moist, medium dense, Silty Sand with Gravel, trace limestone fragments.		SS-2	4-8-9 *N=17*	25	39	
			SS-3	6-9-11 *N=20*	30	72	
756.5		9.5	SS-4	9-11-11 *N=22*	33	56	
	Brown, moist, medium dense to dense, Gravel with Sand, trace limestone fragments.		SS-5	17-16-14 *N=30*	44	44	
			SS-6	9-16-21 *N=37*	55	78	
			SS-7	14-16-11 *N=27*	40	83	
743.5		22.5	SS-8	12-15-15 *N=30*	44	78	
	Brown, wet, medium dense to dense, Gravel with Sand, trace limestone fragments.		SS-9	11-12-15 *N=27*	40	67	
738.5		27.5					
	Gray to brown, wet, dense, Gravel with Sand.		SS-10	16-13-20 *N=33*	49	100	

Depth Scale (feet): 0, 5, 10, 15, 20, 25, 30

Elevation Ref.: Google Earth Pro
Surface Elevation: 766.0 ft.
Date Started/Completed: 3/6/2024-3/6/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-18
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81571 ,-84.16555

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
			35	SS-11	26-15-29 *N=44*	65	100	
724.5		41.5	40	SS-12	20-30-20 *N=50*	74	100	
	Bottom of test boring at 41.5 feet.		45					
			50					
			55					
			60					
			65					

Elevation Ref.: Google Earth Pro
Surface Elevation: 766.0 ft.
Date Started/Completed: 3/6/2024-3/6/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 25' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-19
PROJECT #: J045355.01
PAGE #: 1 of 3
LAT,LON: 39.81707 ,-84.16477

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
766.0	Ground Surface	0.0	0					
765.0	TOPSOIL (12 INCHES).	1.0		SS-1	1-2-3 *N=5*	7	78	
764.0	Gray, moist, loose, Sandy Silt, trace root hairs.	2.0						
	Gray to brown, moist, medium dense to dense, Gravel with Sand, trace limestone fragments. Gravel=49.8%, Sand=40.6, Silt & Clay=9.6% on SS-4.			SS-2	6-8-10 *N=18*	24	50	
			5	SS-3	12-13-11 *N=24*	32	44	
				SS-4	10-20-15 *N=35*	46	28	
			10	SS-5	7-9-12 *N=21*	28	67	
				SS-6	12-20-27 *N=47*	62	72	
			15	SS-7	9-12-19 *N=31*	41	61	
748.5		17.5						
	Gray to brown, moist, very dense, Gravel with Sand.		20	SS-8	12-48-31 *N=79*	104	39	
743.5		22.5						
	Gray to brown, wet, dense, Gravel with Sand.		25 ▽	SS-9	7-18-24 *N=42*	55	100	
738.5		27.5						
	Gray, wet, very dense Sand with Gravel (SW-SM). Gravel=24.2%, Sand=65.8%, Silt & Clay=10% on SS-11.		30	SS-10	20-25-26 *N=51*	67	100	

Elevation Ref.: Google Earth Pro
Surface Elevation: 766.0 ft.
Date Started/Completed: 3/12/2024-3/12/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55 LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-19
PROJECT #: J045355.01
PAGE #: 2 of 3
LAT,LON: 39.81707 ,-84.16477

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
723.5		42.5	35	SS-11	12-25-23 *N=48*	63	100	
	Gray , wet, very dense, Fine to Medium Sand (SP-SM). Gravel=3.6%, Sand=90.6%, Silt & Clay=5.8% on SS-13.		40	SS-12	19-15-17 *N=32*	42	100	
718.5		47.5	45	SS-13	13-42-34 *N=76*	100	100	
	Gray, wet, very dense, Silty Sand with Gravel.							
713.5		52.5	50	SS-14	22-34-27 *N=61*	80	100	
	Gray , wet, medium dense, Sand.							
708.5		57.5	55	SS-15	22-12-14 *N=26*	34	3	
	Gray, wet, hard, Clay (CL). W=10.6%, LL=20%, PL=14%, PI=8% on SS-16.							
703.5		62.5	60	SS-16	12-18-32 *N=50*	66	100	4.5
	Gray, wet, dense to very dense, Gravel with Sand.		65					

Elevation Ref.: Google Earth Pro
Surface Elevation: 766.0 ft.
Date Started/Completed: 3/12/2024-3/12/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55 LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 25' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-19
PROJECT #: J045355.01
PAGE #: 3 of 3
LAT,LON: 39.81707 ,-84.16477

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
			65	SS-17	12-30-18 *N=48*	63	100	
			70	SS-18	35-20-20 *N=40*	53	100	
			75	SS-19	25-48-50/5"		100	
688.5	Gray, wet, very dense, Silty Gravel with Sand.	77.5						
			80	SS-20	21-35-50/4"		100	
683.5	Gray, wet, very dense, Sand with Gravel.	82.5						
			85	SS-21	16-18-29 *N=47*	62	100	
			90	SS-22	18-33-36 *N=69*	91	100	
674.5	Bottom of test boring at 91.5 feet.	91.5	95					

Elevation Ref.: Google Earth Pro
Surface Elevation: 766.0 ft.
Date Started/Completed: 3/12/2024-3/12/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55 LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 25' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-20
PROJECT #: J045355.01
PAGE #: 1 of 2
LAT,LON: 39.81664 ,-84.16347

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
767.4	Ground Surface	0.0	0					
766.4	TOPSOIL (12 INCHES).	1.0		SS-1	1-3-3 *N=6*	9	67	
765.4	Brown, moist, loose, Sandy Clayey Silt, trace root hairs.	2.0						
	Gray to brown, moist, medium dense to dense, Gravel with Sand, trace limestone fragments.			SS-2	7-6-8 *N=14*	21	56	
			5	SS-3	9-14-15 *N=29*	43	78	
				SS-4	9-11-15 *N=26*	39	67	
			10	SS-5	8-9-12 *N=21*	31	56	
755.4		12.0						
	Gray to brown, moist, medium dense, Gravel with Sand.			SS-6	8-9-12 *N=21*	31	67	
752.9		14.5						
	Gray to brown, moist, very dense, Gravel with Sand, trace limestone fragments.		15	SS-7	11-39-29 *N=68*	101	100	
750.4		17.0						
	Gray to brown, moist, medium dense, Gravel with Sand, trace limestone fragments.			SS-8	10-10-10 *N=20*	30	61	
			20	SS-9	14-10-9 *N=19*	28	72	
				SS-10	10-12-10 *N=22*	33	56	
742.9		24.5						
	Brown, wet, medium dense, Sand with Gravel.		25	SS-11	13-11-5 *N=16*	24	89	
740.4		27.0						
	Brown, wet, medium dense, Silty Gravel with Sand.			SS-12	9-7-7 *N=14*	21	78	
			30	SS-13	4-10-14 *N=24*	36	56	
734.9		32.5						

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 767.4 ft.
Date Started/Completed: 3/4/2024-3/4/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-20
PROJECT #: J045355.01
PAGE #: 2 of 2
LAT,LON: 39.81664 ,-84.16347

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
	Brown to gray, wet, medium dense, Gravel with Sand.							
729.9		37.5	35	SS-14	4-9-10 *N=19*	28	67	
	Gray, wet, medium dense, Sand with Gravel.		40	SS-15	10-19-7 *N=26*	39	100	
725.9		41.5						
	Bottom of test boring at 41.5 feet.		45, 50, 55, 60, 65					

Elevation Ref.: Trimble Zeno GPS Survey
Surface Elevation: 767.4 ft.
Date Started/Completed: 3/4/2024-3/4/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: CME 55LC
Foreman: T. Gilbert
Engineer: Dan Furgason

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 25' during drilling
At Completion: Not Encountered
After:
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 90%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

SOIL CLASSIFICATION SHEET

NON COHESIVE SOILS
(Silt, Sand, Gravel and Combinations)

Density

Very Loose	- 4 blows/ft. or less
Loose	- 5 to 10 blows/ft.
Medium Dense	- 11 to 30 blows/ft.
Dense	- 31 to 50 blows/ft.
Very Dense	- 51 blows/ft. or more

Relative Properties

Descriptive Term	Percent
Trace	1 – 10
Little	11 – 20
Some	21 – 35
And	36 – 50

Particle Size Identification

Boulders	- 8 inch diameter or more	
Cobbles	- 3 to 8 inch diameter	
Gravel	- Coarse	- 3/4 to 3 inches
	- Fine	- 3/16 to 3/4 inches
Sand	- Coarse	- 2mm to 5mm (dia. of pencil lead)
	- Medium	- 0.45mm to 2mm (dia. of broom straw)
	- Fine	- 0.075mm to 0.45mm (dia. of human hair)
Silt		- 0.005mm to 0.075mm (Cannot see particles)

COHESIVE SOILS
(Clay, Silt and Combinations)

Consistency	Field Identification	Unconfined Compressive Strength (tons/sq. ft.)
Very Soft	Easily penetrated several inches by fist	Less than 0.25
Soft	Easily penetrated several inches by thumb	0.25 – 0.5
Medium Stiff	Can be penetrated several inches by thumb with moderate effort	0.5 – 1.0
Stiff	Readily indented by thumb but penetrated only with great effort	1.0 – 2.0
Very Stiff	Readily indented by thumbnail	2.0 – 4.0
Hard	Indented with difficulty by thumbnail	Over 4.0

Classification on logs are made by visual inspection.

Standard Penetration Test – Driving a 2.0" O.D., 1 3/8" I.D., sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary to drive the spoon 6 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and making the tests are recorded for each 6 inches of penetration on the drill log (Example – 6/8/9). The standard penetration test results can be obtained by adding the last two figures (i.e. 8+9=17 blows/ft.). Refusal is defined as greater than 50 blows for 6 inches or less penetration.

Strata Changes – In the column "Soil Descriptions" on the drill log, the horizontal lines represent strata changes. A solid line (————) represents an actually observed change; a dashed line (— — — —) represents an estimated change.

Groundwater observations were made at the times indicated. Porosity of soil strata, weather conditions, site topography, etc., may cause changes in the water levels indicated on the logs.

APPENDIX C – INFILTRATION TESTING

GEOTECHNOLOGY
A Universal Engineering Sciences Company

FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 10
TEST LOCATION: B-19
SOIL DESCRIPTION: Dense Sand with Gravel

TEST START DATE: 3/22/2024
TEST END DATE: 3/22/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 35
Depth to Water Table (ft.): 25
Borehole Depth (ft.): 35
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
3/22/2024	8:18 AM	-	0	0.0	420.0	-	-	
"	8:33 AM	15	15	-0.6	419.4	2.4	6.1	
"	8:48 AM	15	30	-0.9	419.1	1.2	3.0	
"	9:03 AM	15	45	-1.2	418.8	1.2	3.0	
"	9:18 AM	15	60	-1.5	418.5	1.2	3.0	
"	9:48 AM	30	90	-1.8	418.2	0.6	1.5	
"	10:18 AM	30	120	-2.1	417.9	0.6	1.5	
"	11:18 AM	60	180	-19.8	400.2	17.7	45.0	
"	12:18 PM	60	240	-32.4	387.6	12.6	32.0	

GEOTECHNOLOGY
A Universal Engineering Sciences Company

FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 01
TEST LOCATION: B-5
SOIL DESCRIPTION: Very Stiff Silty Clay

TEST START DATE: 3/19/2024
TEST END DATE: 3/19/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 25
Depth to Water Table (ft.): 20
Borehole Depth (ft.): 25
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
3/19/2024	3:30 PM	-	0	0.0	300.0	-	-	
"	3:45 PM	15	15	-2.4	297.6	9.6	24.4	
"	4:00 PM	15	30	-2.4	297.6	0.0	0.0	
"	4:15 PM	15	45	-3.3	296.7	3.6	9.1	
"	4:30 PM	15	60	-3.6	296.4	1.2	3.0	
"	5:00 PM	30	90	-3.9	296.1	0.6	1.5	
"	5:30 PM	30	120	-4.2	295.8	0.6	1.5	
"	6:30 PM	60	180	-4.5	295.5	0.3	0.8	
3/20/2024	9:00 AM	870	1050	-5.4	294.6	0.1	0.2	

Filename: B-5_25FT_Falling Head Field Infiltration Test
Tab: Input

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FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 04
TEST LOCATION: B-6
SOIL DESCRIPTION: Medium dense Sand with Gravel

TEST START DATE: 3/20/2024
TEST END DATE: 3/20/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 20
Depth to Water Table (ft.): 20
Borehole Depth (ft.): 20
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
3/20/2024	11:25 AM	-	0	0.0	240.0	-	-	
"	11:40 AM	15	15	-3.6	236.4	14.4	36.6	
"	11:55 AM	15	30	-5.4	234.6	7.2	18.3	
"	12:10 PM	15	45	-7.2	232.8	7.2	18.3	
"	12:25 PM	15	60	-9.0	231.0	7.2	18.3	
"	12:55 PM	30	90	-12.6	227.4	7.2	18.3	
"	1:25 PM	30	120	-16.2	223.8	7.2	18.3	
"	2:25 PM	60	180	-21.6	218.4	5.4	13.7	
"	3:25 PM	60	240	-27.6	212.4	6.0	15.2	

Filename: B-6_20FT_Falling Head Field Infiltration Test
Tab: Input

GEOTECHNOLOGY
A Universal Engineering Sciences Company

FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 04
TEST LOCATION: B-6
SOIL DESCRIPTION: Dense Sand with Gravel

TEST START DATE: 3/20/2024
TEST END DATE: 3/20/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 25
Depth to Water Table (ft.): 20
Borehole Depth (ft.): 25
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
3/20/2024	11:25 AM	-	0	0.0	300.0	-	-	
"	11:40 AM	15	15	-9.0	291.0	36.0	91.4	
"	11:55 AM	15	30	-13.2	286.8	16.8	42.7	
"	12:10 PM	15	45	-18.6	281.4	21.6	54.9	
"	12:25 PM	15	60	-24.0	276.0	21.6	54.9	
"	12:55 PM	30	90	-31.2	268.8	14.4	36.6	
"	1:25 PM	30	120	-38.4	261.6	14.4	36.6	
"	2:25 PM	60	180	-54.0	246.0	15.6	39.6	
"	3:25 PM	60	240	-67.2	232.8	13.2	33.5	

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FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 03
TEST LOCATION: B-6
SOIL DESCRIPTION: Very Stiff Silt

TEST START DATE: 3/20/2024
TEST END DATE: 3/20/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 30
Depth to Water Table (ft.): 20
Borehole Depth (ft.): 30
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
3/20/2024	10:40 AM	-	0	0.0	360.0	-	-	
"	10:55 AM	15	15	-117.6	242.4	470.4	1194.8	
"	11:10 AM	15	30	-146.4	213.6	115.2	292.6	
"	11:25 AM	15	45	-158.4	201.6	48.0	121.9	
"	11:40 AM	15	60	-159.6	200.4	4.8	12.2	
"	12:10 PM	30	90	-163.2	196.8	7.2	18.3	
"	12:40 PM	30	120	-166.8	193.2	7.2	18.3	
"	1:40 PM	60	180	-171.6	188.4	4.8	12.2	
"	2:40 PM	60	240	-176.4	183.6	4.8	12.2	
"	3:40 PM	60	300	-181.2	178.8	4.8	12.2	

Filename: B-6_30FT_Falling Head Field Infiltration Test
Tab: Input

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FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 02
TEST LOCATION: B-6
SOIL DESCRIPTION: Dense Sand with Gravel

TEST START DATE: 3/20/2024
TEST END DATE: 3/20/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 40
Depth to Water Table (ft.): 20
Borehole Depth (ft.): 40
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
3/20/2024	9:25 AM	-	0	0.0	480.0	-	-	
"	9:40 AM	15	15	-32.4	447.6	129.6	329.2	
"	9:55 AM	15	30	-49.2	430.8	67.2	170.7	
"	10:10 AM	15	45	-60.0	420.0	43.2	109.7	
"	10:25 AM	15	60	-70.8	409.2	43.2	109.7	
"	10:55 AM	30	90	-92.4	387.6	43.2	109.7	
"	11:25 AM	30	120	-103.2	376.8	21.6	54.9	
"	12:25 PM	60	180	-127.2	352.8	24.0	61.0	
"	1:25 PM	60	240	-145.2	334.8	18.0	45.7	
"	2:25 PM	60	300	-163.2	316.8	18.0	45.7	
"	3:25 PM	60	360	-175.2	304.8	12.0	30.5	

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FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 09
TEST LOCATION: B-11
SOIL DESCRIPTION: Dense Sand with Gravel

TEST START DATE: 3/21/2024
TEST END DATE: 3/21/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 20
Depth to Water Table (ft.): 20
Borehole Depth (ft.): 20
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
3/21/2024	1:11 PM	-	0	0.0	240.0	-	-	
"	1:26 PM	15	15	-240.0	0.0	960.0	2438.4	
"	1:31 PM	5	20	-240.0	0.0	0.0	0.0	

Filename: B-11_20FT_Falling Head Field Infiltration Test
Tab: Input

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FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 08
TEST LOCATION: B-11
SOIL DESCRIPTION: Dense Sand with Gravel

TEST START DATE: 3/21/2024
TEST END DATE: 3/21/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 25
Depth to Water Table (ft.): 20
Borehole Depth (ft.): 25
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
3/21/2024	1:14 PM	-	0	0.0	300.0	-	-	
"	1:29 PM	15	15	-300.0	0.0	1200.0	3048.0	
"	1:32 PM	3	18	-300.0	0.0	0.0	0.0	

Filename: B-11_25FT_Falling Head Field Infiltration Test
Tab: Input

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FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 07
TEST LOCATION: B-11
SOIL DESCRIPTION: Medium Dense Sand with Gravel

TEST START DATE: 3/21/2024
TEST END DATE: 3/21/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 30
Depth to Water Table (ft.): 20
Borehole Depth (ft.): 30
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
3/21/2024	1:10 PM	-	0	0.0	360.0	-	-	
"	1:25 PM	15	15	-1.5	358.5	6.0	15.2	
"	1:40 PM	15	30	-2.4	357.6	3.6	9.1	
"	1:55 PM	15	45	-2.7	357.3	1.2	3.0	
"	2:10 PM	15	60	-3.0	357.0	1.2	3.0	
"	2:40 PM	30	90	-3.3	356.7	0.6	1.5	
"	3:10 PM	30	120	-3.6	356.4	0.6	1.5	
"	4:10 PM	60	180	-21.0	339.0	17.4	44.2	
"	5:10 PM	60	240	-35.4	324.6	14.4	36.6	

Filename: B-11_30FT_Falling Head Field Infiltration Test
Tab: Input

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FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 06
TEST LOCATION: B-11
SOIL DESCRIPTION: Dense Sand with Gravel

TEST START DATE: 3/21/2024
TEST END DATE: 3/21/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 40
Depth to Water Table (ft.): 20
Borehole Depth (ft.): 40
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
3/21/2024	1:08 PM	-	0	0.0	480.0	-	-	
"	1:23 PM	15	15	-67.8	412.2	271.2	688.8	
"	1:38 PM	15	30	-91.2	388.8	93.6	237.7	
"	1:53 PM	15	45	-109.8	370.2	74.4	189.0	
"	2:08 PM	15	60	-124.8	355.2	60.0	152.4	
"	2:38 PM	30	90	-148.2	331.8	46.8	118.9	
"	3:08 PM	30	120	-166.8	313.2	37.2	94.5	
"	4:08 PM	60	180	-195.6	284.4	28.8	73.2	
"	5:08 PM	60	240	-219.0	261.0	23.4	59.4	

Filename: B-11_40FT_Falling Head Field Infiltration Test
Tab: Input

APPENDIX D – LABORATORY TEST DATA

Tabulation of Laboratory Tests

Particle-Size Analysis Test Forms

Liquid Limits

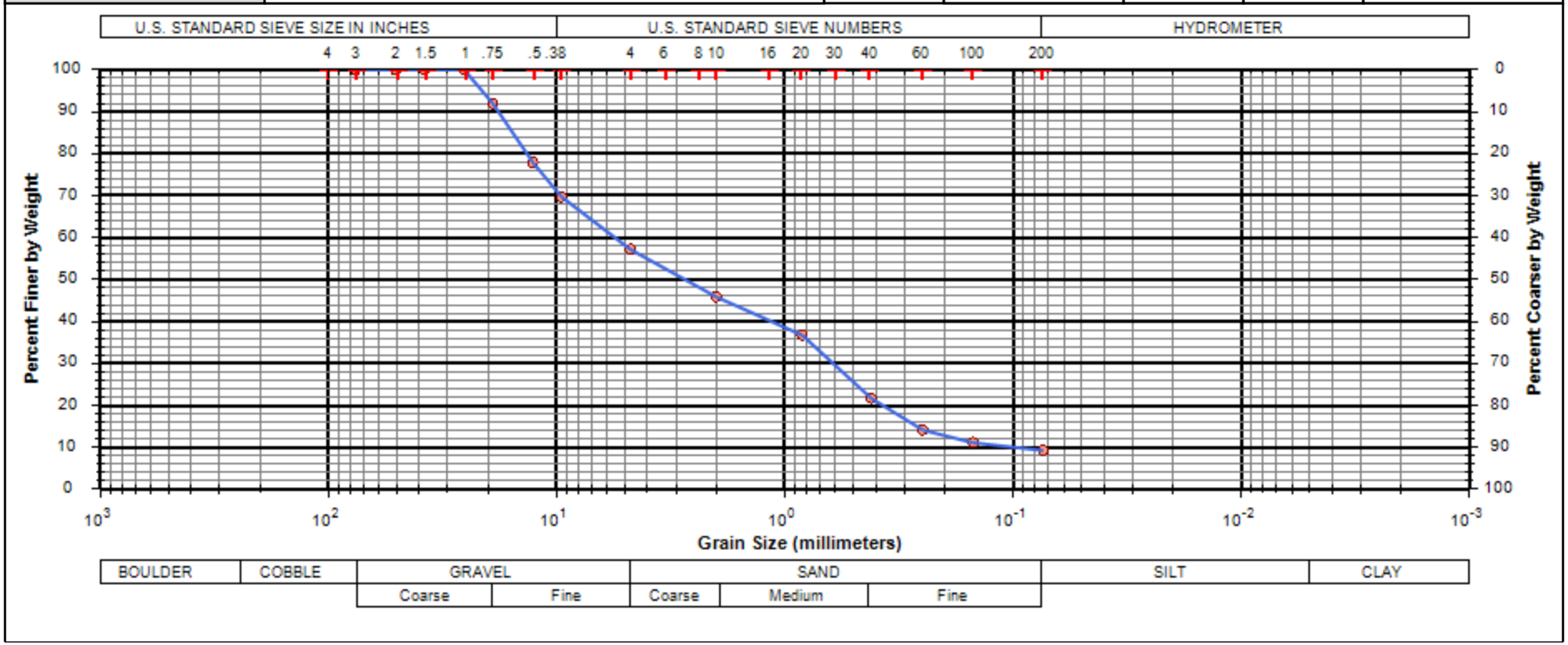
Dayton Miami Well Field
Dayton, OH
J045355.01

TABULATION OF LABORATORY TESTS

Boring No.	Sample No.	Depth (ft.)		Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%)			Gradation Analysis (%)				USCS Classification
		From	To			LL	PL	PI	Gravel	Sand	Silt	Clay	
B-1	SS-4	7.5	9.0						42.8	41.9	9.3	9.3	SP-SM
B-3	SS-9	25.0	26.5	11.5		22	15	7	4.5	32.6	34.2	28.7	CL-ML
B-4	SS-18	70.0	71.5	11.4					6.8	37.0	30.0	26.2	
B-4	SS-4	7.5	9.0						31.0	62.5	6.5	6.5	SP-SM
B-5	SS-9	25.0	26.5	11.5					10.2	28.8	30.4	30.6	
B-6	SS-3	5.0	6.5						55.7	28.0	16.3	16.3	GM
B-6	SS-8	20.0	21.5						25.8	69.4	4.8	4.8	SP
B-6	SS-10	30.0	31.5	12.7					1.2	29.6	43.1	26.1	
B-6	SS-12	40.0	41.5						40.2	50.3	9.5	9.5	SW-SM
B-7	SS-9	25.0	26.5						5.1	87.1	7.8	7.8	SP-SM
B-11	SS-3	5.0	6.5						53.0	39.2	7.8	7.8	GW-GM
B-11	SS-8	20.0	21.5						31.1	58.8	10.1	10.1	GS-SM
B-11	SS-10	30.0	31.5						34.5	65.6	9.9	9.9	SP-SM
B-11	SS-12	40.0	41.5						1.1	86.9	12.0	12.0	SW-SM
B-11	SS-18	70.0	71.5	10.3		20	13	7	6.0	39.3	54.7	54.7	CL-ML
B-19	SS-4	7.5	9.0						49.8	40.6	9.6	9.6	GW-GM
B-19	SS-11	35.0	36.5						24.2	65.8	10.0	10.0	SW-SM
B-19	SS-13	45.0	46.5						3.6	90.6	5.8	5.8	SP-SM
B-19	SS-16	60.0	61.5	10.6		22	14	8	3.2	33.8	32.8	30.2	CL

PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech							Project No.:	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH							Date:	03/27/2024
Boring No.:	1	Sample No.:	SS-4	Depth (ft.):	7.5	Gravel (%)	Sand (%)	Silt & Clay (%)	USCS
Sample Description:						42.8	47.9	9.3	SP-SM
						LL	PL	PI / Group Index	WC (%)



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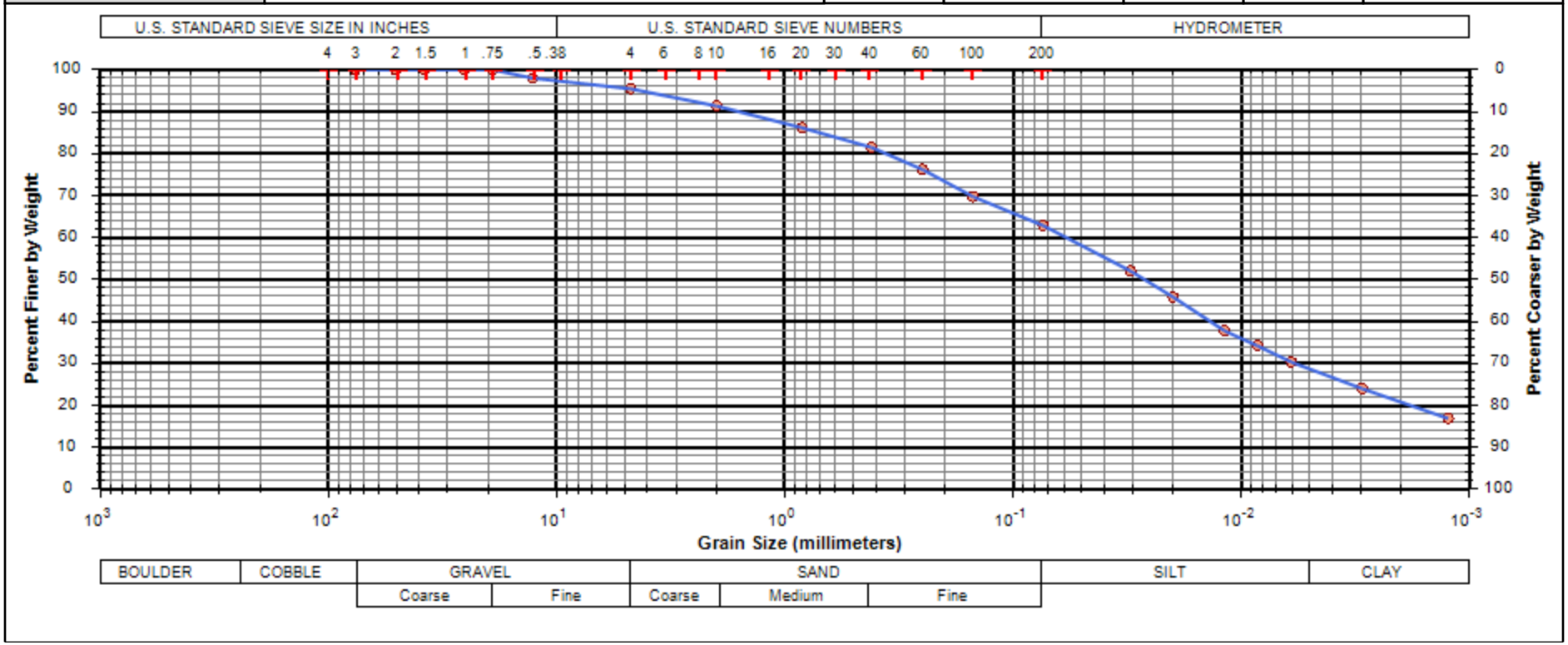
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech								Project No.:	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH								Date:	03/28/2024
Boring No.:	3	Sample No.:	SS-9	Depth (ft.):	25.0	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	USCS
Sample Description:						4.5	32.6	34.2	28.7	CL-ML
						LL	PL	PI	Group Index	WC (%)
						22	15	7		11.5



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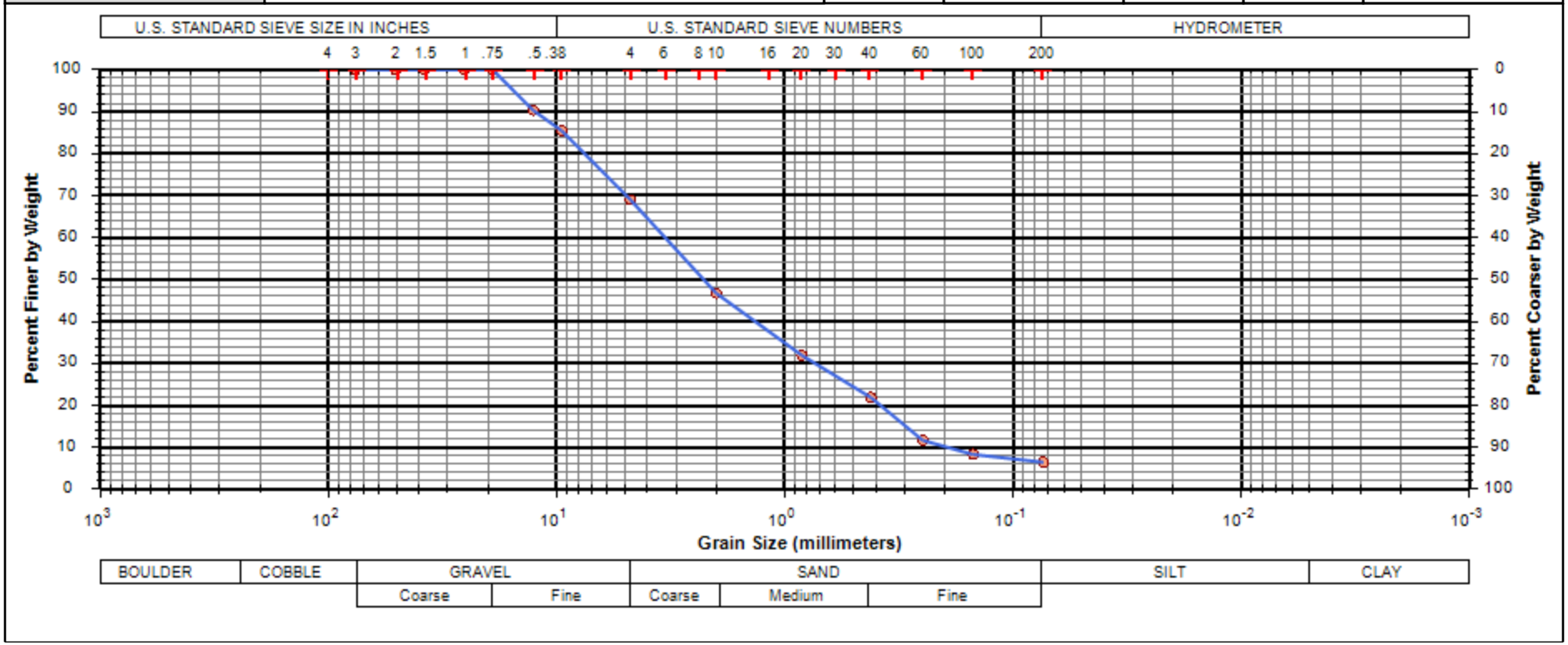
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech								**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH								**Date:**	03/28/2024
Boring No.:	4	**Sample No.:**	SS-4	**Depth (ft.):**	7.5	**Gravel (%)**	**Sand (%)**	**Silt & Clay (%)**		**USCS**
Sample Description:						31.0	62.5	6.5		SP-SM
						LL	**PL**	**PI**	**Group Index**	**WC (%)**



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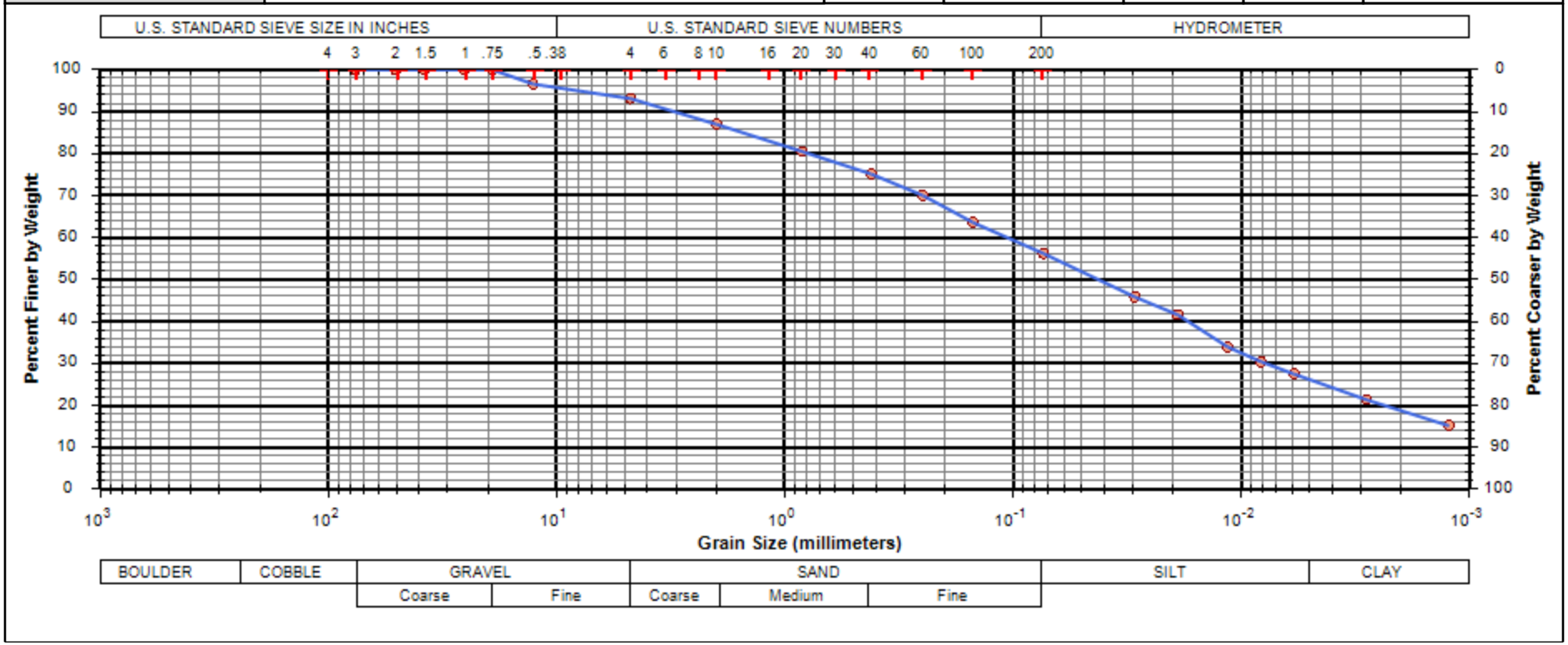
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech								Project No.:	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH								Date:	03/28/2024
Boring No.:	4	Sample No.:	SS-18	Depth (ft.):	70.0	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	USCS
Sample Description:						6.8	37.0	30.0	26.2	-
						LL	PL	PI	Group Index	WC (%)
										11.4



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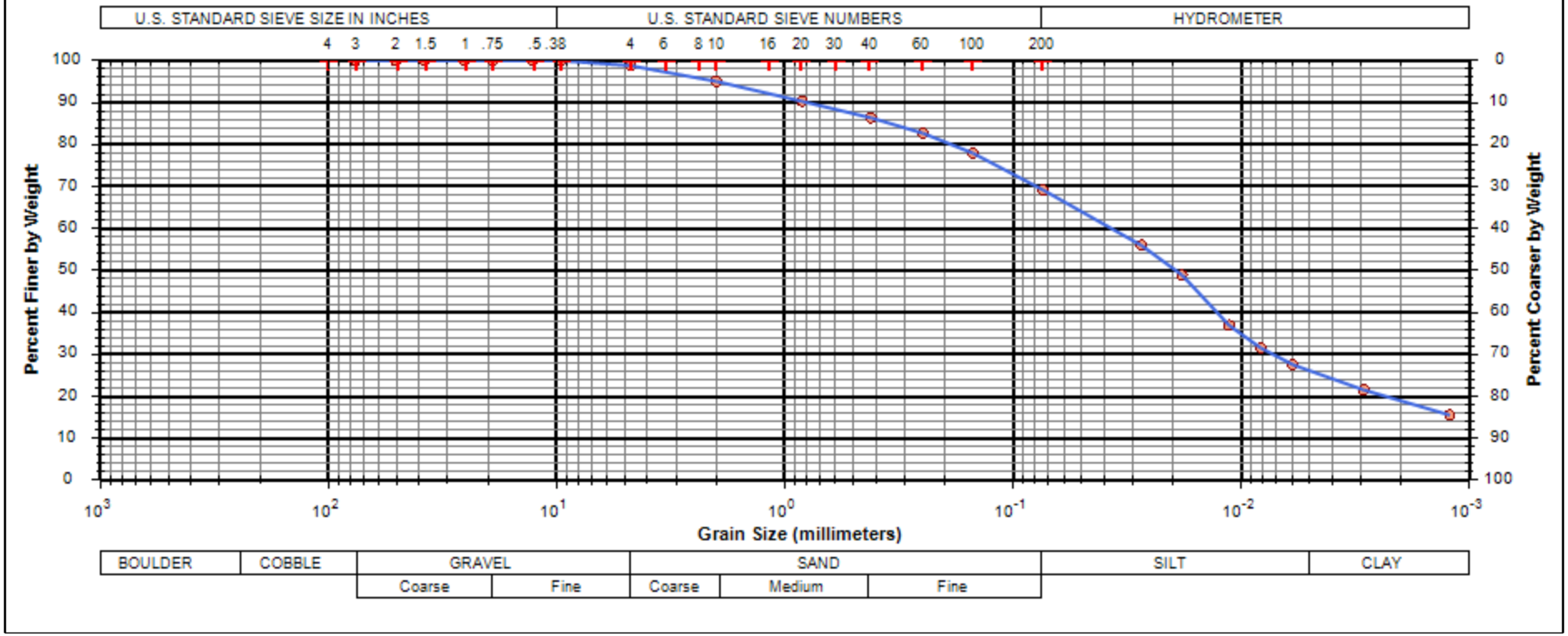
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech								**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH								**Date:**	03/28/2024
Boring No.:	6	**Sample No.:**	SS-10	**Depth (ft.):**	30.0	**Gravel (%)**	**Sand (%)**	**Silt (%)**	**Clay (%)**	**USCS**
Sample Description:						1.2	29.6	43.1	26.1	-
						LL	**PL**	**PI**	**Group Index**	**WC (%)**
										12.7



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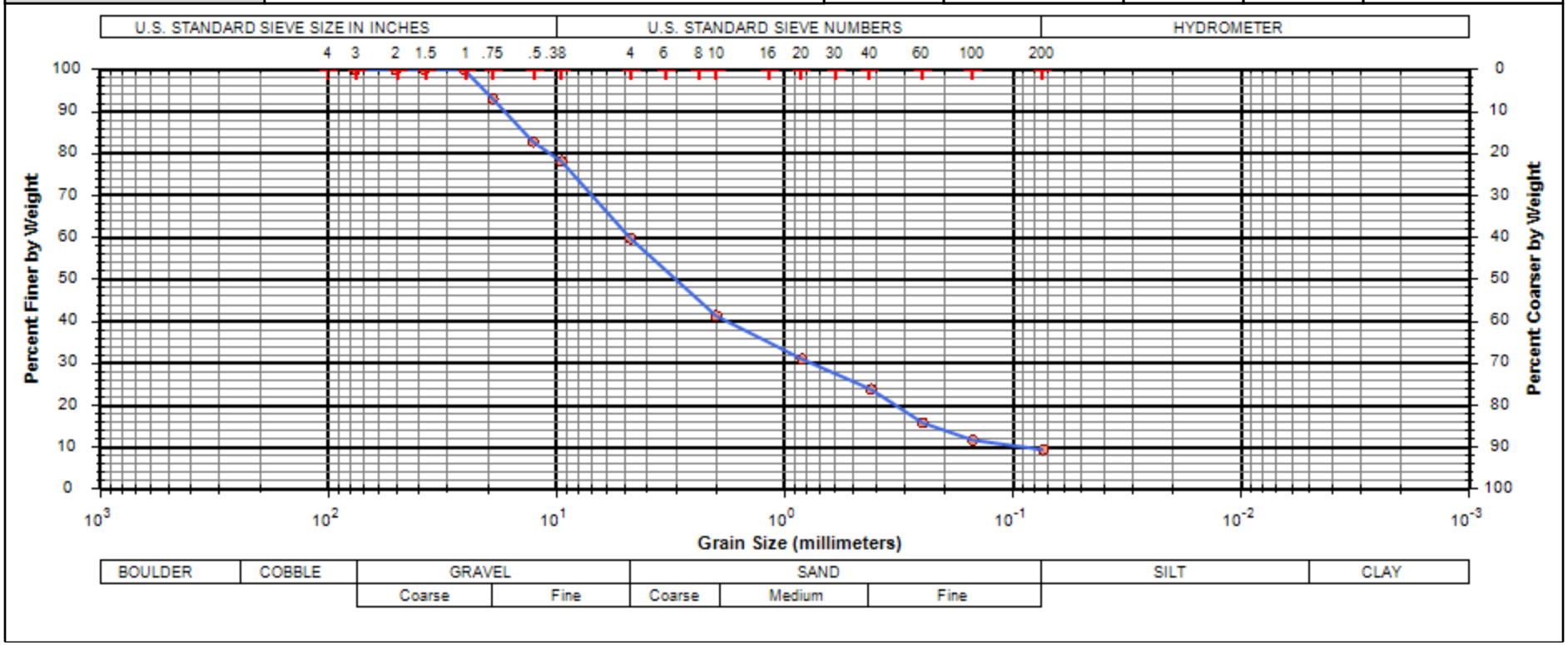
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech							**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH							**Date:**	03/28/2024
Boring No.:	6	**Sample No.:**	SS-12	**Depth (ft.):**	40.0	**Gravel (%)**	**Sand (%)**	**Silt & Clay (%)**	**USCS**
Sample Description:						40.2	50.3	9.5	SW-SM
						LL	**PL**	**PI** / **Group Index**	**WC (%)**



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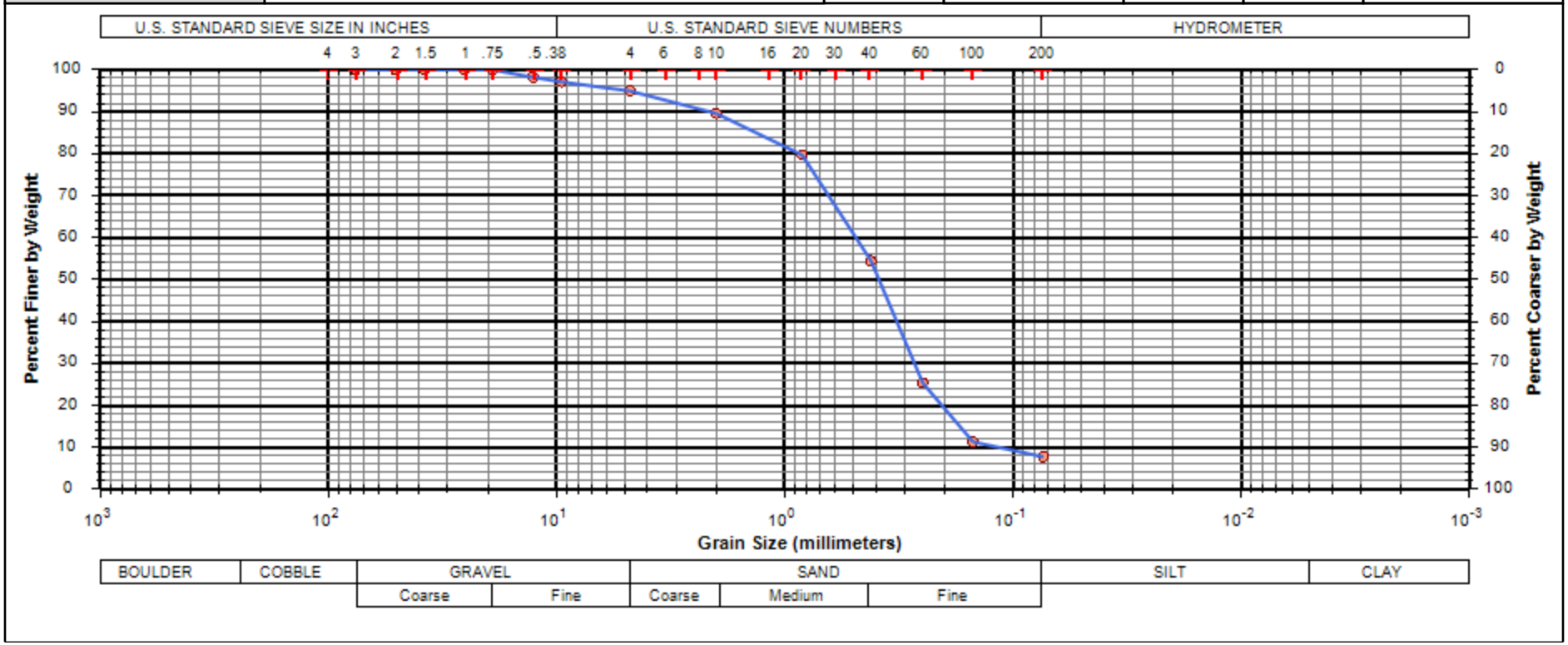
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech							**Project No.:**	J045355.01
Project:	Geotechnical Service, Dayton Miami Well Field Expansion, Dayton, OH							**Date:**	03/28/2024
Boring No.:	7	**Sample No.:**	SS-9	**Depth (ft.):**	25.0	**Gravel (%)**	**Sand (%)**	**Silt & Clay (%)**	**USCS**
Sample Description:						5.1	87.1	7.8	SP-SM
						LL	**PL**	**PI** / **Group Index**	**WC (%)**



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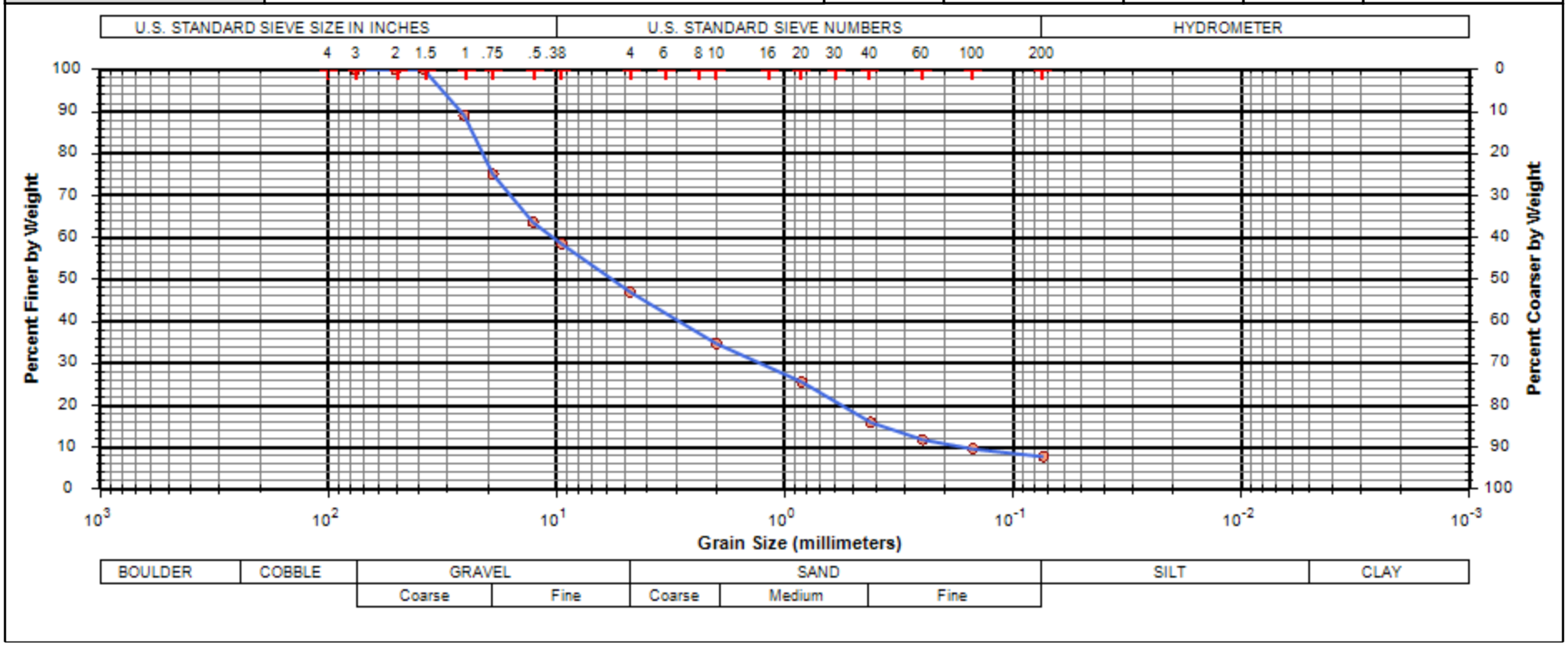
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech							**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH							**Date:**	03/28/2024
Boring No.:	11	**Sample No.:**	SS-3	**Depth (ft.):**	5.0	**Gravel (%)**	**Sand (%)**	**Silt & Clay (%)**	**USCS**
Sample Description:						53.0	39.2	7.8	GW-GM
						LL	**PL**	**PI**	**Group Index**	**WC (%)**



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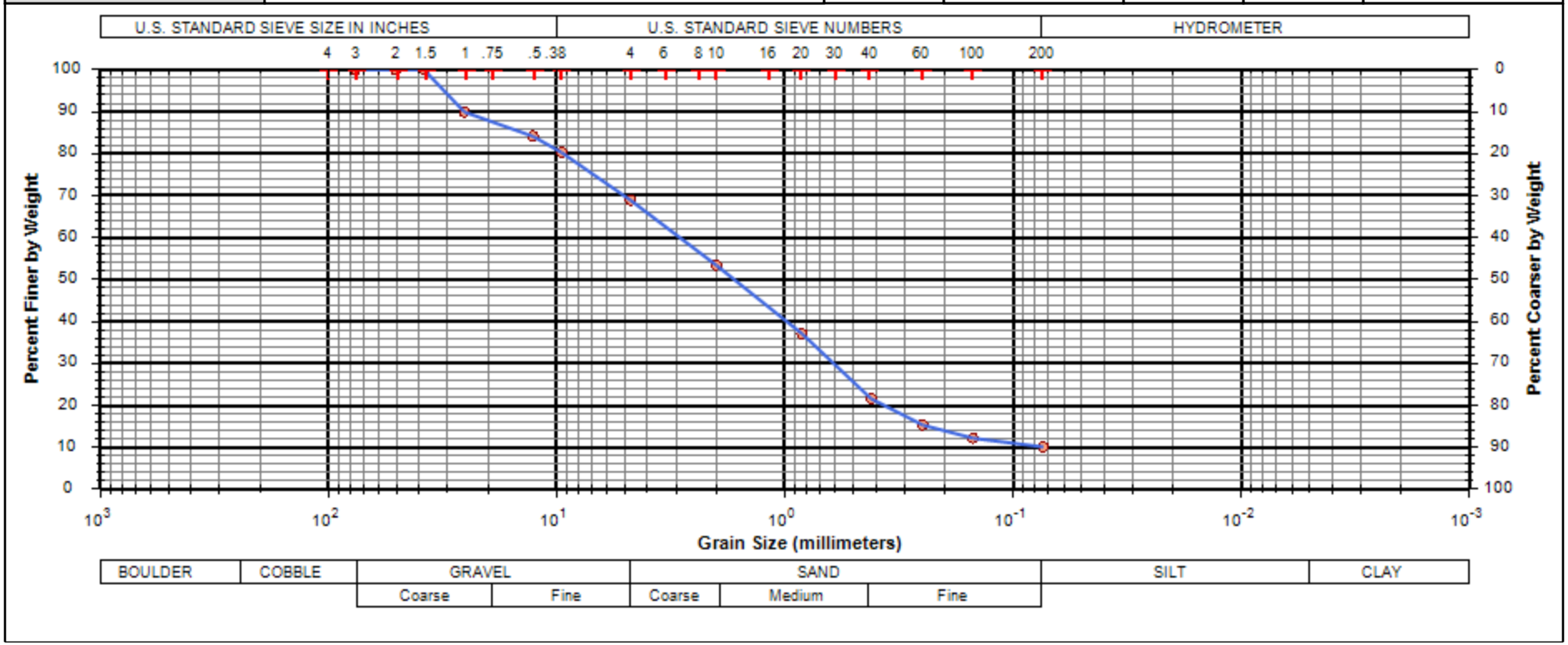
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech								**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH								**Date:**	03/28/2024
Boring No.:	11	**Sample No.:**	SS-8	**Depth (ft.):**	20.0	**Gravel (%)**	**Sand (%)**	**Silt & Clay (%)**		**USCS**
Sample Description:						31.1	58.8	10.1		SW-SM
						LL	**PL**	**PI**	**Group Index**	**WC (%)**



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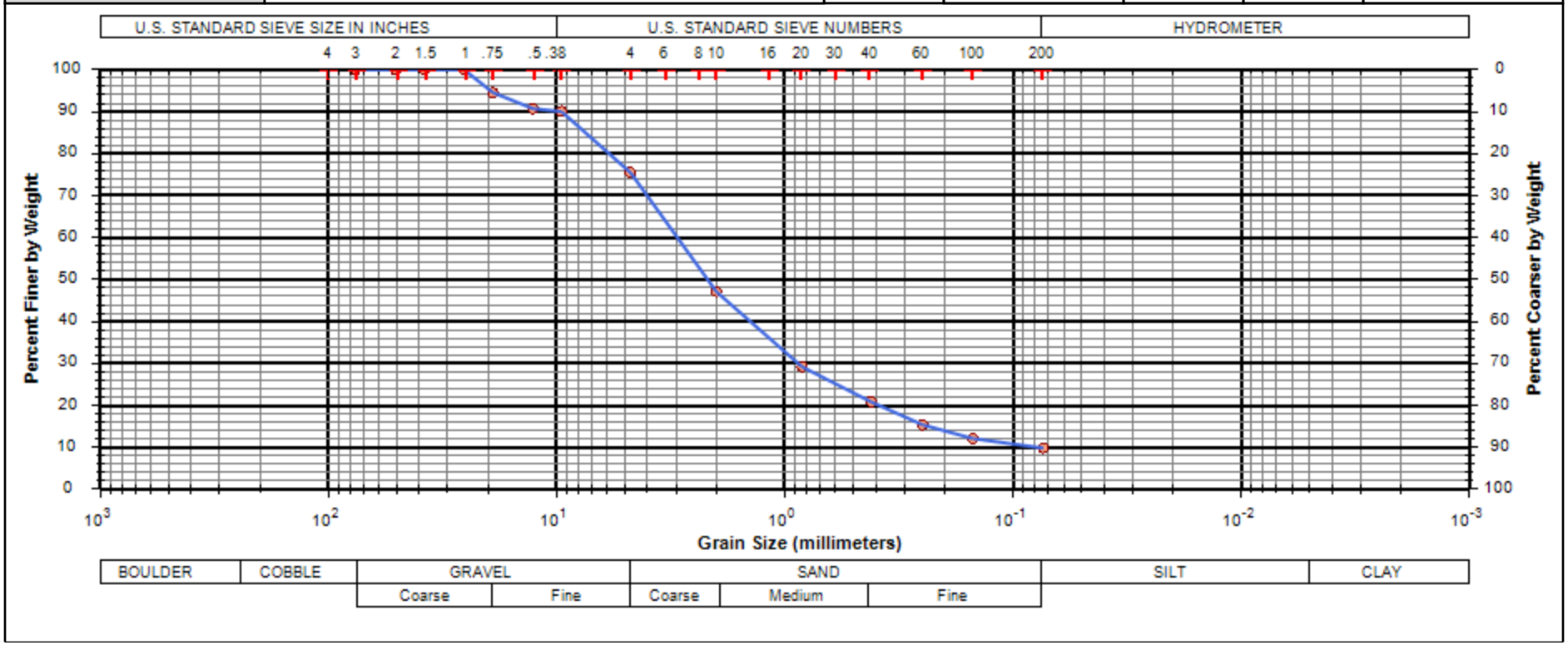
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech								**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH								**Date:**	03/28/2024
Boring No.:	11	**Sample No.:**	SS-10	**Depth (ft.):**	30.0	**Gravel (%)**	**Sand (%)**	**Silt & Clay (%)**		**USCS**
Sample Description:						24.5	65.6	9.9		SP-SM
						LL	**PL**	**PI**	**Group Index**	**WC (%)**



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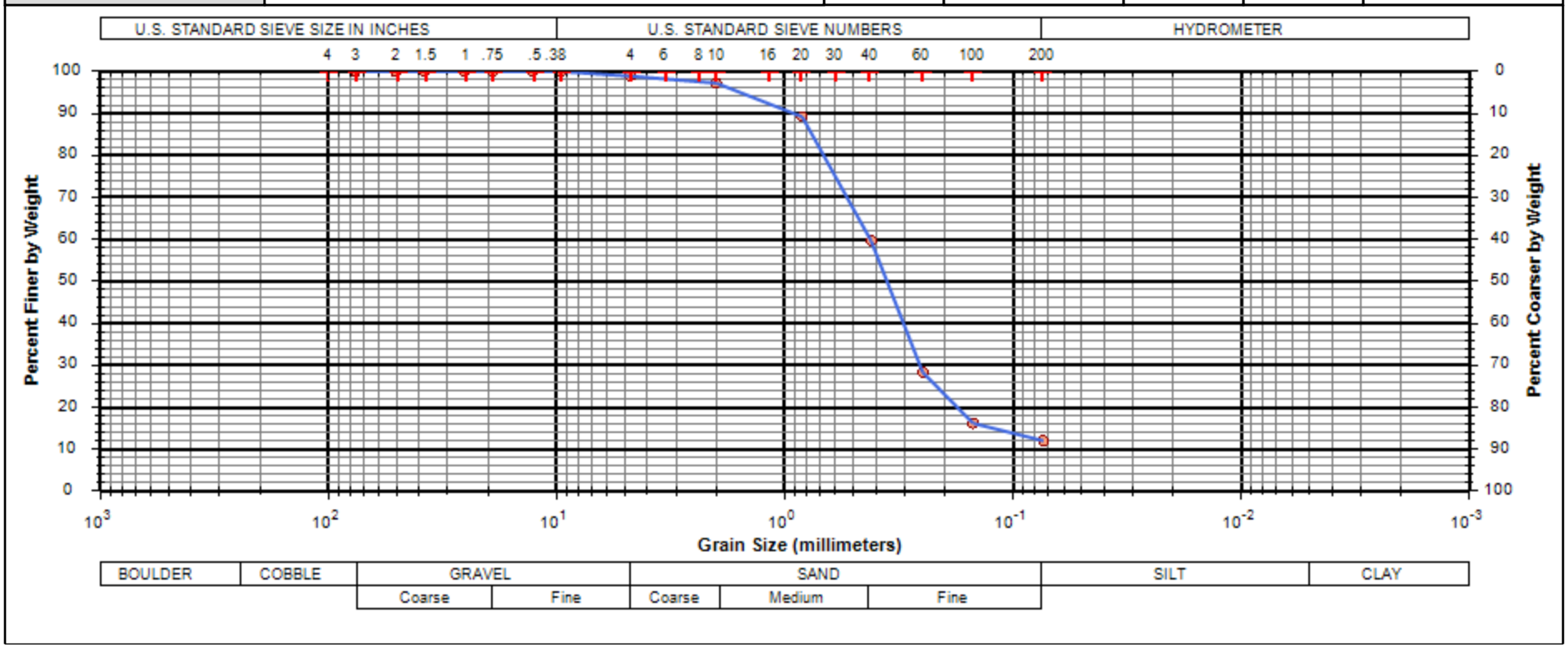
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech							Project No.:	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH							Date:	03/28/2024
Boring No.:	11	Sample No.:	SS-12	Depth (ft.):	40.0	Gravel (%)	Sand (%)	Silt & Clay (%)	USCS
Sample Description:						1.1	86.9	12.0	SW-SM
						LL	PL	PI / Group Index	WC (%)



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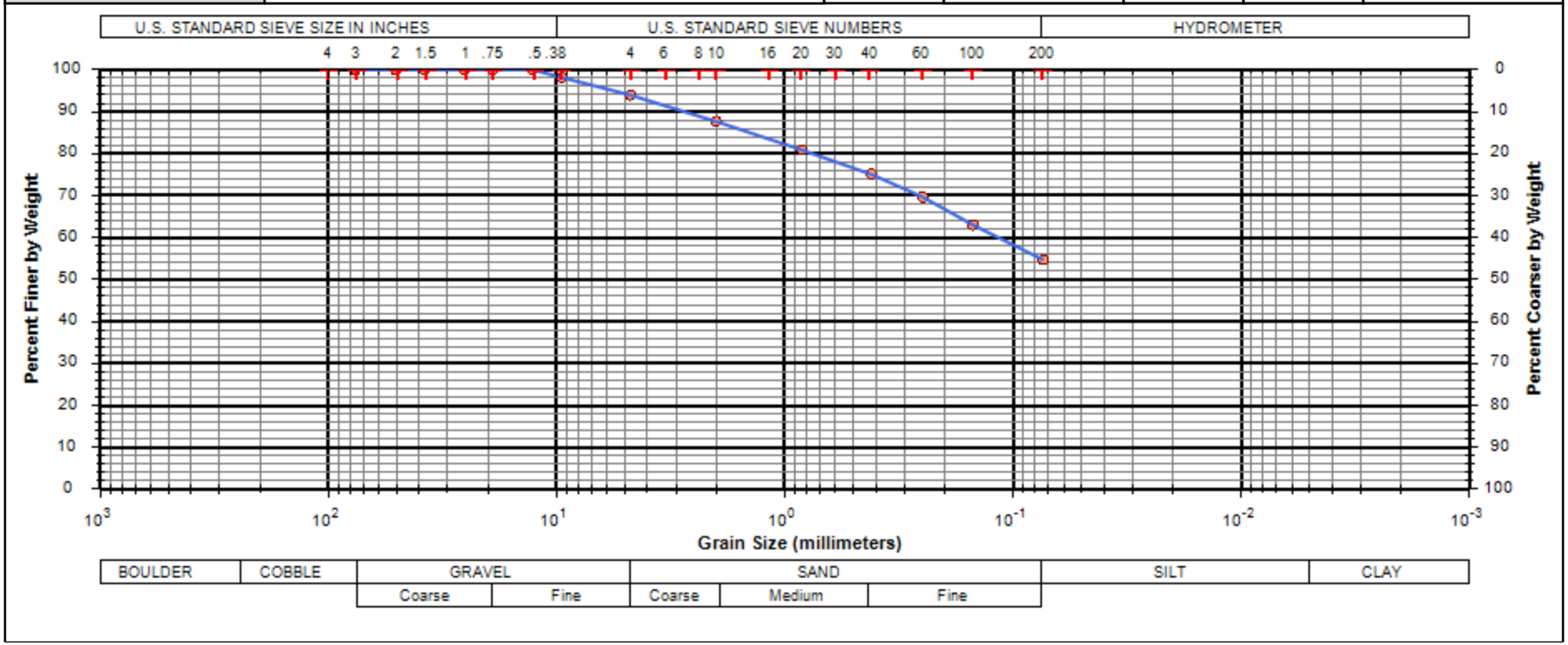
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech							**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH							**Date:**	03/28/2024
Boring No.:	11	**Sample No.:**	SS-18	**Depth (ft.):**	70.0	**Gravel (%)**	**Sand (%)**	**Silt & Clay (%)**	**USCS**
Sample Description:						6.0	39.3	54.7	CL-ML
						LL	**PL**	**PI** / **Group Index**	**WC (%)**
						20	13	7	10.3



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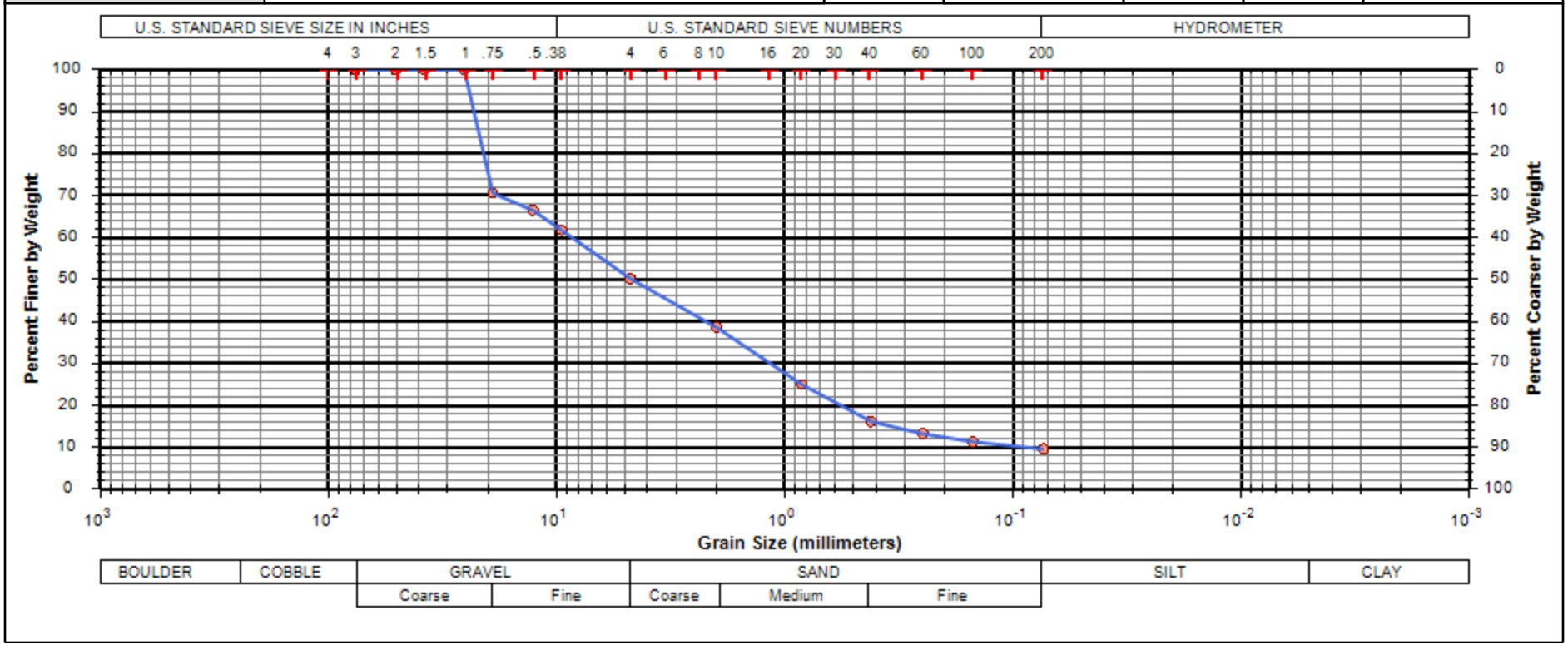
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech								**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH								**Date:**	03/28/2024
Boring No.:	19	**Sample No.:**	SS-4	**Depth (ft.):**	7.5	**Gravel (%)**	**Sand (%)**	**Silt & Clay (%)**		**USCS**
Sample Description:						49.8	40.6	9.6		GW-GM
						LL	**PL**	**PI**	**Group Index**	**WC (%)**



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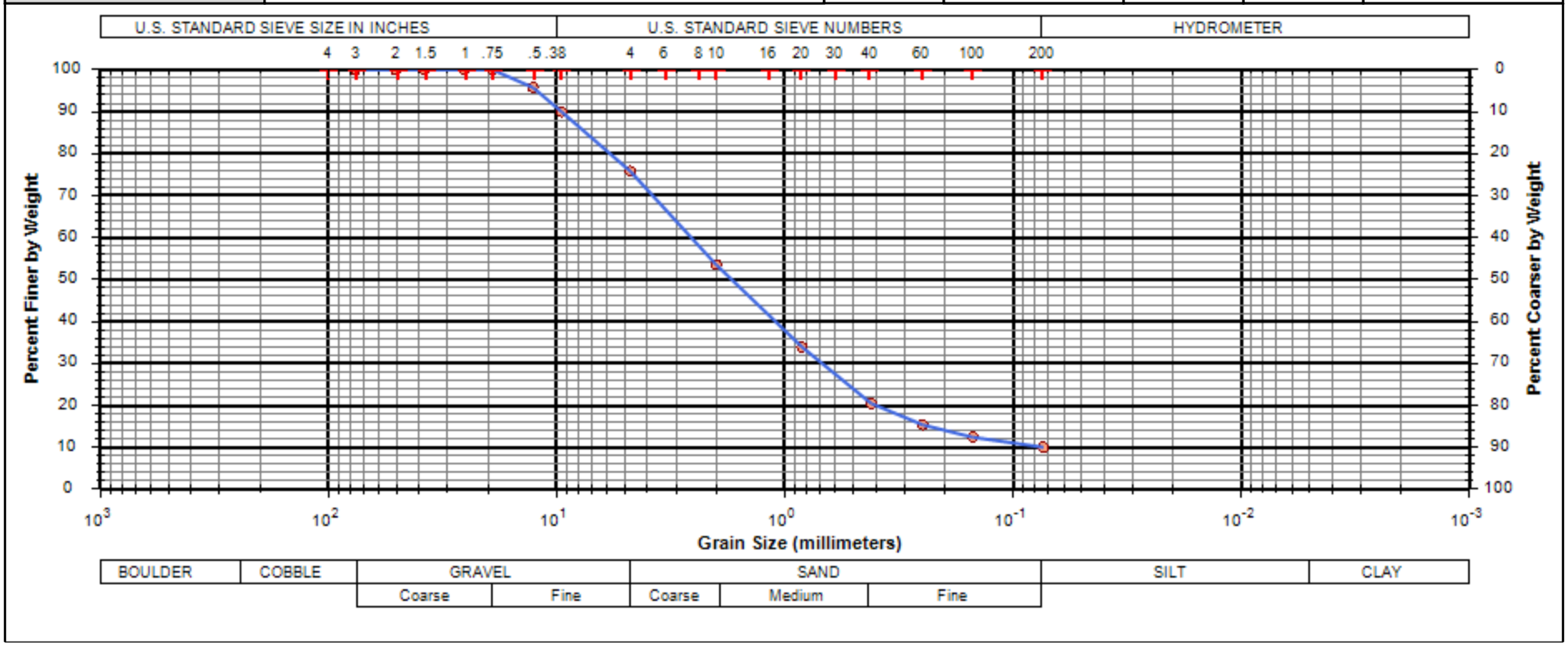
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech							Project No.:	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH							Date:	03/28/2024
Boring No.:	19	Sample No.:	SS-11	Depth (ft.):	35.0	Gravel (%)	Sand (%)	Silt & Clay (%)	USCS
Sample Description:						24.2	65.8	10.0	SW-SM
						LL	PL	PI / Group Index	WC (%)



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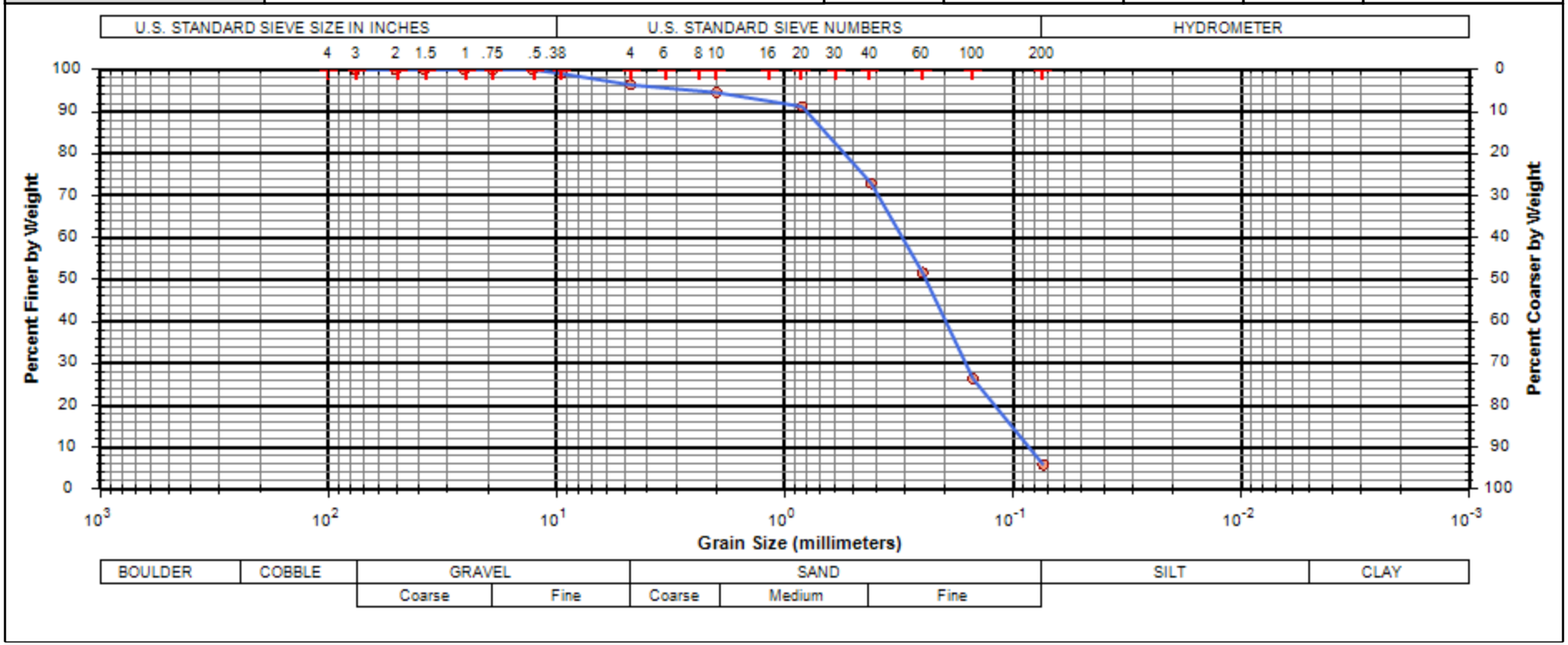
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech								**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH								**Date:**	03/28/2024
Boring No.:	19	**Sample No.:**	SS-13	**Depth (ft.):**	45.0	**Gravel (%)**	**Sand (%)**	**Silt & Clay (%)**		**USCS**
Sample Description:						3.6	90.6	5.8		SP-SM
						LL	**PL**	**PI**	**Group Index**	**WC (%)**



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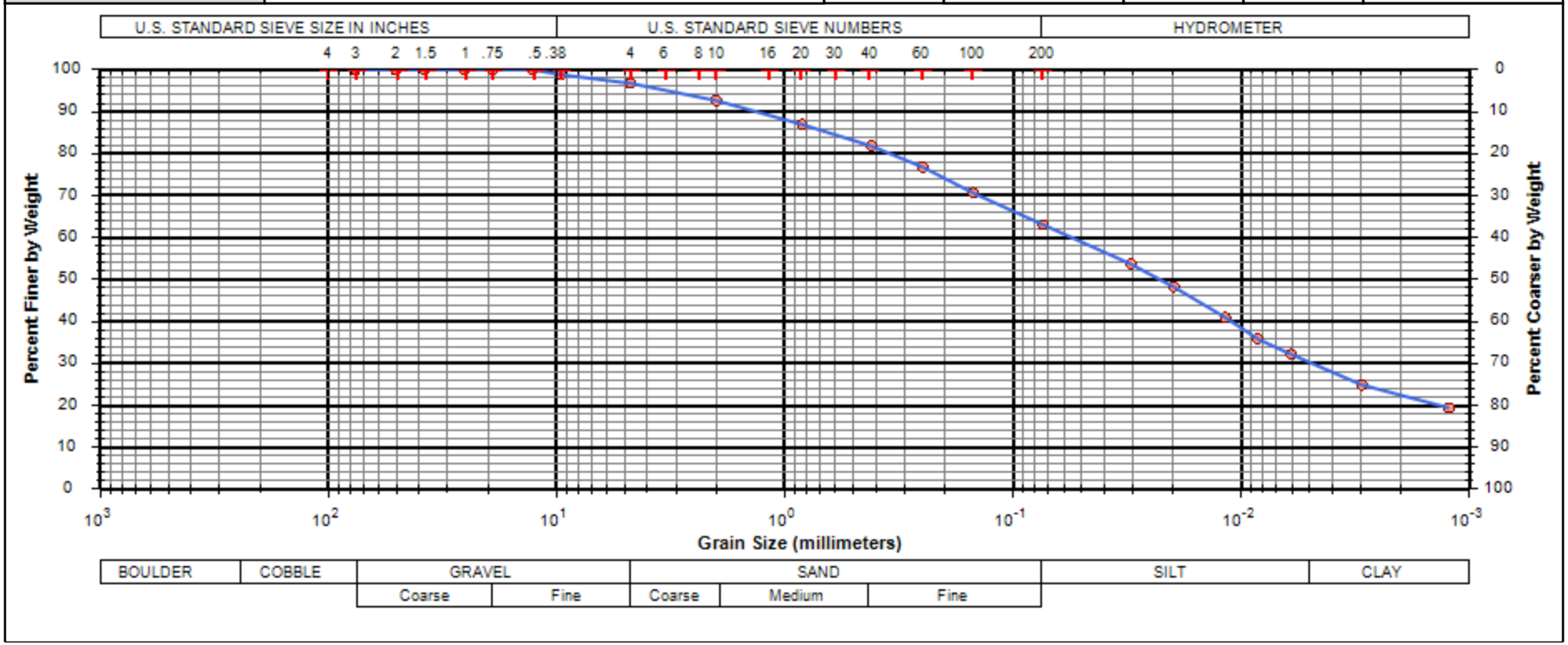
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech								Project No.:	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH								Date:	03/28/2024
Boring No.:	19	Sample No.:	SS-16	Depth (ft.):	60.0	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	USCS
Sample Description:						3.2	33.8	32.8	30.2	CL
						LL	PL	PI	Group Index	WC (%)
						22	14	8		10.6



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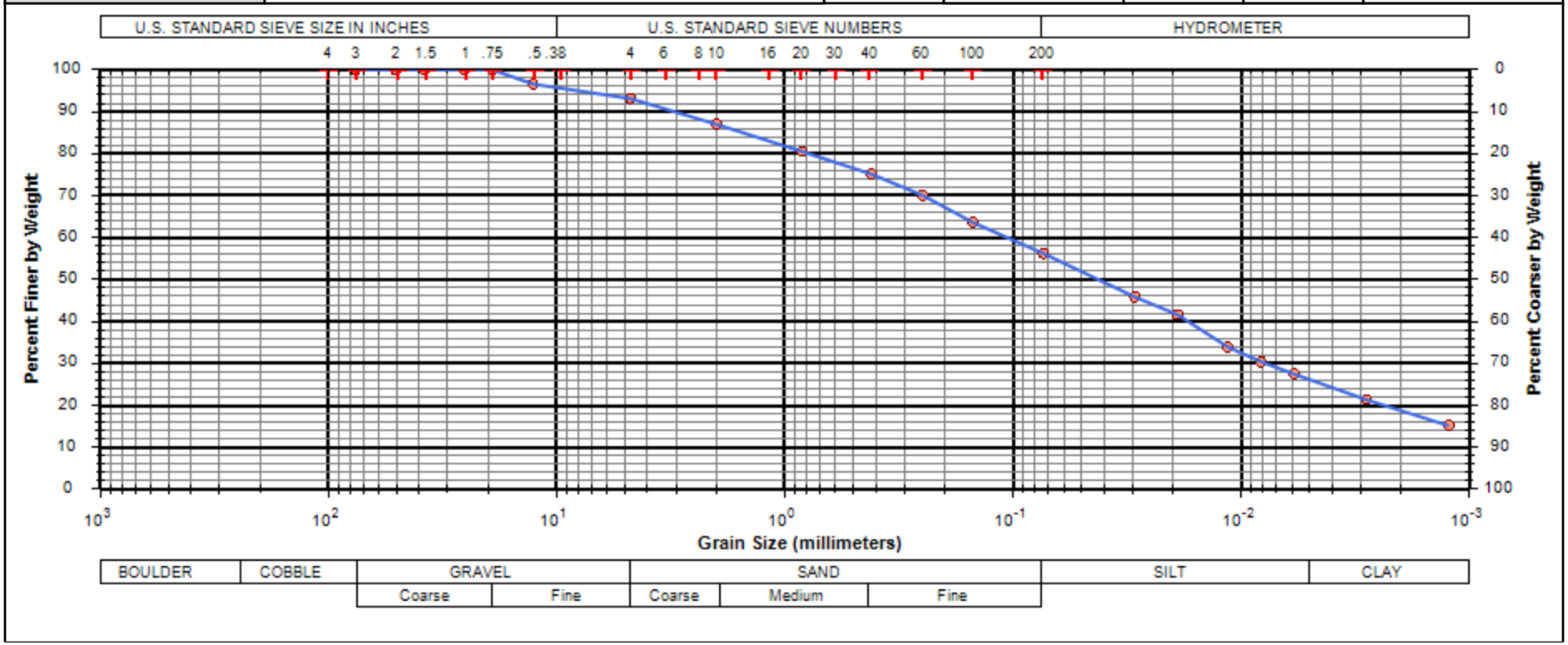
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech								Project No.:	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH								Date:	03/28/2024
Boring No.:	4	Sample No.:	SS-18	Depth (ft.):	70.0	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	USCS
Sample Description:						6.8	37.0	30.0	26.2	-
						LL	PL	PI	Group Index	WC (%)
										11.4



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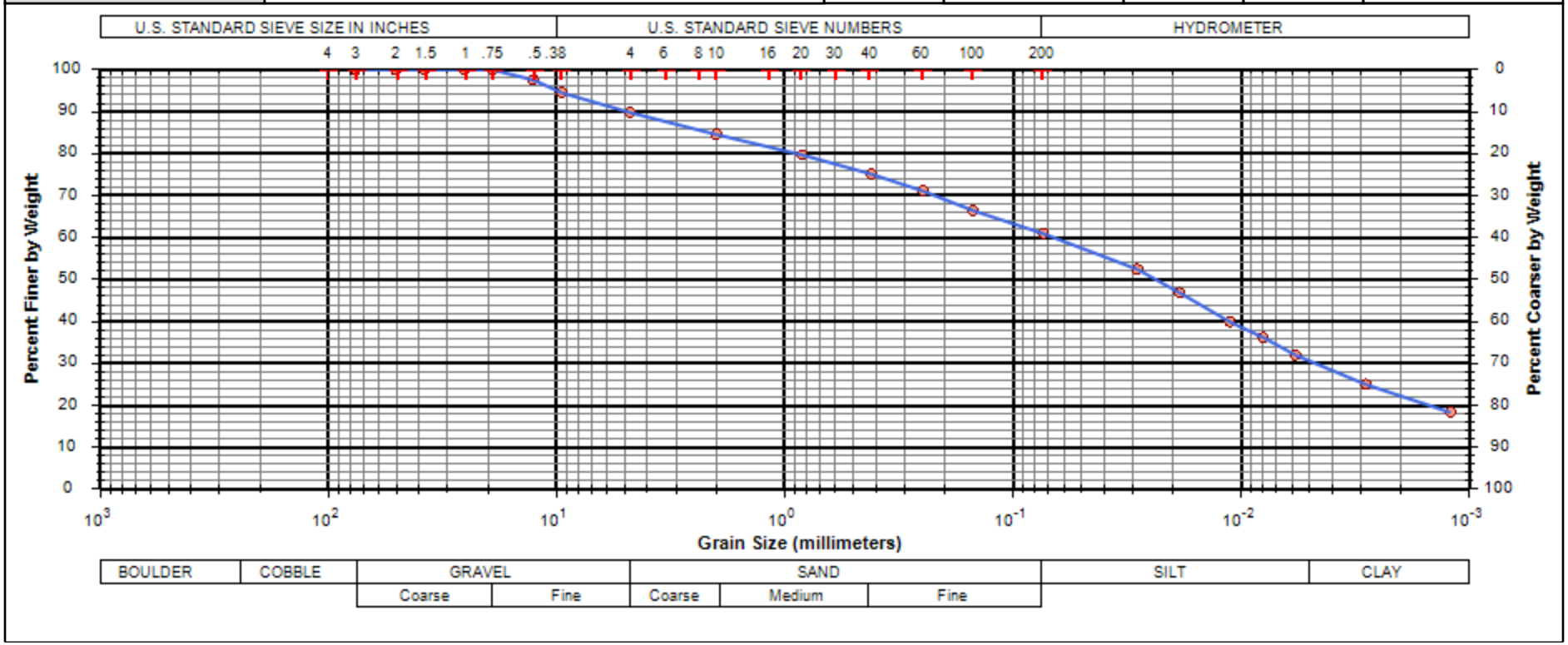
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech								**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH								**Date:**	03/28/2024
Boring No.:	5	**Sample No.:**	SS-9	**Depth (ft.):**	25.0	**Gravel (%)**	**Sand (%)**	**Silt (%)**	**Clay (%)**	**USCS**
Sample Description:						10.2	28.8	30.4	30.6	-
						LL	**PL**	**PI**	**Group Index**	**WC (%)**
										11.5



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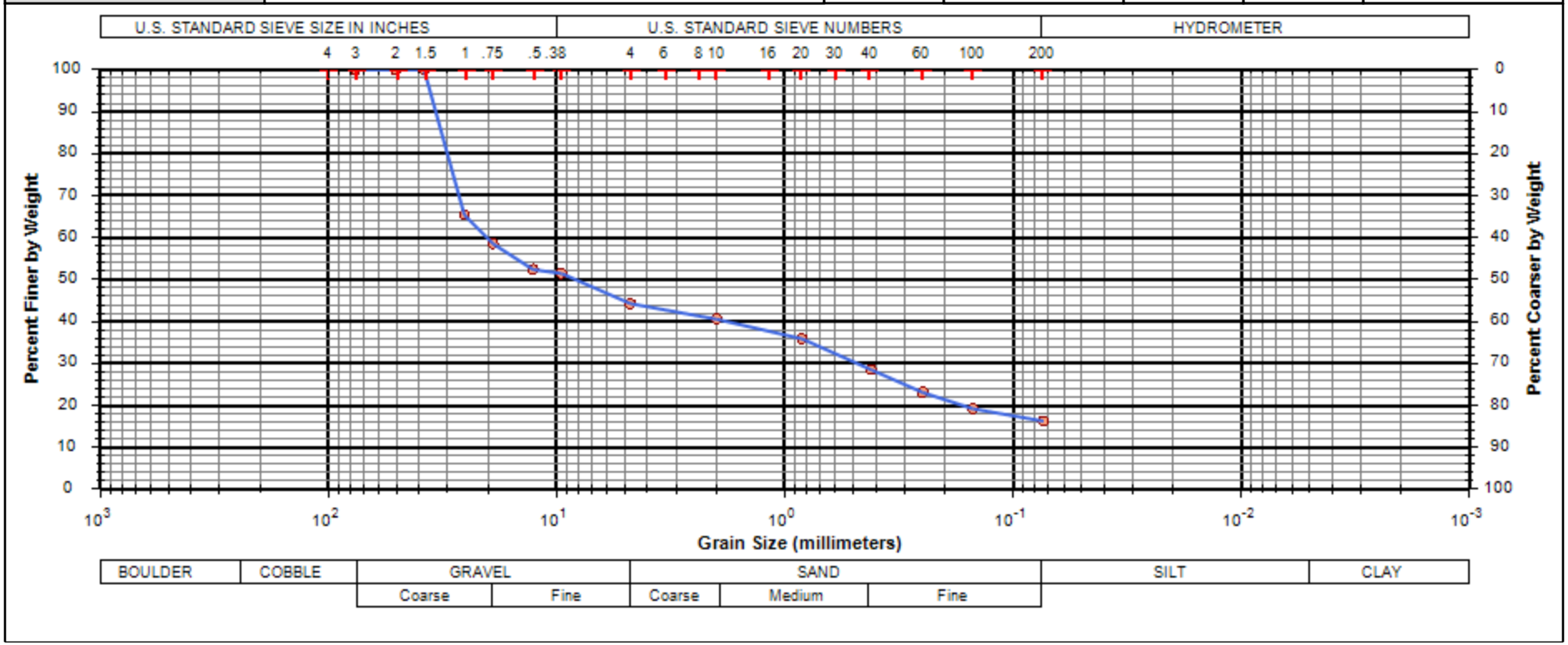
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech							**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH							**Date:**	03/28/2024
Boring No.:	6	**Sample No.:**	SS-3	**Depth (ft.):**	5.0	**Gravel (%)**	**Sand (%)**	**Silt & Clay (%)**	**USCS**
Sample Description:						55.7	28.0	16.3	GM
						LL	**PL**	**PI**	**Group Index**	**WC (%)**



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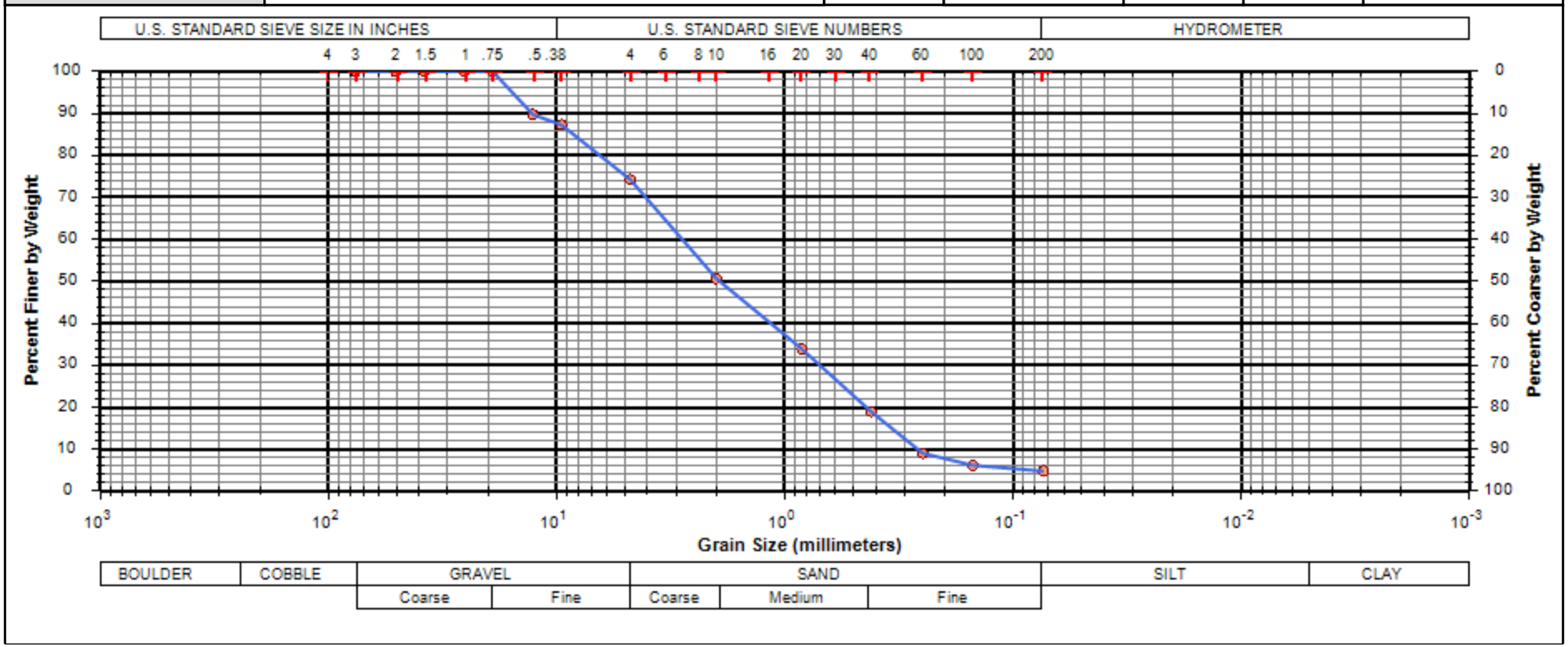
PARTICLE-SIZE ANALYSIS OF SOILS ASTM D-422

Client:	Tetra Tech							**Project No.:**	J045355.01
Project:	Geotechnical Exploration, Dayton Miami Well Field Expansion, Dayton, OH							**Date:**	03/28/2024
Boring No.:	6	**Sample No.:**	SS-8	**Depth (ft.):**	20.0	**Gravel (%)**	**Sand (%)**	**Silt & Clay (%)**	**USCS**
Sample Description:						25.8	69.4	4.8	SP
						LL	**PL**	**PI** / **Group Index**	**WC (%)**



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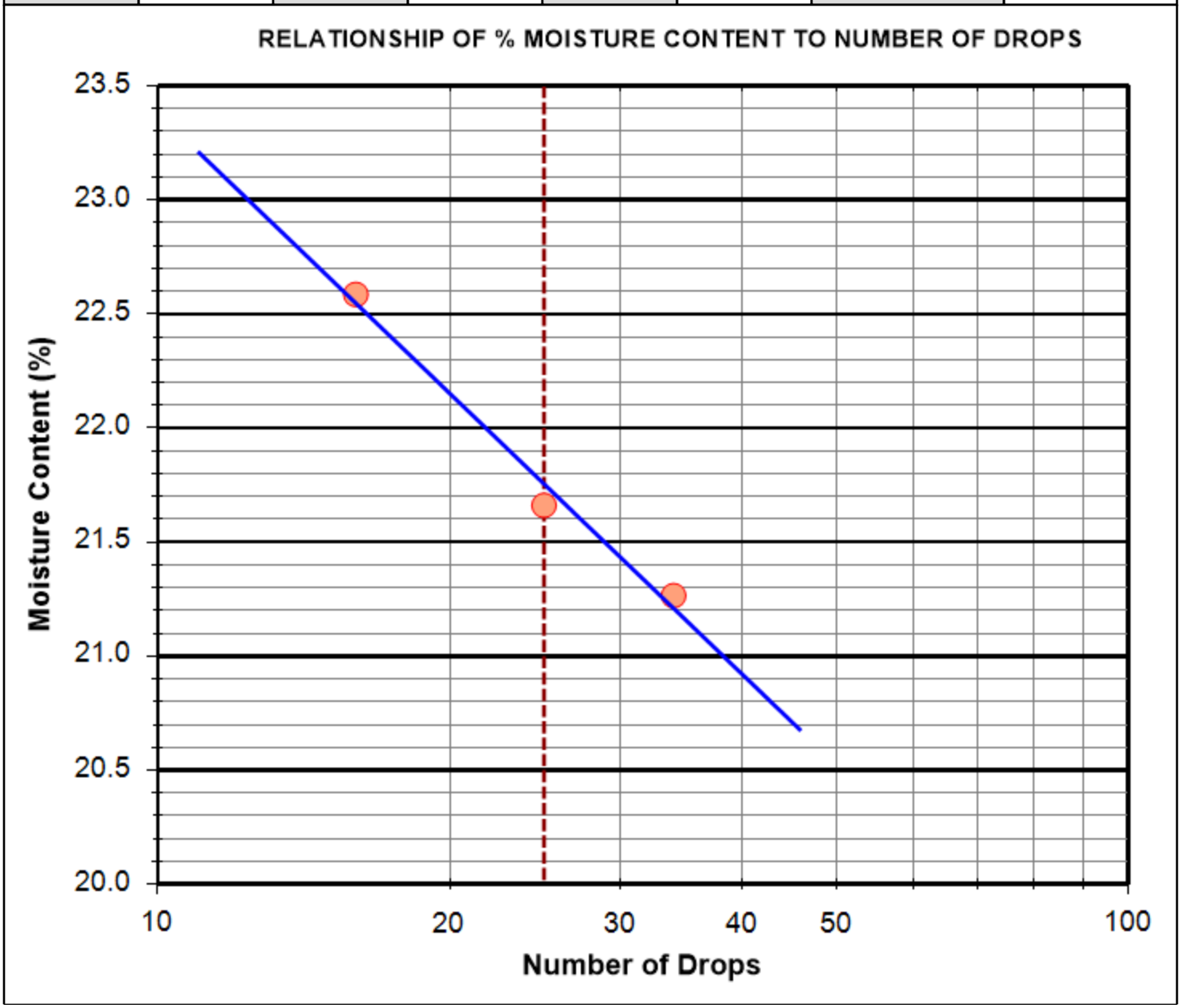
LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS ASTM D-4318

Client:	Tetra Tech					**Project No.:**	J045355.01
Project:	Dayton Miami Well Field Expansion, Dayton, OH					**Date:**	3/28/2024
Boring No.:	3	**Sample No.:**		**Depth (ft.):**	25.0	**Sample Preparation Condition:**	Air Dried
Sample Description:						**In Situ Moisture Content:**	11.5%
Liquid Limit:	22	**Plastic Limit:**	15	**Plastic Index:**	7	**USCS:**	CL-ML



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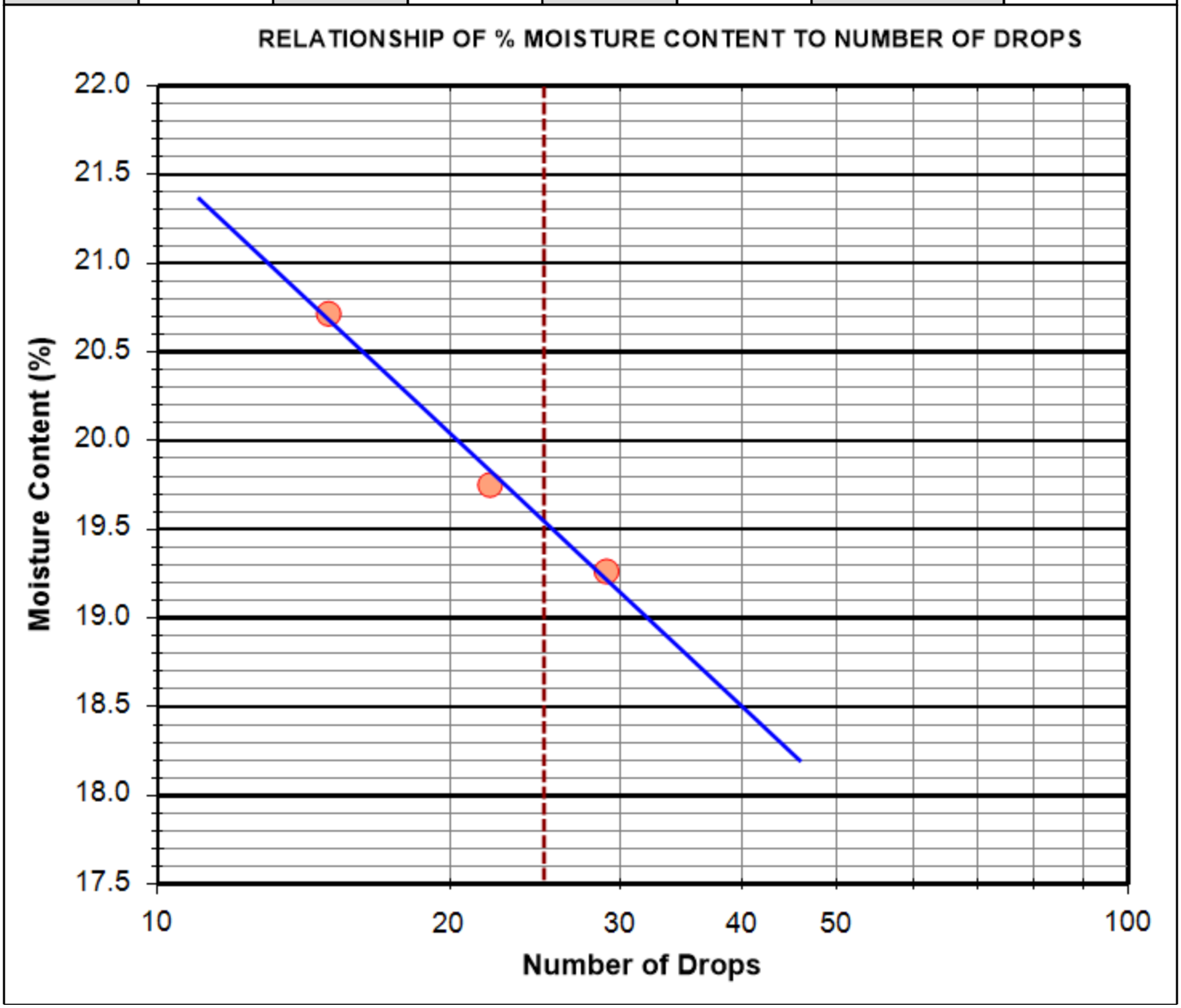
LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS ASTM D-4318

Client:	Tetra Tech					**Project No.:**	J045355.01
Project:	Dayton Miami Well Field Expansion, Dayton, OH					**Date:**	3/27/2024
Boring No.:	11	**Sample No.:**		**Depth (ft.):**	70.0	**Sample Preparation Condition:**	Air Dried
Sample Description:						**In Situ Moisture Content:**	10.3%
Liquid Limit:	20	**Plastic Limit:**	13	**Plastic Index:**	7	**USCS:**	CL-ML



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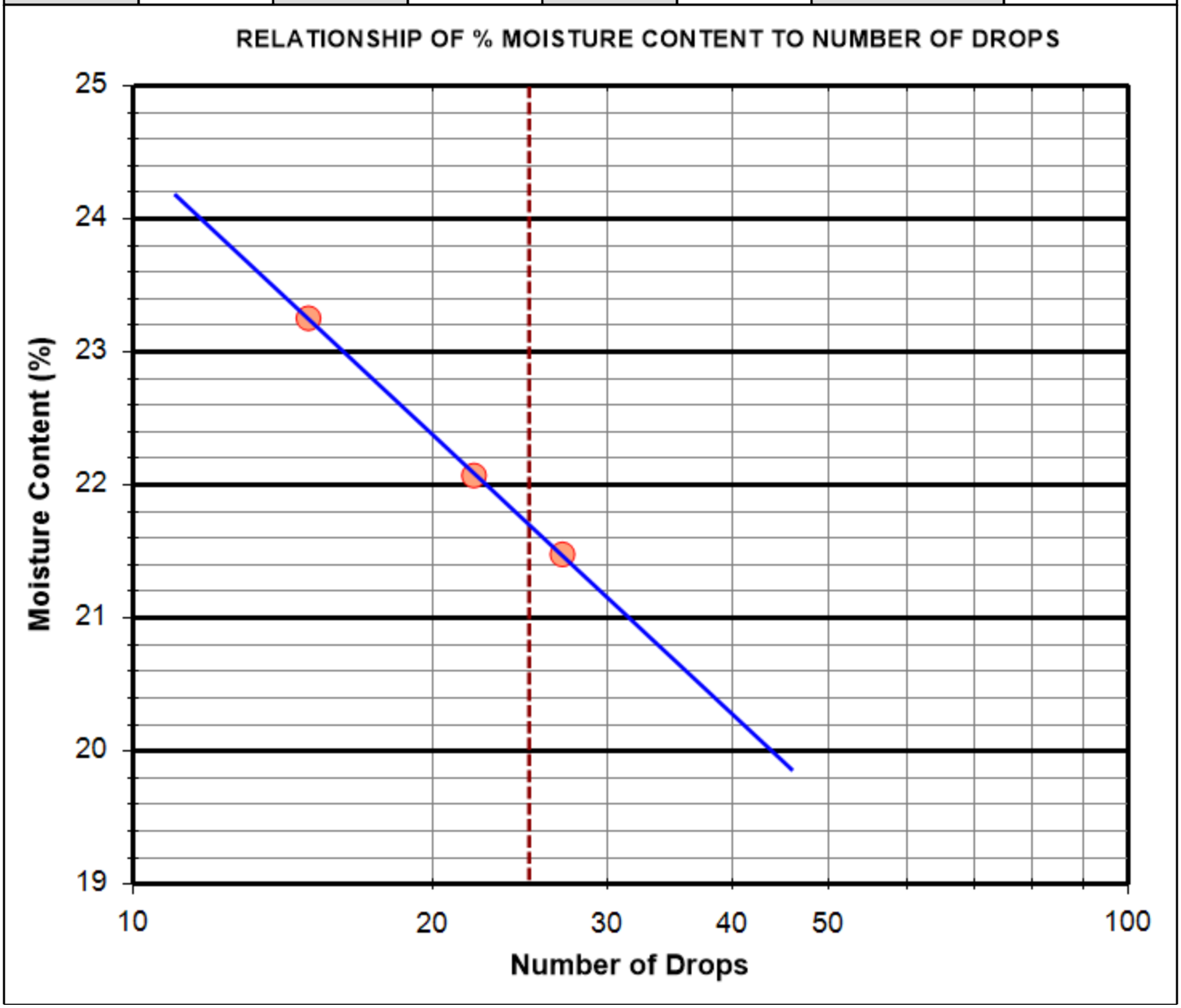
LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS ASTM D-4318

Client:	Tetra Tech					**Project No.:**	J045355.01
Project:	Dayton Miami Well Field Expansion, Dayton, OH					**Date:**	3/27/2024
Boring No.:	19	**Sample No.:**		**Depth (ft.):**	60.0	**Sample Preparation Condition:**	Air Dried
Sample Description:						**In Situ Moisture Content:**	10.6%
Liquid Limit:	22	**Plastic Limit:**	14	**Plastic Index:**	8	**USCS:**	CL



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APPENDIX E – 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

ATTACHMENT 2

December 11, 2024

Mr. James M. Brescol, PE
Tetra Tech
250 W. Court Street
Suite 200W
Cincinnati, Ohio 45202

Re: Geotechnical Exploration Addendum 1
Dayton Miami Well Field Expansion
Dayton, Ohio
Project No. J045355.01-Change Order No. 1

Dear Mr. Brescol:

Presented in this report is Addendum No. 1 to our April 25, 2024 geotechnical report, titled "Geotechnical Exploration Dayton Miami Well Field Expansion Dayton, Ohio" (April 2024 Geotechnical Report). This addendum is supplemental to, and to be used in conjunction with, our April 2024 Geotechnical Report.

As requested, additional borings (B-21 through B-23**)** were performed at Pond P-12. The borings were performed between November 12, 2024, and November 13, 2024 in the same manner as the previous borings using BD-1 drill rig. The energy transfer ratio of the rig used was 73%. The locations of these borings are shown on the exploration plans provided in Appendix A, and boring logs are provided in Appendix B. Laboratory testing, including moisture contents, Atterberg limits, particle-size analysis, and infiltration tests were performed on selected soil samples. The laboratory test results are presented in Appendix C. The field infiltration test results are presented in Appendix D.

Respectfully submitted,
UES

Diwakar K C, PhD, EIT
Project Engineer

Joseph S. Burkhardt, PE
Geotechnical Services manager

DKC/RES:dkc/res

Copies submitted: Tetra Tech (email)

STATE OF OHIO
JOSEPH S. BURKHARDT
E-72589
REGISTERED
PROFESSIONAL ENGINEER

1.0 SUBSURFACE CONDITIONS

1.1 Stratification

Generally, the existing ground surface was underlain by topsoil, fill and alluvium. More specific descriptions of the subsurface strata are provided below, and the boring logs containing detailed material descriptions are located in Appendix B.

1.1.1 Topsoil

Topsoil was encountered at the ground surface in each of the borings. The thickness of the topsoil in these borings was 6 inches.

1.1.2 Fill

Existing fill was encountered beneath the topsoil in Boring B-22 and B-23. The thickness of the fill in Boring B-22 was 2 feet and in Boring B-23 was 4.5 feet. The fill was medium stiff to stiff sandy lean clay, containing gravel, and root hairs. The moisture content in two fill samples were 14.9 and 24.8 percent.

1.1.3 Native Soils

Generally, the native soils were alluvium and glacial outwash soils alluvium consisting primarily of sand and gravel random cohesive layers. The cohesionless soils were medium dense to dense sand and gravel containing silt and clay. The cohesive soils were stiff to very stiff lean clay containing sand and gravel. The Atterberg Limits test was performed on three cohesive samples which yielded the results as lean clay (CL). Moisture content on native soil varied from 1.7 to 29.4 percent. More specific details on soil stratigraphy is given in boring logs in Appendix B.

1.2 Groundwater Conditions

Ground water observations were made in the borings during drilling, and immediately at the completion of drilling, and before backfilling the boring holes. These measurements are documented on the boring logs in Appendix B.

In general, groundwater was encountered in Borings B-21 and B-22 at 30 feet and in Boring B-23 at 25 feet below the existing ground surface during drilling. No water was encountered immediately at the completion of drilling and after 24 hours.

Based on the groundwater observations and our local experience, groundwater seepage is anticipated along the fill/native soil interface, in the saturated zones of fill or native soils that are within the perched groundwater zones, or that are below the groundwater table. Locally concentrated flow may occur due to saturated layers of fill or native soils (particularly the native alluvial silts, sands, or gravels). Additionally, groundwater levels, seepage amounts, and flow rates are expected to vary with time, location, season of the year, and amounts of precipitation.

2.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our engineering reconnaissance of the site, the borings, the visual examination of the recovered samples, the laboratory test results, our understanding of the proposed project, our engineering analyses, and our experience as Geotechnical Engineers in the Dayton Area the following conclusions and recommendations are presented.

2.1 Excavation and Support Requirements

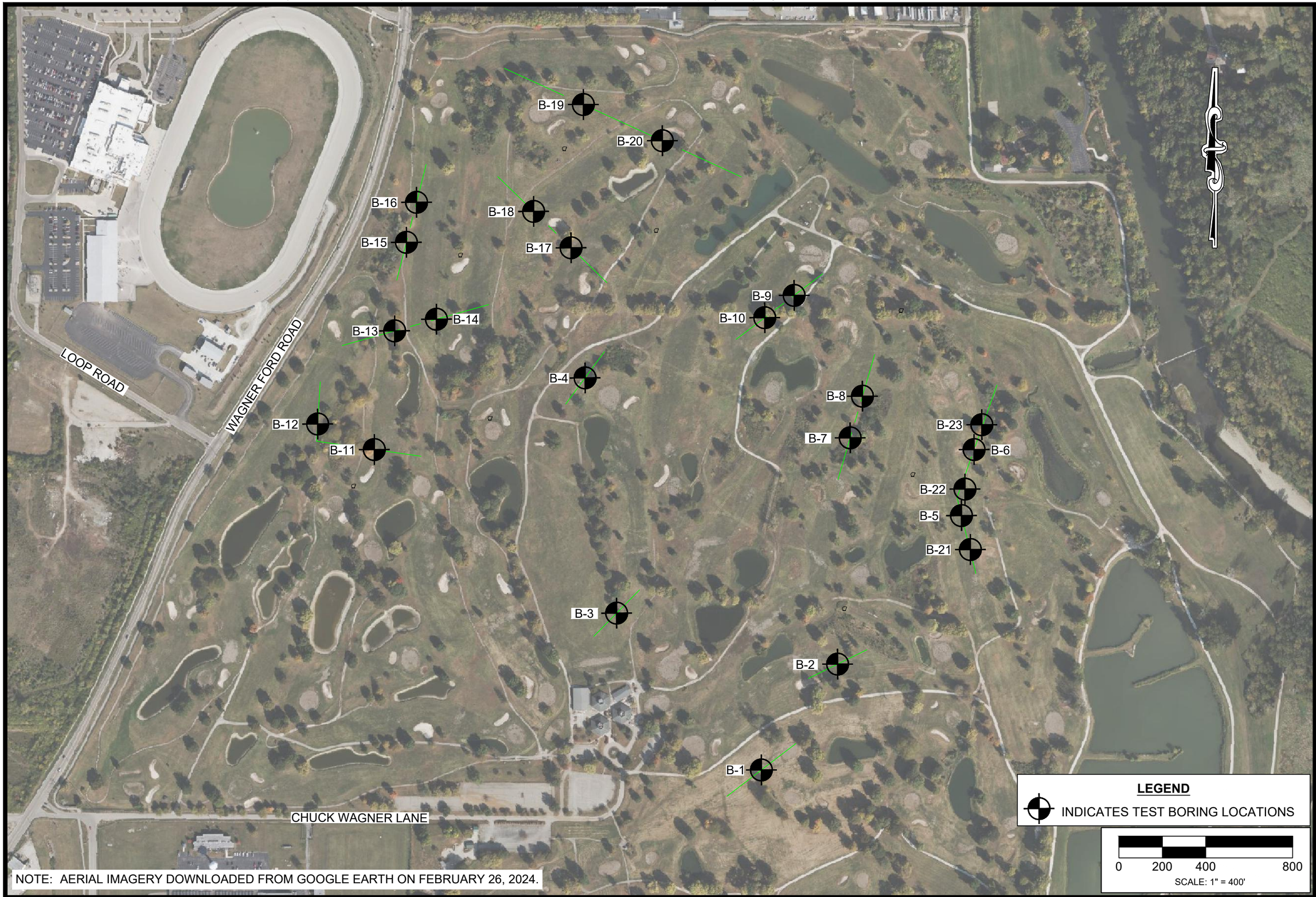
Excavation support should be the responsibility of the Contractor. Excavation support should be designed and implemented such that excavations are adequately ventilated and braced, shored, and/or sloped in order to protect and ensure the safety of workers within and near the excavations and to protect adjacent ground, slopes, structures, and infrastructure. Federal, state, and local safety regulations should be satisfied. The analyses, discussions, conclusions, and recommendations throughout this report are not to be interpreted as pre-engineering compliance with any safety regulation.

The soils at the site are predominantly sand and gravel with lesser components of silt and clay; and some random lean clay layers. Based on the dominant presence of granular soils within the test borings, the OSHA soil classification for soil excavations at this site is expected to be Type C. OSHA recommends maximum allowable backslope for temporary cut slopes of 20 feet of less in height to be 1.5H:1V for Soil Type C. Protection for excavations more than 20 feet in depth must be designed by a registered professional engineer. All excavation should comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P “Excavations” and its appendices, as well as other applicable codes.

APPENDIX A – PLANS

Exploration Plan, Sheet No. 1

Date Printed: 12/5/2024 10:26 AM Path: \\10.1.12.10\cin\data\Projects\J045\J045355.01-Dayton Miami Well Field Expansion\Draw\J045355.01 Exploration Plan (Single sheet).dwg



NOTE: AERIAL IMAGERY DOWNLOADED FROM GOOGLE EARTH ON FEBRUARY 26, 2024.

UES

Project: DAYTON MIAMI WELL FIELD EXPANSION

Location: DAYTON, OHIO

Title: EXPLORATION PLAN

Client: TETRA TECH

Date: 12/5/2024

Project No.: J045355.01

Sheet No.: 1

APPENDIX B – BORING INFORMATION

Boring Logs

Soil Classification Sheet

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field Additional Borings
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-21
PROJECT #: J045355.01 (PHASE-2)
PAGE #: 1 of 2
LAT,LON: 39.811540 ,-84.158296

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
759.8	Ground Surface	0.0	0					
759.3	Topsoil (6 Inches).	0.5						
	Brown, moist, stiff, Sandy Lean Clay, trace root hairs.			SS-1A 1B	3-5-7 *N=12*	15	78	1.0
				SS-2	9-6-4 *N=10*	12	67	1.0
754.8		5.0	5					
	Brown, moist, medium dense, Gravel and Sand, trace silt and clay. Gravel=48.7%, Sand=42.9%, Silt=7.3%, Clay=1.2% on SS-5			SS-3	5-9-18 *N=27*	33	67	
				SS-4	5-10-14 *N=24*	29	67	
			10	SS-5	3-5-14 *N=19*	23	56	
747.3		12.5						
	Brown, moist, medium dense, Gravel and Sand.			SS-6	10-11-12 *N=23*	28	44	
			15	SS-7	10-12-11 *N=23*	28	100	
739.8		20.0						
	Gray, moist, very stiff, Lean Clay (CL), trace gravel. LL=31%, PL=17%, PI=14% on SS-8		20	SS-8	5-5-12 *N=17*	21	100	2.5
			25	SS-9	6-13-18 *N=31*	38	100	3.5
729.8		30.0	30					

Elevation Ref.: Google Earth Pro
Surface Elevation: 759.8 ft.
Date Started/Completed: 11/13/2024-11/13/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: BD-1
Foreman: Gilbert
Engineer: Sunil Badam

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 30' during drilling
▼ At Completion: Not Encountered
After: 24 hours Dry
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 73%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field Additional Borings
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-21
PROJECT #: J045355.01 (PHASE-2)
PAGE #: 2 of 2
LAT,LON: 39.811540 ,-84.158296

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
	Brown, wet, medium dense to dense, Sand, trace gravel.		30	SS-10	9-12-21 ***N=33***	40	100	
			35	SS-11	3-7-10 ***N=17***	21	100	
719.8		40.0	40	SS-12	10-18-16 ***N=34***	41	100	
	Brown, wet, dense, Sand and Gravel .		45	SS-13	15-14-20 ***N=34***	41	0	
708.3		51.5	50	SS-14	12-12-20 ***N=32***	39	100	
	Bottom of test boring at 51.5 feet.		55					
			60					

Elevation Ref.: Google Earth Pro
Surface Elevation: 759.8 ft.
Date Started/Completed: 11/13/2024-11/13/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: BD-1
Foreman: Gilbert
Engineer: Sunil Badam

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 30' during drilling
At Completion: Not Encountered
After: 24 hours Dry
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 73%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field Additional Borings
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-22
PROJECT #: J045355.01 (PHASE-2)
PAGE #: 1 of 2
LAT,LON: 39.812302 ,-84.158404

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
761.0	Ground Surface	0.0	0					
760.5	Topsoil (6 Inches).	0.5						
	Brown, moist, stiff, Sandy Lean Clay, some gravel (Fill).			SS-1A 1B	3-6-7 *N=13*	16	100	1.5
758.5		2.5						
	Brown, moist, medium dense to dense, Gravel and Sand.			SS-2	6-13-18 *N=31*	38	67	
			5	SS-3	10-10-10 *N=20*	24	0	
				SS-4	6-17-19 *N=36*	44	67	
751.0		10.0	10					
	Brown, moist, medium dense, Sand and Gravel.			SS-5	3-5-6 *N=11*	13	100	
				SS-6	3-9-13 *N=22*	27	100	
746.0		15.0	15					
	Brown, moist, medium dense, Sand, trace gravel.			SS-7	3-5-6 *N=11*	13	100	
740.5		20.5	20					
	Brown to Gray, moist, very stiff, Lean Clay (CL), trace sand and gravel. LL=25%, PL=11%, PI=14% on SS-8B LL=26%, PL=17%, PI=9% on SS-9			SS-8A 8B	9-13-17 *N=30*	36	100	3.5
			25	SS-9	3-7-13 *N=20*	24	100	2.5
731.0		30.0	30					

Elevation Ref.: Google Earth Pro
Surface Elevation: 761.0 ft.
Date Started/Completed: 11/12/2024-11/12/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: BD-1
Foreman: Gilbert
Engineer: Sunil Badam

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 30' during drilling
▼ At Completion: Not Encountered
After: 24 hours Dry
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 73%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field Additional Borings
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-22
PROJECT #: J045355.01 (PHASE-2)
PAGE #: 2 of 2
LAT,LON: 39.812302 ,-84.158404

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
	Gray, wet, dense, Sand, trace gravel.		30	SS-10	5-19-29 *N=48*	58	100	
726.0		35.0	35	SS-11	3-12-9 *N=21*	26	100	
	Gray, wet, medium dense to dense, Gravel and Sand.		40	SS-12	7-14-7 *N=21*	26	0	
			45	SS-13	7-20-24 *N=44*	54	100	
709.5		51.5	50	SS-14	13-15-30 *N=45*	55	100	
	Bottom of test boring at 51.5 feet.		55					
			60					

Elevation Ref.: Google Earth Pro
Surface Elevation: 761.0 ft.
Date Started/Completed: 11/12/2024-11/12/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: BD-1
Foreman: Gilbert
Engineer: Sunil Badam

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
First Noted: Groundwater level at 30' during drilling
At Completion: Not Encountered
After: 24 hours Dry
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 73%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field Additional Borings
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-23
PROJECT #: J045355.01 (PHASE-2)
PAGE #: 1 of 2
LAT,LON: 39.813120 ,-84.158147

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
761.4	Ground Surface	0.0	0					
760.9	Topsoil (6 Inches).	0.5						
	Brown, moist, stiff, Sandy Lean Clay, trace gravel and root hairs (Fill).			SS-1A 1B	3-4-5 ***N=9***	11	89	1.0
				SS-2	11-10-8 ***N=18***	22	67	1.5
756.4		5.0	5					
	Brown, moist, medium dense to dense, Gravel and Sand.			SS-3	7-12-21 ***N=33***	40	67	
				SS-4	7-12-12 ***N=24***	29	67	
			10	SS-5	2-5-10 ***N=15***	18	33	
				SS-6	7-12-23 ***N=35***	43	100	
746.4		15.0	15					
	Brown, moist, medium dense, Sand and Gravel.			SS-7	3-7-10 ***N=17***	21	56	
			20	SS-8	10-12-13 ***N=25***	30	56	
736.4		25.0	▽25					
735.4	Brown, wet, medium dense, Gravel and Sand.	26.0		SS-9A 9B	8-11-14 ***N=25***	30	100	2.0
	Brown, wet, stiff, Sandy Lean Clay, trace gravel.							
731.4		30.0	30					

Elevation Ref.: Google Earth Pro
Surface Elevation: 761.4 ft.
Date Started/Completed: 11/12/2024-11/13/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: BD-1
Foreman: Gilbert
Engineer: Sunil Badam

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After: 24 hours Dry
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 73%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

LOG OF TEST BORING

CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field Additional Borings
Well field north of Chuck Wagner Lane
LOCATION OF BORING: Refer to attached Exploration Plan.

BORING #: B-23
PROJECT #: J045355.01 (PHASE-2)
PAGE #: 2 of 2
LAT,LON: 39.813120 ,-84.158147

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Type-Number	SPT* Blows/6"	N_{60}	Recovery (%)	HP (tsf)
726.4	Brown, wet, medium dense, Sand, trace silt, clay and gravel. Gravel=7.2%, Sand=87.4%, Silt=5.0%, Clay=0.4% on SS-10	35.0	30	SS-10	5-7-17 ***N=24***	29	100	
721.4	Brown, wet, medium dense, Sand, trace clay.	40.0	35	SS-11	3-5-7 ***N=12***	15	44	
716.4	Brown, wet, dense, Sand and Gravel.	45.0	40	SS-12	20-21-17 ***N=38***	46	100	
710.6	Brown, wet, dense, Sand, trace gravel.	50.8	45	SS-13	7-17-13 ***N=30***	36	89	
			50	SS-14	29-50/3"-		100	
	Bottom of test boring at 50.8 feet.		55					
			60					

Elevation Ref.: Google Earth Pro
Surface Elevation: 761.4 ft.
Date Started/Completed: 11/12/2024-11/13/2024
Boring Advancement Method: 3.25-inch hollow-stem augers

Drill Rig: BD-1
Foreman: Gilbert
Engineer: Sunil Badam

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

GROUNDWATER DEPTH
▽ First Noted: Groundwater level at 25' during drilling
▼ At Completion: Not Encountered
After: 24 hours Dry
Backfilled: Backfilled with auger cuttings and plastic hole plug

NOTES
Drill Rig ETR = 73%

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

SOIL CLASSIFICATION SHEET

NON COHESIVE SOILS
(Silt, Sand, Gravel and Combinations)

Density

Very Loose	- 4 blows/ft. or less
Loose	- 5 to 10 blows/ft.
Medium Dense	- 11 to 30 blows/ft.
Dense	- 31 to 50 blows/ft.
Very Dense	- 51 blows/ft. or more

Relative Properties

Descriptive Term	Percent
Trace	1 – 10
Little	11 – 20
Some	21 – 35
And	36 – 50

Particle Size Identification

Boulders	- 8 inch diameter or more	
Cobbles	- 3 to 8 inch diameter	
Gravel	- Coarse	- 3/4 to 3 inches
	- Fine	- 3/16 to 3/4 inches
Sand	- Coarse	- 2mm to 5mm (dia. of pencil lead)
	- Medium	- 0.45mm to 2mm (dia. of broom straw)
	- Fine	- 0.075mm to 0.45mm (dia. of human hair)
Silt		- 0.005mm to 0.075mm (Cannot see particles)

COHESIVE SOILS
(Clay, Silt and Combinations)

Consistency	Field Identification	Unconfined Compressive Strength (tons/sq. ft.)
Very Soft	Easily penetrated several inches by fist	Less than 0.25
Soft	Easily penetrated several inches by thumb	0.25 – 0.5
Medium Stiff	Can be penetrated several inches by thumb with moderate effort	0.5 – 1.0
Stiff	Readily indented by thumb but penetrated only with great effort	1.0 – 2.0
Very Stiff	Readily indented by thumbnail	2.0 – 4.0
Hard	Indented with difficulty by thumbnail	Over 4.0

Classification on logs are made by visual inspection.

Standard Penetration Test – Driving a 2.0" O.D., 1 3/8" I.D., sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary to drive the spoon 6 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and making the tests are recorded for each 6 inches of penetration on the drill log (Example – 6/8/9). The standard penetration test results can be obtained by adding the last two figures (i.e. 8+9=17 blows/ft.). Refusal is defined as greater than 50 blows for 6 inches or less penetration.

Strata Changes – In the column "Soil Descriptions" on the drill log, the horizontal lines represent strata changes. A solid line (————) represents an actually observed change; a dashed line (— — — —) represents an estimated change.

Groundwater observations were made at the times indicated. Porosity of soil strata, weather conditions, site topography, etc., may cause changes in the water levels indicated on the logs.

APPENDIX C LABORATORY TEST DATA

Tabulation of Laboratory Tests

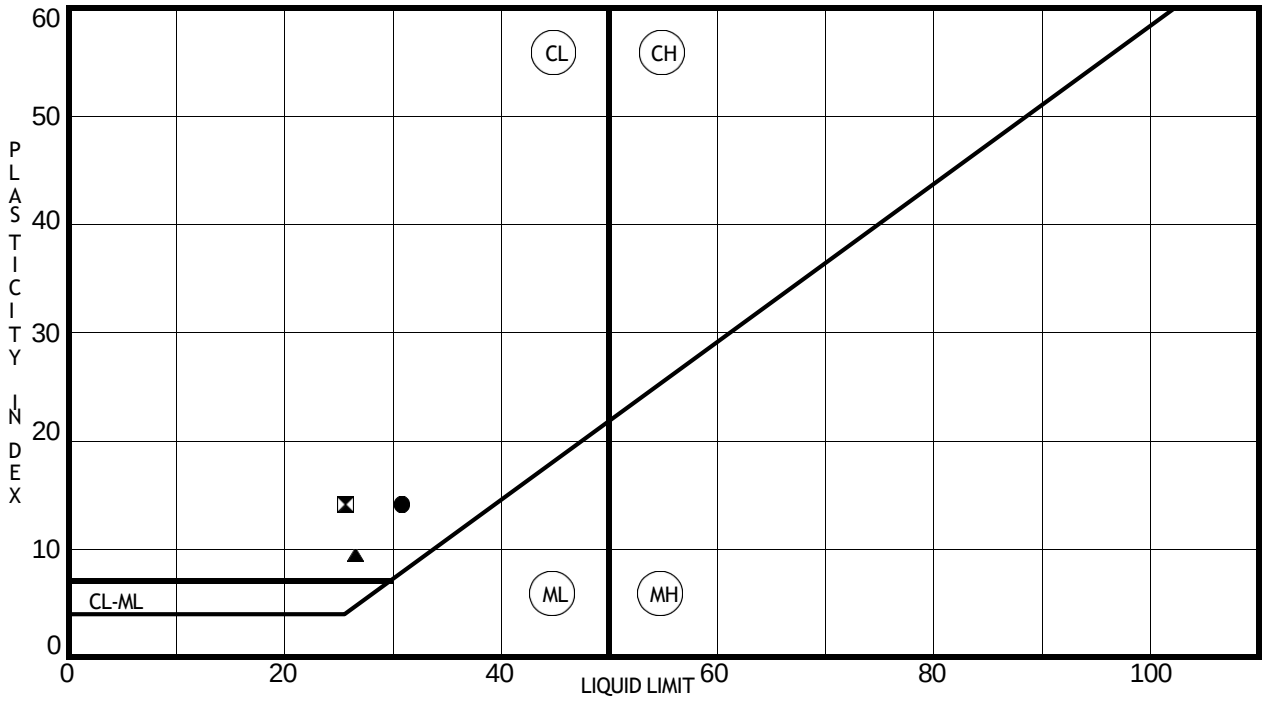
Atterberg Limits Test Forms

Particle-Size Analysis Test Forms

TABULATION OF LABORATORY TESTS

Boring No.	Sample No.	Depth (ft.)		Moisture Content (%)	Atterberg Limits (%)			Gradation Analysis (%)				USCS Classification
		From	To		LL	PL	PI	Gravel	Sand	Silt	Clay	
B-21	SS-1A	0.0	0.5	29.4								
	SS-3	5.0	6.5	4.3								
	SS-5	10.0	11.5	3.2				48.7	42.9	7.3	1.2	
	SS-7	15.0	16.5	4.3								
	SS-8	20.0	21.5	8.1	31	17	14					CL
	SS-9	25.0	26.5	10.3								
	SS-11	35.0	36.5	9.0								
	SS-14	50.0	51.5	13.0								
B-22	SS-1B	0.5	1.5	14.9								
	SS-3	5.0	6.5	1.7								
	SS-5	10.0	11.5	3.6								
	SS-7	15.0	16.5	4.5								
	SS-8A	20.0	21.5	4.5								
	SS-8B	20.0	21.5	10.7	25	11	14					CL
	SS-9	25.0	26.5	10.0	26	17	9					CL
	SS-11	35.0	36.5	17.0								
	SS-13	45.0	46.5	6.4								
B-23	SS-2	2.5	4.0	24.8								
	SS-4	7.5	9.0	3.8								
	SS-6	12.5	14.0	3.3								
	SS-8	20.0	21.5	4.7								
	SS-9B	25.0	26.5	13.6								
	SS-10	30.0	31.5	20.7				7.2	87.4	5.0	0.4	
	SS-12	40.0	41.5	9.5								
	SS-14	50.0	50.8	12.2								

Liquid and Plastic Limits Test Report



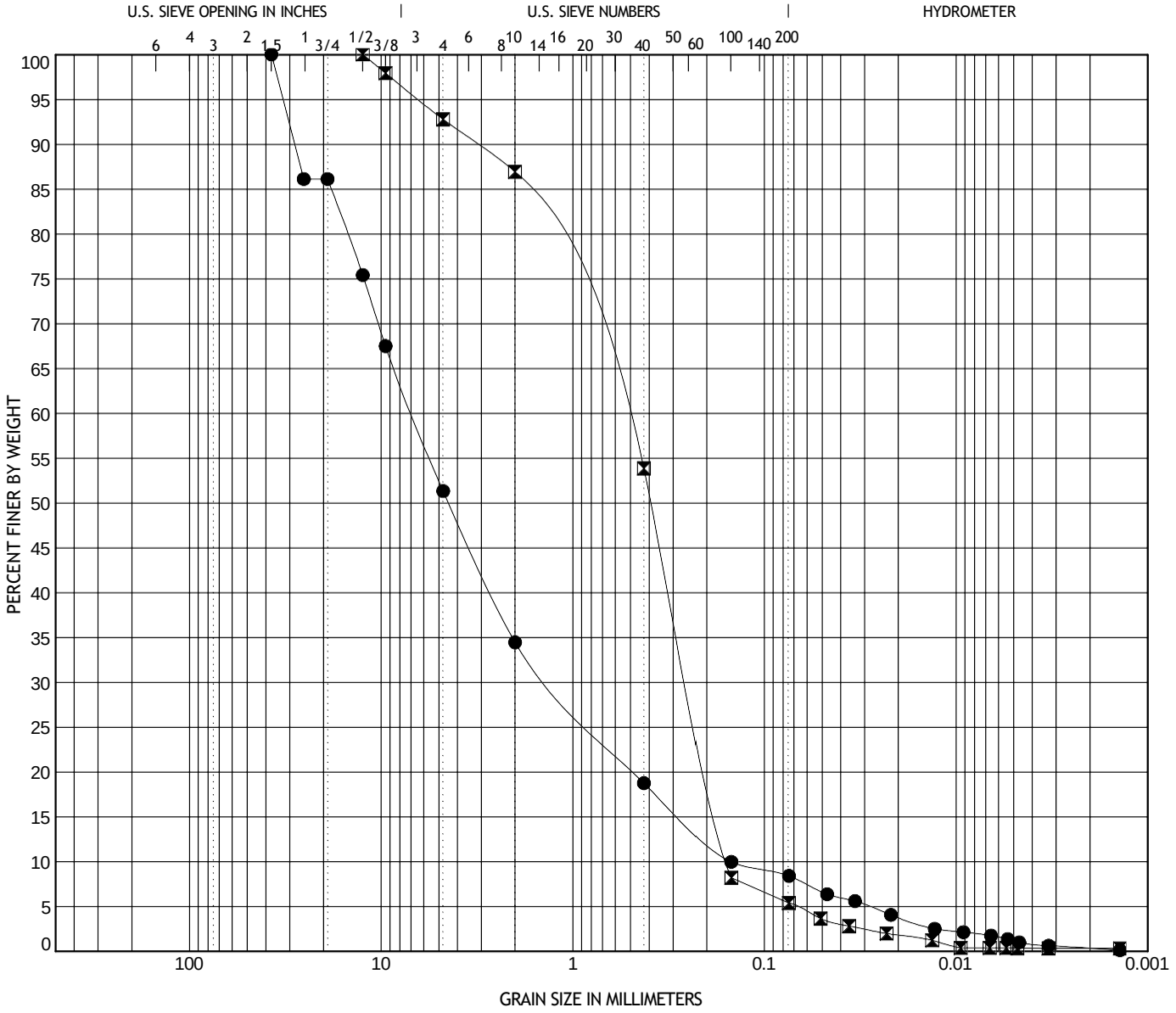
	Boring	Depth (ft)	LL	PL	PI	Water Content	% < #40	% < #200	USCS	Description
●	**B-21**	**20.0**	**31**	**17**	**14**	**8.1**			CL	Classification is based on Atterberg Limits tests
⧓	**B-22**	**20.0**	**25**	**11**	**14**	**4.5**			CL	Classification is based on Atterberg Limits tests
▲	**B-22**	**25.0**	**26**	**17**	**9**	**10.0**			CL	Classification is based on Atterberg Limits tests

CSI of Cincinnati
11785 Highway Drive
Cincinnati, OH 45241
Phone: 513.252.2059
Fax: 888.792.3121

PROJECT INFORMATION

Client: Tetra Tech
Project Name: Dayton Miami Wellfield - Additional Borings
Project Number: J045355.01
Project Location: Dayton, OH

GRAIN SIZE DISTRIBUTION



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring	Depth (ft)	Classification	LL	PL	PI	Cc	Cu
●	B-21	10.0					1.60	45.87
⧓	B-23	30.0					0.69	3.63

	Boring	Depth (ft)	D95	D60	D50	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-21	10.0	32.595	6.892	4.439	1.288	0.15	48.7	42.9	7.3	1.2
⧓	B-23	30.0	6.419	0.567	0.389	0.247	0.156	7.2	87.4	5.0	0.4

CSI of Cincinnati
11785 Highway Drive
Cincinnati, OH 45241
Phone: 513.252.2059
Fax: 888.792.3121

PROJECT INFORMATION

Client: Tetra Tech
Project Name: Dayton Miami Wellfield - Additional Borings
Project Number: J045355.01
Project Location: Dayton, OH

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APPENDIX D FIELD INFILTRATION TEST FORMS

GEOTECHNOLOGY
A Universal Engineering Sciences Company

FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01 (Phase-2)
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 01
TEST LOCATION: B-21
SOIL DESCRIPTION: Very Stiff Silty Clay
GROUNDWATER LEVEL: 30'

TEST START DATE: 11/15/2024
TEST END DATE: 11/15/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 20
Depth to Water Table (ft.): 30
Borehole Depth (ft.): 20
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
11/15/2024	8:10 AM	-	0	0.0	240.0	-	-	
11/15/2024	8:25 AM	15	15	-170.4	69.6	681.6	1731.3	
11/15/2024	8:40 AM	15	30	-201.6	38.4	124.8	317.0	
11/15/2024	8:55 AM	15	45	-210.0	30.0	33.6	85.3	
11/15/2024	9:10 AM	15	60	-216.0	24.0	24.0	61.0	
11/15/2024	9:10 AM	0	0	0.0	240.0	-	-	
11/15/2024	8:40 AM	30	30	-218.4	21.6	436.8	1109.5	
11/15/2024	9:50 AM	0	0	0.0	240.0	-	-	
11/15/2024	10:20 AM	30	30	-218.4	21.6	436.8	1109.5	
11/15/2024	11:20 AM	60	90	-234.0	6.0	15.6	39.6	
11/15/2024	12:20 PM	60	150	-238.8	1.2	4.8	12.2	

GEOTECHNOLOGY
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FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01 (Phase-2)
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 01
TEST LOCATION: B-22
SOIL DESCRIPTION: Very Stiff Lean Clay
GROUNDWATER LEVEL: 30'

TEST START DATE: 11/14/2024
TEST END DATE: 11/15/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 21
Depth to Water Table (ft.): 30
Borehole Depth (ft.): 21
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
11/14/2024	12:35 PM	-	0	0.0	252.0	-	-	
11/14/2024	12:50 PM	15	15	-18.0	234.0	72.0	182.9	
11/14/2024	1:05 PM	15	30	-21.6	230.4	14.4	36.6	
11/14/2024	1:20 PM	15	45	-25.2	226.8	14.4	36.6	
11/14/2024	1:35 PM	15	60	-30.0	222.0	19.2	48.8	
11/14/2024	2:05 PM	30	90	-32.4	219.6	4.8	12.2	
11/14/2024	2:35 PM	30	120	-32.4	219.6	0.0	0.0	
11/14/2024	3:35 PM	60	180	-33.0	219.0	0.6	1.5	
11/14/2024	4:35 PM	60	240	-33.0	219.0	0.0	0.0	
11/14/2024	5:35 PM	60	300	-33.0	219.0	0.0	0.0	
11/15/2024	7:49 PM	854	1154	-60.0	192.0	1.9	4.8	

GEOTECHNOLOGY
A Universal Engineering Sciences Company

FALLING HEAD FIELD INFILTRATION TEST WITHIN BOREHOLE/STANDPIPE

PROJECT NO.: J045355.01 (Phase-2)
CLIENT: Tetra Tech
PROJECT: Dayton Miami Well Field
LOCATION: Dayton, Ohio
TEST NO.: 01
TEST LOCATION: B-23
SOIL DESCRIPTION: Stiff Sandy Lean Clay
GROUNDWATER LEVEL: 25

TEST START DATE: 11/14/2024
TEST END DATE: 11/15/2024
PERSONNEL: SB

Depth of Infiltration Surface below Ground Surface (ft.): 27
Depth to Water Table (ft.): 25
Borehole Depth (ft.): 27
Borehole Diameter (in.): 6.25
Standpipe Material: PVC
Standpipe Diameter (in.): 4
Standpipe Penetration Below Infiltration Surface (in.): 0
Infiltration Area (in.^{2}): 30.68

Infiltration Liquid Used: Water
Weather:
Air Temperature (°F):

Date	Time	Incremental Elapsed Time, Δt (min.)	Total Elapsed Time, t (min.)	Reference Water Measurement (in.)	Depth of Water Above Infiltration Surface, h (in.)	Infiltration Rate v (in./hr.)	Infiltration Rate v (cm/hr.)	Remarks
11/14/2024	11:15 AM	-	0	0.0	324.0	-	-	
11/14/2024	11:30 AM	15	15	-5.7	318.3	22.8	57.9	
11/14/2024	11:45 AM	15	30	-8.2	315.8	10.0	25.4	
11/14/2024	12:00 PM	15	45	-9.3	314.7	4.4	11.2	
11/14/2024	12:15 PM	15	60	-10.0	314.0	2.8	7.1	
11/14/2024	12:45 PM	30	90	-10.1	313.9	0.2	0.5	
11/14/2024	1:15 PM	30	120	-10.1	313.9	0.0	0.0	
11/14/2024	2:15 PM	60	180	-10.1	313.9	0.0	0.0	
11/14/2024	3:15 PM	60	240	-10.1	313.9	0.0	0.0	
11/14/2024	4:15 PM	60	300	-10.1	313.9	0.0	0.0	
11/14/2024	5:15 PM	60	360	-10.1	313.9	0.0	0.0	
11/15/2024	7:45 AM	870	1230	-10.1	313.9	0.0	0.0	