

**Commonwealth Fusion Systems
CFS-4 Development
Devens, MA
GZA File No. 01.0174955.30
10/3/2025**

PRELIMINARY GEOTECHNICAL FINDINGS & DESIGN RECOMMENDATIONS

The following geotechnical findings and recommendations should be considered preliminary and may be revised upon issuance of GZA's full geotechnical report, to be provided under separate cover.

Existing Site Conditions

Based on the existing site topography, setting, and proposed development features, for the purposes of this memorandum, the CFS-4 development Site is divided into two main areas: the Northern Area and Southern Area. Both of these areas are situated immediately west of the proposed CFS-3 development area. A Site locus plan is provided as **Figure 1** and other Site features are shown on **Figure 2**. Summaries of existing site conditions at each area are provided below.

Northern Area (Proposed northern CFS-4 Building & Equipment Pad and Annex Building & Equipment Pad Areas)

- Consists of predominantly undeveloped wooded land with a former roadway area (Beech Street) at the northern end, which was previously filled with about 2 to 3 feet of topsoil during the CFS-2 development. A granular soil stockpile is located at the southeastern portion of the area.
- Existing grades generally slope gradually down to the north and east except for the aforementioned filled-in former Beech Street and the existing granular soil stockpile. Grades generally range from about elevation¹(El.) 268 to 279 in the overall area, with the exception of the existing stockpile which rises to about El. 289.
- The area is bordered to the south by grassed and/or lightly-brush-covered land, to the north by former Beech Street and wooded land with an existing overhead 69kV electric transmission right-of-way (ROW) beyond, to the east by wooded and brush-covered land, and to the west by mostly wooded land with the end of the former Beech Street cul-de-sac area and a topsoil stockpile beyond.

Southern Area (Proposed southern CFS-4 Building/Equipment Pad and Site Retaining Wall Areas)

- Generally consists of wooded areas across the north and west, an existing soil stockpile in the east, and grassed areas at the central, eastern, and southern portions. Much of the area was referred to during the CFS-1 and CFS-2 development projects as the "Ravine", which was filled in with up to about 26 feet of mostly topsoil during the CFS-2 development.
- Existing grades generally slope down gradually toward the east and more steeply to the west. Grades generally range from about El. 259 to 278 with the exception of the existing stockpile, which rises up to about El. 291.
- The Area is bordered to the west by an existing relatively steep wooded slope resource area (SRA, as defined in Massachusetts State Regulation No. 974 CMR 3.06), an existing soil stockpile to the east with a gravel-paved contractor parking lot beyond, wooded/brush-covered land to the north, and an existing grass-covered slope to the south with an existing precast concrete subsurface stormwater infiltration structure (bottom of system at approximately El. 271).

¹ Elevations in this memo are referenced to the NAVD88 vertical datum and are in feet.

Proposed Development

CFS-4 Building & Equipment Pads (Northern and Southern Areas)

These structures, which will occupy the majority of the eastern two-thirds of the Site, include a two-level concrete pad occupying an approximately 335- by 135-foot (ft) footprint that will support multiple pieces of industrial manufacturing equipment including:

- Water Processing Equipment (Southern End of Pad) – non-enclosed equipment, approximately 135 by 110 ft in plan area, with racks extending up to about 75 ft above pad grade of approx. El. 269;
- Beryllium Containment Area (Central Portion of Pad) – a building enclosure, approximately 125 by 90 ft in plan area, extending 70 ft above the pad with lower-level finished floor at El. 269 and first level finished floor at El. 281, and;
- Burner Area (Northern End of Pad) - non-enclosed equipment, approximately 135 by 135 ft in plan area, with a stack extending up to about 85 ft above pad grade of approx. El. 281.

Annex Building & Equipment Pad Areas (Northern Area)

- An approximately 230- by 30-ft footprint area with a central building occupying an approx. 150-ft by 30-ft footprint area and the remaining areas to the north and south will consist of equipment pads. The finished floor elevation of the building and equipment pads is conceptualized as El. 273.5.

Site Retaining Wall Area (Southern Area)

- Conceptualized as an up to 16-foot-tall modular block retaining wall approximately 5-feet east of the existing SRA supporting fill soil behind the wall with a slope of up to 3H:1V and having a bottom of wall at approximately El. 259.

Additional Site Features

- Pavement Areas (Northern and Southern Areas)
- Subsurface Stormwater Infiltration Structure (Northern Area)

Relevant Recent (2025) and Previous (2020 and 2024) Subsurface Explorations in CFS-4 Development areas

A total of 60 explorations (37 borings and 23 test pits) from previous and recent exploration programs considered relevant to this evaluation are summarized below. Based on the geologic conditions observed in the explorations, the following subsurface condition summaries are divided into two areas: 1) the Northern Area, and 2) the Southern Area. . Refer to the logs in **Appendix B** of this report for specific conditions encountered at each exploration location and to the attached **Table 1** for summary information of the subsurface conditions.

Northern Area (19 Subsurface Explorations)

- 12 borings completed to a depth range of about 12 to 54 feet below ground surface, bgs (approximately El. 215 to 265.5).
- 7 test pits completed to a depth range of about 3 to 13 feet bgs (approximately El. 254 to 274).
- Two groundwater observation wells installed within previous borings to depths of about 45 and 53.5 feet bgs, corresponding to approximately El. 221 and 224, respectively.

Southern Area (41 Subsurface Explorations)

- 25 borings completed to a depth range of about 12 to 64 feet bgs (approximately El. 215 to 265.5).
- 16 test pits completed to a depth range of about 3 and 14 feet bgs (approximately El. 243.5 to 276).
- Three groundwater observation wells installed within previous borings to depths ranging from about 44.5 to 48.5 feet bgs, corresponding to approximately El. 219.5 to 235.

Subsurface Conditions

The following summaries of subsurface conditions for each main site area are based on the relevant subsurface explorations in that area.

Northern Area

- General subsurface conditions (in order encountered, depths relative to existing ground surface at exploration location):
 - Topsoil: Surficial layer with organic matter encountered in 18 of 19 explorations with thicknesses ranging from about 0.2 to 2.5 feet.
 - Subsoil: Relatively loose silty sand layer with roots encountered below the topsoil layer in only one of the explorations (GZ-109) near the northeast end of the Site with a thickness of about 1.5-feet that extended to about 2 feet bgs.
 - Granular Fill: encountered in 8 of 19 explorations below the topsoil to a depth of about 2 to 10.5 feet bgs (approximately El. 259.5 to 267) with thicknesses ranging from 1.5 to 8 feet. 6- to 7-inches of buried asphalt pavement was noted at two borings within the former Beech Street area at depths of about 2.3 and 2.4 feet bgs in the Fill stratum. SPT N-values² ranged from 6 to 49 blows per foot (bpf), indicating loose to dense granular soil. Two test pits appeared to encounter possible fill or natural sand/gravel between about 1 to 5 feet bgs.
 - Natural Soils: predominantly sand/gravel or sand, with occasional silty sand and relatively thin sandy silt/clay seams and/or up to about 3.5-foot-thick layers between the granular soils at depths deeper than 13 feet bgs were encountered at each exploration below the topsoil or fill strata at a depth of about 0.5 to 10.5 feet bgs (approximately El. 257 to 281.5). The natural soils were generally relatively thick and were only penetrated in three explorations indicating thicknesses of 33.5, 45, and 47.5 feet. SPT N-values in the natural soils ranged from about 3 to 78 bpf, corresponding to very loose to very dense granular soils with one SPT N-value of 7 obtained in a clayey silt indicating medium stiff cohesive soil. The loose blow counts in the natural soils were encountered within the top 2 feet of the stratum except for at boring GZ-110 where an initial loose blow count (SPT N-value of 9 bpf) was obtained without a positive head of drilling fluid from 13 to 15 feet bgs and a re-attempt at an offset boring (GZ-110A) at the same depth with a positive head of drilling fluid yielded a medium dense blow count (SPT N-value of 14 bpf).
 - Glacial Till: encountered in only three borings at depths of about 43.5, 47.5, and 48.5 feet bgs (approximately El. 218.5 to 229). The stratum generally consisted of silty sand with gravel or sand and gravel with clayey silt. Aside from one blow count believed to be unrepresentative because it was obtained below the groundwater level without maintaining a positive head of drilling fluid inside the augers, the SPT N-values ranged from 21 to 37 bpf, indicating a medium dense to dense granular soil.
 - Bedrock: Not encountered within the depth drilled in the explorations.
- Groundwater: Groundwater was encountered in three of the borings (two of which were completed as observation wells) at depths of about 36 to 47 feet bgs (approximately El. 230 to 233) based on groundwater readings in the two observation wells in this area and/or observations during drilling. It should be noted that fluctuations in groundwater levels may occur due to variations in precipitation, season, site features and other factors different from those existing at the time of the observations.

Southern Area

- General Subsurface conditions (in order encountered, depths relative to existing ground surface at each exploration location):
 - Topsoil and/or Topsoil Fill: Encountered in 29 of 41 explorations. Two different topsoil areas were identified, generally consisting of:

² SPT = Standard Penetration test. Consists of a 2-inch outside-diameter sampler driven 24 inches by blows from a 140-pound hammer falling freely for 30-inches and the SPT N-value is the sum of number of the blows over the middle 12 inches of penetration.

- An area filled-in during the CFS-2 development, referred to as the “Ravine” area: encountered in 21 recent explorations from ground surface to depths of about 3 to 26 feet bgs (approximately El. 248 to 270).
- An area around the Ravine: encountered in 6 of the 14 explorations performed prior to the CFS-2 development and in a total of six explorations performed after the CFS-2 development in locations east, west, and south of the Ravine. The topsoil in this area was encountered from ground surface to depths of about 0.2 to 2 feet bgs (approximately El. 249.5 to 283).
- Subsoil: A relatively loose silty sand layer with roots was encountered either at ground surface or below the topsoil layer in two of the pre-CFS-2 development explorations with thicknesses of about 1.5- and 2-feet that extended to about 2 to 2.5 feet bgs. The subsoil is generally believed to have been removed during the CFS-2 development.
- Granular Fill: encountered in 15 of 41 explorations, either at ground surface or below the topsoil, to a depth range of about 0.7 to 24.5 feet bgs (approximately El. 247.5 to 279) with stratum thicknesses ranging from about 0.7 to 16 feet. Aside from weight-of-hammer (WOH, using a 140-pound hammer) advancement at previous boring B-42 which was noted to have been performed in known disturbed soil from a pre-excavation trench used to clear for unexploded ordnances and/or a utility, SPT N-values ranged from 2 bpf to practical split spoon refusal (50 blows over less than 6 inches), indicating very loose to very dense granular soil.
- Buried Topsoil: Encountered at one exploration (GZ-129) from about 10.5 to 16 feet bgs (approximately El. 265 to 270.5) below a surficial granular fill layer.
- Natural Soils: predominantly sand/gravel, sand, or silty sand with an occasional relatively thin sandy silt seam and/or layer at deeper depths was encountered at each exploration either at ground surface or at locations that penetrated the topsoil, fill, subsoil, or buried topsoil layers (33 of 41 explorations) at a depth range of about 0 to 24.5 feet bgs (approximately El. 247.5 to 283). The natural soils were generally relatively thick and were penetrated in seven explorations with thicknesses ranging from about 12.5 to 45.5 feet. SPT N-values in the natural soils ranged from about 8 to greater than 100 bpf, corresponding to loose to very dense granular soils. We note that the loose blow counts in the natural soils were encountered within the top 2 to 5 feet of the stratum.
- Glacial Till: encountered in seven explorations at a depth range of about 13.5 to 47.5 feet bgs (approximately El. 229 to 242). The glacial till stratum was penetrated in two explorations, with thicknesses of about 10 and 15 feet. The glacial till generally consisted of silty sand or sandy silt with gravel. SPT N-values ranged from 22 bpf to practical split spoon refusal (50 blows over less than 6 inches), indicating medium dense to very dense granular soil.
- Bedrock: Probable bedrock was noted in two of the explorations, likely based on drilling resistance and/or cuttings during 1.5 to 2 feet of drilling advancement at depths of 44.5 and 53.5 feet (approximately El. 216.5 and 231).
- Groundwater: Groundwater was encountered in seven of the borings at a depth range of about 18 to 42 feet bgs (approximately El. 229.5 to 243.5) based on groundwater readings in observation wells and/or observations during drilling. It should be noted that fluctuations in groundwater levels may occur due to variations in precipitation, season, site features and other factors different from those existing at the time of the observations.

Geotechnical Implications of Subsurface Conditions

- Presence of unsuitable materials, fill and loose soils:
 - Due to their compressible and non-homogenous nature, the existing topsoil, subsoil, buried topsoil, and fill (including debris/concrete foundations from previously demolished barracks buildings, if encountered) are considered unsuitable for support of building foundations, building slabs, equipment pads, and retaining wall foundations. In some locations within the proposed building areas, loose blow counts were also noted within the top portion of the natural granular soils. Due to the variability in gradation and relative density, the existing fill is difficult to distinguish from the natural granular soils in some areas at the Site.
 - Unless structural loads are transferred to more suitable natural bearing strata below the unsuitable materials, the unsuitable materials will need to be excavated and replaced with compacted structural fill prior to construction of shallow foundations and slabs on grade. Anticipated depths of overexcavation (removal of unsuitable soils) include:

- Southern portion of CFS-4 Building and southern CFS-4 equipment pad area: approx. 0 to 31.5 ft required (to approximately El. 247.5 to 277) below exterior footings assuming bottom of footing 4 ft below finish grade (El. 281 feet) for frost protection.
 - Site retaining wall: 0 to 12.5 ft required (to approximately El. 245.5 to 258) below the anticipated bottom block of wall assuming approximately 1 ft below the lowest apparent finish grade in front of the wall base (El. 259 ft).
 - Northern portion of CFS-4 Building, northern CFS-4 equipment pad areas: 0 to 7.5 ft required (to approximately El. 259.5 to 265) below exterior footings assuming bottom of footing 4 feet below finish grade (El. 269 ft for frost protection).
 - Annex Building and equipment pad areas: 0 to 4.5 ft required (to approximately El. 265 to 269.5) below exterior footings assuming bottom of footing 4 ft below finish grade (to approximately El. 273.5 ft) for frost protection.
- Reuse of On-Site Soils: Some of the proposed excavated soils, particularly portions of the fill and upper portions of the natural granular soils have a relatively high silt content and may be difficult to reuse as fill, especially in wet/freezing conditions.
 - Stability of temporary Slopes during Earthwork: The extent and depth where unsuitable soils (especially topsoil fill) were encountered in the explorations, particularly within the southern portion of the Site, may impact the stability of earthwork construction slopes during removal of unsuitable soils.

Geotechnical Design Recommendations

Foundations

- Shallow foundations, including spread footings at the CFS-4 and Annex buildings, equipment pad mat foundations, and site retaining walls (or leveling pads/base course for modular block walls), may be used to support structural loads, following excavation and replacement of unsuitable soils down to natural undisturbed granular soil subgrades. Excavation should extend a minimum one foot beyond the edge of foundation and then extend downward and outward on a 1 horizontal to 1 vertical line to natural, undisturbed natural soil. The natural soil subgrades should be sufficiently densified prior to placement of backfill up to the bottom of footing level. (Construction subgrade preparation and backfill requirements will be addressed in our final geotechnical report).
- Footings should be designed in accordance with the 2021 International Building Code (IBC) and the Massachusetts Amendments to the IBC (MSBC), 10th Edition.
- Exterior footings and interior footings in unheated areas for the proposed structures should bear at least 4 feet below the final exterior grades for frost protection.
- Following the aforementioned removal and replacement of unsuitable bearing soils, slab-on-grade construction is recommended for the proposed equipment pads, provided the slabs are underlain by the equivalent of 4 feet of non-frost-susceptible soils. This may be achieved using a combination of high-density rigid insulation board and free-draining backfill materials (i.e. Crushed Stone wrapped in non-woven filter fabric and/or Sand-Gravel).
- Interior footings in heated areas should bear at least 18 inches below top of slab.
- Recommended maximum net allowable bearing pressures in tons per square foot (tsf) for the shallow footings on the different strata are:

o Compacted Structural Fill (placed over the deep densified Natural Soils):	<u>3 tsf</u>
o Deep densified Natural Soils (Sand, Sand/Gravel, Silty Sand):	<u>3 tsf</u>

Building Slabs

- Following removal and replacement of unsuitable soils, slab-on-grade construction is recommended.
- Construct slabs over a minimum 8-inch-thick³ base course layer of compacted Sand-Gravel Fill (material gradation to be provided in the full Geotechnical Report).

³ 8-inch slab base course thickness is considered preliminary and may need to be revised after proposed slab loads are provided during design development.

Lateral Earth Pressure

Retaining walls, buried foundation walls, and other permanent retaining structures subjected to unbalanced earth-loading conditions should be designed to resist lateral earth pressures. We recommend the following design criteria:

- For the purpose of evaluating lateral earth pressures, use the following equivalent weights:
 - o flexible (cantilever) walls 45 pounds/cubic foot
 - o rigid (fixed) walls 65 pounds/cubic foot
- The above values assume that the walls are backfilled with free-draining material (such as Crushed Stone, Sand-Gravel, or Granular Fill with 8% or less fines content) and that adequate drainage is provided (via weepholes or continuous drains behind the wall base that discharge via gravity at the wall ends) such that no water pressure acts at the back of the wall.
- The recommended coefficient of friction to resist sliding between mass concrete/formed concrete and natural soils or compacted Structural Fill is 0.4.
- The minimum factors of safety for sliding and overturning under static loads should be 1.5 and 2, respectively. Passive pressure at the toe of the walls should not be included as a resisting force when analyzing for overturning and sliding.

Estimated Building Settlement

Provided design and construction of subgrades for the shallow foundations and equipment pads are performed as recommended by GZA, post-construction settlement is estimated as:

- Less than ½ inch differential (between columns), and;
- Less than 1 inch total.

Geotechnical Seismic Recommendations

- Based on the criteria of MSBC Section 1806.4 and Figure 1806.4, a qualitative liquefaction assessment was performed on the basis of blow count, soil type and estimated fines content. Provided the unsuitable soils at the Site are removed, the natural soils are deep densified, and proposed site fills are constructed using approved, sufficiently compacted structural fill, the foundation soils are not considered susceptible to liquefaction based on the criteria set forth in the MSBC.
 - Seismic Site Class: SPT N-values from the borings were used to evaluate seismic Site Class in accordance with Section 1613.5.5 of the MSBC, and the IBC. Based on this evaluation, we recommend Site Class D be used for seismic design.
 - Seismic Design Parameters: In accordance with Table 1604.11 of the MSBC, the mapped seismic design factors for the town of Shirley (which is the nearest municipality to the proposed CFS-4 development that the village of Devens is partially encompassed by) are: $S_s = 0.307$, and $S_1 = 0.071$
 - Seismic loads on foundation walls should be calculated based on MSBC Section 1610.2, using the following parameters:
 - o Total Soil Unit Weight: 130 pcf
 - o Site Coefficient: $F_a = 1.6$

Global Slope Stability (Western SRA)

GZA performed two-dimensional global stability analyses using SLOPE/W computer software to evaluate conditions representative of the proposed slope proximate to the existing SRA at the southwest portion of the Site, which is the approximate location of the proposed site retaining wall. The results of initial analysis indicated a factor of safety (FS) for global stability of approximately 1.8, which exceeds the minimum FS required by Subparagraph 11.6.3.7 of AASHTO LRFD Bridge Design Specification for global stability for permanent slopes.

Permanent Groundwater Control

Based on groundwater level measurements from observation wells and observations of groundwater levels noted on the boring logs, groundwater is expected to be approximately 14.5 to 47.5 feet below the proposed bottom of foundation elevations, which we understand will bear at approximately El. 258 to 277. This level is sufficiently low enough to eliminate the need for perimeter drains or other permanent groundwater controls for the buildings and slabs. However, in accordance with MSBC 1805.2, provisions should be made to dampproof below grade portions of foundations and to slope exterior grades away from the buildings and equipment pads to the extent practical to divert stormwater away.

Temporary Dewatering During Construction

- Groundwater is not anticipated to be encountered in the excavations; however, storm water influx and other ponded water will likely be able to be controlled by pumping from localized sumps.
- Site Contractor should be responsible for selecting dewatering method and designing the construction dewatering system, based upon his proposed methods and equipment needed for excavation.

Appendices:

Table

Figures

Appendix A – Limitations

Appendix B – Relevant Previous and Recent Subsurface Exploration Data

Appendix C – Relevant Previous and Recent Laboratory Test Results



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TABLES



TABLE 1
SUMMARY OF SUBSURFACE EXPLORATIONS
PROPOSED CFS-4 DEVELOPMENT AREA
111 HOSPITAL ROAD DEVENS, MA

				DEPTH TO / ELEVATION OF FEATURE OR TOP OF STRATUM (FT) ^{2,3}										Notes	Nearby Development Feature(s)	Exploration in "Ravine" Area? (Y/N)
Area of Site	Exploration ID	Exploration Type	Year Performed	Ground Surface	Bottom of Exploration	Refusal ⁴ (Drilling or Sampler)	Topsoil / Topsoil Fill	Subsoil ⁵	Fill	Natural Granular Soils ⁶	Glacial Till	Bedrock	Ground-water Reading ⁷			
Northern Area	B-73 (MW-5)	boring	2020	0 / 277.6	53.6 / 224	- / -	0 / 277.6	- / -	- / -	1 / 276.6	48.5 / 229.1	- / -	47 / 230.6	Loose blow counts: 0 to 4 ft in topsoil and top of natural soil, SS refusal at 41.8 ft, See Note 8, MW installed	CFS-4, PVT	N
	GZ-110/110A	boring	2025	0 / 271	26 / 245	- / -	0 / 271	- / -	2 / 269	6.9 / 264.1	- / -	- / -	- / -	Buried asphalt: 2.3 to 2.9 ft, GZ-110 loose blowcounts: 2 to 4 ft in fill and 13 to 15 ft in natural sand, GZ-110A medium dense blowcount: 13 to 15 ft (water added)	CFS-4, PVT, SWB	N
	GZ-111	boring	2025	0 / 269	11 / 258	- / -	- / -	- / -	0 / 269	4.4 / 264.6	- / -	- / -	- / -	-	CFS-4, PVT	N
	GZ-119	boring	2025	0 / 270	21 / 249	- / -	0 / 270	- / -	- / -	0.8 / 269.2	- / -	- / -	- / -	V. loose blow count(s): 0 to 4 ft in topsoil & top of natural soil (sand)	CFS-4, PVT	N
	GZ-120	boring	2025	0 / 277.5	12 / 265.5	- / -	0 / 277.5	- / -	- / -	0.4 / 277.1	- / -	- / -	- / -	-	CFS-4, PVT	N
	GZ-121	boring	2025	0 / 269	22 / 247	- / -	0 / 269	- / -	0.8 / 268.2	4 / 265	- / -	- / -	- / -	Sand/Clayey silt: 13.5 to 17 ft between natural granular strata	CFS-4	N
	GZ-122	boring	2025	0 / 270	53.8 / 216.2	- / -	0 / 270	- / -	2.4 / 267.6	10.4 / 259.6	43.5 / 226.5	- / -	37.2 / 232.8	Asphalt pavement in fill: 2.4 to 2.9 ft, clayey silt: 25.8 to 26.4 ft within natural granular strata, possible loose blow count: 45 to 47 ft in glacial till (no water added)	CFS-4, PVT	N
	TP-315	test pit	2025	0 / 272.5	8 / 264.5	- / -	0 / 272.5	- / -	- / -	2 / 270.5	- / -	- / -	- / -	-	CFS-4	N
	TP-317	test pit	2025	0 / 277	3 / 274	- / -	0 / 277	- / -	- / -	1.5 / 275.5	- / -	- / -	- / -	Topsoil Fill: 0 to 1.5 ft	CFS-4	N
	GZ-125	boring	2025	0 / 269	21 / 248	- / -	0 / 269	- / -	0.2 / 268.8	4 / 265	- / -	- / -	- / -	-	Annex	N
	GZ-126	boring	2025	0 / 269	22 / 247	- / -	0 / 269	- / -	0.6 / 268.4	2 / 267	- / -	- / -	- / -	Clayey Silt: 13.5 to 15.5 ft between natural granular strata	Annex, PVT	N
	GZ-127	boring	2025	0 / 269	22 / 247	- / -	0 / 269	- / -	0.3 / 268.7	3.7 / 265.3	- / -	- / -	- / -	possible boulder: 1.8 to 3 ft, Clayey Silt: 18.5 to 22 ft below natural granular stratum	Annex, PVT	N
	TP-14	test pit	2020	0 / 270.3	12 / 258.3	- / -	0 / 270.3	- / -	- / -	0.4 / 269.9	- / -	- / -	- / -	-	Annex, PVT	N
	GZ-15 (OW)	boring	2024	0 / 266	51 / 215	- / -	0 / 266	- / -	0.2 / 265.8	2.3 / 263.7	47.5 / 218.5	- / -	35.8 / 230.2	Observation well installed	PVT	N
	GZ-109	boring	2025	0 / 259	17 / 242	- / -	0 / 259	0.6 / 258.4	- / -	2 / 257	- / -	- / -	- / -	V. loose/loose blow counts: 0 to 4 ft in topsoil/subsoil/top of natural soil (sand)	PVT	N
	TP-18	test pit	2020	0 / 282.1	12 / 270.1	- / -	0 / 282.1	- / -	- / -	0.5 / 281.6	- / -	- / -	- / -	-	PVT	N
	TP-306	test pit	2025	0 / 267	13 / 254	- / -	0 / 267	- / -	- / -	1.5 / 265.5	- / -	- / -	- / -	Possible fill or Sand/Gravel: 1.5 to 4 ft	SWB, PVT	N
	TP-307	test pit	2025	0 / 269	8 / 261	- / -	0 / 269	- / -	- / -	0.5 / 268.5	- / -	- / -	- / -	-	SWB, PVT	N
	TP-308	test pit	2025	0 / 268.5	13 / 255.5	- / -	0 / 268.5	- / -	- / -	1 / 267.5	- / -	- / -	- / -	Possible fill or Sand/Gravel: 1 to 5 ft	PVT, SWB	N



TABLE 1
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PROPOSED CFS-4 DEVELOPMENT AREA
111 HOSPITAL ROAD DEVENS, MA

DEPTH TO / ELEVATION OF FEATURE OR TOP OF STRATUM (FT) ^{2,3}														Notes	Nearby Development Feature(s)	Exploration in "Ravine" Area? (Y/N)
Area of Site	Exploration ID	Exploration Type	Year Performed	Ground Surface	Bottom of Exploration	Refusal ⁴ (Drilling or Sampler)	Topsoil / Topsoil Fill	Subsoil ⁵	Fill	Natural Granular Soils ⁶	Glacial Till	Bedrock	Ground-water Reading ⁷			
Southern Area	B-69	boring	2020	0 / 253.7	25 / 228.7	- / -	- / -	- / -	0 / 253.7	6 / 247.7	- / -	- / -	18.9 / 234.8	Loose blow count: 0 to 2 ft in probable fill	CFS-4, PVT	N
	B-70	boring	2020	0 / 260.8	25 / 235.8	- / -	- / -	- / -	0 / 260.8	6 / 254.8	- / -	- / -	19.8 / 241	Loose blow count: 0 to 2 ft in probable fill	CFS-4, PVT	N
	B-71	boring	2020	0 / 254.5	27 / 227.5	- / -	0 / 254.5	- / -	- / -	2 / 252.5	- / -	- / -	- / -	Loose blow count: 0 to 2 ft in topsoil	CFS-4, PVT	N
	B-134	boring	2020	0 / 254.1	37 / 217.1	- / -	0 / 254.1	- / -	- / -	1 / 253.1	15 / 239.1	- / -	- / -	See note 8	CFS-4	N
	GZ-114	boring	2025	0 / 273	29 / 244	- / -	0 / 273	- / -	19.5 / 253.5	24.5 / 248.5	- / -	- / -	- / -	Topsoil fill: 0 to 19.5 ft	CFS-4, PVT	Y
	GZ-115	boring	2025	0 / 279	26 / 253	- / -	0 / 279	- / -	- / -	22 / 257	- / -	- / -	- / -	Loose blow count(s): 5 to 7 ft in topsoil fill, Topsoil fill: 0 to 22 ft	CFS-4, PVT	Y
	GZ-116	boring	2025	0 / 274	29 / 245	- / -	0 / 274	- / -	- / -	26 / 248	- / -	- / -	- / -	Topsoil fill: 0 to 26 ft	CFS-4	Y
	GZ-118	boring	2025	0 / 272.5	37 / 235.5	- / -	0 / 272.5	- / -	- / -	19.5 / 253	- / -	- / -	- / -	Topsoil fill: 0 to 19.5 ft	CFS-4	Y
	GZ-128	boring	2025	0 / 279.5	16 / 263.5	- / -	0 / 279.5	- / -	4.5 / 275	14 / 265.5	- / -	- / -	- / -	Topsoil Fill: 0 to 4.5 feet, Loose blow count(s): 5 to 9 ft in fill	CFS-4, PVT	Y
	GZ-129	boring	2025	0 / 281	22 / 259	- / -	0 / 281	- / -	0.1 / 280.9	15.8 / 265.2	- / -	- / -	- / -	Loose blow count(s): 10 to 12 ft in fill/topsoil, buried topsoil: 10.5 to 15.8 ft	CFS-4, PVT	Y
	GZ-130	boring	2025	0 / 270	19 / 251	- / -	0 / 270	- / -	16.3 / 253.7	18 / 252	- / -	- / -	- / -	Topsoil Fill: 0 to 16.3 ft, Loose blow count(s): 5 to 7 ft in topsoil	CFS-4	Y
	GZ-131	boring	2025	0 / 272	19 / 253	- / -	0 / 272	- / -	16.3 / 255.7	18.3 / 253.7	- / -	- / -	- / -	Topsoil Fill: 0 to 16.3 ft	CFS-4, PVT	Y
	GZ-132	boring	2025	0 / 268.5	19 / 249.5	- / -	0 / 268.5	- / -	- / -	14.5 / 254	- / -	- / -	- / -	Topsoil Fill: 0 to 14.5 ft, Loose blow count(s): 5 to 7 ft in topsoil	CFS-4, PVT	Y
	TP-309	test pit	2025	0 / 276	14 / 262	- / -	0 / 276	- / -	- / -	12 / 264	- / -	- / -	- / -	Topsoil Fill: 0 to 12 ft	CFS-4, PVT	Y
	TP-310	test pit	2025	0 / 273.5	14 / 259.5	- / -	0 / 273.5	- / -	- / -	- / -	- / -	- / -	- / -	Topsoil Fill: not penetrated at 14 ft	CFS-4	Y
	TP-311	test pit	2025	0 / 274	14 / 260	- / -	0 / 274	- / -	- / -	- / -	- / -	- / -	- / -	Topsoil Fill: not penetrated at 14 ft	CFS-4	Y
	TP-312	test pit	2025	0 / 271.5	14 / 257.5	- / -	0 / 271.5	- / -	- / -	- / -	- / -	- / -	- / -	Topsoil Fill: not penetrated at 14 ft	CFS-4	Y
	TP-313	test pit	2025	0 / 278	14 / 264	- / -	0 / 278	- / -	- / -	- / -	- / -	- / -	- / -	Topsoil Fill: not penetrated at 14 ft	CFS-4, PVT	Y
	TP-314	test pit	2025	0 / 278	14 / 264	- / -	0 / 278	- / -	- / -	- / -	- / -	- / -	- / -	Topsoil Fill: not penetrated at 14 ft	CFS-4, PVT	Y
	TP-316	test pit	2025	0 / 275	6 / 269	- / -	0 / 275	- / -	- / -	5 / 270	- / -	- / -	- / -	Topsoil Fill: 0 to 5 ft	CFS-4, RW, PVT	Y
	TP-318	test pit	2025	0 / 279	3 / 276	- / -	0 / 279	- / -	- / -	2 / 277	- / -	- / -	- / -	Topsoil Fill: 0 to 2 ft	CFS-4, PVT	N
	TP-319	test pit	2025	0 / 275	13 / 262	- / -	0 / 275	- / -	- / -	- / -	- / -	- / -	- / -	Topsoil Fill: not penetrated at 13 ft	CFS-4, PVT	Y
	TP-321	test pit	2025	0 / 266	13 / 253	- / -	0 / 266	- / -	- / -	- / -	- / -	- / -	- / -	Topsoil Fill: not penetrated at 13 ft	CFS-4, RW, PVT	Y
	TP-323	test pit	2025	0 / 270.5	13 / 257.5	- / -	0 / 270.5	- / -	- / -	- / -	- / -	- / -	- / -	Topsoil Fill: not penetrated at 13 ft	CFS-4	Y
	GZ-124	boring	2025	0 / 268.5	22 / 246.5	- / -	0 / 268.5	- / -	- / -	0.2 / 268.3	- / -	- / -	- / -	V. loose/loose blow count(s): 0 to 4 ft in topsoil/top of natural soil (sand), See Note 8	Annex, RW	N
	B-67	boring	2020	0 / 261.9	23.2 / 238.7	23.2 / 238.7	- / -	- / -	- / -	0 / 261.9	23 / 238.9	- / -	18.3 / 243.6	Loose blow count: 0 to 2 ft in natural sand, SS refusal at 23.2 ft	RW	N
	B-68 (MW-4)	boring	2020	0 / 267.7	48.7 / 219	48.7 / 219	- / -	- / -	0 / 267.7	4.9 / 262.8	38.5 / 229.2	- / -	38.3 / 229.4	V. loose/Loose blow count(s): 0 to 4 ft in probable fill, SS refusals: 4.9, 46.4, 48.7 ft, MW installed	RW	N
	B-135	boring	2020	0 / 270	55 / 215	- / -	0 / 270	- / -	- / -	1 / 269	38.5 / 231.5	53.5 / 216.5	21.5 / 248.5	Loose blow count(s): 0 to 4 ft in topsoil/top of natural soil, See note 8, SS refusals at 45.1 and 50.4 ft, probable bedrock: 53.5 to 55 ft	RW, PVT	N
	B-136	boring	2021	0 / 250.4	32.4 / 218	32.4 / 218	0 / 250.4	- / -	- / -	0.7 / 249.7	13.5 / 236.9	- / -	- / -	See note 8, SS refusals: 27.7 and 32.4 ft	RW	N
	TP-320	test pit	2025	0 / 259	4 / 255	- / -	0 / 259	- / -	- / -	3 / 256	- / -	- / -	- / -	Topsoil Fill: 0 to 3 ft	RW	Y
	TP-322	test pit	2025	0 / 253.5	10 / 243.5	- / -	0 / 253.5	- / -	- / -	8 / 245.5	- / -	- / -	- / -	Topsoil Fill: 0 to 8 ft	RW	Y
	B-42	boring	2020	0 / 273.3	32 / 241.3	- / -	- / -	- / -	0 / 273.3	9 / 264.3	- / -	- / -	- / -	Very loose blow counts: 0 to 8 ft within UXO preclearing trench, See Note 8	PVT	N
	B-53 (OW)	boring	2020	0 / 275.5	46.5 / 229	46.5 / 229	- / -	- / -	0 / 275.5	5 / 270.5	33.5 / 242	43.5 / 232	37.7 / 237.8	See Note 8, SS refusal at 45 ft, roller bit and casing practical refusal at 46.5 ft	PVT	N
	B-72	boring	2020	0 / 270.1	37 / 233.1	- / -	- / -	0 / 270.1	- / -	2 / 268.1	- / -	- / -	- / -	Loose blow counts: 0 to 4 ft in subsoil and top of natural soil	PVT	N
	GZ-5 (OW)	boring	2024	0 / 281	64 / 217	- / -	- / -	- / -	0 / 281	2 / 279	47.5 / 233.5	- / -	41.7 / 239.3	Observation well installed	PVT	N
	GZ-9	boring	2024	0 / 264	21 / 243	- / -	- / -	- / -	0 / 264	0.7 / 263.3	- / -	- / -	- / -	-	PVT	N
	GZ-113	boring	2025	0 / 283.5	18 / 265.5	- / -	- / -	- / -	0 / 283.5	14 / 269.5	- / -	- / -	- / -	Vacuum excavated: 0 to 5 ft, loose blow counts: 5 to 9 ft in fill	PVT	N
	GZ-133	boring	2025	0 / 266	12 / 254	- / -	- / -	- / -	0 / 266	7 / 259	- / -	- / -	- / -	Loose blow count(s): 10 to 12 ft in fill	PVT	N
	TP-16	test pit	2020	0 / 283.4	12 / 271.4	- / -	0 / 283.4	- / -	- / -	0.3 / 283.1	- / -	- / -	- / -	-	PVT	N
	TP-120	test pit	2020	0 / 274.5	12 / 262.5	- / -	0 / 274.5	0.7 / 273.8	- / -	2.3 / 272.2	- / -	- / -	- / -	-	PVT	N
	TP-121	test pit	2020	0 / 272.5	11.8 / 260.7	- / -	- / -	- / -	0 / 272.5	3.3 / 269.2	- / -	- / -	- / -	Within apparent former building area	PVT	N

Notes: 1) Definitions/Acronyms: "-" = Not observed or noted, v. = very, ft = depth measurement in feet, ref. = refusal, SS = splitspoon sampler, gw = groundwater, (OW) or (MW-#) = groundwater observation/monitoring well installed in borehole upon drilling completion, WX = completely or very severely weathered bedrock, El. = elevation, TRC = TRC Companies, Inc., H&A = Haley & Aldrich, Inc., RW = retaining wall, PVT = Pavement, SWB = Stormwater Basin.
2) The subsurface information above is based on GZA's review of the exploration logs. Refer to the exploration logs in the appendices of this report for more detail.
3) The ground surface El. for all explorations performed by TRC and/or H&A in 2020 were obtained from logs prepared by TRC and/or H&A. TRC has indicated the ground surface elevation at each boring location was determined by survey. We understand depths are relative to existing ground surface level at the time the exploration was performed. Elevations are in feet and we understand are referenced to the North American Vertical Datum of 1988 (NAVD88). Refer to the 2024 and 2025 GZA exploration logs for details on how the ground surface elevation was obtained.
4) Refusals noted above, either of drilling advancement (casing or roller bit) or split-spoon sampler (typically less than 6-inches advancement under 50 blows of a 140-pound hammer at a free-fall of 30-inches), where bedrock was not cored generally appear to be due to bedrock or cobbles/boulders in the glacial till.
5) Subsoil stratum categorized as Loess or Aeolian Silt deposits on the H&A logs in the Appendices.
6) Natural Granular Soils Stratum categorized as Glaciofluvial or Glaciolacustrine deposits on the H&A logs and occasionally on the TRC logs in the Appendices.
7) Groundwater observation wells were installed in 2020 borings B-53, B-68, and B-73 and the groundwater readings indicated for these borings were at the stabilization times noted by TRC/H&A. **Bold and blue-colored** groundwater level readings indicate groundwater level readings obtained from a monitoring well. All other groundwater level readings in boring logs generally indicated 0-hour stabilization time on the boring logs. It should be noted that fluctuations in groundwater levels may occur due to variations in season, rainfall, site features and other factors different from those existing at the time of the explorations and measurements.
8) Cobbles and occasional boulders were noted in the H&A and TRC boring logs generally within the natural gravelly granular and glacial till strata and occasionally within the existing fill stratum.
9) Differences in strata depths/elevations in this table for borings B-134 to B-136 compared to the TRC boring logs are based on GZA review of soil samples from those borings provided by TRC.



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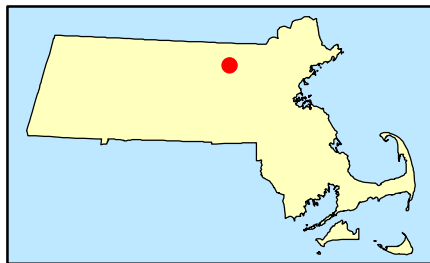
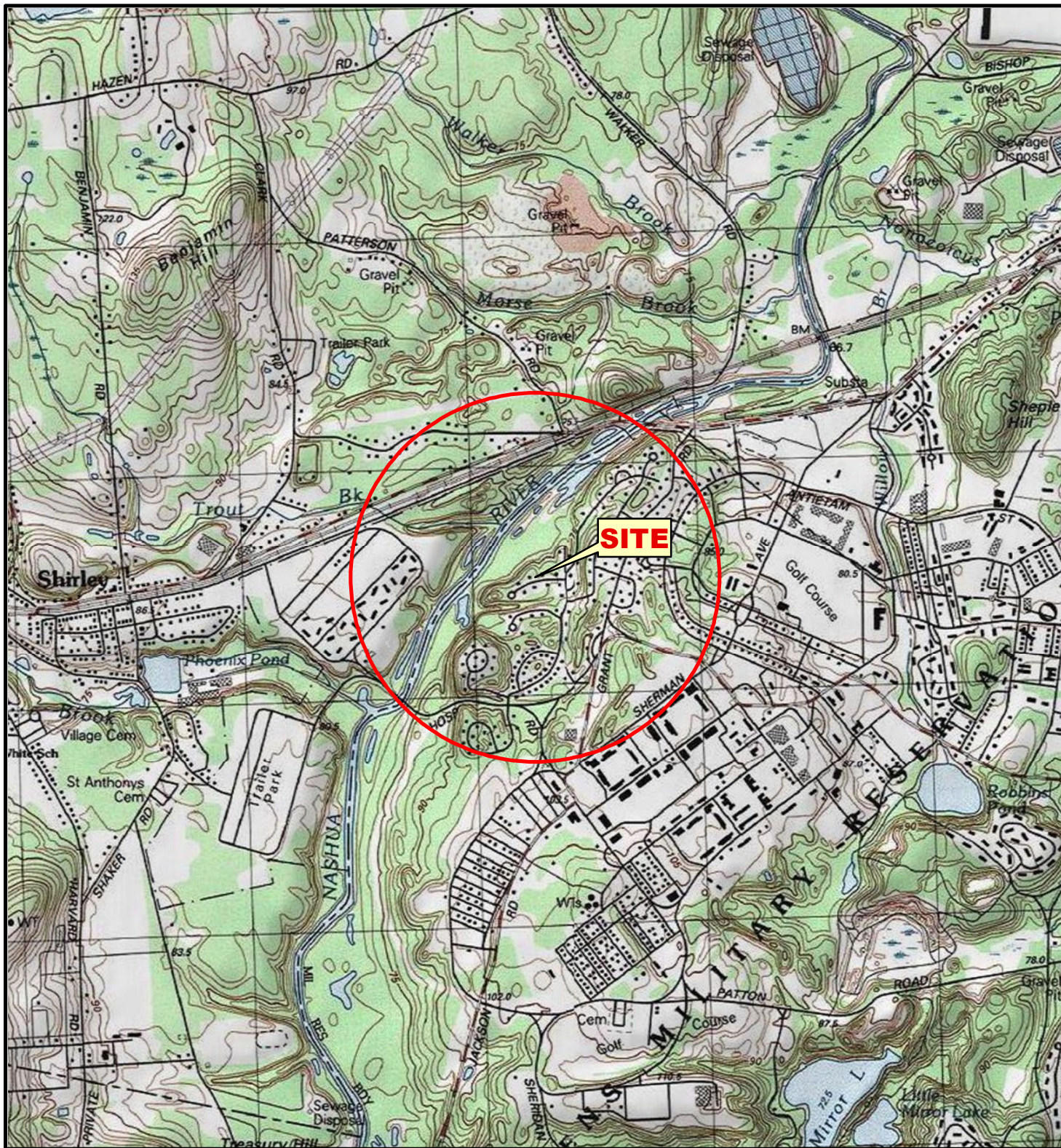
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FIGURES

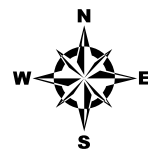


SOURCE : USGS TOPOGRAPHIC QUADRANGLES SCANNED BY
THE NATIONAL GEOGRAPHIC SOCIETY & I-CUBED, COPYRIGHT 2011

Data Supplied by :



0 1,000 2,000 4,000 6,000
SCALE IN FEET



PROJ. MGR.: MJO
DESIGNED BY: MJO
REVIEWED BY: MAR
OPERATOR: MJO
DATE: 09-24-2025

LOCUS MAP
SHOWING 1/2 OFFSET

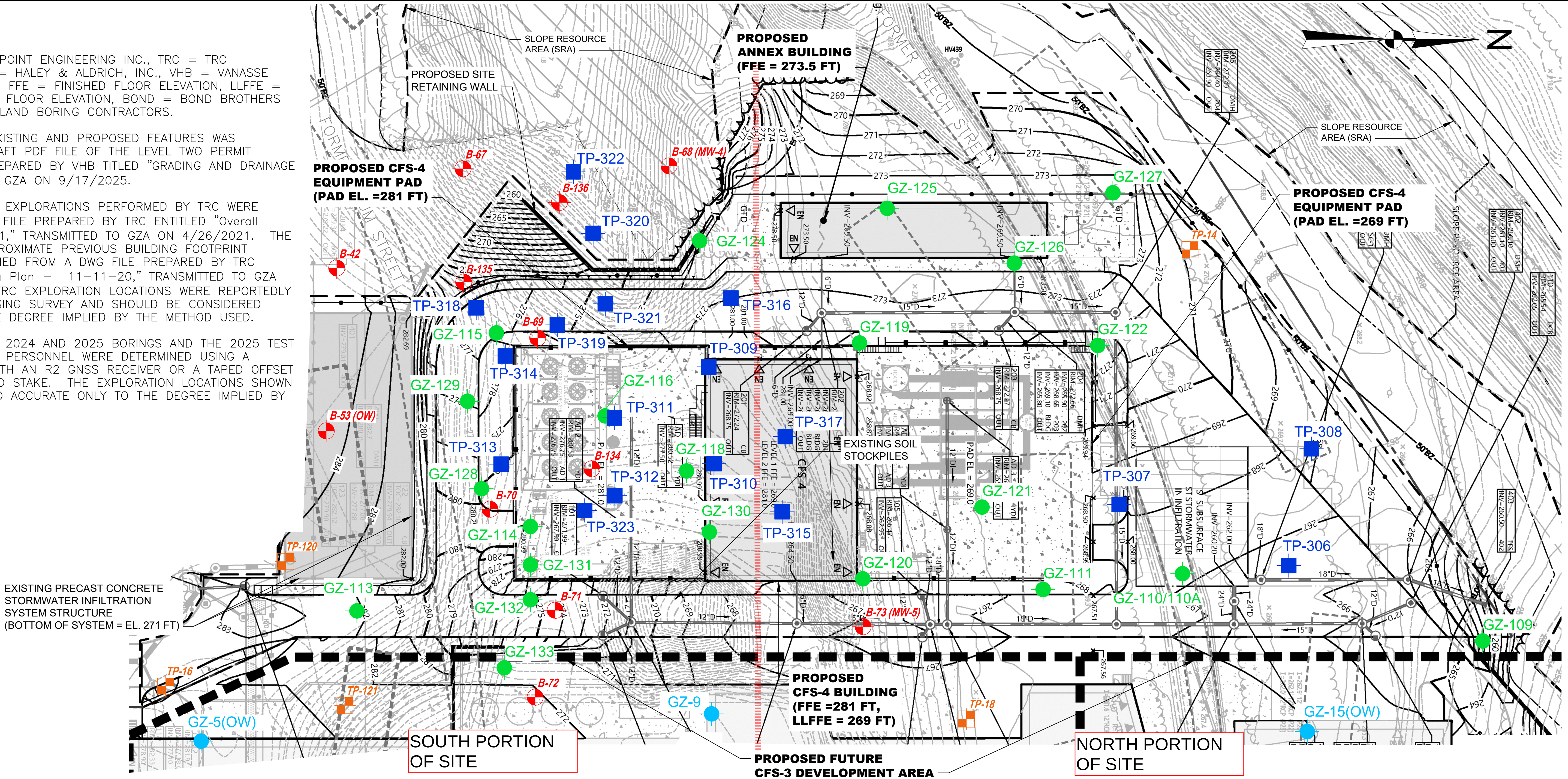
CFS-4 DEVELOPMENT
111 HOSPITAL RD
DEVENS, MASSACHUSETTS

JOB NO.
01.0174955.30

FIGURE NO.
1

GENERAL NOTES

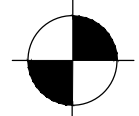
1. ACRONYMS: HEI = HIGHPOINT ENGINEERING INC., TRC = TRC COMPANIES, INC., H&A = HALEY & ALDRICH, INC., VHB = VANASSE HANGEN BRUSTLIN, INC., FFE = FINISHED FLOOR ELEVATION, LLFFE = LOWEST LEVEL FINISHED FLOOR ELEVATION, BOND = BOND BROTHERS INC., NEBC = NEW ENGLAND BORING CONTRACTORS.
2. BASE MAP DEPICTING EXISTING AND PROPOSED FEATURES WAS DEVELOPED FROM A DRAFT PDF FILE OF THE LEVEL TWO PERMIT DRAWING NO. C4.01 PREPARED BY VHB TITLED "GRADING AND DRAINAGE PLAN," TRANSMITTED TO GZA ON 9/17/2025.
3. THE LOCATIONS OF THE EXPLORATIONS PERFORMED BY TRC WERE OBTAINED FROM A DWG FILE PREPARED BY TRC ENTITLED "Overall Boring Plan - 4-8-21," TRANSMITTED TO GZA ON 4/26/2021. THE LOCATIONS OF THE APPROXIMATE PREVIOUS BUILDING FOOTPRINT LOCATIONS WERE OBTAINED FROM A DWG FILE PREPARED BY TRC ENTITLED "Overall Boring Plan - 11-11-20," TRANSMITTED TO GZA ON 11/19/2020. THE TRC EXPLORATION LOCATIONS WERE REPORTEDLY LOCATED BY OTHERS USING SURVEY AND SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
4. THE LOCATIONS OF THE 2024 AND 2025 BORINGS AND THE 2025 TEST PITS OBSERVED BY GZA PERSONNEL WERE DETERMINED USING A TRIMBLE GPS DEVICE WITH AN R2 GNSS RECEIVER OR A TAPED OFFSET FROM THE GPS-LOCATED STAKE. THE EXPLORATION LOCATIONS SHOWN SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.



LEGEND

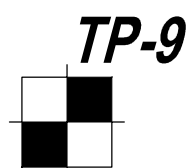
PREVIOUS U.S. ARMY BUILDING FOOTPRINT (APPROX.)

B-1 to B-136 (OW or MW-1)



BORINGS PERFORMED BY TRC COMPANIES, INC. OF WINDSOR, CONNECTICUT BETWEEN AUGUST 2020 AND NOVEMBER 2020 (PRIOR TO THE CFS-2 DEVELOPMENT). OBSERVED AND LOGGED BY TRC AND/OR H&A.

INDICATES MONITORING OR OBSERVATION WELL INSTALLED IN BOREHOLE



TEST PITS PERFORMED BY W.G. MCCLELLAN AND SON OF FALLENTIMBER, PENNSYLVANIA ON BEHALF OF TRC FROM AUGUST 13 TO SEPTEMBER 4, 2020 (PRIOR TO THE CFS-2 DEVELOPMENT). OBSERVED AND LOGGED BY TRC.



GZ-5

(OW)



TP-301



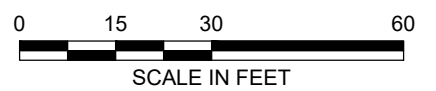
GZ-101

TEST BORING PERFORMED BY NEW ENGLAND BORING CONTRACTORS OF DERRY, NEW HAMPSHIRE FROM OCTOBER 28, 2024 TO NOVEMBER 6, 2024 (CFS-2 DEVELOPMENT WORK ALREADY SUBSTANTIALLY COMPLETED). OBSERVED AND LOGGED BY GZA PERSONNEL.

INDICATES OBSERVATION WELL INSTALLED IN BOREHOLE

TEST PIT PERFORMED BY CRYAN LANDSCAPE CONTRACTORS, INC. OF NORTH ATTLEBOROUGH, MASSACHUSETTS FROM AUGUST 4 TO 7, 2025. OBSERVED AND LOGGED BY GZA PERSONNEL.

TEST BORING PERFORMED BY NEW ENGLAND BORING CONTRACTORS OF DERRY, NEW HAMPSHIRE FROM AUGUST 18 TO SEPTEMBER 5, 2025. OBSERVED AND LOGGED BY GZA PERSONNEL.



UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

GEOTECHNICAL EVALUATION
PROPOSED CFS-4 DEVELOPMENT
HOSPITAL ROAD, DEVENS, MASSACHUSETTS

EXPLORATION LOCATION PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists
www.gza.com

PREPARED FOR: COMMONWEALTH FUSION SYSTEMS

PROJ MGR: MJO REVIEWED BY: MAR
DESIGNED BY: MJO DRAWN BY: MJO
DATE: OCTOBER, 2025 PROJECT NO. 01.0174955.30

CHECKED BY: TMK
SCALE: AS SHOWN
REVISION NO. 0

FIGURE 2



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APPENDIX A

LIMITATIONS



USE OF MEMO

1. GZA GeoEnvironmental, Inc. (GZA) prepared this Memo on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Memo. Use of this Memo, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the contract documents, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in Proposal for Services and/or Memo, and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. If conditions other than those described in this Memo are found at the subject location(s), or the design has been altered in any way, GZA shall be so notified and afforded the opportunity to revise the Memo, as appropriate, to reflect the unanticipated changed conditions.
3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made.
4. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the Memo.

SUBSURFACE CONDITIONS

5. The generalized soil profile(s) provided in our Memo are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs. The nature and extent of variations between these explorations may not become evident until further exploration or construction. If variations or other latent conditions then become evident, it will be necessary to reevaluate the conclusions and recommendations of this Memo.
6. In preparing this Memo, GZA relied on certain information provided by the Client, state and local officials, and other parties referenced therein which were made available to GZA at the time of our evaluation. GZA did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this evaluation.
7. Water level readings have been made in test holes (as described in this Memo) and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this Memo. Fluctuations in the level of the groundwater however occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The water table encountered in the course of the work may differ from that indicated in the Memo.
8. GZA's services did not include an assessment of the presence of oil or hazardous materials at the property. Consequently, we did not consider the potential impacts (if any) that contaminants in soil or groundwater may have on construction activities, or the use of structures on the property.



9. Recommendations for foundation drainage, waterproofing, and moisture control address the conventional geotechnical engineering aspects of seepage control. These recommendations may not preclude an environment that allows the infestation of mold or other biological pollutants.

COMPLIANCE WITH CODES AND REGULATIONS

10. We used reasonable care in identifying and interpreting applicable codes and regulations. These codes and regulations are subject to various, and possibly contradictory, interpretations. Compliance with codes and regulations by other parties is beyond our control.

COST ESTIMATES

11. Unless otherwise stated, our cost estimates are only for comparative and general planning purposes. These estimates may involve approximate quantity evaluations. Note that these quantity estimates are not intended to be sufficiently accurate to develop construction bids, or to predict the actual cost of work addressed in this Memo. Further, since we have no control over either when the work will take place or the labor and material costs required to plan and execute the anticipated work, our cost estimates were made by relying on our experience, the experience of others, and other sources of readily available information. Actual costs may vary over time and could be significantly more, or less, than stated in the Memo.

SCREENING AND ANALYTICAL TESTING

12. We collected soil samples at the locations identified in the Memo. These samples were analyzed for the specific parameters identified in the Memo.
13. Our interpretation of field screening and laboratory data is presented in the Memo. Unless otherwise noted, we relied upon the laboratory's QA/QC program to validate these data.
14. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological or radiological processes. Subsequently observed concentrations may be other than indicated in the Memo, where applicable.

ADDITIONAL SERVICES

15. GZA recommends that we be retained to provide services during any future: site observations, design, implementation activities, construction and/or property development/redevelopment. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.



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APPENDIX B

RELEVANT PREVIOUS (2020 & 2024) AND RECENT (2025) SUBSURFACE EXPLORATION DATA

(TABLES, LOGS, GROUNDWATER MEASUREMENTS)



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APPENDIX B.1

2020 TRC TEST PIT LOGS

KEY TO SYMBOLS

COARSE FRAGMENTS (% of Vol.)

15-35% 35-65%
>65%
gravelly very gravelly
extr. gravelly
channery very channery
extr. channery
cobbly very cobbly
extr. cobbly
flaggy very flaggy
extr. flaggy
stony very stony
extr. stony

TEXTURE

cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c - clay

STRUCTURE

Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES

Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY

Distinctness
Abrupt <1" (thick)
Gradual 2.5 - 5"
Clear 1-2.5"
Diffuse >5"
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

Table 2.3.3. 1982 Rawls Rates¹⁸

Texture Class	NRCS Hydrologic Soil Group (HSG)	Infiltration Rate Inches/Hour
Sand	A	8.27
Loamy Sand	A	2.41
Sandy Loam	B	1.02
Loam	B	0.52
Silt Loam	C	0.27
Sandy Clay Loam	C	0.17
Clay Loam	D	0.09
Silty Clay Loam	D	0.06
Sandy Clay	D	0.05
Silty Clay	D	0.04
Clay	D	0.02

Massachusetts Stormwater Handbook, Volume 3, page 22, Table 2.3.3. 1982 Rawls Rate.



Date: 08/12/20
Project: CFS, Devens, MA
Project #: 349440.0004

TEST PIT LOG

Test Pit #: TP-14

Depth to Massive Rock: Not Encountered

Ground Surface Elevation: 270.3 ft

Horizon	Depth (in)	Color	Texture	Structure	Consistence	Redox/ Mottling Features	Boundary	Hydrologic Group*	Estimated Infiltration Rate (in/hr)*
A	0.0-5.0	10YR 4/3	sl	1 m gr	fr	-	Abrupt Wavy	B	1.02
Bw ₁	5.0-27.0	10YR 6/4	Very gravelly s	0 m	loose	-	Abrupt Smooth	A	8.27
Bw ₂	27.0-50.0	10YR 5/3	Extr. Gravelly s	0 m	loose	-	Abrupt Smooth	A	8.27
Bw ₃	50.0-96.0	10YR 6/1	s	0 m	loose	-	Abrupt Smooth	A	8.27
Bw ₄	96.0-144.0	10YR 6/2	extr. Gravelly cos	0 m	loose	-	-	A	8.27

TRC Engineers, Inc. Representative: Charles Zielke

Notes:

No groundwater was encountered on the day of investigation.

**Based on Massachusetts Stormwater Handbook, Volume 3, page 22, Table 2.3.3. 1982 Rawls Rate. See Key to Symbols.*



Date: 08/14/20
Project: CFS, Devens, MA
Project #: 349440.0004

TEST PIT LOG

Test Pit #: TP-16

Depth to Massive Rock: Not Encountered

Ground Surface Elevation: 283.4 ft

Horizon	Depth (in)	Color	Texture	Structure	Consistence	Redox/ Mottling Features	Boundary	Hydrologic Group*	Estimated Infiltration Rate (in.hr)*
A	0.0-3.0	10YR 5/1	sl	1 m gr	vfr	-	Abrupt Wavy	B	1.02
Bw ₁	3.0-26.0	10YR 5/2	cobbly sl	0 m	loose	-	Gradual Wavy	B	1.02
Bw ₂	26.0-110.4	10YR 5/4	Extr. cobbly cos	0 m	loose	-	Abrupt Smooth	A	8.27
Bw ₃	110.4-144.0	10YR 5/1	sl	0 m	loose	-	-	B	1.02

TRC Engineers, Inc. Representative: Charles Zielke

Notes:

No groundwater was encountered on the day of investigation.

**Based on Massachusetts Stormwater Handbook, Volume 3, page 22, Table 2.3.3. 1982 Rawls Rate. See Key to Symbols.*



Date: 08/13/20
Project: CFS, Devens, MA
Project #: 349440.0004

TEST PIT LOG

Test Pit #: TP-18

Depth to Massive Rock: Not Encountered

Ground Surface Elevation: 282.1 ft

Horizon	Depth (in)	Color	Texture	Structure	Consistence	Redox/ Mottling Features	Boundary	Hydrologic Group*	Estimated Infiltration Rate (in/hr)*
A	0.0-6.0	10YR 4/3	sl	1 m gr	vfr	-	Abrupt Smooth	B	1.02
Bw ₁	6.0-21.0	10YR 6/6	fs	0 m	loose	-	Gradual Smooth	A	8.27
Bw ₂	21.0-72.0	10YR 7/4	fs	0 m	loose	-	Gradual Smooth	A	8.27
Bw ₃	72.0-120.0	10YR 7/4	Extr. Gravelly fs	0 m	loose	-	Gradual Smooth	A	8.27
Bw ₄	120.0-144.0	10YR 7/4	fs	0 m	loose	-	-	A	8.27

TRC Engineers, Inc. Representative: Charles Zielke

Notes:

No groundwater was encountered on the day of investigation.

**Based on Massachusetts Stormwater Handbook, Volume 3, page 22, Table 2.3.3. 1982 Rawls Rate. See Key to Symbols.*



Date: 09/04/20
Project: CFS, Devens, MA
Project #: 349440.0004

TEST PIT LOG

Test Pit #: TP-120

Depth to Massive Rock: Not Encountered

Ground Surface Elevation: 274.5 ft

Horizon	Depth (in)	Color	Texture	Structure	Consistence	Redox/ Mottling Features	Boundary	Hydrologic Group*	Estimated Infiltration Rate (in/hr)*
A	0.0-8.0	10YR 4/2	l	1 m gr	vfr	-	Gradual Wavy	B	0.52
Bw ₁	8.0-28.0	10YR 6/4	Gravelly sil	1 m sbk	fr	-	Gradual Wavy	C	0.27
Bw ₂	28.0-144.0	10YR 5/4	Extr. Cobbly cos	0 m	loose	-	-	A	8.27

TRC Engineers, Inc. Representative: Charles Zielke

Notes:

No groundwater was encountered on the day of investigation.

**Based on Massachusetts Stormwater Handbook, Volume 3, page 22, Table 2.3.3. 1982 Rawls Rate. See Key to Symbols.*



Date: 09/04/20
Project: CFS, Devens, MA
Project #: 349440.0004

TEST PIT LOG

Test Pit #: TP-121

Depth to Massive Rock: Not Encountered

Ground Surface Elevation: 272.5 ft

Horizon	Depth (in)	Color	Texture	Structure	Consistence	Redox/ Mottling Features	Boundary	Hydrologic Group*	Estimated Infiltration Rate (in/hr)*
FILL ₁	0.0-38.0	10YR 6/1	Cobbly sil	1 m sbk	fi	-	Abrupt Smooth	C	0.27
FILL ₂	38.0-40.0	10YR 4/1	Gravel	0 m	loose	-	Abrupt Smooth	-	-
Bb	40.0-136.0	10YR 6/4	fs	0 m	loose	-	Abrupt Smooth	A	8.27
Bw	136.0-141.6	10YR 7/2	Cobbly s	0 m	loose	-	-	A	8.27

TRC Engineers, Inc. Representative: Charles Zielke

Notes:

No groundwater was encountered on the day of investigation.

FILL₂ – contained gravel and concrete

Excavation terminated at 141.6 in. due to pit's sidewalls caving.

**Based on Massachusetts Stormwater Handbook, Volume 3, page 22, Table 2.3.3. 1982 Rawls Rate. See Key to Symbols.*



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APPENDIX B.2

2020 TRC TEST BORING LOGS

KEY TO SYMBOLS

Symbol Description

Strata symbols



Bedrock



Poorly-graded Gravel



Boulders / Cobbles



Poorly-graded Gravel with Clay



Highly Weathered or Decomposed Rock



Poorly-graded Gravel with Silt



Fill (made ground)



Poorly-graded Sandy Gravel



Silty, Clayey Gravel



Well-graded Gravel with Silt



Silty Gravel



Silt with Low Plasticity



Gneiss



USCS Sandy Silt

Notes:

COLUMN A) Soil sample number.

COLUMN B) FOR SOIL SAMPLE (ASTM D 1586): indicates number of blows obtained for each 6 ins. penetration of the standard split-barrel sampler. FOR ROCK CORING (ASTM D2113): indicates percent recovery (REC) per run and rock quality designation (RQD). RQD is the % of rock pieces that are 4 ins. or greater in length in a core run.

COLUMN C) Strata symbol as assigned by the geotechnical engineer.

DESCRIPTION) Description including color, texture and classification of subsurface material as applicable (see Descriptive Terms). Estimated depths to bottom of strata as interpolated from the borings are also shown.

DESCRIPTIVE TERMS: F = fine M = medium C = coarse

RELATIVE PROPORTIONS:

-Descriptive Term-	-Symbol-	-Est. Percentages-
Trace	TR	1-10
Trace to Some	TR to SM	10-15
Some	SM	15-30
Silty, Sandy, Clayey, Gravelly	-	30-40
And	and	40-50

REMARKS) Special conditions or test data as noted during investigation. Note that W.O.P. indicates water observation pipes.

* Free water level as noted may not be indicative of daily, seasonal, tidal, flood, and/or long term fluctuations.

Symbol Description

Misc. Symbols



Water table first encountered



Water table first reading after drilling



Water table second reading after drilling



Water table third reading after drilling

NR

Not Recorded

MH

Moh's Hardness

Sample Type



Rock Core



Split Barrel

Lab Symbols

FINES = Fines %

LL = Liquid Limit %

PI = Plasticity Index %

U_c = Unconfined Compressive Strength

W/V = Unit Weight



LOCATION: DEVENS, MA

SHEET 1 OF 1

DRILLER	G. PEEL
HELPER	D. CARPENTER
INSPECTOR	S. PRATT
DATE STARTED	08/24/2020
DATE COMPLETED	08/24/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
5	S-1	WOH/2.0'		LIGHT BROWN F/M/C SAND, SM GRAVEL, TR CLAY, TR SILT, DRY	265.3	WATER INTRODUCED AT 10.0 FT
	S-2	WOH/2.0'				
	S-3	WOH/2.0'				
	S-4	WOH/1.5' 8				
10	S-5	8 9 20 18		LIGHT BROWN SILTY F/M SAND WITH F/C GRAVEL, DRY	258.3	10.0-15.0 FT - SOME COBBLES
15	S-6	8 10 15 15				
20				LIGHT BROWN F/ SANDY SILT	253.3	17.0 FT - BORING COLLAPSED
25	S-7	16 14 19 25				
	S-8	26 15 13 16		BROWN F/M/C SAND, SM F/ GRAVEL, SM SILT	242.3	
30						
	S-9	10 10 6 8		BROWN SILTY SAND, TRACE TO LITTLE F/ GRAVEL, GLACIAL TILL	241.3	
35				END OF BORING AT 32'		

NEW PROJECTS TEST BORING LOG 349440.0004 CFS.GPJ SITE BLAUVELT.GDT 4/2/21

DRN.	TBT
CKD.	JPB



TEST BORING LOG

BORING **B-53**
G.S. ELEV. 275.5
FILE 349440.0004
SHEET 1 OF 2

PROJECT: CFS

LOCATION: DEVENS, MA

GROUNDWATER DATA

FIRST ENCOUNTERED N/A			
DEPTH	HOUR	DATE	ELAPSED TIME

METHOD OF ADVANCING BOREHOLE

a	FROM	0.0'	TO	10.0'
h	FROM	10.0'	TO	46.5'

DRILLER	A. PETERS
HELPER	C. CHERRY
INSPECTOR	S. PRATT
DATE STARTED	10/23/2020
DATE COMPLETED	10/29/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
	S-1	3 7 22 10		LIGHT BROWN SILTY F/M/C SAND, SM GRAVEL (FILL)		
			3.0	272.5		
	S-2	9 17 27 21		GRAY F/M/C SAND AND ROCK FRAGMENTS, TR TO SM SILT WITH COBBLES (FILL)		
5			5.0	270.5		
	S-3	19 15 9 10				
	S-4	17 15 12 19		BROWN TO LIGHT BROWN GRAVELLY F/M/C SAND TR SILT, COBBLES PRESENT		
10	S-5	48 23 12 20				
			12.5	263.0		
15	S-6	11 19 16 18		LIGHT BROWN F/M/C SAND, TR SILT, TR GRAVEL		
			18.5	257.0		
20	S-7	23 38 39 55				
25				BROWN F/M/C SAND AND F/C GRAVEL, TR TO SM SILT, WITH COBBLES		
	S-8	30 27 30 46				
30	S-9	12 11 20 17				
			33.5	242.0		
35				GREEN-BROWN SILTY F/M/C SAND, TR TO SM F/ GRAVEL, GLACIAL TILL		

NEW PROJECTS TEST BORING LOG 349440.0004 CFS.GPJ SITE BLAUVELT.GDT 4/2/21

DRN. TBT
CKD. JPB



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-53**

G.S. ELEV. 275.5

FILE 349440.0004

SHEET 2 OF 2

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
	S-10	12 12 15 21				
40				GREEN-BROWN SILTY F/M/C SAND, TR TO SM F/ GRAVEL, GLACIAL TILL		
	S-11	17 18 40 32				
45	S-12	80/0'		44.5 231.0		43.0-44.0 FT: BOULDER
				PROBABLE BEDROCK		44.0-44.5: SANDY
				46.5 229.0		
				END OF BORING AT 46.5'		
50						
55						
60						
65						
70						
75						



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-67**

G.S. ELEV. 261.9

FILE 349440.0004

SHEET 1 OF 1

GROUNDWATER DATA

FIRST ENCOUNTERED N/A

DEPTH	HOUR	DATE	ELAPSED TIME
18.3'	NR	8/25	0 HR

METHOD OF ADVANCING BOREHOLE

a	FROM	0.0'	TO	10.0'
h	FROM	10.0'	TO	23.2'

DRILLER A. PETERS

HELPER C. CHERRY

INSPECTOR S. PRATT

DATE STARTED 08/25/2020

DATE COMPLETED 08/25/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
5	S-1	1 3 4 4				
	S-2	5 7 6 8				
	S-3	4 7 7 11				
	S-4	14 7 7 9				
10	S-5	7 14 23 12				
15						
	S-6	5 10 12 12				
20						
	S-7	12 8 11 10				
	S-8	50/0.2'				
23.0					238.9	
23.2				GRAY-BROWN SILTY SAND, SOME GRAVEL, GLACIAL TILL	238.7	
25				END OF BORING AT 23.2'		
30						
35						

NEW PROJECTS TEST BORING LOG 349440.0004 CFS.GPJ SITE BLAUVELT.GDT 4/2/21

DRN. TBT
CKD. JPB



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-68**

G.S. ELEV. 267.7

FILE 349440.0004

SHEET 1 OF 2

GROUNDWATER DATA

FIRST ENCOUNTERED N/A

DEPTH	HOUR	DATE	ELAPSED TIME
38.3'	NR	11/11	NR

METHOD OF ADVANCING BOREHOLE

a	FROM	TO
h	FROM 0.0'	TO 10.0'
	FROM 10.0'	TO 48.7'

DRILLER A. PETERS

HELPER C. CHERRY

INSPECTOR S. PRATT

DATE STARTED 08/26/2020

DATE COMPLETED 08/26/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
5	S-1	1 1 1 1		LIGHT BROWN F/ SAND, LITTLE SILT		
	S-2	2 3 3 2				
	S-3	5 50/0.4'	4.9		262.8	
10	S-4	12 17 22 16				
	S-5	16 9 11 22		BROWN F/M SAND, SOME F/C GRAVEL, COBBLES PRESENT		
15						
	S-6	8 13 20 19				
20			20.0		247.7	
	S-7	30 16 16 30				
25						
	S-8	15 10 9 11		BROWN M/C SAND AND F/C GRAVEL, LITTLE TO SOME SILT		
30						
	S-9	14 17 14 12				
35						

DRN. TBT
CKD. JPB



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-68**

G.S. ELEV. 267.7

FILE 349440.0004

SHEET 2 OF 2

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
	S-10	16 16 19 12		BROWN M/C SAND AND F/C GRAVEL, LITTLE TO SOME SILT		
				38.5 229.2		
40	S-11	18 14 21 28				
				BROWN SILTY SAND, SOME F/ GRAVEL, GLACIAL TILL		
45	S-12	36 44 50/0.4'				
	S-13	49 50/0.2'		48.7 219.0		
50				END OF BORING AT 48.7'		
55						
60						
65						
70						
75						



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-69**

G.S. ELEV. 253.7

FILE 349440.0004

SHEET 1 OF 1

GROUNDWATER DATA

FIRST ENCOUNTERED N/A

DEPTH HOUR DATE ELAPSED TIME

18.9' NR 8/26 0 HR

METHOD OF ADVANCING BOREHOLE

a FROM 0.0' TO 10.0'

h FROM 10.0' TO 25.0'

DRILLER A. PETERS

HELPER C. CHERRY

INSPECTOR S. PRATT

DATE STARTED 08/26/2020

DATE COMPLETED 08/26/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
	S-1	2 2 4 4	2.0	LIGHT BROWN SILT, SOME F/ SAND	251.7	
5	S-2	5 6 10 9		LIGHT BROWN F/ SAND, SOME SILT, LITTLE TO SOME GRAVEL		
	S-3	22 15 13 10	6.0		247.7	
	S-4	11 11 15 17		LIGHT BROWN M/C SAND, SOME GRAVEL		
10	S-5	13 14 15 18	10.0		243.7	
15						
	S-6	10 8 10 20		LIGHT BROWN SILTY C/M/F SAND AND F/C GRAVEL		
20	S-7	20 20 44 30				
	S-8	20 14 17 22	25.0		228.7	
25				END OF BORING AT 25'		
30						
35						

NEW PROJECTS TEST BORING LOG 349440.0004 CFS.GPJ SITE BLAUVELT.GDT 4/2/21

DRN. TBT

CKD. JPB



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-70**

G.S. ELEV. 260.8

FILE 349440.0004

SHEET 1 OF 1

GROUNDWATER DATA

FIRST ENCOUNTERED N/A

DEPTH	HOUR	DATE	ELAPSED TIME
19.8'	NR	8/26	0 HR

METHOD OF ADVANCING BOREHOLE

a	FROM	TO
h	FROM 0.0'	TO 10.0'
	FROM 10.0'	TO 25.0'

DRILLER A. PETERS

HELPER C. CHERRY

INSPECTOR S. PRATT

DATE STARTED 08/25/2020

DATE COMPLETED 08/26/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
5	S-1	2 2 3 4				
	S-2	5 5 5 5				
	S-3	5 6 8 12	6.0	LIGHT BROWN SILTY F/M SAND, TRACE GRAVEL	254.8	
	S-4	12 10 8 8				
10	S-5	5 6 8 9				
15						
	S-6	10 12 11 15		LIGHT BROWN M/C SAND, TRACE GRAVEL		
20			20.0		240.8	
	S-7	12 15 10 15		LIGHT BROWN M/C SAND AND GRAVEL		
			23.0		237.8	
25	S-8	9 10 12 9	25.0	BROWN SILTY F/M SAND, SOME GRAVEL	235.8	
				END OF BORING AT 25'		
30						
35						

NEW PROJECTS TEST BORING LOG 349440.0004 CFS.GPJ SITE BLAUVELT.GDT 4/2/21

DRN. TBT

CKD. JPB



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-71**

G.S. ELEV. 254.5

FILE 349440.0004

SHEET 1 OF 1

GROUNDWATER DATA

FIRST ENCOUNTERED N/A

DEPTH HOUR DATE ELAPSED TIME

METHOD OF ADVANCING BOREHOLE

a FROM 0.0' TO 10.0'

h FROM 10.0' TO 27.0'

DRILLER A. PETERS

HELPER C. CHERRY

INSPECTOR S. PRATT

DATE STARTED 09/22/2020

DATE COMPLETED 09/22/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
	S-1	1 3 4 4		BROWN TO DARK BROWN SILTY F/ SAND, TOPSOIL		
			2.0	252.5		
5	S-2	10 9 7 7				
	S-3	9 6 6 8				
	S-4	9 8 8 12		LIGHT BROWN SILTY F/ SAND, LITTLE GRAVEL		
10	S-5	11 13 9 12				
			12.5	242.0		
15	S-6	11 11 19 19		LIGHT BROWN M/C SAND WITH F/ GRAVEL		
			18.5	236.0		
20	S-7	8 6 7 11				
				LIGHT BROWN F/M SAND, SOME GRAVEL, TRACE SILT		
25	S-8	16 12 11 12				
			27.0	227.5		
				END OF BORING AT 27'		
30						
35						

NEW PROJECTS TEST BORING LOG 349440.0004 CFS.GPJ SITE BLAUVELT.GDT 4/2/21

DRN. TBT
CKD. JPB



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-72**

G.S. ELEV. 270.1

FILE 349440.0004

SHEET 1 OF 2

GROUNDWATER DATA

FIRST ENCOUNTERED N/A

DEPTH	HOUR	DATE	ELAPSED TIME

METHOD OF ADVANCING BOREHOLE

a	FROM	0.0'	TO	10.0'
h	FROM	10.0'	TO	37.0'

DRILLER A. PETERS

HELPER C. CHERRY

INSPECTOR S. PRATT

DATE STARTED 08/28/2020

DATE COMPLETED 08/28/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
				LIGHT BROWN TO YELLOW BROWN SILTY SAND		
	S-1	2 3 3 6	2.0		268.1	
5	S-2	7 3 5 6				
	S-3	7 6 5 7				
	S-4	9 9 7 9				
10	S-5	9 8 7 8		LIGHT BROWN F/ SAND		
15			15.0		255.1	
	S-6	2 3 8 9		BROWN M/C SAND		
20			20.0		250.1	
	S-7	6 4 30 30				
25						
	S-8	11 11 11 13				
				BROWN M/C SAND AND F/C GRAVEL		
30						
	S-9	18 22 30 42				
35						

NEW PROJECTS TEST BORING LOG 349440.0004 CFS.GPJ SITE BLAUVELT.GDT 4/2/21

DRN. TBT

CKD. JPB



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-72**

G.S. ELEV. 270.1

FILE 349440.0004

SHEET 2 OF 2

DEPTH	A	B				C	DESCRIPTION	PP	REMARKS
							BROWN M/C SAND AND F/C GRAVEL		
	S-10	32	41	38	38	37.0	233.1		
							END OF BORING AT 37'		
40									
45									
50									
55									
60									
65									
70									
75									



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-73**

G.S. ELEV. 277.6

FILE 349440.0004

SHEET 1 OF 2

GROUNDWATER DATA

FIRST ENCOUNTERED N/A

DEPTH	HOUR	DATE	ELAPSED TIME
47.0'	NR	11/11	NR

METHOD OF ADVANCING BOREHOLE

a	FROM	0.0'	TO	10.0'
h	FROM	10.0'	TO	53.6'

DRILLER A. PETERS

HELPER C. CHERRY

INSPECTOR S. PRATT

DATE STARTED 09/21/2020

DATE COMPLETED 09/21/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
1.0				DARK BROWN TOPSOIL	276.6	
	S-1	2 1 2 1				
	S-2	3 3 6 10				
5	S-3	11 10 8 14				
	S-4	2 7 7 8		LIGHT BROWN M/C SAND, SOME GRAVEL		
10	S-5	10 10 16 6				
12.5					265.1	
15						
	S-6	17 25 32 33				BOULDER FROM 17-19 FT
20	S-7	21 22 22 19				
				BROWN M/C SAND AND F/C GRAVEL		
25	S-8	22 15 20 19				27.0-30.0 FT & 32.0-35.0 FT: BOULDERS & COBBLES FROM 27-35 FT
30	S-9	25 47 31 15				
35						

DRN. TBT
CKD. JPB



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-73**

G.S. ELEV. 277.6

FILE 349440.0004

SHEET 2 OF 2

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
	S-10	35 39 24 19				
40	S-11	8 12 50 50/0.3		BROWN M/C SAND AND F/C GRAVEL		COBBLE FROM 41-41.8 FT
45	S-12	27 27 25 16				
			48.5		229.1	
50	S-13	11 6 15 30		GREEN-BROWN SILTY F/M SAND, TRACE ROCK FRAGMENTS/GRAVEL		
			53.6		224.0	
55				END OF BORING AT 53.6'		
60						
65						
70						
75						



TEST BORING LOG

BORING **B-134**
G.S. ELEV. 254.1
FILE 349440.0004
SHEET 1 OF 2

PROJECT: CFS
LOCATION: DEVENS, MA

GROUNDWATER DATA			
FIRST ENCOUNTERED N/A			
DEPTH	HOUR	DATE	ELAPSED TIME

METHOD OF ADVANCING BOREHOLE			
a	FROM	0.0'	TO 10.0'
h	FROM	10.0'	TO 37.0'

DRILLER	A. PETERS
HELPER	C. CHERRY
INSPECTOR	S. PRATT
DATE STARTED	11/18/2020
DATE COMPLETED	11/18/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
				1.0 TOPSOIL 253.1		
	S-1	4 4 6 5		2.0 BROWN SAND, LITTLE TO SOME SILT 252.1		
5	S-2	9 6 7 7				
	S-3	12 12 20 19				
	S-4	15 15 20 31				
10	S-5	12 18 21 27				
15	S-6	50/0.4'	15.0	239.1		15.4-16.5 FT: PROBABLE COBBLES
20	S-7	12 11 11 12				
25	S-8	23 17 19 34				
30	S-9	30 70/0.5'				31.0-31.5 FT: PRBABLECOBBLE
35						
				DRN. TBT		
				CKD. JPB		



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-134**

G.S. ELEV. 254.1

FILE 349440.0004

SHEET 2 OF 2

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
	S-10	25 40 40 33		GREEN-BROWN TO GRAY SILTY F/M SAND, TRACE TO LITTLE F/ GRAVEL, GLACIAL TILL		
			37.0		217.1	
				END OF BORING AT 37'		
40						
45						
50						
55						
60						
65						
70						
75						



TEST BORING LOG

BORING **B-135**
G.S. ELEV. 270.0
FILE 349440.0004
SHEET 1 OF 2

PROJECT: CFS
LOCATION: DEVENS, MA

GROUNDWATER DATA			
FIRST ENCOUNTERED N/A			
DEPTH	HOUR	DATE	ELAPSED TIME
21.5'	NR	11/17	0HR

METHOD OF ADVANCING BOREHOLE			
a	FROM	0.0'	TO 10.0'
h	FROM	10.0'	TO 55.0'

DRILLER	A. PETERS
HELPER	C. CHERRY
INSPECTOR	S. PRATT
DATE STARTED	11/17/2020
DATE COMPLETED	11/17/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
1.0				TOPSOIL	269.0	
	S-1	1 1 2 2		BROWN SAND, LITTLE SILT, TRACE ROCK FRAGMENTS AND GRAVEL		
4.0	S-2	5 5 4 5			266.0	
5	S-3	6 5 5 5		LIGHT BROWN SAND, TRACE TO LITTLE GRAVEL		
	S-4	7 7 7 7				
10	S-5	6 8 10 16			260.0	
15	S-6	10 12 11 14				
20	S-7	12 14 17 22		BROWN F/M/C SAND AND F/C GRAVEL, WITH COBBLES		
25	S-8	17 19 20 22				
30	S-9	14 12 15 25				
35						

NEW PROJECTS TEST BORING LOG 349440.0004 CFS.GPJ SITE BLAUVELT.GDT 3/8/21

DRN. TBT
CKD. JPB



TEST BORING LOG

PROJECT: CFS

LOCATION: DEVENS, MA

BORING **B-135**

G.S. ELEV. 270.0

FILE 349440.0004

SHEET 2 OF 2

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
	S-10	19 56 39 34		BROWN F/M/C SAND AND F/C GRAVEL, WITH COBBLES		
			38.5	231.5		
40	S-11	18 19 21 21		GREENISH-BROWN SILTY SAND, LITTLE F/ GRAVEL, GLACIAL TILL		45.0-45.5 FT: PROBABLE COBBLE
45	S-12	50/0.1'				
50	S-13	50/0.4'				
			53.5	216.5		
55				GRAY METAMORPHIC SILTSTONE		PROBABLE BEDROCK AT 53.5 FT
			55.0	215.0		
				END OF BORING AT 55'		
60						
65						
70						
75						



TEST BORING LOG

BORING **B-136**

G.S. ELEV. 250.4

FILE 349440.0004

SHEET 1 OF 1

PROJECT: CFS

LOCATION: DEVENS, MA

GROUNDWATER DATA

FIRST ENCOUNTERED N/A

DEPTH	HOUR	DATE	ELAPSED TIME

METHOD OF ADVANCING BOREHOLE

a	FROM	0.0'	TO	10.0'
h	FROM	10.0'	TO	32.4'

DRILLER A. PETERSHELPER C. CHERRYINSPECTOR S. PRATTDATE STARTED 11/17/2020DATE COMPLETED 11/17/2020

DEPTH	A	B	C	DESCRIPTION	PP	REMARKS
				0.7 TOPSOIL	249.7	
	S-1	6 6 7 10				
	S-2	15 10 15 16				
5	S-3	22 15 17 17				
	S-4	12 11 12 12		LIGHT BROWN SAND, SOME GRAVEL		
10	S-5	22 15 17 17				
				13.5	236.9	
15	S-6	11 50/0.1'				15.5 FT: PROBABLE COBBLE
				GREEN-BROWN SILTY F/M SAND		
20						
				22.0	228.4	
	S-7	17 18 16 18				
25						
	S-8	72 50/0.2'		GREEN-BROWN SILTY F/M SAND, TRACE GRAVEL WITH COBBLES		
30						
	S-9	50/0.4'				
				32.4	218.0	
				END OF BORING AT 32.4'		
35						

NEW PROJECTS TEST BORING LOG 349440.0004 CFS.GPJ SITE BLAUVELT.GDT 3/8/21

DRN. TBTCKD. JPB



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APPENDIX B.3

2020 TRC OBSERVATION WELL GROUNDWATER LEVEL DATA

**Monitoring Well Gauging Data
Commonwealth Fusion Systems (CFS)
111 Hospital Road, Devens, MA**

Well ID ¹	Depth to Water (ft btor)		
	9/15 & 9/25/20 ²	10/8/2020	11/11/2020 ³
MW-1	40.40	41.90	42.00
MW-2	26.40	26.61	26.70
MW-3	41.45	40.40	NM
MW-4	39.80	39.35	39.85
MW-5	47.85	48.25	49.26
MW-6	37.35	38.56	39.57
MW-7	35.99	36.51	37.55
B-45	NM	40.96	NM
B-119	NM	46.57	NM

Ft btor – feet below top of [PVC] riser

¹ B-45 and B-119 are piezometers

² Wells MW-3, 4, 6, and 7 measured on 9/15/20
and wells MW-1 and 2 measured on 9/25/20

³ Water levels collected prior to well
abandonment

Michael Ostrowski

From: Kazaniwsky, Petro W. <PKazaniwsky@trccompanies.com>
Sent: Monday, October 12, 2020 7:22 AM
To: Michael Ostrowski
Cc: Labbe, William; Martin Rodick; Brian Kennedy; Jason Bruetsch; Douglas Hartnett (dhartnett@highpointeng.com); Brent Goldstein; Mike Toomey; treynoso; Anne Columbia; Brett Horton
Subject: RE: [EXTERNAL] Re: Water levels in monitoring wells - CFS Devens
Categories: Green Category, Red Category

Michael, more well stickups:
MW-2 had 2.40 ft. of stickup
MW-5 had 2.26 ft. of stickup
MW-7 had 1.75 ft. of stickup

Petro W. Kazaniwsky, P.E.
Chief Geotechnical Engineer



16000 Commerce Parkway, Suite B, Mount Laurel, NJ 08054
Direct Dial: 856-780-8529 | F: 856-273-9244 | C: 609-314-6662

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From: Kazaniwsky, Petro W.
Sent: Thursday, October 8, 2020 10:10 AM
To: Michael Ostrowski <Michael.Ostrowski@gza.com>
Cc: Labbe, William <wlabbe@trccompanies.com>; Martin Rodick <Martin.Rodick@gza.com>; Brian Kennedy <bkenedy@bwkennedyco.com>; Jason Bruetsch <jbruetsch@bwkennedyco.com>; Douglas Hartnett (dhartnett@highpointeng.com) <dhartnett@highpointeng.com>; Brent Goldstein <brg@gm-se.com>; Mike Toomey <toomey@bostonenvcorp.com>; treynoso <treynoso@ks-prop.com>; Anne Columbia <acolumbia@columbiagrouprealty.com>; Brett Horton <bhorton@cfs.energy>
Subject: Re: [EXTERNAL] Re: Water levels in monitoring wells - CFS Devens

I have some stick ups of pipe risers but field staff will need to confirm for those that I don't have
Mw1 3ft
Mw3 2 ft
Mw4 1ft 9 in.
Mw6 2ft 6in

Sent from my iPhone
P Kazaniwsky



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APPENDIX B.4

2020 H&A SUBSURFACE SUMMARY TABLES AND TEST BORING LOGS

TABLE I
SUMMARY OF SUBSURFACE INFORMATION
SPARC - BUILDING 2 AND MOTOR GENERATOR BUILDING
DEVENS, MASSACHUSETTS



FILE NO. 134902-003

EXPLORATION DESIGNATION	GROUND SURFACE ELEVATION (FT, NAVD88)	DEPTH OF EXPLORATION (FT)	DEPTH TO WATER DURING DRILLING (FT)	ELEV. OF WATER DURING DRILLING (FT)	TOPSOIL / FOREST MAT			FILL			LOESS			GLACIOFLUVIAL DEPOSITS			GLACIOLACUSTRINE DEPOSITS			GLACIAL TILL			BEDROCK	
					DEPTH TO TOP (FT)	TOP OF STRATUM EL. (FT)	THICKNESS (FT)	DEPTH TO TOP (FT)	TOP OF STRATUM EL. (FT)	THICKNESS (FT)	DEPTH TO TOP (FT)	TOP OF STRATUM EL. (FT)	THICKNESS (FT)	DEPTH TO TOP (FT)	TOP OF STRATUM EL. (FT)	THICKNESS (FT)	DEPTH TO TOP (FT)	TOP OF STRATUM EL. (FT)	THICKNESS (FT)	DEPTH TO TOP (FT)	TOP OF STRATUM EL. (FT)	THICKNESS (FT)	DEPTH TO TOP (FT)	TOP OF STRATUM EL. (FT)
B-29	294	27	NE	NE	0	294	0.3	NE	NE	NE	0.3	293.7	2.2	2.5	291.5	24.5	NE	NE	NE	NE	NE	NE	NE	NE
B-30	277	27	NE	NE	0	277	0.5	0.5	276.5	2	2.5	274.5	0.5	3	274	24	NE	NE	NE	NE	NE	NE	NE	NE
B-31 (MW-3)	278	44	NE	NE	NE	NE	NE	0	278	6	NE	NE	NE	6	272	38	NE	NE	NE	NE	NE	NE	NE	NE
B-32	286	50.5	22.2	263.8	NE	NE	NE	NE	NE	NE	NE	NE	NE	0	286	41.5	NE	NE	NE	41.5	244.5	9	50.5	235.5
B-33	278	37	34.6	243.4	NE	NE	NE	0	278	9.5	9.5	268.5	1.5	11	267	23	34	244	3	NE	NE	NE	NE	NE
B-34	282	51	35.1	246.9	NE	NE	NE	0	282	5	NE	NE	NE	5	277	28.5	33.5	248.5	5.5	NE	NE	NE	39	243
B-35	291	50	NE	NE	NE	NE	NE	0	291	6	NE	NE	NE	6	285	16	22	269	16.5	38.5	252.5	11.5	50	241
B-36	288	55	38.5	249.5	0	288	2	NE	NE	NE	0	288	2	2	286	39.5	NE	NE	NE	41.5	246.5	12.5	54	234
B-37	295	54	22.7	272.3	0	295	3	NE	NE	NE	0	295	3	3	292	44.5	NE	NE	NE	47.5	247.5	6	53.5	241.5
B-38	285	50	38.6	246.4	0	285	0.5	NE	NE	NE	0.5	284.5	1.5	2	283	36.5	NE	NE	NE	38.5	246.5	5.5	44	241
B-39	282	45	16.3	265.7	NE	NE	NE	0	282	4	NE	NE	NE	4	278	28.5	NE	NE	NE	32.5	249.5	12.5	45	237
B-40	282	56.2	37.6	244.4	NE	NE	NE	NE	NE	NE	0	282	1.5	1.5	280.5	31.5	NE	NE	NE	33	249	16.5	49.5	232.5
B-41	274	37	NE	NE	NE	NE	NE	0	274	1	1	273	1.5	2.5	271.5	30.5	33	241	4	NE	NE	NE	NE	NE
B-42	273	32	NE	NE	NE	NE	NE	0	273	9	NE	NE	NE	9	264	22	31	242	1	NE	NE	NE	NE	NE
B-43	289	56.5	23.5	265.5	NE	NE	NE	0	289	3.5	NE	NE	NE	3.5	285.5	30.5	NE	NE	NE	34	255	15	49	240
B-44	292	65	27.8	264.2	NE	NE	NE	NE	NE	NE	0	292	2.5	2.5	289.5	37	NE	NE	NE	39.5	252.5	13.5	53	239
B-45 (OW)	283	71.5	35.5	247.5	0	283	0.5	NE	NE	NE	0.5	282.5	1.5	2	281	21.5	23.5	259.5	14.5	38	245	6	44	239
B-46	283	32	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0	283	32	NE	NE	NE	NE	NE	NE	NE	NE
B-47	275	57.5	NE	NE	0	275	1	NE	NE	NE	0	275	1	1	274	33	34	241	13.3	NE	NE	NE	47.3	227.7
B-48	288	45	NE	NE	NE	NE	NE	0	288	6.5	NE	NE	NE	6.5	281.5	29.5	NE	NE	NE	36	252	6	42	246
B-49	299	77	40.5	258.5	NE	NE	NE	NE	NE	NE	0	299	1	1	298	45	NE	NE	NE	46	253	20.5	66.5	232.5
B-50	285	60	27.8	257.2	NE	NE	NE	NE	NE	NE	0	285	2	2	283	32	NE	NE	NE	34	251	9.7	43.7	241.3
B-51	282	55	28.9	253.1	0	282	2.5	NE	NE	NE	0	282	2.5	2.5	279.5	32.5	NE	NE	NE	35	247	9	44	238
B-52	283	55	36.2	246.8	0	283	0.5	NE	NE	NE	NE	NE	NE	0.5	282.5	37.5	38	245	5.5	43.5	239.5	6	49.5	233.5
B-53 (OW)	275	46.5	32.8	242.2	NE	NE	NE	0	275	5	NE	NE	NE	5	270	28.5	NE	NE	NE	33.5	241.5	10	43.5	231.5
B-54 (OW)	287	44	NE	NE	NE	NE	NE	0	287	6	NE	NE	NE	6	281	28	NE	NE	NE	34	253	1.5	35.5	251.5
B-55	286	56.5	NE	NE	0	286	0.3	NE	NE	NE	0.3	285.7	1.7	2	284	32	NE	NE	NE	34	252	19.5	53.5	232.5
B-56	281	55	NE	NE	0	281	2	NE	NE	NE	0	281	2	2	279	32	NE	NE	NE	34	247	9.5	43.5	237.5
B-57	280	37	NE	NE	0	280	2	NE	NE	NE	0	280	2	2	278	35	NE	NE	NE	NE	NE	NE	NE	NE
B-74	299	79.5	44.1	254.9	0	299	1.5	1.5	297.5	2.5	0	299	1.5	4	295	30	34	265	14	48	251	20	68	231
B-81	293	62	27	266	0	293	2	NE	NE	NE	0	293	2	2	291	42	NE	NE	NE	44	249	6	50	243
B-82	280	27	NE	NE	NE	NE	NE	NE	NE	NE	0	280	2	2	278	25	NE	NE	NE	NE	NE	NE	NE	NE
B-83 (OW)	287	72	44	243	0	287	0.3	0.3	286.7	9.7	NE	NE	NE	10	277	33	NE	NE	NE	43	244	18.5	61.5	225.5
B-117	293	65	30.4	262.6	NE	NE	NE	NE	NE	NE	0	293	2	2	291	41.5	43.5	249.5	5	48.5	244.5	6.5	55	238
B-118 (MW-9)	290	63	44	246	0	290	1.5	NE	NE	NE	1.5	288.5	2.5	4	286	39.5	NE	NE	NE	43.5	246.5	10	53.5	236.5
B-119 (MW-8)	295	57	44	251	0	295	2	NE	NE	NE	2	293	3	5	290	28.5	33.5	261.5	11.5	NE	NE	NE	45	250
B-120	287	60	NE	NE	0	287	0.5	0.5	286.5	5.5	NE	NE	NE	6	281	33	NE	NE	NE	39	248	11	50	237

NOTES

1. ELEVATIONS ARE IN FEET AND ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

2. ELEVATIONS ARE BASED ON ELECTRONIC FILE "OVERALL BORING PLAN - 11-11-20.DWG," PROVIDED TO HALEY & ALDRICH, INC. BY TRC ON 17 NOVEMBER 2020.

3. WATER LEVELS OBSERVED DURING DRILLING ARE INFLUENCED BY DRILLING OPERATIONS, THEREFORE, GROUNDWATER MAY NOT HAVE STABILIZED AND WATER LEVEL OBSERVATIONS DURING DRILLING MAY NOT BE REPRESENTATIVE OF ACTUAL GROUNDWATER CONDITIONS. REFER TO TABLE II FOR A SUMMARY OF GROUNDWATER OBSERVATIONS FROM WELLS INSTALLED IN COMPLETED BOREHOLES.

ABBREVIATIONS:

"NE": INDICATES NOT ENCOUNTERED

TABLE II
SUMMARY OF GROUNDWATER OBSERVATIONS
SPARC - Building 2 and Motor Generator Building
Devens, Massachusetts



FILE NO. 134902-003

OBSERVATION WELL ID	GROUND SURFACE ELEV. (FT)	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION OF GROUNDWATER (FT)
B-31 (MW-3)	278	10/6/2020	38.6	239.4
		10/12/2020	38.9	239.1
		10/23/2020	39.2	238.8
		11/9/2020	39.1	238.9
		11/24/2020	39.9	238.1
		12/12/2020	40.1	237.9
B-45 (OW)	283	10/6/2020	37.9	245.1
		10/12/2020	38.4	244.6
		10/23/2020	38.7	244.3
		11/9/2020	39.4	243.6
		11/24/2020	39.7	243.3
		12/12/2020	40.3	242.7
B-53 (OW)	275	11/9/2020	37.7	237.3
		11/24/2020	38.2	236.8
		12/12/2020	38.7	236.3
B-54 (OW)	287	10/23/2020	36.5	250.5
		11/9/2020	37.3	249.7
		11/24/2020	37.3	249.7
		12/12/2020	37.6	249.4
B-83 (OW)	287	11/9/2020	45.2	241.8
		11/24/2020	45.4	241.6
		12/12/2020	45.6	241.5
B-118 (MW-9)	290	10/23/2020	44.3	245.7
		11/9/2020	44.6	245.4
		11/24/2020	45.0	245.0
		12/12/2020	45.4	244.6
B-119 (MW-8)	295	10/12/2020	45.4	249.6
		10/23/2020	45.1	249.9
		11/9/2020	45.7	249.3
		11/24/2020	45.5	249.5
		12/12/2020	45.6	249.4

NOTES

1. ELEVATIONS ARE IN FEET AND ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. ELEVATIONS ARE BASED ON DRAWING, OVERALL BORING PLAN - 11-11-20, DATED 24 AUGUST 2020, PROVIDED TO HALEY & ALDRICH, INC. BY TRC ON 17 NOVEMBER 2020.

IDENTIFICATION AND DESCRIPTION OF SUBSURFACE MATERIALS

SOIL

Soil description on logs of subsurface explorations are based on Standard Penetration Test results, visual-manual examination of exposed soil and soil samples, and the results of laboratory tests on selected samples. The criteria, descriptive terms and definitions are as follows:

DENSITY OR CONSISTENCY

Density of Cohesionless Soils	Penetration Resistance (Blows per ft.)	Consistency of Cohesive Soils	Penetration Resistance (Blows per ft.)
Very Loose	0-4	Very Soft	0-2
Loose	5-10	Soft	3-4
Medium	11-30	Medium	5-8
Dense	31-50	Stiff	9-15
Very Dense	over 50	Very Stiff	16-30
		Hard	over 30

PENETRATION RESISTANCE

Standard Penetration Test (ASTM D-1586) - Number of blows required to drive a standard 2 in. O.D. split spoon sampler 1 ft. with a 140 lb. weight falling freely through 30 in.

COLOR: Basic colors and combinations: black, brown, gray, yellow-brown, etc.

SUPPLEMENTAL SOIL TERMINOLOGY:

Laminae	- 0 to 1/16 in. thick (cohesive)
Parting	- 0 to 1/16 in. thick (granular)
Seam	- 1/16 to 1/2 in. thick
Layer	- 1/2 to 12 in. thick
Stratum	- > 12 in. thick
Pocket	- Small, erratic deposit less than 12 in. size
Lens	- Lenticular deposit larger than a pocket
Occasional	- One or less per 12 in. of thickness
Frequent	- More than one per 12 in. of thickness
Interbedded	- Alternating soil layers of differing composition
Varved	- Alternating thin seams of silt and clay
Mottled	- Variation of color

GEOLOGIC INTERPRETATION

Deposit type - GLACIAL TILL, ALLUVIUM, FILL.....

The natural soils are identified by criteria of Unified Soil Classification System (USCS), with appropriate group symbol in parenthesis for each soil description. Fill materials may not be classified by USCS criteria.

ROCK

Rock descriptions noted on logs of subsurface explorations are based on visual-manual examination of exposed rock outcrops and core samples. The criteria, descriptive terms and definitions used are as follows:

FIELD HARDNESS: A measure of resistance to scratching.

Very Hard	Cannot be scratched with a knife point or sharp pick.
Hard	Can be scratched with a knife point or sharp pick, only with difficulty.
Moderately Hard	Can be readily scratched with a knife point or pick.
Medium Hard	Can be grooved or gouged 1/16 in. deep with firm pressure on a knife point or sharp pick.
Soft	Can be grooved or gouged easily with a knife point or pick.
Very Soft	Can be carved with a knife and excavated with a pick point.

DISCONTINUITIES:

Type	Definition
Joint	A natural fracture along which no displacement has occurred. May occur in parallel groups called sets.
Shear	A natural fracture along which displacement has occurred. Surface may be slickensided or striated.
Fault	A natural fracture along which displacement has occurred. Usually lined with gouge and slickensides.
Shear or Fault Zone	Zone of fractured rock and gouge bordering the displacement plane.

ORIENTATION/ATTITUDE:

Term	Angle (degrees)
Horizontal	0-5
Low Angle	6-35
Moderately Dipping	36-55
High Angle	56-85
Vertical	86-100

SPACING:

Discontinuity Term	Bedding Term	Inches
Extremely Close	Extremely Thin	< 3/4
Very Close	Very Thin	3/4 - 2.5
Close	Thin	2.5 - 8
Moderate	Medium	8 - 24
Wide	Thick	24 - 80
Very Wide	Very Thick	80 - 240
Extremely Wide	Extremely Thick	> 240

PERSISTENCE/CONTINUITY:

Term	Feet	Term	Distance
Very Low	0-3	Very Tight	< 0.1mm
Low	3-10	Tight	0.1mm-0.25mm
Medium	10-35	Partly Open	0.25mm-0.5mm
High	35-65	Open	0.5mm-2.5mm
Very High	> 65	Moderately Wide	2.5mm-1cm
		Wide	> 1cm
		Very Wide	1cm-10cm
		Extremely Wide	10cm-1m
		Cavernous	> 1m

POROSITY:

Type
Primary:
Pre-depositional and depositional inter- and intra- granular, particle, or crystalline pores.

Secondary:
Solution features including pits, vugs, caverns, molds, and channels.
Fracture features including joints, shears, faults, shrinkage and breccia fabrics.

Term	Size
Micro	< 0.0625 mm
Meso	0.0625-4.0 mm
Mega	4.0-256 mm



SUBSURFACE EXPLORATION KEY

U.S. Standard Series Sieve				Clear Square Sieve Openings			
12"	3"	3/4"	4	10	40	200	
Boulders	Cobbles	Gravel		Sand			Silts and Clays
		Coarse	Fine	Coarse	Medium	Fine	
305 mm	76 mm	19 mm	4.75 mm	2.00 mm	0.43 mm	0.074 mm	

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			Group Symbol	Graphic Symbol	TYPICAL NAMES
Coarse grained soils: more than half is larger than number 200 sieve	Gravels More than half of coarse fraction is larger than number 4 sieve	Gravels with little or no fines	GW		Well graded gravels, gravel-sand mixtures
			GP		Poorly graded gravels, gravel-sand mixtures
		Gravels with over 12% fines	GM		Silty gravels, poorly graded gravel-sand-silt mixtures
			GC		Clayey gravels, poorly graded gravel-sand-clay mixtures
	Sands More than half of coarse fraction is smaller than number 4 sieve	Sands with little or no fines	SW		Well graded sands, gravelly sands
			SP		Poorly graded sands, gravelly sands
		Sands with over 12% fines	SM		Silty sands, poorly graded sand-silt mixtures
			SC		Clayey sands, poorly graded sand-clay mixtures
Fined-grained soils: more than half smaller than number 200 sieve	Silts and Clays Liquid limit 50% or less		ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		Organic clays and organic silty clays of low plasticity
	Silts and Clays Liquid limit greater than 50%		MH		Inorganic silty, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH		Inorganic clays of high plasticity, fat clays
			OH		Organic clays of medium to high plasticity, organic silts
			Highly organic soils		PT

GENERAL NOTES

1. Logs of subsurface explorations depict soil, rock and groundwater conditions only at the locations specified on the dates indicated. Subsurface conditions may vary at other locations and at other times.
2. Water levels noted on the logs were measured at the times and under the conditions indicated. During test borings, these water levels could have been affected by the introduction of water into the borehole, extraction of tools on other procedures and thus may not reflect actual groundwater level at the test boring location. Groundwater level fluctuations may also occur as a result of variations in precipitation, temperature, season, tides, adjacent construction activities and pumping of water supply wells and construction dewatering systems.

WEATHERING: The action of organic and inorganic and chemical and physical processes resulting in alteration of color, texture and composition.

Fresh-FR	No visible sign of alteration, except perhaps slight discoloration on major discontinuity surfaces.
Slight-SL	Discoloration of rock material and discontinuity surfaces. All rock may be discolored and/or somewhat weaker than in its fresh condition.
Moderate-MOD	Less than half the rock material is decomposed and/or disintegrated to a soil. Some fresh or discolored rock is present as either a continuous framework or as corestones.
High-HIGH	More than half the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present as either a discontinuous framework or as corestones.
Complete-COMP	All rock material is decomposed and/or disintegrated to soil. The original mass structure is largely intact.
Residual Soil	All rock material is converted to soil. The mass structure and material fabric are destroyed. There has been a large change of volume, but the material has not been significantly transported.

COLOR: Basic colors and combinations: gray, light gray, brown, red-brown.

TEXTURE: Size, shape and arrangements of constituents.

Term	Size	
	Igneous	Sedimentary
Coarse-grained	> 5 mm	> 2 mm
Medium-grained	1 - 5 mm	0.625 - 2 mm
Fine-grained	< 1 mm	< 0.625 mm
Aphanitic	Individual grains invisible to the unaided eye.	

LITHOLOGY: Rock classification and modifiers; accepted formation names.

J:\GRAPHICS\TEMP\MCELENEY-T\FIELD SERVICES\SUBSURFACE EXPLORATION LOG KEYS\SUBSURFACE EXPLORATION KEY2008-1027.DWG

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.



TEST BORING REPORT

Boring No. B-42

File No. 134902-003

Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size [†] , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			% Fines	Field Test			
							% Coarse	% Fine	% Coarse	% Medium	% Fine		Dilatancy	Toughness	Plasticity	Strength
20	16 14 19 25	S7 15	20.0 22.0	242.0 31.0 241.0 32.0	SM	Dense light brown-gray silty SAND with gravel (SM) mps= 0.75 in., no structure, no odor, moist NOTE: Laboratory grain size analysis performed on S7 by TRC -GLACIOFLUVIAL DEPOSITS-		21	12	24	28	15				
25	26 15 13 16	S8 12	25.0 27.0		SW	Medium dense brown well graded SAND with trace gravel (SW) mps = 0.75 in., no structure, no odor, moist		5	15	40	40					
30	10 10 6 8	S9 12 S9A 5	30.0 31.0 31.0 32.0		SW	Medium dense brown well graded SAND (SW) mps= 0.25 in., no structure, no odor, wet			20	50	30					
				ML	S9A: Medium dense brown sandy SILT with trace gravel (ML) mps=0.75 in., no structure, no odor, wet -GLACIOLACUSTRINE DEPOSITS- BOTTOM OF EXPLORATION 32 FT.		5	5	5	35	50					

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No.
B-42

28 Dec 20

COPY, GPJ

GDT

GLB

BORING-09

H&A-TEST



TEST BORING REPORT

Boring No. B-53(OW)

Project SPARC PROJECT BUILDING 2 AND MOTOR GENERATOR BUILDING, DEVENS, MA
 Client COMMONWEALTH FUSION SYSTEMS
 Contractor TRC COMPANIES

File No. 134902-003
 Sheet No. 1 of 2
 Start 23 October 2020
 Finish 29 October 2020
 Driller A. Peters

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Acker XLS
Inside Diameter (in.)	3	1 3/8	--	Bit Type: Roller Bit
Hammer Weight (lb)		140	-	Drill Mud: Polymer
Hammer Fall (in.)		30	-	Casing: NW Spun 46.5 ft
				Hoist/Hammer: Automatic Hammer
				PID Make & Model: NA

H&A Rep. D. Warren

Elevation 275.0

Datum NAVD 88

Location See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size [†] , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand				Field Test			
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	3 7 22 10	S1 10	0.0 2.0		270.0	SM	Medium dense tan silty SAND with gravel (SM) mps=1.5 in., no structure, no odor, moist NOTE: Laboratory grain size analysis performed on S1 by TRC	17	7	17	28	31					
	9 17 29 21	S2 15	2.0 4.0		SM	Dense brown to gray silty SAND with gravel (SM) mps= 1.5 in., no structure, no odor, moist	10	10	5	10	50	15					
	19 15 9	S3 10	4.0 5.0		SM	Similar to above NOTE: Laboratory grain size analysis performed on composite S2 and S3 by TRC	10	10	10	10	45	15					
5	10	S3A 7	5.0 6.0		SW	-FILL- Medium dense brown well graded SAND with gravel (SW) mps= 1.5 in., stratified, no odor, dry	15	15	20	20	30						
	17 15 12 19	S4 16	6.0 8.0		SW	Similar to above, with cobbles	15	15	25	25	20						
	48 23 12 20	S5 16	8.0 10.0		SW	Dense brown well graded SAND with gravel (SW) mps= 1.5 in., no structure, no odor, moist, with cobbles NOTE: Laboratory grain size analysis performed on composite S4 and S5 by TRC	10	10	20	25	35						
10							-GLACIOFLUVIAL DEPOSITS-										
						262.5 12.5		-GLACIOFLUVIAL DEPOSITS-									
15	11 19 16 18	S6 16	15.0 17.0				SP- SM	Dense tan poorly graded SAND with silt (SP-SM) mps= 0.25 in., weakly stratified, dry NOTE: Laboratory grain size analysis performed on S6 by TRC	4	10	44	32	10				
						256.5 18.5											
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to:		
			Bottom of Casing	Bottom of Hole	Water
10/29/2020	1600			44.5	32.8
	Initial	OW reading, not stabilized			

Sample ID

O - Open End Rod
 T - Thin Wall Tube
 U - Undisturbed Sample
 S - Split Spoon Sample

Well Diagram

	Riser Pipe
	Screen
	Filter Sand
	Cuttings
	Grout
	Concrete
	Bentonite Seal

Summary

Overburden (ft) 46.5
 Rock Cored (ft)
 Samples S11

Boring No. B-53(OW)
Field Tests:

Dilatancy: R - Rapid S - Slow N - None

Toughness: L - Low M - Medium H - High

Plasticity: N - Nonplastic L - Low M - Medium H - High

Dry Strength: N - None L - Low M - Medium H - High V - Very High

[†]Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.



TEST BORING REPORT

Boring No. B-53(OW)

File No. 134902-003

Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size [†] , structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand		Field Test			
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness
20	23 38 39 55	S7 15	20.0 22.0		241.5 33.5	SW	Very dense brown well graded SAND with gravel (SW) mps= 1.5 in., no structure, no odor, dry, with cobbles	15	15	20	20	30			
25	30 27 30 46	S8 18	25.0 27.0			SW	Similar to above NOTE: Laboratory grain size analysis performed on composite S7 and S8 by TRC	15	15	25	25	20			
							-GLACIOFLUVIAL DEPOSITS-								
30	12 11 20 17	S9 18	30.0 32.0			SW-SM	Dense brown well graded SAND with silt and gravel (SW-SM), mps=1.5 in., no structure, no odor, dry, with cobbles NOTE: Laboratory grain size analysis performed on S9 by TRC	17	26	11	21	12	13		
35	12 12 15 21	S10 18	35.0 37.0			SM	Medium dense brown silty SAND (SM) mps= 0.5 in., no structure, no odor, moist to wet Note: Laboratory grain size analysis performed on S10 by TRC	14	6	16	28	36			
					231.5 43.5		-GLACIAL TILL-								
40	17 18 40 32	S11 15	40.0 42.0			ML/SM	Very dense brown sandy SILT (ML) with seams of silty SAND (SM) mps= 0.75 in., no structure, no odor, wet Note: Laboratory grain size analysis performed on S11 by TRC	4	11	6	18	31	30		
							Drill action indicates strata change at 43.5 ft. TOP OF PROBABLE BEDROCK 43.5 FT.								
45	80/0in	NR	45.0 45.0				-PROBABLE BEDROCK-								
							No Recovery, spoon refusal at 45 ft.								
					228.5 46.5		Spun casing advancer with button bit to 46.5 ft. Drill action indicates hard, slightly fractured bedrock.								
							-BEDROCK- BOTTOM OF EXPLORATION 46.5 FT.								
							Groundwater observation well installed at 44.5 ft. upon completion.								

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

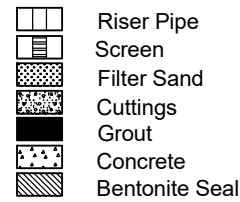
Boring No. B-53(OW)



GROUNDWATER OBSERVATION WELL INSTALLATION REPORT

Well No. B-53(OW)

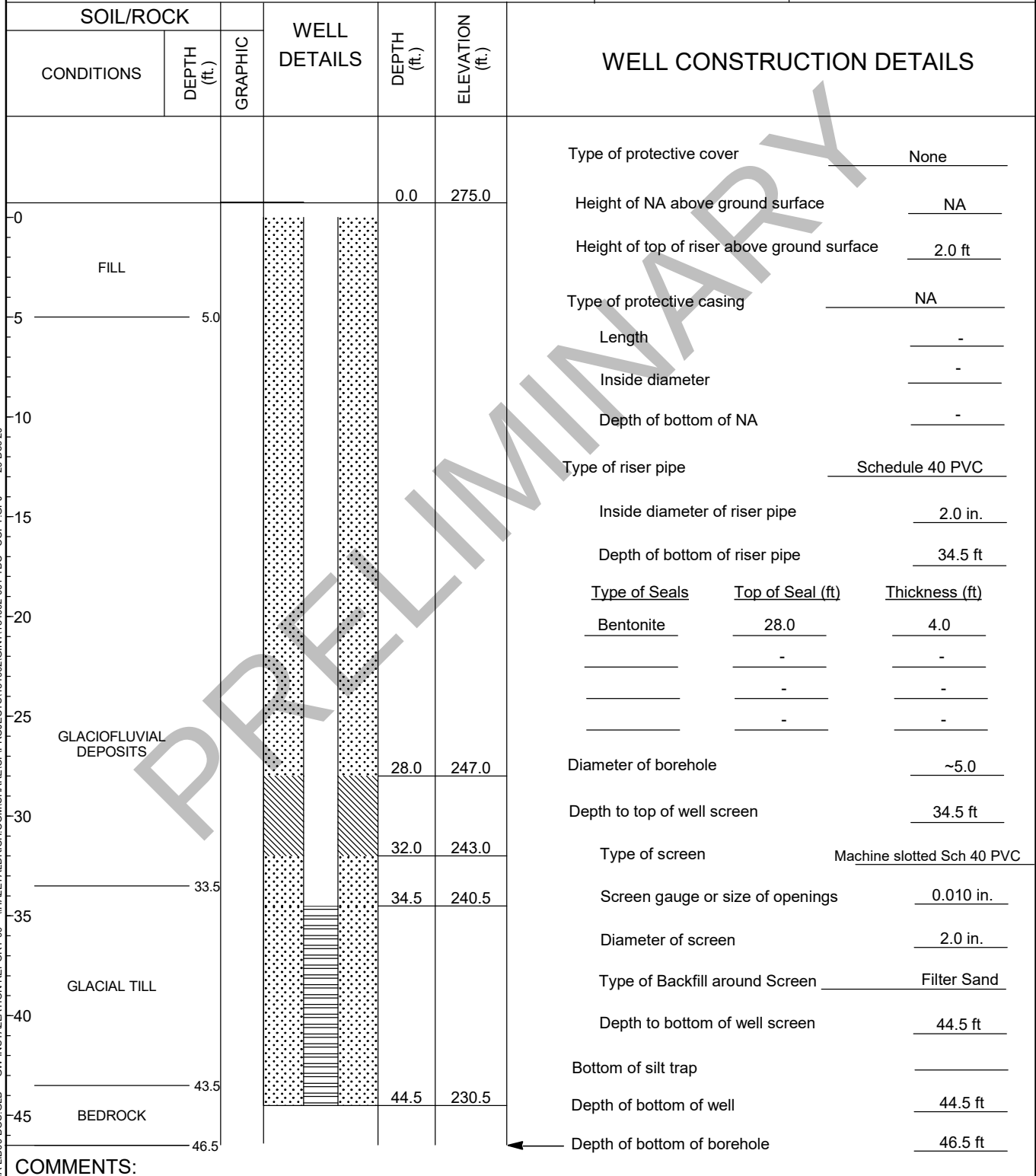
Project SPARC PROJECT BUILDING 2 AND MOTOR GENERATOR BUILDING Well Diagram
 Location DEVENS, MA
 Client COMMONWEALTH FUSION SYSTEMS
 Contractor TRC COMPANIES
 Driller A. Peters



File No. 134902-003
 Date Installed 29 Oct 2020
 H&A Rep. D. Warren
 Location See Plan

Ground El. 275.0
 Datum NAVD 88

Initial Water Level (depth bgs) 32.0 ft





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APPENDIX B.5

2024 GZA TEST BORING LOGS

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed Development
Hospital Road
Devens, Massachusetts

BORING NO.: GZ-5 (OW)
SHEET: 1 of 2
PROJECT NO: 01.0174955.20
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors	Type of Rig: ATV	Boring Location: See Plan	H. Datum: See Plan
Foreman: Walter Hoeckele	Rig Model: Mobile B-53	Ground Surface Elev. (ft.): 281	V. Datum: NAVD88
Logged By: D. Walsh	Drilling Method: D & W	Final Boring Depth (ft.): 64	
		Date Start - Finish: 10/28/2024 - 10/30/2024	

Auger/Casing Type: HW	Sampler Type: Split Spoon	Groundwater Depth (ft.)			
I.D./O.D.: 4"/4.5"	I.D./O.D (in.): 1.375/2	Date	Time	Water Depth	Casing
Hmr Weight (lb.): 140	Sampler Hmr Wt: 140	10/30/24	0715	40.8	49
Hmr Fall (in.): 30"	Sampler Hmr Fall: 30	11/21/24	09:30	41.7	Well
Other: Automatic	Other: Autohammer				Stab. Time
					17 hrs.
					22 days

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample					Blows (per 6 in.)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Depth (ft)	Stratum Description Elev. (ft)	Equipment Installed	
		No.	Depth (ft.)	Pen. (in)	Rec. (in)									4" Standpipe	
5		S-1	0-2	24	16		10 19 16 21	35	S-1: Dense, gray GRAVEL and fine to coarse SAND, little Silt.	1	ND	2'	FILL 279.0'	Concrete (0-1')	
		S-2	2-4	24	11		12 11 9 11	20	S-2: Medium dense, brown fine to coarse SAND and GRAVEL, little Silt.	2	ND				
		S-3	4-6	24	13		19 21 22 23	43	S-3: Dense, brown, fine to coarse SAND, some Gravel, little Silt.	3	ND				
		S-4	6-8	24	22		22 24 28 19	52	S-4: Very dense, brown to gray, fine to coarse SAND and GRAVEL, little Silt.	4	ND				
		S-5	8-10	24	13		6 9 15 17	24	S-5: Top 7": Brown, fine to medium SAND, little Gravel, trace Silt. Bottom 6": Brown, fine to coarse SAND and GRAVEL, little Silt.	ND	ND				2" PVC Riser (0-36')
15		S-6	14-16	24	12		6 11 12 16	23	S-6: Medium dense, brown, fine to coarse SAND, some Gravel, little Silt.	ND	ND	SAND/GRAVEL		Soil Cuttings (1-29')	
		S-7	19-21	24	12		10 32 43 40	75	S-7: Very dense, brown GRAVEL and fine to coarse SAND, little Silt.	ND	ND				
		S-8	24-26	24	16		28 63 60 60	R	S-8: Top 7": Brown GRAVEL and fine to coarse SAND, little Silt. Middle 5": Gray, fine to coarse SAND, some Gravel, little Silt. Bottom 4": Brown GRAVEL and fine to coarse Sand, some Silt.	ND	ND				
30		S-9	29-31	24	10		16 17	32	S-9: Medium dense, brown GRAVEL	ND	ND				

REMARKS

- Ground surface elevation estimated from topography depicted on an AutoCAD .dwg file titled "CFS Composite Existing Surface - polylines," transmitted to GZA on September 16, 2024.
- Boring offset 1.3 N and 3.5 W due to temporary building obstruction.
- Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phoccheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates not detected above instrument detection limit (<0.1 ppmv).
- Advanced borehole to sample depths via cased drive and wash techniques from 0 to 49 feet bgs (below ground surface).

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-5 (OW)

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed Development
Hospital Road
Devens, Massachusetts

BORING NO.: GZ-5 (OW)
SHEET: 2 of 2
PROJECT NO: 01.0174955.20
REVIEWED BY: MJO

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample						Sample Description Modified Burmister	Remark	Field Test Data	Stratum Description	Elev. (ft)	Equipment Installed
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value						
						15 26		and fine to coarse SAND, some Silt.					
35		S-10	34-36	24	14	29 43 43 92	86	S-10: Top 5": Orange GRAVEL, some fine to coarse Sand, little Silt. Bottom 9": Brown to gray, fine to coarse SAND and GRAVEL, little Silt.		ND			
40		S-11	39-41	24	12	26 42 36 51	78	S-11: Very dense, brown with orange staining, GRAVEL and fine to coarse SAND, some Silt.	5	ND	SAND/GRAVEL		
45		S-12	44-46	24	13	11 19 23 16	42	S-12: Dense, brown fine to coarse SAND and GRAVEL, some Silt.		ND			
50		S-13	49-51	24	10	7 26 38 15	64	S-13: Very dense, gray SILT, some fine to coarse Sand, some Gravel.	6	ND			
55		S-14	54-56	24	15	24 28 25 34	53	S-14: Very dense, brown fine to coarse SAND, some Gravel, some Silt.		ND	GLACIAL TILL		
60		S-15	59-61	24	15	25 38 51 46	89	S-15: Very dense, brown, fine to coarse SAND, some Silt, little Gravel.		ND			
65								Bottom of boring at 64 feet.	7				

REMARKS

- A 300 pound hammer was used to advance the casing from 39 to 44 feet due to apparent increased resistance.
- Advanced borehole to sample depths using open hole wash techniques from 49 to 64 feet bgs.
- Upon completion, boring backfilled with drill cuttings to ground surface.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-5 (OW)

TEST BORING LOG



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Engineers and Scientists

Commonwealth Fusion Systems
Proposed Development
Hospital Road
Devens, Massachusetts

BORING NO.: GZ-9
SHEET: 1 of 1
PROJECT NO: 01.0174955.20
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors	Type of Rig: ATV	Boring Location: See Plan	H. Datum: See Plan
Foreman: Walter Hoeckele	Rig Model: Mobile B-53	Ground Surface Elev. (ft.): 264	V. Datum: NAVD88
Logged By: M. Ostrowski	Drilling Method: HSA	Final Boring Depth (ft.): 21	
		Date Start - Finish: 10/31/2024 - 10/31/2024	

Auger/Casing Type: HSA	Sampler Type: Split Spoon	Groundwater Depth (ft.)			
I.D./O.D.: 2.25/6	I.D./O.D (in.): 1.375/2	Date	Time	Water Depth	Casing
Hmr Weight (lb.): -	Sampler Hmr Wt: 140	10/31/24	1325	Dry (19')	19
Hmr Fall (in.): -	Sampler Hmr Fall: 30				5 min.
Other: -	Other: Autohammer				

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample						Sample Description Modified Burmister	Remark	Field Test Data	Depth (ft)	Stratum Description	Elev. (ft)	Equipment Installed
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value							
5		S-1	0-2	24	16	6 17 12 10	29	S-1: (Top 8") Brown, fine to coarse SAND, some Gravel, little Silt, dry.	1	ND	0.7'	FILL	263.3'	No Equipment Installed
		S-2	2-4	24	16	16 23 25 21	48	S-1: (Bottom 8") Brown, fine to coarse SAND, some Gravel, little (-) Silt, dry.	2	ND				
		S-3	4-6	24	12	14 18 16 17	34	S-2: Dense, brown, fine to coarse SAND and GRAVEL, little Silt, dry. S-3: Dense, brown, fine to coarse SAND and GRAVEL, some Silt, dry.		ND				
		S-4	9-11	24	15	10 21 32 26	53	S-4: Very dense, brown, fine to coarse SAND, some Gravel, some Silt, dry.		ND				
		S-5	14-16	24	14	18 22 29 33	51	S-5: Very dense, brown, fine to coarse GRAVEL, some fine to coarse Sand, little (-) Silt, dry.		ND				
		S-6	19-21	24	14	13 23 17 16	40	S-6: Dense, brown, fine to coarse SAND and GRAVEL, trace Silt.		ND				
								Bottom of boring at 21 feet.	3		21'		243.0'	

REMARKS

- Ground surface elevation estimated from topography depicted on an AutoCAD .dwg file titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
- Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phoccheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
- Upon completion, boring backfilled with drill cuttings to ground surface.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-9

TEST BORING LOG



GZA
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Engineers and Scientists

Commonwealth Fusion Systems
Proposed Development
Hospital Road
Devens, Massachusetts

BORING NO.: GZ-15 (OW)
SHEET: 1 of 2
PROJECT NO: 01.0174955.20
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors
Foreman: Walter Hoeckele
Logged By: D. Walsh

Type of Rig: ATV
Rig Model: Mobile B-53
Drilling Method: HSA

Boring Location: See Plan
Ground Surface Elev. (ft.): 266
Final Boring Depth (ft.): 51
Date Start - Finish: 11/5/2024 - 11/6/2024

H. Datum: See Plan
V. Datum: NAVD88

Auger/Casing Type: HSA
I.D./O.D.(in): 2.25/6
Hmr Weight (lb.): -
Hmr Fall (in.): -
Other: -

Sampler Type: Split Spoon
I.D./O.D (in.): 1.375/2
Sampler Hmr Wt (lb): 140
Sampler Hmr Fall (in): 30
Other: Autohammer

Groundwater Depth (ft.)

Date	Time	Water Depth	Casing	Stab. Time
11/6/24	0940	35	44	25 min.
11/21/24	0948	35.8	Well	15 days

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample					Blows (per 6 in.)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Description		Equipment Installed	
		No.	Depth (ft.)	Pen. (in)	Rec. (in)							Depth (ft)	Elev. (ft)		
5		S-1	0-2	24	15		3 12 15 14	27	S-1: S-1: (Top 2") Dark brown, fine to coarse SAND, some Gravel, little (+) Silt, trace (-) Roots, dry.	1	3 ppm	0.2'	265.2	4"	Concrete (0-1')
		S-2	2-4	24	16		23 36 30 25	66	S-1: (Bottom 13") Light brown, fine to medium SAND, some Gravel, some Silt, trace (-) Roots, dry.	2	ND	2.3'	263.7		
		S-3	4-6	24	196		22 20 18 22	38	S-2: S-2: (Top 4") Light brown, fine to medium SAND, some Gravel, some Silt, trace (-) Roots.		1 ppm				
10		S-4	6-8	24	6		7 13 13 13	26	(Bottom 12") Very dense, light brown, fine to coarse SAND and GRAVEL, little Silt, trace (-) Roots.	3	ND				
		S-5	8-10	24	<1"		11 13 9 11	22	S-3: S-3: (Top 9") Gray, fine to coarse SAND and GRAVEL, some Silt, trace (-) Roots, trace (-) Plastic.					2"	PVC Riser (1-30')
		S-6	10-12	24	10		13 13 12 12	25	S-3: (Bottom 10") Brown, fine to coarse SAND and GRAVEL, trace Silt.						
15		S-7	14-16	24	8		4 5 5 6	10	S-4: S-4: Medium dense, brown, fine to coarse SAND, some Gravel, trace Silt.						
		S-8	16-18	24	11		8 7 8 7	15	S-5: S-5: Pieces of metal in spoon.						
		S-9	18-20	24	11		4 6 7 9	13	S-6: S-6: Medium dense, brown, fine to coarse SAND and GRAVEL, little Silt.						
20									S-7: S-7: Medium dense, brown, fine to medium SAND, trace Silt.						
									S-8: S-8: Medium dense, brown, fine to medium SAND, little Gravel, trace Silt, trace Steel Nails.						
									S-9: S-9: Medium dense, brown, fine to medium SAND, trace Silt.						
25		S-10	24-26	24	10		6 9 10 12	19	S-10: S-10: Medium dense, brown with occasional orange, fine SAND, trace Silt.						Bentonite (22.3-25.4')
30		S-11	29-31	24	11		9 14	30	S-11: S-11: Dense, brown, fine SAND,						Sand (25.4-30')

REMARKS

- Ground surface elevation estimated from topography depicted on an AutoCAD .dwg file titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. Offset approximately 9 feet south due to trees at staked location.
- Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phoccheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
- Driller indicated that pieces of concrete and/or steel noted in wash and/or samples from 6 to 10 and 16 to 18 feet below ground surface (bgs) were from an obstruction pushed from the fill stratum above.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-15 (OW)

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed Development
Hospital Road
Devens, Massachusetts

BORING NO.: GZ-15 (OW)
SHEET: 2 of 2
PROJECT NO: 01.0174955.20
REVIEWED BY: MJO

Depth (ft)	Casing Blows/ Core Rate Min/ft	Sample						Sample Description Modified Burmister	Remark	Field Test Data	Stratum Description	Elev. (ft)	Equipment Installed
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value						
						16 18		little Silt.					
35		S-12	34-36	24	17	3 23 17 17	40	S-12: S-12: (Top 9") Gray, CLAY & SILT, trace fine Sand. S-12: (Bottom 8") Brown with orange staining, GRAVEL and fine to coarse SAND, some Silt.			SAND 32.5' 233.9		
											CLAY AND SILT 34.8' 231.2		
40		S-13	38-40	24	17	12 11 11 16	22	S-13: S-13: Medium dense, brown, fine to coarse SAND and GRAVEL, little Silt.			SAND/GRAVEL 42.5' 223.9		2" PVC Screen (30-45')
45		S-14	44-46	24	16	7 9 12 13	21	S-14: S-14: Medium dense, brown with occasional orange staining, fine to coarse SAND, trace Silt.			SAND 47.5' 218.9		
50		S-15	49-51	24	10	20 17 20 29	37	S-15: S-15: Dense, brown with orange staining, fine to coarse SAND and GRAVEL, little (+) Silt.			GLACIAL TILL 51' 215.0		
								Bottom of boring at 51 feet.	4				

REMARKS

4. Installed monitoring well in borehole upon completion.

See log key for explanation of sample descriptions and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-15 (OW)



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MANAGEMENT

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Norwood, MA 02062
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F: 781.278.5702
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APPENDIX B.6

2025 GZA TEST PIT LOGS

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Pivotal Devens, LLC	TEST PIT NO.:	TP-306
	Proposed CFS-3 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0178186.00
	Devens, Massachusetts	REVIEWED BY:	MJO

GZA Rep.	<u>Kyran Peters</u>	Contractor	<u>Cryan Landscaping Contractors, Inc.</u>		Date	<u>8/5/2025</u>	
		Operator	<u>Hassler Lopez</u>		Ground Elev.	<u>267</u>	
Weather	<u>70's, Overcast</u>	Make	<u>CAT</u>	Model	<u>311FLRR</u>	Time Started	<u>0945</u>
		Capacity	<u>1/3 CY</u>	Reach	<u>14</u>	Time Completed	<u>1020</u>

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/ Class	Note No.
1	Light brown, fine to coarse SAND, some fine to coarse Gravel, little Silt, trace Roots, dry. (TOPSOIL - USDA LOAMY SAND)	GS-1	ND	E	0	1, 2
2				M	0	
3		GS-2	ND	D	1B	
4				D	1A	
5	Brown, fine to coarse SAND and fine to coarse Gravel, trace Silt, dry. (SAND/GRAVEL or Possible FILL - USDA LOAMY SAND)			M	0	
6				M	0	
7				M	0	
8				M	0	
9				E	0	
10				E	0	
11				E	0	
12				E	0	
13				E	0	3,4
14						
15						
16						

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phoccheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 13 feet bgs due to cave ins.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Test Pit Plan 11 4 NORTH Volume = 11 cu. yd.	Boulder Class <table><thead><tr><th>Letter Designation</th><th>Size Range Classification</th></tr></thead><tbody><tr><td>A</td><td>6" - 17"</td></tr><tr><td>B</td><td>18" - 36"</td></tr><tr><td>C</td><td>36" and Larger</td></tr></tbody></table>		Letter Designation	Size Range Classification	A	6" - 17"	B	18" - 36"	C	36" and Larger	Proportions Used <table><tbody><tr><td>TRACE (TR.)</td><td>0 - 10%</td></tr><tr><td>LITTLE (LI.)</td><td>10 - 20%</td></tr><tr><td>SOME (SO.)</td><td>20 - 35%</td></tr><tr><td>AND</td><td>35 - 50%</td></tr></tbody></table>		TRACE (TR.)	0 - 10%	LITTLE (LI.)	10 - 20%	SOME (SO.)	20 - 35%	AND	35 - 50%	Abbreviations F = Fine M = Medium C = Coarse V = Very F/M = Fine to medium F/C = Fine to coarse GR = Gray BN = Brown YEL = Yellow	Groundwater () Encountered (X) Not Encountered Elapsed Time to Reading (Hours) Depth to Ground water	
	Letter Designation	Size Range Classification																					
	A	6" - 17"																					
B	18" - 36"																						
C	36" and Larger																						
TRACE (TR.)	0 - 10%																						
LITTLE (LI.)	10 - 20%																						
SOME (SO.)	20 - 35%																						
AND	35 - 50%																						
Excavation Effort E - Easy M - Moderate D - Difficult																							

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Pivotal Devens, LLC	TEST PIT NO.:	TP-307
	Proposed CFS-3 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0178186.00
	Devens, Massachusetts	REVIEWED BY:	MJO

GZA Rep.	Kyran Peters	Contractor	Cryan Landscaping Contractors, Inc.		Date	8/6/2025	
		Operator	Hassler Lopez		Ground Elev.	269	
Weather	70's, Overcast	Make	CAT	Model	311FLRR	Time Started	1310
		Capacity	1/3 CY	Reach	14 ft.	Time Completed	1385

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/ Class	Note No.
0.5 1	Dark brown, fine to coarse SAND,some fine to coarse Gravel, little (+) Silt, trace Roots, dry. (TOPSOIL - USDA SANDY LOAM)	GS-1	ND	E	0	1, 2
2	Light brown, fine to coarse SAND, little fine to coarse Gravel, trace (-) Silt, trace Roots, dry. (SAND - USDA SAND)	GS-2	ND	E	0	
3	Brown, fine to coarse GRAVEL and fine to coarse SAND, trace (-) Silt, dry. (SAND/GRAVEL - USDA SAND)	GS-3	ND	E	0	
4				E	0	
5				E	0	
6				E	0	
7				E	0	
8		GS-4	ND	E	0	3,4
9	Bottom of Test Pit 8'					
10						
11						
12						
13						
14						
15						
16						

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 8 feet bgs due to cave ins.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

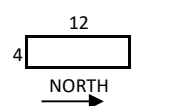
Test Pit Plan Volume = 7 cu. yd.	Boulder Class Letter Designation Size Range Classification		Proportions Used		Abbreviations F = Fine M = Medium C = Coarse V = Very F/M = Fine to medium F/C = Fine to coarse GR = Gray BN = Brown YEL = Yellow	Groundwater () Encountered (x) Not Encountered	
	A	6" - 17"	TRACE (TR.)	0 - 10%	Elapsed Time to Reading (Hours) Depth to Ground water		
	B	18" - 36"	LITTLE (LI.)	10 - 20%			
	C	36" and Larger	SOME (SO.)	20 - 35%			
Excavation Effort E - Easy M - Moderate D - Difficult							
Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions							

TEST PIT LOG						
	Pivotal Devens, LLC			TEST PIT NO.:		TP-308
	Proposed CFS-3 Development			SHEET:		1 of 1
	Hospital Road			PROJECT NO.:		01.0178186.00
	Devens, Massachusetts			REVIEWED BY:		MJO

GZA Rep.	Kyran Peters	Contractor	Cryan Landscaping Contractors, Inc.	Date	8/5/2025
Weather	70's, Overcast	Operator	Hassler Lopez	Ground Elev.	268.5
		Make	CAT	Time Started	0845
		Capacity	1/3 CY	Time Completed	0925
		Model	311FLRR		
		Reach	14 ft.		

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/Class	Note No.
1	Dark brown, fine to coarse SAND, some fine to coarse Gravel, little (+) Silt, trace Roots, moist. (TOPSOIL - USDA SANDY LOAM)	GS-1	ND	E	0	1, 2
2	Brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, moist. (SAND/GRAVEL or Possible FILL - USDA LOAMY SAND)			E	1A	
3		GS-2	ND	E	1A	
4				E	1A	
5				E	0	
6				E	0	
7	Brown, fine to coarse SAND and fine to coarse GRAVEL, trace (-) Silt, moist. (SAND/GRAVEL - USDA SAND)			E	1A	
8			ND	E	0	
9				E	0	
10				E	0	
11				E	0	
12	Brown, fine to coarse GRAVEL and medium SAND, trace (-) Silt, moist. (SAND/GRAVEL - USDA Gradation Determination: SAND)			E	0	
13		GS-3	ND	E	0	3,4
14						
15						
16	Bottom of Test Pit 13'					

- Notes:**
- Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
 - Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phoccheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
 - Test pit terminated at 13 feet bgs due to cave in.
 - Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Test Pit Plan  Volume = 12 cu. yd.	Boulder Class		Proportions Used		Abbreviations F = Fine M = Medium C = Coarse V = Very F/M = Fine to medium F/C = Fine to coarse GR = Gray BN = Brown YEL = Yellow	Groundwater () Encountered (x) Not Encountered Elapsed Time to Reading (Hours) Depth to Ground water		
	Letter Designation	Size Range Classification						
	A	6" - 17"	TRACE (TR.)	0 - 10%				
	B	18" - 36"	LITTLE (LI.)	10 - 20%				
	C	36" and Larger	SOME (SO.)	20 - 35%				
			AND	35 - 50%				
Excavation Effort E - Easy M - Moderate D - Difficult								
Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions								

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Commonwealth Fusion Systems	TEST PIT NO.:	TP-309
	Proposed CFS-4 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0174955.30
	Devens, Massachusetts	REVIEWED BY:	MJO

GZA Rep.	Kyran Peters	Contractor	Cryan Landscaping Contractors, Inc.		Date	8/4/2025	
		Operator	Hassler Lopez		Ground Elev.	276	
Weather	80's, Sunny	Make	CAT	Model	311FLRR	Time Started	1247
		Capacity	1/3 CY	Reach	14 ft.	Time Completed	1320

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/ Class	Note No.
1	Moist, dark brown, fine to coarse SAND, some fine to coarse Gravel, some Silt, trace Roots, trace Wood. (TOPSOIL FILL)			E	0	1, 2
2				E	0	
3				E	0	
4		GS-1	1	E	0	
5				E	0	
6				E	0	
7				E	0	
8				E	0	
9				E	0	
10				E	1A	
11				E	0	
12				E	0	
13	Moist, brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt. (SAND/GRAVEL - USDA LOAMY SAND)	GS-2	ND	E	0	
14				E	1A	3,4
15	Bottom of test pit 14 feet bgs					
16						

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phoccheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 14' bgs at limit of excavator reach.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Test Pit Plan 10 4 NORTH Volume = 10 cu. yd.	Boulder Class <table><thead><tr><th>Letter Designation</th><th>Size Range Classification</th></tr></thead><tbody><tr><td>A</td><td>6" - 17"</td></tr><tr><td>B</td><td>18" - 36"</td></tr><tr><td>C</td><td>36" and Larger</td></tr></tbody></table>		Letter Designation	Size Range Classification	A	6" - 17"	B	18" - 36"	C	36" and Larger	Proportions Used <table><tbody><tr><td>TRACE (TR.)</td><td>0 - 10%</td></tr><tr><td>LITTLE (LI.)</td><td>10 - 20%</td></tr><tr><td>SOME (SO.)</td><td>20 - 35%</td></tr><tr><td>AND</td><td>35 - 50%</td></tr></tbody></table>		TRACE (TR.)	0 - 10%	LITTLE (LI.)	10 - 20%	SOME (SO.)	20 - 35%	AND	35 - 50%	Abbreviations F = Fine M = Medium C = Coarse V = Very F/M = Fine to medium F/C = Fine to coarse GR = Gray BN = Brown YEL = Yellow	Groundwater () Encountered (x) Not Encountered <table><thead><tr><th>Elapsed Time to Reading (Hours)</th><th>Depth to Ground water</th></tr></thead><tbody><tr><td></td><td></td></tr><tr><td></td><td></td></tr></tbody></table>		Elapsed Time to Reading (Hours)	Depth to Ground water				
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SOME (SO.)	20 - 35%																												
AND	35 - 50%																												
Elapsed Time to Reading (Hours)	Depth to Ground water																												
		Excavation Effort E - Easy M - Moderate D - Difficult																											
Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions																													

TEST PIT LOG				
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Commonwealth Fusion Systems		TEST PIT NO.:	TP-310
	Proposed CFS-4 Development		SHEET:	1 of 1
	Hospital Road		PROJECT NO:	01.0174955.30
	Devens, Massachusetts		REVIEWED BY:	MJO

REVIEWED BY: MJO

Time Started	1218
Time Completed	1242

Notes:

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 14' bgs at limit of excavator reach.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Commonwealth Fusion Systems	TEST PIT NO.:	TP-311
	Proposed CFS-4 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0174955.30
	Devens, Massachusetts	REVIEWED BY:	MJO

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/ Class	Note No.
1	Moist, dark brown, fine to coarse SAND, some fine to coarse Gravel, some Silt, trace Roots, trace Wood. (TOPSOIL FILL)			E	0	1, 2
2				E	0	
3				E	0	
4		GS-1	1	E	0	
5				E	0	
6				E	2A	
7				E	0	
8				E	0	
9				E	0	
10				E	0	
11				E	0	
12				E	0	
13				E	0	
14			GS-2	1	E	0
15	Bottom of test pit 14' bgs.					
16						

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phoccheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 14' bgs at limit of excavator reach.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Test Pit Plan 10 4 NORTH Volume = 10 cu. yd.	Boulder Class <table><thead><tr><th>Letter Designation</th><th>Size Range Classification</th></tr></thead><tbody><tr><td>A</td><td>6" - 17"</td></tr><tr><td>B</td><td>18" - 36"</td></tr><tr><td>C</td><td>36" and Larger</td></tr></tbody></table>		Letter Designation	Size Range Classification	A	6" - 17"	B	18" - 36"	C	36" and Larger	Proportions Used <table><tbody><tr><td>TRACE (TR.)</td><td>0 - 10%</td></tr><tr><td>LITTLE (LI.)</td><td>10 - 20%</td></tr><tr><td>SOME (SO.)</td><td>20 - 35%</td></tr><tr><td>AND</td><td>35 - 50%</td></tr></tbody></table>		TRACE (TR.)	0 - 10%	LITTLE (LI.)	10 - 20%	SOME (SO.)	20 - 35%	AND	35 - 50%	Abbreviations F = Fine M = Medium C = Coarse V = Very F/M = Fine to medium F/C = Fine to coarse GR = Gray BN = Brown YEL = Yellow	Groundwater () Encountered (X) Not Encountered Elapsed Time to Reading (Hours) Depth to Ground water	
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SOME (SO.)	20 - 35%																						
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Excavation Effort E - Easy M - Moderate D - Difficult																							

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Commonwealth Fusion Systems	TEST PIT NO.:	TP-312
	Proposed CFS-4 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0174955.30
	Devens, Massachusetts	REVIEWED BY:	MJO

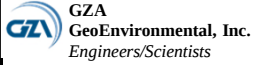
GZA Rep.	<u>Kyran Peters</u>	Contractor	<u>Cryan Landscaping Contractors, Inc.</u>		Date	<u>8/4/2025</u>	
		Operator	<u>Hassler Lopez</u>		Ground Elev.	<u>271.5</u>	
Weather	<u>70's, Sunny</u>	Make	<u>CAT</u>	Model	<u>311FLRR</u>	Time Started	<u>1115</u>
		Capacity	<u>1/3 CY</u>	Reach	<u>14 ft.</u>	Time Completed	<u>1140</u>

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/ Class	Note No.
1	Moist, brown/dark brown, fine to coarse SAND, some fine to coarse Gravel, some Silt, trace Roots, trace Wood. (TOPSOIL FILL)			E	0	1, 2
2				E	0	
3		GS-1	1	E	0	
4				E	1A	
5				E	0	
6				E	1A	
7				E	0	
8				E	1A	
9				E	0	
10				E	0	
11				E	0	
12				E	0	
13				E	0	
14			GS-2	ND	E	0
15	Bottom of test pit 14' bgs.					
16						

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 14' bgs at limit at extent of excavator reach.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Test Pit Plan 10 4 NORTH Volume = 10 cu. yd.	Boulder Class		Proportions Used		Abbreviations F = Fine M = Medium C = Coarse V = Very F/M = Fine to medium F/C = Fine to coarse GR = Gray BN = Brown YEL = Yellow	Groundwater		
	Letter Designation	Size Range Classification	TRACE (TR.)	0 - 10%		() Encountered (X) Not Encountered	Elapsed Time to Reading (Hours)	Depth to Ground water
	A	6" - 17"	LITTLE (LI.)	10 - 20%				
	B	18" - 36"	SOME (SO.)	20 - 35%				
	C	36" and Larger	AND	35 - 50%				
	Excavation Effort							
	E - Easy	M - Moderate	D - Difficult					

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG					
	Commonwealth Fusion Systems			TEST PIT NO.: TP-313	
	Proposed CFS-4 Development			SHEET: 1 of 1	
	Hospital Road			PROJECT NO: 01.0174955.30	
	Devens, Massachusetts			REVIEWED BY: MJO	

GZA Rep. <u>Kyran Peters</u>	Contractor <u>Cryan Landscaping Contractors, Inc.</u>	Date <u>8/4/2025</u>
	Operator <u>Hassler Lopez</u>	Ground Elev. <u>278</u>
Weather <u>70's, Sunny</u>	Make <u>CAT</u> Model <u>311FLRR</u>	Time Started <u>1032</u>
	Capacity <u>1/3 CY</u> Reach <u>14 ft.</u>	Time Completed <u>1105</u>

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/Class	Note No.
1	Moist, brown, fine to coarse SAND, some fine to coarse Gravel, some Silt, trace Roots, trace Wood. (TOPSOIL FILL)			E	0	1, 2
2		GS-1	ND	E	0	
3				E	2A	
4				E	0	
5				E	2A	
6				E	0	
7				E	0	
8				E	0	
9				E	0	
10				E	0	
11				E	0	
12				E	0	
13		GS-2	ND	E	0	
14				E	0	3,4
15	Bottom of test pit 14' bgs.					
16						

Notes:	
1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.	
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).	
3. Test pit terminated at 14' bgs at limit at extent of excavator reach.	
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.	

Test Pit Plan	Boulder Class		Proportions Used		Abbreviations	Groundwater	
10 4 NORTH Volume = 10 cu. yd.	Letter Designation	Size Range Classification	TRACE (TR.)	0 - 10%	F = Fine M = Medium C = Coarse V = Very F/M = Fine to medium F/C = Fine to coarse GR = Gray BN = Brown YEL = Yellow	() Encountered (x) Not Encountered	Depth to Ground water
	A	6" - 17"	LITTLE (LI.)	10 - 20%			
	B	18" - 36"	SOME (SO.)	20 - 35%			
C	36" and Larger	AND	35 - 50%				
Excavation Effort							
E - Easy M - Moderate D - Difficult							

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Commonwealth Fusion Systems	TEST PIT NO.:	TP-314
	Proposed CFS-4 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0174955.30
	Devens, Massachusetts	REVIEWED BY:	MJO

REVIEWED BY: MJO

[illegible]

Notes:
1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 14' bgs at limit at extent of excavator reach.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Commonwealth Fusion Systems	TEST PIT NO.:	TP-315
	Proposed CFS-4 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0174955.30
	Devens, Massachusetts	REVIEWED BY:	MJO

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/Class	Note No.	
1	Brown/dark brown, fine to coarse SAND, some fine to coarse Gravel, little (+) Silt, trace Roots, dry. (TOPSOIL)	GS-1	ND	E	0	1, 2	
2			ND	E	2A		
3	Brown, fine to coarse SAND and fine to coarse GRAVEL, trace (-) Silt. (SAND/GRAVEL - USDA SAND)	GS-2		E	0		
4				E	0		
5				E	0		
6				E	0		
7				E	0		
8				E	0	3	
9		Bottom of Test Pit 8'					
10							
11							
12							
13							
14							
15							
16							

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 8 feet bgs upon reaching target depth.
5. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Commonwealth Fusion Systems	TEST PIT NO.:	TP-316
	Proposed CFS-4 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0174955.30
	Devens, Massachusetts	REVIEWED BY:	MJO

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/Class	Note No.
1	Dark brown, fine to coarse SAND, some fine to coarse Gravel, some Silt, trace Roots, damp. (TOPSOIL FILL)			E	0	1, 2
2				E	0	
3				E	1A	
4				E	0	
5		GS-1	ND	E	0	
6	Brown, fine to coarse SAND and fine to coarse GRAVEL, little Silt, moist. (SAND/GRAVEL)			M	0	3,4
7	Bottom of Test Pit at 6'					
8						
9						
10						
11						
12						
13						
14						
15						
16						

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phoccheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 6 feet bgs.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Commonwealth Fusion Systems	TEST PIT NO.:	TP-317
	Proposed CFS-4 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0174955.30
	Devens, Massachusetts	REVIEWED BY:	MJO

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/Class	Note No.
1	Dark brown, fine to coarse SAND, some fine to medium Gravel, some Silt, trace Roots, damp.	GS-1	ND	E	0	1, 2
2	1.5' (TOPSOIL FILL)			E	1A	
3	Brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt (SAND/GRAVEL)			E	0	3, 4
4	Bottom of Test Pit at 3'					
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phoccheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 3 feet bgs.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Commonwealth Fusion Systems	TEST PIT NO.:	TP-318
	Proposed CFS-4 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0174955.30
	Devens, Massachusetts	REVIEWED BY:	MJO

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/ Class	Note No.
1	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, damp. (TOPSOIL FILL)	GS-1	ND	E	0	1, 2
2				E	0	
3	Brown, fine to coarse SAND, some fine to coarse Gravel, little Silt, moist. (SAND/GRAVEL)			E	0	3, 4
4	Bottom of Test Pit at 3'					
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 3 feet bgs.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG																									
GZA GeoEnvironmental, Inc. Engineers/Scientists			Commonwealth Fusion Systems Proposed CFS-4 Development Hospital Road Devens, Massachusetts		TEST PIT NO.: TP-319 SHEET: 1 of 1 PROJECT NO: 01.0174955.30 REVIEWED BY: MJO																				
GZA Rep. Darragh Walsh			Contractor Cryan Landscaping Contractors, Inc.		Date 8/7/2025																				
Weather 70's-80's Sunny			Operator Hassler Lopez		Ground Elev. 275																				
			Make CAT Model 311FLRR		Time Started 1030																				
			Capacity 1/3 CY Reach 14 ft.		Time Completed 1042																				
Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/Class	Note No.																			
1	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, damp. (TOPSOIL FILL)	GS-1	ND	E	0	1, 2																			
2				E	0																				
3				E	1A																				
4				E	0																				
5				E	0																				
6				M	0																				
7				M	0																				
8				M	2A																				
9				M	0																				
10				M	0																				
11				M	0																				
12				M	0	3																			
13				M	0	4																			
14	Bottom of Test Pit at 13'																								
15																									
16																									
Notes: 1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. 2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv). 3. Test pit terminated at approximate practical reach limit of the excavator at 13 feet. 4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.																									
Test Pit Plan Volume = 12 cu. yd.		Boulder Class <table><tr><th>Letter Designation</th><th>Size Range Classification</th></tr><tr><td>A</td><td>6" - 17"</td></tr><tr><td>B</td><td>18" - 36"</td></tr><tr><td>C</td><td>36" and Larger</td></tr></table>		Letter Designation	Size Range Classification	A	6" - 17"	B	18" - 36"	C	36" and Larger	Proportions Used <table><tr><td>TRACE (TR.)</td><td>0 - 10%</td></tr><tr><td>LITTLE (LI.)</td><td>10 - 20%</td></tr><tr><td>SOME (SO.)</td><td>20 - 35%</td></tr><tr><td>AND</td><td>35 - 50%</td></tr></table>		TRACE (TR.)	0 - 10%	LITTLE (LI.)	10 - 20%	SOME (SO.)	20 - 35%	AND	35 - 50%	Abbreviations F = FINE M = Medium C = Coarse V = Very F/M = Fine to medium F/C = Fine to coarse GR = Gray BN = Brown YEL = Yellow		Groundwater () Encountered (X) Not Encountered Elapsed Time to Reading (Hours) Depth to Ground water	
Letter Designation	Size Range Classification																								
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B	18" - 36"																								
C	36" and Larger																								
TRACE (TR.)	0 - 10%																								
LITTLE (LI.)	10 - 20%																								
SOME (SO.)	20 - 35%																								
AND	35 - 50%																								
		Excavation Effort E - Easy M - Moderate D - Difficult																							
Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions																									

	Commonwealth Fusion Systems	TEST PIT NO.:	TP-320
	Proposed CFS-4 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0174955.30
	Devens, Massachusetts	REVIEWED BY:	MJO

GZA Rep.	<u>Darragh Walsh</u>	Contractor	<u>Cryan Landscaping Contractors, Inc.</u>		Date	<u>8/7/2025</u>	
		Operator	<u>Hassler Lopez</u>		Ground Elev.	<u>259</u>	
Weather	<u>70's-80's Sunny</u>	Make	<u>CAT</u>	Model	<u>311FLRR</u>	Time Started	<u>1035</u>
		Capacity	<u>1/3 CY</u>	Reach	<u>14 ft.</u>	Time Completed	<u>1050</u>

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/ Class	Note No.
1	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, damp. (TOPSOIL FILL)	GS-1	ND	E	0	1, 2
2				E	0	
3				E	1A	3
4	Brown, fine to coarse SAND and fine to coarse GRAVEL, little Silt, moist. (SAND/GRAVEL)			E	0	4
5	Bottom of Test Boring at 4'					
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 4 feet bgs.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Test Pit Plan 12 4 NORTH Volume = 4 cu. yd.	Boulder Class <table><thead><tr><th>Letter Designation</th><th>Size Range Classification</th></tr></thead><tbody><tr><td>A</td><td>6" - 17"</td></tr><tr><td>B</td><td>18" - 36"</td></tr><tr><td>C</td><td>36" and Larger</td></tr></tbody></table>		Letter Designation	Size Range Classification	A	6" - 17"	B	18" - 36"	C	36" and Larger	Proportions Used <table><tbody><tr><td>TRACE (TR.)</td><td>0 - 10%</td></tr><tr><td>LITTLE (LI.)</td><td>10 - 20%</td></tr><tr><td>SOME (SO.)</td><td>20 - 35%</td></tr><tr><td>AND</td><td>35 - 50%</td></tr></tbody></table>		TRACE (TR.)	0 - 10%	LITTLE (LI.)	10 - 20%	SOME (SO.)	20 - 35%	AND	35 - 50%	Abbreviations F = Fine M = Medium C = Coarse V = Very F/M = Fine to medium F/C = Fine to coarse GR = Gray BN = Brown YEL = Yellow	Groundwater () Encountered (x) Not Encountered Elapsed Time to Reading (Hours) Depth to Ground water	
	Letter Designation	Size Range Classification																					
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TRACE (TR.)	0 - 10%																						
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SOME (SO.)	20 - 35%																						
AND	35 - 50%																						
Excavation Effort E - Easy M - Moderate D - Difficult																							

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG																									
GZA GeoEnvironmental, Inc. Engineers/Scientists Commonwealth Fusion Systems Proposed CFS-4 Development Hospital Road Devens, Massachusetts		TEST PIT NO.: TP-321 SHEET: 1 of 1 PROJECT NO: 01.0174955.30 REVIEWED BY: MJO																							
GZA Rep. Darragh Walsh Weather 70's-80's Sunny Contractor Cryan Landscaping Contractors, Inc. Operator Hassler Lopez Make CAT Model 311FLRR Capacity 1/3 CY Reach 14 ft.		Date 8/7/2025 Ground Elev. 266 Time Started 1115 Time Completed 1137																							
Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/Class	Note No.																			
1	Dark brown, fine to coarse SAND and fine to coarse GRAVEL, some Silt, damp. (TOPSOIL FILL)	GS-1	ND	E	0	1, 2																			
2				E	0																				
3				E	0																				
4				E	1A																				
5				E	0																				
6				E	0																				
7				E	0																				
8				M	0																				
9				M	1A																				
10				M	0																				
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12				M	0	3																			
13				M	0	4																			
14	Bottom of Test Pit at 13 feet																								
15																									
16																									
Notes: 1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. 2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv). 3. Test pit terminated at approximate practical reach limit of the excavator at 13 feet. 4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.																									
Test Pit Plan 12 4 NORTH Volume = 12 cu. yd.		Boulder Class <table><thead><tr><th>Letter Designation</th><th>Size Range Classification</th></tr></thead><tbody><tr><td>A</td><td>6" - 17"</td></tr><tr><td>B</td><td>18" - 36"</td></tr><tr><td>C</td><td>36" and Larger</td></tr></tbody></table>		Letter Designation	Size Range Classification	A	6" - 17"	B	18" - 36"	C	36" and Larger	Proportions Used <table><tbody><tr><td>TRACE (TR.)</td><td>0 - 10%</td></tr><tr><td>LITTLE (LI.)</td><td>10 - 20%</td></tr><tr><td>SOME (SO.)</td><td>20 - 35%</td></tr><tr><td>AND</td><td>35 - 50%</td></tr></tbody></table>		TRACE (TR.)	0 - 10%	LITTLE (LI.)	10 - 20%	SOME (SO.)	20 - 35%	AND	35 - 50%	Abbreviations F = Fine M = Medium C = Coarse V = Very F/M = Fine to medium F/C = Fine to coarse GR = Gray BN = Brown YEL = Yellow		Groundwater () Encountered (X) Not Encountered Elapsed Time to Reading (Hours) Depth to Ground water	
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AND	35 - 50%																								
		Excavation Effort E - Easy M - Moderate D - Difficult																							
Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions																									

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Commonwealth Fusion Systems	TEST PIT NO.:	TP-322
	Proposed CFS-4 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0174955.30
	Devens, Massachusetts	REVIEWED BY:	MJO

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/Class	Note No.
1	Dark brown, fine to coarse SAND and fine to coarse GRAVEL, some Silt, trace Roots, damp. (TOPSOIL FILL)	GS-1	ND	E	0	1, 2
2				E	1A	
3				E	0	
4				E	0	
5				E	1A	
6				E	0	
7				E	2A	
8				M	0	
9	Brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt, moist. (SAND/GRAVEL)			M	0	
10				M	0	3, 4
11	Bottom of Test Pit at 10 feet					
12						
13						
14						
15						
16						

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phoccheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at 10 feet bgs.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions

TEST PIT LOG			
GZA GeoEnvironmental, Inc. <i>Engineers/Scientists</i>	Commonwealth Fusion Systems	TEST PIT NO.:	TP-323
	Proposed CFS-4 Development	SHEET:	1 of 1
	Hospital Road	PROJECT NO:	01.0174955.30
	Devens, Massachusetts	REVIEWED BY:	MJO

Depth (ft)	Soil Description (Stratum Description-USDA Field Determination)	Sample No.	Field Test Data	Excav. Effort	Boulders: Count/ Class	Note No.
1	Dark brown, fine to coarse SAND and fine to coarse GRAVEL, some Silt, trace Roots, damp. (TOPSOIL FILL)	GS-1	ND	E	0	1, 2
2				E	0	
3				E	0	
4				E	0	
5				E	3A	
6				E	0	
7				E	1A	
8				E	0	
9				E	1A	
10				E	0	
11				E	0	
12				E	7A	3
13				E	0	4
14	Bottom of Test Pit at 13 feet					
15						
16						

1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
3. Test pit terminated at approximate practical reach limit of the excavator at 13 feet.
4. Test pit backfilled with excavated spoils placed in approximately 1-foot-thick lifts each tamped with the excavator bucket.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions



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APPENDIX B.7

2025 GZA TEST BORING LOGS

PRELIMINARY

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Pivotal Devens, LLC
Proposed CFS-3 Development
Hospital Road
Devens, MA

BORING NO.: GZ-109
SHEET: 1 of 1
PROJECT NO: 01.0178186.00
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: Diedrich D-70 Turbo		Ground Surface Elev. (ft.): 259			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 17				
				Date Start - Finish: 8/28/2025 - 8/28/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6-5/8		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.):		Sampler Hmr Wt (lb): 140 lbs		8/28/25	1455	Dry (17')	15	15 min
Hammer Fall (in.):		Sampler Hmr Fall (in): 30"						
Other:		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample					SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)							
5		S-1	0-2	24	12	2 1 2 2	3	S-1: (Top 7"): Brown, fine to medium SAND, some Silt, little Gravel, trace Roots, dry.	1	24.3	0.6'	TOPSOIL	258.4'
		S-2	2-4	24	11	3 2 3 5	5	(Bottom 5"): Light brown/orange, fine to medium SAND, some Silt, trace Roots, dry.	2	1.1	2'	SUBSOIL	257.0'
								S-2: Loose, light brown, fine to medium SAND, some Gravel, little Silt, trace (-) Roots, dry.					
		S-3	5-7	24	11	12 13 12 9	25	S-3: Medium dense, gray to light brown, GRAVEL and fine to coarse SAND, trace Silt, dry.		ND	4.5'	SAND	254.5'
												SAND/GRAVEL	
10		S-4	10-12	24	16	6 7 8 10	15	S-4: Medium dense, light brown, fine to medium SAND, trace Gravel, trace Silt, damp.		ND	8.5'		250.5'
												SAND	
15		S-5	15-17	24	17	7 10 11 12	21	S-5: Medium dense, light brown, fine to medium SAND, trace Silt, damp.		ND			
											17'		242.0'
								Bottom of boring at 17 feet.	3				

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Boring terminated at 17 feet below ground surface (bgs). Upon completion, the borehole was backfilled with soil cuttings.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-109

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Pivotal Devens, LLC
Proposed CFS-3 Development
Hospital Road
Devens, MA

BORING NO.: GZ-110
SHEET: 1 of 1
PROJECT NO: 01.0178186.00
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors	Type of Rig: ATV	Boring Location: See Plan	H. Datum: See Plan
Foreman: Manlea Thompson	Rig Model: Diedrich D-70 Turbo	Ground Surface Elev. (ft.): 271	V. Datum: See Plan
Logged By: Kyran Peters	Drilling Method: HSA	Final Boring Depth (ft.): 26	
		Date Start - Finish: 8/27/2025 - 8/27/2025	
Auger/Casing Type: HSA	Sampler Type: Split Spoon	Groundwater Depth (ft.)	
I.D./O.D. (in.): 3.25/6-5/8	I.D./O.D. (in.): 1.375/2	Date	Time
Hammer Weight (lb.):	Sampler Hmr Wt (lb): 140 lbs	Water Depth	Casing
Hammer Fall (in.):	Sampler Hmr Fall (in): 30"		Stab. Time
Other:	Other: Autohammer		

Depth (ft)	Casing Blows/ Core Rate	No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
5		S-1	0-2	24	9	5 5 6 5	11	S-1: Medium dense, dark brown, fine to coarse SAND, some Gravel, little Silt, trace Wood, damp.	1	4.4		TOPSOIL	
		S-2	2-4	24	11	4 3 3 65	6	S-2: (Top 4"): Loose, brown, fine to coarse SAND and GRAVEL, little Silt, trace Roots, damp. (Bottom 7"): Bituminous ASPHALT pavement.	2	5.5	2'	FILL	269.0'
		S-3	4-6	24	19	29 29 24 24	53	S-3: Very dense, brown to gray, GRAVEL and fine to coarse SAND, trace Silt, dry.	3	5.5	2.3'	BURIED ASPHALT PAVEMENT	268.7'
		S-4	6-8	24	21	19 19 18 15	37	S-4: (Top 11"): Dense, light brown to gray, GRAVEL and fine to coarse SAND, trace Silt, dry. (Bottom (10"): Dense, light brown, fine to coarse SAND, trace Gravel, trace Silt, damp.		5.4	6.9'	FILL	264.1'
		S-5	8-10	24	15	6 7 9 9	16	S-5: Medium dense, light brown, fine to coarse SAND, some Gravel, trace Silt, Iron oxide staining 9 to 10 inches from top of recovery, dry.		2.8		SAND/GRAVEL	
10											11.5'		259.5'
		S-6	13-15	24	17	4 4 5 5	9	S-6: Loose, light brown, fine to medium SAND, trace Silt, damp.		0.1			
		S-7	15-17	24	9	5 6 7 8	13	S-7: Medium dense, light brown, fine to medium SAND, trace Silt.		ND			
		S-8	18-20	24	14	3 6 11 13	17	S-8: Medium dense, light brown, fine to medium SAND, trace (-) Silt. (USDA Field Determination: SAND)		1.1		SAND	
		S-9	20-22	24	22	8 8 8 9	16	S-9: Medium dense, light brown, fine SAND, trace (+) Silt, Iron oxide coloring bottom 9 inches, moist. (USDA Gradation Determination: SAND)		1.3			
20		S-10	22-24	24	24	12 13 13 14	26	S-10: Medium dense, light brown, fine SAND, some Silt, Iron oxide staining 6-10 inches, 13 to 15 inches from top of recovery, damp.		4.0			
		S-11	24-26	24	21	10 11 13 13	24	Occasional 1/2- to 3-inch-thick silt seam. (USDA Gradation Determination: LOAMY SAND)		3.8			
								S-11: Medium dense, light brown to gray, fine to medium SAND, trace Silt, iron oxide staining observed top 11 inches of recovery.					
25								Occasional 1/2- to 1-inch-thick silt seam within top 11-inches of recovery. (USDA Field Determination: LOAMY SAND)	4		26'		245.0'
								Bottom of boring at 26 feet.					
30													

- REMARKS**
- Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
 - Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
 - Water added into augers prior to sampling S-7 and S-8.
 - Boring terminated at 26 feet below ground surface after reaching target depth. Upon completion, the borehole was backfilled with soil cuttings to the ground surface.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-110

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Pivotal Devens, LLC
Proposed CFS-3 Development
Hospital Road
Devens, MA

BORING NO.: GZ-110A
SHEET: 1 of 1
PROJECT NO: 01.0178186.00
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: Diedrich D-70 Turbo		Ground Surface Elev. (ft.): 271			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 15				
				Date Start - Finish: 8/27/2025 - 8/27/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6-5/8		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.):		Sampler Hmr Wt (lb): 140 lbs		8/27/25	1215	Dry (15')	13	15 min
Hammer Fall (in.):		Sampler Hmr Fall (in): 30"						
Other:		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample					SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)							
5													
10													
15		S-1	13-15	24	13	5 6 8 8	14	S-1: Medium dense, light brown, fine to medium SAND, trace Silt, wet.	3	3.6			
									4		15'		256.0'
								Bottom of boring at 15 feet.	5				
20													
25													
30													

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. Offset approximately 4 feet East of GZ-110.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Boring advanced to 13 feet below ground surface (bgs) with augers prior to sampling.
	4. Water added to augers prior to sampling S-1.
	5. Boring terminated at 15 feet bgs after reaching target depth. Upon completion, the borehole was backfilled with soil cuttings.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.	Boring No.: GZ-110A
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TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Pivotal Devens, LLC
Proposed CFS-3 Development
Hospital Road
Devens, MA

BORING NO.: GZ-111
SHEET: 1 of 1
PROJECT NO: 01.0178186.00
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: Diedrich D-70 Turbo		Ground Surface Elev. (ft.): 269			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 11				
				Date Start - Finish: 8/26/2025 - 8/26/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6-5/8		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.):		Sampler Hmr Wt (lb): 140 lbs		8/26/25	1100	Dry (11')	9	15 min
Hammer Fall (in.):		Sampler Hmr Fall (in): 30"						
Other:		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample						Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value						
5		S-1	0-2	24	22	10 16 33 34	49	S-1: (Top 15"): Dense, light brown, fine to coarse SAND, some Gravel, some Silt, trace Roots. (Bottom 7"): Light brown, GRAVEL and fine to coarse SAND, little Silt.	1	3.6	4.4'	FILL	264.6'
		S-2	2-4	24	17	27 22 28 34	50	S-2: (Top 13"): Very dense, light brown, GRAVEL and fine to coarse SAND, little Silt, dry.	2	3.7			
		S-3	4-6	24	19	9 11 11 10	22	(Bottom 4"): Brown, GRAVEL and fine to coarse SAND, trace Silt, dry. S-3: (Top 5"): Brown, fine to coarse SAND and GRAVEL, little Silt, damp. (Bottom 14"): Medium dense, light brown, fine to coarse SAND, some Gravel, trace Silt, damp.		2.3			
10		S-4	9-11	24	7	8 8 9 10	17	S-4: Medium dense, light brown, fine to coarse SAND, little Gravel, trace Silt.		ND	11'	SAND/GRAVEL	258.0'
								Bottom of boring at 11 feet.	3				

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. Offset approximately 4 feet East of GZ-110.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Boring terminated at 11 feet bgs after reaching target depth. Upon completion, the borehole was backfilled with soil cuttings.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.	Boring No.: GZ-111
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TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Pivotal Devens, LLC
Proposed CFS-3 Development
Hospital Road
Devens, MA

BORING NO.: GZ-113
SHEET: 1 of 1
PROJECT NO: 01.0178186.00
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: Diedrich D-70 Turbo		Ground Surface Elev. (ft.): 283.5			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 18				
				Date Start - Finish: 9/3/2025 - 9/5/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6-5/8		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.):		Sampler Hmr Wt (lb): 140 lbs		9/5/25	0945	Dry (18')	14	15 min
Hammer Fall (in.):		Sampler Hmr Fall (in): 30"						
Other:		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample					SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)							
5		GS-1	0-1					GS-1: (1'): Light brown, fine to coarse SAND and GRAVEL, trace Silt, dry.		1.5			
		GS-2	1-3					GS-2: (3'): Light brown, fine to coarse SAND, some Gravel, little Silt.	1	1.7			
		GS-3	3-5					GS-3: (5'): Light brown, fine to coarse SAND, trace Silt.	2	4.8			
		S-1	5-7	24	10	3 2 2 4	4	S-1: Loose, gray to light brown, GRAVEL and fine to coarse SAND, trace Silt, dry.		4.4			
		S-2	7-9	24	14	3 2 4 4	6	S-2: Loose, gray, GRAVEL and fine to coarse SAND, trace Silt, dry.		4.3		FILL	
		S-3	9-10	13	8	6 27 3/1"	R	S-3: Light brown, fine to coarse SAND, some Gravel, trace Silt, damp.		4.6			
		S-4	10-12	24	7	28 25 33 25	58	S-4: Very dense, light brown, GRAVEL and fine to coarse SAND, little Silt, damp.	4	5.3			
		S-5	12-14	24	3	39 46 25 21	71	S-5: Very dense, light brown, GRAVEL and fine to coarse SAND, little Silt, dry.		5.3			
		S-6	14-16	24	15	11 15 15 19	30	S-6: Dense, light brown, fine to coarse SAND, some Gravel, trace Silt, dry.		5.5	14'		269.5'
		S-7	16-18	24	16	19 22 21 20	43	S-7: Dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, dry.		5.9		SAND/GRAVEL	
								Bottom of boring at 18 feet.	5		18'		265.5'

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. Offset approximately 4 feet East of GZ-110.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV
	3. Boring pre-excavated to 5 feet below ground surface (bgs) with VacMasters System 4600 VacTruck on 9/3/25. Borehole was backfilled with spoils.
	4. Sample S-3 stopped at 10 feet due to ringing, gravel piece observed in tip of spoon, advanced augers to 10 feet before obtaining sample S-4.
	5. Boring terminated at 18 feet bgs. Upon completion, borehole was backfilled with soil cuttings to the ground surface.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.	Boring No.: GZ-113
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TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-114
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors	Type of Rig: ATV	Boring Location: See Plan	H. Datum: See Plan
Foreman: Manlea Thompson	Rig Model: D-70 Turbo	Ground Surface Elev. (ft.): 273	V. Datum: See Plan
Logged By: Kyran Peters	Drilling Method: HSA	Final Boring Depth (ft.): 29	
		Date Start - Finish: 8/19/2025 - 8/19/2025	

Auger/Casing Type: HSA	Sampler Type: Split Spoon	Groundwater Depth (ft.)			
I.D./O.D.(in): 4.25/8	I.D./O.D. (in.): 1.375/2	Date	Time	Water Depth	Casing
Hammer Weight (lb.):	Sampler Hmr Wt (lb): 140 lbs	8/19/25	1200	Dry (29')	27
Hammer Fall (in.):	Sampler Hmr Fall (in): 30"				5 min
Other:	Other: Autohammer				

Depth (ft)	Casing Blows/ Core Rate	No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		S-1	0-2	24	0	7 8	17	S-1: No recovery.	1				
						9 10							
		S-2	2-4	24	2	8 7	15	S-2: Medium dense, brown, GRAVEL, some fine to medium Sand, little Silt, dry.	2	ND			
						8 7							
5		S-3	5-7	24	16	9 7	13	S-3: Medium dense, dark brown, fine to coarse SAND, some Gravel, little Silt, trace Plant Matter, damp.			3.6		
						6 11							
		S-4	7-9	24	8	3 12	30	S-4: Dense, dark brown to brown, fine to coarse SAND, some Gravel, little Silt, trace Roots, moist.			6.7		
						18 18							
10		S-5	10-12	24	15	5 9	18	S-5: Medium dense, dark brown, fine to coarse SAND, some Gravel, little Silt, trace Wood fragments, moist.			9.2	TOPSOIL	
						9 10							
		S-6	12-14	24	11	6 8	20	S-6: Medium dense, dark brown, fine to coarse SAND and GRAVEL, some Silt, trace Wood, moist.			7.2		
						12 15							
15		S-7	15-17	24	22	14 15	26	S-7: Medium dense, dark brown to brown, fine to coarse SAND, some Gravel, some Silt, moist.			5.9		
						11 11							
		S-8	17-19	24	20	13 14	30	S-8: Dense, dark brown, fine to coarse SAND, some Silt, little Gravel, trace Wood fragments, moist.			6.3		
						16 17							
20		S-9	20-22	24	20	10 6	12	S-9: Medium dense, brown, fine to coarse SAND, some Gravel, trace Silt, slightly damp.	3		3.3	19.5' ----- 253.5'	
						6 4							
		S-10	22-24	24	14	10 13	24	S-10: Medium dense, brown, fine to coarse SAND and GRAVEL, trace Silt, dry.			3.1	FILL	
						11 9							
25		S-11	25-27	24	20	7 7	16	S-11: Medium dense, brown, fine to coarse SAND, trace Gravel, trace (-) Silt, dry.			3.1	24.5' ----- 248.5'	
						9 9							
		S-12	27-29	24	18	10 10	23	S-12: Medium dense, brown, fine to coarse SAND, trace Gravel, trace (-) Silt, dry.				SAND	
						13 15							
30								Bottom of boring at 29 feet.	4			29' ----- 244.0'	

- REMARKS**
- Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
 - Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
 - Driller indicated augers advanced with decreased resistance at 19.5 feet below ground surface (bgs).
 - Boring terminated at 29 feet bgs. Upon completion the borehole was backfilled with drilling spoils.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-114

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-115
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors	Type of Rig: ATV	Boring Location: See Plan	H. Datum: See Plan
Foreman: Manlea Thompson	Rig Model: D-70 Turbo	Ground Surface Elev. (ft.): 279	V. Datum: See Plan
Logged By: Jessica Abbazia	Drilling Method: HSA	Final Boring Depth (ft.): 26	
		Date Start - Finish: 8/22/2025 - 8/22/2025	
Auger/Casing Type: HSA	Sampler Type: Split Spoon	Groundwater Depth (ft.)	
I.D./O.D. (in.): 3.25/6.625	I.D./O.D. (in.): 1.375/2	Date	Time
Hammer Weight (lb.): 140	Sampler Hmr Wt (lb): 140 lbs	Water Depth	Casing
Hammer Fall (in.): 30	Sampler Hmr Fall (in): 30"		Stab. Time
Other: Autohammer	Other: Autohammer		

Depth (ft)	Casing Blows/ Core Rate	No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
5		S-1	0-2	24	15	7 8 6 4	14	S-1: Medium dense, dark brown, fine to coarse SAND, some Silt, little Gravel, trace Roots/Wood, moist.	1	5.4			
									2				
									3				
		S-2	5-7	24	15	3 1 2 2	3	S-2: Loose, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots/Wood, moist.		4.9			
10		S-3	10-12	24	15	8 13 13 11	26	S-3: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots/Wood, moist.		6.0		TOPSOIL	
		S-4	12-14	24	22	17 16 13 24	29	S-4: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots/Wood, moist.		6.2			
15		S-5	15-17	24	20	4 9 12 10	21	S-5: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots/Wood, moist.		3.7			
		S-6	17-19	24	22	10 15 14 16	29	S-6: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots/Wood, moist.		4.9			
20		S-7	20-22	24	23	9 9 8 8	17	S-7: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots/Wood, moist.		2.9			
		S-8	22-24	24	17	10 12 10 10	22	S-8: Medium dense, brown, fine to coarse SAND, trace (-) Silt, dry.		0.0	22'		257.0'
25		S-9	24-26	24	17	7 8 9 10	17	S-9: Medium dense, brown, fine to coarse SAND, trace (-) Silt, dry.		0.0		SAND	
											26'		253.0'
								Bottom of boring at 26 feet.	4				
30													

- REMARKS**
- Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
 - Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
 - Borehole advanced using hollow stem auger techniques from 0-24 feet below ground surface (bgs).
 - Borehole terminated at 26 feet bgs. Upon completion, the borehole was backfilled with soil cuttings.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-115

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-116
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors	Type of Rig: ATV	Boring Location: See Plan	H. Datum: See Plan
Foreman: Manlea Thompson	Rig Model: D-70 Turbo	Ground Surface Elev. (ft.): 274	V. Datum: See Plan
Logged By: Jessica Abbazia	Drilling Method: HSA	Final Boring Depth (ft.): 29	
		Date Start - Finish: 8/22/2025 - 8/22/2025	
Auger/Casing Type: HSA	Sampler Type: Split Spoon	Groundwater Depth (ft.)	
I.D./O.D.(in): 3.25/6.625	I.D./O.D. (in.): 1.375/2	Date	Time
Hammer Weight (lb.): 140	Sampler Hmr Wt (lb): 140 lbs	Water Depth	Casing
Hammer Fall (in.): 30	Sampler Hmr Fall (in): 30"		Stab. Time
Other: Autohammer	Other: Autohammer		

Depth (ft)	Casing Blows/ Core Rate	No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
5		S-1	0-2	24	24	5 8 10 11	18	S-1: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.	1	3.4			
									2				
									3				
		S-2	5-7	24	16	9 11 10 9	21	S-2: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0			
		S-3	10-12	24	18	5 6 8 9	14	S-3: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0			
		S-4	12-14	24	22	9 9 8 8	17	S-4: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0			
		S-5	15-17	24	21	5 7 8 9	15	S-5: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0			
		S-6	17-19	24	15	15 17 15 23	32	S-6: Dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0			
		S-7	20-22	24	22	7 6 9 9	15	S-7: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0			
25		S-8	22-24	24	17	10 9 18 16	27	S-8: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0			
		S-9	25-27	24	24	10 28 28 28	56	S-9: (Top 12"): Dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0	26'		248.0'
		S-10	27-29	24	18	23 29 37 35	66	(Bottom 12"): Light brown, fine to coarse SAND, little (+) Silt, dry. S-10: Very dense, light brown, fine to coarse SAND, little (+) Silt, trace Gravel, dry.		0.0		SAND	
30								Bottom of boring at 29 feet.	4		29'		245.0'

- REMARKS**
- Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
 - Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Ion Science Phocheck Tiger organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
 - Borehole advanced using hollow stem auger techniques from 0-29 feet below ground surface (bgs).
 - Borehole terminated at 29 feet bgs. Upon completion, borehole backfilled with soil cuttings.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-116

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-118
SHEET: 1 of 2
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: D-70 Turbo		Ground Surface Elev. (ft.): 272.5			V. Datum: See Plan	
Logged By: Jessica Abbazia		Drilling Method: HSA		Final Boring Depth (ft.): 37				
				Date Start - Finish: 8/22/2025 - 8/22/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6.625		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.): 140		Sampler Hmr Wt (lb): 140 lbs		8/22/25	0315	Dry (37")	35	10 min
Hammer Fall (in.): 30		Sampler Hmr Fall (in): 30"						
Other: Autohammer		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample					SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)							
5		S-1	0-2	24	18	6 8 9 9	17	S-1: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.	1	0.0			
									2				
									3				
10		S-2	5-7	24	17	9 7 6 6	13	S-2: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0			
15		S-3	10-12	24	19	6 5 6 2	11	S-3: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0		TOPSOIL	
20		S-4	12-14	24	24	9 11 11 10	22	S-4: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0			
25		S-5	15-17	24	24	3 7 8 9	15	S-5: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0			
30		S-6	17-19	24	24	17 12 13 14	25	S-6: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, moist.		0.0			
		S-7	20-22	24	20	8 7 8 7	15	S-7: Medium dense, light brown, fine to coarse SAND, some Gravel, trace Silt, dry.		0.0			
		S-8	22-24	24	22	16 20 20 15	40	S-8: Dense, light brown, fine to coarse SAND, some Gravel, trace Silt, dry.		0.0			
		S-9	25-27	24	22	11 18 32 26	50	S-9: Very dense, light brown, fine to coarse SAND, some Gravel, trace Silt, dry.		0.0		SAND/GRAVEL	

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000 meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Borehole advanced using hollow stem auger techniques from 0-35 feet below ground surface (bgs).

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.	Boring No.: GZ-118
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TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-118
SHEET: 2 of 2
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Depth (ft)	Casing Blows/ Core Rate	Sample						Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value						
35		S-10	30-32	24	22	6 10 20 27	30	S-10: Dense, light brown, fine to coarse SAND, some Gravel, trace Silt, dry.		0.0		SAND/GRAVEL	
		S-11	35-37	24	21	13 13 18 13	31	S-11: Dense, light brown, fine to coarse SAND, some Gravel, trace Silt, dry.		0.0			
		Bottom of boring at 37 feet.							4		37		235.5'
40													
45													
50													
55													
60													
65													

REMARKS

4. Borehole terminated at 37 feet bgs. Upon completion, borehole backfilled with soil cuttings.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-118

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-119
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: D-70 Turbo		Ground Surface Elev. (ft.): 270			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 21				
				Date Start - Finish: 8/25/2025 - 8/25/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6.625		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.): 140		Sampler Hmr Wt (lb): 140 lbs		8/25/25	1325	Dry (21')	19	15 min
Hammer Fall (in.): 30		Sampler Hmr Fall (in): 30"						
Other: Autohammer		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample				Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)								
5		S-1	0-2	24	22	2 1 2 2	3	S-1: (Top 9"): Brown, fine to medium SAND, some Silt, trace Roots, dry.	1	2.5	0.8'	TOPSOIL	269.2'
		S-2	2-4	24	15	3 1 2 2	3	(Bottom 13"): Very loose, light brown, fine to medium SAND, little Silt, trace Roots, dry.	2	4.5		SAND	
		S-3	4-6	24	17	8 8 11 11	19	S-2: Very loose, light brown, fine to medium SAND, trace Silt, trace Roots, dry.		4.7	4'		266.0'
								S-3: Medium dense, light brown, fine to coarse SAND and GRAVEL, little Silt, dry.					
		S-4	9-11	24	11	8 8 15 10	23	S-4: Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, dry.		4.5		SAND/GRAVEL	
		S-5	14-16	24	22	7 11 12 11	23	S-5: Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, dry. Soils appeared layered.		4.5			
20		S-6	19-21	24	18	13 12 12 12	24	S-6: (Top 11"): Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, dry.		4.2	19.9'		250.1'
								(Bottom 7"): Light brown to gray, fine to medium SAND, some Silt, little Silty Clay, moist.		4.8	21'	SILTY SAND	249.0'
								Bottom of boring at 21 feet.	3				

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000 meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Upon completion, borehole was backfilled with drill cuttings to ground surface level.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-119

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-120
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors	Type of Rig: ATV	Boring Location: See Plan	H. Datum: See Plan
Foreman: Manlea Thompson	Rig Model: D-70 Turbo	Ground Surface Elev. (ft.): 277.5	V. Datum: See Plan
Logged By: Kyran Peters	Drilling Method: HSA	Final Boring Depth (ft.): 12	
		Date Start - Finish: 8/25/2025 - 8/25/2025	
Auger/Casing Type: HSA	Sampler Type: Split Spoon	Groundwater Depth (ft.)	
I.D./O.D. (in.): 3.25/6.625	I.D./O.D. (in.): 1.375/2	Date	Time
Hammer Weight (lb.): 140	Sampler Hmr Wt (lb): 140 lbs	Water Depth	Casing
Hammer Fall (in.): 30	Sampler Hmr Fall (in): 30"		Stab. Time
Other: Autohammer	Other: Autohammer		

Depth (ft)	Casing Blows/ Core Rate	Sample					SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)							
5		S-1	0-2	24	18	6 10	20	S-1: (Top 5"): Brown, fine to coarse SAND and GRAVEL, little Silt, trace Roots, dry.	1	4.6	0.4'	TOPSOIL	277.1'
						10 7		(Bottom 13"): Medium dense, light brown, fine to coarse SAND and GRAVEL, little Silt, trace Roots, dry.	2	4.9			
		S-2	2-4	24	17	5 6	13	S-2: Medium dense, light brown, fine to coarse SAND, little Gravel, trace Silt, trace Roots, dry.					
						7 7							
10		S-3	5-7	24	18	9 7	15	S-3: Medium dense, light brown, fine to coarse SAND and GRAVEL, little Silt, dry.		5.1		SAND/GRAVEL	
						8 13							
15		S-4	10-12	24	16	8 8	20	S-4: Medium dense, light brown, fine to coarse SAND and GRAVEL, little Silt, dry.		4.3			
						12 12							
20								Bottom of boring at 12 feet.	3		12'		265.5'
25													
30													

REMARKS	- Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. - Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000 meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv). - Upon completion, borehole was backfilled with drill cuttings to ground surface level.
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See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-120

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-121
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: D-70 Turbo		Ground Surface Elev. (ft.): 269			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 22				
				Date Start - Finish: 9/4/2025 - 9/4/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6.625		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.): 140		Sampler Hmr Wt (lb): 140 lbs		9/4/25	0945	Dry (22')	20	15 min
Hammer Fall (in.): 30		Sampler Hmr Fall (in): 30"						
Other: Autohammer		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample					SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)							
5		S-1	0-2	24	18	3 3 8 6	11	S-1: (Top 6"): Brown, fine to medium SAND, little Silt, little Gravel, trace Roots, dry.	1	2.3	0.8'	TOPSOIL	268.2'
		S-2	2-4	24	5	5 4 5 7	9	(Bottom 12"): Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, dry.	2	1.7		FILL	
		S-3	4-6	24	15	6 5 4 5	9	S-2: Loose, light brown, fine to coarse SAND, some Gravel, little Silt, dry.		2.8	4'		265.0'
		S-4	6-8	24	9	7 9 9 15	18	S-3: Loose, light brown, fine to coarse SAND, some Gravel, trace Silt, dry.		1.8			
								S-4: Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, dry.					
		S-5	10-12	24	16	7 7 8 9	15	S-5: Medium dense, light brown, fine to coarse SAND, some Gravel, trace Silt, damp.		1.5			
15		S-6	15-17	24	22	7 9 14 27	23	S-6: (Top 20"): Medium dense, light brown, fine to medium SAND and Clayey SILT, damp. Stratified deposit.		3.5	13.5'	SAND/CLAYEY SILT	255.5'
								(Bottom 2"): Light brown to gray, GRAVEL, some Clayey Silt, some fine to medium Sand, damp.	3		17'		252.0'
20		S-7	20-22	24	19	8 9 12 14	21	S-7: Medium dense, light brown, fine to coarse SAND, some Gravel, little Silt, damp.		3.6		SAND/GRAVEL	
											22'		247.0'
								Bottom of boring at 22 feet.	4				

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. 25' East of staked location.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000 meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Rig chatter while advancing augers from 17 feet to 18 feet below ground surface (bgs) possible indicating a stratum change.
	4. Borehole terminated at 22 feet bgs after reaching target depth. Upon completion the borehole was backfilled with soil cuttings to ground surface.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.	Boring No.: GZ-121
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TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-122
SHEET: 1 of 2
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: D-70 Turbo		Ground Surface Elev. (ft.): 270			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 53.8				
				Date Start - Finish: 8/27/2025 - 8/27/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6.625		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.): 140		Sampler Hmr Wt (lb): 140 lbs		8/28/25	1030	31.9	50	15 min
Hammer Fall (in.): 30		Sampler Hmr Fall (in): 30"		8/28/25	1045	33.8	50	30 min
Other: Autohammer		Other: Autohammer		8/28/25	1120	37.2	45	65 min

Depth (ft)	Casing Blows/ Core Rate	Sample					Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)						
5		S-1	0-2	24	13	4 28 6 7	34	S-1: Dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Roots, damp.	1	6.2	TOPSOIL	
		S-2	2-4	24	11	8 6 5 53	11	S-2: (Top 5"): Dark brown, GRAVEL, some fine to coarse Sand, some Silt, trace Roots, damp. (Bottom 6"): Bituminous ASPHALT pavement.	2	5.3	2.4' 267.6'	BURIED ASPHALT PAVEMENT
		S-3	4-6	24	19	20 26 23 19	49	S-3: Dense, light brown, GRAVEL and fine to coarse SAND, trace Silt, dry.		5.0		
		S-4	6-8	24	16	12 15 14 9	29	S-4: Medium dense, light brown, fine to coarse SAND, some Gravel, little Silt, dry.		5.3		FILL
		S-5	8-10	24	16	4 3 5 8	8	S-5: (Top 11"): Loose, light brown, fine to coarse SAND, some Gravel, little Silt, trace Roots, dry.		5.9	8.9' 261.1'	
10		S-6	10-12	24	14	7 7 12 13	19	(Bottom 5"): Light brown, fine to coarse SAND, little Gravel, trace Silt, damp. S-6: (Top 5") Light brown, fine to coarse SAND, little Gravel, trace Silt, damp. (Bottom 9"): Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, damp.		5.7	10.4' 259.6'	POSSIBLE FILL
		S-7	15-17	24	21	5 7 7 7	14	S-7: Medium dense, light brown, fine to medium SAND, trace Silt.		6.1	13.5' 256.5'	SAND/GRAVEL
20		S-8	20-22	24	18	6 6 6 7	12	S-8: Medium dense, light brown, fine to medium SAND, trace Silt, damp.		6.2		SAND
		S-9	25-27	24	22	5 4 7 17	11	S-9: (Top 9"): Light brown, fine to medium SAND, some Silt, damp. (Middle 7"): Light brown, Clayey SILT, some fine to medium Sand, moist. (Bottom 6"): Light brown, fine to medium SAND, some Clayey Silt, little Gravel, damp.		3.7	25.8' 244.2'	CLAYEY SILT
25												
30												

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000 meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-122

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-122
SHEET: 2 of 2
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Depth (ft)	Casing Blows/ Core Rate	Sample						Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value						
35		S-10	30-32	24	22	8 10 29 34	39	S-10: Dense, light brown, fine to coarse SAND and GRAVEL, little Silt, damp.		7.2			
		S-11	35-37	24	18	13 16 19 22	35	S-11: Dense, light brown, fine to coarse SAND and GRAVEL, little Silt, damp.		6.7		SAND/GRAVEL	
40		S-12	40-42	24	15	5 7 7 7	14	S-12: Medium dense, light brown, fine to coarse SAND, some Gravel, little Silt, wet.		7.1			
45		S-13	45-47	24	15	5 8 13 19	21	S-13: Medium dense, olive brown, GRAVEL, some fine to medium Sand, some Clayey Silt, wet.	3	5.2		GLACIAL TILL	
50		S-14	50-52	24	8	4 4 5 5	9	S-14: Loose, olive brown, fine to medium SAND, some Gravel, little Clayey Silt, wet.		7.4			
		S-15	52- 53.8	22	22	10 11 16 50/4	27	S-15: Very dense, olive brown, fine to medium SAND, some Gravel, little Clayey Silt.	4	7.4			
55								Bottom of boring at 53.8 feet.	5		53.8'		216.2'

REMARKS

- A positive head of water was not added and maintained within the augers prior to obtaining samples S-13 and S-14.
- A positive head of water was added and maintained within the augers prior to obtaining sample S-15.
- Boring terminated at 53.8 feet below ground surface (bgs) after reaching target depth. Upon completion, the borehole was backfilled with soil cuttings to the ground surface.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-122

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-124
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: D-70 Turbo		Ground Surface Elev. (ft.): 268.5			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 22				
				Date Start - Finish: 8/25/2025 - 8/25/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6.625		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.): 140		Sampler Hmr Wt (lb): 140 lbs		8/25/25	1038	Dry (22')	20	20 min
Hammer Fall (in.): 30		Sampler Hmr Fall (in): 30"						
Other: Autohammer		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample						Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value						
5		S-1	0-2	24	17	2 1 1 2	2	S-1: (Top 2"): Brown, fine to medium SAND, some Silt, trace Roots, dry.	1	5.4	0.2'	TOPSOIL	268.3'
		S-2	2-4	24	15	3 3 5 7	8	(Bottom 15"): Very loose, light brown, fine to coarse SAND, some Silt, trace (-) Roots, dry.	2	5.3		SAND	
								S-2: Loose, light brown, fine to coarse SAND, some Silt, dry.	3		4.5'		264.0'
		S-3	5-7	24	17	25 20 31 27	51	S-3: Very dense, light brown, GRAVEL and fine to coarse SAND, some Silt, dry.		2.3		SAND/GRAVEL	
		S-4	10-12	24	20	12 12 11 13	23	S-4: Medium dense, light brown, fine to coarse SAND and GRAVEL, little Silt, dry.		5.2			
		S-5	15-17	24	24	9 12 12 12	24	S-5: Medium dense, light brown, fine to coarse SAND, trace Silt, moist.		5.3	13.5'		255.0'
20		S-6	20-22	24	18	13 17 15 16	32	S-6: Dense, light brown, GRAVEL and fine to coarse SAND, trace Silt, moist.		5.4	18.5'		250.0'
											22'		246.5'
								Bottom of boring at 22 feet.	4				

- REMARKS**
- Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. As drilled location 9 feet west of stake.
 - Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000 meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
 - Intense rig chatter advancing augers from 9 to 10 feet below ground surface (bgs), possibly indicating the presence of cobbles and boulders.
 - Boring terminated at 22 feet bgs. Upon completion, borehole was backfilled with soil cutting to the ground surface.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-124

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-125
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: D-70 Turbo		Ground Surface Elev. (ft.): 269			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 21				
				Date Start - Finish: 8/26/2025 - 8/26/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6.625		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.): 140		Sampler Hmr Wt (lb): 140 lbs		8/26/25	1455	Dry (21')	19	15 min
Hammer Fall (in.): 30		Sampler Hmr Fall (in): 30"						
Other: Autohammer		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample					SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)							
5		S-1	0-2	24	21	10 18 25 27	43	S-1: (Top 2"): Brown, fine to coarse SAND, little Silt, trace Roots, dry. (Bottom 19"): Dense, light brown, fine to coarse SAND, some Gravel, little Silt, dry	1	ND	0.2'	TOPSOIL	268.8'
		S-2	2-4	24	12	24 18 17 23	35	S-2: Dense, light brown, fine to coarse SAND, some Gravel, some Silt, dry.	2	ND		FILL	
		S-3	4-6	24	17	7 6 6 7	12	S-3: Medium dense, light brown, fine to coarse SAND, trace Gravel, trace (-) Silt, damp.		ND	4'		265.0'
		S-4	9-11	24	19	10 7 10 10	17	S-4: Medium dense, light brown, fine to coarse SAND, little Gravel, little Silt, damp. Silt seam at approximately 15- to 17-inches from the top of recovery.		ND		SAND	
10		S-5	14-16	24	16	7 14 19 17	33	S-5: Dense, light brown, fine to coarse SAND, some Gravel, trace Silt, damp.		ND	12.5'		256.5'
15													
		S-6	19-21	24	17	7 10 12 11	22	S-6: Medium dense, light brown, fine to coarse SAND, some Gravel, trace Silt, damp.		ND		SAND/GRAVEL	
20													
25													
30													
								Bottom of boring at 21 feet.	3		21'		248.0'

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000 meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Boring terminated at 21 feet below ground surface (bgs) after reaching target depth. Upon completion, borehole was backfilled with soil cuttings to the ground surface.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-125

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-126
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: D-70 Turbo		Ground Surface Elev. (ft.): 269			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 22				
				Date Start - Finish: 8/26/2025 - 8/26/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6.625		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.): 140		Sampler Hmr Wt (lb): 140 lbs		8/26/25	1310	Dry (22")	20	15 min
Hammer Fall (in.): 30		Sampler Hmr Fall (in): 30"						
Other: Autohammer		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample						Sample Description and Identification (Modified Burmister Procedure)	Remarks	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value						
5		S-1	0-2	24	19	6 10 11 8	21	S-1: (Top 6"): Brown, fine to coarse SAND, some Gravel, little silt, trace Roots, dry.	1	ND	0.6'	TOPSOIL	268.4'
		S-2	2-4	24	14	8 8 7 21	15	(Bottom 13"): Medium dense, light brown, fine to coarse SAND and GRAVEL, little Silt, dry. S-2: Medium dense, light brown, fine to coarse SAND, some Gravel, little Silt, dry.	2	ND	2'	FILL	267.0'
		S-3	5-7	24	14	7 7 9 9	16	S-3: Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, dry.		ND			
		S-4	10-12	24	16	8 16 17 13	33	S-4: Dense, light brown, fine to coarse SAND, some Gravel, trace Silt, damp.		ND			
		S-5	15-17	24	18	7 18 20 15	38	S-5: (Top 6"): Gray, Clayey SILT, some fine to medium Sand, moist. (Bottom 12"): Dense, light brown, fine to coarse SAND and GRAVEL, little Silt , damp.		ND	13.5'	CLAYEY SILT	255.5'
		S-6	20-22	24	18	14 15 17 16	32	S-6: Dense, light brown, fine to coarse SAND and GRAVEL, little Silt, moist.		ND	15.5'		253.5'
								Bottom of boring at 22 feet.	3		22'		247.0'
25													
30													

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000 meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Boring terminated at 22 feet below ground surface (bgs). Upon completion, the borehole was backfilled with soil cuttings to ground surface.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-126

TEST BORING LOG



GZA
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Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-127
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: D-70 Turbo		Ground Surface Elev. (ft.): 269			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 22				
				Date Start - Finish: 9/2/2025 - 9/2/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6.625		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.): 140		Sampler Hmr Wt (lb): 140 lbs		9/2/25	1145	Dry (22')	20	20 min
Hammer Fall (in.): 30		Sampler Hmr Fall (in): 30"						
Other: Autohammer		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample				Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)								
5		S-1	0-1.8	21	15	5 12 19 50/3"	31	S-1: (Top 3"): Brown, fine to medium SAND, some Silt, trace Roots, dry. (Bottom 12"): Very dense, light brown, fine to medium SAND, some Silt, little Gravel, dry.	1	5.2	0.3'	TOPSOIL	268.7'
											1.8'	FILL	267.2'
		S-2	3-5	24	16	6 6 8 8	14	S-2: (Top 8"): Medium dense, light brown, fine to medium SAND and GRAVEL, little Silt, dry.	2	0.1	3'	POSSIBLE BOULDER	266.0'
											3.7'	FILL	265.3'
		S-3	5-7	24	17	5 6 7 8	13	(Bottom 8"): Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, dry. S-3: Medium dense, light brown, fine to medium SAND, trace (-) Silt, dry.	3	4.1	5'	SAND/GRAVEL	264.0'
10		S-4	10-12	24	19	5 5 7 7	12	S-4: Medium dense, light brown, fine to medium SAND, trace (-) Silt, dry.		0.7		SAND	
15		S-5	15-17	24	21	5 6 6 7	12	S-5: Medium dense, light brown, fine to medium SAND, trace (-) Silt, damp. Observed iron oxide staining 13 inches from top of recovery.		ND			
20		S-6	20-22	24	24	3 3 4 4	7	S-6: Medium stiff, light brown, Clayey SILT, some fine to medium Sand, damp.		ND			
25								Bottom of boring at 22 feet.	4		22'	CLAYEY SILT	247.0'
30													

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Possible boulder from 1.8 feet to 3 feet below ground surface (bgs). Advanced with auger to 3 feet bgs.
	4. Boring terminated at 22 feet bgs after reaching target depth. Upon completion, the borehole was backfilled with soil cuttings to the ground surface.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.	Boring No.: GZ-127
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TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-128
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors	Type of Rig: ATV	Boring Location: See Plan	H. Datum: See Plan
Foreman: Manlea Thompson	Rig Model: D-70 Turbo	Ground Surface Elev. (ft.): 279.5	V. Datum: See Plan
Logged By: Kyran Peters	Drilling Method: HSA	Final Boring Depth (ft.): 16	
		Date Start - Finish: 8/20/2025 - 8/20/2025	
Auger/Casing Type: HSA	Sampler Type: Split Spoon	Groundwater Depth (ft.)	
I.D./O.D. (in.): 3.25/6.625	I.D./O.D. (in.): 1.375/2	Date	Time
Hammer Weight (lb.): 140	Sampler Hmr Wt (lb): 140 lbs	Water Depth	Casing
Hammer Fall (in.): 30	Sampler Hmr Fall (in): 30"		Stab. Time
Other: Autohammer	Other: Autohammer		

Depth (ft)	Casing Blows/ Core Rate	Sample No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
5		S-1	0-2	24	6	9 25	38	S-1: Medium dense, light brown, fine to coarse SAND, some Silt, little Gravel, moist.	1	7.0			
		S-2	2-4	24	5	8 9	19	S-2: Medium dense, brown, fine to coarse SAND, some Silt, little Gravel, trace Roots, moist.	2	6.1		TOPSOIL	
						10 10							
		S-3	5-7	24	7	3 2	4	S-3: Loose, brown to light brown, fine to coarse SAND, some Gravel, little Silt, moist.		5.2	4.5'		275.0'
		S-4	7-9	24	7	5 4	9	S-4: Loose, light brown, fine to coarse SAND and GRAVEL, little Silt, moist.		5.7			
						5 6							
		S-5	10-12	24	13	5 5	13	S-5: Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, moist.		5.4			
10						8 12							
		S-6	12-14	24	16	13 13	27	S-6: Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, moist.		5.7			
						14 14							
15		S-7	14-16	24	18	14 12	24	S-7: Medium dense, light brown, fine to medium SAND, trace (-) Silt, dry.		5.5	14'		265.5'
						12 12						SAND	
											16'		263.5'
								Bottom of boring at 16 feet.					
20													
25													
30									3				

- REMARKS**
- Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
 - Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
 - Borehole terminated at 16 feet below ground surface (bgs). Upon completion, the borehole was backfilled with soil cuttings.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-128

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-129
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: D-70 Turbo		Ground Surface Elev. (ft.): 281			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 22				
				Date Start - Finish: 8/20/2025 - 8/20/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D. (in.): 3.25/6.625		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.): 140		Sampler Hmr Wt (lb): 140 lbs		8/20/25	1310	Dry (22')	20	20 min
Hammer Fall (in.): 30		Sampler Hmr Fall (in): 30"						
Other: Autohammer		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample				Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)								
5		S-1	0-2	24	19	6 14 16 15	30	S-1: (Top 1"): Dark brown, fine to coarse SAND, some Silt, trace Roots, dry. (Bottom 18"): Dense, light brown to brown, fine to coarse SAND, some Gravel, little Silt, dry.	1	3.1	0.1'	TOPSOIL	280.9'
		S-2	2-4	24	17	19 17 18 21	35	S-2: Dense, light brown to brown, fine to coarse SAND and GRAVEL, little Silt, moist.	2	2.6			
		S-3	5-7	24	9	9 14 19 22	33	S-3: Dense, light brown, fine to coarse SAND and GRAVEL, little Silt, moist.		5.6		FILL	
		S-4	10-12	24	10	4 2 4 5	6	S-4: (Top 6"): Loose, light brown, fine to coarse SAND, some Gravel, some Silt, moist.		5.6	10.5'		270.5'
		S-5	12-14	24	20	5 7 9 10	16	(Bottom 4"): Loose, dark brown fine to coarse SAND, some Gravel, some Silt, moist. S-5: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, moist.		7.2		BURIED TOPSOIL	
		S-6	15-17	24	19	10 20 17 17	37	S-6: (Top 9"): Dark brown, fine to coarse SAND, some Gravel, some Silt, moist.		8.8	15.8'		265.2'
		S-7	17-19	24	14	17 14 15 15	29	(Bottom 10"): Light brown, fine to coarse SAND, little Gravel, trace Silt, dry. S-7: Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, dry.		5.9		SAND/GRAVEL	
		S-8	20-22	24	16	10 8 10 14	18	S-8: Medium dense, light brown, fine to coarse SAND and GRAVEL, trace Silt, dry.	3	5.8	22'		259.0'
								Bottom of boring at 22 feet.					

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Borehole terminated at 22 feet below ground surface (bgs). Upon completion, the borehole was backfilled with soil cuttings.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-129

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-130
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors	Type of Rig: ATV	Boring Location: See Plan	H. Datum: See Plan
Foreman: Manlea Thompson	Rig Model: D-70 Turbo	Ground Surface Elev. (ft.): 270	V. Datum: See Plan
Logged By: Kyran Peters	Drilling Method: HSA	Final Boring Depth (ft.): 19	
		Date Start - Finish: 8/20/2025 - 8/21/2025	
Auger/Casing Type: HSA	Sampler Type: Split Spoon	Groundwater Depth (ft.)	
I.D./O.D. (in.): 3.25/6.625	I.D./O.D. (in.): 1.375/2	Date	Time
Hammer Weight (lb.): 140	Sampler Hmr Wt (lb): 140 lbs	Water Depth	Casing
Hammer Fall (in.): 30	Sampler Hmr Fall (in): 30"		Stab. Time
Other: Autohammer	Other: Autohammer		

Depth (ft)	Casing Blows/ Core Rate	No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
5		S-1	5-7	24	19	6 5 4 7	9	S-1: Loose, dark brown, fine to coarse SAND, some Silt, little Gravel, trace Wood, moist.	1		7.3		
		S-2	7-9	24	20	10 10 9 7	19	S-2: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Wood, damp.	2		5.8	TOPSOIL	
10		S-3	10-12	24	24	9 10 10 13	20	S-3: Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Wood, damp.			5.5		
		S-4	12-14	24	22	17 20 23 20	43	S-4: Dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Wood, damp.			5.8		
15		S-5	15-17	24	18	9 12 16 20	28	S-5: (Top 15"): Medium dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Wood, damp.			5.4	16.3'	253.7'
		S-6	17-19	24	17	22 24 28 28	52	(Bottom 3"): Light brown, fine to coarse SAND, some Gravel, trace Silt, dry.			5.0	FILL	252.0'
								S-6: (Top 11"): Very dense, brown, fine to coarse SAND and GRAVEL, little Silt, damp.				18'	252.0'
20								(Bottom 6"): Brown, fine to coarse SAND and GRAVEL, little Silt, dry.				19'	SAND/GRAVEL 251.0'
								Bottom of boring at 19 feet.	3				
25													
30													

REMARKS	- Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. - Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv). - Borehole terminated at 19 feet below ground surface (bgs). Upon completion, the borehole was backfilled with soil cuttings.
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See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-130

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-131
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors	Type of Rig: ATV	Boring Location: See Plan	H. Datum: See Plan
Foreman: Manlea Thompson	Rig Model: D-70 Turbo	Ground Surface Elev. (ft.): 272	V. Datum: See Plan
Logged By: Kyran Peters	Drilling Method: HSA	Final Boring Depth (ft.): 19	
		Date Start - Finish: 8/21/2025 - 8/21/2025	
Auger/Casing Type: HSA	Sampler Type: Split Spoon	Groundwater Depth (ft.)	
I.D./O.D.(in.): 3.25/6.625	I.D./O.D. (in.): 1.375/2	Date	Time
Hammer Weight (lb.): 140	Sampler Hmr Wt (lb): 140 lbs	Water Depth	Casing
Hammer Fall (in.): 30	Sampler Hmr Fall (in): 30"		Stab. Time
Other: Autohammer	Other: Autohammer		

Depth (ft)	Casing Blows/ Core Rate	No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
5		S-1	5-7	24	19	9 11 13 11	24	S-1: Medium dense, dark brown to light brown, fine to coarse SAND, some Gravel, some Silt, trace Wood, damp.		6.2			
		S-2	7-9	24	19	19 22 19 14	41	S-2: Dense, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Wood, damp.		4.4		TOPSOIL	
10		S-3	10-12	24	17	12 10 9 9	19	S-3: Medium dense, dark brown, fine to coarse SAND and GRAVEL, some Silt, trace Wood, damp.		5.6			
		S-4	12-14	24	20	14 21 15 8	36	S-4: Dense, dark brown, fine to coarse SAND and GRAVEL, some Silt.		6.0			
15		S-5	15-17	24	22	8 9 12 13	21	S-5: (Top 14"): Medium dense, dark brown, fine to coarse SAND and GRAVEL, some Silt, trace Wood, damp.		3.3		16.25'	255.8'
		S-6	17-19	24	21	15 12 12 11	24	(Bottom 8"): Light brown, fine to coarse SAND, little Gravel, trace Silt, damp.		4.7		18.25'	253.8'
								S-6: (Top 13"): Medium dense, light brown, fine to coarse SAND and GRAVEL, little Silt, trace (-) Roots, damp.				19'	SAND 253.0'
20								(Bottom 8"): Light brown, fine to coarse SAND, trace Gravel, trace (-) Silt, dry.	4				
								Bottom of boring at 19 feet.					
25													
30													

REMARKS	- Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. As drilled location 9 feet west of stake. - Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv). - Advanced boring to 5 feet below ground surface (bgs) with auger prior to sampling. - Boring terminated at 19 feet below ground surface (bgs) after reaching target depth. Upon completion, borehole was backfilled with soil cuttings to the ground surface.
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See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-131

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-132
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: D-70 Turbo		Ground Surface Elev. (ft.): 268.5			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 19				
				Date Start - Finish: 8/21/2025 - 8/21/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in.): 3.25/6.625		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.): 140		Sampler Hmr Wt (lb): 140 lbs		8/21/25	1340	Dry (16')	15	30 min
Hammer Fall (in.): 30		Sampler Hmr Fall (in): 30"						
Other: Autohammer		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample						Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value						
5													
		S-1	5-7	24	17	2 2 4 8	6	S-1: Loose, dark brown, fine to coarse SAND, some Gravel, some Silt, trace Wood, damp.			7.3	TOPSOIL	
		S-2	7-9	24	15	14 16 30 22	46	S-2: Dense, dark brown, fine to coarse SAND and GRAVEL, some Silt, trace Wood, damp.			7.4		
		S-3	10-12	24	19	10 11 11 9	22	S-3: Medium dense, dark brown, fine to coarse SAND and GRAVEL, some Silt, trace Wood, damp.			5.7		
		S-4	12-14	24	19	15 33 20 16	53	S-4: Very dense, dark brown, fine to coarse SAND and GRAVEL, some Silt, trace Wood, damp.			6.8		
		S-5	15-17	24	20	7 10 10 9	20	S-5: Medium dense, light brown, fine to coarse SAND, some Gravel, trace Silt, dry.			5.7	SAND/GRAVEL	
		S-6	17-19	24	14	9 12 11 10	23	S-6: Medium dense. light brown, fine to coarse SAND, little Gravel, trace (-) Silt, dry.			5.5		
20								Bottom of boring at 19 feet.	4		19'		249.5'
25													
30													

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. As drilled location 9 feet west of stake.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Advanced boring to 5 feet below ground surface (bgs) with auger prior to sampling.
	4. Boring terminated at 19 feet below ground surface (bgs) after reaching target depth. Upon completion, borehole was backfilled with soil cuttings to the ground surface.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Boring No.:
GZ-132

TEST BORING LOG



GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Commonwealth Fusion Systems
Proposed CFS-4 Development
Hospital Road
Devens, MA

BORING NO.: GZ-133
SHEET: 1 of 1
PROJECT NO: 01.0174955.30
REVIEWED BY: MJO

Drilling Co.: New England Boring Contractors		Type of Rig: ATV		Boring Location: See Plan			H. Datum: See Plan	
Foreman: Manlea Thompson		Rig Model: D-70 Turbo		Ground Surface Elev. (ft.): 266			V. Datum: See Plan	
Logged By: Kyran Peters		Drilling Method: HSA		Final Boring Depth (ft.): 12				
				Date Start - Finish: 8/21/2025 - 8/21/2025				
Auger/Casing Type: HSA		Sampler Type: Split Spoon		Groundwater Depth (ft.)				
I.D./O.D.(in): 3.25/6.625		I.D./O.D. (in.): 1.375/2		Date	Time	Water Depth	Casing	Stab. Time
Hammer Weight (lb.): 140		Sampler Hmr Wt (lb): 140 lbs		8/21/25	1500	Dry (12')	10	10 min
Hammer Fall (in.): 30		Sampler Hmr Fall (in): 30"						
Other: Autohammer		Other: Autohammer						

Depth (ft)	Casing Blows/ Core Rate	Sample					SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Depth (ft.)	Stratum Description	Elev. (ft.)
		No.	Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)							
5		S-1	5-7	24	13	2 4 6 8	10	S-1: Medium dense, light brown, fine to coarse SAND and GRAVEL, little Silt, dry.		4.0		FILL	
10		S-2	10-12	24	18	3 4 5 5	9	S-2: Loose, light brown, fine to medium SAND, trace (-) Silt, dry.		4.9		SAND	
15								Bottom of boring at 12 feet.			12'		254.0'
20									5				
25													
30													

REMARKS	1. Ground surface elevation estimated from topography depicted on an AutoCAD file prepared by VHB titled "CFS Composite Existing Surface -polylines," transmitted to GZA on September 16, 2024. As drilled location 9 feet west of stake.
	2. Field testing results represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using a Honeywell MiniRAE3000+ organic vapor meter equipped with a photoionization detector (PID) and 10.6eV lamp. Results in parts per million by volume (ppmv). ND indicates nothing detected (<0.1 ppmv).
	3. Advanced boring to 5 feet below ground surface (bgs) with auger prior to sampling.
	4. Driller noted lower resistance advancing augers 7 to 10 feet below ground surface, possible indicating a change in stratum.
	5. Boring terminated at 12 feet below ground surface (bgs) after reaching target depth. Upon completion, borehole was backfilled with soil cuttings to the ground surface.

See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.	Boring No.: GZ-133
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APPENDIX C

RELEVANT PREVIOUS (2020 & 2024) AND RECENT (2025) LABORATORY TEST RESULTS



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APPENDIX C.1

2020 TRC GEOTECHNICAL LABORATORY TEST RESULTS



SUMMARY OF LABORATORY TEST DATA

Project Name: CFS – Building #2
 Client Name: Commonwealth Fusion Systems
 TRC Project #: 349440.0004

SAMPLE IDENTIFICATION			USCS (GROUP SYMBOL)	Moisture Content (%)	GRAIN SIZE DISTRIBUTION				PLASTICITY				Maximum Dry Density (pcf)	Optimum Moisture Content (%)	CALIFORNIA BEARING CAPACITY		Organic Content (%)
Boring #	Sample #	Depth (ft)			Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Liquidity Index (%)			Percent Compaction (%)	CBR (%) at 0.10 in.	
B-41	S-6 to S-7	15.0-27.0	SM	9.1	24.4	65.0	10.6		-	-	-	-	-	-	-	-	-
B-42	S-1 to S-3	0.0-6.0	SM	3.0	18.9	68.3	4.5	8.3	-	-	-	-	-	-	-	-	-
B-42	S-6	15.0-17.0	ML	20.5	0.0	44.4	55.6		-	-	-	-	-	-	-	-	-
B-42	S-7	20.0-22.0	SM	8.8	21.0	64.0	15.0		-	-	-	-	-	-	-	-	-
B-43	S-1 to S-4	0.0-8.0	SM	3.4	30.5	50.9	14.8	3.8	-	-	-	-	-	-	-	-	-
B-43	S-5	8.0-10.0	SM	10.3	2.0	55.9	38.2	3.9	NP	NP	NP	-	-	-	-	-	-
B-43	S-6 to S-9	15.0-32.0	SP-SM	14.8	7.4	82.5	10.1		-	-	-	-	-	-	-	-	-
B-44	S-1 to S-3	0.0-6.0	SM	2.8	21.7	59.8	10.2	8.3	-	-	-	-	-	-	-	-	-
B-44	S-4	6.0-8.0	SW-SM	3.7	21.1	70.1	8.8		-	-	-	-	-	-	-	-	-

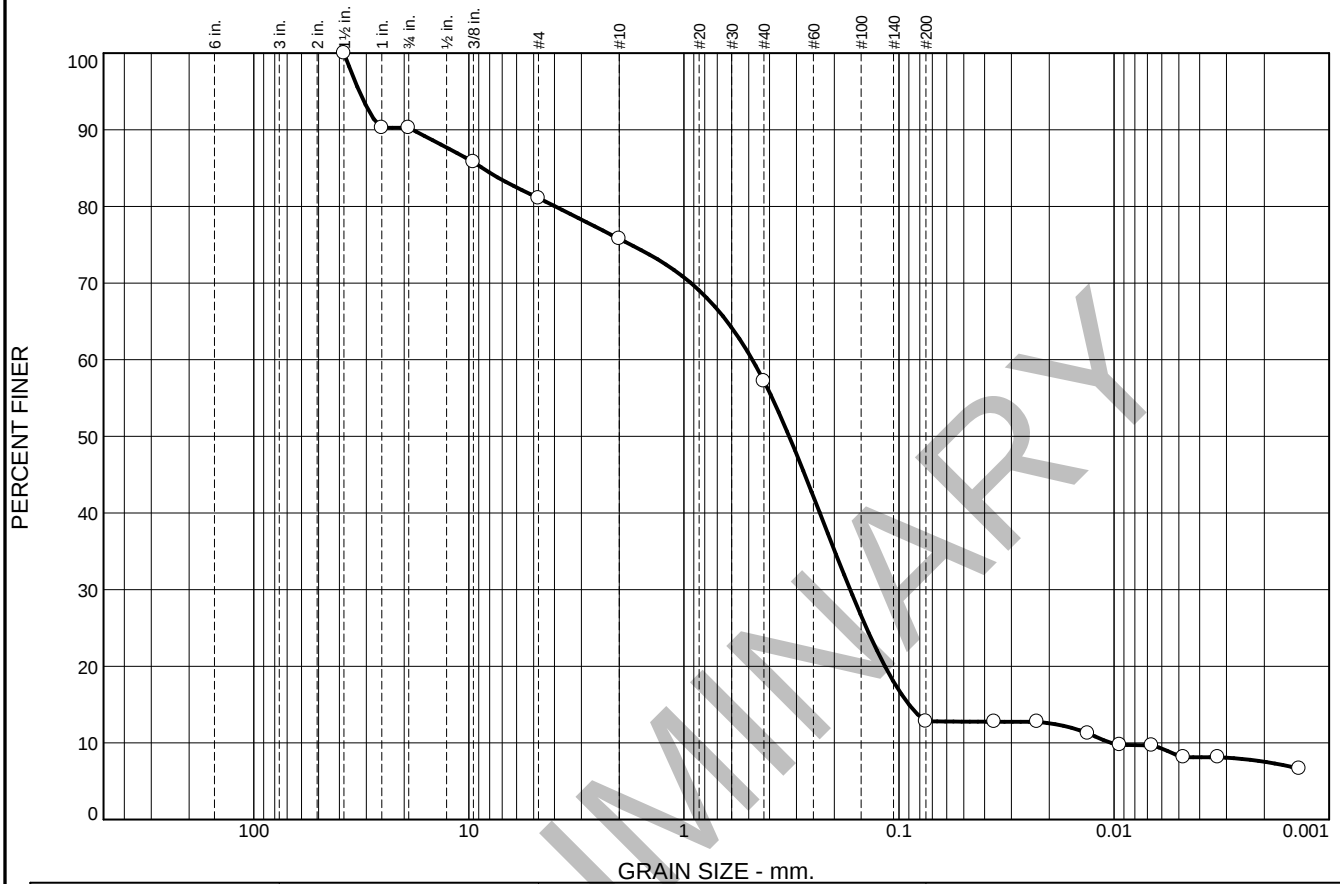


SUMMARY OF LABORATORY TEST DATA

Project Name: CFS – Building #2
Client Name: Commonwealth Fusion Systems
TRC Project #: 349440.0004

SAMPLE IDENTIFICATION			USCS (GROUP SYMBOL)	Moisture Content (%)	GRAIN SIZE DISTRIBUTION				PLASTICITY				Maximum Dry Density (pcf)	Optimum Moisture Content (%)	CALIFORNIA BEARING CAPACITY		Organic Content (%)
Boring #	Sample #	Depth (ft)			Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Liquidity Index (%)			Percent Compaction (%)	CBR (%) at 0.10 in.	
B-53	S-1	0.0-2.0	SM	7.5	16.9	51.6	31.5	-	-	-	-	-	-	-	-	-	-
B-53	S-2 & S-3	2.0-6.0	SM	6.4	40.9	45.6	13.5	-	-	-	-	-	-	-	-	-	-
B-53	S-4 & S-5	6.0-10.0	SW-SM	3.9	33.9	57.9	8.2	-	-	-	-	-	-	-	-	-	-
B-53	S-6	15.0-17.0	SP-SM	6.6	3.8	85.9	10.3	-	-	-	-	-	-	-	-	-	-
B-53	S-7 & S-8	20.0-27.0	SW-SM	7.9	42.1	47.3	10.6	-	-	-	-	-	-	-	-	-	-
B-53	S-9	30.0-32.0	SM	10.2	42.2	44.6	13.2	-	-	-	-	-	-	-	-	-	-
B-53	S-10	35.0-37.0	SM	11.5	14.4	50.0	35.6	-	-	-	-	-	-	-	-	-	-
B-53	S-11	40.0-42.0	SM	11.3	15.0	55.1	29.9	-	-	-	-	-	-	-	-	-	-
B-54	S-1	0.0-2.0	SM	7.5	23.5	62.0	14.5	-	-	-	-	-	-	-	-	-	-

Particle Size Distribution Report



Particle Size Distribution Report

% +3"		% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
	0.0	0.0	0.0	0.0	0.9	43.5	55.6	

LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
		0.2038	0.0863						

MATERIAL DESCRIPTION		TEST DATE	USCS	NM
○ BROWN SANDY SILT		11/03/20	ML	20.5

Project No. 349440.0004 **Client:** COMMONWEALTH FUSION SYSTEMS
Project: CFS - BUILDING #2 DEVENS, MA

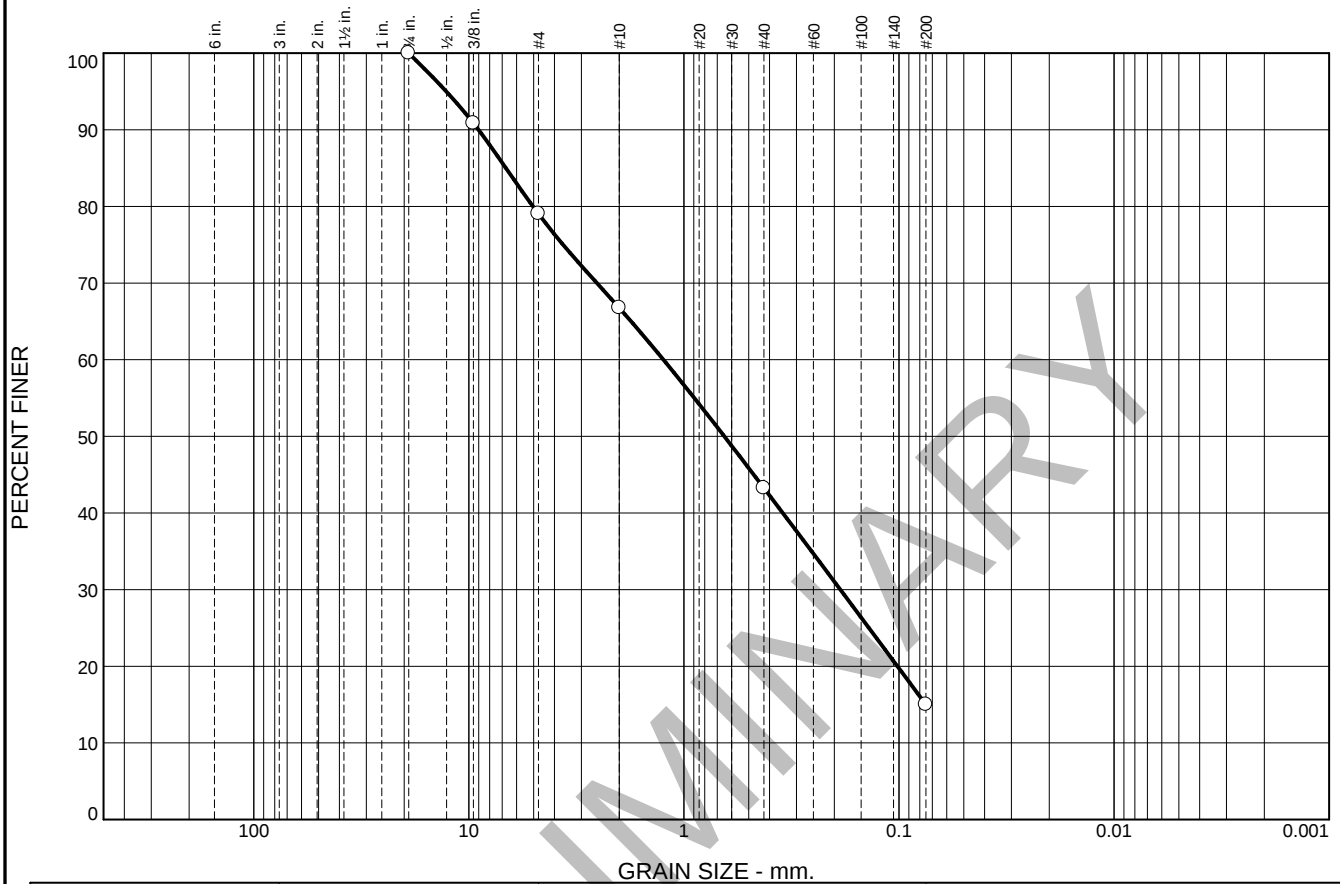
○ **Source of Sample:** B-42 **Depth:** 15.0-17.0 FT **Sample Number:** S-6

TRC Engineers, Inc.
Mt. Laurel, NJ

Remarks:
○SAMPLE DESCRIPTION
BASED ON USCS

Checked By: JPB 04/01/21

Particle Size Distribution Report



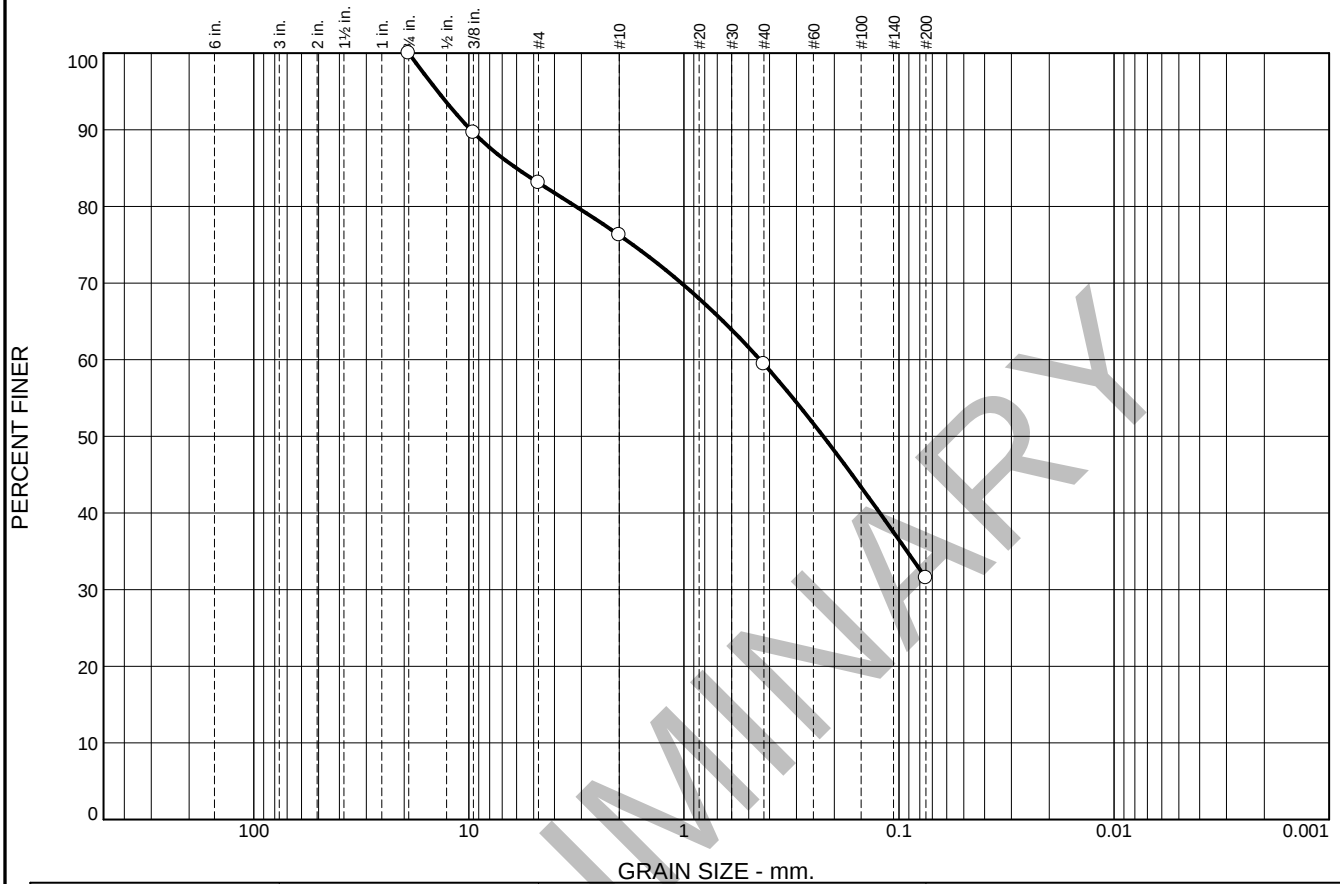
% +3"		% Gravel		% Sand			% Fines		
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay	
☐	0.0	0.0	21.0	12.2	23.5	28.3	15.0		
☒	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	
☐			6.7246	1.2458	0.6489	0.1874			
MATERIAL DESCRIPTION							TEST DATE	USCS	NM
☐ BROWN SILTY SAND WITH GRAVEL							11/03/20	SM	8.8
Project No. 349440.0004 Client: COMMONWEALTH FUSION SYSTEMS Project: CFS - BUILDING #2 DEVENS, MA ☐ Source of Sample: B-42 Depth: 20.0-22.0 FT Sample Number: S-7							Remarks: ☐ SAMPLE DESCRIPTION BASED ON USCS		
TRC Engineers, Inc. Mt. Laurel, NJ									

Figure 52

Tested By: CWZ 11/03/20

Checked By: JPB 04/01/21

Particle Size Distribution Report



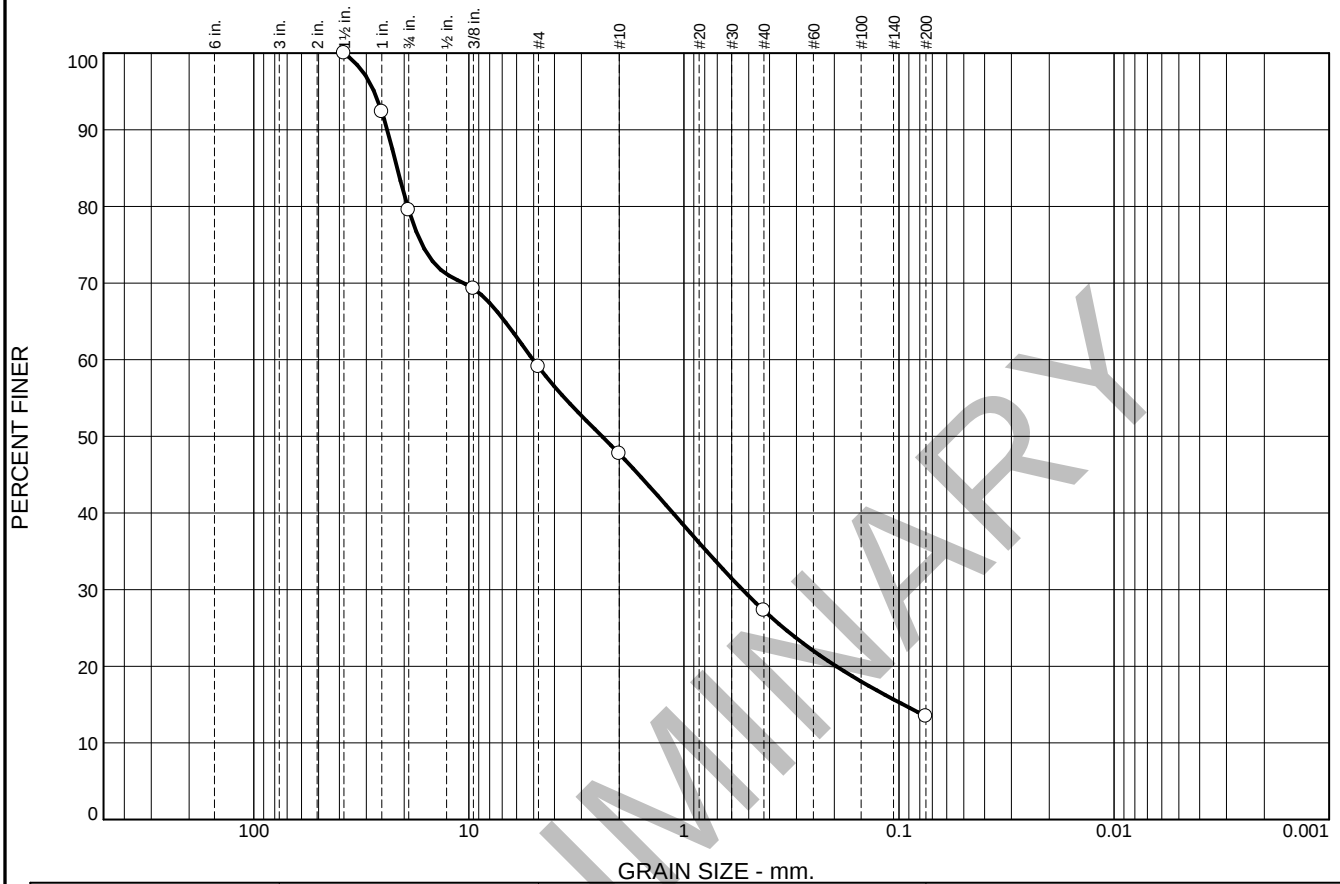
GRAIN SIZE - mm.									
% +3"	% Gravel		% Sand			% Fines		Silt	Clay
	Coarse	Fine	Coarse	Medium	Fine				
0.0	0.0	16.9	6.8	16.9	27.9	31.5			
LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
		6.0154	0.4428	0.2250					
MATERIAL DESCRIPTION							TEST DATE	USCS	NM
BROWN SILTY SAND WITH GRAVEL							11/18/20	SM	7.5
Project No. 349440.0004 Client: COMMONWEALTH FUSION SYSTEMS Project: CFS - BUILDING #2 DEVENS, MA Source of Sample: B-53 Depth: 0.0-2.0 FT Sample Number: S-1							Remarks: SAMPLE DESCRIPTION BASED ON USCS		
TRC Engineers, Inc. Mt. Laurel, NJ									

Figure 94

Tested By: CWZ 11/18/20

Checked By: JPB 04/01/21

Particle Size Distribution Report



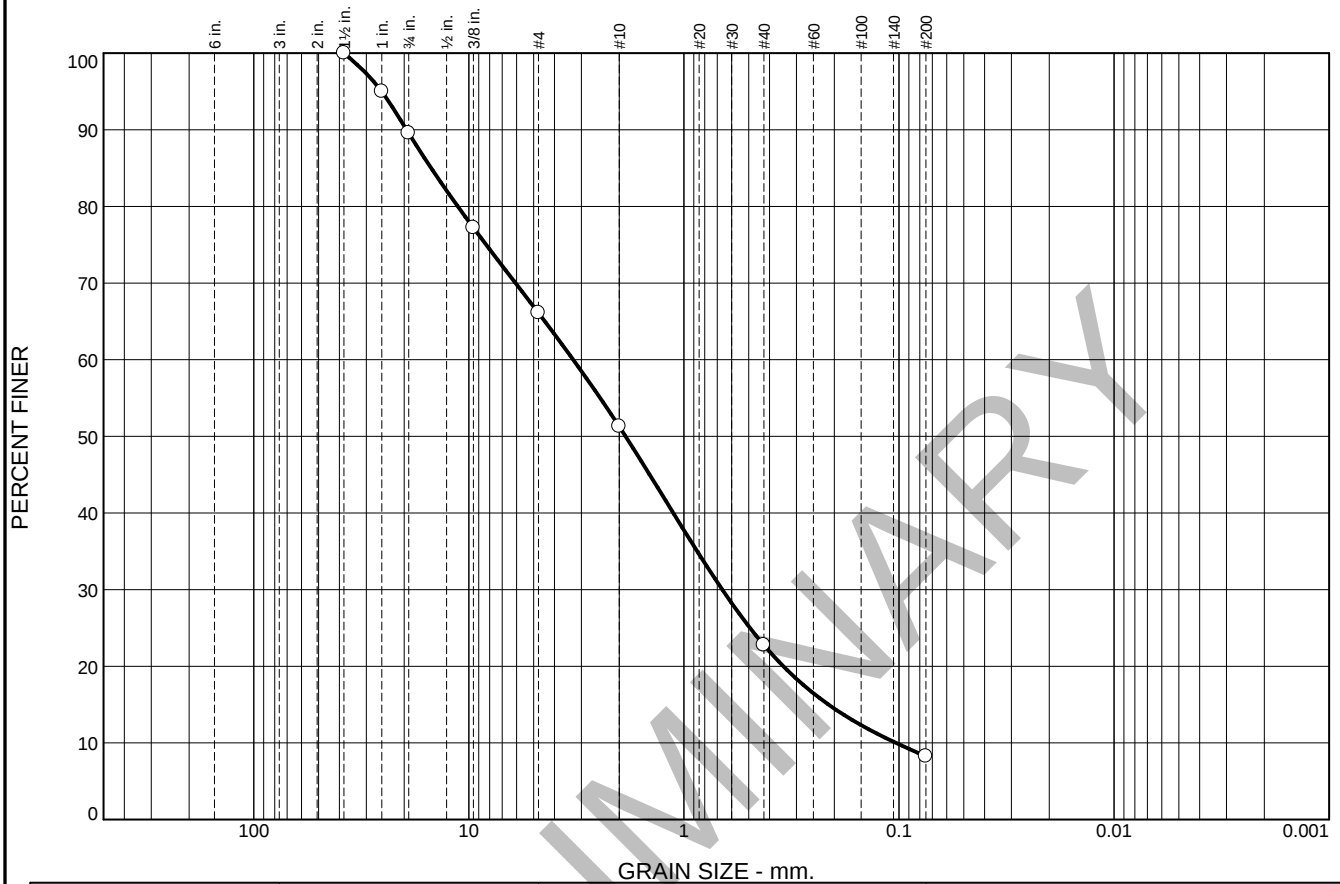
GRAIN SIZE - mm.									
% +3"	% Gravel		% Sand			% Fines		Silt	Clay
	Coarse	Fine	Coarse	Medium	Fine				
0.0	20.5	20.4	11.4	20.4	13.8	13.5			
☒ LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
☐		21.5360	5.0310	2.4041	0.5348	0.0955			
MATERIAL DESCRIPTION							TEST DATE	USCS	NM
☐ BROWN SILTY SAND WITH GRAVEL							12/01/20	SM	6.4
Project No. 349440.0004 Client: COMMONWEALTH FUSION SYSTEMS Project: CFS - BUILDING #2 DEVENS, MA ☐ Source of Sample: B-53 Depth: 2.0-6.0 FT Sample Number: S-2 & S-3							Remarks: ☐ SAMPLE DESCRIPTION BASED ON USCS		
TRC Engineers, Inc. Mt. Laurel, NJ									

Figure 95

Tested By: CWZ 12/01/20

Checked By: JPB 04/01/21

Particle Size Distribution Report



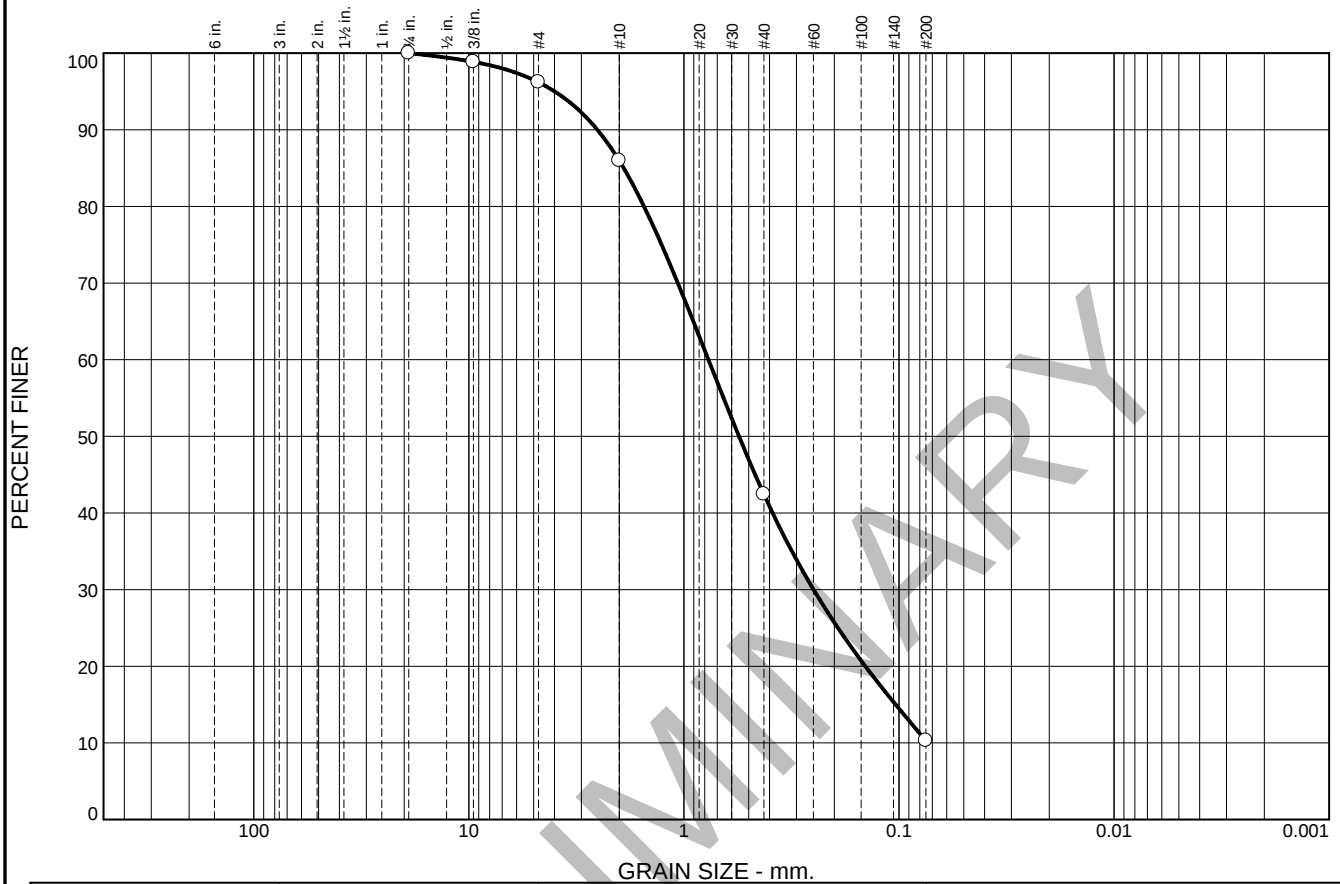
	% +3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	10.4	23.5	14.8	28.5	14.6	8.2			
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○			14.9718	3.2722	1.8682	0.6630	0.2128	0.1032	1.30	31.70
MATERIAL DESCRIPTION							TEST DATE	USCS	NM	
○ BROWN SAND WITH SILT AND GRAVEL*							11/18/20	SW-SM	3.9	
Project No. 349440.0004 Client: COMMONWEALTH FUSION SYSTEMS Project: CFS - BUILDING #2 DEVENS, MA ○ Source of Sample: B-53 Depth: 6.0-10.0 FT Sample Number: S-4 & S-5							Remarks: ○ SAMPLE DESCRIPTION BASED ON USCS * SPECIMEN EXHIBITED SLIGHT PETRO-LIKE ODOR			
TRC Engineers, Inc. Mt. Laurel, NJ										

Figure 96

Tested By: CWZ 11/18/20

Checked By: JPB 04/01/21

Particle Size Distribution Report



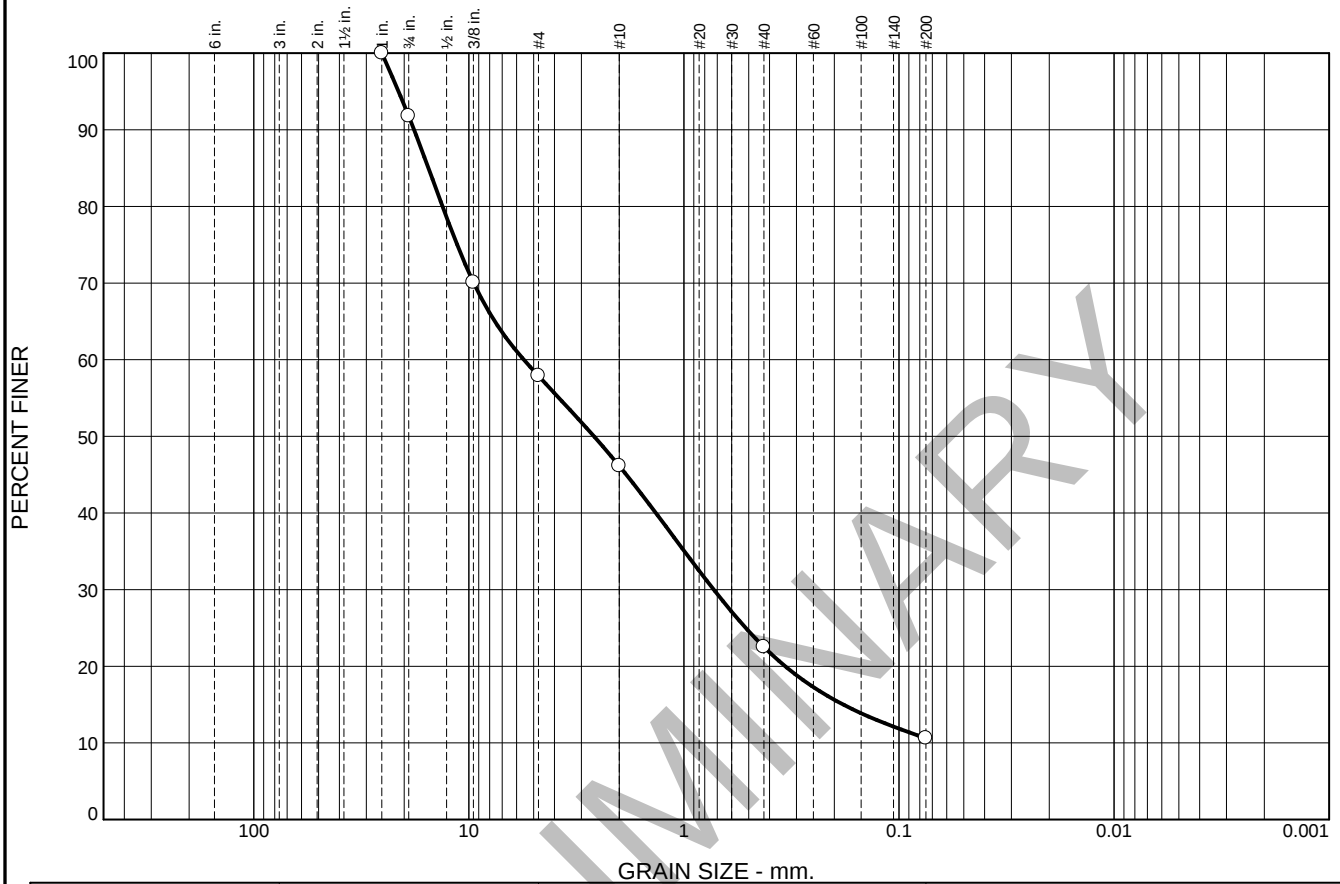
% +3"		% Gravel		% Sand			% Fines		
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay	
☐	0.0	0.0	3.8	10.2	43.6	32.1	10.3		
☒	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	
☐			1.9050	0.7693	0.5546	0.2496	0.1037		
MATERIAL DESCRIPTION							TEST DATE	USCS	NM
☐ BROWN SAND WITH SILT							11/18/20	SP-SM	6.6
Project No. 349440.0004 Client: COMMONWEALTH FUSION SYSTEMS Project: CFS - BUILDING #2 DEVENS, MA ☐ Source of Sample: B-53 Depth: 15.0-17.0 FT Sample Number: S-6							Remarks: ☐ SAMPLE DESCRIPTION BASED ON USCS		
TRC Engineers, Inc. Mt. Laurel, NJ									

Figure 97

Tested By: CWZ 11/18/20

Checked By: JPB 04/01/21

Particle Size Distribution Report



	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		8.2	33.9	11.8	23.6	11.9	10.6		
⊗	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○			15.4172	5.5532	2.6192	0.7267	0.1816			

MATERIAL DESCRIPTION							TEST DATE	USCS	NM
BROWN SAND WITH SILT AND GRAVEL							11/19/20	SW-SM	7.9

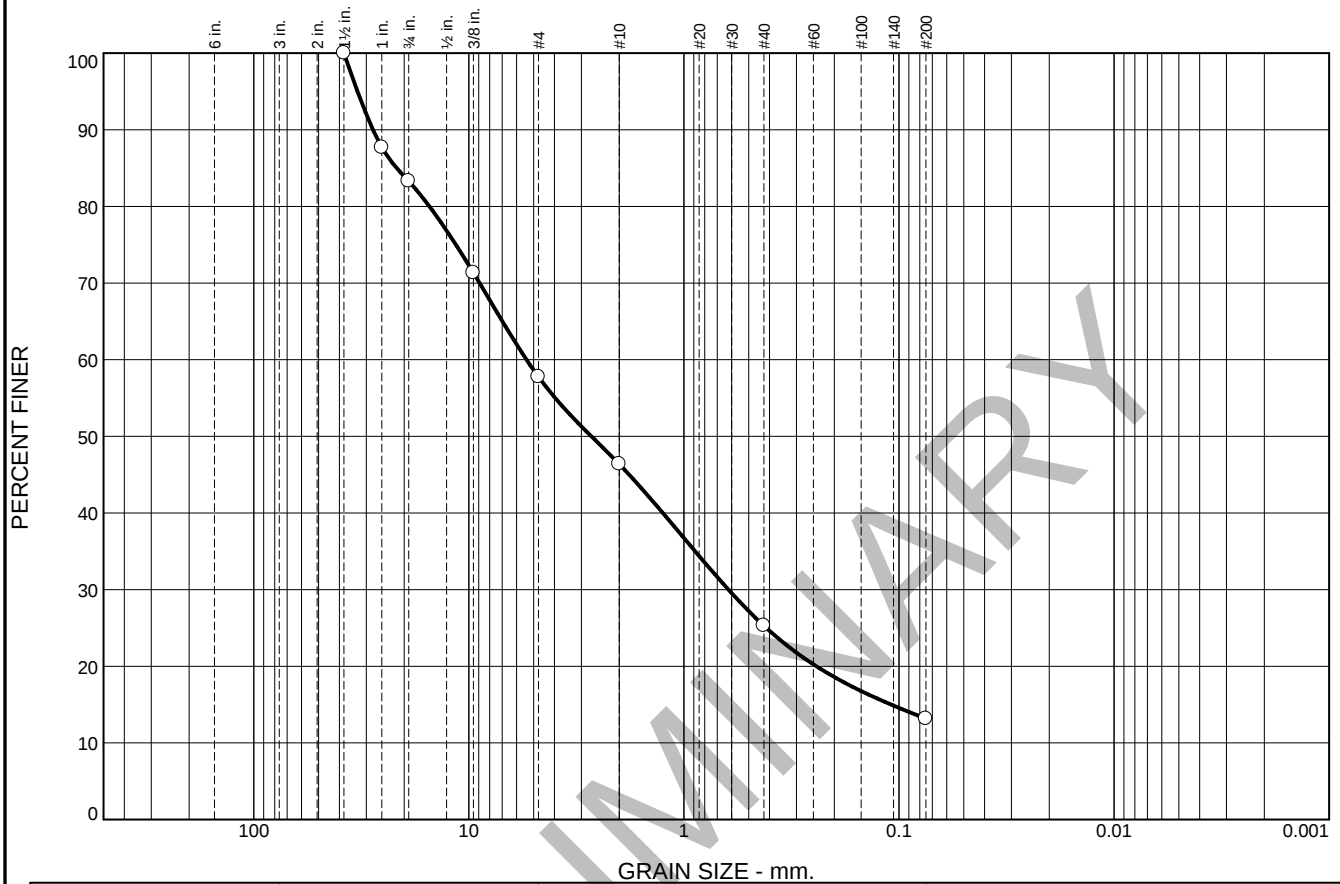
Project No. 349440.0004 Client: COMMONWEALTH FUSION SYSTEMS Project: CFS - BUILDING #2 DEVENS, MA			Remarks: ○SAMPLE DESCRIPTION BASED ON USCS
○ Source of Sample: B-53	Depth: 20.0-27.0 FT	Sample Number: S-7 & S-8	
TRC Engineers, Inc. Mt. Laurel, NJ			Figure 98

Figure 98

Tested By: CWZ 11/19/20

Checked By: JPB 04/01/21

Particle Size Distribution Report



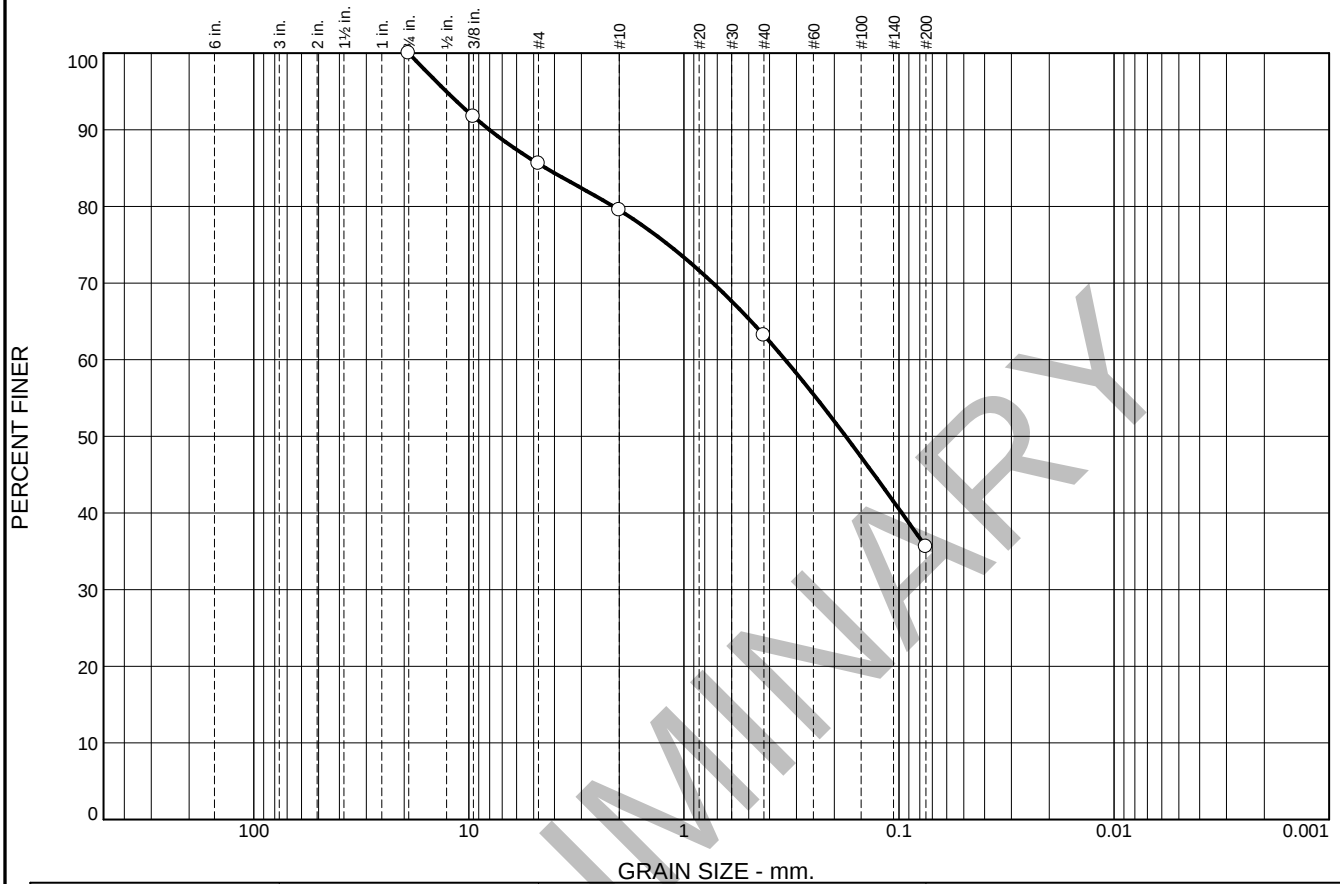
	% +3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
☐	0.0	16.7	25.5	11.4	21.1	12.1	13.2			
☐	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
☐			21.6508	5.3948	2.6937	0.6207	0.1087			
MATERIAL DESCRIPTION							TEST DATE	USCS	NM	
☐ BROWN SILTY SAND WITH GRAVEL							11/30/20	SM	10.2	
Project No. 349440.0004 Client: COMMONWEALTH FUSION SYSTEMS Project: CFS - BUILDING #2 DEVENS, MA ☐ Source of Sample: B-53 Depth: 30.0-32.0 FT Sample Number: S-9							Remarks: ☐ SAMPLE DESCRIPTION BASED ON USCS			
TRC Engineers, Inc. Mt. Laurel, NJ										

Figure 99

Tested By: CWZ 11/30/20

Checked By: JPB 04/01/21

Particle Size Distribution Report



GRAIN SIZE - mm.									
% +3"	% Gravel		% Sand			% Fines		Silt	Clay
	Coarse	Fine	Coarse	Medium	Fine				
0.0	0.0	14.4	6.1	16.3	27.6	35.6			
LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
		4.3815	0.3384	0.1768					
MATERIAL DESCRIPTION							TEST DATE	USCS	NM
BROWN SILTY SAND							11/18/20	SM	11.5
Project No. 349440.0004 Client: COMMONWEALTH FUSION SYSTEMS Project: CFS - BUILDING #2 DEVENS, MA Source of Sample: B-53 Depth: 35.0-37.0 FT Sample Number: S-10							Remarks: SAMPLE DESCRIPTION BASED ON USCS		
TRC Engineers, Inc. Mt. Laurel, NJ									

Figure100

Tested By: CWZ 11/18/20

Checked By: JPB 04/01/21

Particle Size Distribution Report



% +3"		% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
☐	0.0	3.8	11.2	6.8	18.0	30.3	29.9			
☒	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
☐			4.7456	0.4199	0.2256	0.0756				
MATERIAL DESCRIPTION							TEST DATE	USCS	NM	
☐ BROWN SILTY SAND WITH GRAVEL							11/30/20	SM	11.3	
Project No. 349440.0004 Client: COMMONWEALTH FUSION SYSTEMS Project: CFS - BUILDING #2 DEVENS, MA ☐ Source of Sample: B-53 Depth: 40.0-42.0 FT Sample Number: S-11							Remarks: ☐ SAMPLE DESCRIPTION BASED ON USCS			
TRC Engineers, Inc. Mt. Laurel, NJ										

Figure101

Tested By: CWZ 11/30/20

Checked By: JPB 04/01/21



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APPENDIX C.2

2024 GEOTECHNICAL LABORATORY TEST RESULTS

	195 Frances Avenue Cranston RI, 02910 Phone: (401)-467-6454 Fax: (401)-467-2398 cts.thielsch.com <i>Let's Build a Solid Foundation</i>	Client Information: GZA GeoEnvironmental Norwood, MA 781-603-5934	Project Information: CFS-3 and Parking Lot 105 to 117 Hospital Road, Devens MA Project Number: 01.0174955.20
		Project Contact: Michael Ostrowski Collected By: GZA	Summary Page: 1 of 1 Report Date: 26-Nov

LABORATORY TESTING DATA SHEET, Report No.: 7424-L-B025

Material Source	Sample ID	Depth (ft)	Laboratory No.	Identification Tests						Corrosivity Tests										Laboratory Log and Soil Description
				As Rcvd Moisture Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	Resistivity (Mohms-cm)	Chloride (mg/kg)	Sulfate (mg/kg)	Sulfide (mg/kg)	Redox Potential (mv)	pH	Electrical Resist. As Rcvd Ohm-cm @ 60°F	Electrical Resist. Saturated Ohm-cm @ 60°F		
				D2216	D4318		D6913			D2974	EPA	D4327		EPA	G200	G51	G187			
TP-212	S-5	5.5	24-S-B1674				36.9	58.7	4.4										Brown f-c SAND and f-c GRAVEL, trace Silt	
TP-213	S-1	5.1	24-S-B1675				43.4	50.2	6.4										Brown f-c SAND and f-c GRAVEL, trace Silt	
TP-204	S-3	2.5-4	24-S-B1676				15.4	74.0	10.6										Brown f-c SAND, little fine Gravel, little Silt	
GZ-3	S-3	4-6	24-S-B1677				33.0	55.3	11.7										Brown f-c SAND, some fine Gravel, little Silt	
GZ-5	S-4	6-8	24-S-B1678				24.2	61.4	14.4										Brown f-c SAND, some fine Gravel, little Silt	
GZ-8	S-2	2-4	24-S-B1679				4.4	88.8	6.8										Brown f-m SAND, trace Silt, trace fine Gravel	
GZ-13	S-2	2-4	24-S-B1680				42.2	51.0	6.8										Brown f-c SAND and f-c GRAVEL, trace Silt	

Date Received:	<u>11/20/2024</u>	Reviewed By:	<u><i>Donna LeBlanc</i></u>	Date Reviewed:	<u>11/26/2024</u>
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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	24.2	13.2	28.2	20.0	14.4	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	90.9		
3/8"	86.1		
#4	75.8		
#10	62.6		
#20	48.7		
#40	34.4		
#60	25.6		
#100	19.6		
#200	14.4		

* (no specification provided)

Soil Description
Brown f-c SAND, some fine Gravel, little Silt

PL= NP Atterberg Limits LL= NV PI= NP
Coefficients
D₉₀= 12.0867 D₈₅= 8.8780 D₆₀= 1.6959
D₅₀= 0.9141 D₃₀= 0.3314 D₁₅= 0.0811
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO= A-1-b
Remarks

Source of Sample: GZ-5 Depth: 6-8'
Sample Number: S-4

Date: 11/25/2024

Thielsch Engineering Inc.

Cranston, RI

Client: GZA GeoEnvironmental
Project: CFS-3 and Parking Lot
105 to 117 Hospital Road, Devens, MA

Project No: 01.0174955.20

Figure 24-S-B1678

Checked By: Ronelle LeBlanc



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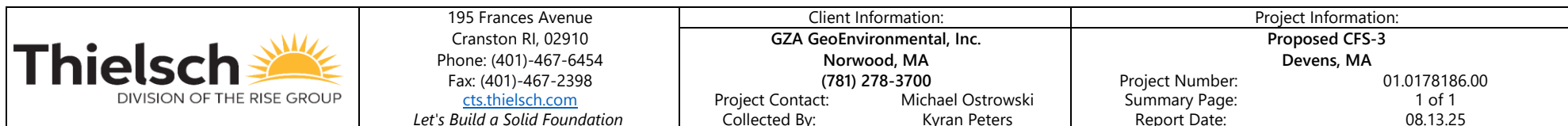
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APPENDIX C.3

2025 GEOTECHNICAL LABORATORY TEST RESULTS



Client Information:	
GZA GeoEnvironmental, Inc.	
Norwood, MA	
(781) 278-3700	
Project Contact:	Michael Ostrowski
Collected By:	Kvran Peters

Project Information:	
Proposed CFS-3 Devens, MA	
Project Number:	01.0178186.00
Summary Page:	1 of 1
Report Date:	08.13.25

Boring No.	Sample ID	Depth (ft)	Laboratory No.	Identification Tests									Proctor / CBR / Permeability Tests								Laboratory Log and Soil Description
				As Rcvd Moisture Content %	LL %	PL %	OD LL	Gravel %	Sand %	Fines %	Org. %	pH	$\frac{g_d}{MAX(pcf)} W_{opt}(\%)$	$\frac{g_d}{MAX(pcf)} W_{opt}(\%)(Corr.)$	Dry unit wt. (pcf)	Test Moisture Content %	Target Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"	Permeability cm/sec	
				D2216	D4318			D6913			D2974	D4792	D1557								
TP-302	GS-4	5.5-6	25-S-B1665	11.1							5.1									Organic Content Only	
TP-310	GS-1	4	25-S-B1666	13.0							2.9									Organic Content Only	
TP-314	GS-2	14	25-S-B1667	16.3							4.9									Organic Content Only	
Organic Content tested by MA 08.12.25.																					

Organic Content tested by MA 08.12.25.

Reviewed By:

Date Reviewed: 08.13.25

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Cranston RI, 02910
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Fax: (401)-467-2398
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Let's Build a Solid Foundation

Client Information:
GZA GeoEnvironmental, Inc.
Norwood, MA
(781) 278-3700
Project Contact: Michael Ostrowski
Collected By: Kyran Peters

Project Information:
Proposed CFS-3
Devens, MA
Project Number: 01.0178186.00
Summary Page: 1 of 1
Report Date: 08.13.25

LABORATORY TESTING DATA SHEET, Report No.: 7425-H-B025

Boring No.	Sample ID	Depth (ft)	Laboratory No.	Identification Tests										Proctor / CBR / Permeability Tests							Laboratory Log and Soil Description
				As Rcvd Moisture Content %	LL %	PL %	OD LL	Gravel %	Sand %	Fines %	Org. %	pH	$\frac{g_d}{MAX}$ (pcf) $\frac{W_{opt}}{W_{opt}}$ (%)	$\frac{g_d}{MAX}$ (pcf) $\frac{W_{opt}}{W_{opt}}$ (%) (Corr.)	Dry unit wt. (pcf)	Test Moisture Content %	Target Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"	Permeability cm/sec	
				D2216	D4318			D6913			D2974	D4792	D1557								
TP-301	GS-3	6-7	25-S-B1656					40.5	56.9	2.6											Brown poorly graded sand with gravel
TP-302	GS-5	7	25-S-B1657					0.0	89.5	10.5											Brown poorly graded sand with silt
TP-308	GS-3	13	25-S-B1658					60.5	38.7	0.8											Brown poorly graded gravel with sand
TP-305	GS-4	8	25-S-B1659					0.0	98.6	1.4											Brown poorly graded sand

Date Received: 8/8/2025

Reviewed By: *John A. Varnon*

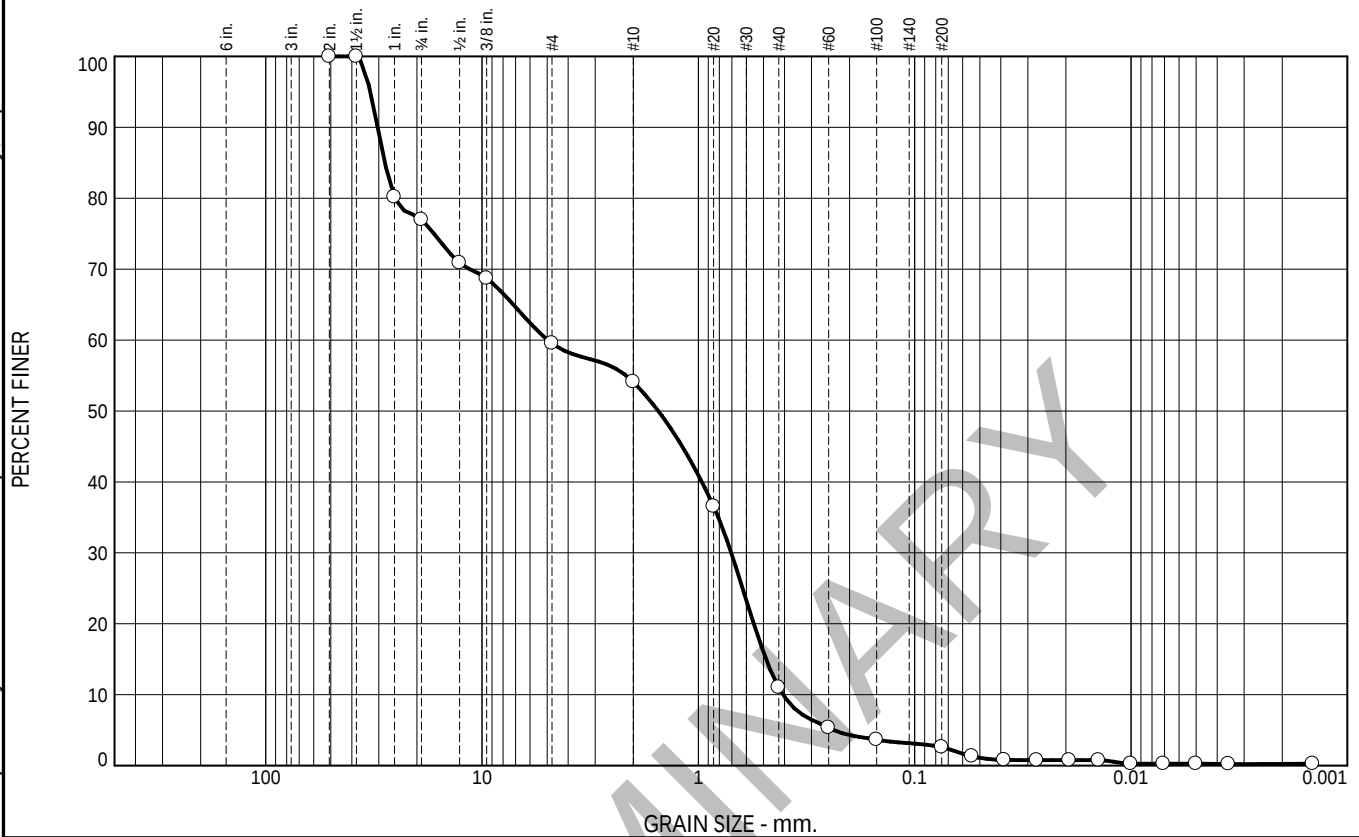
Date Reviewed: 08.13.25

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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	23.0	17.5	5.4	43.1	8.4	2.4	0.2

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1-1/2"	100.0		
1"	80.2		
3/4"	77.0		
1/2"	70.9		
3/8"	68.7		
#4	59.5		
#10	54.1		
#20	36.6		
#40	11.0		
#60	5.3		
#100	3.7		
#200	2.6		
0.0544 mm.	1.3		
0.0386 mm.	0.8		
0.0273 mm.	0.8		
0.0193 mm.	0.8		
0.0141 mm.	0.8		
0.0100 mm.	0.3		
0.0071 mm.	0.3		
0.0050 mm.	0.3		
0.0035 mm.	0.2		
0.0014 mm.	0.3		

* (no specification provided)

Soil Description
Brown poorly graded sand with gravel

PL= NP Atterberg Limits LL= NV PI= NP
D₉₀= 30.3660 D₈₅= 28.1185 D₆₀= 4.9643
D₅₀= 1.5319 D₃₀= 0.7050 D₁₅= 0.4864
D₁₀= 0.4060 C_u= 12.23 C_c= 0.25

USCS= SP Classification AASHTO= A-1-b
Remarks

Source of Sample: TP-301 Depth: 6-7'
Sample Number: GS-3

Date: 08/13/25

Thielsch Engineering Inc.

Cranston, RI

Client: GZA GeoEnvironmental, Inc.
Project: Proposed CFS-3

Project No: 01.0178186.00

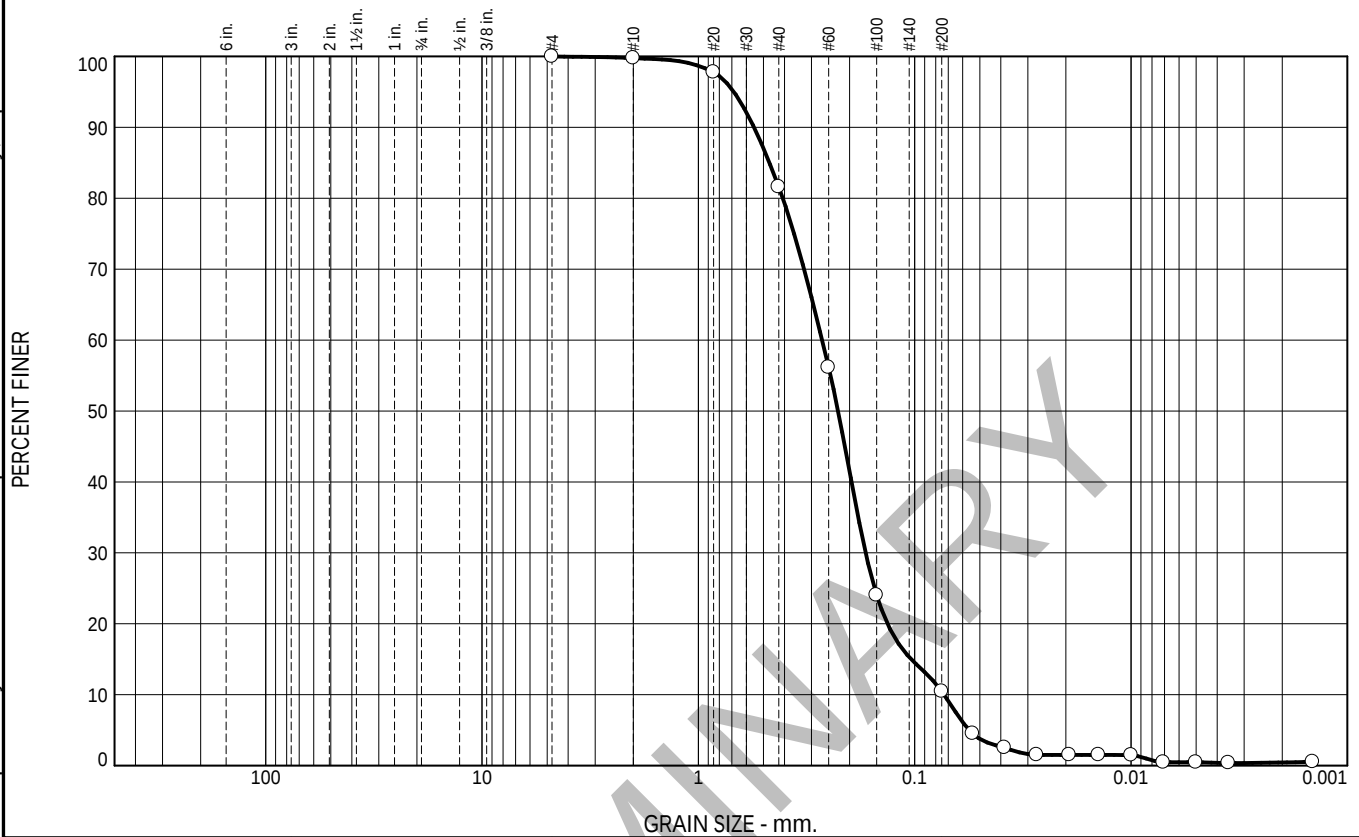
Figure 25-S-B1656

Tested By: MA / SF

Checked By: Ronelle LeBlanc

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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	18.2	71.1	10.1	0.4

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.8		
#20	97.8		
#40	81.6		
#60	56.2		
#100	24.0		
#200	10.5		
0.0539 mm.	4.5		
0.0384 mm.	2.5		
0.0273 mm.	1.5		
0.0193 mm.	1.5		
0.0141 mm.	1.5		
0.0100 mm.	1.5		
0.0071 mm.	0.5		
0.0050 mm.	0.5		
0.0035 mm.	0.4		
0.0014 mm.	0.5		

* (no specification provided)

Soil Description
Brown poorly graded sand with silt

PL= NP Atterberg Limits LL= NV PI= NP
LL= NV
PI= NP
Coefficients
D₉₀= 0.5530 D₈₅= 0.4693 D₆₀= 0.2681
D₅₀= 0.2262 D₃₀= 0.1685 D₁₅= 0.1039
D₁₀= 0.0732 C_u= 3.66 C_c= 1.45

Classification
USCS= SP-SM AASHTO= A-3
Remarks

Source of Sample: TP-302 Depth: 7'
Sample Number: GS-5

Date: 08/13/25

Thielsch Engineering Inc.

Cranston, RI

Client: GZA GeoEnvironmental, Inc.
Project: Proposed CFS-3

Project No: 01.0178186.00

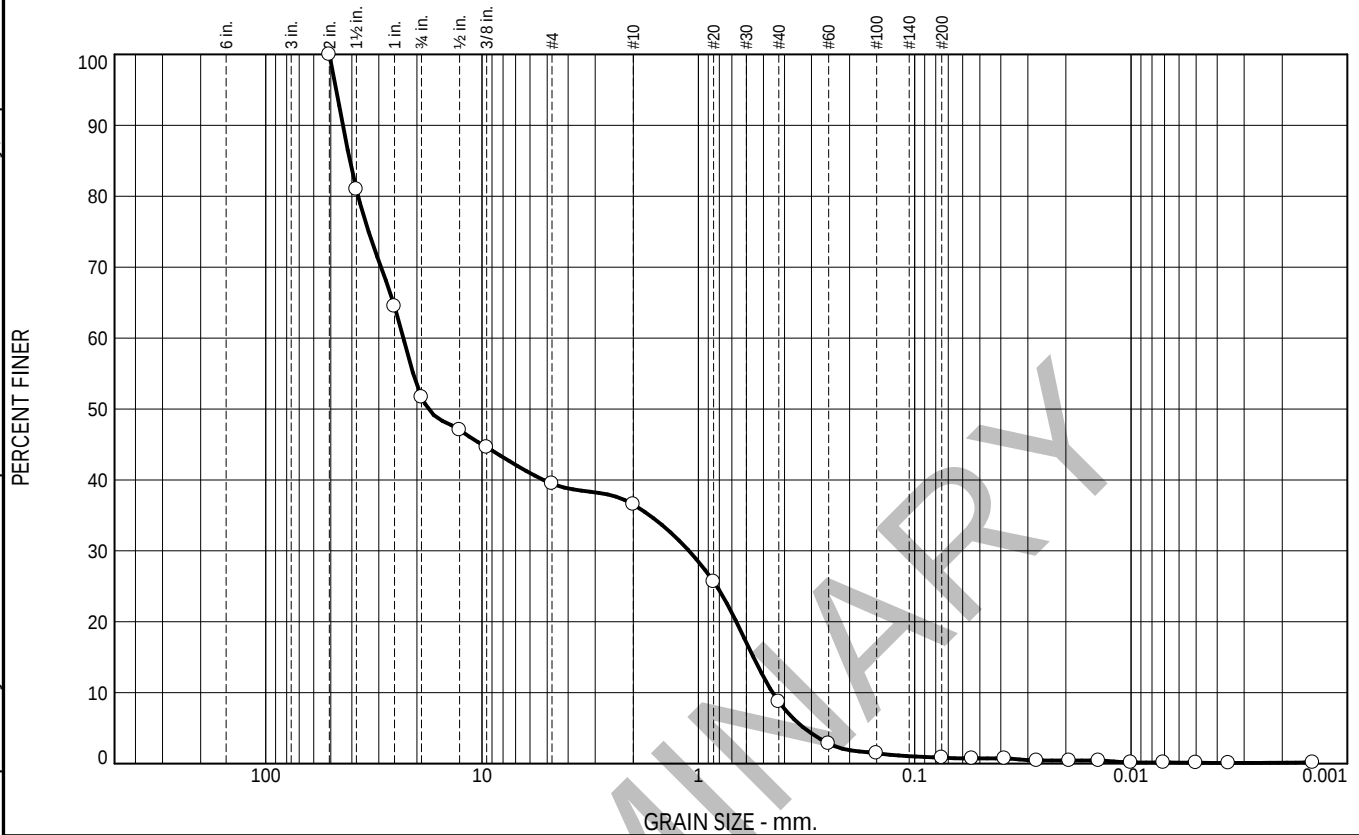
Figure 25-S-B1657

Tested By: MA / SF

Checked By: Ronelle LeBlanc

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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	48.3	12.2	3.0	27.8	7.9	0.7	0.1

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1-1/2"	81.0		
1"	64.5		
3/4"	51.7		
1/2"	47.1		
3/8"	44.6		
#4	39.5		
#10	36.5		
#20	25.7		
#40	8.7		
#60	2.8		
#100	1.5		
#200	0.8		
0.0544 mm.	0.7		
0.0384 mm.	0.7		
0.0273 mm.	0.4		
0.0193 mm.	0.4		
0.0141 mm.	0.4		
0.0100 mm.	0.1		
0.0071 mm.	0.1		
0.0050 mm.	0.1		
0.0035 mm.	0.1		
0.0014 mm.	0.1		

* (no specification provided)

Soil Description
Brown poorly graded gravel with sand

PL= NP Atterberg Limits LL= NV PI= NP

Coefficients
D₉₀= 43.9736 D₈₅= 40.7995 D₆₀= 23.0966
D₅₀= 17.6941 D₃₀= 1.1056 D₁₅= 0.5563
D₁₀= 0.4540 C_u= 50.88 C_c= 0.12

Classification
USCS= GP AASHTO= A-1-a

Remarks

Source of Sample: TP-308 Depth: 13'
Sample Number: GS-3

Date: 08/13/25

Thielsch Engineering Inc.

Cranston, RI

Client: GZA GeoEnvironmental, Inc.
Project: Proposed CFS-3

Project No: 01.0178186.00

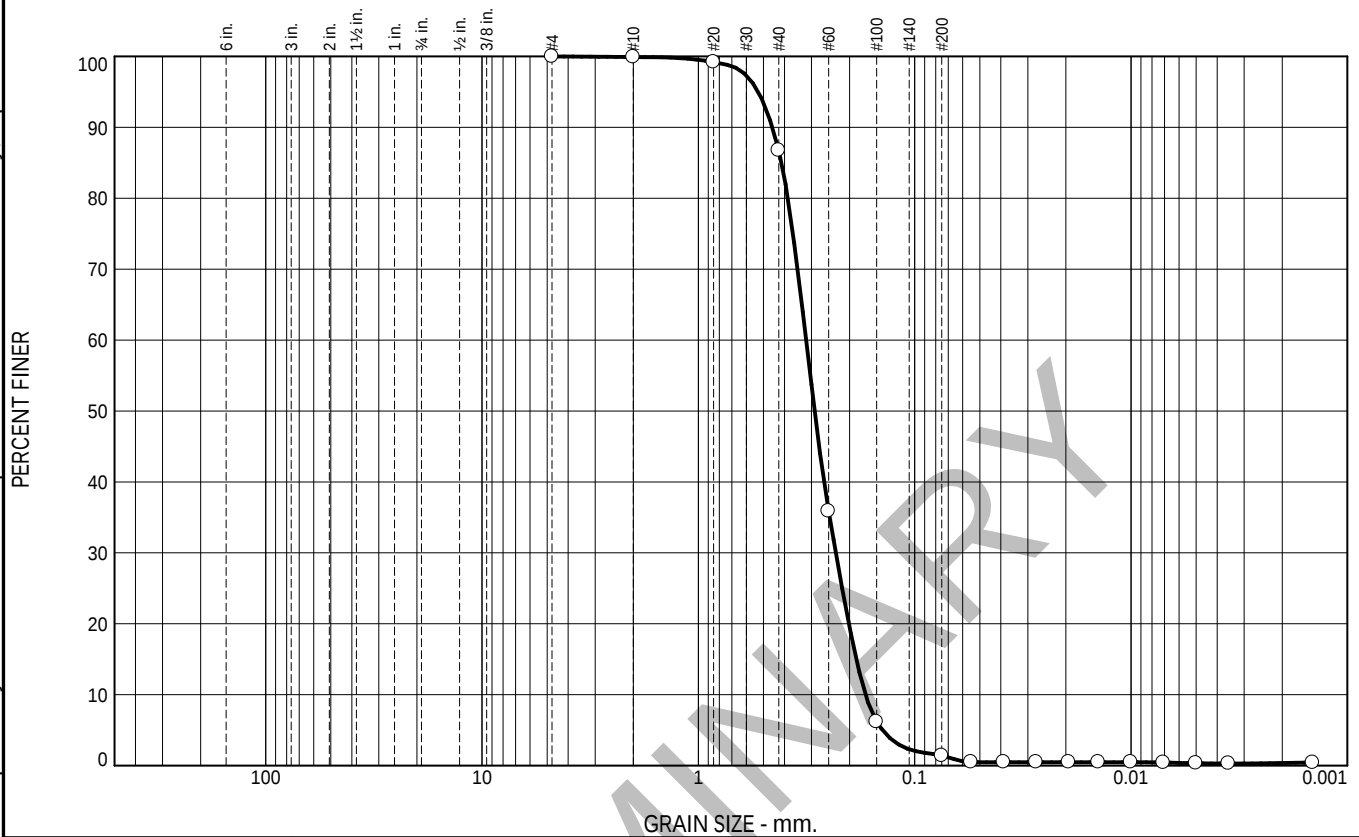
Figure 25-S-B1658

Tested By: MA / SF

Checked By: Ronelle LeBlanc

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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	13.2	85.3	1.0	0.4

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.9		
#20	99.2		
#40	86.7		
#60	35.9		
#100	6.2		
#200	1.4		
0.0548 mm.	0.5		
0.0388 mm.	0.5		
0.0274 mm.	0.5		
0.0194 mm.	0.5		
0.0142 mm.	0.5		
0.0100 mm.	0.5		
0.0071 mm.	0.4		
0.0050 mm.	0.3		
0.0035 mm.	0.3		
0.0014 mm.	0.4		

* (no specification provided)

Soil Description
Brown poorly graded sand

PL= NP Atterberg Limits LL= NV PI= NP
D₉₀= 0.4549 Coefficients D₈₅= 0.4126 D₆₀= 0.3176
D₅₀= 0.2902 D₃₀= 0.2315 D₁₅= 0.1861
D₁₀= 0.1688 C_u= 1.88 C_c= 1.00

USCS= SP Classification AASHTO= A-3
Remarks

Source of Sample: TP-305 Depth: 8'
Sample Number: GS-4

Date: 08/13/25

Thielsch Engineering Inc.

Cranston, RI

Client: GZA GeoEnvironmental, Inc.
Project: Proposed CFS-3

Project No: 01.0178186.00

Figure 25-S-B1659

Tested By: MA / SF

Checked By: Ronelle LeBlanc

 Thielsch DIVISION OF THE RISE GROUP	195 Frances Avenue Cranston RI, 02910 Phone: (401)-467-6454 Fax: (401)-467-2398 cts.thielsch.com <i>Let's Build a Solid Foundation</i>	Client Information:	Project Information:
		GZA GoEnvironmental, Inc. Norwood, MA 781-278-3700 Project Contact: Michael Ostrowski Collected By: Kyran Peters	Proposed CFS-3 Devens, MA Project Number: 1.0178186.000 Summary Page: 1 of 1 Report Date: 9/17/2025

LABORATORY TESTING DATA SHEET, Report No.: 7425-J-153, Rev 1

Material Source	Sample ID	Depth (ft)	Laboratory No.	Identification Tests										Proctor / CBR / Permeability Tests							Laboratory Log and Soil Description
				As Rcvd Moisture Content %	LL %	PL %	OD LL	Gravel %	Sand %	Fines %	Org. %	pH	9 _d MAX (pcf) W _{opt} (%)	9 _d MAX (pcf) W _{opt} (%) (Corr.)	Dry unit wt. (pcf)	Test Moisture Content %	Target Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"	Permeability cm/sec	
				D2216	D4318			D6913			D2974	D4792	D1557								
GZ-105	S-5	8-10	25-S-3227					1.3	78.0	20.7											Light Brown f-c SAND, some Silt, trace fine Gravel // Sand
GZ-110	S-9	20-22	25-S-3228					0.0	90.3	9.7											Light Brown fine SAND, trace Silt // Sand
GZ-110	S-10	22-24	25-S-3229					0.0	67.7	32.3											Light Brown fine SAND, some Silt // Loamy sand

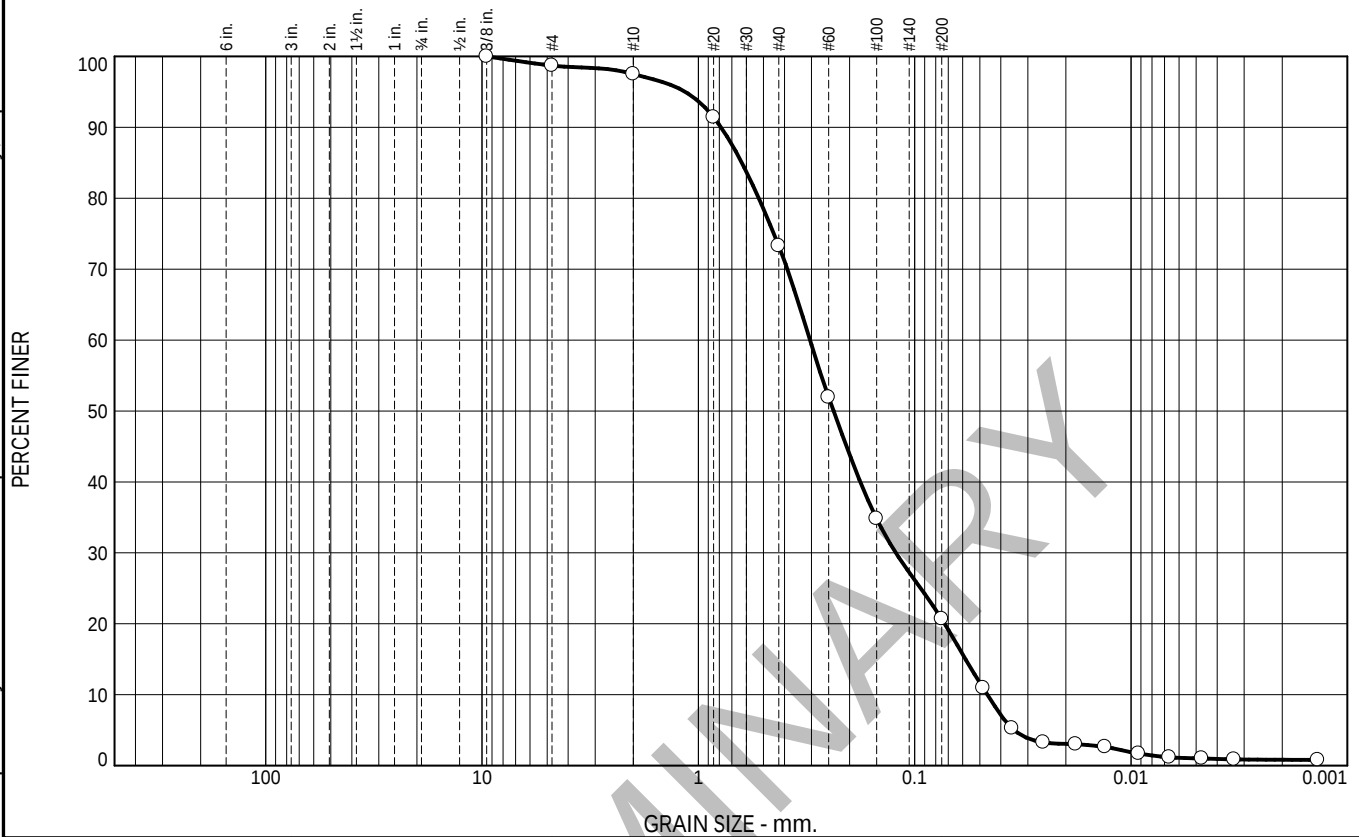
Report revised 09-19-25 to include USDA classification. KR

Date Received: 9/12/2025
 Reviewed By: 
 Date Reviewed: 9/17/2025

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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	1.2	24.2	52.6	19.9	0.8

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	98.7		
#10	97.5		
#20	91.4		
#40	73.3		
#60	51.9		
#100	34.8		
#200	20.7		
0.0483 mm.	10.9		
0.0355 mm.	5.3		
0.0254 mm.	3.3		
0.0180 mm.	3.0		
0.0132 mm.	2.6		
0.0092 mm.	1.7		
0.0067 mm.	1.2		
0.0047 mm.	1.0		
0.0033 mm.	0.9		
0.0014 mm.	0.8		

* (no specification provided)

Soil Description
Light Brown f-c SAND, some Silt, trace fine Gravel // Sand

PL=	NP	Atterberg Limits	LL=	NV	PI=	NP
D ₉₀ =	0.7852	Coefficients	D ₈₅ =	0.6295	D ₆₀ =	0.3049
D ₅₀ =	0.2371		D ₃₀ =	0.1222	D ₁₅ =	0.0582
D ₁₀ =	0.0461		C _u =	6.61	C _c =	1.06

USCS= SM Classification AASHTO= A-2-4(0)

Remarks

Source of Sample: GZ-105 Depth: 8-10'
Sample Number: S-5

Date: 09.17.25

Thielsch Engineering Inc.

Cranston, RI

Client: GZA GeoEnvironmental, Inc.

Project: Proposed CFS-3
Devens, MA

Project No: 01.0178186.00

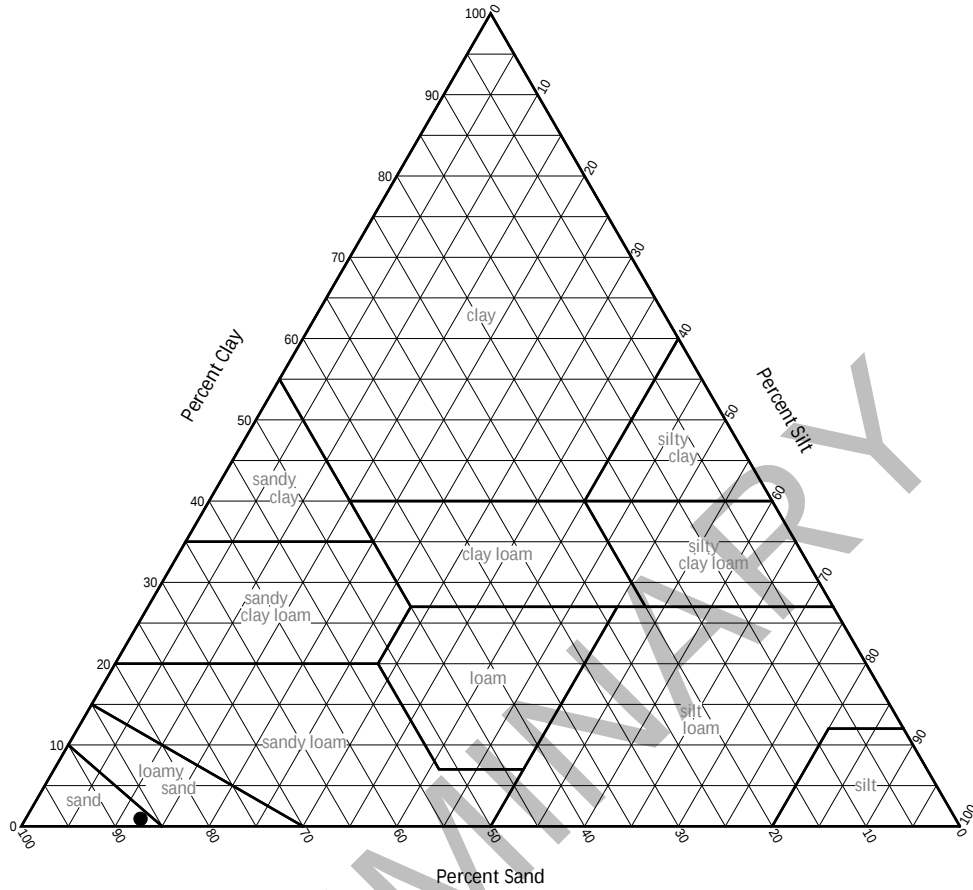
Fig. 25-S-3227

Tested By: AB/TG

Checked By: Becca Blake

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USDA Soil Classification



SOIL DATA

	Source	Sample No.	Depth	Percentages From Material Passing a #10 Sieve			Classification
				Sand	Silt	Clay	
●	GZ-105	S-5	8-10'	86.8	12.4	0.8	Sand

Thielsch Engineering Inc.

Cranston, RI

Client: GZA GeoEnvironmental, Inc.

Project: Proposed CFS-3
Devens, MA

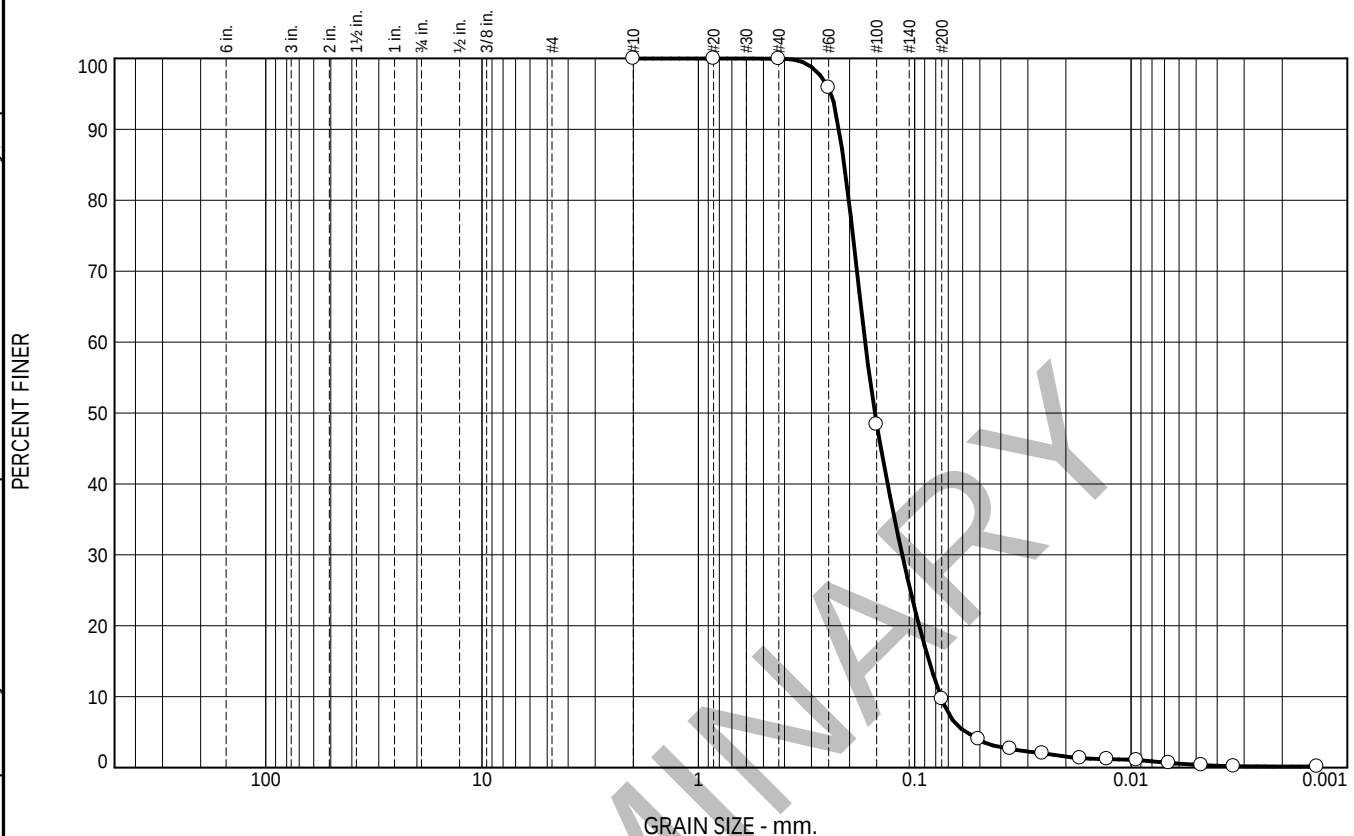
Project No.: 01.0178186.00

Fig. 25-US-3227

Checked By: KR

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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	90.3	9.5	0.2

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	100.0		
#40	100.0		
#60	95.9		
#100	48.4		
#200	9.7		
0.0507 mm.	4.0		
0.0362 mm.	2.7		
0.0257 mm.	2.0		
0.0172 mm.	1.3		
0.0129 mm.	1.2		
0.0094 mm.	1.1		
0.0067 mm.	0.7		
0.0047 mm.	0.4		
0.0034 mm.	0.2		
0.0014 mm.	0.1		

* (no specification provided)

Soil Description
Light Brown fine SAND, trace Silt // Sand

PL= NP Atterberg Limits LL= NV PI= NP
Coefficients
D₉₀= 0.2238 D₈₅= 0.2116 D₆₀= 0.1695
D₅₀= 0.1531 D₃₀= 0.1143 D₁₅= 0.0858
D₁₀= 0.0757 C_u= 2.24 C_c= 1.02
Classification
USCS= SP-SM AASHTO= A-3
Remarks

Source of Sample: GZ-110 Depth: 20-22'
Sample Number: S-9

Date: 09.17.25

Thielsch Engineering Inc.

Cranston, RI

Client: GZA GeoEnvironmental, Inc.

Project: Proposed CFS-3
Devens, MA

Project No: 01.0178186.00

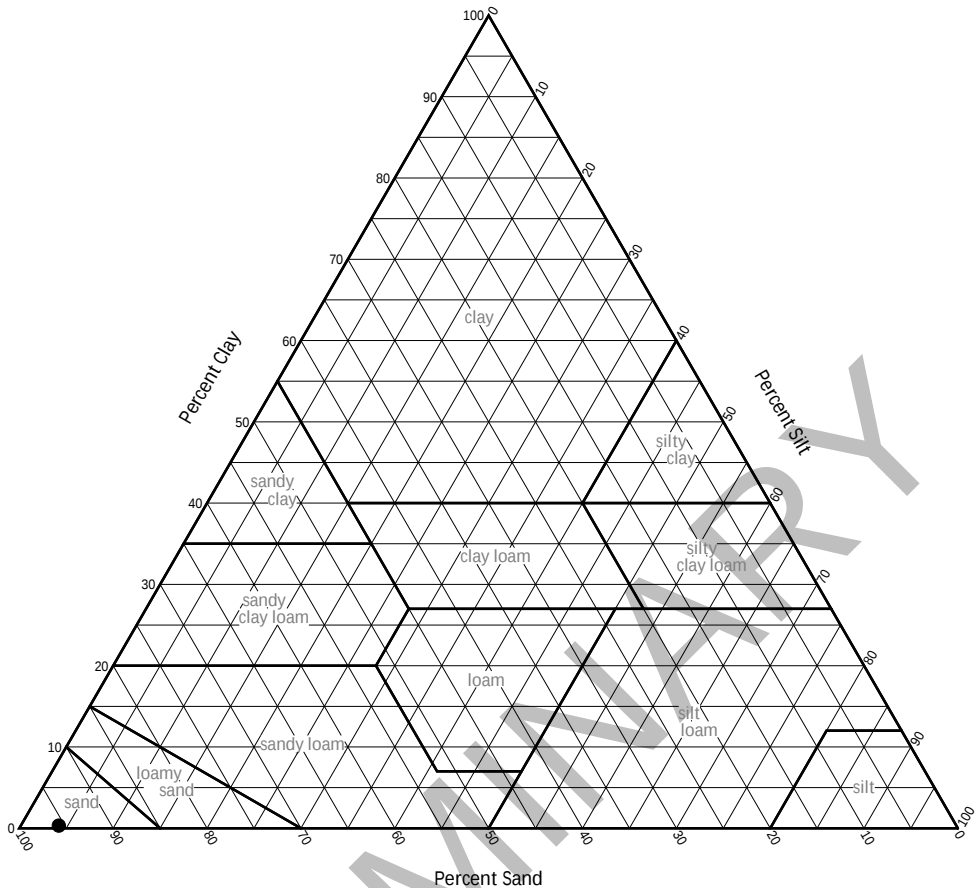
Fig. 25-S-3228

Tested By: AB/TG

Checked By: Becca Blake

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USDA Soil Classification



SOIL DATA							
	Source	Sample No.	Depth	Percentages From Material Passing a #10 Sieve			Classification
				Sand	Silt	Clay	
●	GZ-110	S-9	20-22'	95.6	4.2	0.2	Sand

Thielsch Engineering Inc.
Cranston, RI

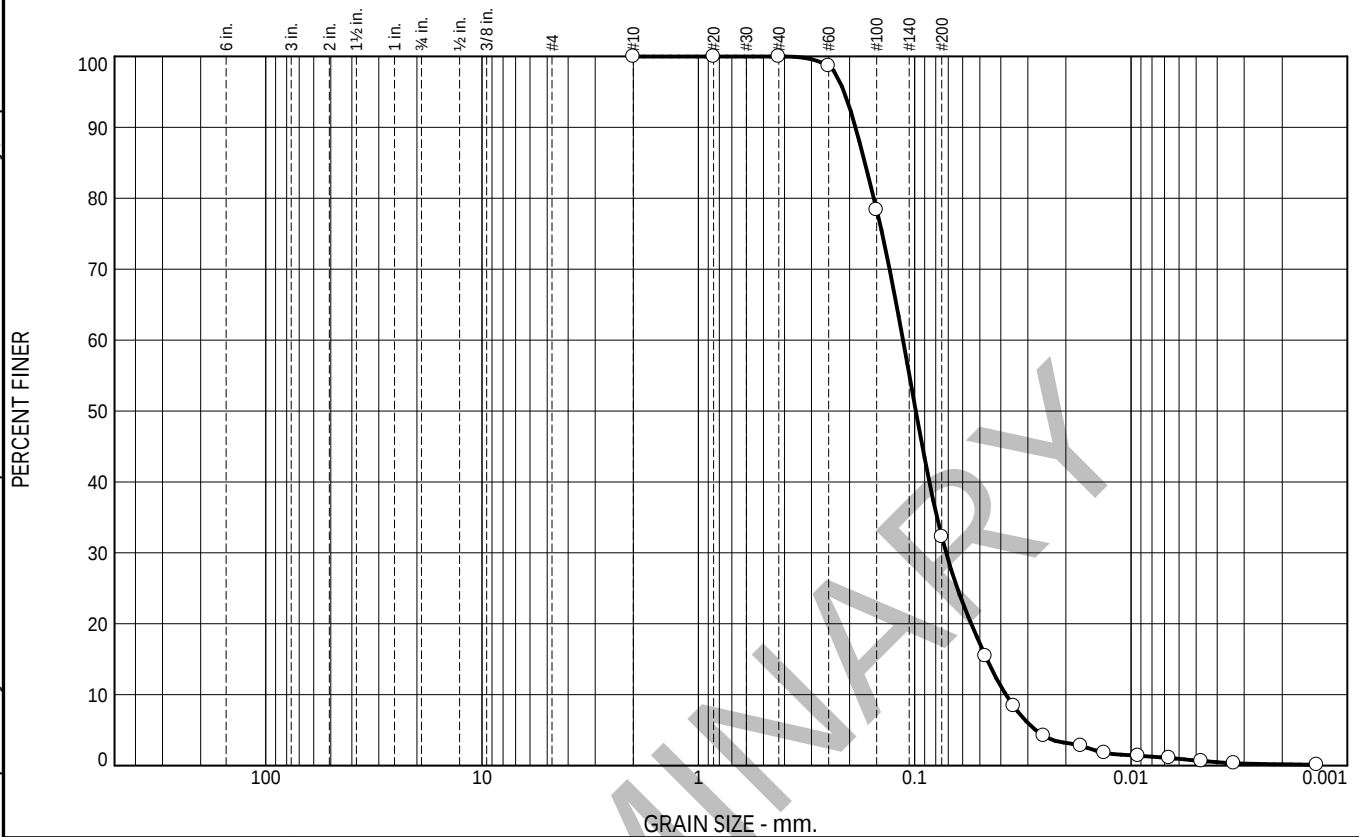
Client: GZA GeoEnvironmental, Inc.
Project: Proposed CFS-3
Devens, MA
Project No.: 01.0178186.00

Fig. 25-US-3228

Checked By: KR

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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	67.7	32.1	0.2

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	100.0		
#40	100.0		
#60	98.7		
#100	78.4		
#200	32.3		
0.0471 mm.	15.5		
0.0349 mm.	8.4		
0.0254 mm.	4.2		
0.0171 mm.	2.8		
0.0133 mm.	1.8		
0.0093 mm.	1.4		
0.0067 mm.	1.1		
0.0047 mm.	0.7		
0.0034 mm.	0.3		
0.0014 mm.	0.1		

* (no specification provided)

Soil Description
Light Brown fine SAND, some Silt // Loamy sand

PL= NP **Atterberg Limits** LL= NV PI= NP

Coefficients
D₉₀= 0.1877 D₈₅= 0.1699 D₆₀= 0.1133
D₅₀= 0.0988 D₃₀= 0.0716 D₁₅= 0.0464
D₁₀= 0.0379 C_u= 2.99 C_c= 1.19

Classification
USCS= SM AASHTO= A-2-4(0)

Remarks
Sample visually classified as non-plastic. Sample could not be rolled to 1/4".

Source of Sample: GZ-110 Depth: 22-24'
Sample Number: S-10

Date: 09.17.25

Thielsch Engineering Inc.

Cranston, RI

Client: GZA GeoEnvironmental, Inc.

Project: Proposed CFS-3
Devens, MA

Project No: 01.0178186.00

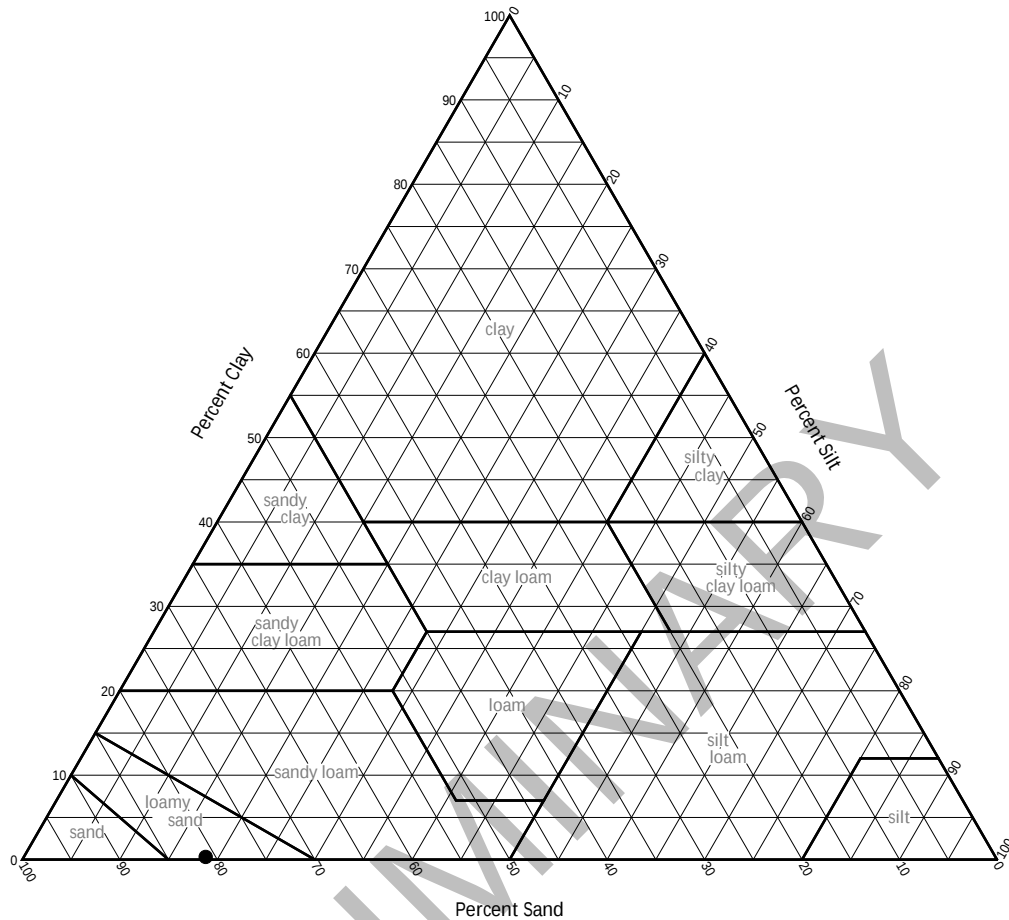
Fig. 25-S-3229

Tested By: AB/TG

Checked By: Becca Blake

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USDA Soil Classification



SOIL DATA							
	Source	Sample No.	Depth	Percentages From Material Passing a #10 Sieve			Classification
				Sand	Silt	Clay	
●	GZ-110	S-10	22-24'	81.0	18.8	0.2	Loamy sand

Thielsch Engineering Inc.
Cranston, RI

Client: GZA GeoEnvironmental, Inc.
Project: Proposed CFS-3
Devens, MA
Project No.: 01.0178186.00

Fig. 25-US-3229