Revised Geotechnical Report

ANC FedEx Sorting Facility

Anchorage, Alaska

June 2023



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CRW ENGINEERING GROUP

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1. Introduction and Project Description

CRW Engineering Group, Inc. (CRW) is pleased to present this geotechnical data and design recommendations report to support the site development of a new aviation cargo sorting facility with plane parking at the Ted Stevens International Airport (ANC) in Anchorage, Alaska. Figure 1 shows the project location with reference to Anchorage, Alaska.

A geotechnical investigation was conducted by CRW for MCG Explore Design (MCG) working through their agreement with FedEx.

The scope of work included:

- Performing a geotechnical investigation which included advancing peat probes and boreholes over the approximately 22-acre lot.
- Overseeing laboratory testing of recovered soil samples including consolidation tests, moisture content, grain size distribution with hydrometer, and Atterberg Limits.
- Analysis of field observations and testing results.
- Performing settlement calculations.
- Preparing the geotechnical report to provide recommendations.

1.1 Revised Report

CRW has prepared this revised final report to include the use of Geopiers ground improvement beneath the proposed building.

2. Site Conditions

The project is located on the east side of ANC, west of North Tug Road, east of the Remain Overnight Parking area, and south of the existing FedEx facility. This area is currently outside of the existing security fence. The site is approximately 22 acres, with overall dimensions of approximately 875 by 1080 feet.

The site has minimal topography and is primarily composed of wetlands. The National Wetlands Inventory lists three wetland classifications in this area: Freshwater Emergent Wetland (PEM1/SS1C), Freshwater Forested/Shrub Wetland (PSS4/1B), and Freshwater Forested/Shrub Wetland (PSS1/EM1B). Several areas appear to have been filled with granular material in the past, and these areas host many of the trees and shrubs that cover the lot. The unaltered portions of the lost include grassy wetlands with hummock and tussock terrain. The west and south edges of the site are particularly soft and wet.

To the west and south, the site is bounded by wetlands. To the south the wetlands extend to the ANC Airfield Maintenance and Fire Training facilities with only limited alteration to the natural state. The wetlands to the west transition to higher ground and ultimately to the fill upon which the Remain Overnight Parking Area and taxiways are built. To the east of the site is Tug Road which is built on a berm approximately 10 feet above the wetland grade. To the north, Taxiway U separates the site from the existing FedEx facility. Taxiway U does not extend all the way to North Tug Road.

Shallowly buried remnants of a small wooden structure or structures were found in the western portion of the site. The origin and purpose of the structures are unknown.

Site drainage has been enhanced by a few corrugated metal drainage basins and a network of ditches up to approximately 8 feet wide that lead to a drainage point in the northeast corner of the lot. It is believed that this outlet leads to an outfall into the Knik Arm to the north. The soil removed from the ditches is piled in narrow mounds parallel to the ditches and consists primarily of organics that now host many trees, shrubs, and other vegetation.

Minimal utilities are known to be located on the site. Communications and power lines run parallel and adjacent to North Tug Road.

3. Subsurface Exploration / Field Investigation

For a description of activities and results of the peat probing effort undertaken in May of 2021, see CRW's memorandum titled *Peat Probe Investigation Findings* (CRW, 2021). A geotechnical investigation was completed between the 3rd and 11th of March 2022, to assess the project site's existing soil conditions. The investigation drilled and sampled 16 boreholes (BH-01 through BH-16). Borehole logs are presented in Appendix A.

Borehole locations were pre-determined from the conceptual layout plan. Minor field adjustments to some of the boring locations were made to provide better access for the drilling equipment.

3.1 Subsurface Investigation

Drilling services were provided by GeoTek Alaska, Inc. (GTA) of Anchorage, Alaska, using a track-mounted Geoprobe 7822DT drill rig. The drill rig was equipped with a nominal 8-inch outer diameter (O.D.) hollowstem auger and a 3.25-inch inner diameter (I.D.) continuous flight, hollow stem auger, which was used to advance the drilling and reach the target depths for each borehole. At selected borehole locations, vane shear tests were conducted at pre-selected depths within the peat identified during the peat probe investigation to characterize the undrained shear strengths of the peat. Undisturbed samples of peat were also collected in selected locations for primary consolidation testing. Where the depths of vane shear and consolidation tests overlapped, an offset hole was drilled to ensure test and sample quality. Utilities were located prior to any drilling.

CRW engineers supervised the field exploration program, recovered soil samples, executed vane shear tests, and managed field operations. Borings were advanced to depths ranging from 31.5 to 76.5 feet below ground surface (BGS). Borehole locations are presented in Figure 2 which also provide the thickness of peat as determined during CRW's previous peat probe field work.

3.2 Sample Collection

Bulk soil samples were obtained from the borings by advancing a standard split-spoon sampler into the soil beyond the bottom of the auger or by collecting cuttings from the auger. Driven samples were collected using a 2-inch O.D. split-spoon sampler as a Standard Penetration Test (SPT). The sampler was driven 18 or 24 inches, counted in 6-inch intervals, using a 140-pound automatic hammer. The number of blows required to drive the sampler each 6-inch interval is reported on the borehole logs. The blow counts shown on the borehole logs are uncorrected values.

Samples for consolidation testing were collected in Shelby tubes advanced over the selected interval using the drill rig mast. Tubes were capped immediately upon retrieval and were transported and stored with care to prevent freezing and excessive jostling before being submitted to the laboratory.

Recovered samples were visually classified in the field before being individually sealed in double plastic bags and transported for additional testing. Field visual classifications were verified per laboratory testing. Soil characteristics, such as classification, consistency, moisture, and color were noted for each sample recovered. The classification was performed following the Unified Soils Classification System (USCS), according to ASTM D2487/D2488. Frost classifications of the soil are described according to the United

States Department of Transportation Federal Aviation Administration's (FAA) Advisory Circular (AC) Number 150/5320-6G (Airport Pavement Design and Evaluation) and reference to the Municipality of Anchorage (MOA) Design Criteria Manual (DCM) standard.

3.3 Borehole Completion

All boreholes were backfilled with cuttings brought to the ground surface during drilling. Eight piezometers were installed at the site. Piezometer wells (constructed of 1-inch Schedule 80 PVC with threaded joints and hand-slotted screens) were installed to varying depths. Wells with piezometers were left with 1.5 to 4.5 feet of stickup above the ground surface.

			Piezom			
Borehole Designation	Total Depth (feet BGS)	Completion Type	Screened Interval (feet BGS)	PVC Total Depth (feet BGS)	Stickup Height (feet)	Peat Depth (feet BGS)
BH-01	32	Piezometer	21.5 – 31.5	31.5	1.7	9.0
BH-02	76.5	Backfilled	-	-	-	3.0
BH-03	52	Piezometer	8.5 – 38.5	38.5	3.0	7.5
BH-04	41.5	Backfilled	-	-	-	15.5
BH-05	39	Backfilled	-	-	-	9.5
BH-06	31.5	Piezometer	2.0 - 12.0	12.0	3.3	2.75
BH-07	67	Backfilled	-	-	-	8.8
BH-08	37	Piezometer	7.0 – 27.0	37.0	1.5	6.0
BH-09	31.5	Backfilled	-	-	-	1.25
BH-10	36.5	Piezometer	7.0 – 17.0	37	2.9	7.0
BH-11	37	Backfilled	-	-	-	4.5
BH-12	51.5	Backfilled	-	-	-	5.0
BH-13	37	Piezometer	9.0 - 24.0	33.1	3.8	No peat
BH-14	36.5	Piezometer	8.4 - 18.4	23.4	3.8	No peat
BH-15	32	Piezometer	6.8 – 16.8	21.8	4.5	No peat
BH-16	32	Backfilled	-	-	-	7.0

Table 3-1 – Borehole Completion Summary

All borings were restored to original grade while striving to maintain original drainage patterns. The presence of snow made this difficult in some cases.

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4. Laboratory Testing and Results

4.1 Testing Summary

Soil laboratory tests to evaluate index properties of representative samples were performed by Alaska Testlab at their Anchorage facility. The laboratory tests were performed in accordance with the test methods of ASTM International or laboratory procedures, as summarized in Table 4-1. In total, 186 samples were submitted for testing.

The laboratory testing consisted of soil index tests for: water content, grain-size distribution, Atterberg Limits, frost classification, organic content by loss on ignition (LOI) and Limited Mechanical Analysis (LMA) to determine percentages of gravel, sand, and fines content. Advanced testing included consolidation testing on samples of undisturbed peat.

LMA consists of washing a sample over the Number 200 mesh sieve. The coarse fraction of the remaining soil is then dried and sieved through the Number 4 sieve to determine the sand and gravel content. The LMA is a means to determine the percentage of coarse and fine soil in a sample without having to perform full gradations. Because LMAs are not full gradations, all classifications of clean granular soils are "poorly graded" even though the soil may, in fact, be well graded. Qualitative observations of grain sizes are included in the soil descriptions on the logs in Appendix A.

Results of the laboratory testing are presented in Appendix B.

Analysis	Method	Quantity
Water Content	ASTM D2216	176
Grain-size Distribution including hydrometer	ASTM D6913 ASTM D422	3 2
Atterberg Limits	ASTM D4318	27
Limited Mechanical Analysis	Laboratory procedure	34
Organic Content by LOI	ASTM D2974	1
Consolidation Test	ASTM D7181 ASTM D2435	8

Table 4-1 – Laboratory Tests

4.2 Results

All samples were tested for their water content. In granular soils the water content varied between 7 and 37 percent. For silts and clays, water contents up to 33 percent were recorded. Several samples with organic material were analyzed, and water contents found to vary between 49 and 1757 percent.

Native soils comprise silts, sandy silts, silty sands, clays, and occasional layers of well-sorted sand. Gravel was rarely observed across the site in native soils, and where present was subrounded to rounded and less than one inch in diameter.

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Thirty-nine samples were selected for grain-size distribution testing or LMA. Fines contents ranged from 9 to 100 percent in soils tested. Many fine-grained soils were not analyzed for grain size. Two samples were analyzed by hydrometer testing, and the fraction finer than 0.02 mm ranged from 50 to 72 percent, a frost classification of FG-4 (MOA F-4).

Twenty-seven samples were tested for their Atterberg Limits. The results of these tests determined the plasticity indices to be between 7 and 27. Most soils tested were classified as lean clay, with one classified as fat clay and one as silty clay.

Eight samples were tested for their consolidation parameters. The interpreted results of these tests are summarized below. Note that the specific gravities were estimated based on past testing of specific gravity of peats relative to their initial water content. The coefficient of consolidation is based on samples tested between 500 to 2000 pounds per square foot (PSF) to better represent loadings in the field.

Borehole	Sample	Depth	Initial Water Content (%)	Specific Gravity, Gs	Initial Void Ratio, e	Compression Index, Cc	Secondary Compression, Cα	Coefficient of Consolidation (ft ² /yr) ¹
BH-01	S2B	3	410	2.0	10.41	4.9	0.43	95 to 63
BH-01	S2B	3.5	346	2.10	8.02	2.8	0.13	189 to 158
BH-05	S4	7.5	1757	1.5	28.29	11.6	0.17	126 ²
BH-05	S4	8	555	1.7	12.11	6.2	0.23	88 to 47
BH-08	S2A	2.5	377	2.10	9.21	4.2	0.05	158 to 126
BH-10	S2	6	610	1.6	10.06	5.3	0.08	63 to 19
BH-10	S2	7	579	1.7	10.71	4.6	0.05	79 to 47
BH-12	S3A	4	264	1.7	4.84	2.1	0.06	79 to 57

Table 4-2 – Consolidation Parameters

1. Values are for the 500 PSF to 2000 PSF, respectively.

2. Issues occurred during testing. Value is for 500 PSF only.

We note that not all samples appears to have achieved completion of primary consolidation to confidently determine the secondary compression value, C_a . We recommend the standard literature value of C_a/C_c of 0.06 be used for design (Terzaghi et al., 1996).

The strain produced in the lab testing for 500 PSF loading ranged between 6 to 18 percent with an average of 9.4 percent. The strain for the 1000 PSF loading ranged between 3 to 18 percent with an average of 10.5 percent. The strain for the 2000 PSF loading ranged between 9 to 33 percent with an average of 17.7 percent.

Results of the laboratory testing are presented in Appendix B.

5. Site Conditions

5.1 Geology

The surficial geology in Anchorage was determined from the Simplified Geologic Map of Central and East Anchorage, Alaska, as mapped by R.A. Combellick with the Alaska Division of Geologic and Geophysical Surveys (DGGS) in 1999 in addition to the 1972 map by Schmoll and Dobrovolny. Ted Stevens International Airport (ANC) is located in the western portion of the MOA; the surficial geology in this area is characterized by glacially-derived sediment. Soils in the area are typically 1) well stratified and sorted silts and clays of aeolian, fluvial, or lacustrine origin; 2) well sorted sands and gravels of glacial outwash origin; or 3) silts and clays underlying coarser sediments of lacustrine origin (Schmoll, et al. 1999). Peat bogs are common in the general area.

5.2 Soil Lithology

The surface of the project area consists predominantly of a brown to black wet, very soft, fibrous peat with roots and occasional wood fragments. This peat layer ranged in thickness from 0 feet BGS on the northeast side of the site to 15 feet BGS in the southwest side of the site. The peat is underlain by a unit of gray to brown moist silty sand or silt with sand. The silty sand/silt with sand ranged between 5 feet thick on the southwest corner of the site and 5 to 20 feet thick on the north and eastern sides of the site, respectively.

Below the silty sand/silt with sand layer, was a stiff, gray, and moist layer of lean clay. The clay ranged between 3 to 40 feet BGS with depths reaching 50 to 55 ft BGS in the south half of the site. This lean clay had occasional layers of silt, silty clay, and clayey sand.

Specific variations in water content, fines content, and other lithological features were too diverse to succinctly summarize. Borehole logs are included in Appendix A with soils laboratory data in Appendix B for further information.

5.3 Vane Shear Testing

Vane shear testing was performed in mineral soils recovered in split-spoons samples and in situ in peat material. Vane shear testing of split-spoon samples was performed with a Humboldt handheld vane shear tool used in the manner recommended by the manufacturer. Vane shear tests in the peats were performed using an Acker downhole vane shear tool provided by GeoTek and deployed using the drill rig. Vane shear tests were conducted as recommended by the manufacturer using a torque wrench.

Eight downhole vane shear test locations were selected to test the range of peat undrained shear strength as determined from qualitative observations recorded during the peat probing effort in May 2021 (CRW, 2021).

The results of downhole vane shear tests in peats conducted within the upper 8 feet BGS range from 157 to 1356 PSF. Analysis of these results shows that shear strength increases with depth and that the lower limit of the undrained shear strength can be described by the following equation:

 S_u (PSF) = 60.6*Depth (feet) -21.7

The results of vane shear tests on split-spoon samples of cohesive material from 7.5 to 75 feet BGS show variable undrained shear strength values with no clear trend between 7.5 to 35 feet BGS. Measured undrained shear strengths range from 417.8 to 3133.5 PSF. Below 35 feet BGS, measured shear strength values range from 417.8 to 1754.8 PSF, generally increasing with depth. The trend is not marked enough to justify representation with a simple equation.

5.4 Groundwater Conditions

Groundwater, if observed during drilling, was recorded on the borehole logs. Some of the sand, silty sand, or silt layers within the clay may be water-bearing, though the predominantly clayey soils throughout the site are likely to act as aquitards. The surface water in the peat bog and shallow granular soils is perched on this clay. Other than this, there is no well-connected unconfined aquifer across the site that forms a water table. Table 5-1 provides a summary of the screened intervals and the groundwater levels at the time of drilling and several days after the completion of drilling. All depths are relative to the existing ground surface.

Parahala	Depth to (feet		Piezometer			
Borehole Designation	At Time of Drilling	Nine Weeks After Drilling	Screened Interval (feet BGS)	PVC Total Depth (feet BGS)	Stickup Height (feet)	
BH-01	10.5	5.05	21.5 – 31.5	31.5	4.75	
BH-03	1	20.95	8.5 – 38.5	38.5	3.0	
BH-06	7.5	0.7	2.0 - 12.0	12.0	3.25	
BH-08	7.5	0.7	7.0 – 27.0	37.0	1.5	
BH-10	Not observed	0.28	4.6 - 14.6	34.6	2.9	
BH-13	7.0	4.25	4.1 – 19.1	29.1	3.8	
BH-14	3.0	1.3	5.4 - 15.4	20.4	3.8	
BH-15	7.5	5.3	5.8 – 15.8	20.8	4.5	

Table 5-1 – Summary of	of Groundwater Levels

5.5 Seismic Considerations

The project site lies in a region of moderate to high seismicity, and is subjected to relatively large earthquakes and strong ground motion. The Alaska Earthquake Center (AEC) has documented several moment magnitude earthquakes larger than 7.0, including the November 2018 Anchorage earthquake. The general Anchorage area is bounded by the Denali Fault to the north and east, the Castle Mountain fault to the west-southwest, and the Alaska-Aleutian Megathrust Subduction zone to the south. The project site has three dominant seismic sources that present hazards. All information below comes from the AEC, the Alaska Department of Natural Resources Division of Geological and Geophysical Surveys, and the United States Geological Survey (USGS) website (retrieved July/August 2020).

- The Denali Fault is a thrust and right-lateral strike-slip surface fault extending over 1,000 miles, located approximately 130 miles away from the project site at the nearest approach. The Denali Fault has a variable slip rate of greater than 0.2 inches/year on some segments. The central portion generated a moment magnitude earthquake of 7.9 on November 3, 2002.
- The Castle Mountain fault is a northeast-striking, active fault system located an estimated 25 miles from the project site. The fault is approximately 120 miles long and the western segment is considered active with Holocene fault scarps identified along this portion of the fault. The Castle Mountain fault has a maximum slip rate of 0.2 inches/year and an estimated maximum moment magnitude earthquake of 7.1.
- The toe of the Alaska-Aleutian Megathrust Subduction zone is approximately 200 miles from the project site. This plate boundary fault is the source of the 1964 Great Alaska Earthquake. A fault in the subducted Pacific slab was the source of the 2018 Anchorage Earthquake. The convergence and slip along the megathrust is estimated to be between 2.2 and 2.9 inches/year in a north-northwest direction.

Seismic design parameters were determined from the MOA Building Safety Design parameters, the Applied Technology Council's (ATC) online Hazards by Location tool (https://hazards.atcouncil.org/), and the United States Geological Survey (USGS) online Unified Hazard Tool (https://earthquake.usgs.gov/hazards/interactive/) in addition to considerations from the American Society of Civil Engineers (ASCE) 7-16 (2016) and the International Building Code (IBC, International Code Council, 2018). We note that ASCE 7-16 has two maximum considered earthquakes (MCE): one for geometric mean (MCE_g) and one for risk-targeted (MCE_R). See ASCE 7-16 for detailed discussion of the differences in the two MCE ground motions.

Table 5-2 provides the seismic design parameters for the 2,475-year return period (2 percent in 50 years) consistent with the IBC and ASCE 7-16. The seismic parameters below assume a Risk Category II structure. If the building has a different risk category, the parameters should be adjusted.

The borings depths were not sufficient to fully evaluate the project site class based on ASCE 7 however based on our borings, experience, and judgment, we estimate the project site class to be site class D.

The MOA has identified and mapped areas of the city where there is increased potential for ground failure during a seismic event (MOA, 2006). The map was developed based on observations of ground failure from the 1964 M9.2 earthquake and attempts to identify sites that may experience ground failure. There are five seismic hazard zones, Zones 1 through 5, that range from low to high potential for ground failure, respectively. The project site is located in Zone 3.

Description	Value (Site Class D)						
Moment Magnitude, M _w	9.2						
Peak Ground Acceleration, PGA _M	0.60g						
S _s (0.2 second period acceleration, MOA value)	1.50g						
S ₁ (1 second period acceleration, MOA value)	0.55g						
S _{DS} (0.2 second period acceleration)	1.00g						
S _{D1} (1 second period acceleration)	0.623g						

Table 5-2 – Seismic Design Parameters (2,475-year return period)

5.6 Contaminated Soils

No evidence of contaminated soils was observed during the geotechnical investigation based on olfactory screening during sample recovery. No petroleum odor or sheen was observed on any sample. Environmental sampling for PFAS was not part of CRW's scope of work and no results of environmental investigations are presented in this report.

6. Geotechnical Engineering Recommendations

Based on our findings and results of our laboratory testing, we have developed recommendations for the project site development including taxiway and aprons, hardstands, parking lots, sidewalks, utilities, building foundations, and fill slopes.

6.1 Frost Depth and Permafrost

Seasonal frost was observed across the site to varying depths at the time of drilling. Recommendations are based on one-dimensional freeze/thaw estimates for Anchorage which typically results in design frost depths of 8 to 11 feet BGS. It should be noted that seasonal fluctuations of snow cover, temperatures, infiltration/evaporation, groundwater table, and other climatic effects will have an impact on the design frost depth. Deeper frost penetrations are possible though not common.

Permafrost was not encountered in the exploration and is not expected at the project site.

6.2 Stability Evaluation

6.2.1 Slope Instability

The site is relatively flat, therefore, by inspection, global instability is deemed of no concern.

6.2.2 Loss of Bearing Capacity

The proposed building will be founded on piles which will be installed sufficiently deep that loss of bearing during a seismic event is expected to be negligible.

6.2.3 Liquefaction and Lateral Spreading

We performed an inspection of the field blow counts and evaluation of the soil types, including fines content, which leads to our conclusion that there is a low potential for soil liquefaction at the project site. We noted a zone of potentially liquefiable at the interface of the peat and underlaying silty sand on the order of 2 to 3 feet in thickness in select borings assuming the silty sands are saturated. The primary manifestation from this would be post-earthquake settlement which we estimate to be on the order of 1 to 2 inches before fill placement which is expected to mitigate some post-earthquake settlement, though the exact magnitude is difficult to determine.

If proposed building is founded on pile foundations due to the presence of peat beneath the building footprint, the pile design should account for the post-earthquake liquefaction and backfill/surcharge settlement downdrag as required.

6.3 Site Preparation, Fill Placement, Surcharge, and Settlement Monitoring

All trees, bushes, and existing infrastructure should be removed prior to beginning any earthwork. We understand that removal of the peat at this site is not planned due to the presence of PFAS.

6.3.1 Fill Placement and Staged Construction

The peat found in the west and southwest portion of the site is particularly soft and potentially susceptible to shear failure. The in-situ vane shear measurements and expected fill heights are not expected to require staged construction. Staged construction occurs when the underlying peat/soft soil cannot bear the weight of the full amount of fill, requiring that the fill be placed in stages. A stage is typically a percentage of the full fill height that allows the peat/soft soil to gain strength through the consolidation process. Once sufficient strength is gained, additional stages are added until the full height is achieved.

The additional load due to surcharge, however, could warrant staged construction and will be evaluated by CRW's geotechnical and civil engineers as the design advances.

During fill placement, the contractor shall monitor for signs of "mud-waving" or other instability. If signs of instability are observed fill placement shall be halted to assess conditions. We recommend the project's specification include requirements for contractor experience in working with fills over peat.

6.3.2 Surcharge and Drainage

Placement of fill over the site will result on primary consolidation of the peat. As such, we recommend a surcharge be placed prior to final earthwork construction (i.e. pavements) to compress the peat and mitigate primary consolidation. Secondary compression (long-term settlement in the peat due to sustained loading) is expected; however, the surcharge can mitigate some secondary compression. In addition to compressing the peat, the mineral soils at the north end of the feeder ramp (in particular BH-14 and BH-15) are recommended to be surcharged to over-consolidate, or be excavated and replaced.

The height of the surcharge is a function of the settlement magnitude (both primary consolidation and secondary compression), time rate of consolidation considering drainage path, and available construction window. CRW's geotechnical and civil engineers are working with the contractor to develop the surcharge plan as the design advances.

We recommend surcharge be placed in the fall, prior to ground freezing, to permit the maximum amount of time for the surcharge to be effective. If the peat freeze prior to surcharge placement, the surcharge will not induce the required loading and be ineffective until the peat thaw the following spring/summer.

The time required for surcharge can be lengthened if staged construction is required.

If the total construction time between surcharge and staged construction does not meet the construction schedule, the design will need to incorporate a method to accelerate consolidation. A common method for accelerating consolidation is the installation of prefabricated vertical drains (PVDs, a.k.a. "Wick Drains"). The PVDs would be spaced such that consolidation could be decreased from months down to weeks or even days. PVDs are typically installed by ground improvement contractors and spaced 3 to 8 feet apart in a triangular pattern covering the whole surcharged area. If this option is selected, design of the PVD layout should be developed in consultation with the geotechnical engineer of record and a ground improvement contractor.

The consolidation of the peat is expected to produce water in an upward manner due to the relatively low permeability of the underlying silty soils. To assist with drainage, the designers could consider a 1-foot layer of clean, free-draining fill that meets the Porous Backfill Material specification in Alaska Department

of Transportation and Public Facilities (ADOT&PF) Standard Specification for Highway Construction (ADOT&PF, 2017) be used. The Porous Backfill Material is placed directly on the geotextile (discussed later in this report) with subsequent lifts of classified fill. To aid in constructability, we recommend a biaxial geogrid, consistent with Mirafi BXG11 or approved equal, be installed at the top of the Porous Backfill Material. The geogrid should be handled and installed per the manufacturer's recommendations.

6.3.3 Settlement Monitoring

We recommend the installation of settlement monitoring plates over the site at the beginning of fill placement to permit monitoring of the peat settlement over time. The time-rate of settlement can then be correlated with degree of consolidation using observational methods to predict when primary consolidation is nearing completion.

The settlement plates consist of square metal plates attached to the bottom of a riser pipe, which is typically a two-inch diameter steel pipe welded orthogonal to the plate with threaded connections at the top to allow additional pipe sections to be added as the fill is placed. The top of the riser pipe is then surveyed during and after fill/surcharge placement. We recommend the plate be one inch thick and at least three feet square. The plate can be directly installed on the peat, although is it preferable to install it on the first lift of fill for increased stability. The settlement monitoring plates and risers can be damaged if not protected and regularly monitored by construction personnel and equipment. If a settlement monitoring plate is damaged during construction, it should be replaced with a new plate and riser installed at the same location as soon as possible.

Settlement plate locations will be coordinated with the civil engineer as the design advances.

We recommend survey measurements of the riser pipe occur a minimum of every 5 days or each time a new riser pipe is installed. The accuracy of the survey measurements should be at least ± 0.01 feet. Survey should reference the same non-moving benchmark each time settlement readings are collected for consistency. Survey measurements should be provided to the geotechnical engineer as soon as possible to interpret the data and provide real-time monitoring of the degree of consolidation.

Alternatively, the designers can select instrumentation to monitor settlement during construction. CRW's geotechnical engineers will work with the designers to select the most cost effective and simplest approach during design.

6.3.4 Alternatives to Surcharge

As the design is advanced, we understand alternatives to surcharging the site have and are being considered including light weight fill and ground improvement.

We understand the design team has elected to use ground improvement beneath the proposed building to utilize shallow foundations as an alternative to pile foundations. CRW recommends the use of Rammed Aggregate Piers (RAP) to stabilize the peat and provide a stable surface for conventional shallow foundations. RAP have greater strength and stiffness allowing for higher bearing capacities and less settlement compared to traditional stone columns.

6.4 Shallow Foundations with Rammed Aggregate Piers (RAP)

We recommend the use of Rammed Aggregate Piers (RAP) to provide a stabilized subgrade upon which conventional shallow foundations for the building can be constructed. The RAP is a highly densified inclusion of rammed crushed aggregate forming a relatively stiff column to a target depth of improvement. RAP are constructed by applying a direct vertical ramming energy to compact successive lifts of the aggregate in a pre-drilled hole. Constructed RAP inclusions provide a reinforced soil profile with less compressibility than without the inclusion. Typically, RAP range from 2 to 3 feet in diameter, spaced between 8 to 15 feet on-center, and can extend to depths up to 30 feet, depending on construction technique and/or design requirements. For this project, RAP diameter is 2 feet, with pier spacing on the order of 6 to 7.5 feet on-center, and penetration depths up to approximately 20 feet.

6.4.1 Bearing Capacity and Settlement

Footings constructed on RAP have allowable bearing pressures between 3,000 to 6,000 PSF. For this project, we understand the design is based on an allowable bearing pressure of 4,000 PSF with a one-third increase for transient loads such as wind and seismic. We recommend the RAP contractor work directly with the structural engineers on the design allowable bearing pressure during design development.

We recommend RAP be designed for a typical settlement of 1 inch total and 0.5-inch differential settlement. The design will need to consider time-dependent settlement in the peat and underlying clays as part of the settlement calculations. CRW's geotechnical engineer can provide consolidation characteristics of the underlying clays based on past experience and local correlations as no site-specific consolidation testing was completed as part of the fieldwork.

For the building slab foundation, we recommend coordination between the structural engineer and the RAP designer on the required structural slab load and the associated capacity of the RAP.

6.4.2 Lateral Loading

Lateral loads on footings will be resisted by passive earth pressures developed against the footing block and frictional resistance against the base of the footing. We recommend a passive resistance (equivalent fluid pressure) of 225 psf/foot (pcf) for the expected fill adjacent to the footings. This equivalent fluid pressure includes a factor of safety of 2.0. A friction coefficient of 0.45 is recommended to be used for resistance of footings to lateral sliding, assuming the concrete footing is cast directly against sand and gravel. A friction coefficient of 0.35 is recommended for precast footings.

6.4.3 Uplift

Uplift loads may occur in some foundation elements due to overturning moments resulting from wind and seismic forces. Uplift loads may be resisted by the weight of the footing and soil within the limits of a truncated pyramid above the top of the footing. The shape of the truncated pyramid will vary with material type and density. For the expected fill, the pyramid should be defined by a 17 degree angle α as shown in Exhibit 1, measured from a vertical line extending upward from the top edge of the footing. If footings are not sufficient to resist uplift, additional structural elements such as helical piles may be required. CRW's geotechnical engineer will provide support to the structural engineer if helical piles are required to address uplift.

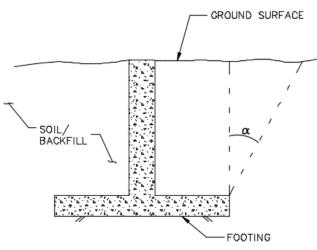


Exhibit 1. Uplift Resistance

6.4.4 Liquefaction Potential with RAP

We understand the shallow foundation will be designed to accommodate the post-liquefaction settlement; however, we anticipate that the placement of additional fill and the construction of the RAP will result in increased confinement as well as densification of the liquefiable layer, respectively. These combined improvements can reduce the liquefaction potential and settlement magnitudes even further than the already acceptable levels. Because the shallow foundation will accommodate the maximum liquefaction potential before any resulting construction, we do not feel verification of liquefaction mitigation is required as part of the project. If verification is required, CRW should be retained to perform that verification as we are intimately familiar with the field testing procedures that were performed and the most qualified to perform post-construction verification.

6.4.5 RAP Construction Recommendations

RAP layout and installation requires precise control in the field and is the responsibility of the General Contractor (GC) and the RAP Contractor. The RAP Contractor should provide the required tolerances for pier installation relative to the design. Other construction requirements such as stable subgrade requirements, lift thickness, and depth shall be coordinated between the GC and the RAP Contractor. We understand the aggregate for the piers will consist of Type 1 Grade B in general accordance with ASTM D1241.

The presence of the peat will require the use of casing or other similar construction technique to ensure stabilization of the peat for the construction of the RAP. Low undrained shear strength material can present construction difficulties for RAP (Han, 2015).

We recommend downward modulus test(s) be performed on the RAP to determine the pier stiffness. The number of tested RAP should follow typical practice. The RAP Contractor should select the pier(s) for testing, perform the test(s), and submit the results to the project geotechnical engineer for review. We recommend the testing procedure be submitted to the geotechnical engineer for review well in advance of testing to ensure adequate time for feedback and comment prior to mobilization of equipment.

We recommend CRW be retained to provide full-time observation of the installation of the RAP to verify the procedures and document any changes to the subsurface conditions, if encountered.

6.5 Excavations

All excavations should follow proper local, state, and federal requirements including those in 29 Code of Federal Regulations (CFR) Part 1926 Occupational Safety and Health Standards Subpart P – Excavations (Occupational Safety and Health Administration [OSHA], 2020). The contractor is responsible for trench stability, worker safety, and regulation compliance as he will be present on a day-to-day basis and can adjust efforts to obtain the needed stability.

Excavation in the areas of thick non-compressed peat is not recommended due to its soft nature and high degree of saturation. In areas adjacent to higher ground, in compressed peat, or where granular materials are present near the surface, excavations may be more practical. We recommend close coordination between the GC and the RAP Contractor if excavations are expected to occur near the RAP after they are installed.

Excavations in soils above the water table may stand relatively steeply initially but fail suddenly without warning. As the in-situ silty soils dry they will tend to ravel and slough to their natural angle of repose, which we estimate to be about 2H:1V (horizontal to vertical). Below the water table, or if surface water is allowed to enter the trench, silty soils may soften, squeeze, slump over time or due to disturbance, to slopes of 3.0 to 4H:1V or flatter.

Permanent excavations into soil should either be retained or sloped to meet long-term stability requirements. Excavation and backfilling operations should be closely coordinated so that potential seepage and surface runoff is not allowed to collect and stand in open trenches for long periods.

We recommend that excavation bottoms in mineral soils be evaluated by a qualified geotechnical engineer or trained inspector to identify unsuitable soils. Unsuitable soils are defined as organics, organic soils, or soft, saturated silts. If unsuitable soils are encountered, they should be overexcavated and replaced with non-frost susceptible (NFS) classified fill as required.

We recommend that the excavations be performed with equipment that minimizes disturbance of the insitu soils. Excavations should be performed with equipment that minimizes the disturbance of any subgrade soils. The contractor should exercise care to avoid pumping or rutting subgrade soils. Overexcavation and replacement of disturbed, pumped, or rutted subgrade soils may be required to achieve compaction of fill.

6.6 Drainage, Control of Water, and Dewatering

Excavations may experience seepage due to potential perched water, surface runoff, or rain infiltration, and should be monitored during construction. Where possible, the ground around open excavations should be contoured to direct surface water away from the excavations.

Parking areas should have positive gradients toward drainage structures and away from buildings. Site grading should be established to provide drainage of surface water and roof drainage away from proposed

buildings. Grading should be designed to prevent ponding of surface water except where retention ponds or similar devices are intended.

The native soils may present difficulties for compaction and construction equipment if exposed to excess water from rain or surface runoff.

Groundwater was observed in the peat, which is expected. No conventional water table was observed deeper in the soils. Groundwater conditions will vary with environmental variations and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as man-made influences, such as existing ditches and drainage structures.

We understand excavations into compressed peat will occur as part of the utility installations. Depths range from approximately 8 to 12 feet below final grade. As such, we anticipate dewatering will be required. Due to the variation of peat depth, soil type, earthwork quantity balances, and PFAS water treatment, CRW's geotechnical engineer will provide dewatering rates separately from the geotechnical report.

6.7 Pile Foundation Recommendations

Foundations are used to transfer building loads to the underlying soil. The soil type, consistency/density, compressibility, frost classification, heave/swell/collapse potential, groundwater table, and depth to and type of bedrock are all considered in the type of foundation recommended for the proposed infrastructure.

Due to the presence of peat from the ground surface to depths up to 15 feet BGS, if ground improvement with shallow foundations is not used, we recommend deep foundations via piles to carry the expected building loads.

Design of pile foundations should consider the bearing capacity of the soils, expected settlements, uplift forces, lateral forces due to wind and seismic loads, frost heaving potential, and constructability issues. We anticipate that the pile will consist of a driven, open-ended steel pipe pile. Pile size and depth must be selected based on vertical and lateral soil response to loading, downdrag loading, and installation verification method. Helical piles were considered, but not found to be cost advantageous compared to driven piles. Small diameter helical piles for uplift are not included in the comparison.

All values and recommendations presented below are based on our understanding at the time of this report and should be assessed and refined in the design phase.

6.7.1 Soil Parameters

We have developed generalized soil parameters for use in design of the pile foundation based on the soils encountered in borings BH-02, 07, and 12. Table 6-1 provides generalized average soil properties for input into lateral and axial pile analysis based on blow counts, soil types, lab testing results, literature values, and judgment. The soil profile is based on conditions at the time of the geotechnical investigation and do not reflect changes to the site for construction such as fill placement.

Depth (feet BGS)	Soil Classification	Model Soil Type	Drained Friction Angle (degrees)	Effective Unit Weight (pcf) ²	Undrained Shear Strength (psf)	Modulus of Horizontal Subgrade Reaction (psi/in)	€50 (-)	P- Multiplier, m _p 1
0 – 9	Peat	Soft Clay	N/A	72	200	N/A	0.02	1.0
9 – 12	Silty Sand	Reese Sand	32	62.6	N/A	75	N/A	1.0 [0.1]
12 – 20	Silty Sand	Reese Sand	32	62.6	N/A	75	N/A	1.0
20 – 30	Lean Clay	Stiff Clay without free water	28	57.6	1200	-	0.01	1.0
30 – 60	Lean Clay	Stiff Clay without free water	28	57.6	600	-	0.02	1.0
60 – 75	Lean Clay	Stiff Clay without free water	28	57.6	1200	-	0.01	1.0

Table 6-1 – Soil Profile for Building Piles

The values in the above table are appropriate for non-cyclic loading.

pcf – pounds per cubic foot, psi/in – pounds per square inch per inch, psf – pounds per square foot

1. For liquefied/seismic conditions, the p-y method and P-multipliers provided in brackets should be applied in LPile analysis.

2. All soil units are below the static groundwater level. Total unit weight of soil is reduced by 62.4 pcf for submerged soil units to estimate effective unit weight.

6.7.2 Axial Capacities

Typically, the pile's axial capacity is developed through frictional resistance along the pile's external surface area and the tip resistance at the end of the pile. The allowable axial pile capacity during design is dependent on the size/shape, type, installation, and verification method during construction. The verification method dictates the factors of safety used in design. CRW's geotechnical engineer has provided axial capacity charts for select pile sizes and will continue to provide pile capacities separate from this report as the design develops.

We recommend driven, open ended, steel pipe pile be used for the building foundation. Discussion on additional considerations for the axial pile design are discussed below.

6.7.3 Lateral Capacities

Lateral loads from the wind and seismic loadings are expected to occur. The lateral loading on foundation piles will be resisted by the surrounding soil and is dependent on pile type, size, stiffness, allowable deflection, and degree of pile head fixity. The behavior of soil surrounding and reacting to a laterally loaded pile can be characterized by the p-y method, which offers a family of curves that relate soil reaction (p) to lateral pile deflection (y). P-y curves are assigned at discreet depths along the pile and are equivalent to stiff, non-linear springs counteracting the pile movement.

For the use of modeling, lateral soil properties are provided in Table 6-1. No factors of safety should be applied to these parameters, as they are for displacement-based analyses. Further reductions should be applied if piles are spaced less than 6 times the largest pile diameters apart (see next section).

6.7.4 Group Effects

If more than a single pile is used, the piles should be spaced far enough apart that group effects are not deemed a concern. If multiple piles are placed close together, group effect decreases the axial capacity of a single pile. If the piles are spaced over 6 times the pile diameter, the group efficiency is 1.0. At 2.5 times the pile diameter, we recommend the efficiency be 0.65. For intermediate spacing, the value for efficiency may be determined by linear interpolation. Spacing closer than 2.5 times the pile diameters is not recommended.

For lateral pile group action, the p-y curves should be reduced if the piles are spaced closely enough to influence the other piles in the group. The values of p should be multiplied by a p-multiplier value, Pm, to account for group effects. The value of Pm can be determined based on recommendations in the AASHTO LRFD Bridge Manual (AASHTO 2015).

6.7.5 Downdrag

The placement of fill is expected to produce consolidation of the peat and loose, silty sand resulting in downdrag on the pile. Downdrag forces are the result of soils that move downward relative to a pile foundation that extends into dense, non-compressible soils. The vertical settlement of the consolidating soils generates negative (i.e. downward) frictional load on the side of the pile. We recommend the pile's computed frictional resistance in the upper 12 feet be used for the downdrag force in the pile design.

6.7.6 Factor of Safety

We have provided factors of safety for compression and tension, lateral, and frost heave loading for driven piles based on published literature for deep foundations (AASHTO 2015; FHWA, 2016) and judgment. We recommend the minimum factors of safety for compression, tension, and lateral capacity of piles as shown in Table 6-2. These factors of safety assume no static load testing is performed. Lower factors of safety can be used as higher quality load testing occurs.

Table 6-2 – Pile Recomm	ended Factors of Sa	fety
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Method/Loa	Factor of Safety	
Static Analysis Comprossion	Skin Friction	2.25
Static Analysis – Compression	End Bearing	3.0
Static Analysis – Tension (excludi	3.0	
Static Analysis – Lateral and Dow	1.0	
Static Analysis – Frost Heaving	1.5	
Verification – Wave Equation An	2.0	
Verification – High Strain Dynam	ic Testing (HSDT)	1.5*

* Assumes significant driven capacity during construction beyond required value or re-strike of the pile.

6.7.7 Pile Driving Considerations

We anticipate the use of an impact pile driving hammer to install the pile foundation. We recommend the contractor submit a pile driving plan prior to mobilization of equipment to the site. The plan should include proposed methods, equipment, and a wave equation analysis.

The hammer should be sized to achieve the ultimate pile capacity without damage to the pile and not exceeding the blows per foot of the hammer that voids the manufacturer's warranty. The compressive driving stress is recommended to not exceed 90 percent of the steel yield strength. A wave equation analysis should be performed prior to the start of pile driving to ensure the pile/driving hammer combination are compatible so as to minimize the driving stress in the pile while also achieving required pile embedment. The selection of the pile driving equipment is the responsibility of the contractor, but is subject to approval by the engineer.

We recommend driven piles be installed plumb, and be no more than a 1/8-inch per foot from the vertical and be installed within 2 horizontal inches of design location. Piles should be driven continuously to the extent possible to avoid pile setup.

We recommend the piles be driven to a capacity that includes both the downdrag load and the structural load, not just the structural load.

We recommend that driven piles have an inside cutting shoe to avoid damage to the pile toe should any obstructions be encountered. The contractor should have means of clearing obstructions like pre-drilling or jetting.

A qualified technician or engineer representing the owner should be present during production driving to observe and record pile installation practices. Complete driving logs should be maintained as part of the permanent as-built record. Completed pile driving logs should, at a minimum, include:

- Date of installation
- Start and end time of driving the pile and any stopping periods
- Hammer and pile designation, type, size, etc.
- Hammer stroke and setting
- Blows per foot of pile
- Any other comments during driving

Two methods for verifying pile capacity during driving are 1) wave equation analysis, and 2) dynamic testing with signal matching using high-strain dynamic testing (HSDT).

Wave equation analysis is performed to establish installation criteria (i.e., required blows per foot versus stroke or energy of the particular hammer) to determine ultimate pile capacity. The wave equation is used to assess potential pile damage and driving stresses. The wave equation analysis assesses the feasibility of the proposed foundation system and establishes installation criteria to limit driving stresses to acceptable levels and provides verification in the field.

HSDT testing provides an added degree of certainty when determining pile capacity, and consequently permits a lower factor of safety when calculating ultimate pile capacity. Other advantages of HSDT testing is the ability to monitor pile stresses during driving, measure hammer energy transmitted to the pile,

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recognize possible damage during installation, gauge soil set-up or relaxation, and assess structural integrity of the pile as installed. HSDT is strongly recommended for the verification method during design and construction, particularly to better assess the magnitude of the downdrag and ensure the pile has adequate axial capacity. We recommend CRW be retained to perform HSDT to verify pile capacity during construction.

6.8 Retaining Walls and Lateral Earth Pressures

We understand retaining walls are not anticipated for this project however we recognize many times the site development changes such that they become necessary. We have provided the following general recommendations which can be refined if retaining walls become necessary.

Retaining walls, including those used for basements or crawl spaces, must be designed to resist lateral earth pressures plus lateral pressure resulting from surcharge loads applied at the ground surface behind the wall. The magnitude of the earth pressure varies depending on permissible wall movement, type of backfill used, compaction, and drainage.

We recommend a minimum of 5 feet thick, clean, free-draining, and properly-compacted (per our recommendations) coarse-grained soil for backfill, with drainage provisions to prevent the buildup of hydrostatic pressure on the wall. All retaining wall recommendations assume these conditions exist. Alternate recommendations can be provided, should differing materials or drainage exist. Additional lateral loads due to surface loads are not included in the equivalent fluid densities below.

The active earth pressure condition for static loading should be designed to resist the lateral earth pressure exerted by a fluid with a density of 40 pcf if the retaining wall is allowed to deflect or rotate a minimum of 0.001 times the wall height.

The at-rest pressure condition will occur if the wall is restrained at the top and cannot move sufficiently to permit the active earth pressure condition to exist. Under this condition, retaining walls should be designed to resist the lateral earth pressure exerted by a fluid with a density of 60 pcf.

The passive earth pressure condition for static loading can be designed for 250 pcf if the retaining wall is allowed to deflect or rotate a minimum of 0.01 times the wall height. This equivalent fluid pressure includes a factor of safety of 2.0. A friction coefficient of 0.45 is recommended to be used for resistance of footings to lateral sliding.

For seismic lateral earth pressures, we recommend a fluid density of 30 pcf be added to the active or atrest condition, depending on the wall type.

We recommend any foundation stem walls be backfilled on both sides simultaneously to prevent differential lateral loading of the foundation wall.

6.9 Slope Stability

We understand the site grading will require fill slopes around the perimeter. We recommend classified fill slopes be no steeper than 3H:1V to aid with fill placement and performance of fill over the peat. Steeper slopes may require slower placement or even reinforcement depending on the rate of loading on the peat.

Fill slopes at this recommended angle will perform well though some minor sloughing and rills might occur over time due to runoff/infiltration under static conditions and minor toe shoving could occur due to peat displacement. During strong ground motions, minor displacements could occur with the primary effect anticipated to be rotational failures of the slope edges. More detailed seismic slope stability analyses can be performed on request.

6.10 Pavement Recommendations

The following pavement recommendations were developed based on several sources. Flexible pavements intended only for vehicular traffic were designed using the Federal Highway Administration's NHI-05-037, *Geotechnical Aspects of Pavements* (2006) and the American Association of State Highway and Transportation Officials (AASHTO) *Guide for Design of Pavement Structures* (1993). All recommendations for pavements intended to support aircraft and ground support vehicles were developed using the United States Department of Transportation Federal Aviation Administration's (FAA) Advisory Circular (AC) Number 150/5320-6G Airport Pavement Design and Evaluation (2021).

Vehicle types, maximum gross weights, frequency of passage or departures, and gear/wheel configurations were assumed based on limited knowledge of the operations of the proposed facility. Typically, the largest or heaviest aircraft and ground support vehicles were selected, or the heaviest use classes. The departures were based on approximately one aircraft per hardstand per day 360 days per year, with two departures for each type of ground support vehicle per aircraft turnaround. As designers refine the operating capacity of the proposed facility, these assumptions should be refined to accurately reflect intended capacity.

We recommend the following pavement sections (Tables 6-3 through 6-7) however further modifications may be required as traffic loading and aircraft weights could vary during design. Based on knowledge of the local geology and experience with one-dimensional frost penetration modeling, frost penetration depths for the proposed structural sections and existing subgrade are around 8 feet below grade. The pavement sections were evaluated, in addition to traffic loading, considering the Limited Subgrade Frost Penetration approach per AC 150/5320-6G such that the thickness of the NFS pavement is greater than 65 percent of the frost penetration.

The designers will need to evaluate separately the transitions from these pavement sections to the existing Taxiway pavement section.

Thickness (inches)	Layer	Type/Material	Compaction (percent)
2/6	Top/Wearing Course	Asphalt Concrete	Per Specifications
2/6	Crushed Aggregate Base	D-1	95
42/48	Subbase	Selected Material Type A	95
	Geotextile Separation Fabric	Separation per ADOT	

Table 6-3 – Flexible Asphalt Pavement Section (Parking Lot: Light/Heavy)

Thickness (inches)	Layer	Type/Material	Compaction (percent)
4	Top/Wearing Course	Asphalt Concrete	Per Specifications
6	Crushed Aggregate Base	D-1	100
36	Subbase	Selected Material Type A	100 (upper 24 inches), 95
	Geotextile Separation Fabric	Separation per ADOT	

Table 6-4 – Flexible Asphalt Pavement Section (Apron – Ground Support Vehicles Only)

Table 6-5 – Flexible Asphalt Pavement Section (Apron – Aircraft Taxiways)

Thickness (inches)	Layer	Type/Material	Compaction (percent)
5	Top/Wearing Course	Asphalt Concrete	Per Specifications
6	Crushed Aggregate Base	D-1	100
48	Subbase	Selected Material Type A	100 (upper 24 inches), 95
	Geotextile Separation Fabric	Separation per ADOT	-

Table 6-6 – Rigid Pavement Section (Hardstands)

Thickness (inches)	Layer	Type/Material	Compaction (percent)
9	Top/Wearing Course	Portland Cement Concrete	-
6	Crushed Aggregate Base	D-1	100
48	Subbase	Selected Material Type A	100 (upper 24 inches), 95
	Geotextile Separation Fabric	Separation per ADOT	-

Table 6-7 – Rigid Pavement Section (Truck Loading Dock)

Thickness (inches)	Layer	Type/Material	Compaction (percent)
7	Top/Wearing Course	Portland Cement Concrete	-
6	Crushed Aggregate Base	D-1	95
30	Subbase	Selected Material Type A	95
	Geotextile Separation Fabric	Separation per ADOT	-

6.11 Fill and Compaction

6.11.1 Classified Fill and Compaction General Requirements

All classified fill material should be thawed, free from lumps, organics, debris, and other deleterious material and should be durable and sound. A vibratory steel drum roller should be used to compact classified fill. Lightweight or hand-operated compactors should be used near existing structures, utilities, or other infrastructure to prevent damage.

No hauling or grading equipment should be used in lieu of appropriate compaction equipment. Any loosening of fill material by hauling or other equipment should be repaired and re-compacted. The number of passes required to meet the compaction requirement will depend on the size of compaction

equipment used. Each layer should be compacted as recommended in the report and field verification of compaction requirements is recommended.

Foundation soils should be protected from freezing during construction. No frozen soil should be used as fill, nor should any fill be placed over frozen soil. Any frozen soil should be removed and replaced with appropriate fill prior to construction.

6.11.2 Classified Fill and Compaction

We recommend the classified fill be clean, well-graded sand and gravel with a frost classification of NFS. The gradation of the classified fill be consistent with the State of Alaska Department of Transportation and Public Facilities (ADOT&PF) Standard Specifications for Highway Construction (2017) unless otherwise specified.

Classified fill should be placed in loose lifts not exceeding 12 inches in thickness with lift thickness adjusted based on the contractor's equipment to achieve the required compaction. Each lift of classified fill should be compacted to a minimum of 95 percent of its Modified Proctor Maximum Density, determined per ASTM D1557, unless otherwise recommended in this report.

6.11.3 Porous Backfill and Compaction

The Porous Backfill for the first lift over the peat may be difficult to compact. We recommend static compaction rolling without vibration. The Porous Backfill should be compacted to a minimum of 95 percent of its Modified Proctor Maximum Density, as determined per ASTM D1557.

6.12 Geotextiles

We recommend that a separation geotextile be used at the base of the fill in surcharged areas. The use of a geotextile increases lateral confinement over the peat providing additional stability during construction. This separation geotextile must consider the expected flow of water upward from the peat during the consolidation process. Typical permittivity of separation geotextiles are on the order of 0.05 sec⁻¹ however this permittivity will impede flow. We recommend the permittivity of the separation geotextile be at least 1.0 sec⁻¹. We recommend a woven geotextile consistent with Mirafi FW300 or approved equal be used for the separation geotextile.

Joints should be overlapped or sewn in accordance with the manufacturer's recommendations.

6.13 Utility Recommendations

The satisfactory performance of piped utilities is highly dependent upon the quality of soil below and along the sides of the pipe. We recommend, if possible, utilities being installed below the peat to mitigate long-term settlements. If that is not possible, we recommend utilities being installed in the fill placed over the peat after the surcharge settlement is completed and settlements have stabilized. Secondary compression producing long-term settlements are expected. Utilities that rely on gravity to flow may require support in the form of supports like helical piles to aid in mitigating the effects of settlement. Careful consideration should be made to supporting utilities in this manner however as the utilities will be at a relatively fixed elevation whereas the fill around the utility will settle. This could result in surface

manifestations of the utility over time. CRW's geotechnical engineer will continue to work with the designers on the best approach to utility installation and performance.

All utilities should be bedded and compacted per the utility owner's requirements or manufacturer's recommendations, whichever is more stringent. Backfill over the bedding should be non-frost susceptible (NFS) sand and gravel classified fill or native material as appropriate to match the soils outside the trench to maintain consistent surface behavior. We recommend a separation fabric be used around the bedding material to mitigate the potential for fines migration.

Buried utilities which are susceptible to damage from freezing need to be frost-protected by sufficient amounts of burial depth, insulation, or active freeze protection like heat tape or a combination of these methods.

We recommend maintaining adequate burial depth to protect from freezing. Insulation recommendations can be provided if burial depths cannot be achieved.

7. Limitations and Closure

The information submitted in this report is based on our interpretation of data from a field geotechnical exploration performed for this project. The conclusions contained in this report are based on site conditions as they were observed on the drilling dates indicated. It is presumed that the exploratory borings are representative of the subsurface conditions throughout the site. Effort was made to obtain information representative of existing conditions at the site. If, however, subsurface conditions are found to differ, we should be notified immediately to review these recommendations in light of additional information.

If there is substantial lapse of time between the submittal of this report and the start of work at the site, or if conditions have changed due to natural causes or construction operations at or adjacent to the site, we recommend that this report be reviewed to determine the applicability of the conclusions considering the changed conditions and time lapse. Unanticipated soil conditions are commonly encountered and cannot fully be determined by collecting discrete samples or advancing borings. The client and contractor should be aware of this risk and account for contingency accordingly.

Soil samples will be retained for six months following the date of issue of the final report. If the client wishes to make other arrangements for the retention of samples, this can be accommodated.

This report was prepared by CRW for use on this project only, and may not be used in any manner that would constitute a detriment to CRW. CRW is not responsible for conclusions, opinions, or recommendations made by others based on data presented in this report.

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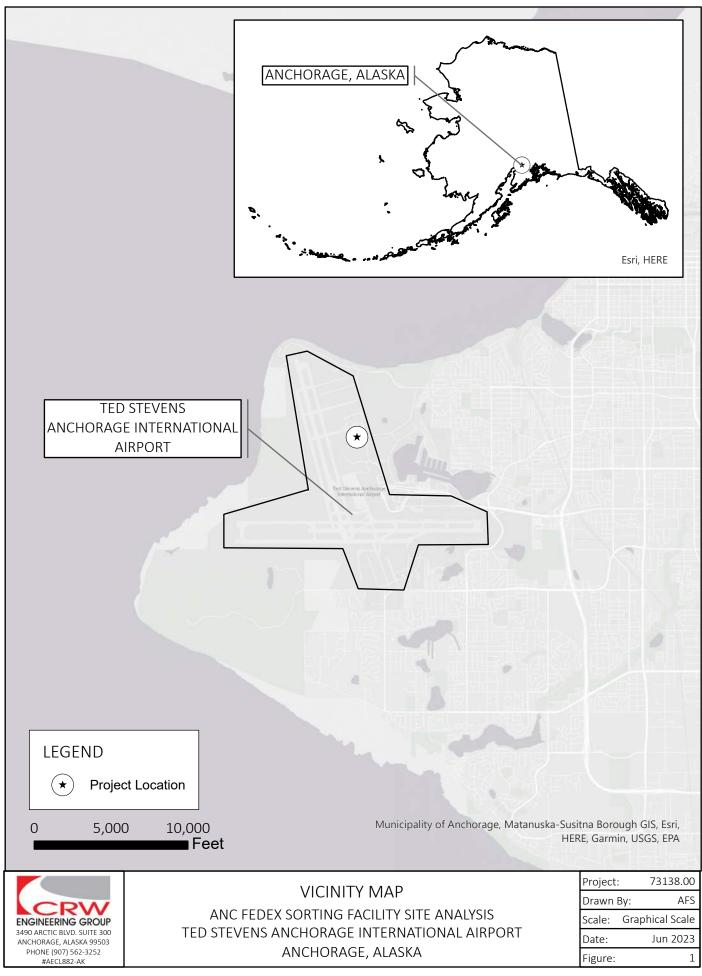
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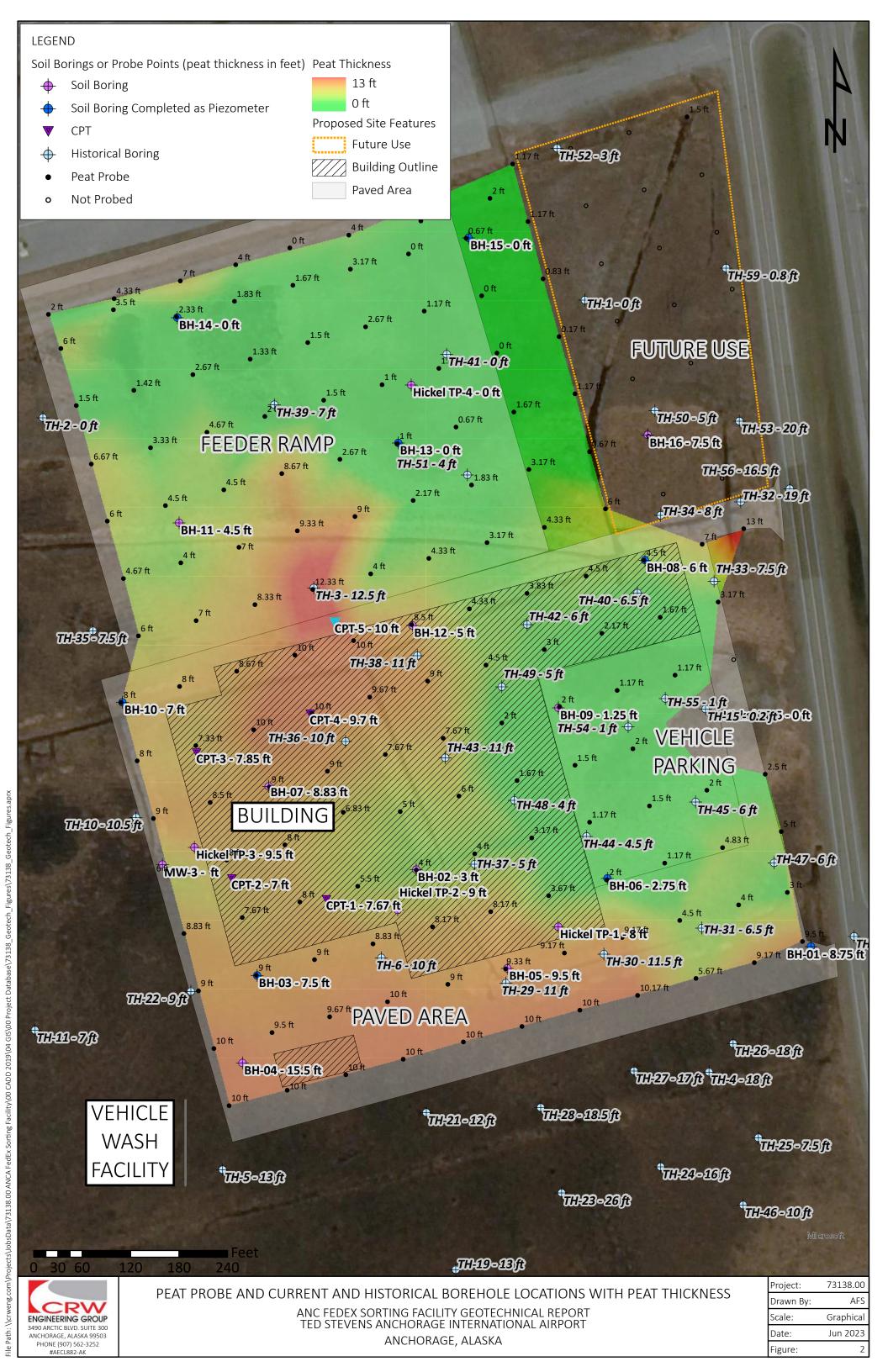
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Figures





Appendix A

Borehole Logs

Included in this section:

- 1) Borehole Log Legend
- 2) Borehole Logs (BH-01 through BH-16)

UNIFIED	SOIL CLASSIFICATION		/I D 2487)
GROUP SYMBOL	SOIL GROUP NAMES &	LEGEN	١D
GW	WELL-GRADED GRAVEL	め	dd
GP	POORLY GRADED GRAVEL		soil contains 5% sand, a 'with sand"
GM	SILTY GRAVEL		if soil contains ≥ 15% sand, add "with sand"
GC	CLAYEY GRAVEL		<u> </u>
SW	WELL-GRADED SAND		dd
SP	POORLY GRADED SAND		soil contains 5% gravel, a with gravel"
SM	SILTY SAND		if soil contains 15% gravel, add "with gravel"
SC	CLAYEY SAND		,
CL	LEAN CLAY		soil d" or e is ndy"
ML	SILT		rained ; ith san /er type add "sa
OL	ORGANIC CLAY OR SILT		arse-gr add "w whichev 30%, a avelly"
СН	FAT CLAY		ains coarse- 2 29%, add " el" for which or for ≥ 30% or "gravelly
MH	ELASTIC SILT		if soil contains coarse-grained soil from 15% to 25%, add "with sand" or "with gravel" for whichever type is prominent, or for 2 30%, add "sandy or "gravelly"
ОН	ORGANIC CLAY OR SILT		if s from prom
PT	PEAT	$\vee\!$	

-eqends.

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Report

Gravels or sands with 5% to 12 % fines require dual symbols (GW-GM, GW-GC, GP-GM, GP-GC, SW-SM, SW-SC, SP-SM, SP-SC) and add "with clay or "with silt" to group name. If fines classify as CL-ML for GM or SM, use dual symbol GC-GM or SC-SM.

Optional Abbreviations: Lower case "s" after USCS group symbol denotes either "sandy or "with sand" and "g" denotes either "gravelly" or "with gravel."

60 ORGANIC CLAY OR SILT (OH, OL) if: <u>LL (oven dried)</u> < 0.75 <u>LL (not dried)</u> < 0.75 PLASTICITY CHART PLASTICITY INDEX (PI) A LINE CH ÷ CL MĤ 10 МL < 4) 10 20 30 40 50 60 LIQUID LIMIT (LL) 70 80 90 100

COMPONENT DEFINITIONS BY GRADATION

COMPONENT	SIZE RANGE
BOULDERS	ABOVE 12 IN.
COBBLES	3 IN. TO 12 IN.
GRAVEL	3 IN. TO NO. 4 (4.76 mm)
COARSE GRAVEL	3 IN. TO 3/4 IN.
FINE GRAVEL	3/4 IN. TO NO. 4 (4.76 mm)
SAND	NO. 4 (4.76 mm) TO NO. 200 (0.074 mm)
COARSE SAND	NO. 4 (4.76 mm) TO NO. 10 (2.0 mm)
MEDIUM SAND	NO 10 (2.0 mm) TO NO. 40 (0.42 mm)
FINE SAND	NO. 40 (0.42 mm) TO NO. 200 (0.074 mm)
SILT AND CLAY	SMALLER THAN NO. 200 (0.074 mm)
SILT	0.074 mm TO 0.005 mm
CLAY	LESS THAN 0.005 mm

RELATIVE DENSITY / CONSISTENCY ESTIMATE USING STANDARD PENETRATION TEST (SPT) VALUES (FROM TERZAGHI & PECK 1996)

echnical F			OTHE	ER SYMBO	LS						ONSISTENCY ES PT) VALUES (FRC				
otec	SYMBO	DL	NA	AMES & LEGE	ND		CC	DHESIONLES	S SOILS	a)		COHES	IVE SOILS ^{(I}		
CRW Geot	BLDR	COBE	LES AND	BOULDERS	X	overlay	RELAT DENS	FIVE SITY (BL	N ₆₀ .OWS/FO	OT) ^(c)	CONSISTENCY	N BLOWS)	I ₆₀ /FOOT) ^(c)	UNCONFIN COMPRESS STRENGTH (T	IVE
	FILL	GRA	NULAR F	ILL		o	VERY L	OOSE	0 - 4		VERY SOFT	0	- 2	0 - 0.25	
echnical	WD	WOO	DY DEBR	RIS	$\langle \langle \rangle$	laced	LOOSE		4 - 10		SOFT	2	- 4	0.25 - 0.50	0
ech	RAP		LAIMED A	SPHALT		man-made placed	MED D	ENSE	10 - 30		MEDIUM	4	- 8	0.50 - 1.0	
Geot		PAV	EMENT				DENSE		30 - 50		STIFF	8 -	15	1.0 - 2.0	
- 1					_		VERY [DENSE	OVER 5	- 30	2.0 - 4.0				
\Tech.	CI				ć						HARD		R 30	OVER 4.0	
es			STM D 2	-			behavior				arately or in combination poss	-	haracteristics of	plasticity, and exhibiting	g drained
ences		<u> </u>		F MOISTURE		(i	c) Refer to	ASTM D 1586-99 f	or a definition	of N.	nd exhibiting undrained behav				
Refer	DR			TO THE	-,	(d) Undraine U_c.	d shear strength, s			npression strength, U _c . Note the		measures su and	Pocket Penetrometer	measures
		τοι	JCH								IONS				
ering	мо			NO VISIBLE			SS	SPT Sample		, -	/	C	Core (Ro		
Jeer			TER				SSO			OD, 140 lb typ.)	TW		(Shelby Tube)		
ngir				EE WATER,			HD Heavy Duty Split Spoon (3 in. BD Bulk Drive (4 in. OD, 300/340					, -	Modified S	· ·	
s/E	WE		TER TAB	DIL IS BELOV	v		BD		,		llow-Stem Auger)	GP	Geoprobe		
LCe	L						CA G		`		8,	AR	-	Rotary Cuttings ger Cuttings	
	DESCF	RIPTIVE	TERMI	NOLOGY F	OR		G	Grab Sampl	e ironi sui	Tace /	lesipil	AG	Auger Cu	uings	
Re	PER	CENTA	GES (AS	6TM D 2488)			LA	BORAT	ORY	TEST ABBREVIA	TIONS			
g		SCRIPTI		NGE OF	AL	Atterber	g Limit		PI	Plastic	c Index	TS	Thaw Cons	olidation	Ĩ
Technical		TERMS	PRC	PORTION	Conso	Consolio	dation		PID	Photo	ionization Detector	ΤV	Torvane		
Tee		TRACE		0 - 5%	LMA	Limited	Mechanic	al Analysis	Proc	Procto	or	TXCD	Consolidate	d Drained Triaxi	ial
Гщ.		FEW	Ę	5 - 10%	MA	Sieve ar	nd Hydroi	meter Analysi	s PP	Pocke	et Penetrometer	тхси	Consolidate	d Undrained Tri	axial
о. С		LITTLE	1	0 - 25%	MC	Moisture	e Content		P200	Perce	nt Fines (Silt & Clay)	ΤΧυυ	Unconsolida	ated Undrained	Triaxial
ven		SOME	3	0 - 45%	NP	Non-pla	stic		SA	Sieve	Analysis	VS	Vane Shear		
CL	Ν	<i>I</i> OSTLY	50) - 100%	OLI	Organic	Loss on	Ignition	SpG	Speci	fic Gravity	Ω	Soil Resistiv	/ity	
FILE NAME: 🗸	11/01	ARCTIC BLVD. SUIT IORAGE, ALASKA 9 DEE: (907) 582-33 #AECL882-AK	1607			LEG	GEND:	SOIL CL	ASSIFI	CAT	ION AND ABB	REVIA	TIONS		

1. DESCRIBE SOIL		N SOIL CLASS						1
INDEPENDENT O FROZEN STATE	F				L BY THE	UNIFIED SOIL SYSTEM		
		MAJOR	GROUP			SUBGROL	IP	ICE BONDING SYMBOL
		DESCRIPTION	DESIGNA	TION	DES	CRIPTION	DESIGNATION	No ice-bonded soil
		Segregated			Poorly b	onded of friable	N _f	observed
		ice not visible by eye	N		Well	No excess ice	Nbn	Poorly bonded or friable
2. MODIFY SOIL					bonded	Excess ice	Nbe	
DESCRIPTION B' DESCRIPTION O FROZEN SOIL						al ice crystals or clusions	Vx	Well bonded
		Segregated ice visible by eye (ice less than 25 mm thick)			Ice coati	ngs on particles	Vc	DEFINITIONS
			v			n or irregularly ice formations	Vr	<u>Candled Ice</u> is ice which has rotted or otherwise formed into long columnar cryst very loosely bonded together.
						ed or distinctly ice formations	Vs	<u>Clear Ice</u> is transparent and contains only moderate number of air bubbles.
					Uniforml	y distributed ice	Vu	<u>Cloudy Ice</u> is translucent, but essentially s and non-pervious.
3. MODIFY SOIL DESCRIPTION B' DESCRIPTION O		Ice greater than 25 mm thick	ICE		Ice with	soil inclusions	ICE+soil type	Friable denotes a condition in which mater easily broken up under light to moderate pressure.
SUBSTANTIAL IC STRATA			102		Ice witho	ut soil inclusions	ICE	Granular Ice is composed of coarse, more less equidimensional, ice crystals weakly bonded together.
	FRO			SIFIC				Ice Coatings on particles are discernible la
FROST GROUP ⁽²⁾	FROST DESIGN SOIL CLASSIFICATION ⁽¹⁾ GENERAL SOIL TYPE % FINER THAN 0.02 mm BY TYPICAL USCS WEIGHT SOIL CLASS					 of ice found on or below the larger soil par in a frozen soil mass. They are sometimes associated with hoarfrost crystals, which h grown into voids produced by the freezing 		
NFS ⁽³⁾	(a) Gravels Crushed stone Crushed rock		Crushed stone			GV	V, GP	action. <u>Ice Crystal</u> is a very small individual ice pa visible in the face of a soil mass. Crystals be present alone or in a combination with
		(b) Sands			0 - 3	SV	V, SP	ice formations.
PFS ⁽⁴⁾ [MOA NFS] [FAA NFS]		(a) Gravels Crushed stone Crushed rock			.5 - 3		V, GP	Ice Lenses are lenticular ice formations in occurring essentially parallel to each other generally normal to the direction of heat lo and commonly in repeated layers.
[MOA F-2] [FAA FG-2]		(b) Sands			3 - 10	SV	V, SP	Ice Segregation is the growth of ice as dist lenses, layers, veins and masses in soils,
S1 [MOA F-1] [FAA FG-1]		Gravelly soils			3 - 6		V-GM, GP-GM, C, GP-GC	commonly but not always oriented normal direction of heat loss.
S1 [MOA F-2] [FAA FG-2]		Sandy soils			3 - 6		V-SM, SP-SM, C, SP-SC	<u>Massive Ice</u> is a large mass of ice, typicall nearly pure and relatively homogeneous.
F1 ⁽⁵⁾ [MOA F-1] [FAA FG-1]		Gravelly soils		6	6 - 10		1-GC, GW-GM, V-GC, GP-GC	<u>Poorly-Bonded</u> signifies that the soil partic are weakly held together by the ice and the frozen soil consequently has poor resistant chipping or breaking.
F2 ⁽⁵⁾		(a) Gravelly soils		1	0 - 20		V-GM, GP-GM, C, GP-GC	Porous Ice contains numerous void, usual interconnected and usually resulting from
[MOA F-2] [FAA FG-2]		(b) Sands		6	6 - 15		1, SP-SM, SC, P-SC, SM-SC	melting at air bubbles or along crystal inter from presence of salt or other materials in water, or from the freezing of saturated sn
		(a) Gravelly soils		0	ver 20	GM, GO	C, GM-GC	Though porous, the mass retains its struct unity.
F3 ⁽⁵⁾ [MOA F-3] [FAA FG-3]	(b) Sar	nds, except very fi sands	ine silty	0	ver 15	SM, SC	C, SM-SC	Thaw-Stable frozen soils do not, on thawir
		(c) Clays, PI>12				CL	., CH	show loss of strength below normal, long-t
		(a) Silts				-	H, ML-CL	thawed values nor produce detrimental settlement.
(5)	(b) Very fine silty sa	ands	0	ver 15	-	C, SM-SC	Thaw-Unstable frozen soils show on thaw
F4 ⁽⁵⁾ [MOA F-4] [FAA FG-4]		(c) Clays, PI≤12				CL,	ML-CL	significant loss of strength below normal,
		d clays or other fir banded sediments					red with ML, MH, SC, or SM-SC	long-time thawed values and/or significant settlement, as a direct result of the melting the excess ice in the soil.

(3) Non-frost susceptible
 (4) Possibly frost susceptible
 (5) Consistent with MOA Definition.



FILE NAME: //

LEGEND: FROZEN SOIL CLASSIFICATION

CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252		BOREHOLE BH-01 PAGE 1 OF 2
CLIENT MCG Explore Design	PROJECT NAME ANCA FedEx Sorting Fa	acility
PROJECT NUMBER _ 73138.00	PROJECT LOCATION Anchorage, Alaska	3
DATE STARTED 3/11/22 COMPLETED 3/11/22	GROUND ELEVATION	
ORILLING CONTRACTOR GeoTek Alaska, Inc.		
DRILLING METHOD Hollow-Stem Auger, autohammer		
OGGED BY AFS CHECKED BY SMH		
	✓ AFTER DRILLING <u>5.05 ft</u>	
MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER RECOVERY % (RQD) FIELD BLOW COUNTS (N VALUE) (N VALUE) POCKET PEN. (psf) ICE BOND	(M) % % A FIELD N VALUE % % 10 % % 10 % % 10 10 20 10 20 10 10 <
0	R R R	PL MC LL 10 20 30 40
_ PEAT, (PT) Brown, moist to wet, fibrous. ⊻ ⊻	G 100	
- <u>v</u>	G 100	
	SZA	3
	S2B 100	Conso 4
$\begin{array}{c} PT & \frac{\mathbf{v}^{\prime\prime}}{\mathbf{v}} \\ 5 & v & v \\ v & v \\ v \end{array}$	ST 100	Conso 3.
5 VS (Acker) = 1295 psf peak/648 psf residual	∕ ss	
- <u>»</u>	S3 40 WOH	VS 4
		VS 44
34		5
	SS 54A 100 0-0-4-7	
OL ORGANIC SOIL, (OL) 0% gravel, 10% sand, 90% fines	SS (4)	
10 Moist. 10.8% organics.		
10 SILTY SAND, (SM) 0% gravel, 81% sand, 19% fines ↓ ↓ ↓ ↓ Gray, moist to wet, no odor. Fine to coarse sand.	SS 0-12-15-16	
	<u>S5</u> 50 (27)	
15		
	SS 13-17-20- S6 75 21	
	S6 75 21 (37)	
- SM		
	SS 14-19-23- S6 75 23	
	S6 75 23 (42)	
25		
25 [고한지카] (Continued Next Page)		



CRW Engineering Group, Inc.

BOREHOLE BH-01

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CLIENT MCG Explore Design

PROJECT NAME ANCA FedEx Sorting Facility

PROJ	ECT N	UMBE	R _73138.00	PRO		CATIO	N Anchora	age, Ala	aska			
5 DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
 <u>- 30</u> 	CL		LEAN CLAY, (CL) 0% gravel, 5% sand, 95% fines Gray, moist, stiff, no odor. VS (Humboldt) 1212 psf peak/125 psf residual.		SS S7	83	4-6-10-13 (16) 5-5-8-9 (13)	8000 avg			AL, VS	▲ ● +
			Bottom of borehole at 32.0 feet.									

Notes:

Completed as piezometer. 1" Sch80 PVC, hand slotted 21.5 to 31.5 ft BGS. Stickup 1.7 ft. Annulus backfilled with cuttings.

		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252							BC	DRE	PAGE 1 OF
			lore Design	PROJE	CT NA	ME _A	NCA FedE	x Sortir	ng Fa	acility		
PROJE	ECT N	IUMBEF	R _73138.00	PROJE	CT LO	CATIO	N Anchora	age, Al	aska	l		
DATE	STAF	RTED	3/7/22 COMPLETED 3/7/22	GROUN	ID ELE	EVATIO	DN					
RILL	ING C	ONTR/	ACTOR _GeoTek Alaska, Inc.									
DRILL	ING N	IETHO	D Hollow-Stem Auger, autohammer	∇	ТТМ	e of d	RILLING _	1.50 ft				
OGG	ED B	Y AFS	CHECKED BY SMH	A		OF D	RILLING _					
NOTES	S			4	FTER	DRILL	ING					
0 UEPIH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE 10 20 30 40 PL MC LL 10 20 30 40
	PT	<u>~~</u>	PEAT, (PT) Dark brown, wet, no odor. Fibrous, contain roots and trees. ∑	ns live	G S1	_						4
-			SILTY SAND, (SM) 0% gravel, 68% sand, 32% fines Gray, moist, no odor. Fine to medium sand.		SS S2A SS S2B	42	2-0-0-0 (0)				LMA	© 9
_					SS S3	83	5-9-9-12 (18)					•••••
-	SM		0% gravel, 71% sand, 29% fines		SS S4	79	8-10-6-4 (16)				LMA	
<u>10</u> –					SS S5	67	6-6-7-10 (13)					▲C
-												
<u>15</u> –			LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, stiff to very stiff, no odor. VS (Humboldt) = 1629 psf peak/84 psf residual.	+	SS S6	50	4-5-6-7 (11)	4500 avg			AL	A P
-												
20	CL		Gray, moist, very stiff, low plasticity to nonplastic, no or	dor.		0	4-6-10-11 (16)					.
-			VS (Humboldt) = 1253 psf peak/0 psf residual.		SS S7	100	5-8-10-12 (18)	7833 avg				▲ 0



BOREHOLE BH-02

PAGE 2 OF 3

CLIENT MCG Explore Design

CRW MOA LOG - CRW_DATATEMPLATE_20190115.GDT - 6/8/23 08:53 - 73138 ANCA FEDEX SORTING FACILITY.GPJ

PROJECT NAME ANCA FedEx Sorting Facility

			R_73138.00 PR	PROJECT LOCATION Anchorage, Alaska								
HLLADD 25	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPI F TYPF	NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
			LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, stiff to very stiff, no odor. <i>(continued)</i> VS (Humboldt) = 1504 psf peak/334 psf residual.	Д	SS S8	117	6-6-7 (13)	6167 avg			AL	▲ Ю
 <u>30</u> 			Medium plasticity. VS (Humboldt) = 1170 psf peak/0 psf residual.	X	SS S9	67	6-6-8 (14)	5000 avg				▲ 0
 <u>35</u> 	CL				SS S10	0	8-8-10 (18)	-				
40						0	4-4-6 (10)	-				
45			Wet, very disturbed. Likely slough, may not be representative.		SS S11	75	4-4-5-5 (9)	-				• 0
	CL		LEAN CLAY WITH SAND, (CL) 0% gravel, 19% sand, 819 fines Gray, moist, soft to medium, low plasticity, no odor. Thin laminae of gray to very dark gray fine sand. VS (Humboldt) = 627 psf peak/0 psf residual.		SS S12	28	4-4-4 (8)	1200			LMA	• 0
	CL		LEAN CLAY, (CL) 0% gravel, 5% sand, 95% fines Gray, moist, soft to medium, low plasticity, no odor. Thin laminae of fine gray to black sand up to 1/16" thick. VS (Humboldt) = 627 psf peak/0 psf residual.		SS S13	100	7-4-4-7 (8)	3167 avg				···· A ····O·····
;			(Continued Next Page)									



BOREHOLE BH-02

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CLIENT MCG Explore Design

PROJECT NAME _ ANCA FedEx Sorting Facility

VS (Humboldt) = 1755 psf peak/42 psf residual. $VS (Humboldt) = 1755 psf peak/42 psf residual.$ $VS (Humboldt) = 1755 psf peak/42 psf residual.$					DJECT NA		N Anchora							
55 LEAN CLAY, (CL) 0% gravel, 5% sand, 96% fines 3867 55 Gray, moist, soft on medum, low plasticity, no odor. Thin laminae of fine gray to black sand up to 1/16* thick. (continued) Wedium to stiff. VS (Humboldt) = 794 psf peak/0 psf residual. SS 5-7-8-9 3867 60 CL SANDY LEAN CLAY, (CL) 10% gravel, 21% sand, 69% fines SS 75 5-7-8-9 3867 60 SANDY LEAN CLAY, (CL) 10% gravel, 21% sand, 69% fines SS 75 10-13-17-7 750 60 CL Gray, moist, no odor. Very fine to coarse angular sand and round to subrounded gravel up to 1". SS 75 10-13-17-7 750 65 CL LEAN CLAY, (CL) 0% gravel, 10% sand, 90% fines SS 100 14-22-25-7 0 65 CL LEAN CLAY, (CL) 0% gravel, 10% sand, 90% fines SS 100 14-22-25-7 0 65 CL SC SS (ray, moist, no odor. Very fine to fine sand. SS (ray, moist, no odor. Very fine to fine sand. SS (ray, moist, no odor. Very fine to fine sand. 0 65 SC SS (ray, moist, no odor. Very fine to fine sand. SS (ray, moist, no odor. Very fine to fine sand. SS (ray, moist, no odor	DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	10 2 PL	<u>0 30</u> MC L	40 _L
SANDY LEAN CLAY, (CL) 10% gravel, 21% sand, 69% SS 75 10-13-17- 26 7750 Gray, moist, no odor. Very fine to coarse angular sand and round to subrounded gravel up to 1". VS (Humboldt) = 1212 psf peak/84 psf residual. 75 10-13-17- 26 7750 G5 CL LEAN CLAY, (CL) 0% gravel, 10% sand, 90% fines Gray, moist, very stiff to hard, nonplastic, no odor. SS S16A 100 14-22-25- 23 CL CLAYEY SAND, (SC) 0% gravel, 60% sand, 40% fines Gray, moist, no odor. Very fine to fine sand. SS S16B 100 14-22-25- 23 0 70 SILTY CLAY, (CL-ML) 0% gravel, 10% sand, 90% fines Gray, moist, very stiff to hard, no odor. SS S16B 9000 AL		CL		Gray, moist, soft to medium, low plasticity, no odor. Thin laminae of fine gray to black sand up to 1/16" thick. <i>(continued)</i> Medium to stiff.	SS S14	75		1			AL			
CL LEAN CLAY, (CL) 0% gravel, 10% sand, 90% fines Gray, moist, very stiff to hard, nonplastic, no odor. SS S16A 100 14-22-25- 23 (47) CLAYEY SAND, (SC) 0% gravel, 60% sand, 40% fines Gray, moist, no odor. Very fine to fine sand. SS S16B 100 14-22-25- 23 (47) SC SILTY CLAY, (CL-ML) 0% gravel, 10% sand, 90% fines Gray, moist, very stiff to hard, no odor. SS S16B 9000 (56) AL		CL		fines Gray, moist, no odor. Very fine to coarse angular sand and round to subrounded gravel up to 1".	SS S15	75	26	1			LMA	(D A	
SILTY CLAY, (CL-ML) 0% gravel, 10% sand, 90% fines SS 100 22-25-31 9000 Gray, moist, very stiff to hard, no odor. VS (Humboldt) = 1755 psf peak/42 psf residual. SS 100 22-25-31 9000 CL- ML SILTY CLAY, (CL-ML) 0% gravel, 5% sand 95% fines AL CI- 75				Gray, moist, very stiff to hard, nonplastic, no odor. CLAYEY SAND, (SC) 0% gravel, 60% sand, 40% fines	S16A	100	23	-						
		CL- ML		Gray, moist, very stiff to hard, no odor.	SS S17	100					AL	C	n 1	>>
		CL		VS (Humboldt) = 1504 psf peak/251 psf residual. Bottom of borehole at 76.5 feet. Notes:	SS S18	83						0		>>

CRW Engine 3940 Arctic B Anchorage, A Telephone: ()	ering Group, Inc. Ivd, Ste. 300 K 99503 907) 562-3252						BC	DRE	HOLE BH-03 PAGE 1 OF 2
LIENT MCG Explore Design		PROJECT N		NCA FedE	x Sortir	ng Fa	cility		
ROJECT NUMBER 73138.00		PROJECT L	OCATIO	N Anchor	age, Ala	aska			
ATE STARTED <u>3/9/22</u>	COMPLETED _ 3/9/22	GROUND EL	EVATIC	DN					
RILLING CONTRACTOR GeoTek Alask									
RILLING METHOD Hollow-Stem Auger									ter present.
OGGED BY DSN C						t Dee	eper gi	roundv	water at time of drilling.
OTES				ING _20.95	5 ft				
	ERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	r. Fibrous.	G S1	_						
	sf peak/158 psf residual				_			VS	
Gray, moist. Fine s			42	0-0-4-5 (4)	-			LMA	
Brown, moist, soft.	(ML) 0% gravel, 40% sand, 60% fir		75	0-0-5-7 (5)	-				
Gray, moist, stiff.	0% gravel, 0% sand, 100% fines		100	3-5-7-8 (12)	-			AL	AIO - I
20 LEAN CLAY, (CL)					_				
_ _ _ CL		SS S5	100	3-4-5-7 (9)	_			AL	
25									



BOREHOLE BH-03

PAGE 2 OF 2

CLIENT MCG Explore Design

PROJECT NAME ANCA FedEx Sorting Facility

			73138.00								
(tt) 25	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALU 10 20 30
-			LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, stiff. <i>(continued)</i>	SS S6	100	3-3-4-7 (7)	_				•
_ 30 _ _ _				SS S7	88	5-5-6-8 (11)	-				·····
_ 35 _				SS S8	0	3-4-5-6 (9)	-				·····
- - 40 - -	CL		Very stiff to hard.	SS S9	75	7-11-15-20 (26)	9000 avg			AL	 ₽
_ _ 45 _ _			Medium plasticity.	SS S10	100	8-9-13-17 (22)	8000 avg				
_ _ 50 _			Low plasticity. Notes: Completed as piezometer. 1" Sch80 PVC, hand slotted 8.5 to 38.5 ft BGS. Stickup 3 ft. Annulus backfille with cuttings.	ed ss S11	100	8-10-12-14 (22)	9000 avg				
			Bottom of borehole at 52.0 feet.								

		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252							BC	DRE	HOLE BH-04 PAGE 1 OF
			lore Design	PROJE		ME A	NCA FedE	x Sortir	ng Fa	acility		
PROJE	ECT N	IUMBEF	R _73138.00	PROJE	CT LO	CATIO	N Anchor	age, Al	aska			
			3/9/22 COMPLETED <u>3/9/22</u>									
			ACTOR _ GeoTek Alaska, Inc.									
			D Hollow-Stem Auger, autohammer									
			CHECKED BY SMH									
NOTES	s				AFTER	DRILL				1	1	1
0 DEPIH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE 10 20 30 40 PL MC LL 10 20 30 40
_		<u>r</u> 77	PEAT, (PT) Brown, moist to wet, extremely soft, fibrous. Contains r Poor recovery, no recovery in Shelby tube attempt. Pea appears compressed at bottom of interval.	roots. at	G S1	100						15
- - 5		77 77 77	VS (Acker) = 136 psf peak/91 psf residual		SS S2	0	WOH				VS 4	
<u> </u>		* 77 7. *	Shelby tube sample (S3) attempted 5 to 7 ft BGS, no recovery. Sample of auger cuttings (S4) collected inste	ad.	G S4	100						6
-	РТ	77 77 77	VS (Acker) = 407 psf peak/181 psf residual		SS S5	0	WOH				vs	
<u>10</u> –		r 77 77 7		Σ	SS S6	17	WOH					3
-		<u>r 77</u>										
<u>15</u> - -		**	LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, soft to medium. Frost class F4 (24-hr hydrometer).		SS <u>S7A</u> SS S7B	100	0-2-3-4 (5)	4333 avg			МА	
_												
20	CL				SS S8	100	5-9-12-12 (21)	9000 avg			AL	# 0
-												
25												



BOREHOLE BH-04

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CLIENT MCG Explore Design

PROJECT NAME ANCA FedEx Sorting Facility

PROJECT NUMBER _73138.00 PROJECT LOCATION _Anchorage, Alaska												
(#) 5	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
 <u>30</u> 	CL		LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, soft to medium. Frost class F4 (24-hr hydrometer). <i>(continued)</i>		SS S9 SS S10	100	3-5-5-8 (10) 3-3-3-4 (6)	6000 avg 5000 avg				···•
<u>35</u> 	CL		LEAN CLAY WITH SAND, (CL) 0% gravel, 16% sand, 84 fines Gray, moist. Fine sand and one 1/4" piece of subrounded gravel in 35-ft sample.	~~~	SS S11 SS S12	75	3-3-3-5 (6) 4-3-5-6 (8)	4333 avg			LMA	··• • ··· · · · · · · · · · · · · · · ·

Bottom of borehole at 42.0 feet.

Notes: Backfilled with cuttings.

The set of se		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252							BC	ORE	HOLE BH-0 PAGE 1 OF
DATE STARTED 2/10/22 COMPLETED 2/10/22 GROUND ELEVATION DRILLING CONTRACTOR George Alaska, Inc. GROUND WATER LEVELS: GROUND ALSO STATUS DATE STARTED CHECKED BY SMH AFTER DRILLING NOTES CHECKED BY SMH AFTER DRILLING TEND OF DRILLING MATERIAL DESCRIPTION		MCG Exp	olore Design	PROJEC		ME _A	NCA FedE	x Sortir	ng Fa	cility		
DRILING CONTRACTOR GeoTek Alaska, Inc. GROUND WATER LEVELS: VALUNG 10.00 ft Also surface water at 1 ft BGS. COGGED BY AFS	PROJECT	NUMBE	R <u>73138.00</u>	PROJEC	T LO	CATIO	N Anchora	age, Al	aska			
DRILLING METHOD Hollow-Stem Auger, autohammer ✓ AT TIME OF DRILLING 10.00 ft Also surface water at 1ft BGS. COGED BY AFS CHECKED BY MH AT END OF DRILLING	DATE STA	RTED _	3/10/22 COMPLETED _3/10/22	GROUN	DELE	VATIC	DN					
LOGGED BY_AFS CHECKED BY_SMH AT END OF DRILLING VOTES AFTER DRILLING The set of the se												
NOTES AFTER DRILLING The second se	DRILLING	METHO	D Hollow-Stem Auger, autohammer									
Image: Signed					END	OF D	RILLING _					
0 PEAT, (PT) Brown/dark brown, wet, fibrous. G S1 0 <t< th=""><th>NOTES _</th><th></th><th></th><th>AF</th><th>TER</th><th>DRILL</th><th></th><th>1</th><th></th><th></th><th>1</th><th></th></t<>	NOTES _			AF	TER	DRILL		1			1	
$\frac{22}{5} = \frac{22}{2}$ $\frac{22}{5} = \frac{22}{5}$		GRAPHIC LOG	MATERIAL DESCRIPTION		NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE 10 20 30 40 PL MC LL 10 20 30 40
5 PT PT <td< td=""><td>-</td><td><u>r 7</u></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	-	<u>r 7</u>				-						
Brown, moist, fibrous. Brown, moist, fibrous. Bottom of peat layer inferred from sand recovered on bottom of Shelby tube and resistance encountered when pushing Shelby tube. Conso ST ST ST ST ST ST ST ST ST ST	- - 5 DT	<u>~~</u>				3		-			VS	
10 bottom of Shelby tube and resistance encountered when pushing Shelby tube. ST S4 10 SILTY SAND, (SM) 0% gravel, 60% sand, 40% fines Gray, wet, no odor. Medium sand. SS S5 63 9-10-12-13 (22) 15 SM SILT, (ML) 0% gravel, 0% sand, 100% fines Gray, moist, stift, nonplastic, no odor. VS (Humboldt) = 1421 psf peak/0 psf residual. SS S5 50 1-4-7-6 (11) 7200 avg ML SILT, (ML) No sample recovery. Silt and clay slough with sand and possible organics. Uncertainty in soil classification due to amount recovered. 0 8-9-11-11 (20)		<u>71</u>		X		13						
SM SM SM SM SM SM SM SM SM SM	-	<u>v v</u>	bottom of Shelby tube and resistance encountered wh pushing Shelby tube.	en								
SILT, (ML) 0% gravel, 0% sand, 100% fines SS 7200 Gray, moist, stiff, nonplastic, no odor. S6 50 1-4-7-6 VS (Humboldt) = 1421 psf peak/0 psf residual. 50 1-4-7-6 (11) ML SILT, (ML)No sample recovery. Silt and clay slough with sand and possible organics. Uncertainty in soil classification due to amount recovered. 0 8-9-11-11	_		✓ SILTY SAND, (SM) 0% gravel, 60% sand, 40% fines Gray, wet, no odor. Medium sand.		SS S5	63		3			LMA	0
20	15		Gray, moist, stiff, nonplastic, no odor.		SS S6	50						0
SILT, (ML)No sample recovery. Silt and clay slough with sand and possible organics. Uncertainty in soil classification due to amount recovered. 0 8-9-11-11 (20)	-	-										
	-		sand and possible organics. Uncertainty in soil classifi	th cation		0						.
	- ML -	-										



BOREHOLE BH-05

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CLIENT MCG Explore Design

PROJECT NAME _ ANCA FedEx Sorting Facility

PROJ	PROJECT NUMBER _73138.00 PROJECT LOCATION _Anchorage, Alaska												
(tJ) HLd JD 25	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40	
	-		LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, no odor. VS (Humboldt) = 1337 psf peak/42 psf residual.			42	6-7-8-10 (15)	6000 avg			AL		
<u> </u>	CL		No recovery at 30 ft sample.			0	4-6-7-8 (13)	-				·····	
	-		No recovery at 35 ft sample.			0	4-5-6-7 (11)	-					
FACILITY.GPJ	CL		LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, stiff to very stiff, no odor.	·	SS S10	100	10-10-13 (23)	2000 avg			AL	₽	

Bottom of borehole at 39.0 feet.

Notes: Backfilled with cuttings.

		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252						BC	DRE	HOLE BH-06 PAGE 1 OF 3
CLIEN	н М	CG Ex	olore Design	PROJEC	T NAME	ANCA FedE	x Sortir	ng Fa	cility		
PROJI	ECT N	UMBE	R _73138.00	PROJEC		NON Anchor	age, Al	aska			
			3/10/22 COMPLETED 3/10/22								
			ACTOR _GeoTek Alaska, Inc.								
			D Hollow-Stem Auger, autohammer								
			CHECKED BY SMH								
NOTE	s			_¥_AF	TER DR	LLING 0.70	ft			1	
				Ц	8	3	Ż		Ś		▲ FIELD N VALUE
t) t	S. S.	GRAPHIC LOG			RECOVERY %	(RQD) FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	10 20 30 40
DEPTH (ft)	U.S.C.	LO	MATERIAL DESCRIPTION				CKET F (psf)	ы Ш Ш	(by	1ES	
		0		SAN			PO	l≤l	E		PL MC LL 10 20 30 40
0			PEAT, (PT)	<u> </u>							<u>10 20 30 40</u> : : : : :
_		<u></u>	 PEAL, (P1) Dark brown, moist, organics, fibrous. 		G						2
	PT	<u> </u>			S1						
-		<u></u>	_				_				
_	SM		─ Frozen. ─ SILTY SAND, (SM) 0% gravel, 75% sand, 25% fines	—⁄_Å	SS S2A	_ 3-5-7-10				LMA	
_			Brown, moist, no odor.		SS 7 S2B	5 (12)				LMA	
5			SILTY SAND, (SM) 0% gravel, 77% sand, 23% fines Gray/brown, moist, no odor.		SS		-				
5			0% gravel, 75% sand, 25% fines		<u>S2C</u> SS		1				
_			Medium sand. Single 1/4" lens of gray silt.	Å	S3 5	8 7-11-12-1 (23)	1			SA	0
						(23)					
_			$\overline{\Delta}$]				
-			Gray, wet, no odor.	X	SS S4 c	14-15-18	-				0
_				<u> </u>	54 6	3 18 (33)					
10							-				
			0% gravel, 52% sand, 48% fines Gray, moist to wet, no odor. Interbedded sand, silt, and		SS	10-15-15]				0
_			sand.		S5 7	5 17				LMA	↓
_	SM					(30)	_				
_	1										
_											
15							_				
			SILT, (ML) 0% gravel, 40% sand, 60% finesGray, mois stiff, low plasticity to nonplastic, no odor.	ist,	SS S6	15-19-26	-				0
-	1			K Y	5	8 26 (45)					
-				\vdash			-				
_											
_											
20	<u>ML</u>	<u> </u>	VS (Humboldt) = 1462 psf peak/0 psf residual.		SS		7000				0
_				A	<u>S7</u> 2	9 4-2-6-10	avg				
						(8)					
_							-				
_											
_											
25			(Continued Next Page)								



CRW Engineering Group, Inc.

BOREHOLE BH-06

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CLIENT MCG Explore Design

PROJECT NAME _ ANCA FedEx Sorting Facility

PROJECT NUMBER 73138.00 PROJECT LOCATION Anchorage, Alask												
(ft) 5 DEPTH	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
 30	CL- ML		CLAYEY SILT, (CL-ML) 0% gravel, 0% sand, 100% fines Gray, moist, low plasticity, soft to stiff, no odor. VS (Humboldt) = 1253 psf peak/0 psf residual.		SS S8	83	4-6-8-10 (14)	6033 avg				<u>,</u>
	CL		LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, no odor. VS (Humboldt) = 1003 psf peak/0 psf residual.	X	SS S9	100	6-5-8 (13)	4367 avg			AL	
	Bottom of borehole at 31.5 feet.											

Notes: Completed as piezometer. 1" Sch80 PVC, hand slotted 2 to 12 ft BGS. Stickup 3.25 ft. Annulus backfilled with cuttings.

		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252							BC	DRE	HOLE BH-07 PAGE 1 OF 3
LIEN	T M	CG Ex	plore Design	PROJE	CT NA	ME _A	NCA FedE	x Sortir	ng Fa	acility		
PROJE	ECT N	UMBE	R 73138.00	PROJE	CT LO	CATIO	N Anchor	age, Al	aska			
			3/8/22 COMPLETED 3/8/22									
			ACTOR _ GeoTek Alaska, Inc.									
			D Hollow-Stem Auger, autohammer									
			S CHECKED BY SMH									
NOTES	S				FIER		ING	1	-			1
o UEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE A 10 20 30 40 PL MC LL 10 20 30 40
_		<u>v.</u>	PEAT, (PT) Dark brown organic silt, moist. Frozen to 1ft $\underline{\nabla}$ BGS.		G S1							
-	PT	<u>77</u> 77	Organics/wood.	×	SS S2	7	0-0-2-1 (2)	-				
5 -		<u>r r</u> 77		X	SS S3	7	0-0-0-0 (0)					3
- 10		<u>»"</u>	SILTY SAND, (SM) 0% gravel, 56% sand, 44% fines Gray, moist, no odor. Fine to medium sand.		SS S4A SS S4B		0-0-4-6 (4)	-			LMA	▲ 4 0
-	SM				SS S5	25	0-0-2-9 (2)	-				0
- - 15												
-			SILTY SAND, (SM) 0% gravel, 55% sand, 45% fines Gray, moist, no odor. Fine to medium sand with 3" layer silty sand and sandy silt.	s of	SS S6	75	7-10-12-14 (22)	•				O .
-	SM											
20			CLAYEY SILT, (CL-ML) 0% gravel, 0% sand, 100% fine Gray, moist, stiff, low plasticity, no odor. VS (Humboldt) = 1671 psf peak/0 psf residual.	es	SS S7	92	4-5-7-10 (12)	6333 avg				Q
-	CL- ML				_							
25												



BOREHOLE BH-07

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CLIENT MCG Explore Design

PROJECT NAME ANCA FedEx Sorting Facility

	ECT N	IUMBE	R _73138.00								
(tt) 25	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
			LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, medium, no odor. VS (Humboldt) = 1922 psf peak/125 psf residual.	SS S8	96	3-5-7-9 (12)	6833 avg			AL	▲ I -O
30	CL		VS (Humboldt) = 1170 psf peak/125 psf residual.	SS S9	133	3-3-4 (7)	4500 avg				
 			VS (Humboldt) = 1546 psf peak/42 psf residual.	SS S10	100	4-6-6 (12)	5300 avg				⊙
40 -	CL- ML		SILTY CLAY, (CL-ML) 0% gravel, 6% sand, 94% fines Gray, moist, soft to medium, medium plasticity, no odor. Thin lenses and laminations of silt or very fine sand. VS (Humboldt) = 501 psf peak/42 psf residual.	SS S11	100	2-2-4-6 (6)	1667 avg			LMA	• .
45	CL		LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, no odor. VS (Humboldt) = 1045 psf peak/84 psf residual. SILTY CLAY WITH SAND, (CL-ML) 0% gravel, 12% sar 88% fines Gray, moist, no odor. Interbedded clayey and sandy			3-10-12 (22)	2400 avg			AL LMA	1 0 -
- 50 -	CL- ML		Medium to stiff, medium plasticity. VS (Humboldt) = 836 psf peak/84 psf residual.	SS S13	100	4-7-10 (17)	4600 avg				



BOREHOLE BH-07

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CLIENT MCG Explore Design

PROJECT NAME _ ANCA FedEx Sorting Facility PROJECT LOCATION Anchorade Alaska

PROJ		UMBE	R _73138.00 PR	OJECT	LOCA	TION Anch	orage, A	laska	1		
DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER RECOVERY %	(RQD) FIELD BLOW COUNTS	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
	CL- ML			-							
			SILT WITH SAND, (ML) 8% gravel, 20% sand, 72% fines Gray, moist, hard, nonplastic, no odor. Angular, coarse sand. Rounded and subrounded gravel up to 3/4".		SS 514 9	94 16-20-3 (52)	2 9000 avg)		LMA	0 >>
 60	ML										
			SILT, (ML) 0% gravel, 5% sand, 95% fines Gray, moist, medium, nonplastic, no odor. VS (Humboldt) = 836 psf peak/0 psf residual.		SS 615 8	39 11-17-2 (40)	3 9000 avg				0
	ML										
65											
	CL- ML		CLAYEY SILT, (CL-ML) 0% gravel, 10% sand, 90% fines Gray, moist, low plasticity, no odor. Some very thin sand laminations, and some black sand/oxidized organics. Trace angular coarse sand. VS (Humboldt) = 418 psf peak/42 psf residual.		SS 516 8	38 16-18-2 20 (38)	0- 6300 avg)			
			Bottom of borehole at 67.0 feet.								

Notes: Backfilled with cuttings.

CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252	BOREHOLE BH-08 PAGE 1 OF 2
CLIENT MCG Explore Design	GROUND WATER LEVELS:
HLdg (£) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	A FIELD BLOW RECOVERY & RECOVERY & A LIELD BLOW RECOVERY & A LIELD BLOW IO 30 40 DTHER POCKET PEN. IO 50 30 40 DTHER POCKET PEN. IO 50 30 40 DTHER PI 0 20 30 40 DTHER COUNTS IO 10 20 30 40 IO 10 20 30 40
PT U PT U S S S S S S S S S S S S S	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
SILTY SAND, (SM) 0% gravel, 65% sand, 35% fines Gray, moist, no odor. Fine to medium sand, Lenses of silt ~3/4" thick. SM SILTY SAND, (SM) 0% gravel, 85% sand, 15% fines Gray, moist, no odor. Fine to medium sand.	of gray SS 56 75 23 (42)
25 SM	



BOREHOLE BH-08

PAGE 2 OF 2

CLIENT MCG Explore Design

PROJECT NAME ANCA FedEx Sorting Facility

PROJ	ECT N	UMBE	R _73138.00	PRO	JECT LO	CATIO	N Anchora	ge, Ala	aska			
(ft) 5 DEPTH	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
	CL		LEAN CLAY, (CL) 0% gravel, 5% sand, 95% fines Gray, moist, stiff, no odor. VS (Humboldt) = 1212 psf peak/0 psf residual.		SS S8	100	6-10-13-17 (23)	8200 avg			AL	
 <u>30</u> 			SILT, (ML) 0% gravel, 0% sand, 100% fines Gray, moist, very stiff, nonplastic, no odor. VS (Humboldt) = 1421 psf peak/0 psf residual.		SS S9	100	6-7-14-20 (21)	8967 avg				· · · · · · · · · · · · · · · · · · ·
 <u>35</u> 	CL		LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, stiff, no odor. VS (Humboldt) = 1504 psf peak/42 psf residual.		SS S10	100	5-7-10-14 (17)	6967 avg			AL	

Bottom of borehole at 37.0 feet.

Notes: Completed as piezometer. 1" Sch80 PVC, hand slotted 7 to 27 ft BGS, unslotted casing 27 to 37 ft BGS. Stickup 1.5 ft. Annulus backfilled with cuttings.

		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252							BC	DRE	HOLE BH-09 PAGE 1 OF
CLIEN	т_м	CG E	xplore Design	PRO	JECT NA	ME _A	NCA FedE	x Sortir	ng Fa	acility		
PROJE		IUMBI	ER _73138.00	PRO	JECT LO	CATIO	N Anchora	age, Al	aska	l		
DATE	STAF	RTED	COMPLETED	GRO	UND ELE	EVATIO	DN					
			RACTOR _ GeoTek Alaska, Inc.		_							
			DD Hollow-Stem Auger, autohammer									
			CHECKED BY SMH									
NOTES	S						ING	1	1		1	
o DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE 10 20 30 40 PL MC LL 10 20 30 40
<u> </u>	PT	<u></u>	PEAT, (PT) Dark brown, fibrous, frozen.		G							
_	SM		SILTY SAND, (SM) 0% gravel, 60% sand, 40% fines Brown, moist to wet, no odor. Fine to medium sand. M contain organics.	ay	S1A G S1B	-						0
-	SM		SILTY SAND, (SM) 0% gravel, 81% sand, 19% fines Gray/brown with reddish/orange iron staining, moist, no odor. Medium sand, contains roots.	/_ 0	SS S2	75	5-7-6-8 (13)				LMA	o ■
5 –			POORLY GRADED SAND WITH SILT, (SP-SM) 0% gravel, 90% sand, 10% fines Gray, wet, no odor. Medium sand.		SS S3	75	6-9-11-13 (20)					
-					SS S4	75	13-17-22- 19 (39)					0
<u>10</u> –	SP- SM				SS S5	75	5-15-18-17 (33)	7				
_												
<u>15</u> - -			SILTY SAND, (SM) 0% gravel, 85% sand, 15% fines Gray, wet, no odor. Fine to medium sand.		SS S6	83	12-16-16- 18 (32)	-				0
_	SM											
20 -			SILTY SAND, (SM) 0% gravel, 72% sand, 28% fines Gray, wet, no odor. Fine sand with trace coase sand.		SS S7	67	11-17-24- 26 (41)				LMA	Q
-	SM											
25									1			



BOREHOLE BH-09

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CLIENT MCG Explore Design

PROJECT NAME _ ANCA FedEx Sorting Facility

PROJ	PROJECT NUMBER _73138.00 PROJECT LOCATION _Anchorage, Alaska											
(tt) (tt) 25	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE IYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
	CL- ML		CLAYEY SILT, (CL-ML) 0% gravel, 0% sand, 100% fines Gray, moist, stiff to very stiff, low plasticity to nonplastic, no odor. VS (Humboldt) = 1797 psf peak/0 psf residual.	X	SS S8	100	8-11-13 (24)	8500 avg				
<u>30</u> 	-		VS (Humboldt) = 1671 psf peak/84 psf residual.		SS S9	100	7-9-14 (23)	8000 avg				▲ ○
			Bottom of borehole at 31.5 feet.									

Notes: Backfilled with cuttings.

3	CRW Engineering Group, Inc. 1940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252						BC	DRE	HOL	PAGE		
CLIENT MCG Explore Design	n	PROJECT NA	ME _/	NCA FedE	< Sortin	ig Fa	cility					
	00											
	COMPLETED <u>3/6/22</u>											
	SeoTek Alaska, Inc.											
	Stem Auger, autohammer			DRILLING								
	CHECKED BY _SMH											
. 0		SAMPLE TYPE NUMBER	× %	ΣωΩ	Ä		Ń,		▲ FIE	ELD N	VALU	JE 🔺
DEPTH (ft) (ft) U.S.C.S. LOG LOG	MATERIAL DESCRIPTION	E ⊥ BE	RECOVERY 6 (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	10	20	30	40
DEPT (ff) (ff) U.S.C. LOG LOG		NUN	Ю. Ш		NO TO	빙	a) O	티비	PI	М	с I	
0		SA	R	ш	۲ ۲		Ē		10	- M 20	30	40
₽ PEAT,											:	:
	5.								:			
					-				!			
<u>4</u>		≍ SS \ S1		1-0-0-0							÷	469
			13	(0)				'		:		
- PT .					-							•
5 4 24								VS				<u> </u>
	ker) = 1101 psf peak/712 psf residual											
			1					Consc		:	:	610
Bottom	depth inferred from observations of bottom of	ST S2								···:	•••	:610 :
<u>vv</u> Shelby	tube.		4					Consc				579
SP	LY GRADED SAND WITH SILT, (SP-SM) 0% 90% sand, 10% fines											
ੋ SM										:	:	:
10	SAND, (SM) 0% gravel, 63% sand, 37% fines				-						<u> </u>	÷
Gray, r	noist, no odor. Fine to medium sand.		75	7-10-11-9				LMA	.			
		<u> </u>	-	(21)							÷	÷
SM									ŀ	:		
											•••••••	•••••
									!			
15												
CLAYE Grav r	EY SILT, (CL-ML) 0% gravel, 0% sand, 100% fi noist, stiff, low plasticity, no odor.			4-5-7-9	5000					÷		:
- VS (HL	umboldt) = 1462 psf peak/125 psf residual.	SS S4	100	(12)	5833 avg				:		0	•
		<u> </u>			-							
CL- ML												
										••••		
20	 CLAY, (CL) 0% gravel, 0% sand, 100% fines	📈 ss			-					:	: :	: :
Gray, r	noist, stiff, no odor. umboldt) = 1922 psf peak/209 psf residual,	× 33 \$5	67	4-5-6 (11)	5000 avg			AL	.		0	
VS (HL measu	rement possibly elevated.			()	9						-	
25											-	÷
23 /////	(Continued Next Page)		1	1	1			<u> </u>	L:	:	:	·····



CRW Engineering Group, Inc.

BOREHOLE BH-10

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CLIENT MCG Explore Design

PROJECT NAME ANCA FedEx Sorting Facility

PROJ	ECT N	UMBE	R _73138.00	PRO	JECT LOO	CATIO	N Anchora	age, Ala	aska			
(H) HLd JQ 25	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
	-		LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, stiff, no odor. <i>(continued)</i> VS (Humboldt) = 1253 psf peak/42 psf residual, measurement possibly elevated.		SS S6	100	5-6-7 (13)	6333 avg				▲ ○
 - <u>30</u> 	CL		Softer and higher plasticity than above. VS (Humboldt) = 1253 psf peak/84 psf residual, measurement possibly elevated.		SS S7	100	5-5-5 (10)	5167 avg				
 _ <u>35</u> 	-		VS (Humboldt) = 1253 psf peak/125 psf residual.		SS S8	100	4-4-5 (9)	4000 avg				• 0
			Bottom of borehole at 36.5 feet.									

Notes:

Completed as piezometer. 1" Sch80 PVC, hand slotted 7 to 17 ft BGS, unslotted casing 17 to 37 ft BGS. Stickup 2.9 ft. Annulus backfilled with cuttings.

		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252							BC	DRE	HOLE BH-1' PAGE 1 OF
CLIEN	т_м	CG Exp	olore Design	PROJI		ME _A	NCA FedE	x Sortii	ng Fa	acility		
PROJE		UMBE	R <u>73138.00</u>	PROJI	ECT LO	CATIO	N Anchor	age, Al	laska	I		
DATE	STAF	RTED _	3/3/22 COMPLETED 3/3/22 0	GROU	ND ELE	EVATIO	ON					
DRILL	ING C	CONTR	ACTOR GeoTek Alaska, Inc.	GROU	ND WA	TER L	EVELS:					
DRILL	ING N	NETHO	D Hollow-Stem Auger, autohammer	∇	ΑΤ ΤΙΜ	e of d	DRILLING	5.50 ft	t			
LOGG	ED B	Y AFS	CHECKED BY SMH		AT END	OF D	RILLING _					
NOTE	s				AFTER	DRILL	.ING					
DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE 10 20 30 40 PL MC LL 10 20 30 40
0		<u> \\</u>	PEAT, (PT) Dark brown, moist, no odor. Organics with roots.									
	PT	<u>v v</u>		H	ЩG	-						1
7		<u></u>	Brown, fibrous, organic odor.	F	S1	4		-				
-		<u>14</u> <u>14</u>	SILTY SAND, (SM) 0% gravel, 76% sand, 24% fines		SS S2A		0-0-0-10				LMA	
-	SM		Gray/brown, moist, no odor. VS (Acker): No soil failure at maximum torque.		SS S2B	47	(0)				VS	
5			∇	-				-				
_			POORLY GRADED SAND, (SP) 0% gravel, 95% sand, 5	5%	ss		12-13-14					
	SP		fines Gray, wet, no odor.	Ł	<u>∖</u> S3	67	(27)					
-												
_			SILTY SAND, (SM) 0% gravel, 70% sand, 30% fines Gray, wet, no odor. Medium sand.		ss		7.0.44.44					
			Gray, wet, no oddr. Wediam sand.	Ľ	\ S4	63	7-6-14-11 (20)				LMA	│
								-				
10			0% gravel, 65% sand, 35% fines	k	/			-				
_			Gray, wet, no odor. Interbedded gray silty sand and sand silt in ~4" layers. Fine to medium sand.	y y		75	6-5-9-10					
	SM			ľ			(14)					
-								1				
-												
_												
15												
			SILTY CLAY, (CL-ML) 0% gravel, 0% sand, 100% fines		ss							
-			Gray, moist, very stiff, medium plasticity, no odor. Possib trace sand.		∖ S6	67	5-8-11-11 (19)	8500 avg				
_												
	CL- ML											
-												
-												
20				↓				1				
			LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, stiff, no odor.	$\left \right $	ss		4-6-8-9	6800				
-			VS (Humboldt) = 1671 psf peak/0 psf residual.	Z	\ S7	75	(14)	avg			AL	
-				F				-				
	CL											
-												
25												



CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300

BOREHOLE BH-11

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CLIENT MCG Explore Design

PROJECT NAME ANCA FedEx Sorting Facility

PROJECT LOCATION Anchorage, Alaska PROJECT NUMBER 73138.00 SAMPLE TYPE NUMBER % POCKET PEN. (psf) ▲ FIELD N VALUE ▲ FIELD BLOW COUNTS (N VALUE) PID (by S&W) RECOVERY 9 (RQD) GRAPHIC LOG ICE BOND U.S.C.S. OTHER TESTS DEPTH (ft) 10 20 30 40 MATERIAL DESCRIPTION MC PI LL **4**0 25 20 30 10 LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, stiff, no odor. *(continued)* VS (Humboldt) = 1379 psf peak/125 psf residual. SS 4-5-6 6867 100 Ο S8 (11) avg 30 CL VS (Humboldt) = 1671 psf peak/84 psf residual. SS S9 3-4-5 3233 100 Ó (9) avg 35 LEAN CLAY WITH SAND, (CL) 0% gravel, 10% sand, 90% fines 1750 SS 0-2-2-4 100 CL Gray, moist, soft, no odor. Fine grain sand layer at ~35.5 ▲ e AL ŀ S10 avg (4) feet. VS (Humboldt) = 543 psf peak/0 psf residual. Bottom of borehole at 37.0 feet.

Notes:

Backfilled with cuttings.

		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252							BC	DRE	HOLE BH-12 PAGE 1 OF 2
CLIEN	т_м	CG Exp	plore Design	PROJ	IECT NA	ME _A	NCA FedE	x Sortir	ng Fa	acility		
PROJE	ECT N	IUMBE	R 73138.00	PROJ	IECT LO	CATIO	N Anchor	age, Al	aska			
DATE	STAR	RTED _	3/4/22 COMPLETED _3/5/22	GRO	UND ELE	EVATIO	ON					
ORILLI	ING C	ONTR	ACTOR _ GeoTek Alaska, Inc.									
			D Hollow-Stem Auger, autohammer									
			S CHECKED BY SMH									
NOTES	S				AFTER	DRILL	.ING			1		1
0 UEPIH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
0		<u></u>	PEAT, (PT) Dark brown, organics. Frozen with visible ice.		G	-						
-		<u> </u>	Dark Drown, organics. Frozen with VISIDIE ICE.		∭ <u>S1</u> X SS	├──		1				28
-	PT	<u>v v</u>			<u>S2</u>	33	2-1-0-0 (1)					
5		r 77			ST S3A	63					Consc	26
-			POORLY GRADED SAND, (SP) 0% gravel, 95% sand fines © Gray/brown, moist, no odor. Organics in Sample S3.	d, 5%	ST S3B	J	-					0
-	SP		Gray, wet, no odor. Fine to medium sand.		SS S4	58	11-11-11- 11 (22)					O
10			SILTY SAND, (SM) 0% gravel, 77% sand, 23% fines Gray, wet, no odor. Fine to medium sand.		SS S5	67	8-8-9-11 (17)				LMA	O
-												
<u>15</u>	SM		0% gravel, 60% sand, 40% fines Gray, moist to wet. Fine to medium sand.		SS S6	42	15-15-16- 15					O
-							(31)					
20			SILTY CLAY, (CL-ML) 0% gravel, 10% sand, 90% fine					9000				
-			Gray, moist, soft to very stiff, no odor. 1" lens of fine s VS (Humboldt) = 2883 psf peak/167 psf residual.	and.	SS S7	67	8-10-11 (21)	avg				•
-	CL- ML											
25												



BOREHOLE BH-12

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CRW MOA LOG - CRW_DATATEMPLATE_20190115.GDT - 6/8/23 08:53 - 73138 ANCA FEDEX SORTING FACILITY.GPJ

CLIEN	нт _М	CG Explo	pre Design P	ROJECT	AME _A	NCA FedE	x Sortin	ng Fa	cility					
PROJ		IUMBER	73138.00 P	ROJECT L	OCATIC	N Anchora	age, Ala	aska						
5 DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	10	ELD N V 20 3 MC 20 3	04	. <u>0</u>
			SILTY CLAY, (CL-ML) 0% gravel, 10% sand, 90% fines Gray, moist, soft to very stiff, no odor. 1" lens of fine sand (<i>continued</i>) VS (Humboldt) = 836 psf peak/0 psf residual.		50	4-7-7 (14)	-					•	0	
<u> </u>	CL- ML		No recovery.		0	3-3-4 (7)	-							
35	CL		LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, very stiff to hard, no odor. VS (Humboldt) = 1253 psf peak/167 psf residual.	SS S1	67 0 67	14-18-22 (40)	9000 avg			AL		Đ	-1	
40			SILT, (ML) 0% gravel, 13% sand, 87% fines Gray, moist, no odor. Crumbles easily under hand pressu	re. St	67	11-18-22 (40)	-			LMA		0		
45	SM		SILTY SAND, (SM) 0% gravel, 65% sand, 35% fines Gray, moist, no odor. Fine sand.	SS S1	2 78	17-24-31 (55)						0		>>/
 	 SM		SILT WITH SAND, (ML) 0% gravel, 35% sand, 65% fines Gray, moist, no odor. Crumbles easily under hand pressu SILTY SAND, (SM) 0% gravel, 83% sand, 26% fines Gray, moist, no odor. Fine sand.	s re. <u>S13</u> S13	A 78	15-23-33 (56)				SA	0	0		>>,

Bottom of borehole at 51.5 feet.

Notes: Backfilled with cuttings

		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252							BC	DRE	HO		E BI		
			xplore Design	PRO.	JECT NA	ME _/	ANCA FedE>	Sortir	ng Fa	acility						
PROJE		UMB	ER <u>73138.00</u>	PRO.	JECT LO	CATIO	DN Anchora	age, Al	aska							
DATE	STAF	RTED	<u>3/4/22</u> COMPLETED <u>3/4/22</u>	GRO		EVATI	ON									
DRILL	ING C	CONT	RACTOR GeoTek Alaska, Inc.	GRO	UND WA	TERL	EVELS:									
DRILL	ING N	NETH	OD Hollow-Stem Auger, autohammer	Σ	AT TIM	E OF I	DRILLING	7.00 ft								
LOGG	ED B	Y _AF	ES CHECKED BY SMH				RILLING 6									
NOTES	s			$\overline{\Lambda}$	AFTER	DRILI	LING 4.25	ft								
DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	1	02	D N V 20 <u>3</u> MC	04	10
0		N NED	SILTY SAND, (SM) 0% gravel, 70% sand, 30% fines			-		_				1	0 2	<u>0 3</u>	04	0
-	SM		Brown/reddish brown, moist, slight organic odor, roots.		G S1											
_			SILTY SAND, (SM) 0% gravel, 84% sand, 16% fines Brown, moist, no odor. Intervals of silty sand and sandy Fine to medium sand.	— — – ∕ silt.	SS S2	75	7-6-6-7 (12)				LMA		2			
5	SM				SS S3	67	5-9-8-6 (17)						O_			
_	SM		SILTY SAND, (SM) 0% gravel, 83% sand, 17% fines Brown, wet, no odor. Fine to medium sand.		SS S4	75	8-11-16-13 (27)				LMA			°▲	· · · · · · · · · · · · · · · · · · ·	
10			POORLY GRADED SAND, (SP) 0% gravel, 95% sand, fines Brown, wet, no odor. Fine to medium sand.	, 5%	SS S5	100	4-12-18-20 (30)						(2	N	
_	SP														· · · · · · · · · · · · · · · · · · ·	
<u>15</u> –			POORLY GRADED SAND WITH SILT, (SP-SM) 0% gravel, 90% sand, 10% fines Gray, wet, no odor. Fine to medium sand.		SS S6	100	26-31-39 (70)							-0-	· · · · · · · · · · · · · · · · · · ·	:
-															· · · · · · · · · · · · · · · · · · ·	
<u>20</u> -	SP- SM				SS S7	100	21-21-23 (44)							2		
_								•								
25			(Continued Next Page)													



CRW Engineering Group, Inc.

BOREHOLE BH-13

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CLIENT MCG Explore Design

PROJECT NAME ANCA FedEx Sorting Facility

PROJI	ECT N	UMBE	R _73138.00	PROJ	ECT LO	CATIO	N Anchora	age, Ala	aska			
5 DEPTH 5	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
			LEAN CLAY, (CL) 0% gravel, 5% sand, 95% fines Gray, moist, very stiff, no odor. VS (Humboldt) = 2005 psf peak/0 psf residual.	4	SS S8	50	9-13-17-22 (30)	9000			AL	IO I
 30	CL											
	<u> </u>		LEAN CLAY, (CL) 0% gravel, 3% sand, 97% fines Gray, moist, stiff to very stiff, no odor. VS (Humboldt) = 1629 psf peak/209 psf residual.		SS S9	100	8-11-12-14 (23)	8300 avg			LMA, AL	
	CL			_	_							
			0% gravel, 0% sand, 100% fines VS (Humboldt) = 1838 psf peak/0 psf residual.		SS S10	75	6-9-12-12 (21)	7250 avg				0

Bottom of borehole at 37.0 feet.

Notes: Completed as piezometer. 1" Sch80 PVC, machine slotted 9 to 24 ft BGS. Stickup 3.8 ft. Annulus backfilled with ... cuttings.

		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252							BC	DRE	HOLE BH-14 PAGE 1 OF 2
CLIEN	IT _M	CG E	plore Design	PROJEC	T NAI	ME _A	NCA FedE	x Sortir	ng Fa	acility		
PROJE	ECT N	IUMB	R _73138.00	PROJEC	T LO	CATIO	N Anchor	age, Al	aska			
DATE	STAF	RTED	3/4/22 COMPLETED <u>3/4/22</u>	GROUN	DELE	VATIC	N					
ORILL	ING C	ONT	ACTOR GeoTek Alaska, Inc.	GROUN	O WA	TER LI	EVELS:					
ORILL	ING N	/ETH	D Hollow-Stem Auger, autohammer	${ar abla}$ At	TIME	e of d	RILLING _	3.00 ft				
			S CHECKED BY SMH									
NOTES	s	1			TER	DRILL	ING <u>1.30</u>	ft			1	1
0 DEPTH (ft)	U.S.C.S.	GRAPHIC	MATERIAL DESCRIPTION	SAMDI E TVDE	NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE 4 10 20 30 40 PL MC LL 10 20 30 40
-	ML		SILT, (ML) 0% gravel, 10% sand, 90% fines Tan/brown, moist, soft, nonplastic, no odor. Frozen, V ⊈ 5-15%.	×	SS S1	88	9-7-3-3 (10)					
_			∑ SILT WITH SAND, (ML) 3% gravel, 20% sand, 77% fi Tan/brown, moist to wet, soft. ▼	nes	SS S2	75	4-2-3-2 (5)				LMA	▲ [©]
5	ML		0% gravel, 25% sand, 75% fines Wet	×	SS S3	13	0-0-0-0 (0)				LMA	0
-			SILT, (ML) 0% gravel, 10% sand, 90% fines Tan/brown, moist to wet, soft, nonplastic.		SS S4	33	1-3-1-2 (4)	_				•
10	ML			X	SS S5	19	0-1-1-1 (2)	-				0
- 15												
_	SM		Gray, wet, no odor. Fine to medium sand. LEAN CLAY WITH SAND, (CL) 0% gravel, 24% sand, fines Gray, moist, soft, no odor.	, 76%	SS S6A SS S6B	25	4-3-2-1 (5)	1000			AL	© • • • • • • • • • • • • • • • • • • •
- 20	CL		VS (Humboldt) = 418 psf peak/0 psf residual.									
			LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, medium to very stiff, no odor. VS (Humboldt) = 1504 psf peak/0 psf residual.		SS S7	75	5-10-13-17 (23)	8833 avg			AL	 01
_	CL											
25												



BOREHOLE BH-14

PAGE 2 OF 2

CLIENT MCG Explore Design

PROJECT NAME _ ANCA FedEx Sorting Facility

PROJ		UMBE	R _73138.00	PROJECT LOCATION _ Anchorage, Alaska								
HLd JD 25	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
	-		LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, medium to very stiff, no odor. <i>(continued)</i> VS (Humboldt) = 3134 psf peak/418 psf residual.	,	SS S8	100	5-7-10-11 (17)	8433 avg				· · · · · O · · · · · · · · · · · · · · · ·
<u>30</u> 35	CL		VS (Humboldt) = 1671 psf peak/293 psf residual.		SS S9	117	4-3-4 (7)	4900 avg				▲
	CL		LEAN CLAY, (CL) 0% gravel, 5% sand, 95% fines Gray, moist, stiff to very stiff, no odor. Lenses of fine gr sand, <0.25" thick. VS (Humboldt) = 1128 psf peak/167 psf residual.	ray	SS S10	100	5-7-10 (17)	5100 avg				
			Bottom of borehole at 36.5 feet. Notes: Completed as piezometer. 1" Sch80 PVC, machine slo 8.4 to 18.4 ft BGS, 5 ft unslotted casing below. Stickup ft. Annulus backfilled with cuttings.									

		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252						BC	DRE	HOLE BH-1
CLIEN	т_м	CG Ex	plore Design	PROJECT NA	ME A	NCA FedE	x Sortin	ig Fa	cility		
PROJE	ECT N	IUMBE	ER _73138.00	PROJECT LO	CATIO	N Anchora	age, Ala	aska			
DRILL	ING C	ONTF	RACTOR _ GeoTek Alaska, Inc.								
			DD Hollow-Stem Auger, autohammer								
			S CHECKED BY <u>SMH</u>								
DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE 10 20 30 40 PL MC LL 10 20 30 40
0			POORLY GRADED SAND WITH SILT, (SP-SM) 0% gravel, 91% sand, 9% fines Dark brown, moist, no odor, organics.	G S1	-					LMA	
- - 5	SP- SM		Roots.	SS S2	47	2-2-0-0 (2)					©
-	SM		 ✓ ✓ SILTY SAND, (SM) 0% gravel, 70% sand, 30% fines Brown, moist, no odor. Interbedded silt and silty sand. layers gray/brown. 	Silt SS S3	88	2-8-13-12 (21)					¢.
-	SP- SM		POORLY GRADED SAND WITH SILT, (SP-SM) 0% gravel, 90% sand, 10% fines Brown/gray, wet, no odor. Blow counts during sampling inaccurate due to hamme issue.	er SS S4	58	N/A					0
10 -			SILTY SAND, (SM) 0% gravel, 80% sand, 20% fines Gray, wet, no odor. Fine to coarse sand.	SS S5	79	3-9-11-12 (20)				SA	Â
-	SM										
<u>15</u>	ML		Gray, wet, no odor. Fine to medium sand. SILT WITH SAND, (ML) 0% gravel, 15% sand, 85% fin Gray, moist to wet, nonplastic, no odor. Laminae of san within silt.	nd SS S6B	1 01	5-10-11-13 (21)	7500				
-	SM		SILTY SAND, (SM) 0% gravel, 70% sand, 30% fines Gray, moist, no odor. Fine sand.								
20			FAT CLAY, (CH) 0% gravel, 0% sand, 100% fines Gray, moist, very stiff to hard, no odor.	SS S7	83	7-12-15-22 (27)	9000 avg			AL	.
-	СН										
_ 25											



CRW Engineering Group, Inc.

BOREHOLE BH-15

PAGE 2 OF 2

CLIENT MCG Explore Design

PROJECT NAME ANCA FedEx Sorting Facility

PROJECT	NUMBER	73138.00

PROJ	ECT N	UMBE	R _73138.00 PRO	JEC	T LO	CATIO	N Anchora	ige, Ala	aska			
014) (ft) 5	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE I YPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40
	CL		LEAN CLAY, (CL) 0% gravel, 0% sand, 100% fines Gray, moist, very stiff, no odor.	X	SS S8	100	5-9-13-15 (22)	9000 avg			AL	
<u> 30 </u> _			SILT WITH SAND, (ML) 3% gravel, 12% sand, 85% fines Gray/brown, moist, very stiff, no odor. Rounded gravel up to 1/4".		SS S9	92	5-7-12-18 (19)	8300 avg			LMA	A .Q

Bottom of borehole at 32.0 feet.

Notes:

Completed as piezometer. 1" Sch80 PVC, machine slotted 6.75 to 16.75 ft BGS, 5 ft unslotted casing below. Stickup 4.5 ft. Annulus backfilled with cuttings.

CRW MOA LOG - CRW_DATATEMPLATE_20190115. GDT - 6/8/23 08:53 - 73138 ANCA FEDEX SORTING FACILITY. GPJ

		R	CRW Engineering Group, Inc. 3940 Arctic Blvd, Ste. 300 Anchorage, AK 99503 Telephone: (907) 562-3252							BC	DRE	HO		GE 1			
			olore Design	PROJ	ECT NA	ME _/	NCA FedE>	< Sortir	ng Fa	acility							
PROJECT NUMBER 73138.00																	
DATE STARTED _3/11/22 COMPLETED _3/11/22					GROUND ELEVATION												
DRILLING CONTRACTOR GeoTek Alaska, Inc.																	
DRILLING METHOD Hollow-Stem Auger, autohammer																	
LOGGED BY _AFS CHECKED BY _SMH					AT END	OF D	RILLING										
NOTE	s				AFTER	DRILL	_ING										
UEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf)	ICE BOND	PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40					
0	-	r 77 77	PEAT, (PT) Dark brown, moist to wet, organics, fibrous.		G S1	J						1	<u>0 2</u>	0 30) 4	0 21	
-		<u>r vi</u> <u>vr</u>	Some frozen slough. VS (Acker) = 1230 psf peak/324 psf residual	:	≤ SS S2			-			VS					34	
5	PT	<u>v vi</u>	Small amount of gray medium sand in sample shoe.			7	0-0-0-1 (0)										
_		r 71				33	0-0-0-0 (0)									4	
_	 		POORLY GRADED SAND, (SP) 0% gravel, 95% sand fines Gray, wet, no odor. Medium sand.	I, 5%	SS S4	75	7-14-13-17 (27)	-					C)			
10	SP		0% gravel, 95% sand, 5% fines Fine to medium sand.	X	SS S5	67	7-15-14-15 (29)	-					C				
-	-															•	
15	ML		SANDY SILT, (ML) 0% gravel, 42% sand, 58% fines Gray, moist, no odor. POORLY GRADED SAND, (SP) 0% gravel, 95% sand fines Gray, moist, no odor. Medium sand.	 , 5%	≤ SS S6A SS S6B	100	4-3-10-5 (13)				LMA		C) O			
-	SP																
20	 		SILT, (ML) No recovery. Gray sandy slough in sample spoon.			0	3-3-5-7 (8)	_									
-	ML															· · · ·	
-	1													:			



BOREHOLE BH-16

PAGE 2 OF 2

CLIENT MCG Explore Design

PROJECT NAME ANCA FedEx Sorting Facility

PROJI	PROJECT NUMBER _73138.00 PRO						DJECT LOCATION _Anchorage, Alaska									
(ff) (ff)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION			RECOVERY % (RQD)	FIELD BLOW COUNTS (N VALUE)	POCKET PEN. (psf) ICE BOND		PID (by S&W)	OTHER TESTS	▲ FIELD N VALUE ▲ 10 20 30 40 PL MC LL 10 20 30 40				
			SILT, (ML) No recovery. Gray sandy slough in sample spoon. <i>(continued)</i> No recovery. Very disturbed wet silt and fine sand in sample spoon, likely slough.			0	4-6-7-8 (13)					·····				
30	ML CL		LEAN CLAY, (CL) 0% gravel, 5% sand, 95% fines Gray, moist, stiff to very stiff, no odor. VS (Humboldt) = 2047 psf peak/125 psf residual.	X	SS S8	62	5-8-13-16 (21)	5900 avg			AL	I O −I ▲				
	ML		SANDY SILT, (ML) 5% gravel, 37% sand, 58% fines Gray, moist, stiff, low to medium plasticity, no odor. VS (Humboldt) = 1128 psf peak/84 psf residual.	X	SS S9	50	4-4-9-13 (13)	5500 avg			MA	0				

Bottom of borehole at 32.0 feet.

Notes:

Backfilled with cuttings.

Appendix B

Laboratory Results

Included in this section:

1) Laboratory Results from Alaska Testlab

ATL	

								info@al	laskatestlab.com
	erial Test F	-			Issi	ort No: AS ie No: 1			
Client:	CRW Engineering Group		Project Co	ode: 220484	The resu reproduc	ults contained below pe ced, except in full, with	ertain only to the items out the prior written app	tested below. This repo proval of Alaska Testlab	ort should not be or the agency.
	3940 Arctic Blvd., Ste. 3	00	CC: C	CRW /laria Kampsen					
	Anchorage, AK, 99503		IN IN	nana Kampsen			1 04	1 -	
Project:	FedEx Bog					-	Marcho	upser)	
							1		
					Revie	wed By: Mari	a E Kampsen		
	73138.00				Title:		or Engineer		
					Date:	4/22	/2022		
Samp	le Details								
Sample	e ID		22-0250-S01	22-0250-S02	22-0250-S03	22-0250-S04	22-0250-S05	22-0250-S06	
	Sample ID		BH-01 S1	BH-01 S2A	BH-01 S2B 3.0ft	BH-01 S2B 4.0ft	BH-01 S3	BH-01 S4A	
Date Sa	-								
Other	Test Results								
Descrip	otion	Method			Res	ults			Limits
	Content (%)	ASTM D2216	1424	320			408	587	
Date Te			3/21/2022	3/22/2022			3/22/2022	3/23/2022	
Tested I	Ву	(Christian Detablan	Christian Detablan			Christian Detablan	Christian Detablan	

N/A

								4040 B	lab - Anchorage Street, Suite 102 orage, AK 99503
	TL							Fa	e: 907-205-1987 ax: 907-782-4409 laskatestlab.com
Mate	erial Test R	Report			Rep	oort No: AS ue No: 1	SM:22-0250	-	laskatestiab.com
Client:	CRW Engineering Group	o, LLC	Project Co	ode: 220484	The res	ults contained below p		tested below. This repo proval of Alaska Testlab	
	3940 Arctic Blvd., Ste. 30 Anchorage, AK, 99503	00	CC: C N	RW Iaria Kampsen					
Project:	FedEx Bog						Hant	enpser	
	73138.00				Revie Title: Date:	Sen	ia E Kampsen ior Engineer 2/2022		
Samp	le Details								
Sample Client S Date Sa	Sample ID		22-0250-S07 BH-01 S4B	22-0250-S08 BH-01 S4C	22-0250-S09 BH-01 S5	22-0250-S10 BH-01 S6	22-0250-S11 BH-01 S7	22-0250-S12 BH-01 S8	
Other	Test Results								
Descrip		Method		_	Res			-	Limits
Water C	content (%) sted	ASTM D2216	33 3/22/2022	23 3/22/2022	16 3/22/2022	12 3/22/2022	14 3/22/2022	20 3/22/2022	
Tested E	7		Christian Detablan	Christian Detablan	Christian Detablan	Christian Detablan	Christian Detablan	Christian Detablan	
	Material (%) ntent (%)	ASTM D2974	10.8 89.2						
	Content (%)		2						
Method			Α						
	e Temperature (°C)		440						
Tested E	e Duration (min) By		300 Cindy Zickefoose						
Percent	,	LMA (Internal Me			0				
Percent	Sand				81				
	Fines (Silt/Clay)				19				
Group S					SM				
Group N Tested E					Silty sand John Platt				
Group C		ASTM D2487			John Latt			CL	
Group N								Lean clay	
Gravel (0	
Sand (%								0	
Fines (% Tested E		ASTM D2487						100 Cindy Zickefoose	
Liquid Li		ASTM D2407						36	
Plastic L								19	
Plasticity	-							17	
	tion Method							Wet Hand during mixing on	
	e Removed By imit Apparatus							Mechanical	
Grooving								Plastic	
Rolling	9							Hand	
Tested E	Ву							Caleb Fischer	
Date Te	sted							4/15/2022	
Comm	nents								
N/A									

Alaska Testlab - Anchorage

ATL

Cilem: CRW Engineering Group, LLC 3404 Archite Bud, Ste, Sta Anchorage, AK, 99503 73138.00 Sample Details Sample ID Description		erial Test F	-			Issue No:			
Tatisa.ou Reviewed Br. Sanka E Kampan Sanka Engineer Jate: 2022 Sample ID Client Sample ID Date Sample ID	Client:	3940 Arctic Blvd., Ste. 3		CC: CRW	1				
Title: Senior Engineer Date: 4/22/2022 Sample ID Sample ID BH-02 S1 22-0264-S01 22-0264-S02 22-0254-S03 22-0254-S04 22-0254-S05 BH-02 S1 BH-02 S1 BH-02 S2A BH-02 S3 BH-02 S4 Date Sample ID Date Sample ID Date Sample ID Date Sample ID Method Results Imits Description Method 475 941 20 16 17 Date Tested By Christian Detablan Christian Detablan 22/2022 2/22/202 12 Tested By Christian Detablan Christian Detablan Detastan Detastan Percent Tance (Sill/Clay) 68 71 Percent Tance (Sill/Clay) 53 SM SM Group Name Silly samd Silly samd Silly samd John Platt John Platt John Platt	Project:	FedEx Bog					Marte,	farpser)	
Sample ID Cilent Sample ID bate Sampled 22-0254-S01 BH-02 S2A 22-0254-S04 BH-02 S2B 22-0254-S04 BH-02 S3 22-0254-S04 S3/22/022 3/22/02		73138.00				Title:	Senior Engineer		
Sample ID Client Sample ID bate Sampled 22-0254-S01 BH-02 S2A 22-0254-S03 BH-02 S2A 22-0254-S04 BH-02 S2A 22-0254-S04 BH-02 S3A 22-0254-S04 S4A 20-0154-S04 S3A 20-0154-S04 S3A 20-0154-S04 S3A 20-0154-S04 S3A 20-0154-S04 S4A 20-015-S04 S4A 20-015-S04-S04 S4A 20-015-S04-S04 S4A	Samp	le Details							
Description Method 475 941 20 16 17 Date Tested 3/22/022 3/2 3/2 </td <td>Sample Client S Date Sa</td> <td>e ID Sample ID ampled</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Sample Client S Date Sa	e ID Sample ID ampled							
Water Content (%) ASTM D2216 475 941 20 16 17 Date Tested 3/22/2022 3/22/2022 3/22/2022 3/22/2022 Date Tested By Christian Detablan Christian Deta	Other	Test Results							
Date Tested 3/22/2022 3/22/2022 3/22/2022 3/22/2022 Tested By Christian Detablan Christia				475	0.44		10	17	Limits
Percent Gravel LMA (Internal Method) 0 0 Percent Sand 88 71 Percent Fines (Sill/Clay) 32 29 Group Symbol SiM SM Group Name Silty sand Silty Sand Tested By John Platt John Platt	Date Te	sted		3/22/2022	3/22/2022	3/22/2022	3/22/2022	3/22/2022	
Percent Fines (Silt/Clay) SM SM Group Symbol Silty Sand Silty Sand Tested By John Platt John Platt					CHIISUAN DELADIAN	0	Chilstian Detablan		
Group Symbol Sity Sand Sity Sand Sity Sand Sity Sand Sity Sand John Platt John Platt									
Group Name Tested By John Platt John Platt									
	Group N	lame				Silty sand		Silty Sand	
	Tested E	Зу				John Platt		John Platt	
Commonto									
Commonto									
Commonto									
Commonto									
Commonto									
	Com	anta							

	TL						4040 B Ancho Phon Fa	ab - Anchorage Street, Suite 102 orage, AK 99503 e: 907-205-1987 ix: 907-782-4409 laskatestlab.com
Mat	erial Test F	Renort			Report No	: ASM:22-02	54	
Client:	CRW Engineering Grou 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503	p, LLC	Project Code CC: CRW Maria		The results contained reproduced, except in	below pertain only to the it	ems tested below. This repo n approval of Alaska Testlab	rt should not be or the agency.
Project:	FedEx Bog					Mart	Farpsen	
	73138.00				Reviewed By: Title: Date:	Maria E Kamps Senior Enginee 4/22/2022		
Samp	le Details							
Sample Client			22-0254-S06 BH-02 S5	22-0254-S07 BH-02 S6	22-0254-S08 BH-02 S7	22-0254-S09 BH-02 S8	22-0254-S10 BH-02 S9	
Other	[·] Test Results							
Descri	ption	Method			Results			Limits
Date Te		ASTM D2216	17 3/22/2022	30 3/22/2022	25 3/22/2022	26 3/22/2022	25 3/22/2022	
Tested Group (1	 ASTM D2487	Christian Detablan	Christian Detablan CL	Christian Detablan	Christian Detablan CL	Christian Detablan	
Group		ASTIVI D2407		Lean clay		Lean clay		
	I Proportions Estimated			Yes		Yes		
Gravel				0		0		
Sand (%				0		0		
Fines (%	-			100		100		
Tested		ASTM D2487 ASTM D4318		Cindy Zickefoose 41		Cindy Zickefoose 41		
Liquid L Plastic I		A311VI D4310		23		22		
	ty Index			18		19		
	ation Method			Wet		Wet		
	e Removed By			Hand during mixing on glass		Hand during mixing on glass		
	imit Apparatus			Mechanical		Mechanical		
Groovin	ig Tool			Plastic		Plastic		
Rolling	D.			Hand		Hand		
Tested Date Te				Karen Jackson 4/11/2022		Karen Jackson 4/8/2022		

	TL						4040 B Ancho Phon Fa info@a	ab - Anchorage Street, Suite 102 irage, AK 99503 e: 907-205-1987 x: 907-782-4409 laskatestlab.com
Mate	erial Test F	Report			Report No Issue No:	o: ASM:22-02{ 1	54	
Client:	CRW Engineering Group 3940 Arctic Blvd., Ste. 30 Anchorage, AK, 99503 FedEx Bog	o, LLC	Project Code CC: CRW Maria		The results contained	below pertain only to the lite full, without the prior writter	ems tested below. This repo	
	73138.00				Reviewed By Title: Date:	: Maria E Kampse Senior Engineer 4/22/2022		
Samp	le Details							
Sample	e ID Sample ID		22-0254-S11 BH-02 S11	22-0254-S12 BH-02 S12		22-0254-S14 BH-02 S14	22-0254-S15 BH-02 S15	
Other	Test Results							
Descrip	otion	Method			Results			Limits
Water C Date Te Tested E		ASTM D2216	47 3/22/2022 bristian Detablan	24 3/22/2022 Christian Detablan	22 3/22/2022 Christian Detablan	24 3/22/2022 Christian Detablan	20 3/22/2022 Christian Detablan	
Percent	,	LMA (Internal Met		0	Onnstian Detablan	Onnstian Detablan	10	
Percent	Sand	(,	19			21	
	Fines (Silt/Clay)			81			69	
Group S				ML			ML	
Group N				Silt with sand			Sandy silt	
Tested E Group C		ASTM D2487		John Platt		CL	John Platt	
Group C		A311VI D2407				Lean clay		
	Proportions Estimated					Yes		
Gravel (0		
Sand (%						0		
Fines (%	-					100		
Tested E	-	ASTM D2487				Cindy Zickefoose		
Liquid Li	imit	ASTM D4318				30		
Plastic L						18		
Plasticity						12		
	tion Method					Wet		
	e Removed By					Hand during mixing on glass		
	imit Apparatus					Mechanical		
Grooving	g Tool					Plastic		
Rolling	_					Hand		
Tested E Date Te						Karen Jackson 4/11/2022		
	3154					4/11/2UZZ		

Mate	CRW Engineering Gro	-	Project Code:	220484	Issue No:	Report No: ASM:22-0254 Issue No: 1 The results contained below pertain only to the items tested below		
Chefit.	3940 Arctic Blvd., Ste.		CC: CRW				roval of Alaska Testiab or the agency.	
Project:	Anchorage, AK, 99503 FedEx Bog	3	Maria	Kampsen		HanEta	pser	
	73138.00				Reviewed By: Title: Date:	Maria E Kampsen Senior Engineer 4/22/2022		
Samp	le Details							
Date Sa	Sample ID		22-0254-S16 BH-02 S16A	22-0254-S17 BH-02 S16B	22-0254-S18 BH-02 S17	22-0254-S19 BH-02 S18		
Descrip		Method			Results		Limits	
Water Co Date Tes	ontent (%) sted	ASTM D2216	21 3/22/2022	16 3/22/2022	19 3/22/2022	16 3/22/2022	Linite	
Tested E Group C		 ASTM D2487	hristian Detablan	Christian Detablan	Christian Detablan CL-ML	Christian Detablan		
Group N Gravel (⁴	ame %)				Silty clay 0			
Sand (% Fines (%					0 100			
Tested E	Зу	ASTM D2487			Cindy Zickefoose			
Liquid Li Plastic L Plasticity	imit	ASTM D4318			28 21 7			
Preparat	tion Method Removed By				Wet Hand during mixing on glass			
Liquid Li Grooving	mit Apparatus				Mechanical Plastic			
Rolling Tested E Date Tes					Hand Caleb Fischer 4/15/2022			

Material Test F	Report			Issu	ue No: 1	SM:22-0256		
Client: CRW Engineering Grou		-	ode: 220484				tested below. This repo proval of Alaska Testlab	
3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503	600	CC: C M	CRW /aria Kampsen				1	
Project: FedEx Bog						1 Et	and	
Project: real bog						March	inper	
				Revi	ewed By: Mai	ria E Kampsen		
73138.00				Title:		nior Engineer		
				Date		2/2022		
Sample Details								
Sample ID		22-0256-S01	22-0256-S02	22-0256-S03	22-0256-S04	22-0256-S05	22-0256-S06	
Client Sample ID		BH-03 S1	BH-03 S2		BH-03 S3B		BH-03 S5	
Date Sampled								
Other Test Results								
Description	Method			Res				Limits
Water Content (%)	ASTM D2216	1027	22	345	17		27	
Date Tested		3/22/2022	3/22/2022	3/22/2022	3/22/2022	3/22/2022	3/22/2022	
Tested By Percent Gravel			Christian Detablan 0	Unristian Detablan	Unristian Detablan	Christian Detablan	Unristian Detablan	
Percent Graver	LMA (Internal Me	ethod)	73					
Percent Fines (Silt/Clay)			27					
Group Symbol			SM					
Group Name			Silty sand					
Tested By			John Platt					
Group Code	ASTM D2487					CL	CL	
Group Name						Lean clay	Lean clay	
Material Proportions Estimated						Yes 0	Yes 0	
Gravel (%) Sand (%)						0	0	
Fines (%)						100	100	
Tested By	ASTM D2487					Cindy Zickefoose	Cindy Zickefoose	
Liquid Limit	ASTM D4318					36	42	
Plastic Limit						20	20	
Plasticity Index						16	22	
Preparation Method						Wet	Wet Hand during mixing on	
Oversize Removed By Liquid Limit Apparatus						Hand during mixing on		
Grooving Tool						Mechanical Plastic	Plastic	
Rolling						Hand	Hand	
Tested By							Karen Jackson	
						4/11/2022	4/11/2022	
Date Tested								

Soil Classification of Fines (-#200) in LMA assumed unless verified by additional testing

Alaska Testlab - Anchorage

					Dev			4040 B Ancho Phon Fa	ab - Anchorage Street, Suite 102 orage, AK 99503 e: 907-205-1987 ix: 907-782-4409 laskatestlab.com
Mat	erial Test F	Report			lsei	ue No: 1	SM:22-0256		
Client:	Client: CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503 Project: FedEx Bog			de: 220484 RW aria Kampsen	The res	The results contained below pertain only to the items tested below. This report shot reproduced, except in full, without the prior written approval of Alaska Testlab or the			
	73138.00				Revie Title: Date:		ia E Kampsen ior Engineer 2/2022		
Samp	le Details								
Sample Client S Date S			22-0256-S07 BH-03 S6	22-0256-S08 BH-03 S7	22-0256-S09 BH-03 S9	22-0256-S10 BH-03 S10	22-0256-S11 BH-03 S11		
					_	••			
Descri		Method	07	07	Res		01		Limits
Date Te	Content (%)	ASTM D2216	27 3/22/2022	27 3/22/2022	23 3/22/2022	23 3/22/2022	21 3/22/2022		
Tested I		(Christian Detablan				
Group C Group N	Code Jame Proportions Estimated %) 6)	ASTM D2487			CL Lean clay Yes 0 0 100				
Tested I		ASTM D2487			Cindy Zickefoose				
Liquid L	imit	ASTM D4318			30				
Plastic L	_imit				21				
Oversiz	tion Method e Removed By imit Apparatus g Tool By				9 Wet Hand during mixing on dises ratio Mechanical Plastic Hand Caleb Fischer 4/15/2022				

					Bonort No	· ASM-22 026	info@al	x: 907-782-44 laskatestlab.c
	erial Test F	-			Issue No:			
lient:	CRW Engineering Group		Project Code	220484			ems tested below. This repo approval of Alaska Testlab	
	3940 Arctic Blvd., Ste. 30 Anchorage, AK, 99503	00	CC: CRW Maria	Kampsen				
	FedEx Bog					Jane	Kapsen	
	73138.00				Reviewed By: Title: Date:	Maria E Kampse Senior Engineer 4/22/2022		
amn	le Details				Dale.			
-			22-0257-S01	22-0257-S02	22-0257-S03	22-0257-S04	22-0257-S05	
	Sample ID Impled		BH-04 S1	BH-04 S4	BH-04 S6	BH-04 S7A	BH-04 S7B	
artic	le Size Distribut	ion						
lethod	-	Sieve Size			% Passing		107	Limits
STM D		3in 2in					100 100	
)escrip		∠in 1½in					100	
	of Particle Size	1 /2011 1 in					100	
	ion in Soils. Sieving for >75µm, Hydrometer	³⁄₄in					100	
		½in					100	
rying	Бу:	3/8in					100	
	_	No.4					100	
lasheo		No.10					100	
ample	Washed	No.20					100	
		No.40					100	
		No.60					100	
		No.100					100	
		No.200					100	
		Finer No.200 (75µm)					99.5	
Other	Test Results							
)escrip	tion	Method			Results			Limits
Vater Co	ontent (%)	ASTM D2216	1577	508	382	388	29	
ate Tes			3/22/2022	3/22/2022	3/22/2022	3/22/2022	3/22/2022	
ested E			hristian Detablan	Christian Detablan	Christian Detablan	Christian Detablan		
	on device	ASTM D 422					Dispersant by hand	
	on time (min)							
Shape								
lardnes								
Froup C		ASTM D2487					ML	
Froup N							Silt	
iquid Li							0	
Plasticity Gravel (9							0 0	
							0	
and (% ines (%							100	
ested E	-	ASTM D2487					Cindy Zickefoose	
	,							

Mate	erial Test F	Ponort			Report No	: ASM:22-025	9	askatestlab.co
	CRW Engineering Group	-	Project Code:	220484	Issue No: The results contained	1 below pertain only to the ite	ms tested below. This repor	
	3940 Arctic Blvd., Ste. 3		CC: CRW		reproduced, except in	full, without the prior written	approval of Alaska Testlab	or the agency.
	Anchorage, AK, 99503			Kampsen			1 -	
Project:	FedEx Bog					Mr. E	Kanpse.)	
•						- function	11-1	
	70400.00				Reviewed By:	Maria E Kampse	en	
	73138.00				Title:	Senior Engineer		
-					Date:	4/22/2022		
Sampl	e Details							
Sample			22-0257-S06	22-0257-S07	22-0257-S08	22-0257-S09	22-0257-S10	
Client S Date Sa	ample ID		BH-04 S8	BH-04 S9	BH-04 S10	BH-04 S11	BH-04 S12	
	Test Results							
Descrip		Method			Results			Limits
	ontent (%)	ASTM D2216	27	32	27	20	19	Linits
Date Tes	ted		3/22/2022	3/22/2022	3/22/2022	3/22/2022	3/22/2022	
Tested B	<i>,</i>			Christian Detablan	Christian Detablan	Christian Detablan	Christian Detablan	
Group Co Group Na		ASTM D2487	CL Lean clay					
	Proportions Estimated		Yes					
Gravel (%			0					
Sand (%)			0					
Fines (% Tested B		ASTM D2487	100 Cindy Zickefoose					
Liquid Lir	•	ASTM D4318	48					
Plastic Li	mit		22					
Plasticity			26					
•	ion Method Removed By	н	and during mixing on glass					
	nit Apparatus		Mechanical					
Grooving			Plastic					
Rolling			Hand					
Tested B Date Tes			Caleb Fischer 4/15/2022					
Percent (LMA (Internal Met				0		
Percent \$,	,			16		
	Fines (Silt/Clay)					84 ML		
Group Sy Group Na						Silt with sand		
Tested B						John Platt		

Alaska Testlab - Anchorage

ATL						Anchora Phone: Fax:	D - Anchorage reet, Suite 102 ige, AK 99503 907-205-1987 907-782-4409 skatestlab.com
Material Te	st Report			Report I Issue N	No: MAT:22-02	257-S05	
Client: CRW Engineeri 3940 Arctic Blvo Anchorage, AK, Project: FedEx Bog 73138.00	ng Group, LLC I., Ste. 300	Project Code: CC: CRW	220484 Kampsen	The results conta reproduced, exce	ained below pertain only to the		
				Date:	4/22/2022		
Sample Details	22-0257-S05		Other Tes Description	t Result	tS Method	Result	Limits
Client Sample ID Specification	BH-04 S7B Sieve SOILS		Dispersion der Dispersion tim Shape Hardness Water Conten Date Tested Tested By	ne (min)	ASTM D	ispersant by hand	
56 Passing					Sieve Size 3in 2in 1½in 1in ¾in 1½in 3/8in	John Platt % Passing 100 100 100 100 100 100 100 10	Limits
		Mo.08 0 No.200 25 µm	18.1 m 9.70001 m 7.2 1 m 3.8 m 2.7 m	12µm	No.4 No.20 No.40 No.60 No.100 Finer No.200 (7 25.0 μm 16.1 μm 9.7 μm	73.4 70.4 64.2	
					7.1 μm 5.2 μm 3.8 μm 2.7 μm 1.2 μm	58.1 53.5 47.4 42.8 29.1	

ATL	

Mat	erial Test Report	Report No: MAT:22-0257-S05 Issue No: 1	
Client:	CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503	Project Code: 220484 CC: CRW Maria Kampsen	The results contained below pertain only to the items tested below. This report should not be reproduced, except in full, without the prior written approval of Alaska Testlab or the agency.
Project:	FedEx Bog		Mar Etapper
	73138.00		Reviewed By:Maria E KampsenTitle:Senior EngineerDate:4/22/2022

Other Test Results

Description	Method	Result	Limits
Group Code	ASTM D2487	ML	
Group Name		Silt	
Liquid Limit		0	
Plasticity Index		0	
Gravel (%)		0	
Sand (ŵ)		0	
Fines (%)		100	
Tested By	ASTM D2487	Cindy Zickefoose	
Date Tested		4/9/2022	

Comments

ATL	

							-	askatestlab.com
	erial Test I				Issue No:			
Client: Project:	CRW Engineering Grou 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503 FedEx Bog	•	Project Code CC: CRW Maria		reproduced, except in	full, without the prior writte	ems tested below. This repo n approval of Alaska Testlab	rt should not be or the agency.
	73138.00				Reviewed By: Title: Date:	Maria E Kamps Senior Enginee 4/22/2022		
Samp	le Details							
Sample Client S Date Sa	e ID Sample ID ampled		22-0258-S01 BH-05 S1	22-0258-S02 BH-05 S2	22-0258-S03 BH-05 S3	22-0258-S04 BH-05 S4 Shelby	22-0258-S05 BH-05 S4 Shelby	
Other	Test Results							
Descrip Water C Date Te Tested B	ontent (%) sted	Method ASTM D2216	3/22/2022	418 3/22/2022 Christian Detablan	Results 422 3/22/2022			Limits
	,							
Comm Soil Clas	1ents sification of Fines (-#200)) in LMAs Assun	ned Unless Verif	ied by Additional	Testing			

	TL						Alaska Testlab - Anchorage 4040 B Street, Suite 102 Anchorage, AK 99503 Phone: 907-205-198 Fax: 907-782-4400 info@alaskatestlab.com
Mate	erial Test F	Report			Report No Issue No:	: ASM:22-0258 1	
Client:	CRW Engineering Grou 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503 FedEx Bog	p, LLC	Project Code CC: CRW Maria		The results contained	below pertain only to the items	tested below. This report should not be proval of Alaska Testlab or the agency.
	73138.00				Reviewed By: Title: Date:	Maria E Kampsen Senior Engineer 4/22/2022	
Sampl	e Details						
Sample Client S Date Sa	ample ID		22-0258-S06 BH-05 S5	22-0258-S07 BH-05 S6	22-0258-S08 BH-05 S8	22-0258-S09 BH-05 S10	
Other	Test Results						
Descrip Water Co Date Tes Tested B	ontent (%) sted	Method ASTM D2216	15 3/22/2022 Christian Detablan	26 3/22/2022 Christian Detablan	Results 26 3/22/2022 Christian Detablan	30 3/22/2022 Christian Detablan	Limits
Percent (Percent S Percent F Group S) Group Na Tested B	Sand Fines (Silt/Clay) ymbol ame	LMA (Internal Me	thod) 0 60 40 SM Silty sand John Platt				
Group Co Group Na Material Fines (%	ode ame Proportions Estimated)	ASTM D2487			CL Lean clay Yes 100	CL Lean clay Yes 100 Caleb Fischer	
Tested B Liquid Lir Plastic Li Plasticity Tested B Date Tes	mit imit / Index /y	ASTM D2487 ASTM D4318			Maria E Kampsen 45 22 23 Karen Jackson 4/11/2022	Caleb Fischer 46 22 24 Caleb Fischer 4/14/2022	

Client:	erial Test I	-	Ducia et Ca	day 000404	Issu	ue No: 1	SM:22-0259 ertain only to the items	ested below. This rep	ort should not be
Client:	CRW Engineering Grou 3940 Arctic Blvd., Ste. 3		Project CC CC: C	ode: 220484			out the prior written app		
	Anchorage, AK, 99503			laria Kampsen				1	
Project:	FedEx Bog						Hanth	pser	
	73138.00				Revie Title: Date		ia E Kampsen ior Engineer 2/2022		
Samp	le Details								
Sample Client S Date Sa	Sample ID		22-0259-S01 BH-06 S1	22-0259-S02 BH-06 S2A	22-0259-S03 BH-06 S2B	22-0259-S04 BH-06 S2C	22-0259-S05 BH-06 S3	22-0259-S06 BH-06 S4	
	Test Results								
Descrip	otion	Method			Res	ults			Limits
	ontent (%)	ASTM D2216	214	340	37	18	16	19	
Date Tes	sted		3/22/2022	3/22/2022	3/22/2022	3/22/2022	3/22/2022	3/22/2022	
Tested E	Зу	(Christian Detablan	Christian Detablan	Christian Detablan	Christian Detablan	Christian Detablan	Christian Detablan	
Percent	Gravel	LMA (Internal Me	thod)		0	0			
Percent	Sand				75	77			
	Fines (Silt/Clay)				25	23			
Group S	ymbol				SM	SM			
Group N	ame				SIIty sand	Silty sand			
Tested E					John Platt	John Platt			
Group C	ode	ASTM D2487					SM		
Group N	ame						Silty sand		
Liquid Li	mit						0		
Plasticity	/ Index						0		
Tested E	Зу	ASTM D2487					Cindy Zickefoose		
Method		ASTM D6913					А		
•	tion Method						Oven Dry		
	ite Sieving?						Yes		
Separati	ng Sieve(s)						No. 4		
	al Mass Retained (%)						0.00		
Fraction		ASTM D2487							

ATL					ant Nav AC	NI-00 0050	Phone: 907-205-1 Fax: 907-782-4 info@alaskatestlab.c
Material Test F	Report			Rep Issi	ort No: AS Je No: 1	SM:22-0259	
Client: CRW Engineering Grou			ode: 220484	The res	ults contained below p	ertain only to the items tes	sted below. This report should not be wal of Alaska Testlab or the agency.
3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503	00	CC: C N	RW Iaria Kampsen				,
Project: FedEx Bog						Hartha	pser
73138.00				Revie Title: Date:	Sen	ia E Kampsen ior Engineer 2/2022	
Sampla Dataila				Date	4/22	./2022	
Sample Details		00 0050 007	00.0050.000	00.0050.000	00.0050.010	00 0050 011	
Sample ID Client Sample ID Date Sampled		22-0259-S07 BH-06 S5	22-0259-S08 BH-06 S6	22-0259-S09 BH-06 S7	22-0259-S10 BH-06 S8	22-0259-S11 BH-06 S9	
Other Test Results							
Description	Method			Res			Limits
Water Content (%) Date Tested	ASTM D2216	20 3/22/2022	17 3/22/2022	24 3/22/2022	29 3/22/2022	31 3/22/2022	
Tested By	Cł			Christian Detablan			
Percent Gravel	LMA (Internal Met						
Percent Sand		52					
Percent Fines (Silt/Clay)		48					
Group Symbol		SM					
Group Name		Silty sand John Platt					
Tested By Group Code	ASTM D2487	John Platt				CL	
Group Name	ASTIVI D2407					Lean clay	
Material Proportions Estimated						Yes	
Gravel (%)						0	
Sand (%)						0	
Fines (%)						100	
Tested By	ASTM D2487					Cindy Zickefoose	
Liquid Limit	ASTM D4318					47	
Plastic Limit						23	
Plasticity Index						24	
Preparation Method						Wet Hand during mixing on	
Oversize Removed By						diase niata	
Liquid Limit Apparatus						Mechanical Plastic	
Grooving Tool Rolling						Hand	
Tested By						Karen Jackson	
						4/11/2022	
Date Tested						4/11/2022	

N/A

late	rial Te	est Re	por	t			Issue			
39 Al oject: Fe	RW Engineeri 940 Arctic Blv nchorage, AK edEx Bog 3138.00	d., Ste. 300	.C	CC:	ode: 2204 CRW Maria Kampse		reproduced, e	d By: Maria E Kampa Senior Engined 4/22/2022	ten approval of Alaska Testlab o	should not be the agency.
ampl	e Details				Ot	her Te	st Resu			
	mple ID	22-0259- BH-06 S3	3		Wa Dat Tes Gro Liq Pla Tes	scription ter Conte te Tested sted By oup Code oup Name uid Limit sticity Ind sted By te Tested		ASTM D ASTM D	3/22/2022 Christian Detablan 2487 SM Silty sand 0 0	Limits
article	Size Dis	stributio	า					Method: A	ASTM D6913	
10 - 100 - 90 -	0 60	20 mm	6	Diameter 2	600	200 _ μm	100 50	Date Tested: 4	Dven 4/1/2022 John Platt % Passing 100	Limits
80 - 70 - 70 - 70 - 70 - 70 - 70 - 70 -								2in 1½in 1in ¾in ½in 3/8in No.4 No.10 No.20 No.40 No.40 No.60 No.100 No.200	100 100 100 100 100 100 100 100 99 92 63 25	

ATL	

Mate	erial Test Repor	t	Report No: MAT:22-0259-S05 Issue No: 1	
Client:	CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503	Project Code: 220484 CC: CRW Maria Kampsen	The results contained below pertain only to the items tested below. This report should not be reproduced, except in full, without the prior written approval of Alaska Testlab or the agency.	
Project:	FedEx Bog		Maretapser	
	73138.00		Reviewed By:Maria E KampsenTitle:Senior EngineerDate:4/22/2022	
Other T	est Results			
Descrip	otion	Method	Result Limits	
Method		ASTM D6913	Α	-
Prepara	ation Method		Oven Dry	
Compos	site Sieving?		Yes	
Separat	ting Sieve(s)		No. 4	
Fraction	nal Mass Retained (%)		0.00	
Cu		ASTM D2487		
Cc				
Date Te	ested		4/1/2022	

Comments

ATL

Material Te	est Report			Rep Issi	oort No: AS ue No: 1	SIVI:22-0260		
Client: CRW Engineer	ing Group, LLC	Project Co	de: 220484	The res	ults contained below pe	ertain only to the items t out the prior written app	ested below. This repor roval of Alaska Testlab	t should not be or the agency.
3940 Arctic Blv		CC : C	RW laria Kampsen					
Anchorage, AK	., 99503	IV	ana nampsen			1 CV	1-	
Project: FedEx Bog						Marcha	pser	
73138.00					ewed By: Mari			
				Title: Date		ior Engineer /2022		
Sample Details				Duio				
Sample ID		22-0260-S01	22-0260-S02	22-0260-S03	22-0260-S04	22-0260-S05	22-0260-S06	
Client Sample ID		BH-07 S1	BH-07 S2	BH-07 S3	BH-07 S4A	BH-07 S4B	BH-07 S5	
Date Sampled								
Other Test Resu	ults							
Description	Method				ults			Limits
Water Content (%)	ASTM D2216	61	207	332	468	21	16	
Date Tested Tested By	C C	3/22/2022	3/22/2022 Christian Detablan	3/22/2022 Christian Detablan	3/20/2022 Christian Detablan	3/22/2022 Christian Detablan	3/22/2022 Christian Detablan	
Percent Gravel	LMA (Internal Me		Simonan Delabiali	Sinistian Delavidii	Sinstan Delaviali	Chilistian Delabian	Singuan Delavian	
Percent Sand						56		
Percent Fines (Silt/Clay)					44		
Group Symbol						SM		
Group Name						Silty sand John Platt		
Tested By						John Platt		
Comments								
Soil Classification of Fine	es (-#200) in LMAs Assum	ed Unless Ve	erified by Addit	tional Testing				

3940 Arctic Blvd., Ste. 300 Archorage, AK, 99503 CC: CRW Maria Kampsen Waria Kampsen 73138.00 FedEx Bog 73138.00 Reviewed By: Maria E Kampsen Title: Senior Engineer Date: 4/22/2022 Sample Details Sample ID Client Sample ID Date Sampled Description Method Vater Content (%) ASTM D2216 19 3/22/2022 3/22/2022 Group Name Lean clay Material Proportions Estimated	Client:	CRW Engineering Group	-	Project C	nde: 220484	ISS The res	ue No: 1 sults contained below p	SM:22-0260	tested below. This repo	rt should not be
Project: FedEx Bog Reviewed By: Maria E Kampsen 73138.00 Reviewed By: Maria E Kampsen Sample Details 9 4/22/2022 4/22/2022 Sample ID 22-0260-S07 22-0260-S08 22-0260-S09 22-0260-S10 22-0260-S11 22-0260-S12 Client Sample ID BH-07 S6 BH-07 S7 BH-07 S8 BH-07 S9 BH-07 S10 BH-07 S11 Date Sampled BH-07 S6 23/22/2022 3/22/2022	Silent.	3940 Arctic Blvd., Ste. 3		CC: (CRW	reprod	uced, except in full, with	hout the prior written app	proval of Alaska Testlab	or the agency.
Title: Senior Engineer Date: 4/22/2022 Sample Details Sample ID 22-0260-S07 22-0260-S08 22-0260-S10 22-0260-S11 Date 02-0260-S11 Date 02-0260 Limits Description Method Results Limits Date Tested ASTM D2487 CL Group Name Lean clay Material Proportions Estimated <	Project:	-						Hantha	upser	
Sample ID Client Sample ID Date Sampled 22-0260-S07 BH-07 S6 22-0260-S08 BH-07 S7 22-0260-S10 BH-07 S8 22-0260-S11 BH-07 S10 22-0260-S12 BH-07 S10 22-0260-S11 BH-07 S10 22-0260-S11 BH-07 S10 22-0260-S12 BH-07 S10 22-0260-S10 BH-07 S10 22-0260-S10 BH-07 S10 22-0260-S10 BH-07 S10 22-0260-S10 BH-07 S10 Ethics BH-07 S10 Date Sampled Method Results Results Limits Description Method 93 28 25 30 30 22/2/002 3/22/2/022 3/		73138.00				Title	: Ser	ior Engineer		
Sample ID Client Sample ID Date Sampled 22-0260-S07 BH-07 S6 22-0260-S08 BH-07 S7 22-0260-S10 BH-07 S8 22-0260-S11 BH-07 S1 22-0260-S12 BH-07 S1 22-0260-S12 S1 22-0260-S12 S1 22-0260-S12 S1 22-0260-S12 S1 23-020 S1/2/2/2/2/2/2/2/2 3/22/2/2/2/2/2/2/2/2 3/22/2/2/2/2/2/2/2/2 3/22/2/2/2/2/2/2/2/2/2/2 3/22/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/	Samp	le Details								
DescriptionMethodResultsLimitsWater Content (%)ASTM D2216193328253030Date Tested3/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/2022Tested ByChristian DetablanChristian Detab	Client S	Sample ID								
Water Content (%) ASTM D2216 19 33 28 25 30 30 Date Tested 3/22/2022<	Other	Test Results								
Date Tested3/22/20223/22/2023/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/20223/22/2023/22/2023/22/2023/22/2023/22/2023/22/2023/22/2023/22/2023/22/2023/22/2023/22/2023/22/2	Descrip	otion	Method			Res	sults			Limits
Tested ByChristian DetablanChristian Deta			ASTM D2216							
Group Code ASTM D2487 CL Group Name Lean clay Material Proportions Estimated Yes Fines (%) 100 Tested By ASTM D2487 Karen Jackson Liquid Limit Liquid Limit ASTM D4318 Plastic Limit 22 Plasticity Index 24 Tested By Karen Jackson Date Tested 4/11/2022 Percent Gravel LMA (Internal Method) Percent Fines (Silt/Clay) 94 Group Symbol ML										
Group NameLean clayMaterial Proportions EstimatedYesFines (%)100Tested ByASTM D2487Karen Jackson100Liquid LimitASTM D4318Plastic Limit22Plastic Ilmit24Tested ByKaren JacksonDate Tested4/11/2022Percent GravelLMA (Internal Method)Percent Sand6Percent Fines (Silt/Clay)94Group SymbolML				Christian Detablan	Christian Detablan		Christian Detablan	Christian Detablan	Christian Detablan	
Material Proportions Estimated Yes Fines (%) 100 Tested By ASTM D2487 Liquid Limit ASTM D4318 Plastic Limit 22 Plastic Limit 22 Plasticity Index 24 Tested By Karen Jackson Date Tested 4/11/2022 Percent Gravel LMA (Internal Method) Percent Fines (Silt/Clay) 6 Percent Fines (Silt/Clay) 94 Group Symbol ML	•		ASTM D2487			-				
Fines (%)100Tested ByASTM D2487Karen JacksonLiquid LimitASTM D431846Plastic Limit22Plasticity Index24Tested ByKaren JacksonDate Tested4/11/2022Percent GravelLMA (Internal Method)0Percent Sand6Percent Fines (Silt/Clay)94Group SymbolML						•				
Tested ByASTM D2487Karen JacksonLiquid LimitASTM D431846Plastic Limit22Plasticity Index24Tested ByKaren JacksonDate Tested4/11/2022Percent GravelLMA (Internal Method)0Percent Sand6Percent Fines (Silt/Clay)94Group SymbolML										
Liquid Limit ASTM D4318 46 Plastic Limit 22 Plasticity Index 24 Tested By Karen Jackson Date Tested 4/11/2022 Percent Gravel LMA (Internal Method) 0 Percent Sand 6 Percent Fines (Silt/Clay) 94 Group Symbol ML	-									
Plastic Limit 22 Plasticity Index 24 Tested By Karen Jackson Date Tested 4/11/2022 Percent Gravel LMA (Internal Method) Percent Sand 6 Percent Fines (Silt/Clay) 94 Group Symbol ML										
Plasticity Index 24 Tested By Karen Jackson Date Tested 4/11/2022 Percent Gravel LMA (Internal Method) Percent Sand 6 Percent Fines (Silt/Clay) 94 Group Symbol ML	•		ASTM D4318							
Tested By Karen Jackson Date Tested 4/11/2022 Percent Gravel LMA (Internal Method) Percent Sand 6 Percent Fines (Silt/Clay) 94 Group Symbol ML										
Date Tested 4/11/2022 Percent Gravel LMA (Internal Method) 0 Percent Sand 6 Percent Fines (Silt/Clay) 94 Group Symbol ML						24				
Percent Gravel LMA (Internal Method) 0 Percent Sand 6 Percent Fines (Silt/Clay) 94 Group Symbol ML		-								
Percent Sand 6 Percent Fines (Silt/Clay) 94 Group Symbol ML						4/11/2022				
Percent Fines (Silt/Clay) 94 Group Symbol ML		-	LMA (Internal Me	ethod)						
Group Symbol ML										
Group Name Silt Tested By John Platt										
Tested By John Platt	Group N	lame								
	Tested E	Зу							John Platt	

								4040 B Ancho Phon Fa	ab - Anchorage Street, Suite 102 irage, AK 99503 e: 907-205-1987 x: 907-782-4409 laskatestlab.com
Mat	erial Test F	Ponort			Rep	oort No: AS	SM:22-0260		
Client:	CRW Engineering Grou 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503	p, LLC	CC: 0	ode: 220484 CRW Maria Kampsen	ISS The res	ults contained below p	ertain only to the items	tested below. This repo proval of Alaska Testlab	
Project:	FedEx Bog						March	inpser	
	73138.00				Revie Title: Date		ia E Kampsen ior Engineer 2/2022		
Samp	ole Details								
Sample Client		E	22-0260-S13 3H-07 S12A	22-0260-S14 BH-07 S12B	22-0260-S15 BH-07 S13	22-0260-S16 BH-07 S14	22-0260-S17 BH-07 S15	22-0260-S18 BH-07 S16	
Other	Test Results								
Descri	ption	Method			Res	ults			Limits
	Content (%)	ASTM D2216	22 3/22/2022	20 3/22/2022	19 3/22/2022	16 3/22/2022	19 3/22/2022	21 3/22/2022	
Tested	,			Christian Detablan	Christian Detablan	Christian Detablan	Christian Detablan	Christian Detablan	
Group (ASTM D2487	CL						
Group N			Lean clay						
	l Proportions Estimated		Yes 0						
Gravel Sand (%			0						
Fines (9			100						
Tested		ASTM D2487	Cindy Zickefoose						
Liquid L		ASTM D4318	30						
Plastic I			18						
Plasticit	ty Index		12						
	ation Method		Wet						
	e Removed By		Hand during mixing on						
	imit Apparatus		Mechanical						
Groovin	ng Tool		Plastic						
Rolling	Dv		Hand						
Tested Date Te		I	Karen Jackson 4/11/2022						
	t Gravel	LMA (Internal Me		0		8			
Percent		LIMA (IIIternal Me	uiou)	12		20			
	t Fines (Silt/Clay)			88		72			
Group S				ML		ML			
Group N				Silt		Silt with sand			
Tested				John Platt		John Platt			

ATL

Mate	erial Test F	Report			Report Issue N	No: ASM:22- lo: 1	-0261	
Client:	CRW Engineering Group 3940 Arctic Blvd., Ste. 30 Anchorage, AK, 99503	o, LLC	Project Code: 220484 CC: CRW Maria Kampsen		The results con	tained below pertain only to	o the items tested below. This report written approval of Alaska Testlab	rt should not be or the agency.
Project:	FedEx Bog					Mar	Appenden	
	73138.00				Reviewed Title: Date:	By: Maria E Kar Senior Engi 4/22/2022		
Samp	le Details							
Sample	e ID Sample ID		22-0261-S01 BH-08 S1	22-0261 BH-08		22-0261-S03 BH-08 S2B	22-0261-S04 BH-08 S3	
	Test Results							
Descrip		Method			Results			Limits
Water C Date Tes Tested E		ASTM D2216	278 3/23/2022 Christian Detablan		Chr	543 3/23/2022 ristian Detablan	19 3/23/2022 Christian Detablan	
Percent Percent Group S Group N Tested E	Fines (Silt/Clay) Symbol Iame					79 21 SM Silty sand John Platt		
Comm	nonts							
	sification of Fines (-#200)	in LMAs Assume	ed Unless Verified by Add	ditional Te	sting			

ATL

Mat	erial Test F	Report			Repo	rt No: ASM:22· No: 1	0261	
Client:	CRW Engineering Group 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503	o, LLC	Project Code: 22 CC: CRW Maria Kam		The results of	contained below pertain only to	the items tested below. This repo written approval of Alaska Testlab	
Project:	FedEx Bog					Mar	Eterpsen	
	73138.00				Reviewe Title: Date:	ed By: Maria E Kaı Senior Engi 4/22/2022		
Samp	le Details							
	e ID Sample ID ampled		22-0261-S05 BH-08 S4	22-0261- BH-08		22-0261-S07 BH-08 S6	22-0261-S08 BH-08 S7	
Other	r Test Results							
Descri		Method			Result			Limits
	Content (%)	ASTM D2216	19	0 100 10	20	20	19	
Date Te			3/23/2022	3/23/2 Christian Data		3/23/2022	3/23/2022 Christian Datablan	
Tested Percent	By t Gravel	LMA (Internal Met	Christian Detablan	Christian Deta	uali U	hristian Detablan 0	Christian Detablan	
Percent		LINA (Internal Met	85			65		
Percent	t Fines (Silt/Clay)		15			35		
Group S			SM			SM		
Group I			Silty sand			Silty sand		
Tested	Ву		John Platt			John Platt		
Comr								
Soil Clas	ssification of Fines (-#200)	in LMAs Assum	ed Unless Verified b	by Additional Tes	sting			

Mate	erial Test F	Report			Repor	t No: ASM:22-02	4040 B Street, S Anchorage, AK Phone: 907-20 Fax: 907-70 info@alaskatest	< 9950 05-198 82-440
Client:	CRW Engineering Grou 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503 FedEx Bog	p, LLC	Project Code: 22 CC: CRW Maria Karr			ontained below pertain only to the	e items tested below. This report should not tten approval of Alaska Testlab or the agend	
	73138.00				Reviewe Title: Date:	ed By: Maria E Kamp Senior Engine 4/22/2022		
Samp	le Details				-			
Sample Client S			22-0261-S09 BH-08 S8	22-0261 BH-0	-S10)8 S9	22-0261-S11 BH-08 S10		
	Test Results							
Date Te	content (%) sted	Method ASTM D2216	26 3/23/2022		Result 21 2022	27 3/23/2022	Lim	its
Gravel (Code Jame Proportions Estimated %)	ASTM D2487	Christian Detablan CL Lean clay 0 0	Christian Det		hristian Detablan CL Lean clay Yes		
Sand (% Fines (% Tested E	6)		0 100 Cindy Zickefoose			100 Karen Jackson		
Oversize Liquid Li Grooving Rolling	_imit y Index tion Method e Removed By imit Apparatus g Tool	ASTM D4318	38 19 19 Wet Hand during mixing on glass plate Mechanical Plastic Hand			43 23 20		
Tested I Date Te			Karen Jackson 4/11/2022			Karen Jackson 4/16/2022		

ATL

Material Test	t Report			Report No Issue No:	o: ASM:22-026 1	2	
Client: CRW Engineering G 3940 Arctic Blvd., S Anchorage, AK, 995	Froup, LLC te. 300	Project Code CC: CRW Maria		The results contained	below pertain only to the iter full, without the prior written	ms tested below. This repo approval of Alaska Testlab	rt should not be or the agency.
Project: FedEx Bog				De la constante	Marte,	Karpsen	
73138.00				Title: Date:	Maria E Kampse Senior Engineer 4/22/2022	n	
Sample Details							
Sample ID Client Sample ID Date Sampled		22-0262-S01 BH-09 S1A	22-0262-S02 BH-09 S1B	22-0262-S03 BH-09 S2	22-0262-S04 BH-09 S3	22-0262-S05 BH-09 S4	
Other Test Results							
Description	Method			Results			Limits
Water Content (%) Date Tested Tested By	ASTM D2216	49 3/23/2022	24 3/23/2022 Christian Datablan	22 3/23/2022 Christian Datablan	19 3/23/2022 Christian Detablan	23 3/23/2022 Christian Datablan	
Percent Gravel	LMA (Internal Me		Chinslian Delabian	Olinstian Detablan	Chinstian Detablan	Chinslian Delabian	
Percent Sand				81			
Percent Fines (Silt/Clay)				19 SM			
Group Symbol Group Name				Silty sand			
Tested By				John Platt			
Comments							
Soil Classification of Fines (-#	200) in LMAs Assum	ed Unless Verif	ied by Additional	Testing			

ATL

Material Test F	Report			Report No Issue No:	: ASM:22-026 1	2	
Client: CRW Engineering Grou 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503 Project: FedEx Bog	p, LLC	Project Code: CC: CRW _{Maria}	220484 Kampsen	The results contained	full, without the prior written	ms tested below. This repor approval of Alaska Testlab	t should not be or the agency.
73138.00				Reviewed By: Title: Date:	Maria E Kampse Senior Engineer 4/22/2022		
Sample Details				<u>ц</u>			
Sample ID Client Sample ID Date Sampled		22-0262-S06 BH-09 S5	22-0262-S07 BH-09 S6	22-0262-S08 BH-09 S7	22-0262-S09 BH-09 S8	22-0262-S10 BH-09 S9	
Other Test Results							
Description Water Content (%) Date Tested	Method ASTM D2216	19 3/23/2022	19 3/23/2022	Results 19 3/23/2022	26 3/23/2022	27 3/23/2022	Limits
Tested By			Christian Detablan		Christian Detablan	Christian Detablan	
Percent Gravel Percent Sand Percent Fines (Silt/Clay) Group Symbol Group Name Tested By	LMA (Internal Me	thod)		0 72 28 SM Silty sand John Platt			
Comments							
Soil Classification of Fines (-#200) in LMAs Assum	ned Unless Verifi	ed by Additional 1	Testing			

ATL

Mat	erial Test F	Report			Report No Issue No:	: ASM:22-026 1	3	
Client:	CRW Engineering Group 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503	p, LLC	Project Code CC: CRW Maria		The results contained	below pertain only to the ite full, without the prior written		
Project:	FedEx Bog					Han E,	Karpsen	
	73138.00				Reviewed By: Title: Date:	Maria E Kampse Senior Engineer 4/22/2022	'n	
Samp	le Details							
Date S	Sample ID ampled		22-0263-S01 BH-10 S1	22-0263-S02 BH-10 S2 Shelby	22-0263-S03 BH-10 S2 Shelby	22-0263-S04 BH-10 S3	22-0263-S05 BH-10 S4	
Other	Test Results							
Descri		Method			Results			Limits
Water C Date Te Tested		ASTM D2216	469 3/23/2022 Christian Detablan			16 3/23/2022 Christian Detablan	28 3/23/2022 Christian Detablan	
Percent		LMA (Internal Me				0	Chinstian Detablan	
Percent Percent Group S Group N Tested	: Fines (Silt/Clay) Symbol Name					63 37 SM Silty sand John Platt		
Comn				and have the left of the	Testin			
Soll Clas	sification of Fines (-#200)	In LMAs Assum	ied Unless Verifi	ied by Additional	resting			

Ma	terial Test Repor
Client:	CRW Engineering Group, LLC
	3940 Arctic Blvd., Ste. 300
	Anchorage, AK, 99503

Mat	erial Test F	Report	Report No	Report No: ASM:22-0263 Issue No: 1				
Client:	CRW Engineering Grou 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503	p, LLC	Project Code CC: CRW Maria		The results contained	below pertain only to the items tested below full, without the prior written approval of Alas		
Project:	FedEx Bog					Mar Etapse	\supset	
	73138.00				Reviewed By: Title: Date:	Maria E Kampsen Senior Engineer 4/22/2022		
Samp	le Details							
Sample	e ID Sample ID		22-0263-S06 BH-10 S5	22-0263-S07 BH-10 S6	22-0263-S08 BH-10 S7	22-0263-S09 BH-10 S8		
Other	Test Results							
Descri	otion	Method			Results		Limits	
Water C Date Te Tested I		ASTM D2216	28 3/23/2022	30 3/23/2022 Christian Datablan	27 3/23/2022 Christian Detablan	26 3/23/2022 Christian Datablan		
Group C		ASTM D2487	CL	Christian Detablan	Christian Detablan	Ginstian Delabian		
Group N	lame		Lean clay					
	Proportions Estimated		Yes					
Fines (%			100					
Tested I Liquid L		ASTM D2487 ASTM D4318	Caleb Fischer 49					
Plastic L			23					
Plasticit			26					
Tested I	-		Caleb Fischer					
Date Te			4/18/2022					

ATL

Material Test F	Report			Re Iss	eport No: AS sue No: 1	M:22-0264		
Client: CRW Engineering Grou	p, LLC	-	de: 220484	The re	esults contained below pe duced, except in full, with			
3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503	300	CC: C N	RW laria Kampsen				/	
Project: FedEx Bog						Un. Eta	1050.)	
						1-hurry	150	
73138.00					viewed By: Mari			
				Title Dat		ior Engineer /2022		
Sample Details								
Sample ID		22-0264-S01	22-0264-S02	22-0264-S03	3 22-0264-S04	22-0264-S05	22-0264-S06	
Client Sample ID Date Sampled		BH-11 S1	BH-11 S2A	BH-11 S2E		BH-11 S4	BH-11 S5	
Other Test Results								
Description	Method			Re	sults			Limits
Water Content (%)	ASTM D2216	199	123	24		19	22	
Date Tested		3/23/2022	3/23/2022	3/23/2022	2 3/23/2022	3/23/2022	3/23/2022	
Tested By		Christian Detablan	Christian Detablan	Christian Detablar	n Christian Detablan	Christian Detablan	Christian Detablan	
Group Code	ASTM D2487							
Group Name				-	<u></u>	^		
Percent Gravel	LMA (Internal Me	thod)		0 76		0 70		
Percent Sand Percent Fines (Silt/Clay)				24		30		
Group Symbol				Z4 SM		SM		
Group Name				Silty sand		Silty sand		
Tested By				John Plat		John Platt		
Tested by				50mm at	L	John Latt		
Comments								
Soil Classification of Fines (-#200) in LMAs Assum	ed Unless Ve	erified by Addit	tional Testing				

	CRW Engineering Grou	p, LLC	-	ode: 220484	ISS The re		ertain only to the items to out the prior written app		
	3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503	00	CC: C N	CRW Iaria Kampsen				/	
	FedEx Bog						Hantha	pser	
	73138.00				Rev Title Date		a E Kampsen ior Engineer /2022		
Samp	le Details								
Sample Client S Date Sa	Sample ID		22-0264-S07 BH-11 S6	22-0264-S08 BH-11 S7	22-0264-S09 BH-11 S8		22-0264-S11 BH-11 S10		
Other	Test Results								
Descrip	otion	Method			Res	sults			Limits
Date Tes		ASTM D2216	25 3/23/2022	28 3/23/2022	26 3/23/2022		30 3/23/2022		
Tested E Group C		ASTM D2487	nnstian Detablan	Christian Detablan	Crinslian Delabian	Christian Detablan	Christian Detablan		
Group N				Lean clay		Lean clay Yes			
Gravel (' Sand (%)			0 0 100		100			
Fines (% Tested E	-	ASTM D2487		Cindy Zickefoose		Caleb Fischer			
Liquid Li Plastic L	mit	ASTM D4318		38 22		48 23			
	/ Index tion Method e Removed By			16 Wet Hand during mixing on		25			
Liquid Li Grooving	mit Apparatus			Mechanical Plastic		Manual Plastic			
Rolling Tested E Date Tes				Hand Cindy Zickefoose 4/8/2022		Hand Caleb Fischer 4/15/2022			

ATL	

						-	askalesliab.com
Material Test				Issue No:	: ASM:22-026 1		
Client: CRW Engineering Gro 3940 Arctic Blvd., Ste Anchorage, AK, 99503 Project: FedEx Bog	. 300	Project Code CC: CRW Maria		The results contained reproduced, except in	below pertain only to the ite full, without the prior written	ms tested below. This repor approval of Alaska Testlab o	t should not be or the agency.
				Reviewed By:	Maria E Kampse	m	
73138.00				Title: Date:	Senior Engineer 4/22/2022		
Sample Details							
Sample ID Client Sample ID Date Sampled		22-0265-S01 BH-12 S1	22-0265-S02 BH-12 S2	22-0265-S03 BH-12 S3A Shelby	22-0265-S04 BH-12 S3B	22-0265-S05 BH-12 S4	
Other Test Results							
Description	Method			Results			Limits
Water Content (%) Date Tested	ASTM D2216	442 3/23/2022	286 3/23/2022		24 3/23/2022	24 3/23/2022	
Tested By	C		Christian Detablan		Christian Detablan		

ATL						4040 B Anch Phoi F	tlab - Anchorag Street, Suite 10 orage, AK 9950 ne: 907-205-198 ax: 907-782-440 alaskatestlab.co
Material Tes	t Report			Report No Issue No:	: ASM:22-020 1	65	
Client: CRW Engineering 3940 Arctic Blvd., Anchorage, AK, 99	Ste. 300	Project Code: CC: CRW Maria		The results contained	below pertain only to the ite full, without the prior written	erns tested below. This rep a approval of Alaska Testla	ort should not be b or the agency.
Project: FedEx Bog					Mare	garpsen	
73138.00				Reviewed By: Title: Date:	Maria E Kampse Senior Engineer 4/22/2022		
Sample Details							
Sample ID Client Sample ID Date Sampled		22-0265-S06 BH-12 S5	22-0265-S07 BH-12 S6	22-0265-S08 BH-12 S7	22-0265-S09 BH-12 S8	22-0265-S10 BH-12 S10	
Other Test Result	S						
Description	Method			Results			Limits
Water Content (%) Date Tested	ASTM D2216	19 3/23/2022	18 3/23/2022	26 3/23/2022	33 3/23/2022	21 3/23/2022	
Tested By Percent Gravel Percent Sand	LMA (Internal Me	thod) 0 77	Christian Detablan	Christian Detablan	Christian Detablan	Christian Detablan	
Percent Fines (Silt/Clay) Group Symbol Group Name		23 SM Silty sand					
Tested By Group Code Group Name	ASTM D2487	John Platt				CL Lean clay	
Material Proportions Estima Fines (%) Tested By	ASTM D2487					Yes 100 Karen Jackson	
Liquid Limit Plastic Limit	ASTM D4318					34 20	
Plasticity Index Preparation Method Liquid Limit Apparatus						14 Wet Manual	
Grooving Tool Rolling Tested By						Metal Hand Karen Jackson	
Date Tested						4/16/2022	
Comments			ed by Additional				

	TL						Alaska Testlab - Anchorage 4040 B Street, Suite 102 Anchorage, AK 99503 Phone: 907-205-1987 Fax: 907-782-4409 info@alaskatestlab.com
Mate	erial Test R	Report			Report No Issue No:	: ASM:22-0265 1	
	CRW Engineering Group 3940 Arctic Blvd., Ste. 30 Anchorage, AK, 99503 FedEx Bog		Project Code CC: CRW Maria		The results contained	below pertain only to the items to	ested below. This report should not be roval of Alaska Testlab or the agency.
	73138.00				Reviewed By: Title: Date:	Maria E Kampsen Senior Engineer 4/22/2022	
Sampl	e Details						
Sample Client S Date Sa	ample ID		22-0265-S11 BH-12 S11	22-0265-S12 BH-12 S12	22-0265-S13 BH-12 S13A	22-0265-S14 BH-12 S13B	
Other	Test Results						
Descrip		Method			Results		Limits
Water Co Date Tes Tested B		ASTM D2216	23 3/23/2022 Christian Detablan	22 3/23/2022 Christian Detablan	24 3/23/2022 Christian Detablan	7 3/23/2022 Christian Detablan	
Percent	-	LMA (Internal Met					
Percent Percent Group S Group N	Fines (Silt/Clay) ymbol		13 87 ML Silt				
Tested B			John Platt				
Group C Group N Liquid Lin Plasticity	ode ame mit / Index	ASTM D2487				SM Silty sand 0 0	
Tested B Method	5y	ASTM D2487 ASTM D6913				Cindy Zickefoose A	
Preparat Composi	ion Method ite Sieving? ng Sieve(s)					Oven Dry Yes No. 4	
Fractiona Cu Cc	al Mass Retained (%)	ASTM D2487				0.00	

Ċ	AT		5															4040 B S Anchor Phone Fax	b - Anchorage treet, Suite 102 age, AK 99503 : 907-205-1987 : 907-782-4409 iskatestlab.com
Ма	te	ri	al	Te	est	Re	epo	rt					Γ	Repo Issue	ort N e No	No: MAT:22- o: 1	0265-S1	14	
Client: CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503							Project Code: 220484 CC: CRW Maria Kampsen					The results contained below pertain only to the items tested below. This report should not be reproduced, except in full, without the prior written approval of Alaska Testlab or the agency.							
Project: FedEx Bog										Ashley Kampsen									
	7	/313	8.00											Reviev Title: Date:	wed E	By: Ashley Kam Administrato 5/13/2022			
Sar	npl	le I	Deta	ails	;						O	ther T	est	Res	sult	S			
Sam Clier		e ID Sample ID				22-0265-S14 BH-12 S13B			Description Water Conter Date Tested Tested By Group Code Group Name Liquid Limit				ntent ed de me it		%) ASTM D2216 3/23/2 Christian Detal ASTM D2487	SM Silty sand 0	7 22 Jan SM nd 0		
											Te	sticity I sted By te Teste				ASTM	D2487 Cindy	0 Zickefoose 4/9/2022	
Part	icle	e S	ize	Dis	strik	outic	on												
		00 ⊢—	60		20	— mr	6 n ——	Dia	ameter 2	6	00	200 — µm –	10	0 5	50 ⊣	Method: Drying By: Date Tested: Tested By:	ASTM I Oven 4/1/202 John P	22	
	100 90														_	Sieve Size 3in	% P	Passing 100	Limits
	80														_	2in 1½in 1in		100 100 100	
(by mass)	70 60															¾in 1∕₂in 3/8in No.4		100 100 100 100.0	
Passing (50														-	No.4 No.10 No.20 No.40		100 100 100 100	
Percentage Passing (by mass)	40														No.60 No.100 No.200			100 83 26	
	30 20													¥					
	10														-				
Sieve	0 e Size	9 3'	" 2"		1″	1/2"	#	4	#10	#20	#40	#60 # [^]	100	#200					

ATL	

Mat	erial Test Repor	t	Report No: Issue No:	Report No: MAT:22-0265-S14 Issue No: 1				
Client:	CRW Engineering Group, LLC	Project Code: 220484		The results contained below pertain only to the items tested below. This report should not be reproduced, except in full, without the prior written approval of Alaska Testlab or the agency.				
	3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503	CC: CRW Maria Kampsen						
Project:	FedEx Bog			Ashley Kampsen				
	70400.00		Reviewed By:	Ashley Kampsen				
	73138.00		Title:	Administrator				
			Date:	5/13/2022				
Other 1	Fest Results							
Descri	ption	Method		Result	Limits			
Method	1	ASTM D6913		A				
Prepara	ation Method							
Compo	site Sieving?							
Separa	ting Sieve(s)							
Fractio	nal Mass Retained (%)			0.00				
Cu		ASTM D2487						
Cc								
Date To	ested		4/1/2022					

Comments

ATL

	erial Test F	-			Issue No:			
Client:	CRW Engineering Group 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503		Project Code CC: CRW Maria		The results contained reproduced, except in	below pertain only to the itt full, without the prior writter	ems tested below. This repo n approval of Alaska Testlab	rt should not be or the agency.
Project:	FedEx Bog					Hart	Karpsen	
	73138.00				Reviewed By: Title: Date:	Maria E Kampse Senior Engineer 4/22/2022		
Samp	le Details							
Sample	e ID Sample ID		22-0266-S01 BH-13 S1	22-0266-S02 BH-13 S2	22-0266-S03 BH-13 S3	22-0266-S04 BH-13 S4	22-0266-S05 BH-13 S5	
	Test Results							
Descrip Water C Date Te Tested B	ontent (%) sted	Method ASTM D2216	11 3/23/2022 Christian Detablan	11 3/23/2022 Christian Detablan	Results 15 3/23/2022 Christian Detablan	23 3/23/2022 Christian Detablan	20 3/23/2022 Christian Detablan	Limits
Percent Percent	Gravel Sand Fines (Silt/Clay) symbol lame	LMA (Internal Me		Christian Detablan 0 84 16 SM Silty sand John Platt		Christian Detaolan 0 83 17 SM Silty sand John Platt		
Comm								

	TL						4040 B S Ancho Phone Fa:	ab - Anchorage Street, Suite 102 rage, AK 99503 a: 907-205-1987 k: 907-782-4409 askatestlab.com
Mat	erial Test F	Ponort			Report No	: ASM:22-02	66	
Client:	CRW Engineering Group 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503 FedEx Bog	p, LLC	Project Code CC: CRW Maria			d below pertain only to the it	ems tested below. This repor n approval of Alaska Testlab o	
	73138.00				Reviewed By Title: Date:	: Maria E Kamps Senior Enginee 4/22/2022		
Samp	le Details							
Sample Client S Date Sa	e ID Sample ID ampled		22-0266-S06 BH-13 S6	22-0266-S07 BH-13 S7	22-0266-S08 BH-13 S8	22-0266-S09 BH-13 S9	22-0266-S10 BH-13 S10	
Other	Test Results							
Descrip		Method			Results			Limits
Date Te		ASTM D2216	25 3/23/2022	20 3/23/2022	26 3/23/2022	27 3/23/2022	25 3/23/2022	
Tested E Group C		ASTM D2487	Christian Detablan	Christian Detablan	<u>Christian Detablan</u> CL	Christian Detablan CL	Christian Detablan	<u> </u>
Group C					Lean clay	Lean clay		
	Proportions Estimated				Yes	Yes		
Gravel ((%)				0			
Sand (%					0	5		
Fines (%					100	95		
Tested E		ASTM D2487			Cindy Zickefoose			
Liquid Li Plastic L		ASTM D4318			43 23	44 21		
Plastic L					23	23		
	tion Method				Wet	Wet		
	e Removed By				Hand during mixing on glass	Mechanically pushed through		
	imit Apparatus				Mechanical	Manual		
Groovin					Plastic	Plastic		
Rolling	-				Hand	Hand		
Tested E						Karen Jackson		
Date Te					4/8/2022	4/16/2022		
Percent		LMA (Internal Me	thod)			0		
Percent						3		
Group S	Fines (Silt/Clay)					97 CL		
Group S						Lean Clay		
Tested E						John Platt		
	-)							

AIL

Mate	erial Test F	Report			Issu	ie No: 1	M:22-0267		
Client:	CRW Engineering Group 3940 Arctic Blvd., Ste. 30 Anchorage, AK, 99503		CC : C	de: 220484 RW laria Kampsen	The res	ults contained below pe	ertain only to the items out the prior written app	tested below. This repo proval of Alaska Testlab	rt should not be or the agency.
Project:	FedEx Bog						Hanth	upser	
	73138.00				Revie Title: Date:		a E Kampsen ior Engineer /2022		
Samp	le Details				0				
Sample	e ID Sample ID		22-0267-S01 BH-14 S1	22-0267-S02 BH-14 S12	22-0267-S03 BH-14 S3	22-0267-S04 BH-14 S4	22-0267-S05 BH-14 S5	22-0267-S06 BH-14 S6A	
	Test Results								
Descrip		Method			Res				Limits
	ontent (%)	ASTM D2216	29 3/23/2022	20 3/23/2022	24 3/23/2022	27 3/23/2022	26 3/23/2022	20 3/23/2022	
Date Te Tested E		C			Christian Detablan				
Percent		LMA (Internal Me		3	0				
Percent				20	25				
	Fines (Silt/Clay)			77 ML	75 ML				
Group S Group N				Silt with sand	Silt with sand				
Tested E				John Platt	John Platt				
Comm						Testin			
Soil Clas	sification of Fines (-#200)	in Sieve Analys	es Assumed	Unless Verifie	d by Additional	Testing			

ATL								4040 B Anch Pho F	tlab - Anchorage Street, Suite 102 orage, AK 99503 ne: 907-205-1987 ax: 907-782-4409 alaskatestlab.com
Material Test F	Report					oort No: AS ue No: 1	M:22-0267		
Client: CRW Engineering Grou 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503 Project: FedEx Bog	ip, LLC	CC: (ode: 220484 RW Jaria Kampsen		The res reprodu	ults contained below per ced, except in full, with ewed By: Mari	put the prior written app		
73138.00					Title: Date:		or Engineer /2022		
Osmula Detalla					Date	. 4/22			
Sample Details Sample ID Client Sample ID Date Sampled		22-0267-S07 BH-14 S6B	22-0267-S08 BH-14 S7	22-026 BH-1		22-0267-S10 BH-14 S9	22-0267-S11 BH-14 S10		
Other Test Results									
Description	Method				Res	ults			Limits
Water Content (%) Date Tested Tested By	ASTM D2216	22 3/23/2022 Christian Detablan	29 3/23/2022 Christian Detablan	3/23/ Christian D		28 3/23/2022 Christian Detablan	17 3/24/2022 Christian Detablan		
Group Code Group Name Material Proportions Estimated Sand (%)	ASTM D2487	CL Lean clay with sand 24 76	CL Lean clay Yes 100						
Fines (%) Tested By	ASTM D2487	7 O Karen Jackson	Karen Jackson						
Liquid Limit Plastic Limit Plasticity Index Tested By	ASTM D4318	34 20 14 Karen Jackson	40 22 18						
Date Tested		4/15/2022	4/16/2022						
Percent Gravel Percent Sand Percent Fines (Silt/Clay) Group Symbol Group Name Tested By	LMA (Internal Me	ethod) 0 24 76 CL Lean clay with sand John Platt							

Comments Soil Classification of Fines (-#200) in Sieve Analyses Assumed Unless Verified by Additional Testing

	TL								4040 B Ancho Phor Fa	lab - Anchorage Street, Suite 102 orage, AK 99503 ne: 907-205-1987 ax: 907-782-4409 laskatestlab.com
Mate	erial Test F	Report				Rep	ort No: AS e No: 1	M:22-0268		
Client:	CRW Engineering Group 3940 Arctic Blvd., Ste. 3	o, LLC	Project Co	ode: 220484	Т	he resul	ts contained below pe	ertain only to the items out the prior written ap	tested below. This repo proval of Alaska Testlab	rt should not be or the agency.
Project:	Anchorage, AK, 99503 FedEx Bog			laria Kampsen				J. Et	050	
								march	appa	
	73138.00				т	Reviev Title: Date:		a E Kampsen or Engineer /2022		
Samp	le Details									
Sample	e ID Sample ID		22-0268-S01 BH-15 S1	22-0268-S02 BH-15 S2	22-0268- BH-15		22-0268-S04 BH-15 S4	22-0268-S05 BH-15 S5	22-0268-S06 BH-15 S6A	
	Test Results									
Descrip	otion	Method			F	Resu	ilts			Limits
Date Te		ASTM D2216	9 3/24/2022	10 3/24/2022	3/24/20		25 3/24/2022	20 3/24/2022	22 3/24/2022	
Tested E Percent				Christian Detablan	Christian Deta	ıblan (Christian Detablan	Christian Detablan	Christian Detablan	
Percent		LMA (Internal Me	(1100) 0 91							
Percent	Fines (Silt/Clay)		9							
Group S			SP-SM							
Group N		Р	oorly graded sand with							
Tested E		ASTM D2487	John Platt					SM		
Group C Group N		ASTIVI D2407						Silty sand		
Liquid Li								0		
Plasticity								0		
Tested E		ASTM D2487						Cindy Zickefoose		
Method		ASTM D6913						A		
	tion Method							Oven Dry		
	site Sieving?							Yes		
	ing Sieve(s) al Mass Retained (%)							No. 4 0.00		
Cu	ai wass i tetaineu (70)	ASTM D2487						0.00		
Cc		ACTIN D2401								

								Alaska Testlab - Anchorag 4040 B Street, Suite 10 Anchorage, AK 9950 Phone: 907-205-198 Fax: 907-782-440 info@alaskatestlab.cor
Mate	erial Test F	Report			Rep	oort No: AS ue No: 1	SM:22-0268	
Client: (3 /	CRW Engineering Grou 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503 FedEx Bog	p, LLC	CC: C	ode: 220484 RW Iaria Kampsen	The res	sults contained below p	ertain only to the items tess rout the prior written appro	sted below. This report should not be wal of Alaska Testlab or the agency.
7	73138.00				Revi Title: Date		ia E Kampsen ior Engineer 8/2022	
Sample	e Details							
Sample I Client Sa Date Sar	ID ample ID		22-0268-S07 BH-15 S6B	22-0268-S08 BH-15 S6C	22-0268-S09 BH-15 S7	22-0268-S10 BH-15 S8	22-0268-S11 BH-15 S9	
	Test Results							
Descript	ion	Method			Res	ults		Limits
Water Co Date Test Tested By	ntent (%) ted	ASTM D2216	22 3/24/2022 Christian Detablan	17 3/24/2022 Christian Detablan	25 3/24/2022 Christian Detablan	20 3/24/2022	25 3/24/2022 Christian Detablan	
Group Co Group Na	de me Proportions Estimated	ASTM D2487			CH Fat clay Yes 100	CL Lean clay Yes 100		
Tested By		ASTM D2487				Karen Jackson		
Liquid Lin		ASTM D4318			50	40		
	Index Removed By nit Apparatus Tool /				23 27 Mechanically pushed through Ma An elaion Manual Plastic Hand	21 19 Karen Jackson 4/16/2022		
Percent G Percent S	Gravel	LMA (Internal Me	thod)			4/10/2022	3 12	
Percent F Group Sy Group Na Tested By	ime						85 ML Silt with sand John Platt	
-	ents							

																	4040 B S Anchor Phone Fax	b - Anchorage treet, Suite 102 age, AK 99503 : 907-205-1987 : 907-782-4409 iskatestlab.com
Mat	eri	ial	Τe	est I	Re	po	rt						Rep	port ue N	No: MAT:22-	0268-S0	5	
Client: Project:	CRV 3940 Anc	N Eng 0 Arct horag	jineer ic Blv e, AK	ing Grou d., Ste. 3 , 99503	ıp, LL			-	Code: C: CRW Maria	2204 Kampse			The res reprodu	sults cont uced, exc	ained below pertain only to ept in full, without the prior	written approval		
	731:	38.00										!	Title:	:	By: Maria E Kar Senior Engi 4/23/2022			
Sam	nlo	Dot	aile							Of	hor	Test	Date					
Sampl	-	DCI	ans		268-5	S05					scripti			Jun	Metho	d	Result	Limits
Client		ple II	D		15 S5					Wa Da Te: Gro Gro Liq Pla Te:	iter Co te Tes sted B oup Co oup Na uid Lir	ntent ted y ode ame nit Index y	. ,		ASTM	D2216 Christia D2487 D2487	20 3/24/2022 n Detablan SM Silty sand 0 0 Zickefoose 4/9/2022	
Partic	cie S	SIZE	Dis	stribu	tior	1									Method:	ASTM [16013	
1	100 ⊢−− 00 ├−-1	60		20	mm	6	Diam	eter 2	60	00	200 — µm) 10	0	50	Drying By: Date Tested: Tested By:	Oven	2	
Percentage Passing (by mass)	90	3" 2"			/2"	#4	#	10	#20	#40	#60 #	#100	#200		Sieve Size 3in 2in 1½in 1in ¾in ½in 3/8in No.4 No.10 No.20 No.40 No.60 No.100 No.200	% P	assing 100 100 100 100 100 100 100 100 95 89 79 51 20	Limits
Comr	nen	ts																

Soil Classification of Fines (-#200) in Sieve Analyses Assumed Unless Verified by Additional Testing No Plasticity Index Test Performed

ATL	

Mate	erial Test Repor	t	Report No: MAT:22-0268-S05 Issue No: 1	
Client:	CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503	Project Code: 220484 CC: CRW Maria Kampsen	The results contained below pertain only to the items tested below. This report should n reproduced, except in full, without the prior written approval of Alaska Testlab or the age	
Project:	FedEx Bog 73138.00		Reviewed By: Maria E Kampsen Title: Senior Engineer	
			Date: 4/23/2022	
Other 1	lest Results			
Descri	otion	Method	Result Limits	
Method		ASTM D6913	A	
Prepara	ation Method		Oven Dry	
Compo	site Sieving?		Yes	
Separa	ting Sieve(s)		No. 4	
Fraction	nal Mass Retained (%)		0.00	
Cu	(),	ASTM D2487		
Cc				
Date Te	ested		4/8/2022	

Comments

Soil Classification of Fines (-#200) in Sieve Analyses Assumed Unless Verified by Additional Testing No Plasticity Index Test Performed

ATL

	Material Test Report						Report No: ASM:22-0269 Issue No: 1 The results contained below pertain only to the items tested below. This report should not be			
Client: Project:	CRW Engine 3940 Arctic Anchorage, FedEx Bog	Blvd., Ste. 3		Project Code CC: CRW Maria		The results contained reproduced, except in	below pertain only to the ite full, without the prior written	ams tested below. This repo n approval of Alaska Testlab	rt should not be or the agency.	
	73138.00					Reviewed By Title: Date:	Maria E Kampse Senior Engineer 4/23/2022			
Samp	le Detail	S								
Sample Client Date S	e ID Sample ID ampled			22-0269-S01 BH-16 S1	22-0269-S02 BH-16 S2	22-0269-S03 BH-16 S3	22-0269-S04 BH-16 S4	22-0269-S05 BH-16 S5		
	[·] Test Re	sults								
Descri Water O Date Te Tested	Content (%) ested		Method ASTM D2216	3/24/2022	342 3/24/2022 Christian Detablan	Results 458 3/24/2022 Christian Detablan	19 3/24/2022 Christian Detablan	20 3/24/2022 Christian Detablan	Limits	
Comn Soil Clas		ines (-#200)	in LMAs Assur	ned Unless Verif	ied by Additional	Testing				

ATL						Alaska Testlab - Anchoragy 4040 B Street, Suite 10 Anchorage, AK 9950 Phone: 907-205-198 Fax: 907-782-440 info@alaskatestlab.com
Material Test F	Report			Report No: ASM:22-0269 Issue No: 1		
Client: CRW Engineering Grou 3940 Arctic Blvd., Ste. 3 Anchorage, AK, 99503		Project Code CC: CRW Maria		The results contained	below pertain only to the items	tested below. This report should not be proval of Alaska Testlab or the agency.
Project: FedEx Bog				Reviewed By:	Maria E Kampsen	upser
73138.00				Title: Date:	Senior Engineer 4/23/2022	
Sample Details						
Sample ID Client Sample ID Date Sampled	:	22-0269-S06 BH-16 S6A	22-0269-S07 BH-16 S6B	22-0269-S08 BH-16 S8	22-0269-S09 BH-16 S9	
Particle Size Distribut	tion					
Method: ASTM D 422	Sieve Size 3in			% Passing	100	Limits
Description: Analysis of Particle Size Distribution in Soils. Sieving for Particles >75µm, Hydrometer	2in 1½in 1in ¾in				100 100 100 100	
Drying By: Washed:	1∕₂in 3/8in No.4				100 99 95 76	
Sample Washed	No.10 No.20 No.40 No.60 No.100 No.200 Finer No.200 (75µm)				76 76 74 71 67 58 67.1	
Other Test Results						
Description	Method			Results		Limits
Water Content (%) Date Tested Tested By	ASTM D2216	20 3/24/2022 ristian Detablan	25 3/24/2022 Christian Detablan	22 3/24/2022 Christian Detablan	27 3/24/2022 Christian Detablan	
Percent Gravel Percent Sand Percent Fines (Silt/Clay) Group Symbol Group Name Tested By	LMA (Internal Meth					
Group Code Group Name Liquid Limit	ASTM D2487			CL Lean clay	ML Sandy silt 0	
Plasticity Index Material Proportions Estimated Gravel (%) Sand (%)	ASTM D2487			Yes	0 5 37	
Fines (%) Tested By	ASTM D2487			100 John Platt	58	

ATL

		Report No: ASM:22-0269 Issue No: 1			
Client: CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503 Project: FedEx Bog 73138.00	Project Code: CC: CRW Maria	220484 Kampsen	Reviewed By:	below pertain only to the items tested below. Thi full, without the prior written approval of Alaska T Maria E Kampsen	s report should not be estlab or the agency.
			Title: Date:	Senior Engineer 4/23/2022	
Sample Details					
Sample ID Client Sample ID Date Sampled	22-0269-S06 BH-16 S6A	22-0269-S07 BH-16 S6B	22-0269-S08 BH-16 S8	22-0269-S09 BH-16 S9	
Other Test Results					
Description Meth			Results		Limits
Liquid Limit ASTN Plastic Limit Plasticity Index Tested By Date Tested	/I D4318		32 18 14 John Platt 4/18/2022		
	<i>∧</i> D 422			Dispersant by hand	

laterial Te	st Repo	ort		Report No: MAT:22-0269-S09 Issue No: 1			
lient: CRW Engineerin		Project Code				the items tested below. This report written approval of Alaska Testlab o	
3940 Arctic Blvd Anchorage, AK, roject: FedEx Bog		CC : CRV Mari	v a Kampsen		Han	Eterpsen	
73138.00				Reviewed By Title: Date:	y: Maria E Kam Senior Engin 4/23/2022		
Sample Details			Other Tes	t Results	;		
ample ID	22-0269-S09		Description		Metho		Limit
Client Sample ID Specification	BH-16 S9 Sieve SOILS		Dispersion dev Dispersion tim Shape Hardness	ne (min)		Dispersant by hand	
			Water Content Date Tested	t (%)	ASTM	D2216 27 3/24/2022 Christian Detablan	
article Size Dis	tribution		Tested By		Method:	ASTM D 422	
article Size Dis	tribution			I	Date Tested:	ASTM D 422 4/12/2022	
	tribution			I		ASTM D 422	
% Passing	tribution				Date Tested:	ASTM D 422 4/12/2022	Limits
% Passing	tribution				Date Tested: Tested By: Sieve Size ³ⁱⁿ 2in	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100	Limits
% Passing	tribution				Date Tested: Tested By: Sieve Size 3in 2in 11⁄₂in	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100	Limits
% Passing	tribution				Date Tested: Tested By: Sieve Size 3in 2in 11∕₂in 11∕₂in 1in	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100 100	Limits
% Passing	tribution				Date Tested: Tested By: Sieve Size 3in 2in 11⁄₂in	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100 100 100 100	Limits
% Passing	tribution				Date Tested: Tested By: Sieve Size 3in 2in 1½in 1½in ¼in ½in 3/8in	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100 100 100 100 100 99	Limits
% Passing	tribution			/	Date Tested: Tested By: Sieve Size 3in 2in 1½in 1½in ¼in ½in 3/8in No.4	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100 100 100 100 100 99 95	Limits
% Passing	tribution			/	Date Tested: Tested By: Sieve Size 3in 2in 1½in 1½in ¼in ¼in ¾in 3/8in No.4 No.10	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100 100 100 100 100 99 95 76	Limits
% Passing	tribution				Date Tested: Tested By: Sieve Size 3in 2in 1½in 1½in ¼in ¾in ¾in 3/8in No.4 No.10 No.20	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100 100 100 100 100 100 100 10	Limits
% Passing	tribution			/	Date Tested: Tested By: Sieve Size 3in 2in 1½in 1½in ¼in ¼in ¾in 3/8in No.4 No.10	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100 100 100 100 100 100 100 10	Limits
% Passing 100 90 80 70 60 50 40 20	tribution				Date Tested: Tested By: Sieve Size 3in 2in 11⁄2in 1in ¾in ¼in 3/8in No.4 No.10 No.20 No.40 No.60 No.60 No.100	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100 100 100 100 100 100 100 10	Limits
% Passing	tribution				Date Tested: Tested By: Sieve Size 3in 2in 11⁄2in 1in 3⁄4in 3⁄8in No.4 No.10 No.20 No.40 No.60 No.60 No.100 No.200	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100 100 100 100 100 100 100 10	Limits
50 Passing 50 50 50 50 50 50 50 50 50 50 50 50 50					Date Tested: Tested By: Sieve Size 3in 2in 11⁄2in 1in 3⁄4in 3⁄8in No.4 No.10 No.20 No.40 No.60 No.60 No.100 No.200 Finer No.200	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100 100 100 100 100 100 100 10	Limits
% Passing 100 50 50 50 40 50 50 50 50 50 50 50 50 50 5					Date Tested: Tested By: Sieve Size 3in 2in 11⁄2in 1in 3⁄4in 3⁄8in No.4 No.10 No.20 No.40 No.60 No.60 No.100 No.200	ASTM D 422 4/12/2022 Cindy Zickefoose % Passing 100 100 100 100 100 100 100 100 100 10	Limits

No Plasticity Index Test Performed Soil Classification of Fines (-#200) in Sieve Analyses Assumed Unless Verified by Additional Testing

ATL	

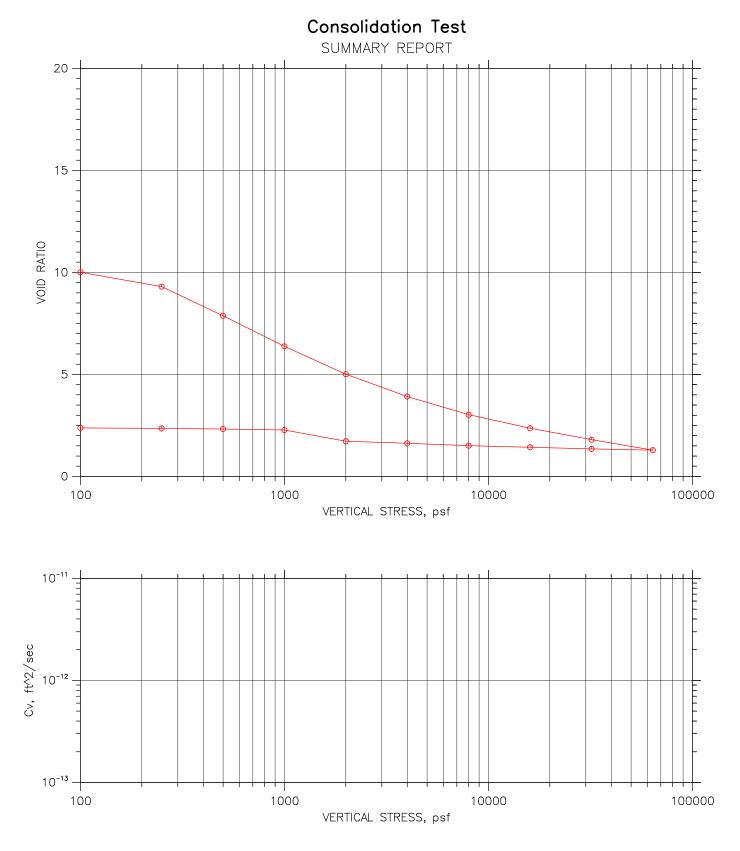
Mat	erial Test Report		Report No: MAT:22-0269-S09 Issue No: 1	
Client:	CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503	Project Code: 220484 CC: CRW Maria Kampsen		below pertain only to the items tested below. This report should not be full, without the prior written approval of Alaska Testlab or the agency.
Project:	FedEx Bog			Mar Exposed
	73138.00		Reviewed By: Title: Date:	Maria E Kampsen Senior Engineer 4/23/2022

Other Test Results

Description	Method	Result	Limits
Group Code	ASTM D2487	ML	
Group Name		Sandy silt	
Liquid Limit		0	
Plasticity Index		0	
Gravel (%)		5	
Sand (ŵ)		37	
Fines (%)		58	

Comments

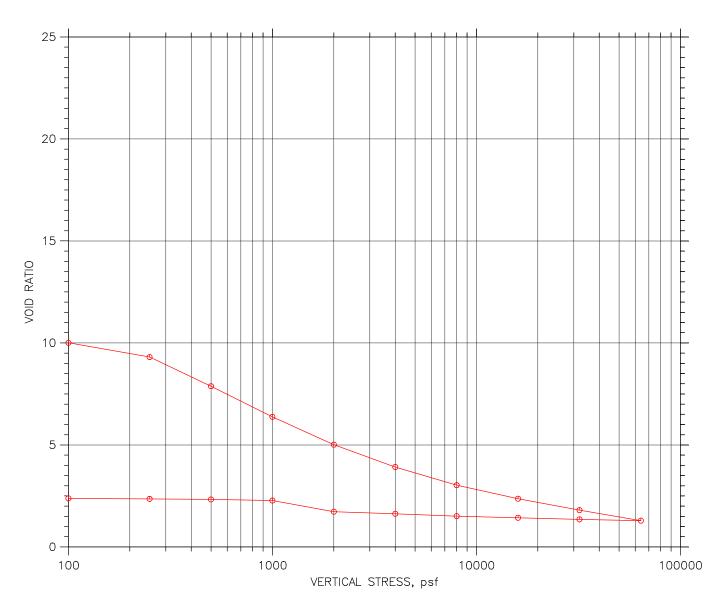
No Plasticity Index Test Performed Soil Classification of Fines (-#200) in Sieve Analyses Assumed Unless Verified by Additional Testing



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK		
ATL	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1		
Alaska Testlab	Depth: 3.0	Sample Type: Shelby	Elevation:		
Resinand by	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (N	lethod A)		
Hanterpred	Remarks: ASTM D2487: PT Visual Classification: Peat				
- churcheter	Displacement at End of Primary		Page 1 of 25		

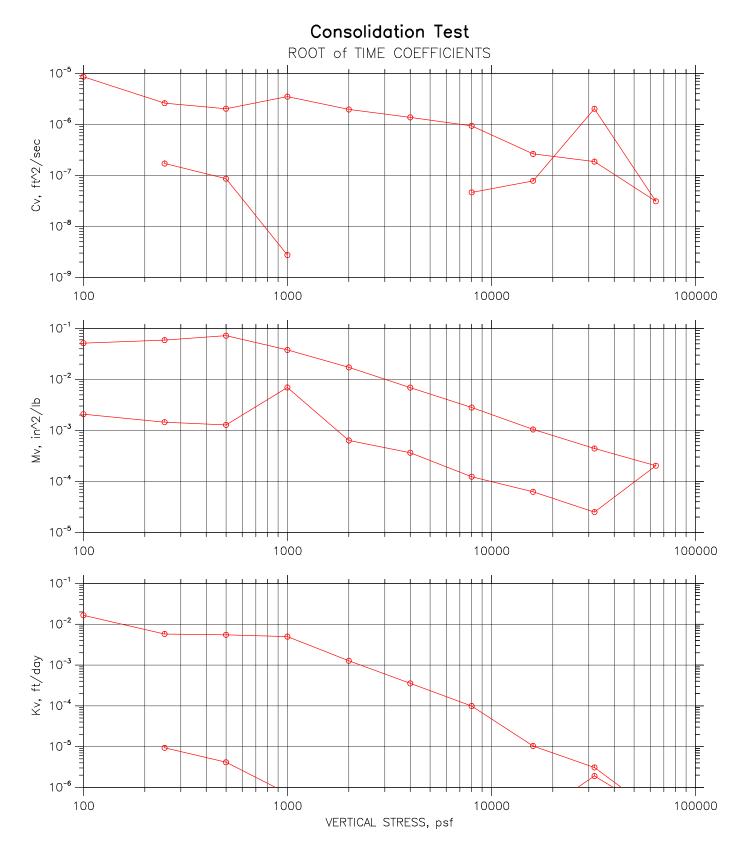
Consolidation Test

SUMMARY REPORT

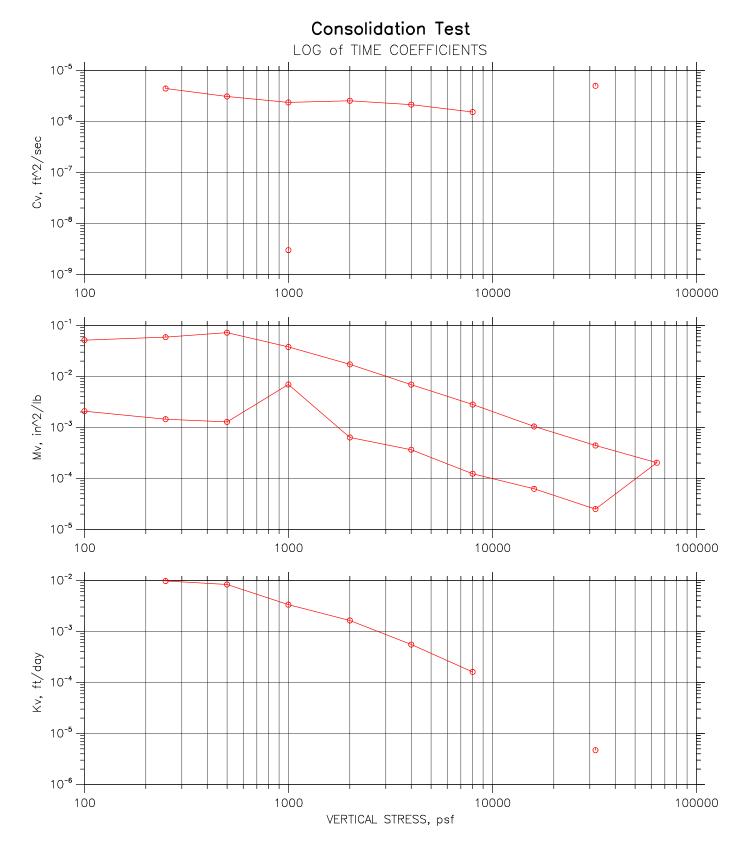


					Before Test	After Test
Overburden Pre	essure: 0 psf			Water Content, %	410.33	123.16
Preconsolidatio	on Pressure: 0 p	osf		Dry Unit Weight, pcf	10.94	36.946
Compression Index: 0			Saturation, %	78.81	103.53	
Diameter: 2.499 in Height: 0.9985 in		Void Ratio	10.41	2.38		
LL:	PL:	PI:	GS: 2.00	Back Pressure, psf	0	0

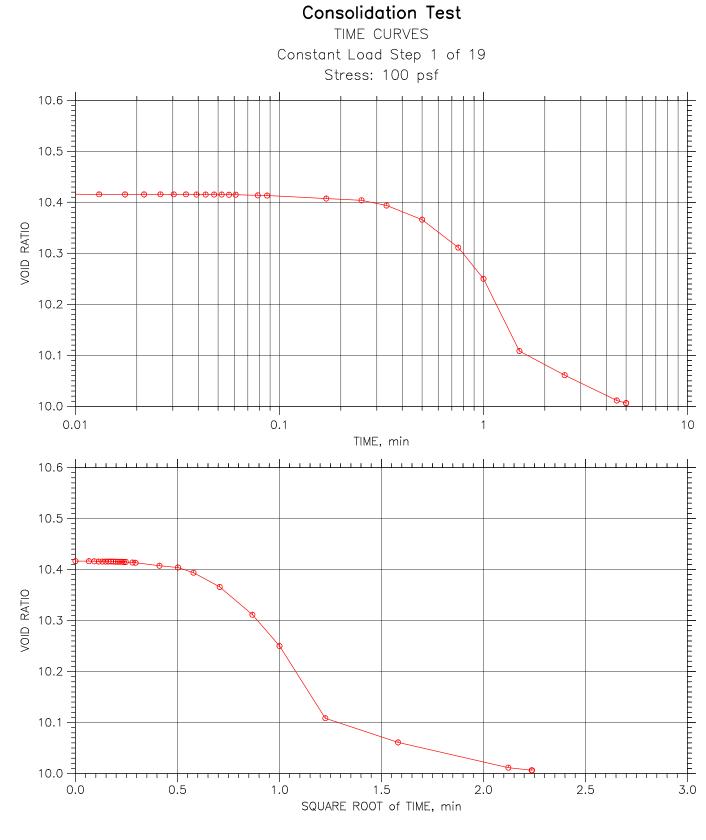
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK		
ATL	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1		
Alaska Testlab	Depth: 3.0	Sample Type: Shelby	Elevation:		
Reviewed by	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (N	lethod A)		
Han Exposed	Remarks: ASTM D2487: PT Visual Classification: Peat				
oppingoppin	Displacement at End of Primary		Page 2 of 25		



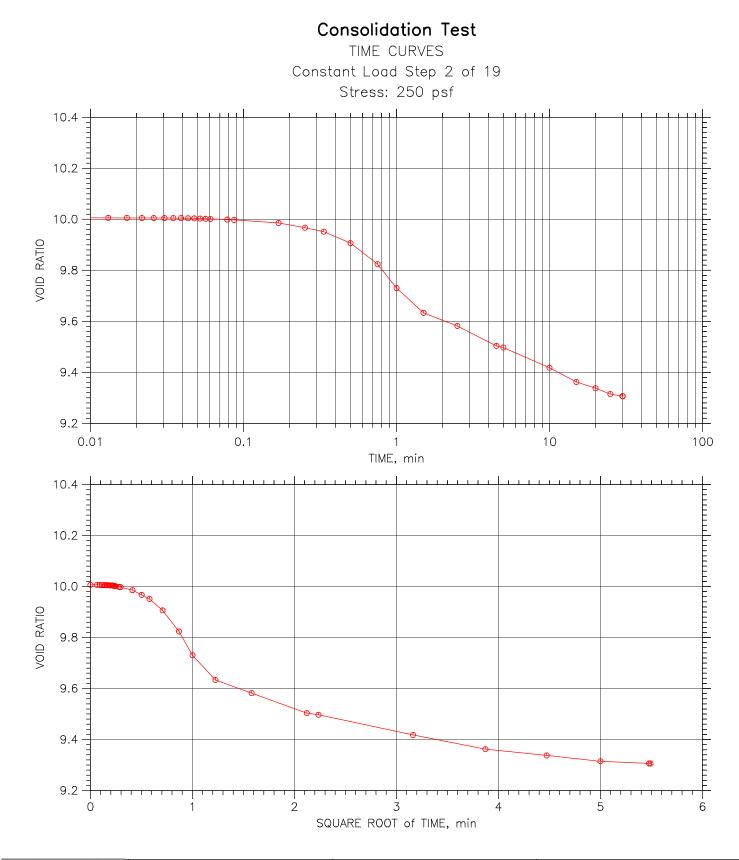
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
ATL	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
Alaska Testlab	Depth: 3.0	Sample Type: Shelby	Elevation:
Reviewed by	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	lethod A)
Non Exposed	Remarks: ASTM D2487: PT Visi	ual Classification: Peat	
- Marco Marca	Displacement at End of Primary		Page 3 of 25



-	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK	
ATL	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1	
Alaska Testlab	ska Testlab Depth: 3.0 Sample Type: Shelby Elevation:			
Resinant by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Han Eterpsed	Remarks: ASTM D2487: PT Visual Classification: Peat			
- churcharter	Displacement at End of Primary		Page 4 of 25	



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
ATL	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
Alaska Testlab	Depth: 3.0	Sample Type: Shelby	Elevation:
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Mar Eterpsed	Remarks: ASTM D2487: PT Visual Classification: Peat		
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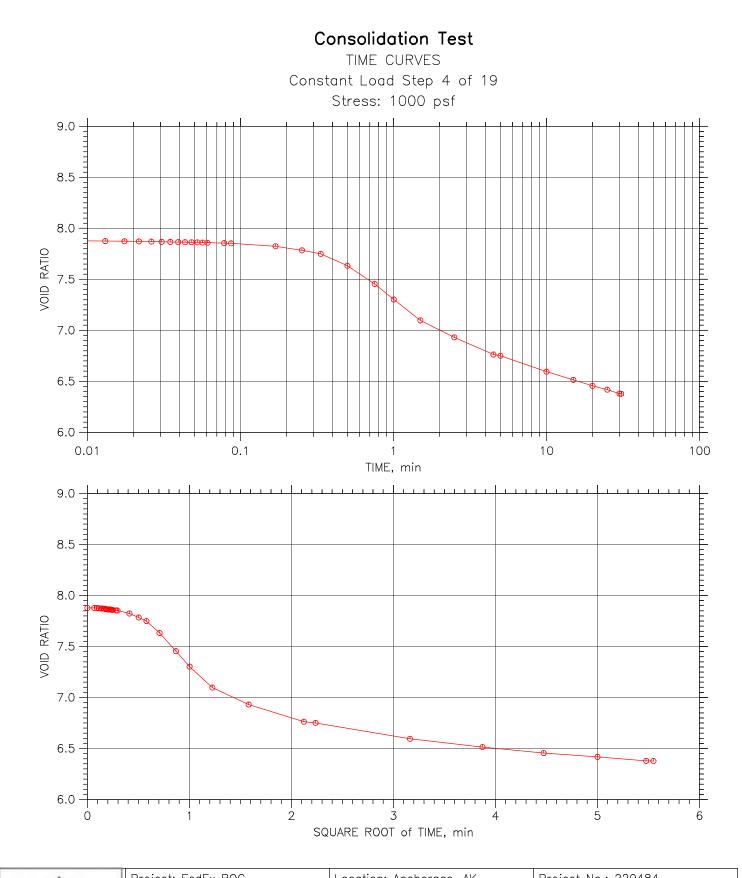


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
,	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visu	ual Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 3 of 19 Stress: 500 psf 10.5 -10.0 -9.5 VOID RATIO 9.0 8.5 8.0 -7.5 -П 0.1 0.01 1 10 100 TIME, min 10.5 -10.0 9.5 VOID RATIO 9.0 8.5 8.0 ക 7.5 Т 2 6 3 4 5 0 SQUARE ROOT of TIME, min



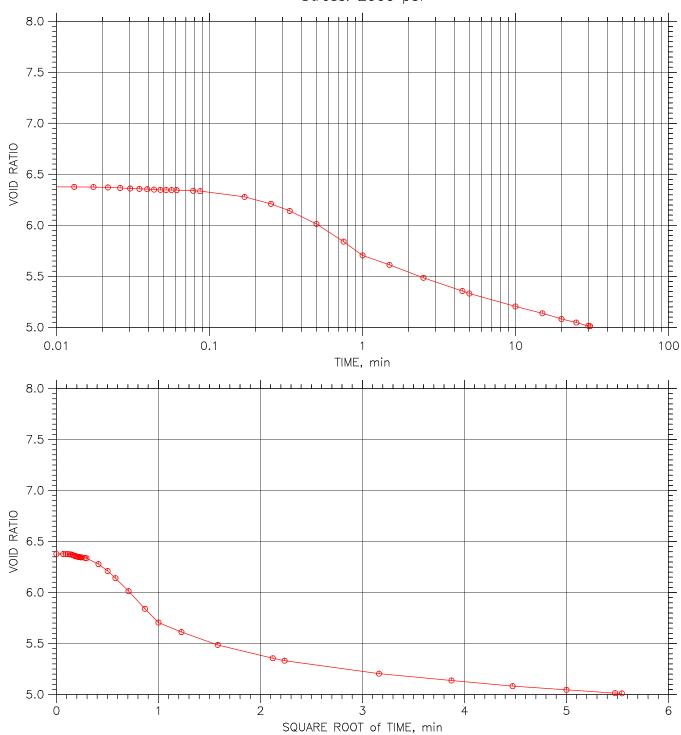
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
6	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visu	ual Classification: Peat	



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	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
,	Depth: 3.0	Sample Type: Shelby	Elevation:
1	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 5 of 19 Stress: 2000 psf

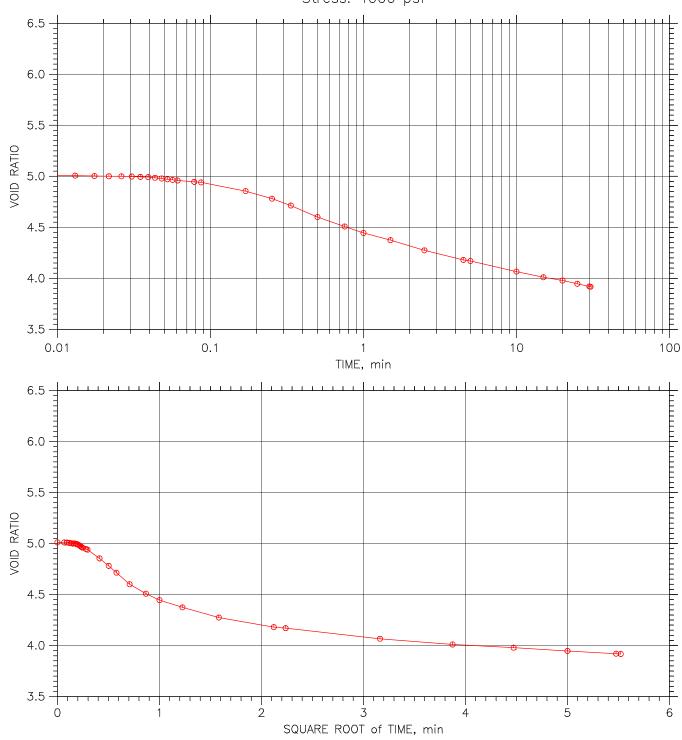


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	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visu	ual Classification: Peat	

Consolidation Test

TIME CURVES Constant Load Step 6 of 19 Stress: 4000 psf





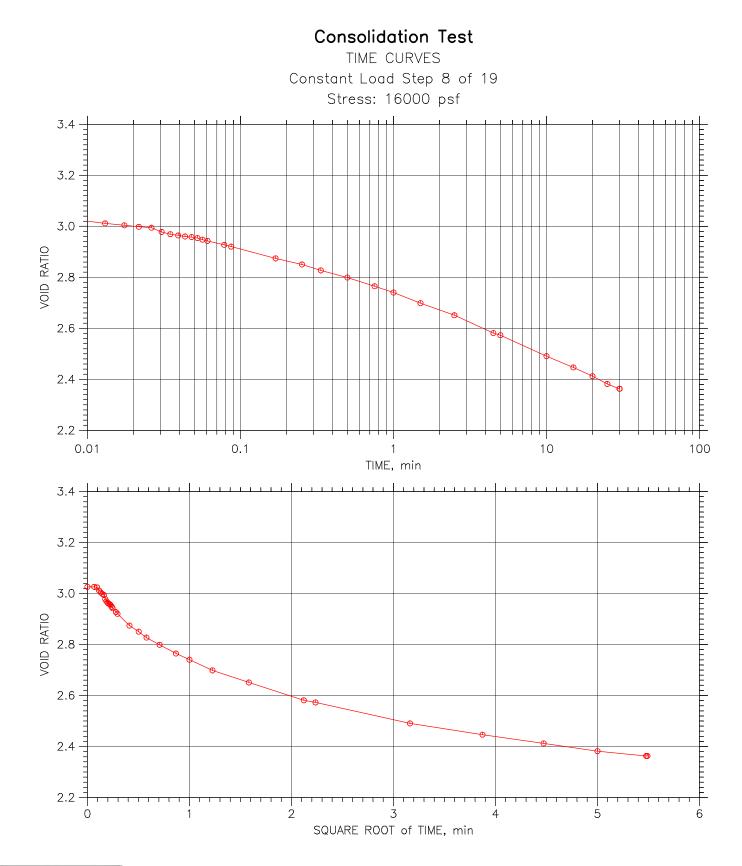
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
ь	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visi	ual Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 7 of 19 Stress: 8000 psf 4.2 -4.0 -3.8 VOID RATIO 3.6 3.4 3.2 -3.0 -П 0.1 10 0.01 1 100 TIME, min 4.2 -4.0 3.8 VOID RATIO 3.6 3.4 3.2 3.0 Т 2 6 3 5 0 4

SQUARE ROOT of TIME, min

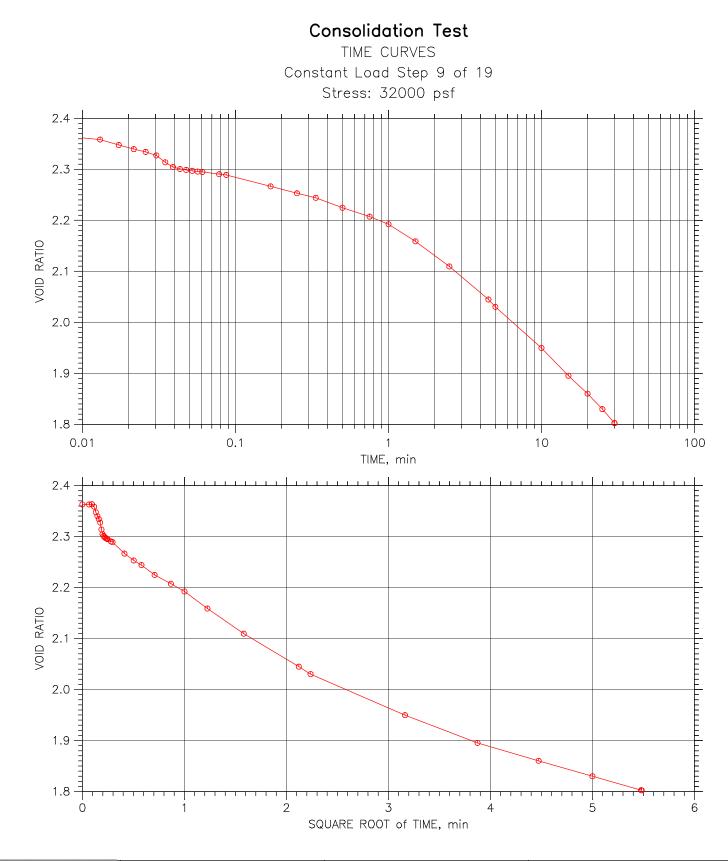


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
Ь	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visu	ual Classification: Peat	



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	Borin
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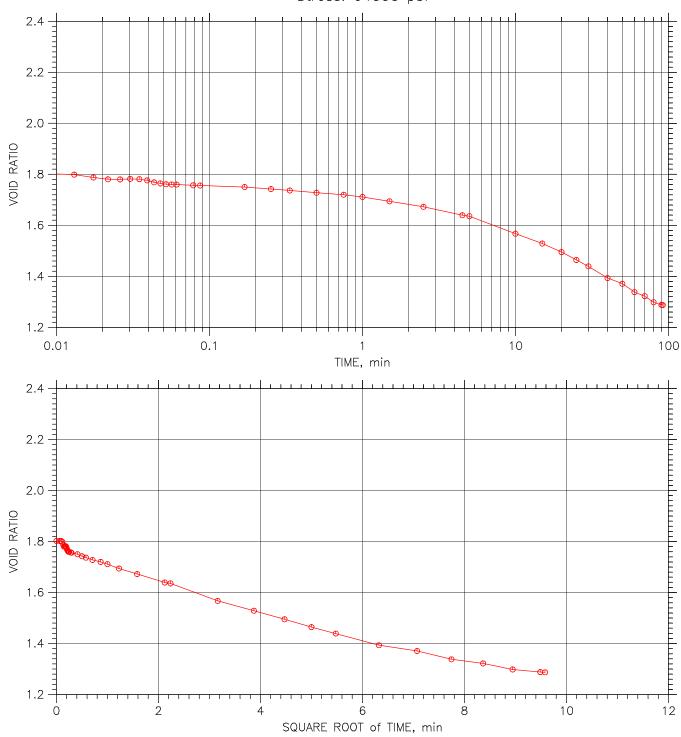
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
6	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
	Depth: 3.0	Sample Type: Shelby	Elevation:
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visi	ual Classification: Peat	





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
,	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visi	ual Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 10 of 19 Stress: 64000 psf

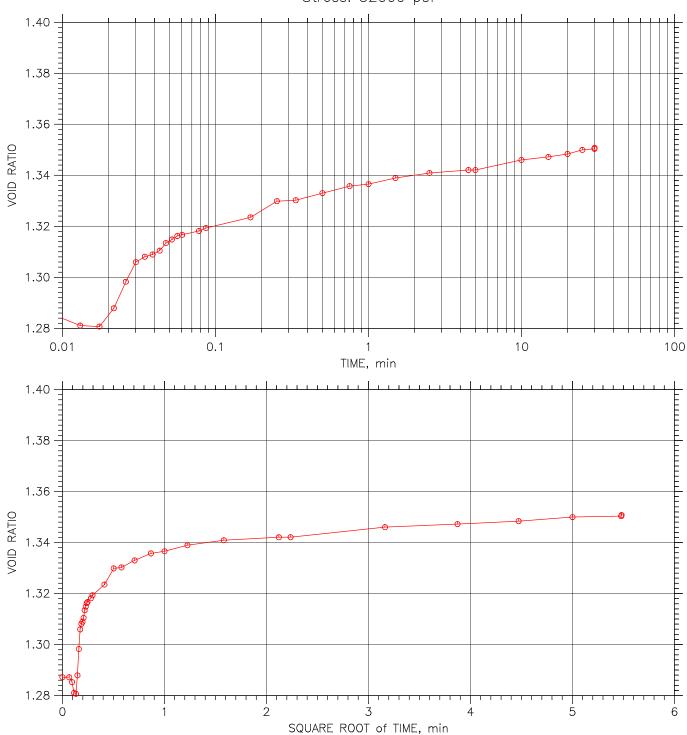




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
,	Depth: 3.0	Sample Type: Shelby	Elevation:
Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			ethod A)
	Remarks: ASTM D2487: PT Visu	ual Classification: Peat	

Consolidation Test

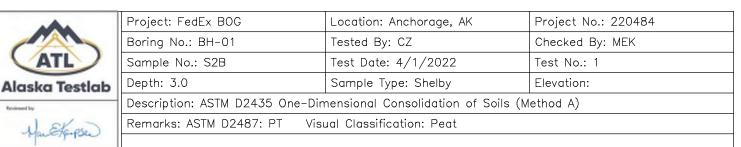
TIME CURVES Constant Load Step 11 of 19 Stress: 32000 psf



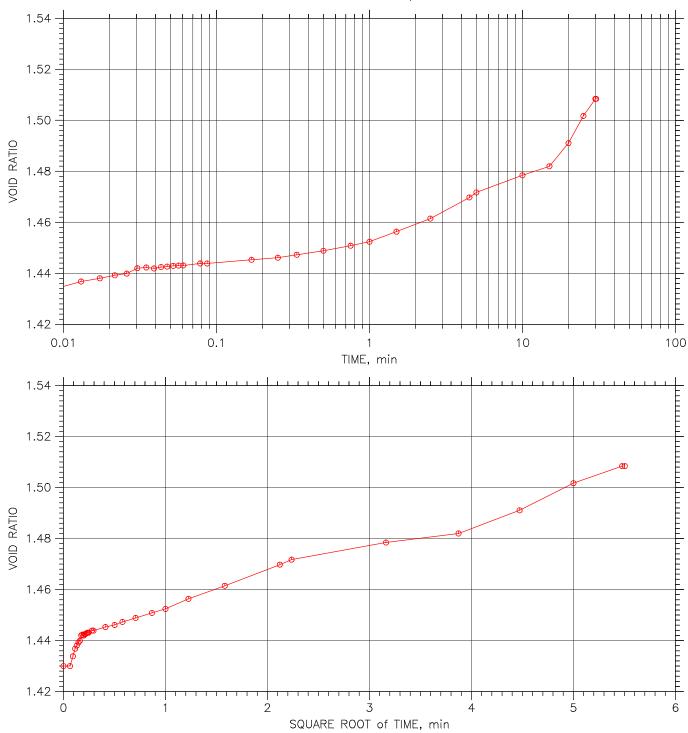
Alaska Testlab
Restreed by Han Ether Ben

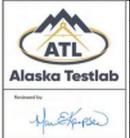
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
	Depth: 3.0	Sample Type: Shelby	Elevation:
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classif		ual Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 12 of 19 Stress: 16000 psf 1.46 1.44 1.42 VOID RATIO 1.40 1.38 1.36 1.34 -0.01 0.1 10 100 1 TIME, min 1.46 1.44 1.42 VOID RATIO 1.40 1.38 1.36 -1.34 2 3 5 6 \cap 4 SQUARE ROOT of TIME, min



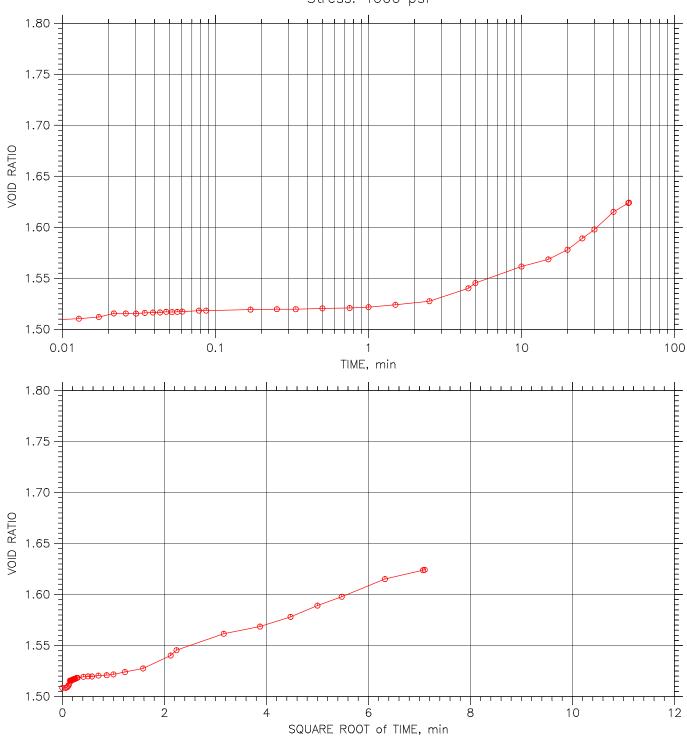
Consolidation Test TIME CURVES Constant Load Step 13 of 19 Stress: 8000 psf





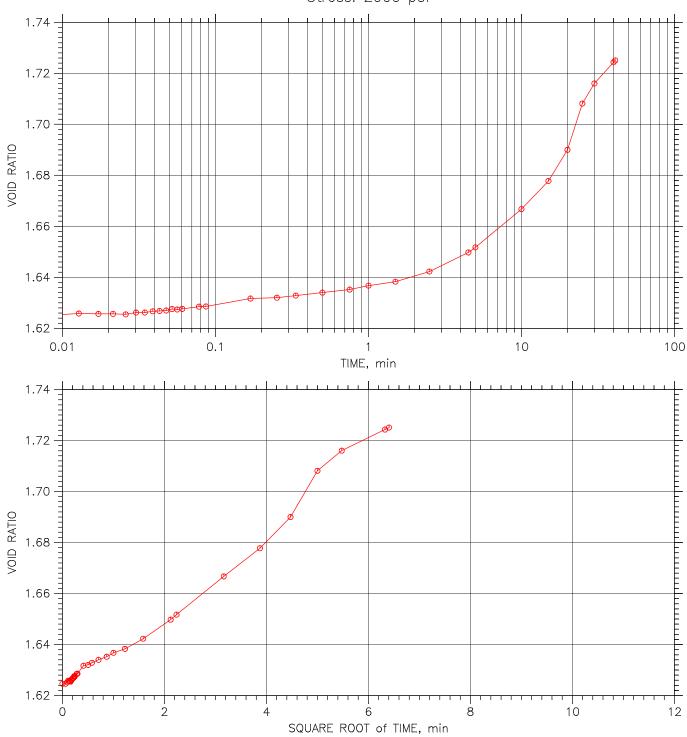
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 14 of 19 Stress: 4000 psf



Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
Boring No.: BH-01	Tested By: CZ	Checked By: MEK
Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
Depth: 3.0	Sample Type: Shelby	Elevation:
Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
Remarks: ASTM D2487: PT Visual Classification: Peat		

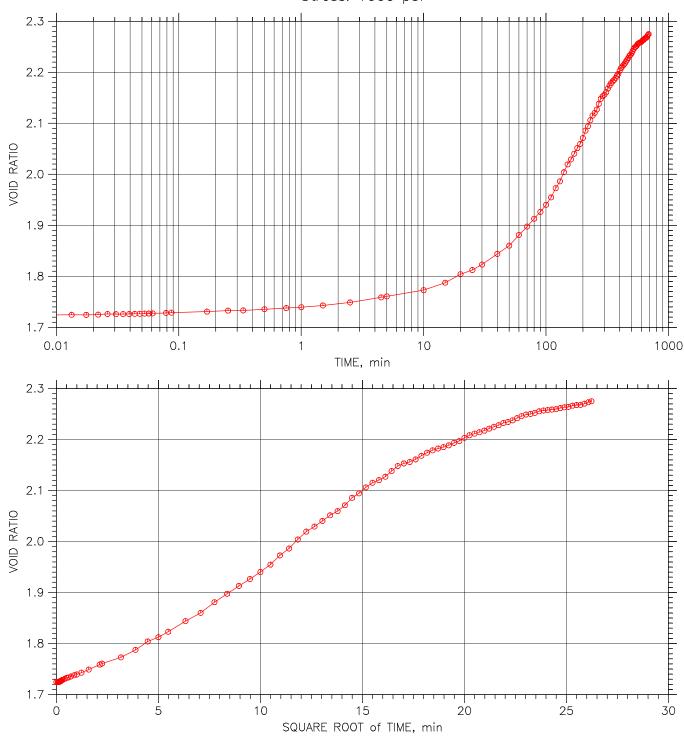
Consolidation Test TIME CURVES Constant Load Step 15 of 19 Stress: 2000 psf





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK	
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1	
	Depth: 3.0	Sample Type: Shelby	Elevation:	
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Remarks: ASTM D2487: PT Visual Classification: Peat				

Consolidation Test TIME CURVES Constant Load Step 16 of 19 Stress: 1000 psf



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
	Depth: 3.0	Sample Type: Shelby	Elevation:
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 17 of 19 Stress: 500 psf 2.33 -2.32 -2.31 VOID RATIO 2.30 2.29 2.28 -2.27 -П 0.1 10 0.01 1 100 TIME, min 2.33 2.32 · 2.31 VOID RATIO 2.30 2.29 2.28 -2.27 6 2 5 0 3 4 1 SQUARE ROOT of TIME, min

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
ATL	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
aska Testlab	Depth: 3.0	Sample Type: Shelby	Elevation:
end by:	Description: ASTM D2435 One-Dim	nensional Consolidation of Soils (M	ethod A)
Han Etforpsed	Remarks: ASTM D2487: PT Visu	ual Classification: Peat	
- Marchartha			

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Consolidation Test TIME CURVES Constant Load Step 18 of 19 Stress: 250 psf 2.355 -2.350 -2.345 VOID RATIO 2.340 2.335 2.330 -2.325 -0.1 0.01 1 10 100 TIME, min 2.355 -2.350 2.345 VOID RATIO 2.340 2.335 2.330 -2.325 Т 2 6 5 3 4 0 SQUARE ROOT of TIME, min



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
,	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visu	ual Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 19 of 19 Stress: 100 psf 2.380 -2.375 -2.370 VOID RATIO 2.365 2.360 2.355 2.350 -0.1 10 0.01 1 TIME, min 2.380 -2.375 2.370 VOID RATIO 2.365 2.360 2.355 2.350 -0.5 1.0 Т 1.5 2.0 2.5 3.0 0.0

SQUARE ROOT of TIME, min



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/1/2022	Test No.: 1
	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visu	ual Classification: Peat	



Client:

Project:

Alaska Testlab – Anchorage 4040 B Street, Suite 102 Anchorage, AK 99503 Phone: 907-205-1987 Fax: 907-782-4409 info@alaskatestlab.com

Shelby Photo Log

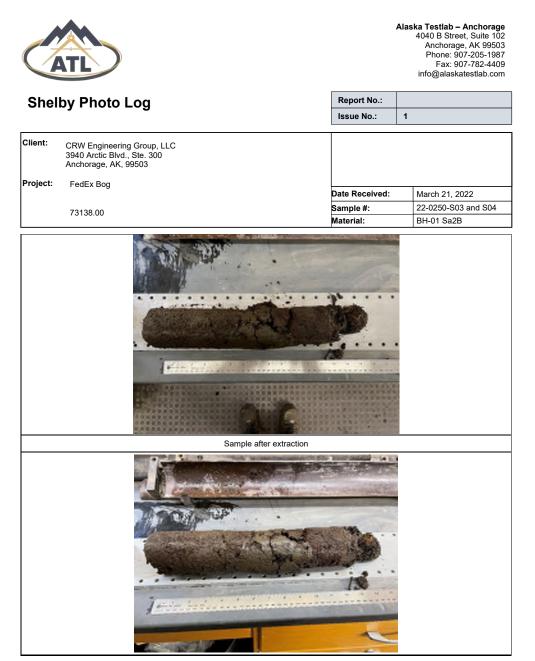
Report No.: Issue No.: 1

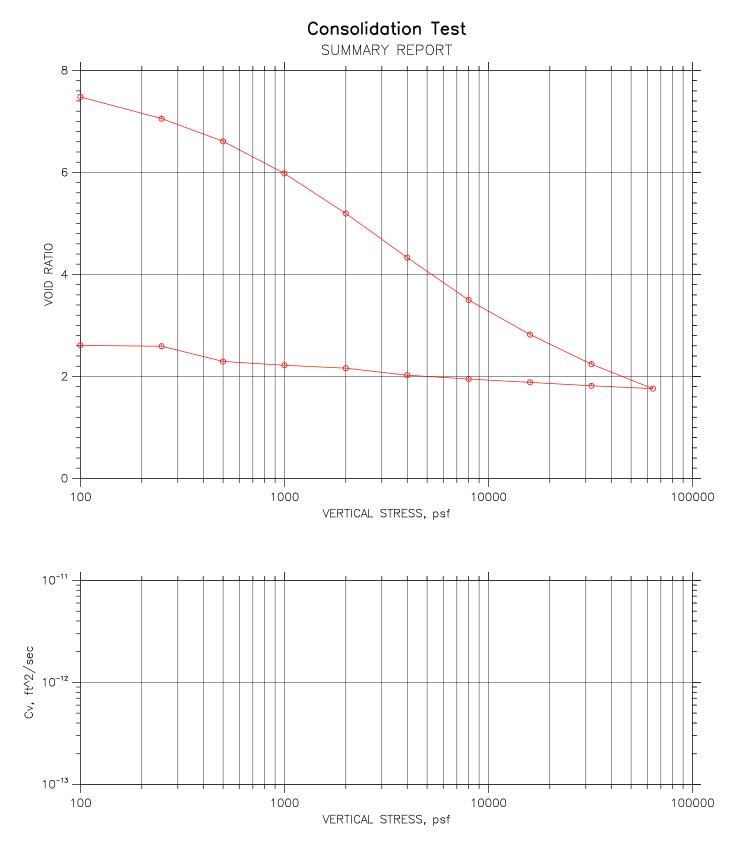
:	CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503 FedEx Bog		
-	•	Date Received:	March 21, 2022
	73138.00	Sample #:	22-0250-S03 and S04



ATL	
AIL	

External Test Report			Report No: EXT:22-0250-S03-1 Issue No: 2	
Client:	CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503	Project Code: 220484 CC:	The results contained below pertain only to the items tested below. This report should not be reproduced, except in full, without the prior written approval of Alaska Testiab or the agency.	
Project:	FedEx Bog 73138.00		Reviewed By: Maria E Kampsen Title: Senior Engineer Date: 4/26/2022	
	ATL)	Alaska Testlab – Anchorage 4040 B Street, Suite 102 Anchorage, AK 99503 Phone: 907-205-1987 Fax: 907-782-4409 info@alaskatestlab.com	
Shelby Photo Log		Log	Report No.: Issue No.:	

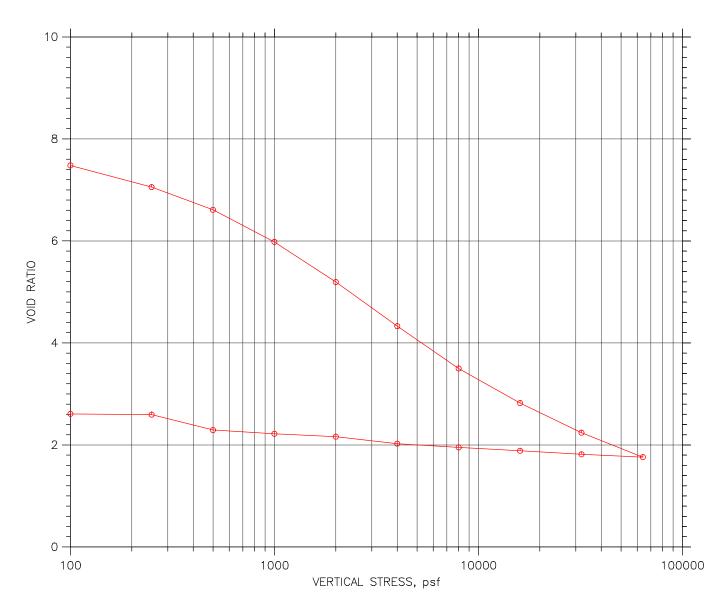




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK		
ATL	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2		
Alaska Testlab	Depth: 3.0	Sample Type: Shelby	Elevation:		
Renieward by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)				
Mar Exprese	Remarks: ASTM D2487: PT Visua	ks: ASTM D2487: PT Visual Classification: Peat			
- opener portice	Displacement at End of Primary		Page 1 of 25		

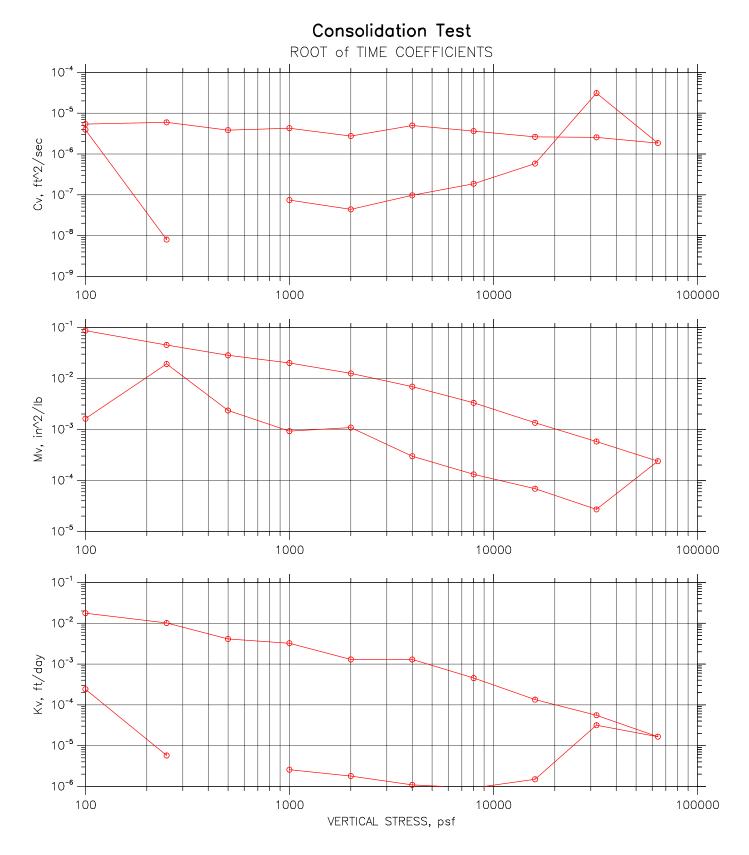
Consolidation Test

SUMMARY REPORT

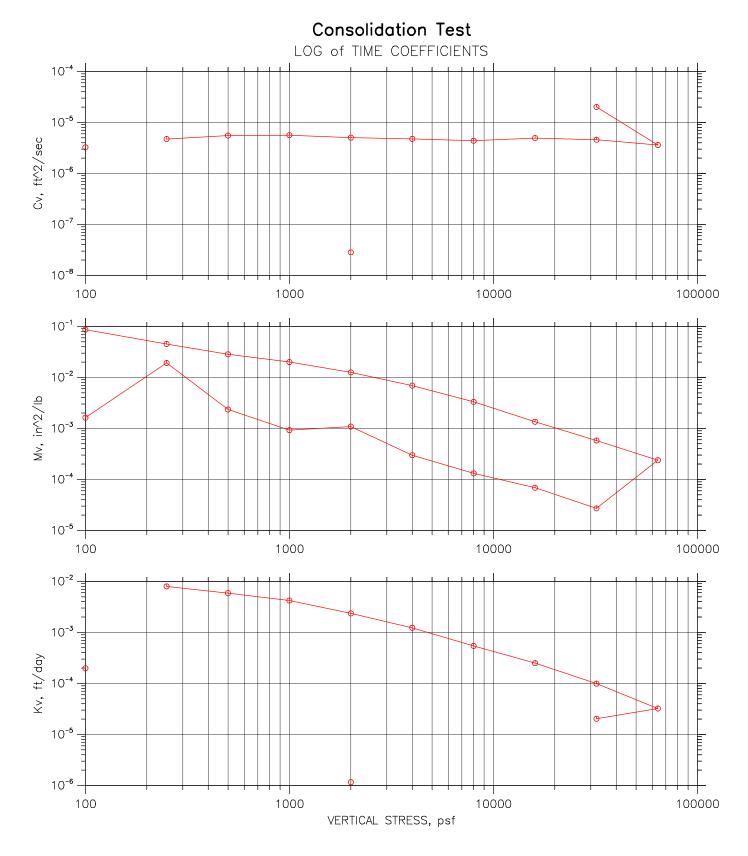


					Before Test	After Test
Overburden Pressure: 0 psf			Water Content, %	345.98	129.56	
Preconsolidation Pressure: 0 psf			Dry Unit Weight, pcf	14.531	36.33	
Compression Index: 0			Saturation, %	90.57	104.30	
Diameter: 2.5 in Height: 1 in		Void Ratio	8.02	2.61		
LL:	PL:	PI:	GS: 2.10	Back Pressure, psf	0	0

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK		
ATL	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2		
Alaska Testlab	Depth: 3.0	Sample Type: Shelby	Elevation:		
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)				
Non Exposed	Remarks: ASTM D2487: PT Visual Classification: Peat				
oppingation	Displacement at End of Primary		Page 2 of 25		



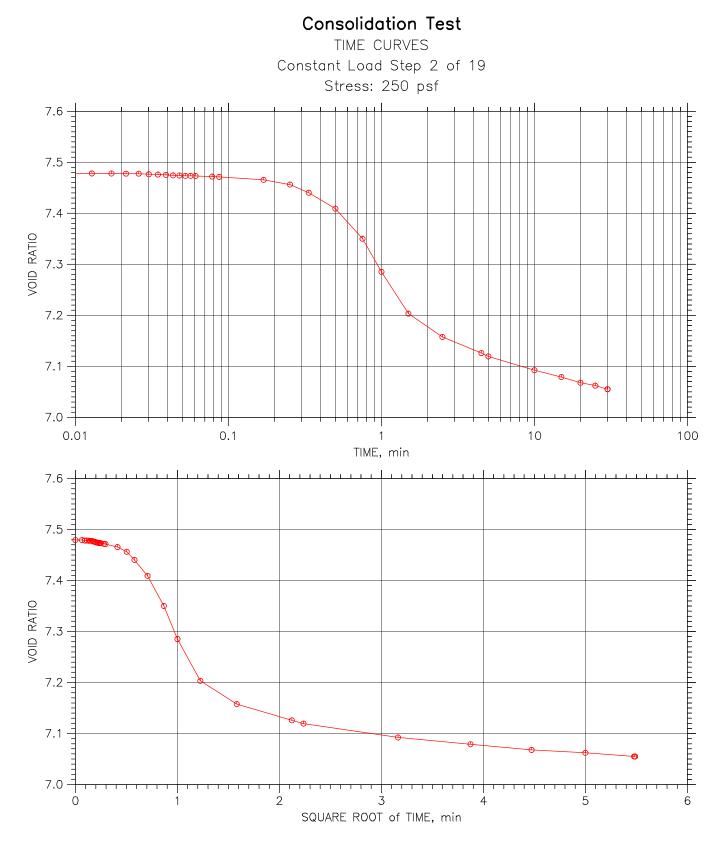
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ATL	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
Alaska Testlab	Depth: 3.0	Sample Type: Shelby	Elevation:
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Han Exprese	Remarks: ASTM D2487: PT Visual Classification: Peat		
- charce better	Displacement at End of Primary		Page 3 of 25



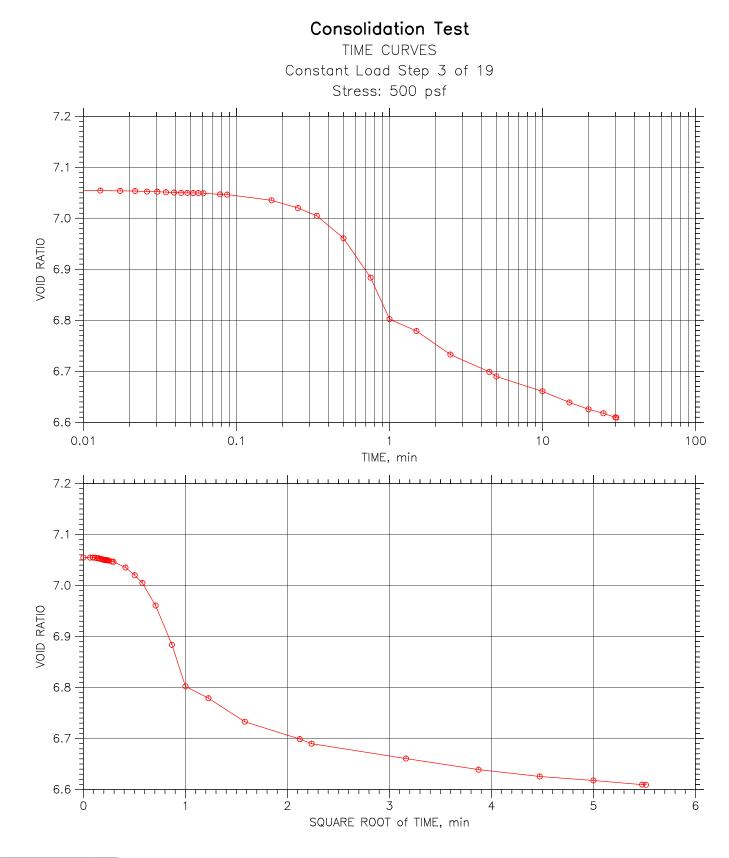
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK		
ATL	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2		
Alaska Testlab	Depth: 3.0	Sample Type: Shelby	Elevation:		
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)				
Han Eterpsed	Remarks: ASTM D2487: PT Visua	PT Visual Classification: Peat			
- Marcipation	Displacement at End of Primary		Page 4 of 25		

Consolidation Test TIME CURVES Constant Load Step 1 of 19 Stress: 100 psf 8.6 8.4 8.2 VOID RATIO 8.0 7.8 7.6 7.4 -0.1 0.01 1 10 TIME, min 8.6 8.4 8.2 VOID RATIO 8.0 7.8 7.6 7.4 Т 0.5 2.0 2.5 0.0 1.0 1.5 3.0 SQUARE ROOT of TIME, min

Project: FedEx BOGLocation: Anchorage, AKProject No.: 220484Boring No.: BH-01Tested By: CZChecked By: MEKSample No.: S2BTest Date: 4/2/2022Test No.: 2Depth: 3.0Sample Type: ShelbyElevation:Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)Remarks: ASTM D2487: PT Visual Classification: Peat

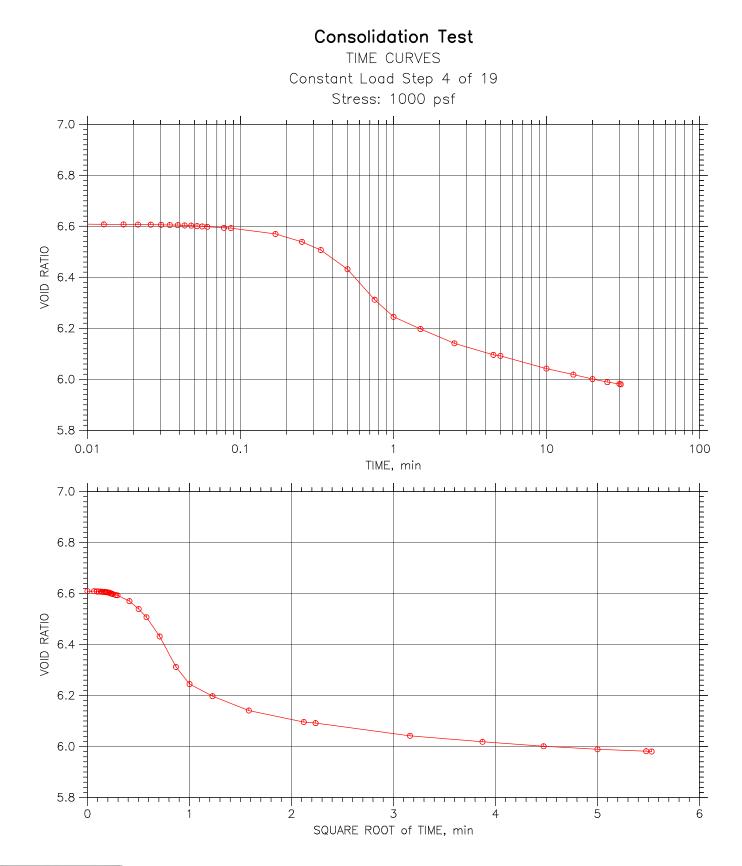


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
ATL	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
Alaska Testlab	Depth: 3.0	Sample Type: Shelby	Elevation:
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Na Eterpse	Remarks: ASTM D2487: PT Visual Classification: Peat		
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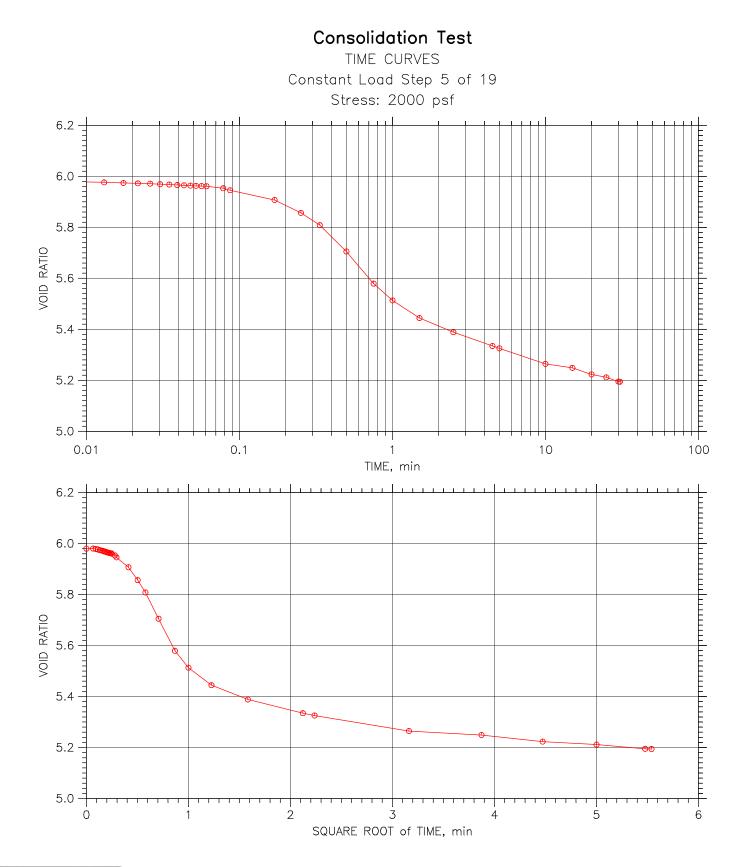


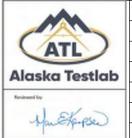
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	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
	Depth: 3.0	Sample Type: Shelby	Elevation:
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			



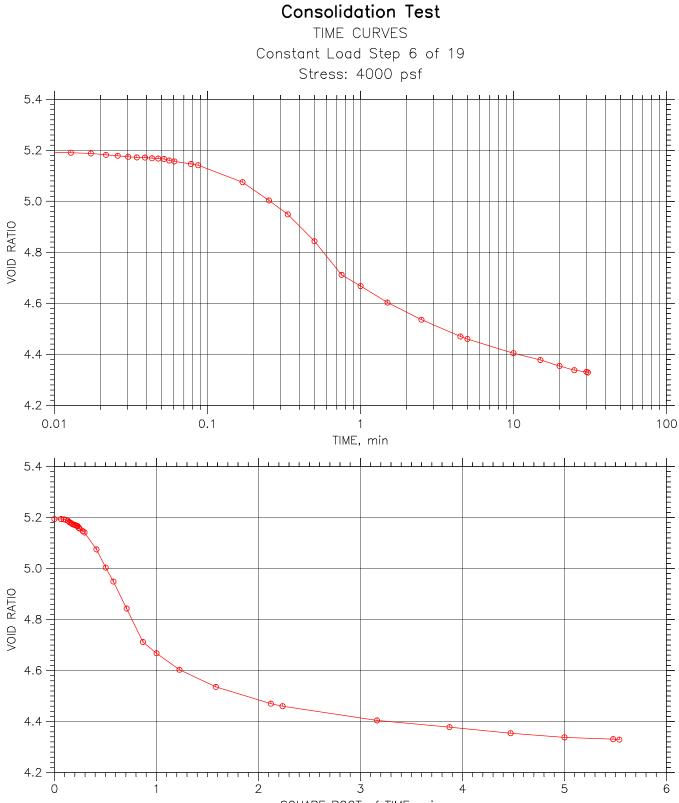
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Alaska Testlab
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	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK	
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2	
	Depth: 3.0	Sample Type: Shelby	Elevation:	
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Remarks: ASTM D2487: PT Visual Classification: Peat				





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		



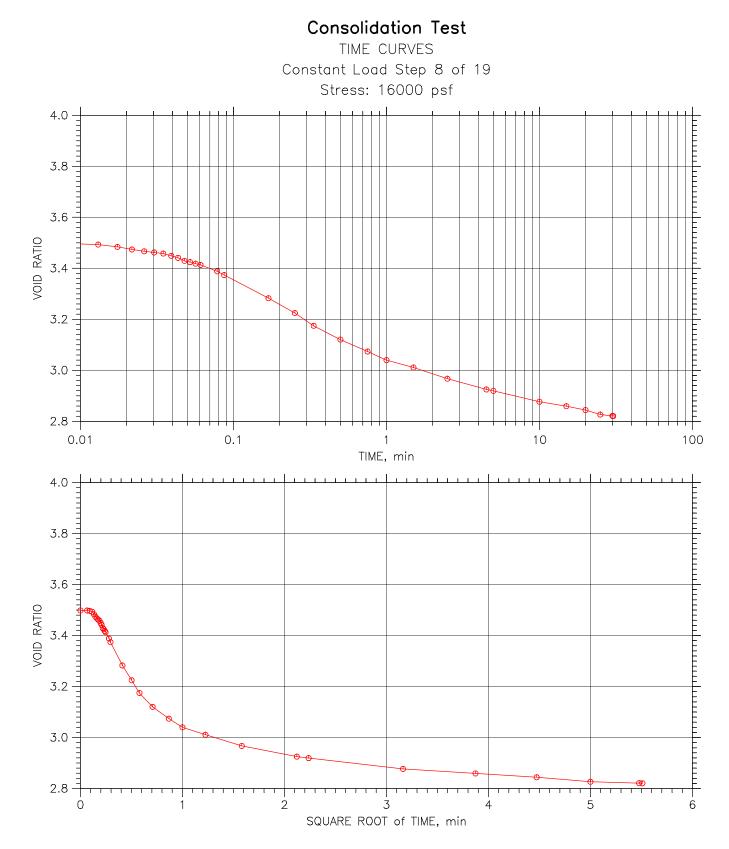


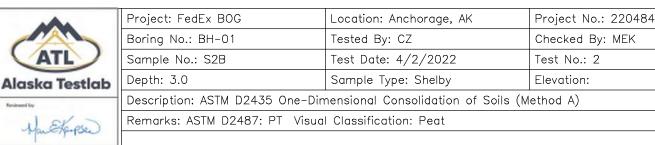
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 7 of 19 Stress: 8000 psf 4.6 -4.4 -4.2 VOID RATIO 4.0 3.8 3.6 3.4 – П 0.1 10 0.01 1 100 TIME, min 4.6 -4.4 4.2 VOID RATIO 4.0 3.8 3.6 œ 3.4 6 2 5 3 4 0 1

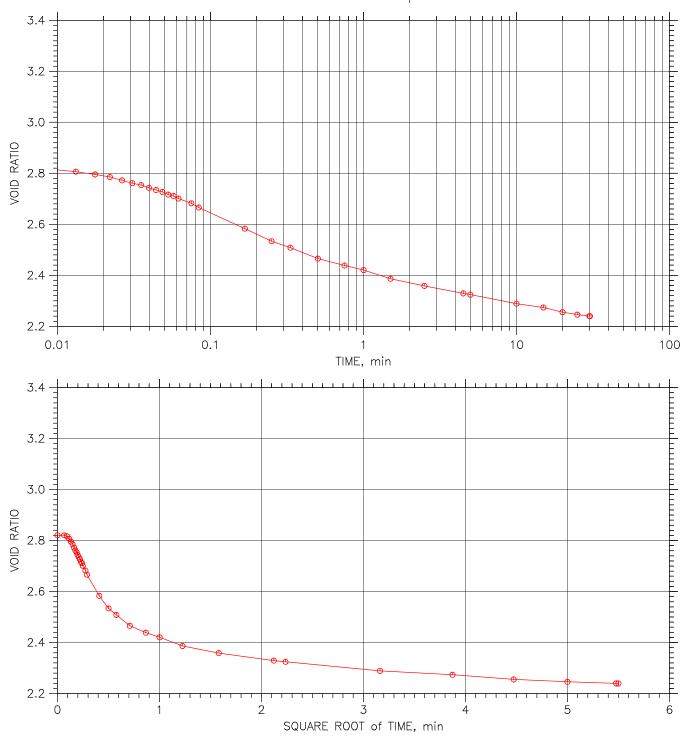


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
>	Depth: 3.0	Sample Type: Shelby	Elevation:
	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		



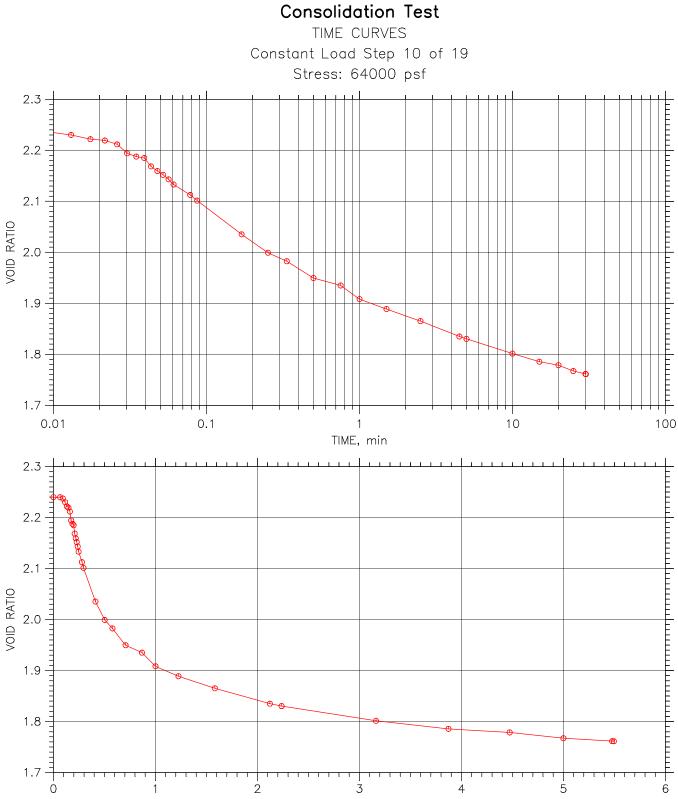


Consolidation Test TIME CURVES Constant Load Step 9 of 19 Stress: 32000 psf



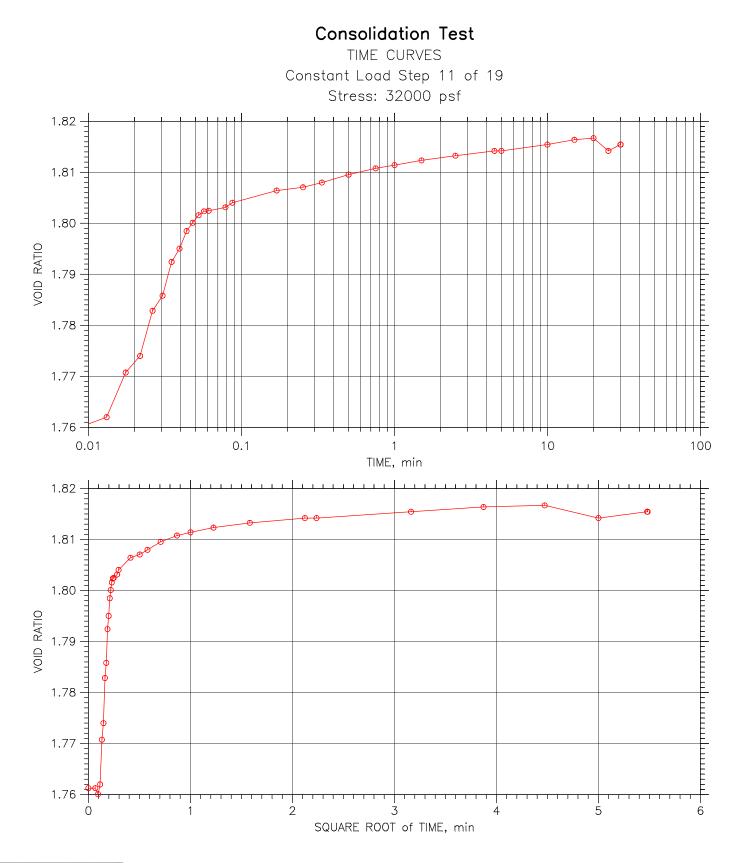


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK	
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2	
	Depth: 3.0	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
,	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		



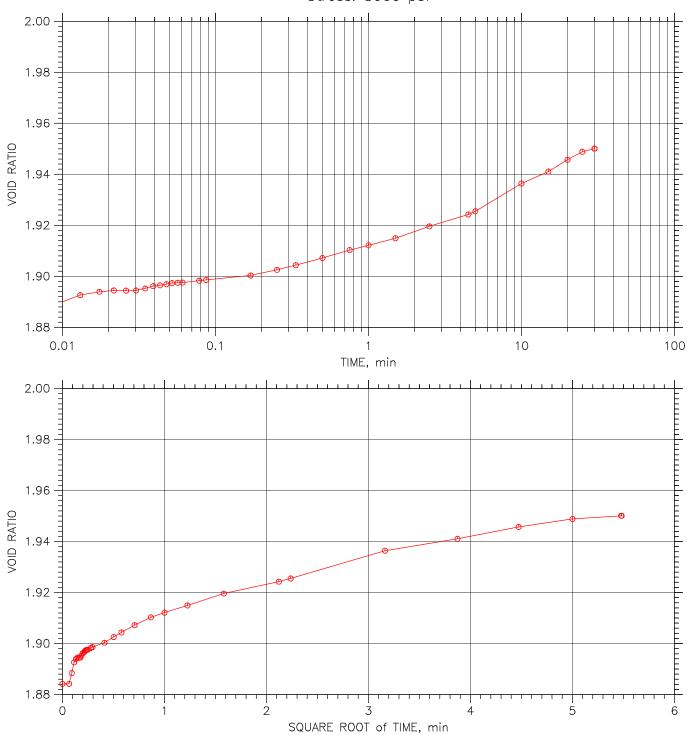
Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
Boring No.: BH-01	Tested By: CZ	Checked By: MEK
Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
Depth: 3.0	Sample Type: Shelby	Elevation:
Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A) Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 12 of 19 Stress: 16000 psf 1.92 -1.90 -1.88 VOID RATIO 1.86 1.84 1.82 1.80 -. | 0.1 0.01 1 10 100 TIME, min 1.92 -1.90 Ð 1.88 VOID RATIO 1.86 1.84 1.82 -1.80 2 6 5 3 4 0



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			

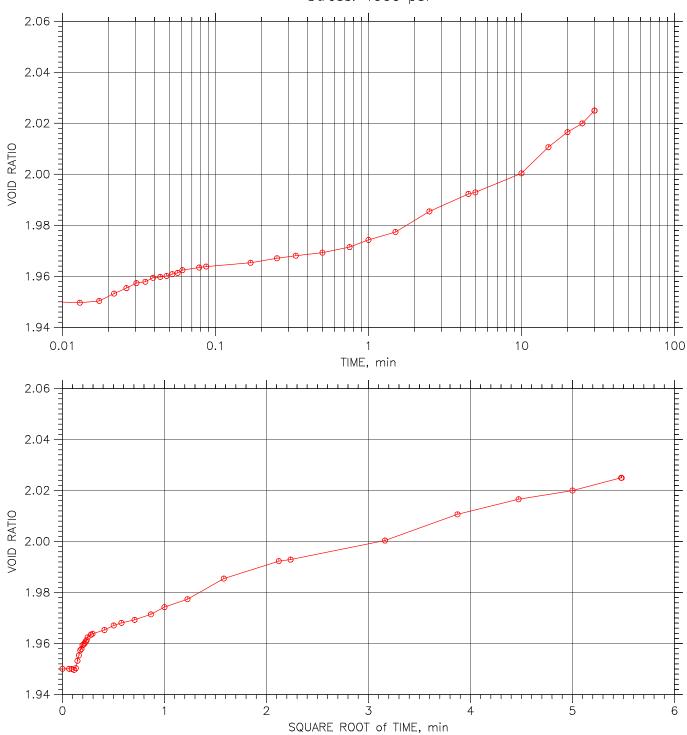
Consolidation Test TIME CURVES Constant Load Step 13 of 19 Stress: 8000 psf



Alaska Testlab
Restruct by

Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
Boring No.: BH-01	Tested By: CZ	Checked By: MEK	
Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2	
Depth: 3.0	Sample Type: Shelby	Elevation:	
Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Remarks: ASTM D2487: PT Visual Classification: Peat			

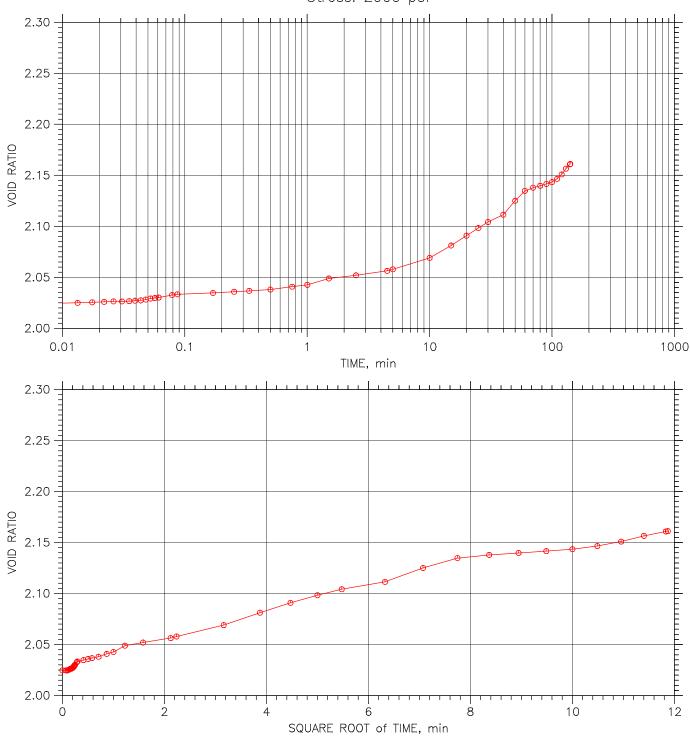
Consolidation Test TIME CURVES Constant Load Step 14 of 19 Stress: 4000 psf



Alaska Testlab
Resident by Han Etherpsen

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
	Depth: 3.0	Sample Type: Shelby	Elevation:
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 15 of 19 Stress: 2000 psf



ATL Alaska Testlab
Reinerd by Har Eterpsen

Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
Boring No.: BH-01	Tested By: CZ	Checked By: MEK
Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
Depth: 3.0	Sample Type: Shelby	Elevation:
Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A) Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 16 of 19 Stress: 1000 psf 2.22 -2.21 -2.20 VOID RATIO 2.19 2.18 2.17 -2.16 -I 0.1 10 0.01 1 100 TIME, min 2.22 -2.21 2.20 VOID RATIO 2.19 2.18 2.17 -2.16 12 2 8 10 0 4 6

Alaska Testlab
Restruct by Han Hoppsen

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
,	Depth: 3.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 17 of 19 Stress: 500 psf 2.32 -2.30 -2.28 VOID RATIO 2.26 2.24 2.22 -2.20 -I 0.1 0.01 1 10 100 TIME, min 2.32 -2.30 2.28 VOID RATIO 2.26 2.24 2.22 · 2.20 L 2 6 5 3 4 0



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK	
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2	
	Depth: 3.0	Sample Type: Shelby	Elevation:	
Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			ethod A)	
	Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 18 of 19 Stress: 250 psf 2.8 -2.7 -2.6 VOID RATIO 2.5 2.4 2.3 -2.2 -Т ' | ۱I 0.1 10 0.01 1 100 1000 TIME, min 2.8 -2.7 -2.6 VOID RATIO 2.5 0000 2.4 2.3 2.2 30 5 10 20 25 15 \cap



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK	
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2	
ь	Depth: 3.0	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 19 of 19 Stress: 100 psf 2.620 -2.615 -2.610 VOID RATIO 2.605 2.600 2.595 2.590 -0.1 10 0.01 1 TIME, min 2.620 -2.615 -2.610 Ð VOID RATIO 2.605 2.600 2.595 2.590 --|- 3.0 0.5 1.0 0.0 1.5 2.0 2.5

ATL	
Alaska Testlab	
Reviewed by	
Han Elferpsed	

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-01	Tested By: CZ	Checked By: MEK
	Sample No.: S2B	Test Date: 4/2/2022	Test No.: 2
	Depth: 3.0	Sample Type: Shelby	Elevation:
1	Description: ASTM D2435 One-Dim	nensional Consolidation of Soils (M	ethod A)
Remarks: ASTM D2487: PT Visual Classification: Peat			



Client:

Project:

Alaska Testlab – Anchorage 4040 B Street, Suite 102 Anchorage, AK 99503 Phone: 907-205-1987 Fax: 907-782-4409 info@alaskatestlab.com

Shelby Photo Log

Report No.: Issue No.: 1

:	CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503 FedEx Bog		
	8	Date Received:	March 21, 2022
-	73138.00	Sample #:	22-0250-S03 and S04



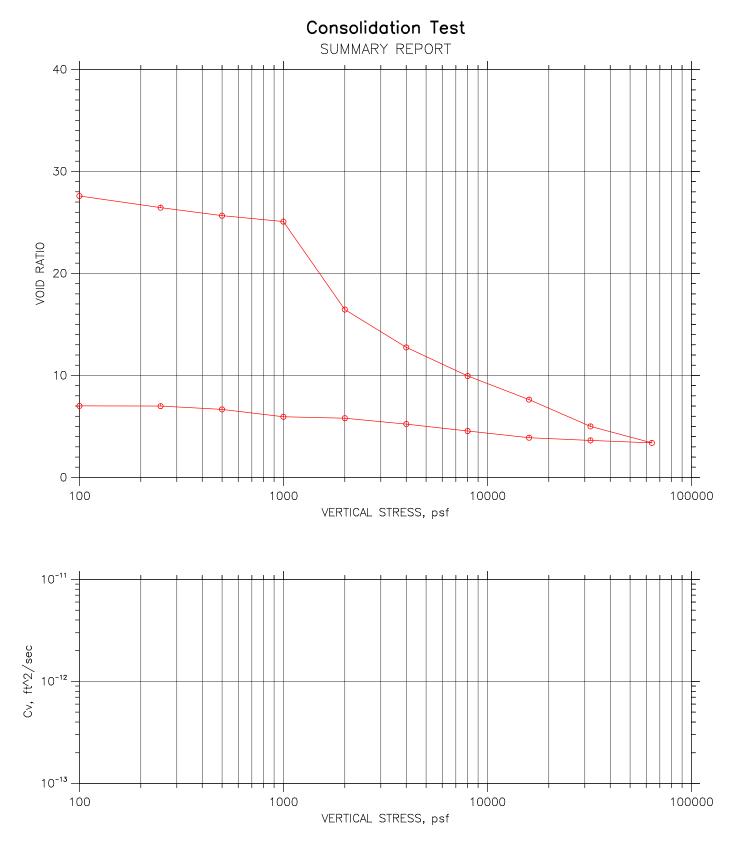
ATL
AIL

Exte	ernal Test Repo	ort	Issue No: 2	Г:22-0250-S04-1
Client:	CRW Engineering Group, LLC	Project Code: 220484		tain only to the items tested below. This report should not ut the prior written approval of Alaska Testlab or the agence
3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503		CC:		
Project:	FedEx Bog		-	Mar Exarpsen
			Reviewed By: Maria E Kampsen	
	73138.00			or Engineer
			Date: 4/26/2	
	ATL)	Anchorage, AK 99503 Phone: 907-205-1987 Fax: 907-782-4409 info@alaskatestlab.com	
	Shelby Phot	o Log	Report No.:	
			Issue No.:	1
		ering Group, LLC Ivd., Ste. 300 IK, 99503		
	Project: FedEx Bog		Date Received:	Marah 21, 2022
			Sample #:	March 21, 2022 22-0250-S03 and S04
	73138.00		oanpie #.	22 0200 000 und 004



Sample after extraction

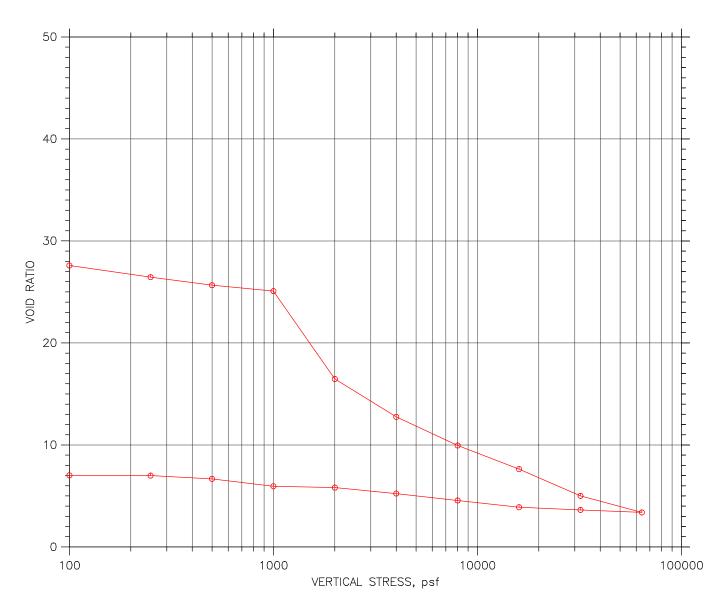




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
ATL	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
Alaska Testlab	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Mar Eterpsed	Remarks: ASTM D2487: PT Visual Classification: Peat			
- church the	Displacement at End of Primary			

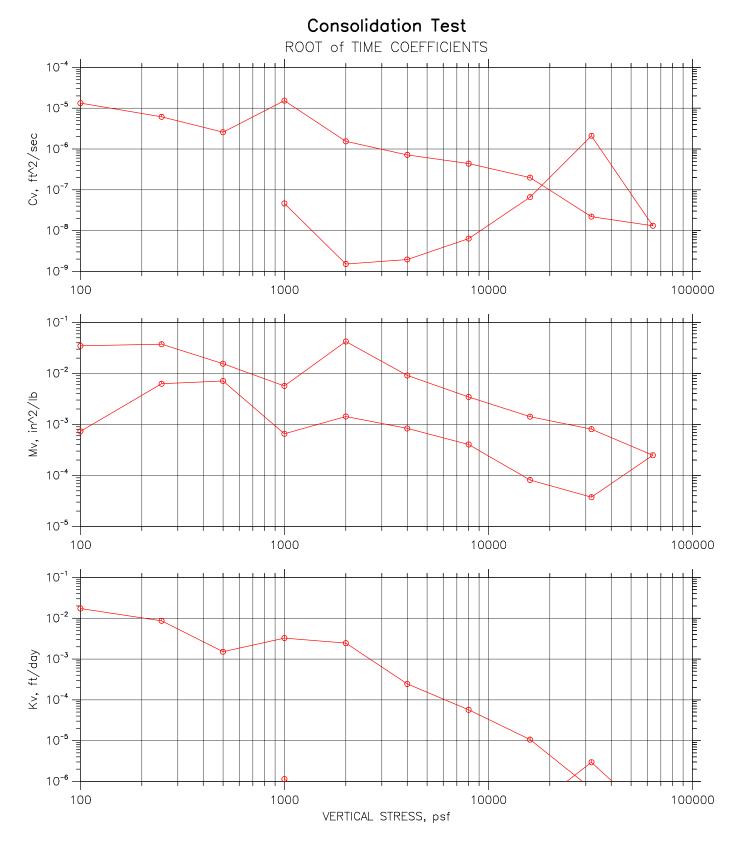
Consolidation Test

SUMMARY REPORT



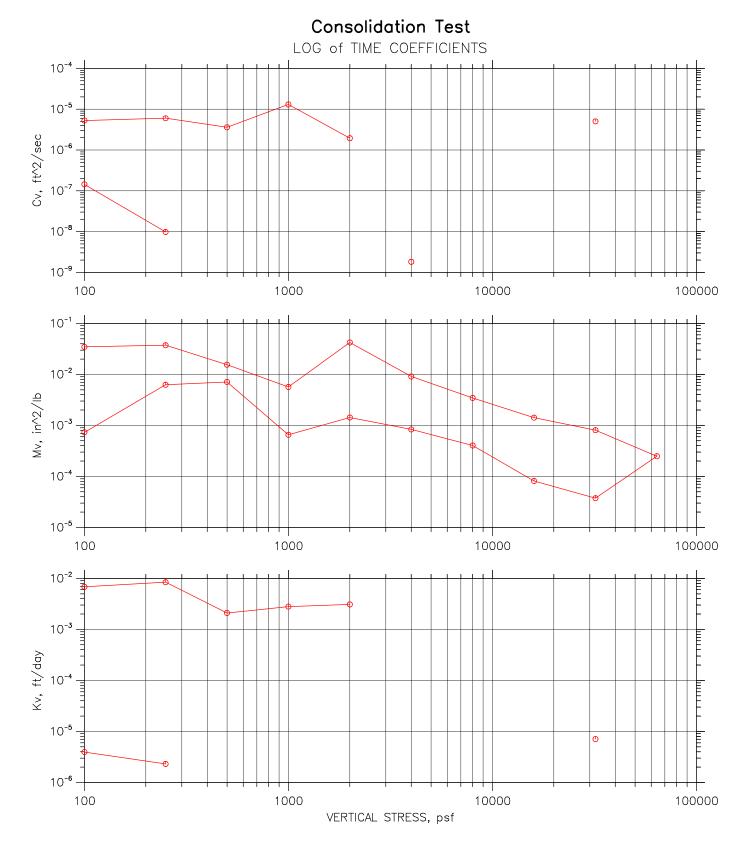
					Before Test	After Test
Overburden Pressure: 0 psf			Water Content, %	1756.56	639.41	
Preconsolidation Pressure: 0 psf			Dry Unit Weight, pcf	3.1967	11.687	
Compression Index: 0			Saturation, %	93.13	136.77	
Diameter: 2.495 in Height: 1 in		Void Ratio	28.29	7.01		
LL:	PL:	PI:	GS: 1.50	Back Pressure, psf	0	0

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
ATL	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1
Alaska Testlab	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Non Experie	Remarks: ASTM D2487: PT Visual Classification: Peat		
- charolatore	Displacement at End of Primary		

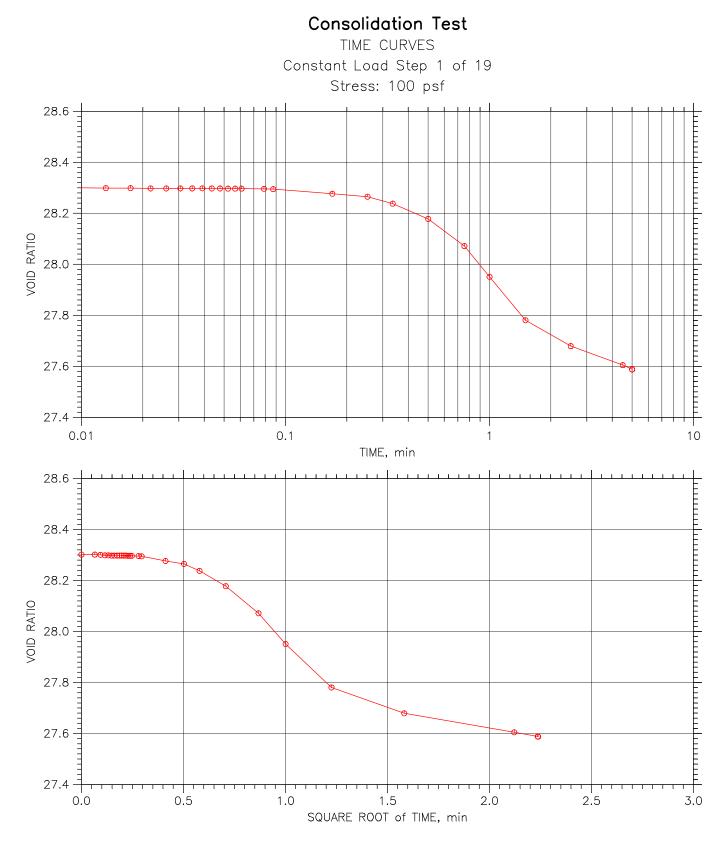


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK		
ATL	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1		
aska Testlab	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:		
ed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)				
Han Etforpsen	Remarks: ASTM D2487: PT Visual Classification: Peat				
operation	Displacement at End of Primary				

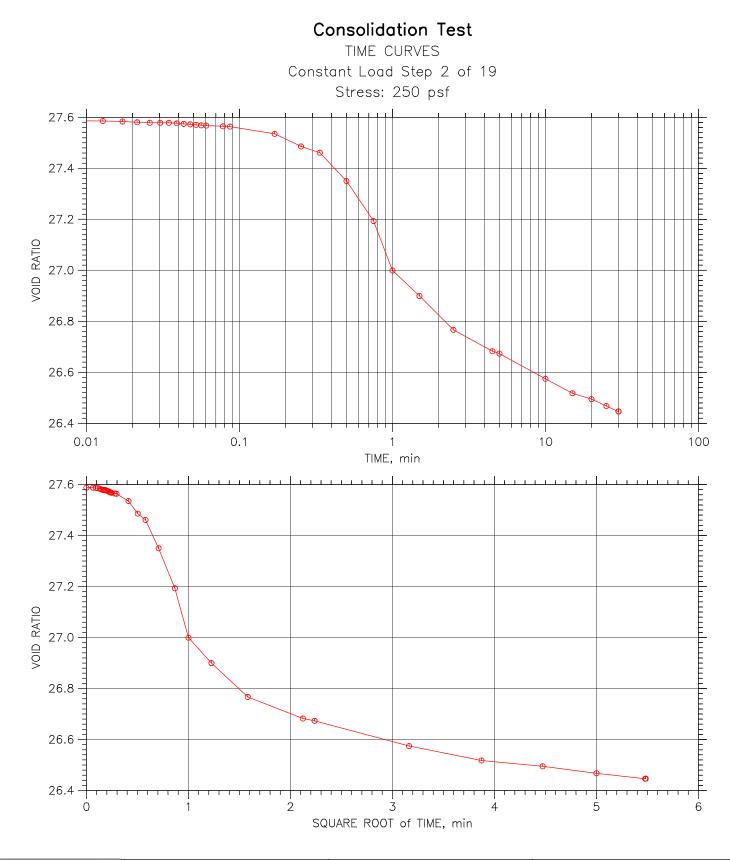
Ala



-	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK		
ATL	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1		
Alaska Testlab	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:		
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)				
Han Exprese	Remarks: ASTM D2487: PT Visual Classification: Peat				
- churcheter	Displacement at End of Primary				



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
ATL	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1
Alaska Testlab	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
HanEterpsed	Remarks: ASTM D2487: PT Visual Classification: Peat		
- Marcharter			





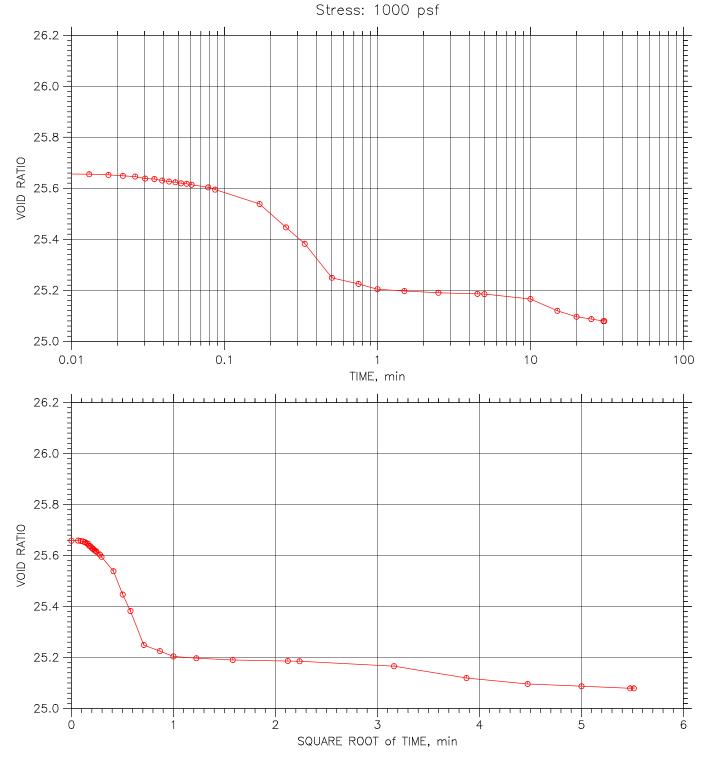
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1
,	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	ethod A)	
	Remarks: ASTM D2487: PT Visual Classification: Peat		

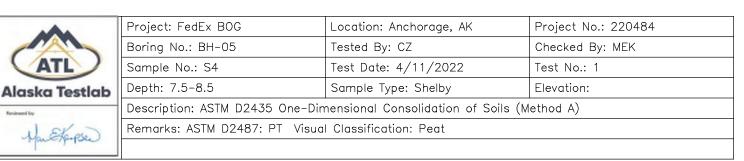
Consolidation Test TIME CURVES Constant Load Step 3 of 19 Stress: 500 psf 26.8 -26.6 26.4 VOID RATIO 26.2 26.0 25.8 25.6 -П 0.1 0.01 1 10 100 TIME, min 26.8 -26.6 26.4 VOID RATIO 26.2 26.0 25.8 25.6 6 2 3 5 0 4 SQUARE ROOT of TIME, min

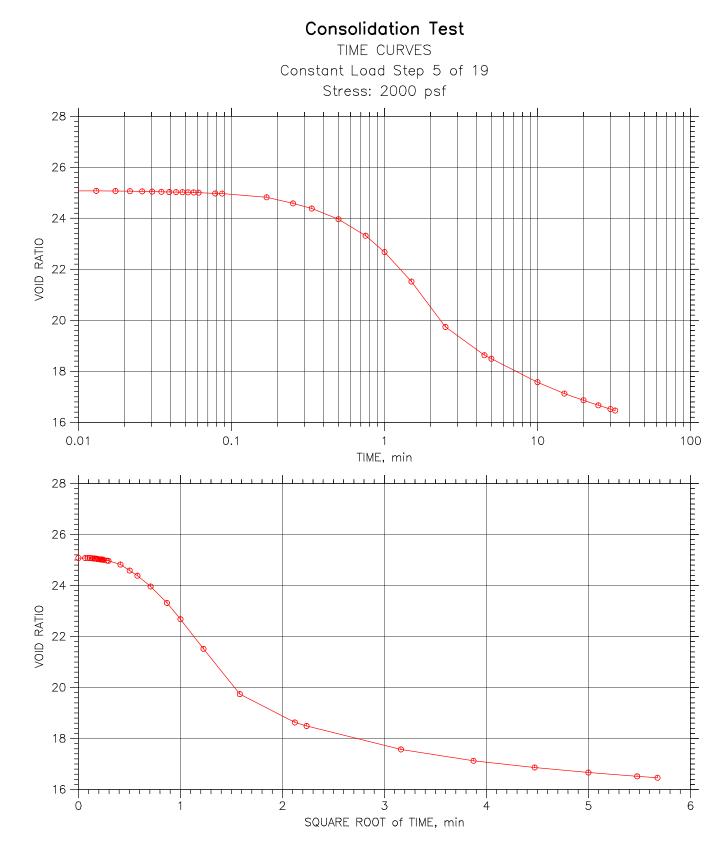
Alaska Testlab

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 4 of 19

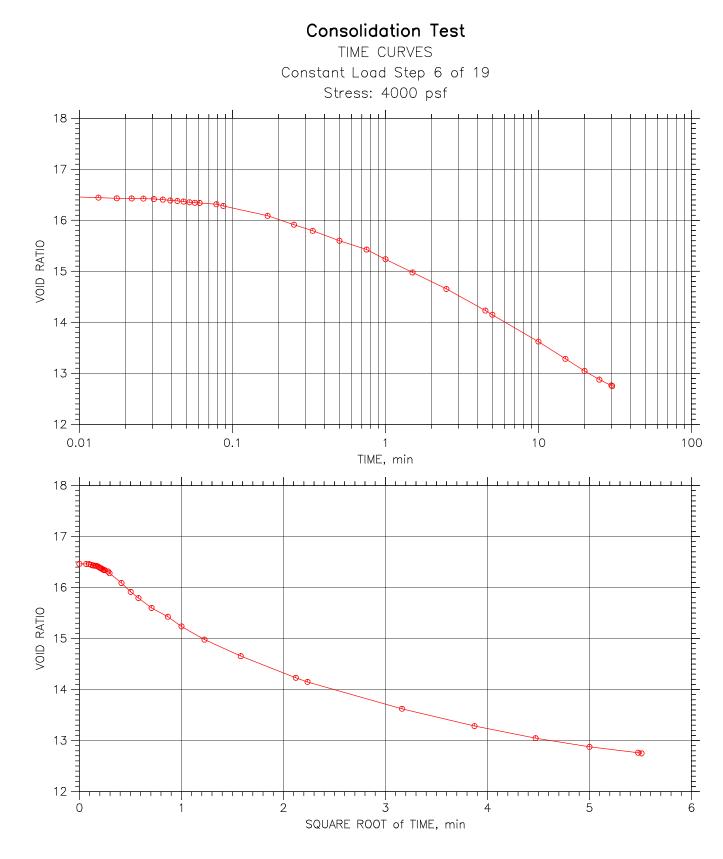








	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK		
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1		
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:		
1	Description: ASTM D2435 One-Din	ethod A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat				



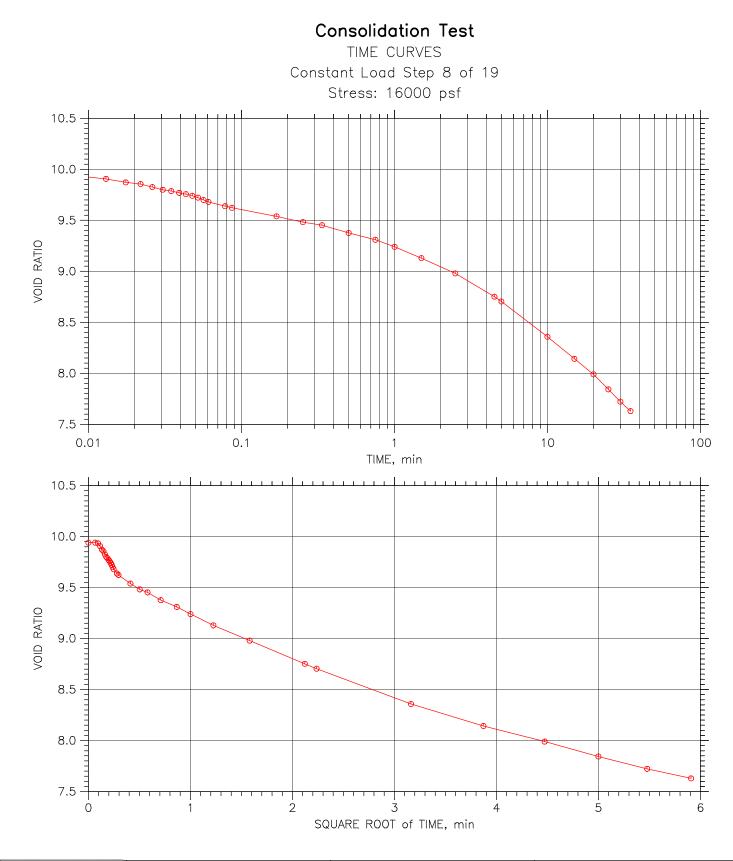


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
,	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visua			

Consolidation Test TIME CURVES Constant Load Step 7 of 19 Stress: 8000 psf 15 -14 -13 -VOID RATIO 12 11 10 9 – П 0.1 10 0.01 1 100 TIME, min 15 -14 13 VOID RATIO 12 11 10 9 6 2 ż 5 0 4 1

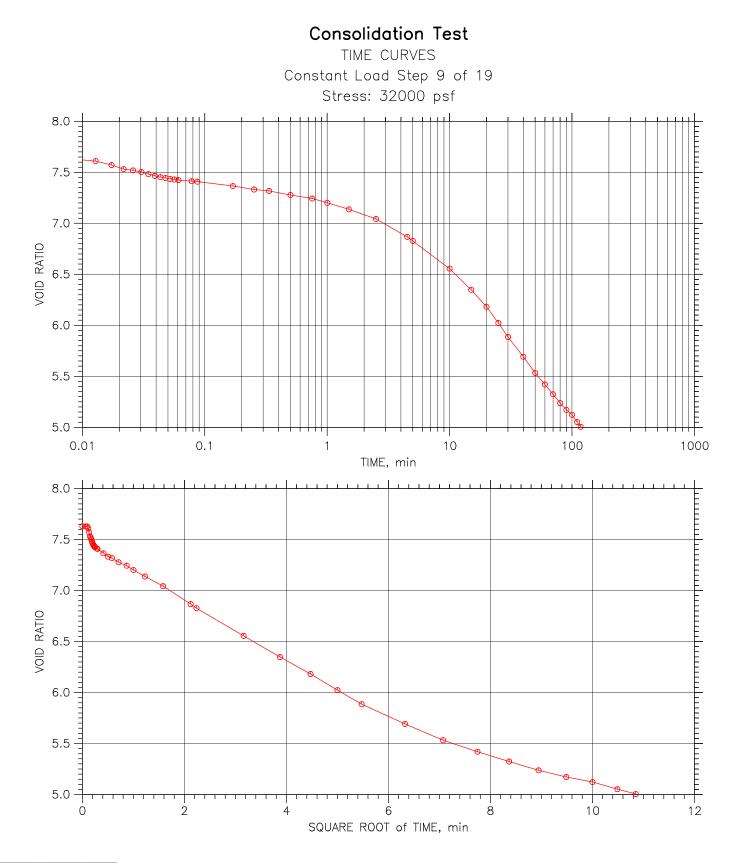


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			



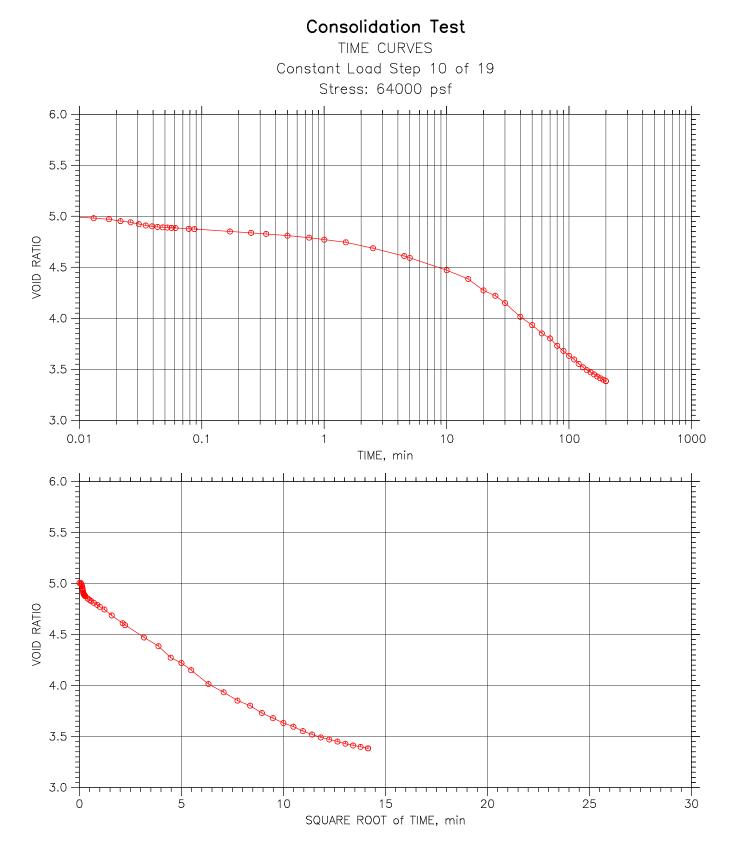


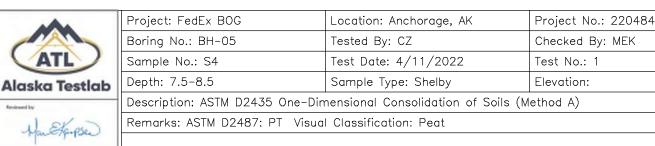
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
,	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visua			

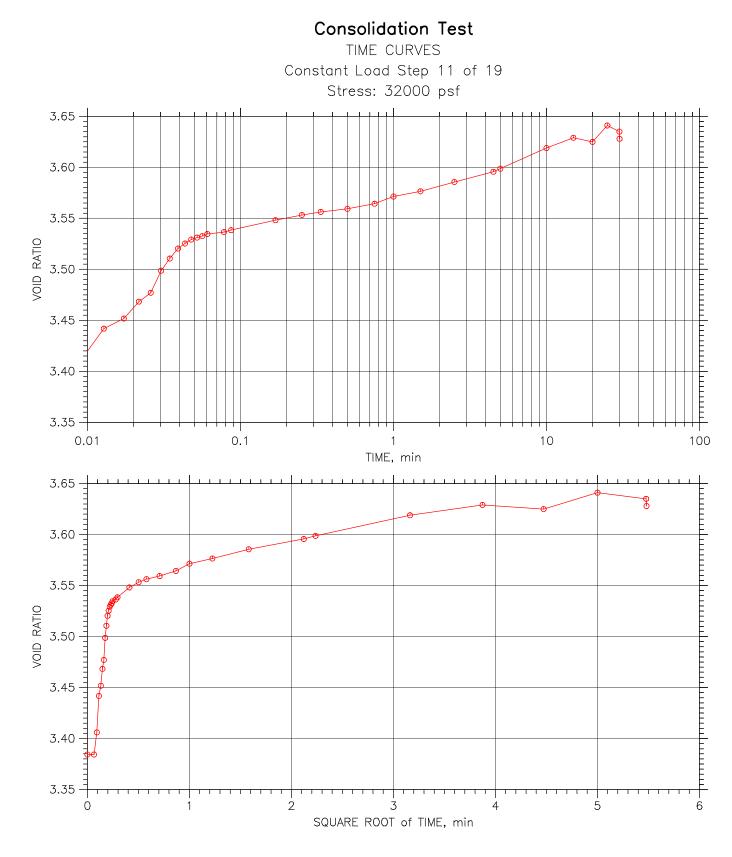




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Remarks: ASTM D2487: PT Visual Classification: Peat				

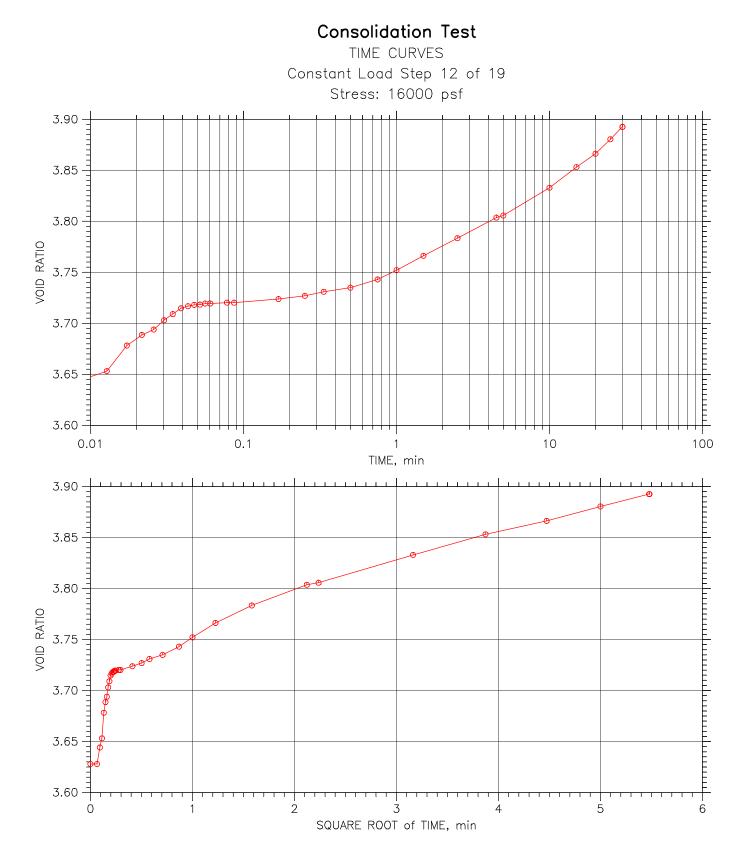








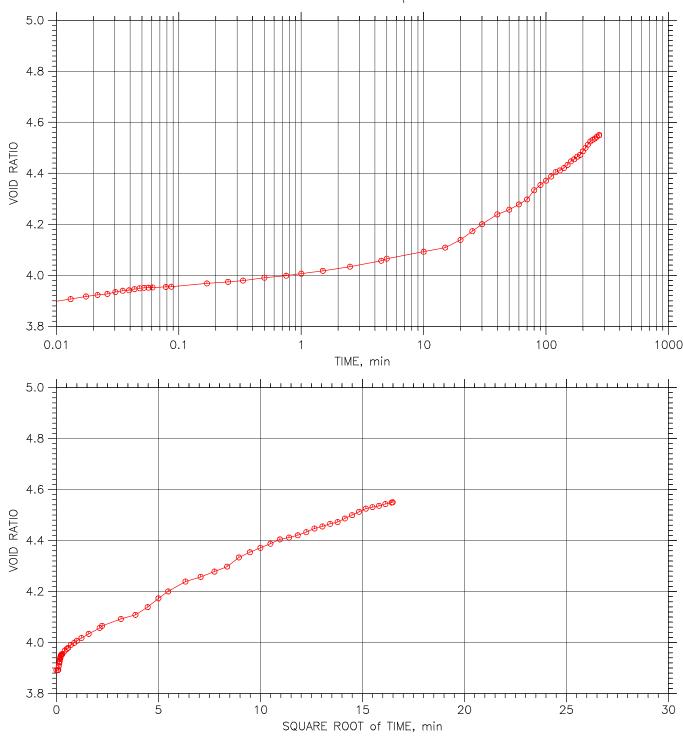
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual			



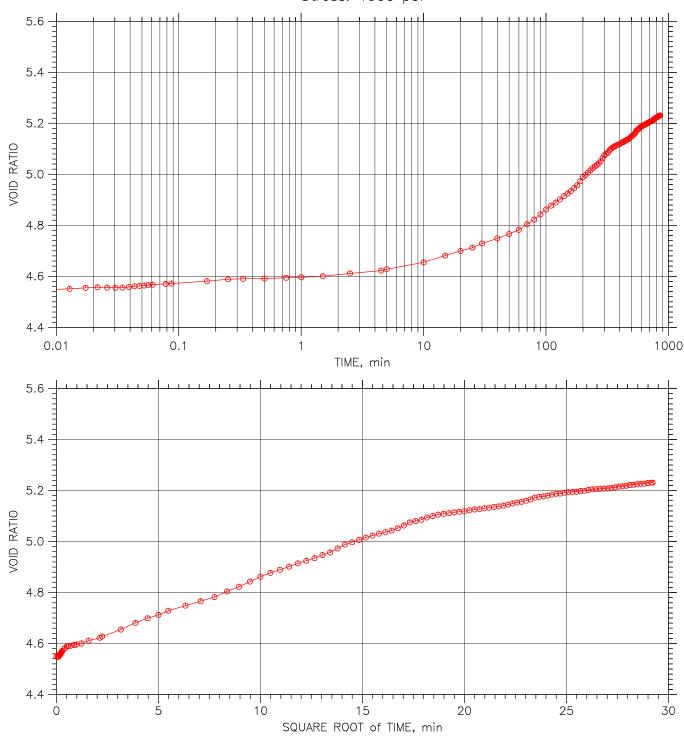


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visua	l Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 13 of 19 Stress: 8000 psf



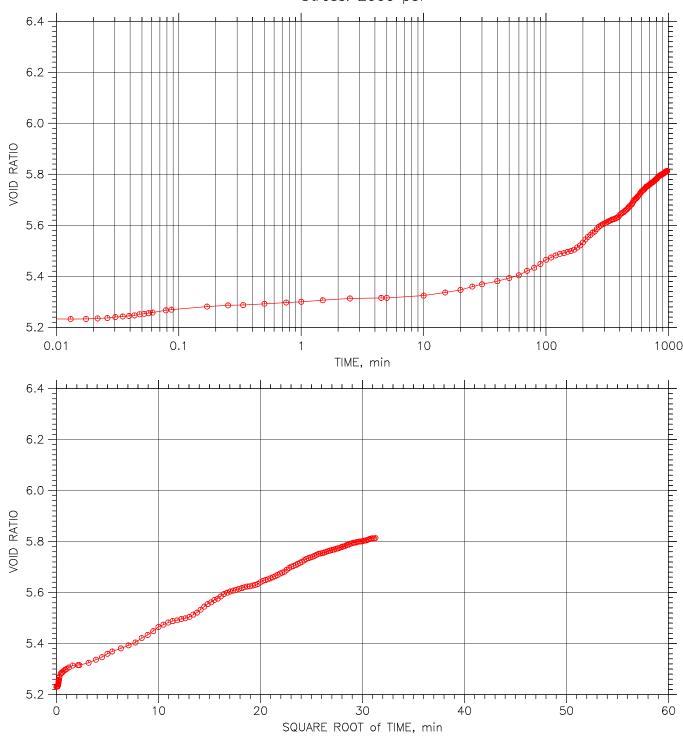
Consolidation Test TIME CURVES Constant Load Step 14 of 19 Stress: 4000 psf





1	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Remarks: ASTM D2487: PT Visual Classification: Peat				

Consolidation Test TIME CURVES Constant Load Step 15 of 19 Stress: 2000 psf



Project No.: 220484

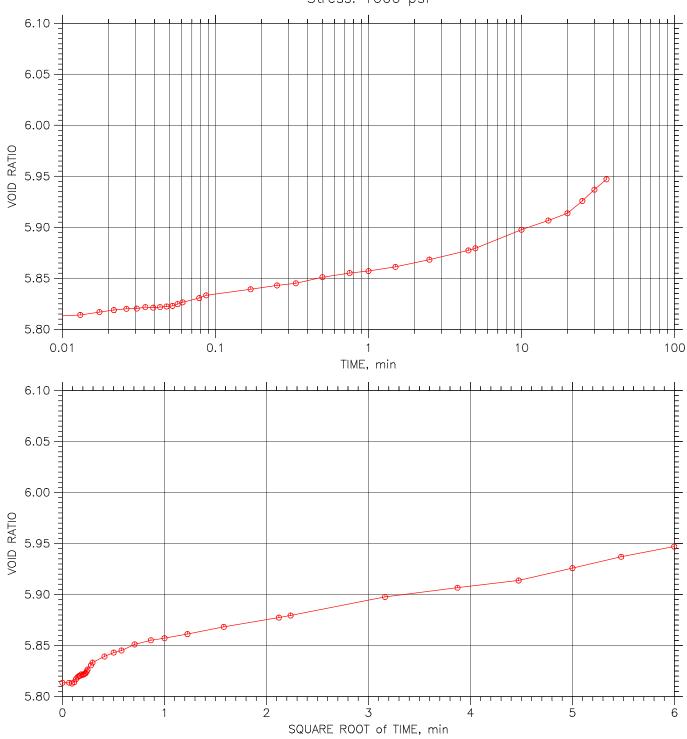
Checked By: MEK

Test No.: 1

Elevation:

	ATL	Project: FedEx BOG	Location: Anchorage, AK	Project N	
		Boring No.: BH-05	Tested By: CZ	Checked	
		Sample No.: S4	Test Date: 4/11/2022	Test No.:	
	Alaska Testlab	Depth: 7.5-8.5	Sample Type: Shelby	Elevation	
	Resinand by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Handkerpsen	Remarks: ASTM D2487: PT Visual	l Classification: Peat		

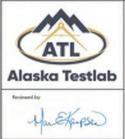
Consolidation Test TIME CURVES Constant Load Step 16 of 19 Stress: 1000 psf





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual	l Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 17 of 19 Stress: 500 psf 7.0 -6.8 6.6 VOID RATIO 6.4 6.2 6.0 -5.8-Т Т ۱I 0.1 10 100 1000 0.01 1 TIME, min 7.0 -6.8 DOOD 6.6 VOID RATIO 6.4 6.2 6.0 5.8 30 10 5 20 25 15 \cap



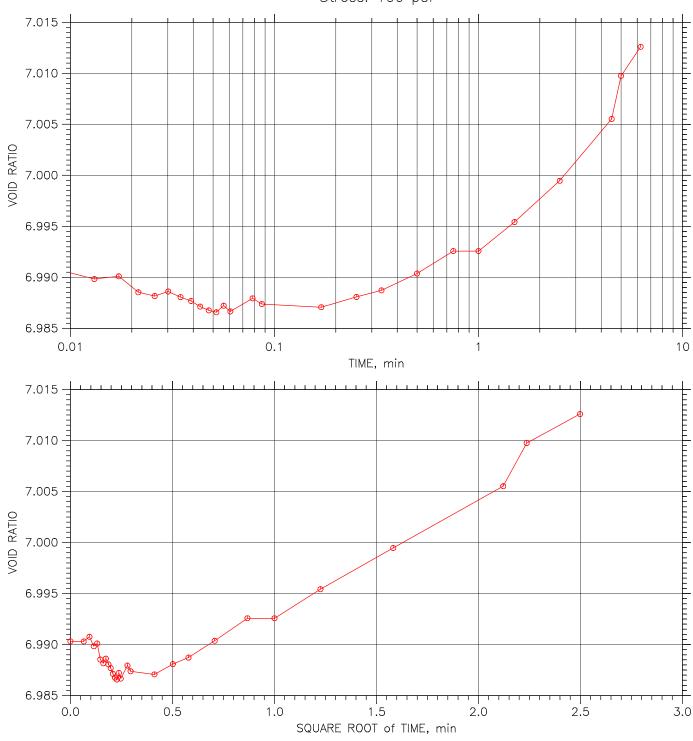
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 18 of 19 Stress: 250 psf 7.2 -7.1 -7.0 -VOID RATIO 6.9 6.8 6.7 -6.6 -Т Т ۱I 0.1 10 100 1000 0.01 1 TIME, min 7.2 -7.1 -7.0 VOID RATIO 6.9 6.8 6.7 -6.6 12 2 8 10 4 6 \cap SQUARE ROOT of TIME, min



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Remarks: ASTM D2487: PT Visual Classification: Peat				

Consolidation Test TIME CURVES Constant Load Step 19 of 19 Stress: 100 psf





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/11/2022	Test No.: 1	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			



Alaska Testlab – Anchorage 4040 B Street, Suite 102 Anchorage, AK 99503 Phone: 907-205-1987 Fax: 907-782-4409 info@alaskatestlab.com

Shelby Photo Log

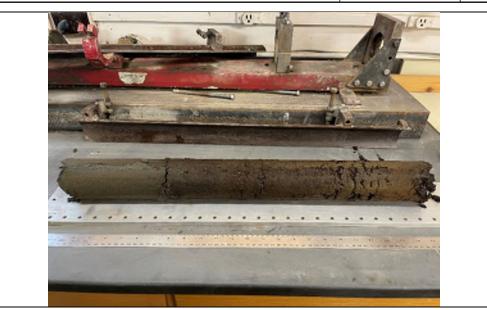
 Report No.:
 1

Client: CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503

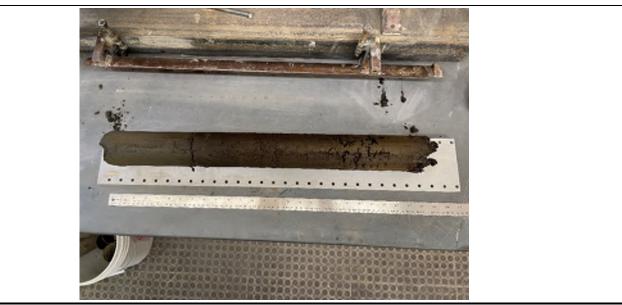
Project: FedEx Bog

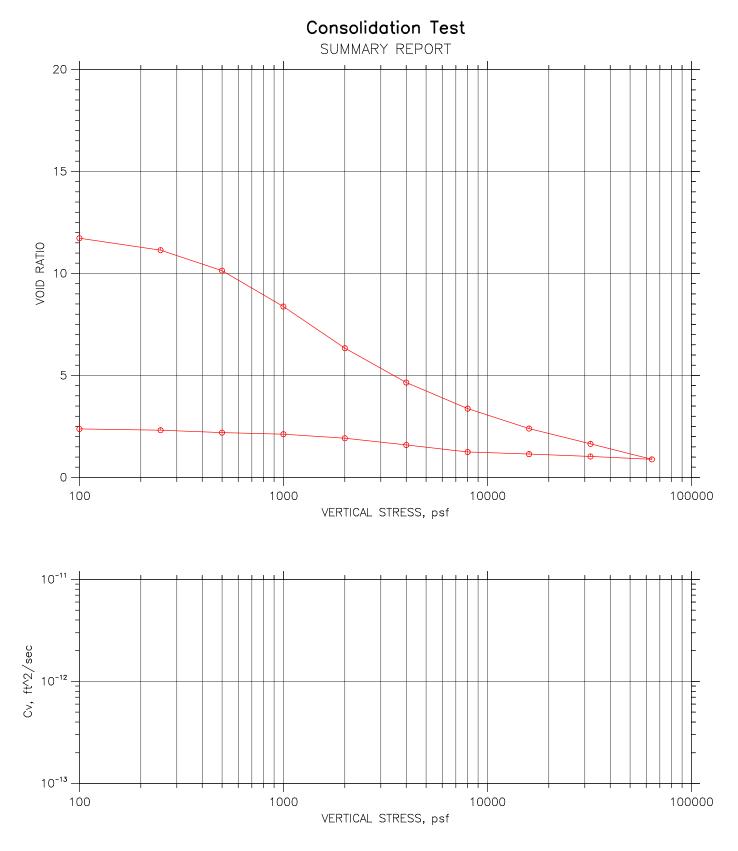
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Date Received:	March 21, 2022
Sample #:	22-0258-S04 and S05
Material:	BH-05 Sa4



Sample after extraction

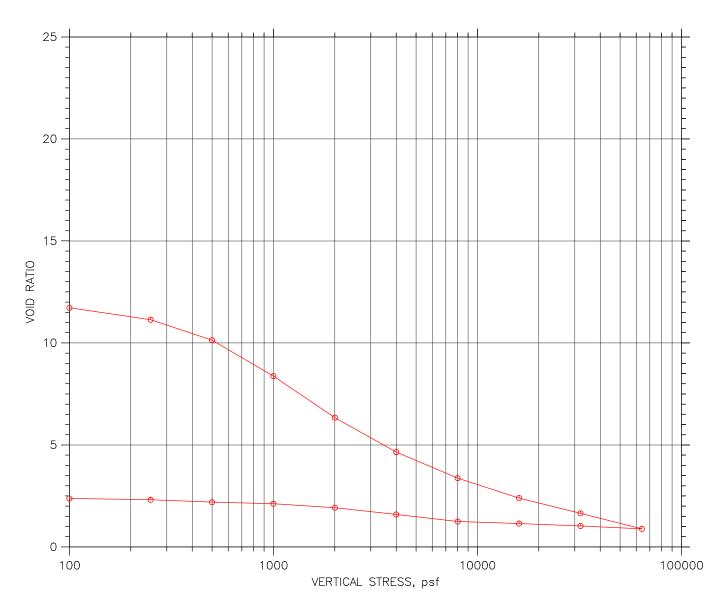




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
ATL	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
Alaska Testlab	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
Reviewed by	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	lethod A)
Han Eterpsen	Remarks: ASTM D2487: PT Visual Classification: Peat		
- Harrister	Displacement at End of Primary		

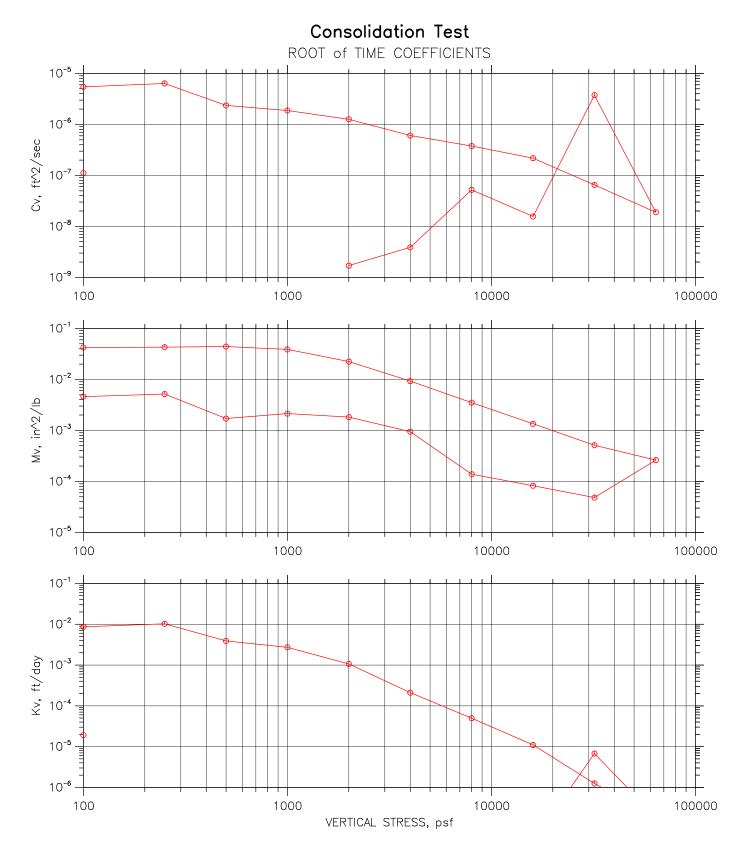
Consolidation Test

SUMMARY REPORT

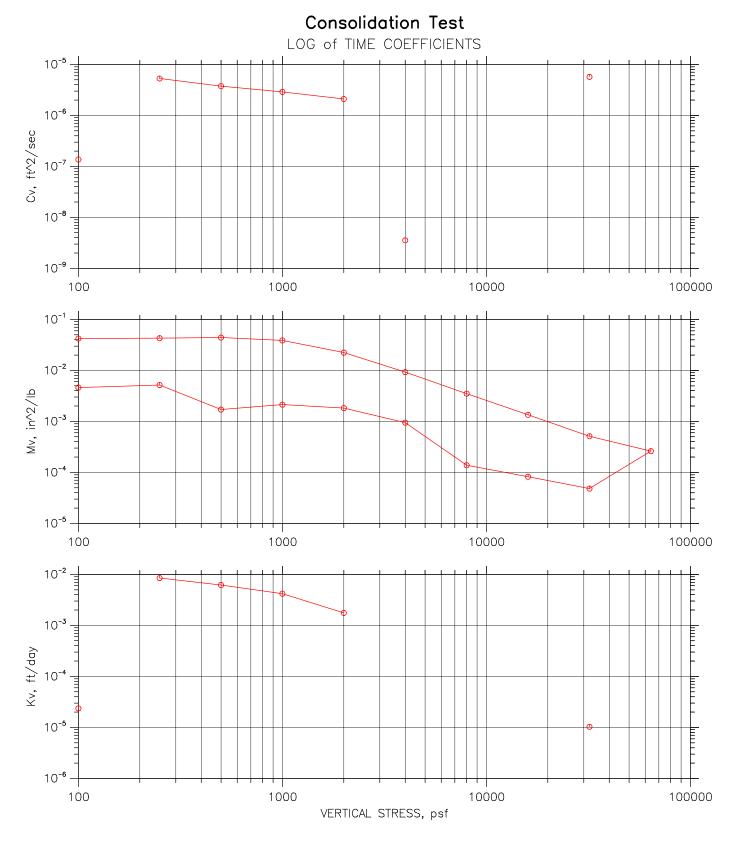


					Before Test	After Test
Overburden Pressure: 0 psf			Water Content, %	554.63	177.32	
Preconsolidatio	Preconsolidation Pressure: 0 psf			Dry Unit Weight, pcf	8.096	31.449
Compression Ir	Compression Index: 0			Saturation, %	77.87	126.94
Diameter: 2.49	3 in	in Height: 0.9999 in		Void Ratio	12.11	2.37
LL:	PL:	PI:	GS: 1.70	Back Pressure, psf	0	0

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
ATL	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2	
Alaska Testlab	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
Reviewed by	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (N	lethod A)	
Non Exposed	Remarks: ASTM D2487: PT Visual Classification: Peat			
Displacement at End of Primary				

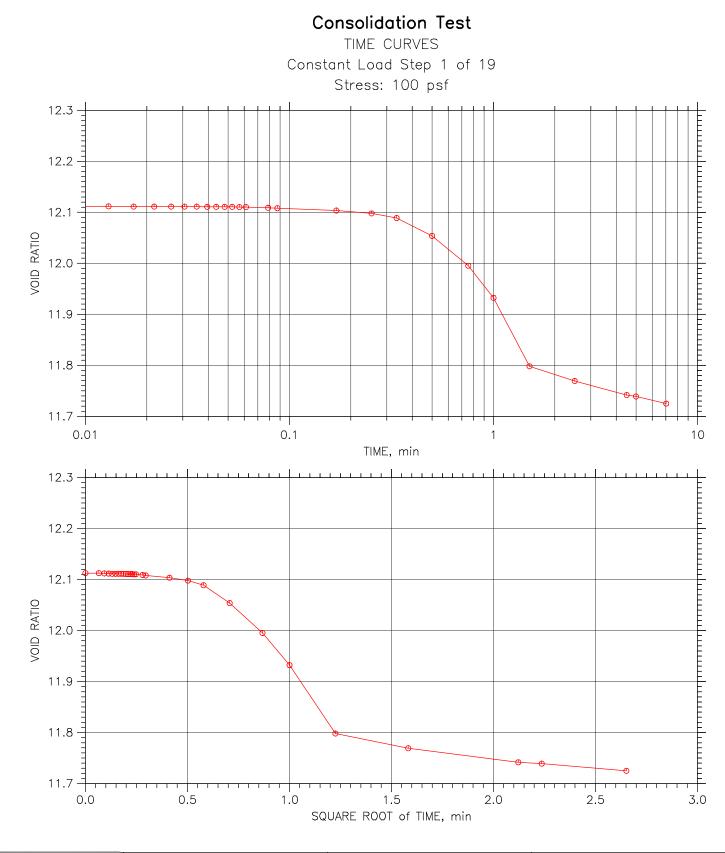


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
ATL	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
Alaska Testlab	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
Reviewed by	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	lethod A)
Mar Eterpsed	Remarks: ASTM D2487: PT Visual Classification: Peat		
- charce better	Displacement at End of Primary		



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK		
ATL	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2		
aska Testlab	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:		
and by	Description: ASTM D2435 One-Dim	nensional Consolidation of Soils (M	ethod A)		
Han Experie	Remarks: ASTM D2487: PT Visual Classification: Peat				
- Marcinetae	Displacement at End of Primary				

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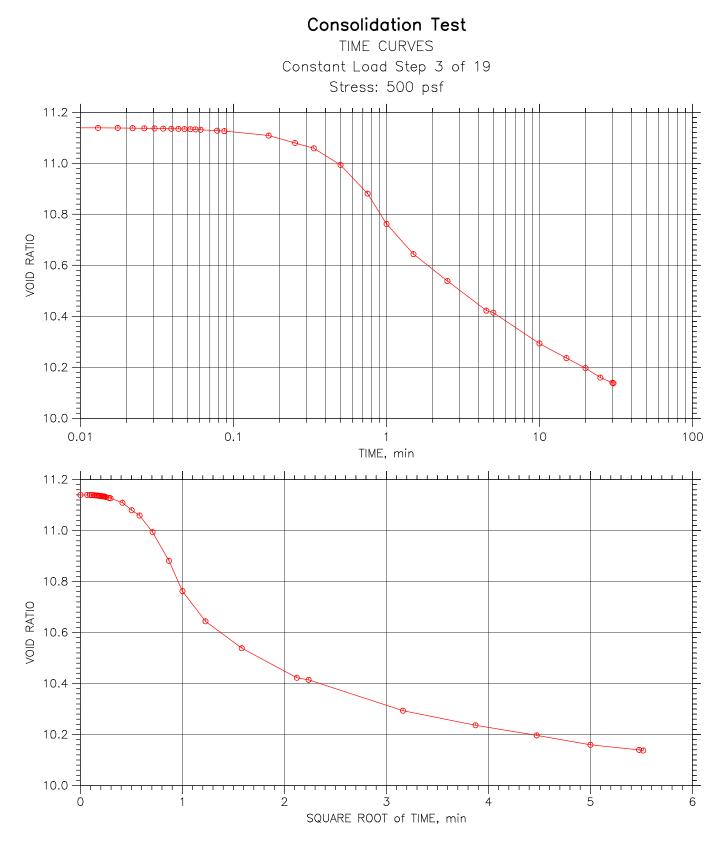


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
1	Description: ASTM D2435 One-Dim	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visual	Classification: Peat	

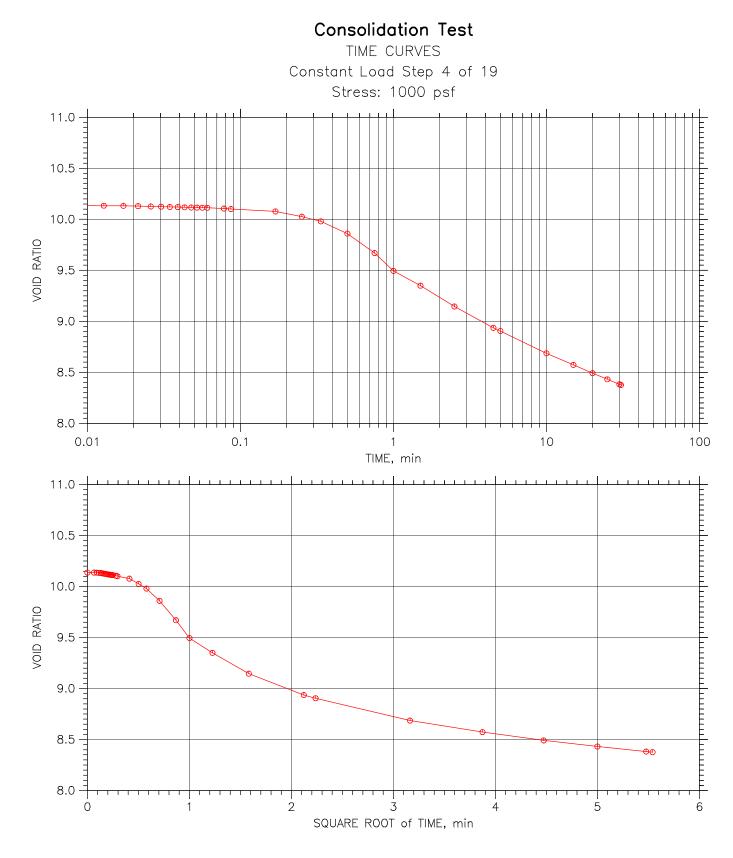
Consolidation Test TIME CURVES Constant Load Step 2 of 19 Stress: 250 psf 12.2 -12.0 -11.8 -VOID RATIO 11.6 11.4 11.2 -11.0 -П 0.1 10 0.01 1 100 TIME, min 12.2 -12.0 11.8 VOID RATIO 11.6 11.4 11.2 -11.0 6 2 5 0 3 4 1



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)	
Remarks: ASTM D2487: PT Visual Classification: Peat				

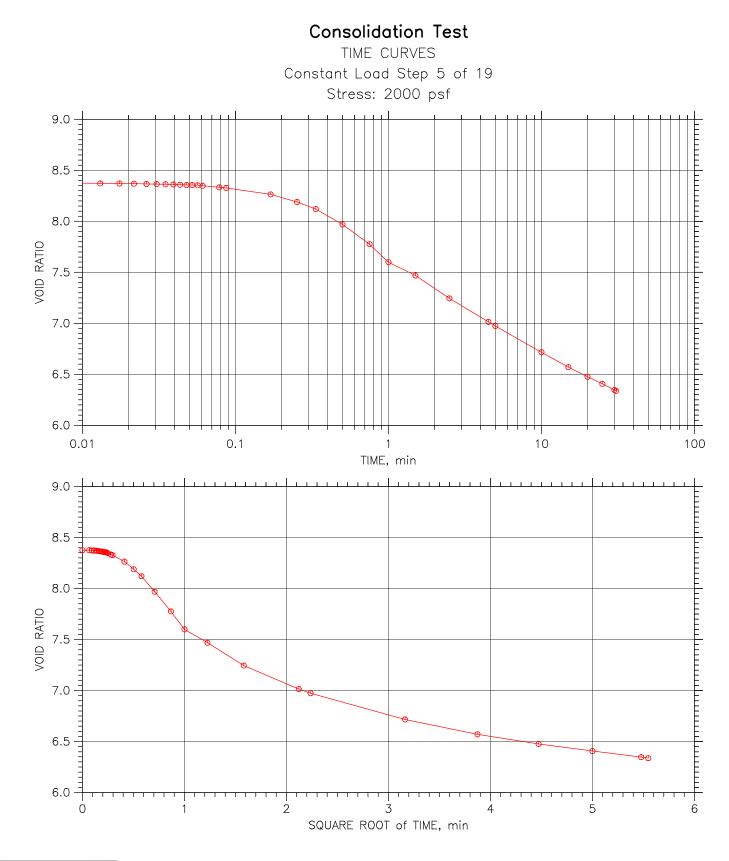


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
ATL	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
Alaska Testlab	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
Resinant by	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	lethod A)
Han Eterpsen	Remarks: ASTM D2487: PT Visual Classification: Peat		
- churchalon			





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2	
,	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)	
	Remarks: ASTM D2487: PT Visual Classification: Peat			

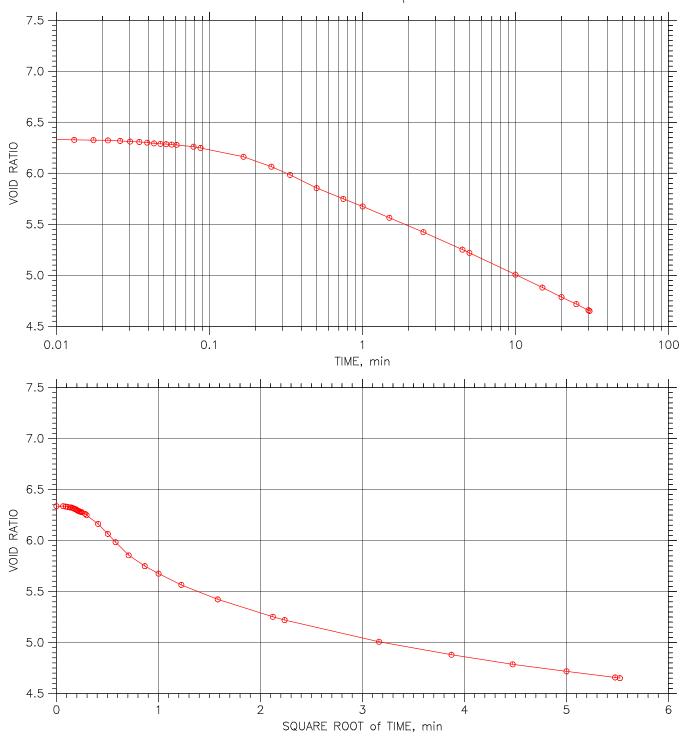




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
1	Description: ASTM D2435 One-Dim	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visual	Classification: Peat	

Consolidation Test

TIME CURVES Constant Load Step 6 of 19 Stress: 4000 psf

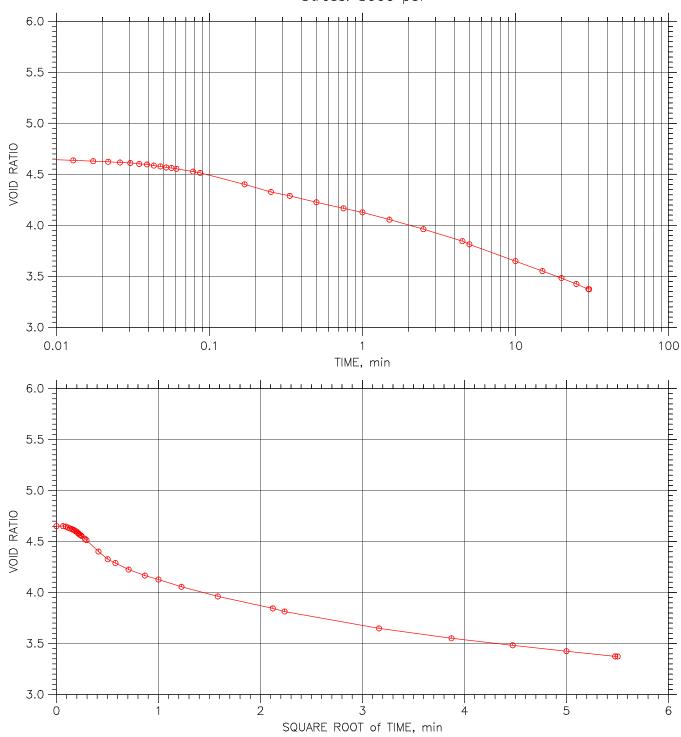


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	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
>	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual	Classification: Peat	

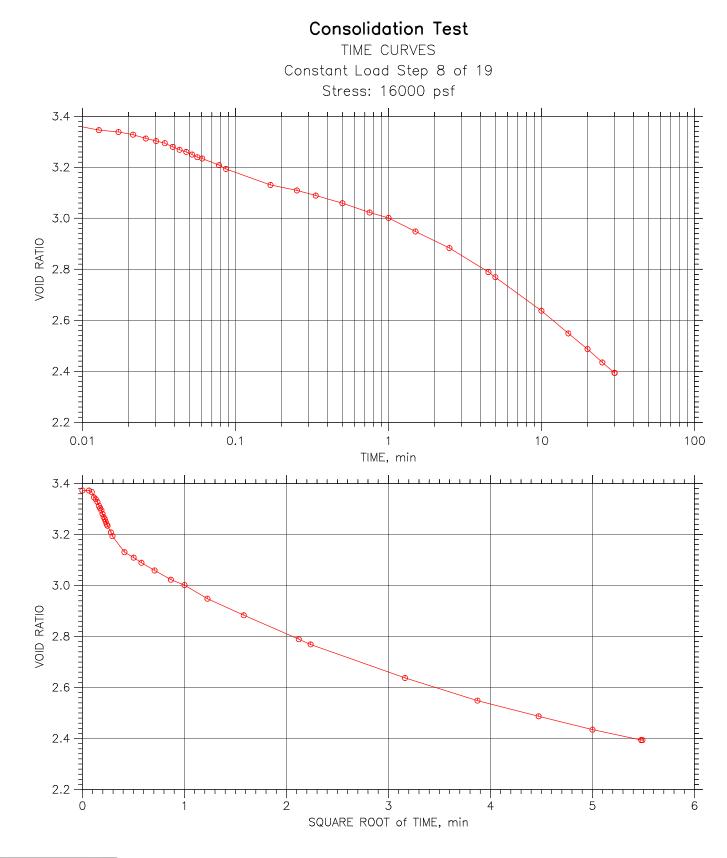
Consolidation Test

TIME CURVES Constant Load Step 7 of 19 Stress: 8000 psf





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visua	Classification: Peat	





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 9 of 19 Stress: 32000 psf 2.8 -2.6 -2.4 VOID RATIO 2.2 2.0 1.8 1.6 -П 0.1 10 0.01 1 100 TIME, min 2.8 -2.6 2.4 VOID RATIO 2.2 2.0 1.8 1.6 6 2 ż 5 0 4 1



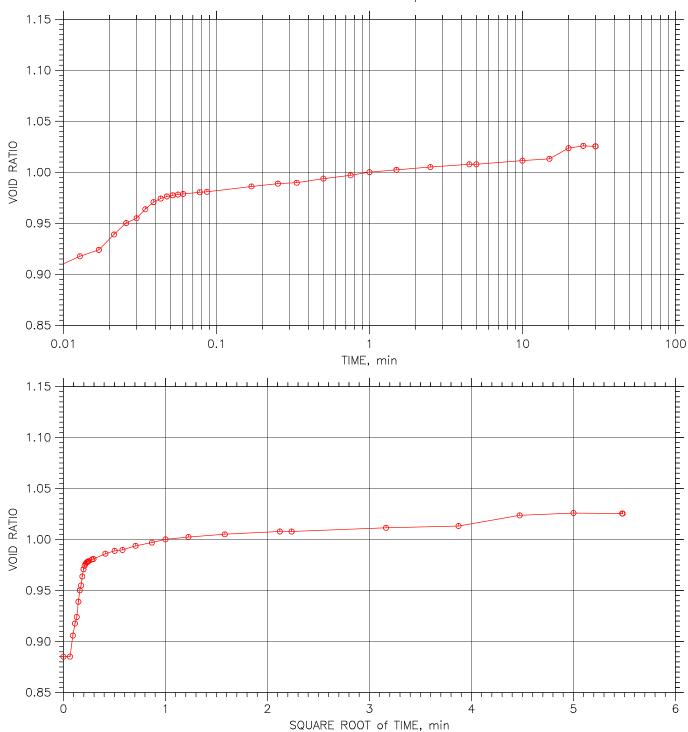
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 10 of 19 Stress: 64000 psf 2.0 -1.8 1.6 VOID RATIO 1.4 1.2 1.0 0.8-П 0.1 10 0.01 1 100 TIME, min 2.0 -1.8 1.6 VOID RATIO 1.4 1.2 1.0 0.8 12 2 10 8 4 6 0 SQUARE ROOT of TIME, min



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
,	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 11 of 19 Stress: 32000 psf



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	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
,	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 12 of 19 Stress: 16000 psf 1.30 -1.25 -1.20 VOID RATIO 1.15 1.10 1.05 -1.00 -۲I 0.1 10 0.01 1 100 TIME, min 1.30 -1.25 1.20 VOID RATIO 1.15 1.10 1.05 -1.00 12 2 8 10 4 6 0 SQUARE ROOT of TIME, min



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 13 of 19 Stress: 8000 psf 1.26 -1.24 -1.22 VOID RATIO 1.20 1.18 1.16 -1.14 -I 0.1 10 0.01 1 100 TIME, min 1.26 -1.24 -1.22 VOID RATIO 1.20 1.18 1.16 -1.14 Т 2 6 5 3 4 0

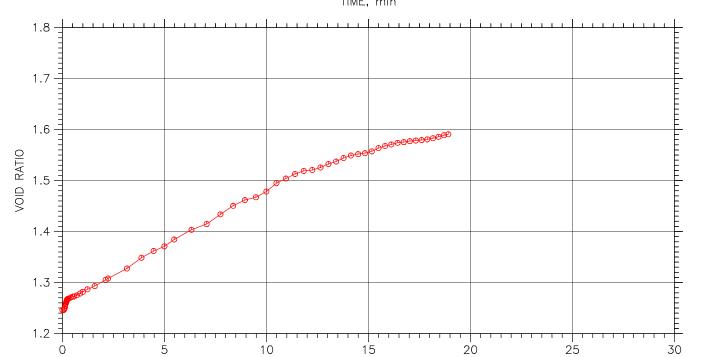


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visua	Classification: Peat	

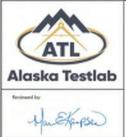
Consolidation Test TIME CURVES Constant Load Step 14 of 19 Stress: 4000 psf

Т

1000



SQUARE ROOT of TIME, min



1.8 -

1.7 -

1.6

1.4

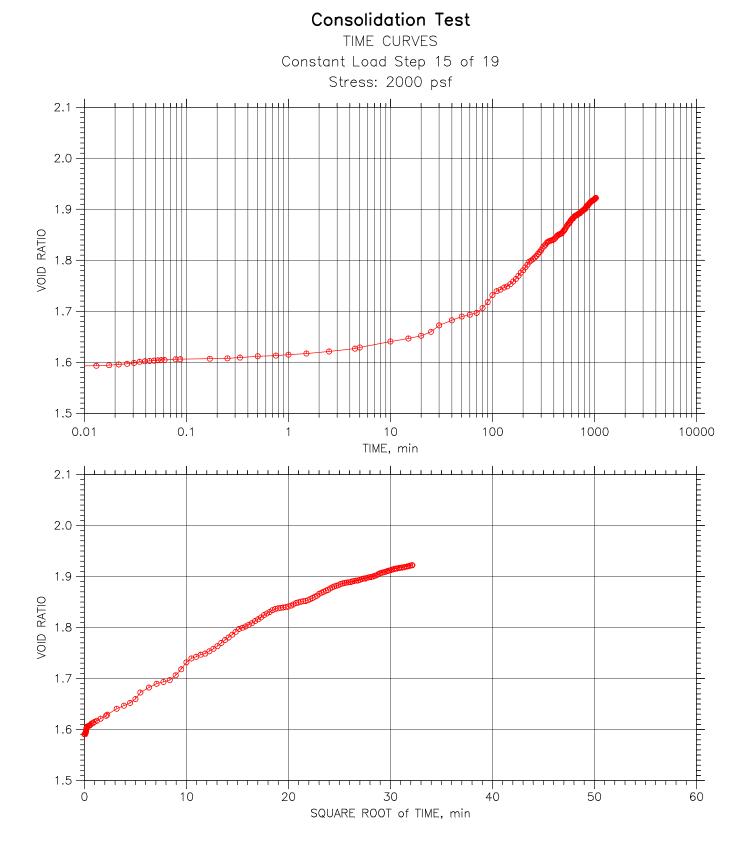
1.3 -

1.2 -

0.01

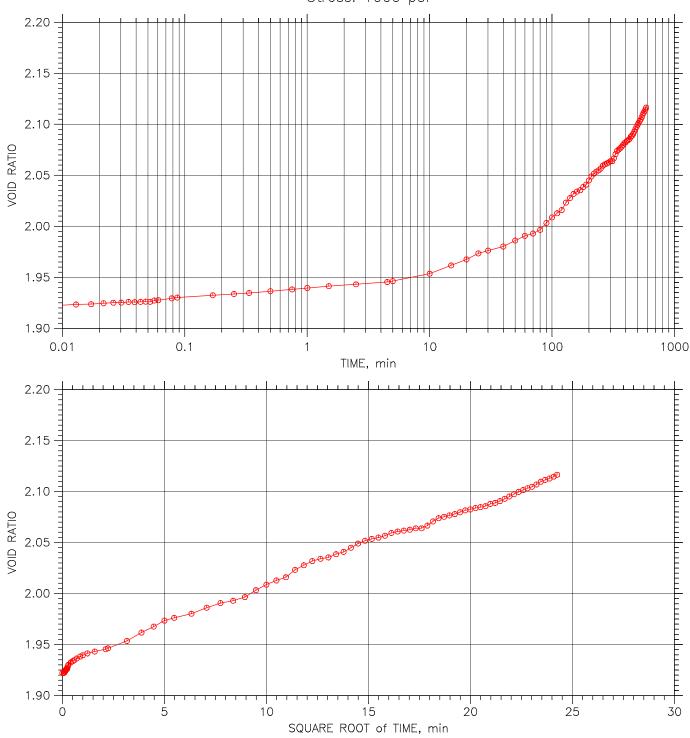
OILA 1.2

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			



Project: FedEx BOGLocation: Anchorage, AKProject No.: 220484Boring No.: BH-05Tested By: CZChecked By: MEKSample No.: S4Test Date: 4/13/2022Test No.: 2Depth: 7.5-8.5Sample Type: ShelbyElevation:Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)Remarks: ASTM D2487: PTVisual Classification: Peat

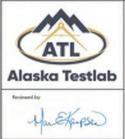
Consolidation Test TIME CURVES Constant Load Step 16 of 19 Stress: 1000 psf





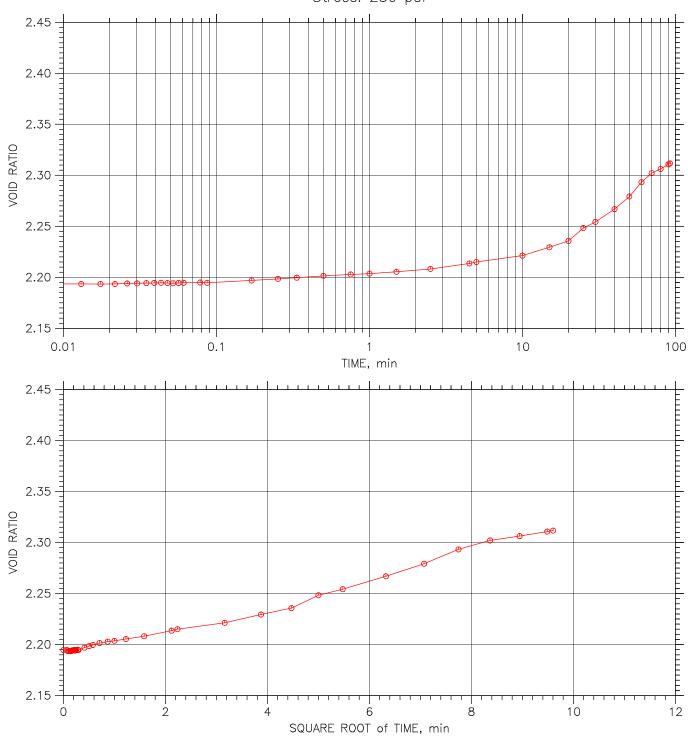
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
•	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 17 of 19 Stress: 500 psf 2.22 -2.20 -2.18 VOID RATIO 2.16 2.14 2.12 -2.10 -۲I 0.1 0.01 1 10 100 TIME, min 2.22 -2.20 2.18 VOID RATIO 2.16 2.14 2.12 -2.10 12 2 8 10 4 6 0



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK
•	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:
	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visua	l Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 18 of 19 Stress: 250 psf

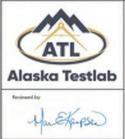




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2	
	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Remarks: ASTM D2487: PT Visual Classification: Peat				

Consolidation Test TIME CURVES Constant Load Step 19 of 19 Stress: 100 psf 2.42 -2.40 -2.38 VOID RATIO 2.36 2.34 2.32 -2.30 -11 0.1 0.01 1 10 100 TIME, min 2.42 -2.40 2.38 Ø VOID RATIO 2.36 2.34 2.32 -2.30 Т 2 6 5 3 4 \cap

SQUARE ROOT of TIME, min



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-05	Tested By: CZ	Checked By: MEK	
	Sample No.: S4	Test Date: 4/13/2022	Test No.: 2	
ь	Depth: 7.5-8.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			



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Shelby Photo Log

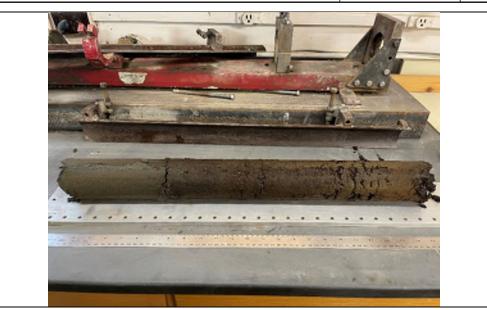
 Report No.:
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Client: CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503

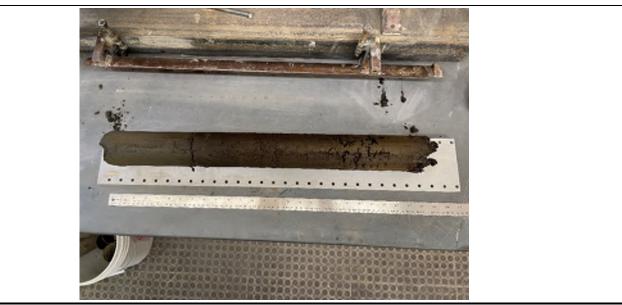
Project: FedEx Bog

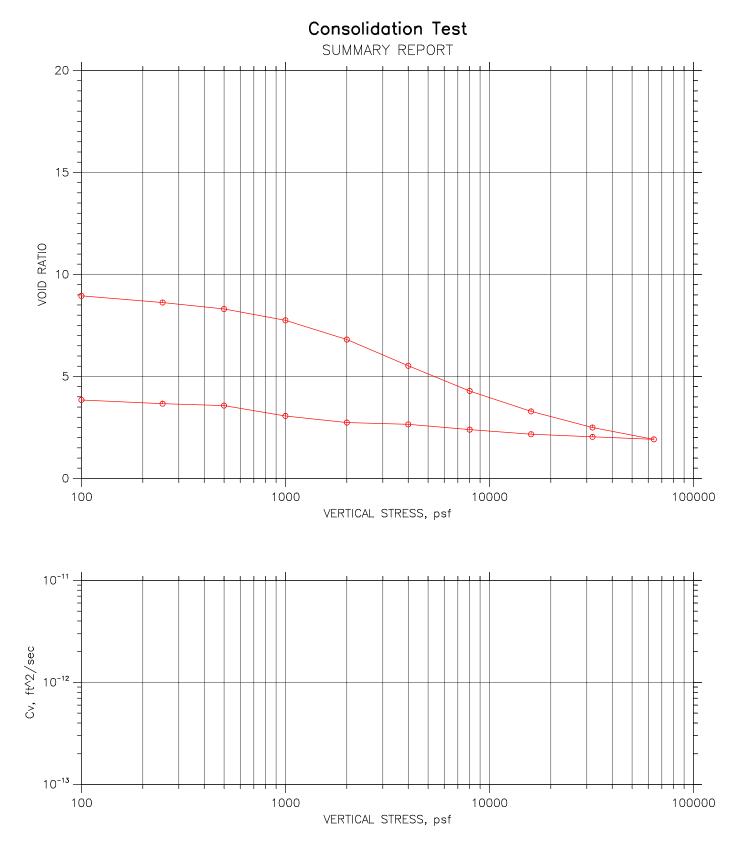
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Date Received:	March 21, 2022
Sample #:	22-0258-S04 and S05
Material:	BH-05 Sa4



Sample after extraction

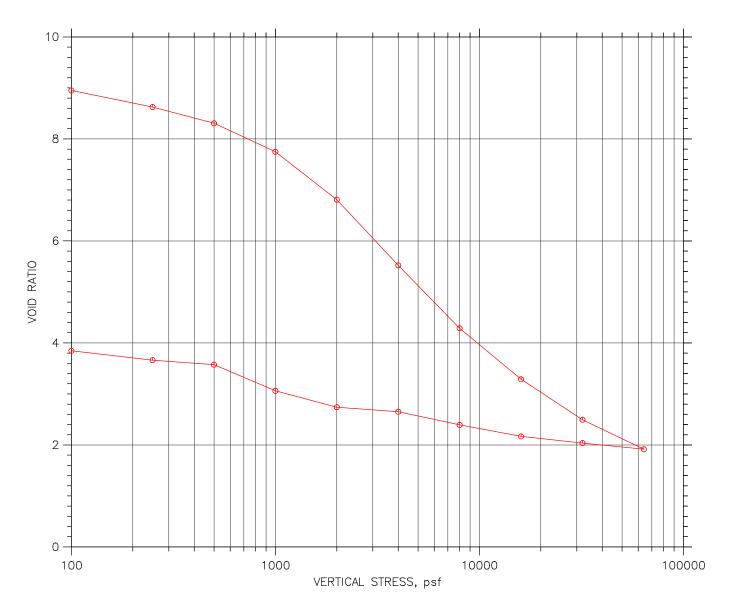




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484			
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK			
ATL	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1			
Alaska Testlab	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:			
Resinand by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)					
Mar Exprese	Remarks: ASTM D2487: PT Visual Classification: Peat					
- churcherton	Displacement at End of Primary					

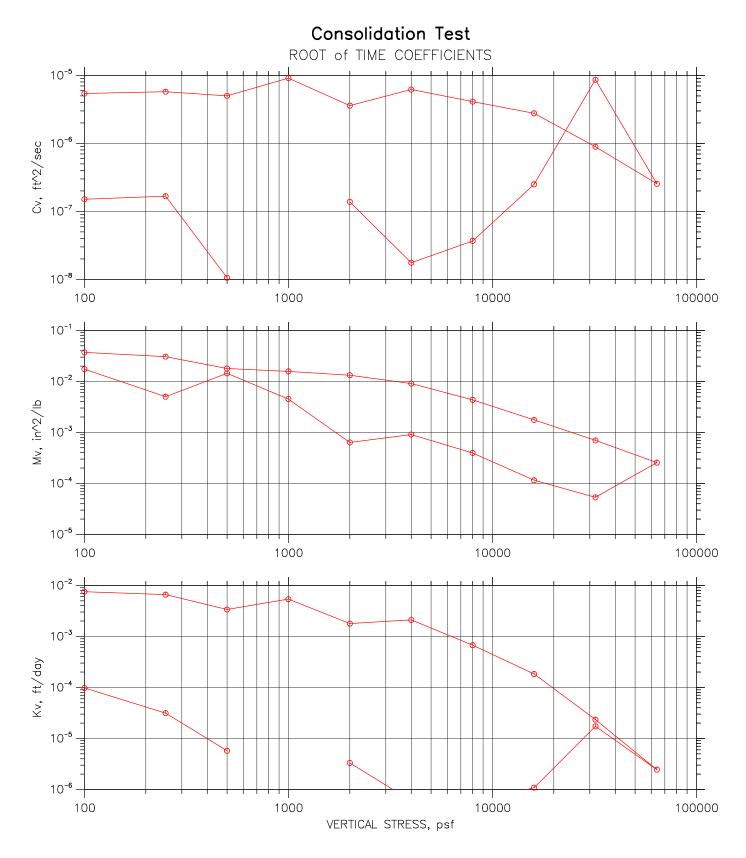
Consolidation Test

SUMMARY REPORT

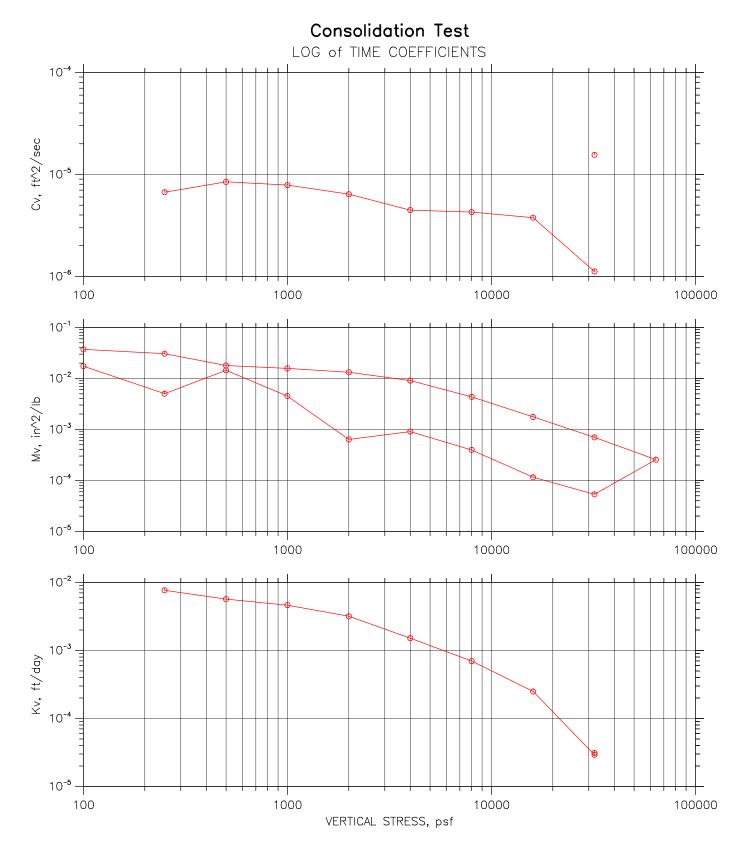


					Before Test	After Test
Overburden Pre	Overburden Pressure: 0 psf		Water Content, %	377.10	191.07	
Preconsolidation Pressure: 0 psf		Dry Unit Weight, pcf	12.837	27.055		
Compression Ir	Compression Index: 0		Saturation, %	85.96	104.34	
Diameter: 2.497 in Height: 0.9999 in		in	Void Ratio	9.21	3.85	
LL:	PL:	PI:	GS: 2.10	Back Pressure, psf	0	0

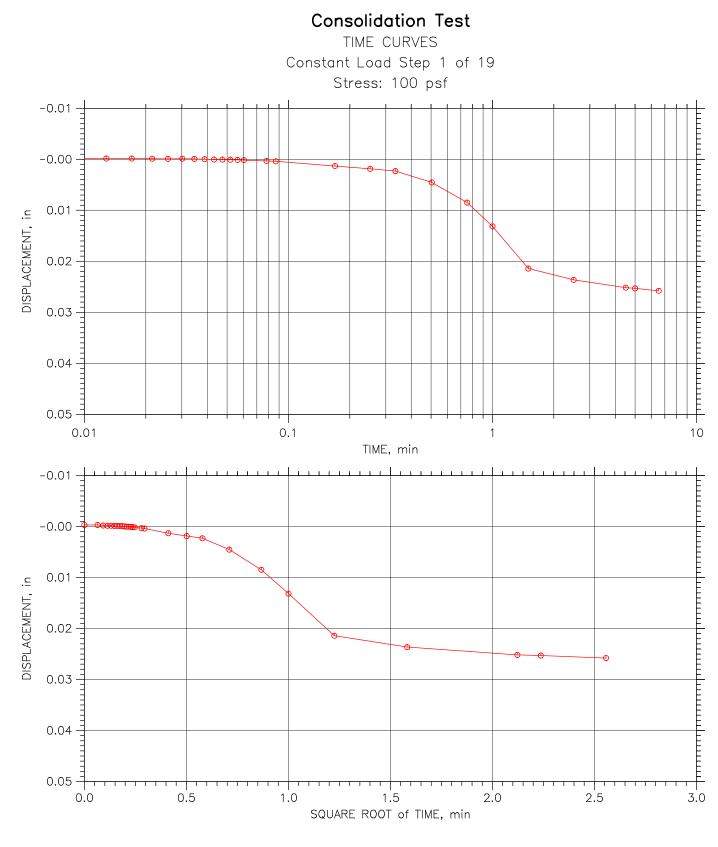
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484			
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK			
ATL	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1			
Alaska Testlab	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:			
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)					
Non Exposed	Remarks: ASTM D2487: PT Visual Classification: Peat					
- Marcibalda	Displacement at End of Primary					



-	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484			
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK			
ATL	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1			
Alaska Testlab	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:			
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)					
Han Eterpsed	Remarks: ASTM D2487: PT Visua	l Classification: Peat				
- Hurshipe	Displacement at End of Primary					

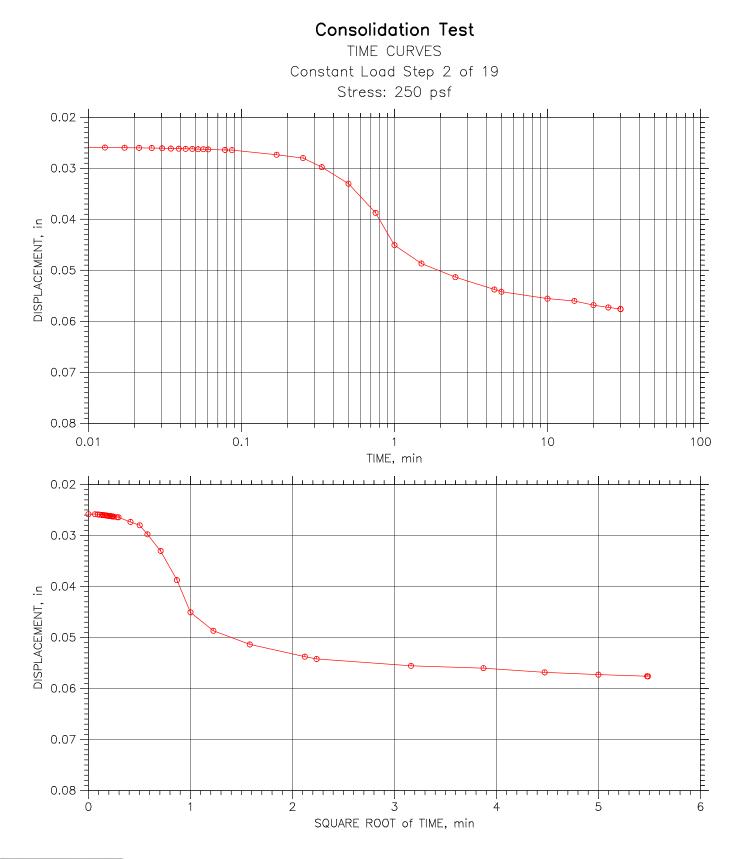


-	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484			
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK			
ATL	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1			
Alaska Testlab	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:			
Resinand by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)					
Han Eterpsen	Remarks: ASTM D2487: PT Visua	l Classification: Peat				
- church the	Displacement at End of Primary					



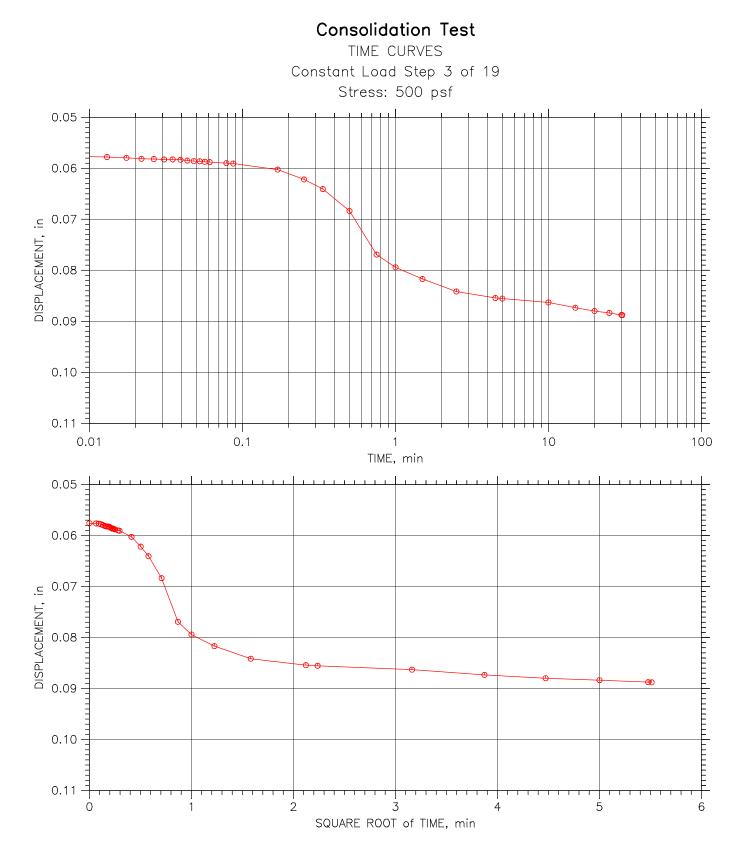
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK	
ATL	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1	
laska Testlab	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:	
ideand by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Han Experie	Remarks: ASTM D2487: PT Visual Classification: Peat			
- marcinette				

Al



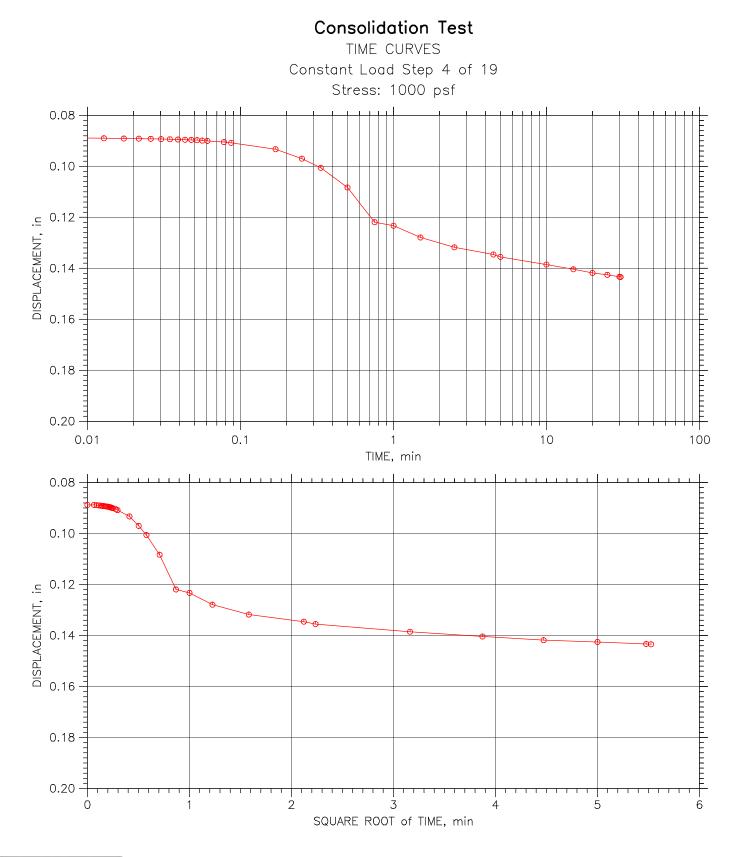


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK	
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1	
	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:	
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visua			



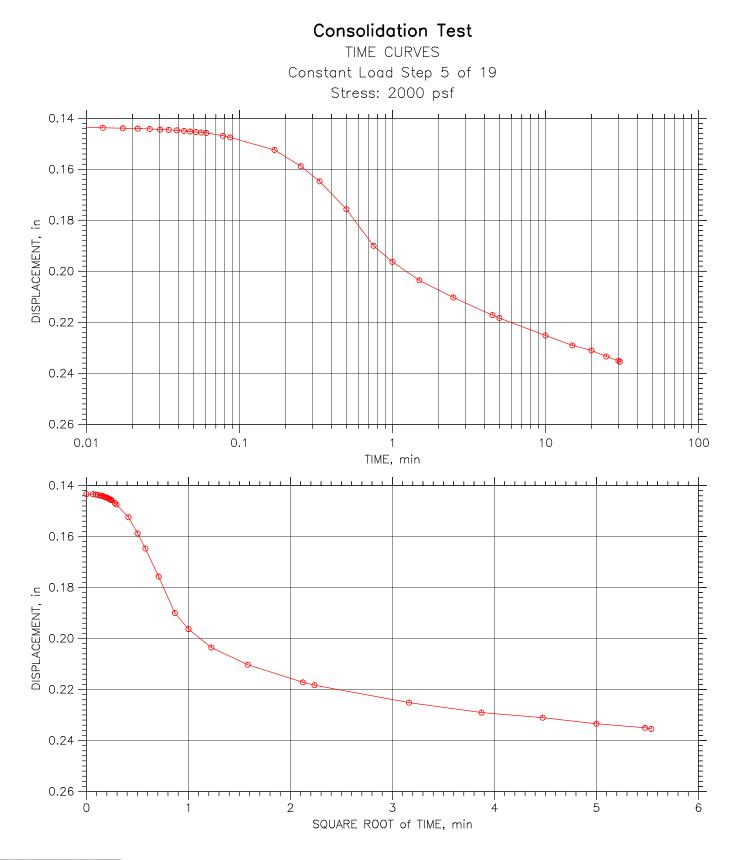


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK	
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1	
	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:	
1	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Remarks: ASTM D2487: PT Visual Classification: Peat				



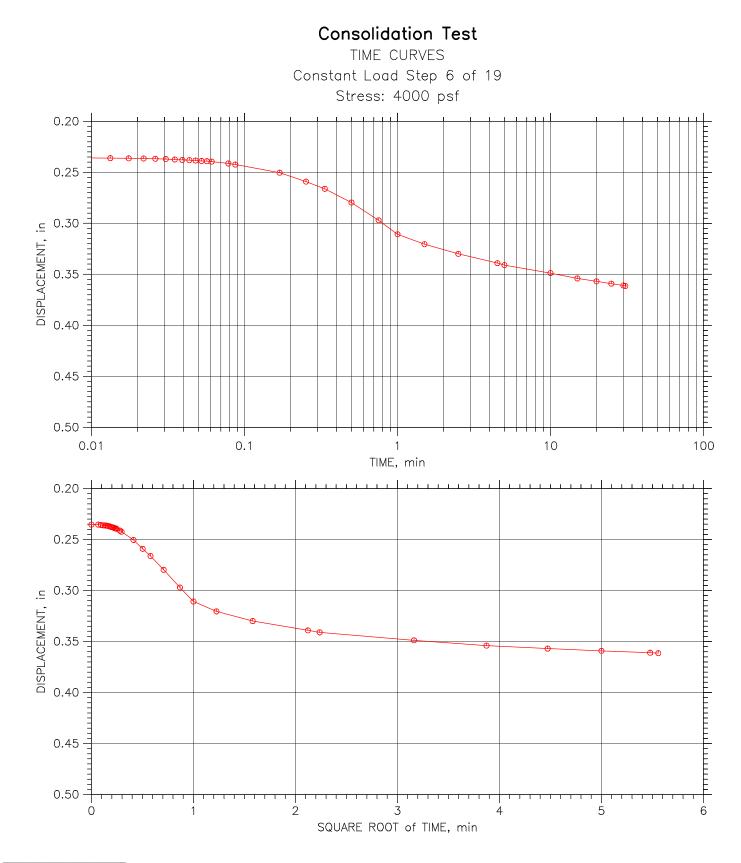


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK		
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1		
	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:		
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)				
	Remarks: ASTM D2487: PT Visual Classification: Peat				

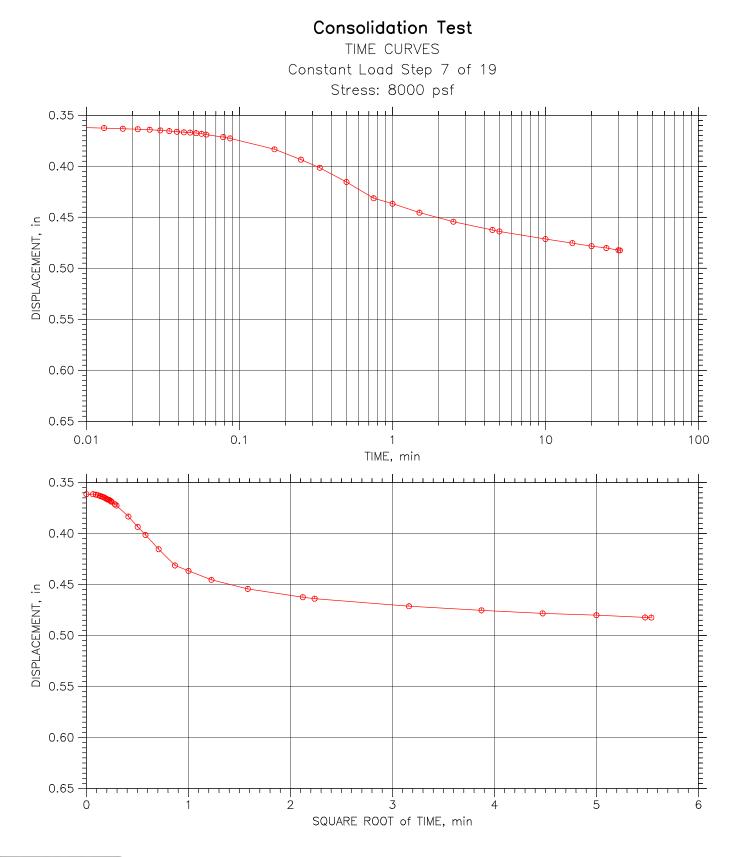




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK	
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1	
	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)	
	Remarks: ASTM D2487: PT Visual Classification: Peat			

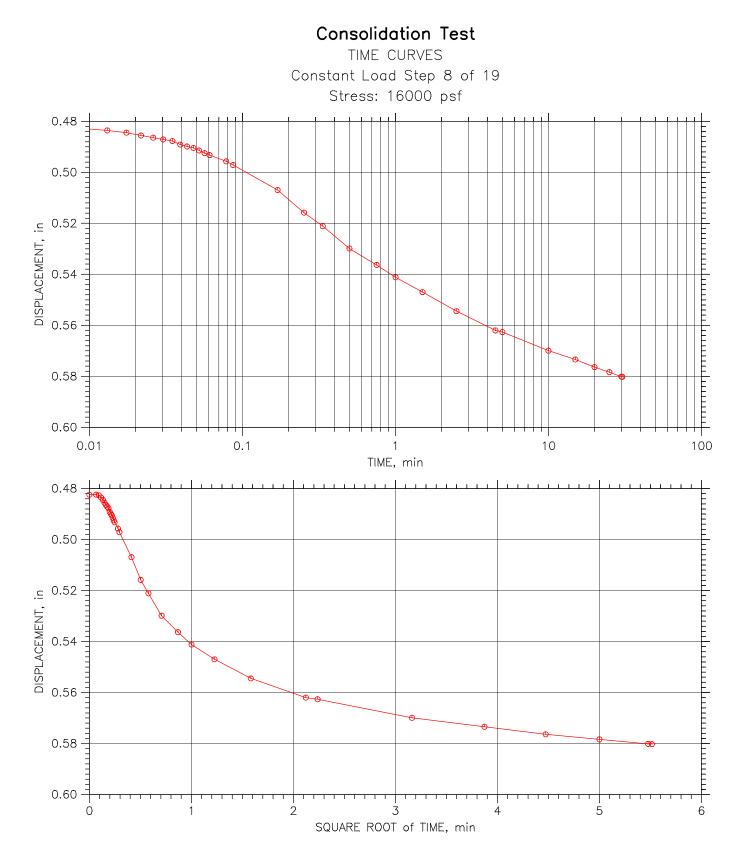


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
1	Description: ASTM D2435 One-Dim	nensional Consolidation of Soils (M	ethod A)
Remarks: ASTM D2487: PT Visual Classification: Peat			



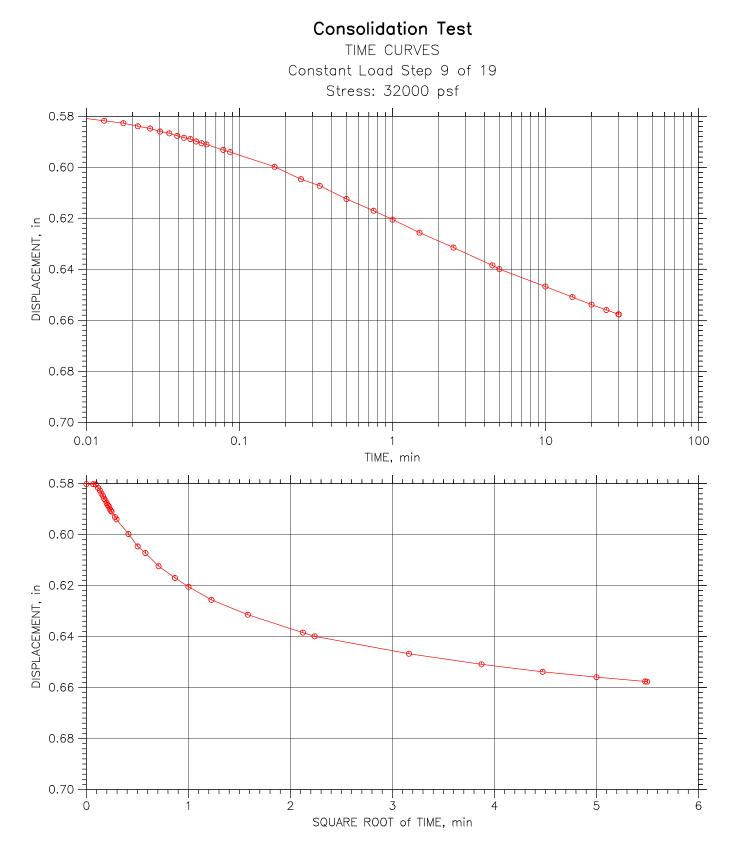


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
,	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
Remarks: ASTM D2487: PT Visual Classification: Peat			



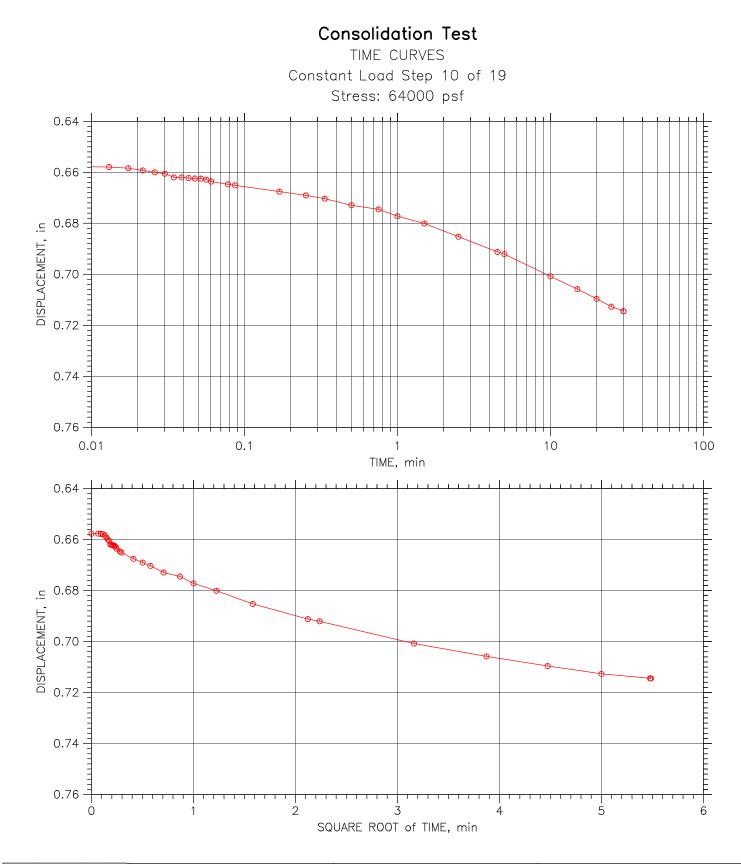


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visua	Classification: Peat	



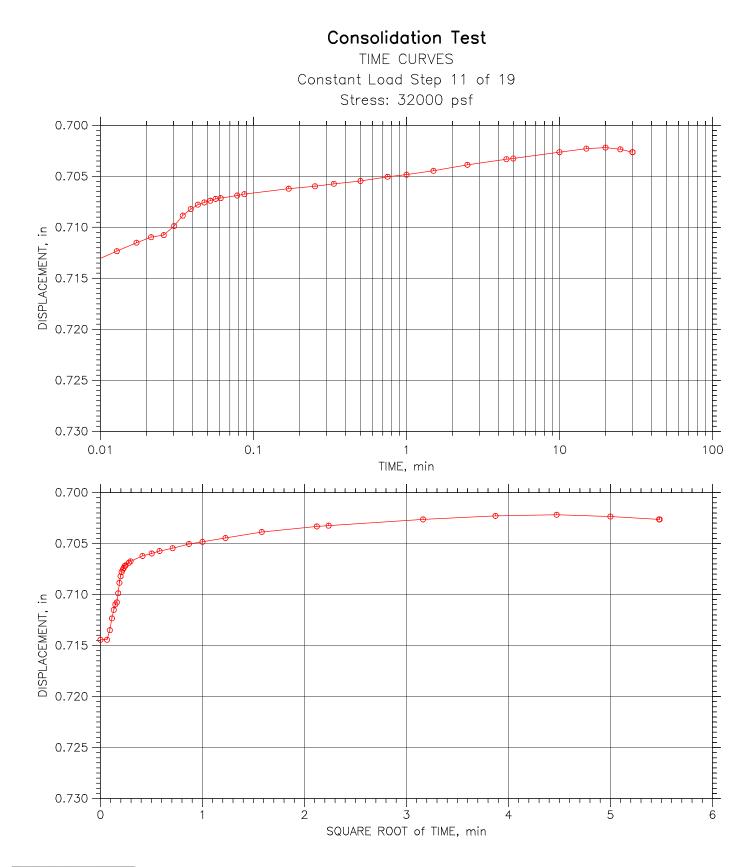


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK	
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1	
,	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)	
	Remarks: ASTM D2487: PT Visual Classification: Peat			



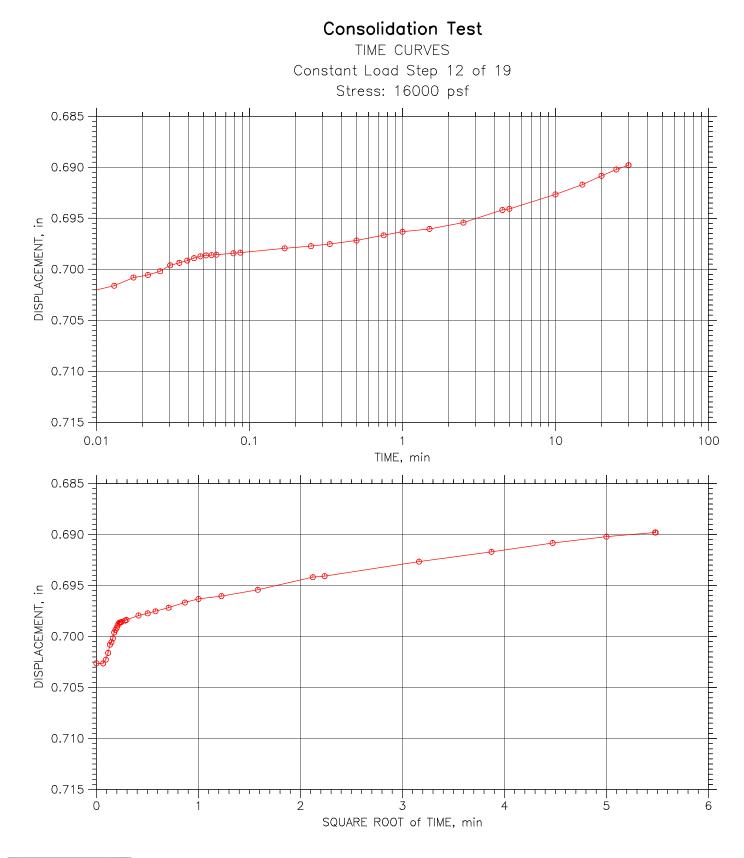
AI	aska Testlab
Reviewed by	
Han Experie	

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
1	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
Remarks: ASTM D2487: PT Visual Classification: Peat			





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK	
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1	
	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)	
	Remarks: ASTM D2487: PT Visual Classification: Peat			





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visua		

Consolidation Test TIME CURVES Constant Load Step 13 of 19 Stress: 8000 psf 0.665 -0.670 u 0.675 DISPLACEMENT, in 0.680 0.685 0.685 0.690 0.695 -Т Т ۱I 0.1 10 0.01 1 100 1000 TIME, min 0.665 -0.670 u 0.675 DISPLACEMENT, in 0.680 0.685 0.685 0.690 0.695 12 2 8 10 0 4 6

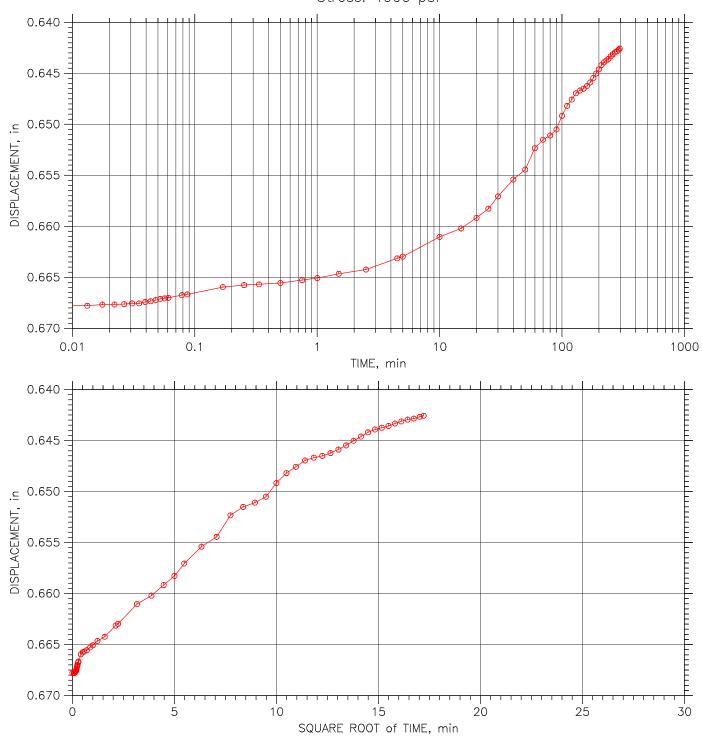
SQUARE ROOT of TIME, min



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
1	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
b	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
_	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visua	l Classification: Peat	

Consolidation Test

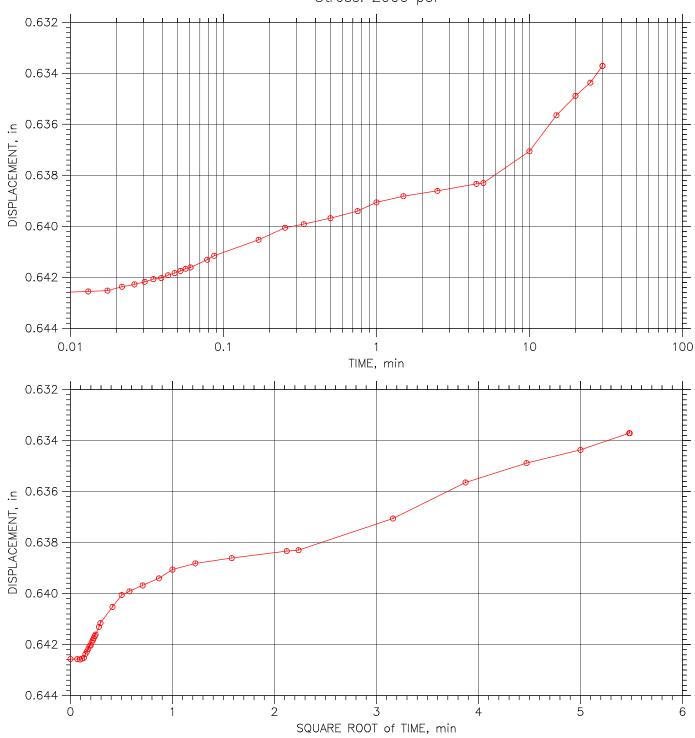
TIME CURVES Constant Load Step 14 of 19 Stress: 4000 psf



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Han Experie	R

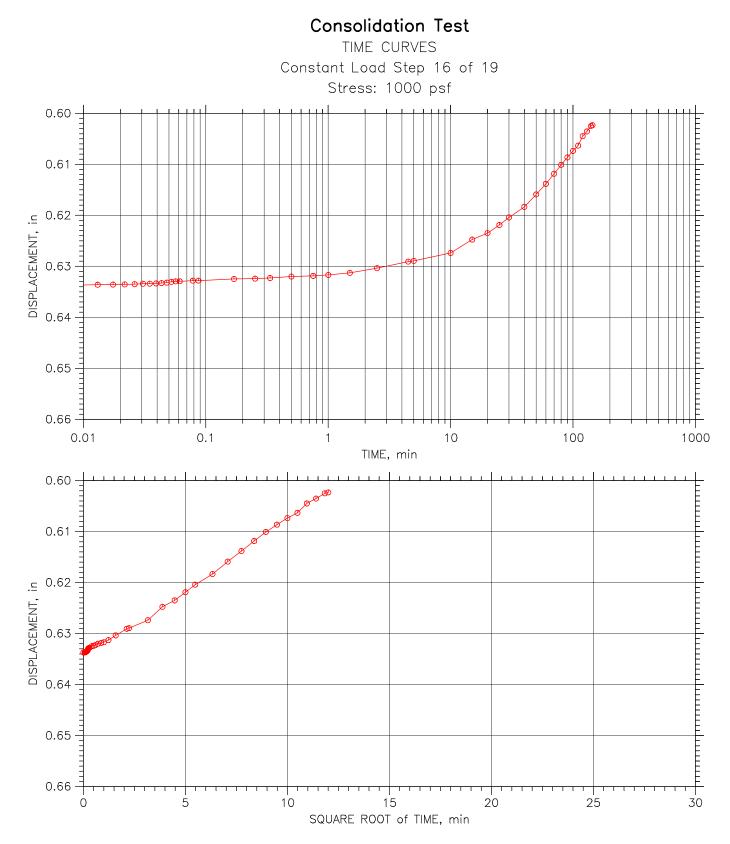
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
ь	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 15 of 19 Stress: 2000 psf



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Alaska Testlab
April Kapser

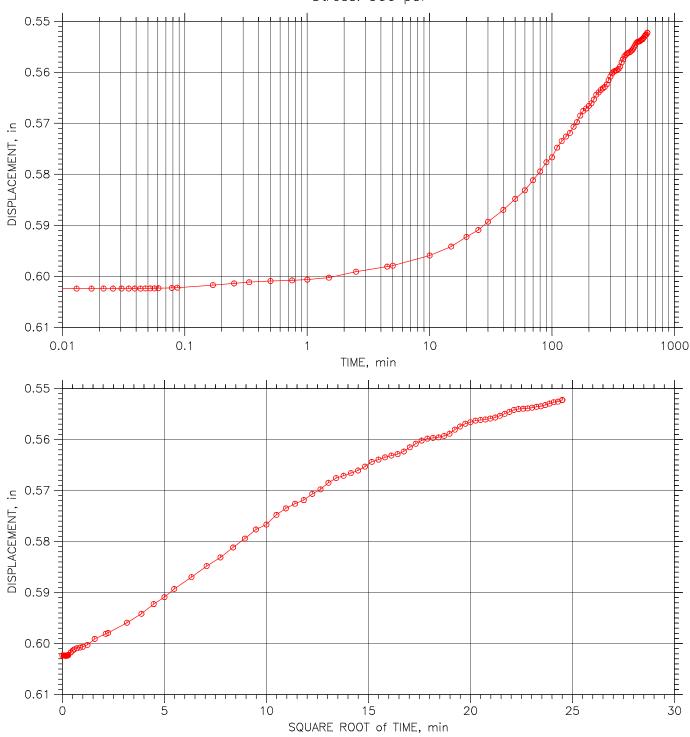
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			



-	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
aska Testlab	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
and by	Description: ASTM D2435 One-Dim	nensional Consolidation of Soils (M	lethod A)
Non Expres	Remarks: ASTM D2487: PT Visual	Classification: Peat	
oppinesporter			

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Consolidation Test TIME CURVES Constant Load Step 17 of 19 Stress: 500 psf



	Project:
	Boring N
ATL	Sample 1
Alaska Testlab	Depth: 2
Reviewed by	Descripti
1) Elina	Remarks
- open popula	

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		ethod A)	
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 18 of 19 Stress: 250 psf 0.542 -0.544 u 0.546 UISPLACEMENT, 10 0.548 0.550 0.550 0.552 0.554 -П 0.1 10 0.01 1 100 TIME, min 0.542 -0.544 0.546 0.548 0.548 0.550 0.552 0.554 6 2 5 0 3 4 1

SQUARE ROOT of TIME, min



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
ь	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 19 of 19 Stress: 100 psf 0.525 0.530 -u 0.535 (1) 0.540 0.540 0.545 0.550 0.555 -П 0.1 10 0.01 1 100 TIME, min 0.525 -0.530 u 0.535 (1) 0.540 0.540 0.545 0.550 12 0.555 2 8 10 0 4 6 SQUARE ROOT of TIME, min

Alaska Testlab	
Restruct by April Har Phare	

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-08	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2A	Test Date: 4/11/2022	Test No.: 1
,	Depth: 2.5-4.5	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			



Alaska Testlab – Anchorage 4040 B Street, Suite 102 Anchorage, AK 99503 Phone: 907-205-1987 Fax: 907-782-4409 info@alaskatestlab.com

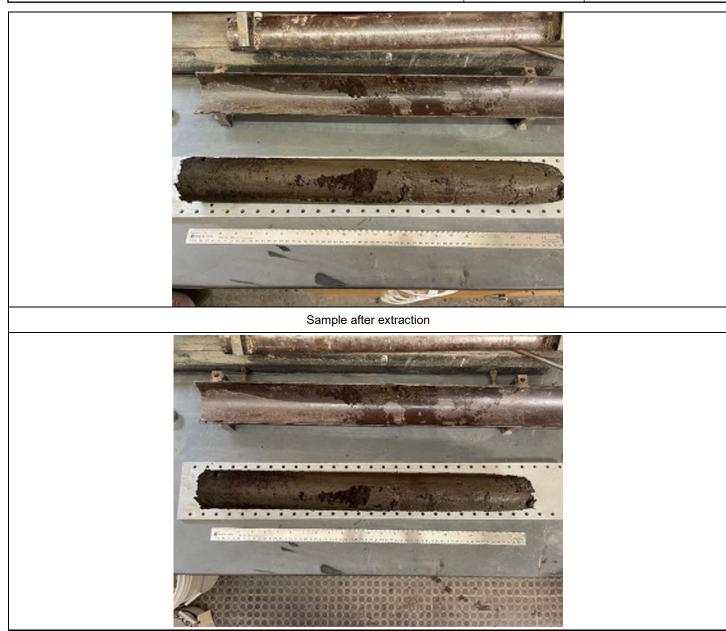
Shelby Photo Log

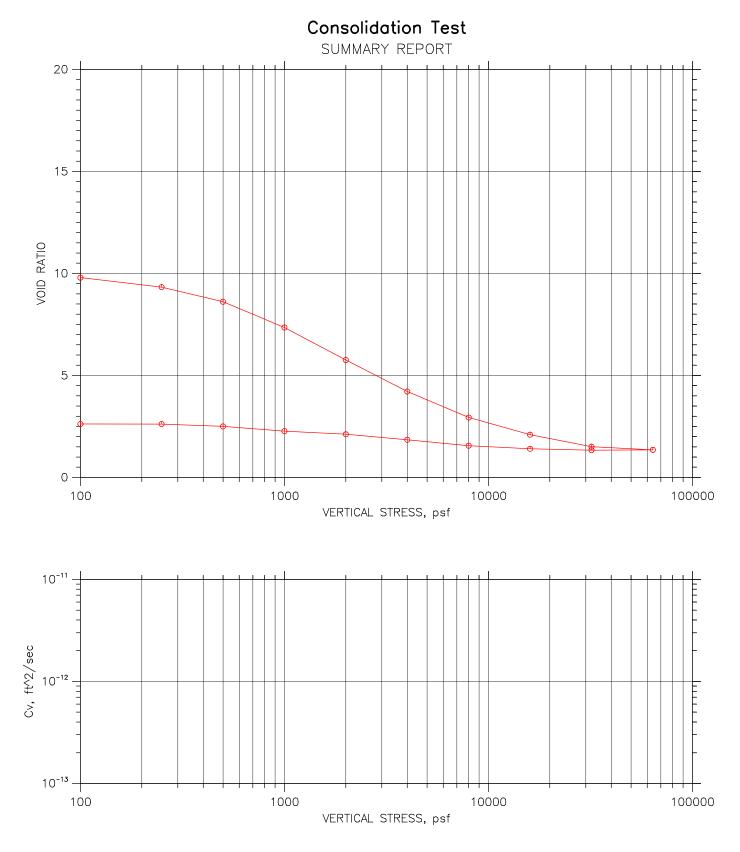
 Report No.:
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CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503
-

Project: FedEx Bog

Date Received:	March 21, 2022
Sample #:	22-0261-S02
Material:	BH-08 Sa2A

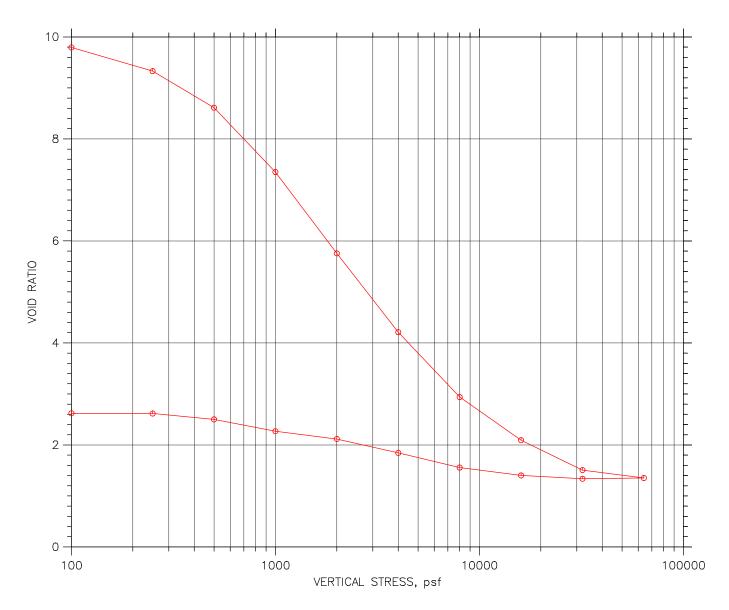




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1
Alaska Testlab	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
Resinand by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Han Eterpsed	Remarks: ASTM D2487: PT Visual Classification: Peat		
- churcherton	Displacement at End of Primary		

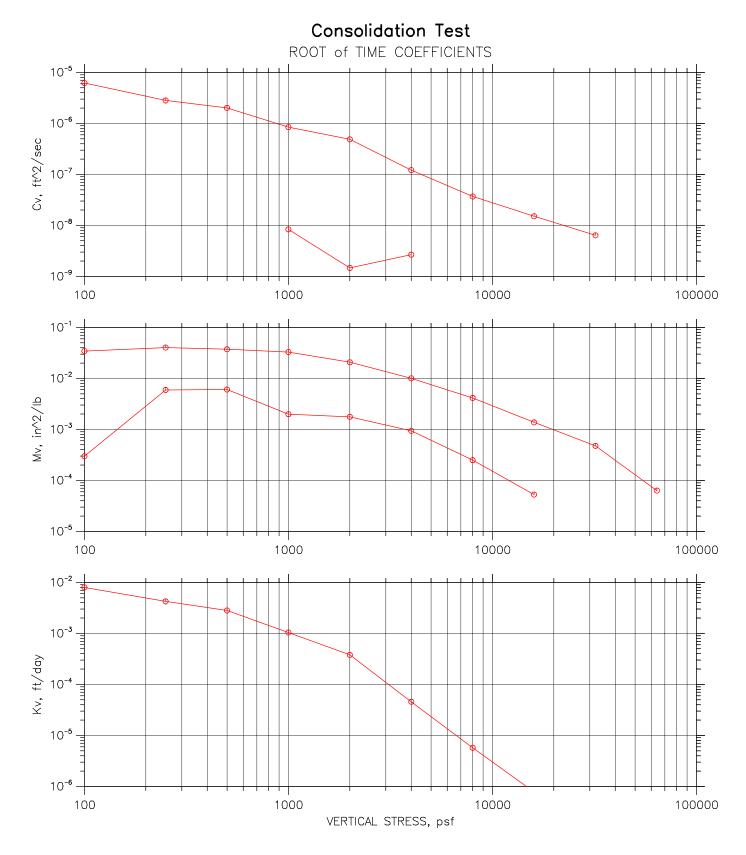
Consolidation Test

SUMMARY REPORT

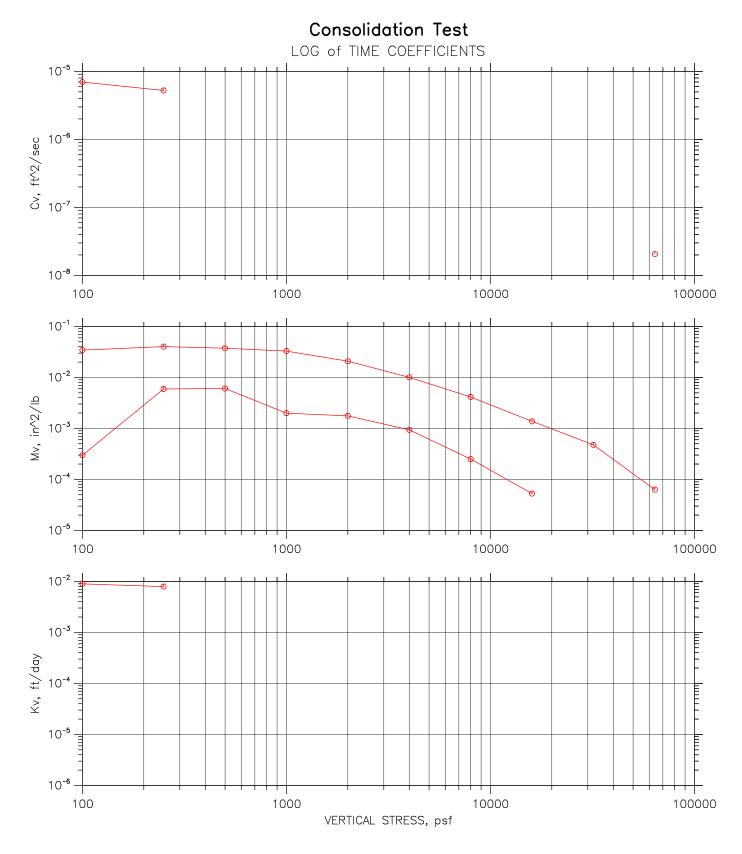


					Before Test	After Test
Overburden Pressure: 0 psf			Water Content, %	609.87	199.14	
Preconsolidation Pressure: 0 psf			Dry Unit Weight, pcf	9.0336	27.601	
Compression Index: 0			Saturation, %	97.03	121.66	
Diameter: 2.49	97 in	Height: 0.9998	in	Void Ratio	10.06	2.62
LL:	PL:	PI:	GS: 1.60	Back Pressure, psf	0	0

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK	
ATL	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1	
Alaska Testlab	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:	
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Handkapsen	Remarks: ASTM D2487: PT Visual Classification: Peat			
- Marcibalda	Displacement at End of Primary			

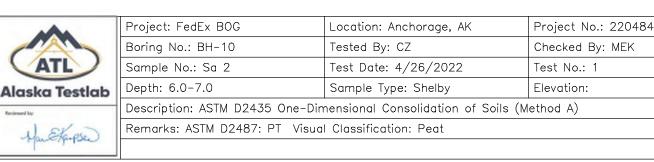


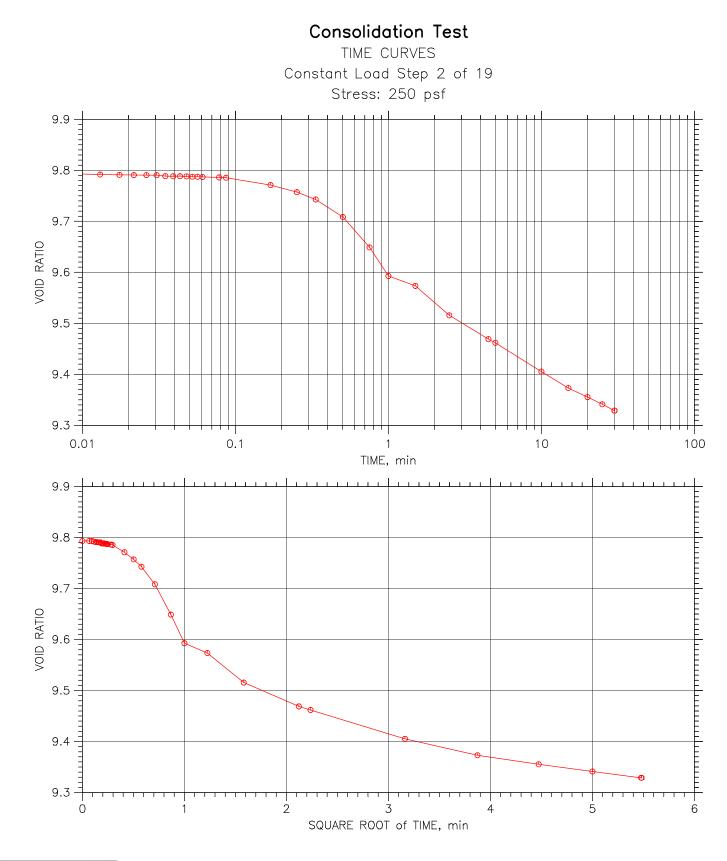
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1
Alaska Testlab	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
Reviewend key	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Mar Eterpsen	Remarks: ASTM D2487: PT Visual Classification: Peat		
- Harrister	Displacement at End of Primary		



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK		
ATL	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1		
Alaska Testlab	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:		
Resinand by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)				
Han Eterpsen	Remarks: ASTM D2487: PT Visual Classification: Peat				
- charcedare	Displacement at End of Primary				

Consolidation Test TIME CURVES Constant Load Step 1 of 19 Stress: 100 psf 10.3 10.2 10.1 VOID RATIO 10.0 9.9 9.8 9.7 -0.1 0.01 1 10 TIME, min 10.3 10.2 10.1 VOID RATIO 10.0 9.9 9.8 9.7 Т 0.5 1.0 1.5 2.0 2.5 3.0 0.0 SQUARE ROOT of TIME, min







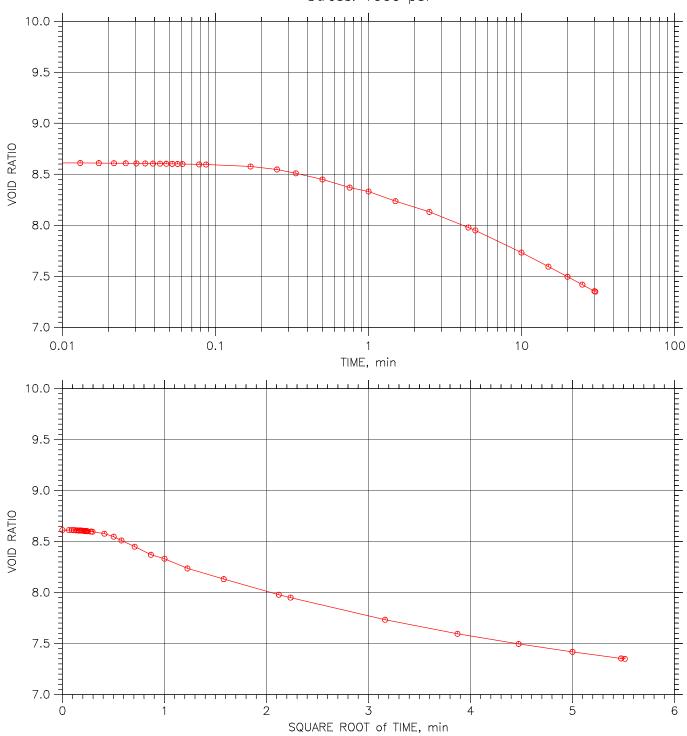
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	Boring No.: BH-10	Tested By: CZ	Checked By: MEK	
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1	
	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 3 of 19 Stress: 500 psf 9.8 -9.6 9.4 -VOID RATIO 9.2 9.0 8.8 8.6 -П ' | 0.1 10 0.01 1 100 TIME, min 9.8 -9.6 9.4 VOID RATIO 9.2 9.0 8.8 8.6 6 2 5 0 3 4 1 SQUARE ROOT of TIME, min

Alaska Testlab
Restrand by Mar Horpsen

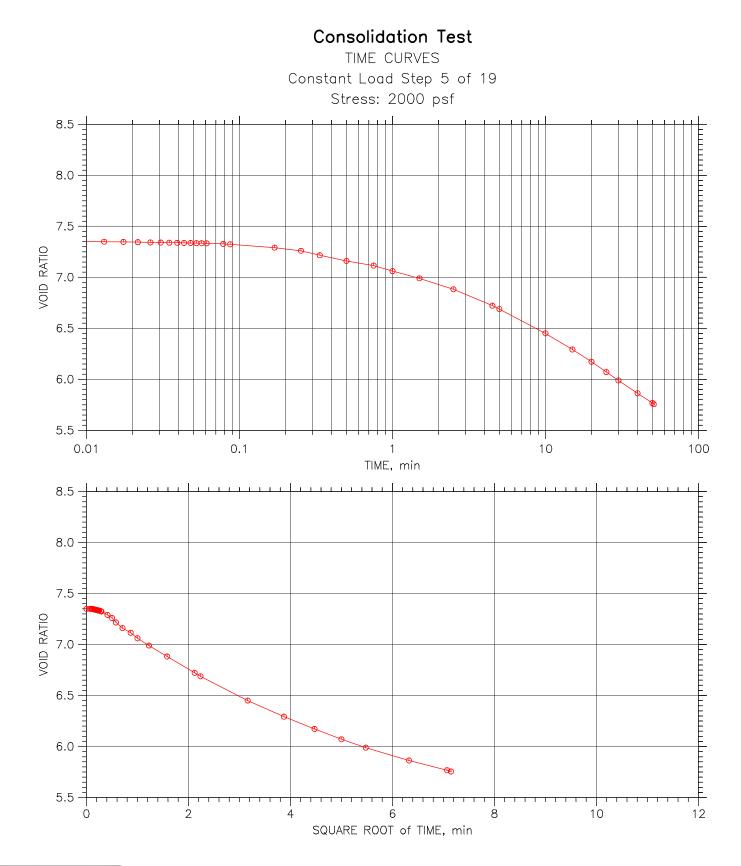
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK	
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1	
	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 4 of 19 Stress: 1000 psf





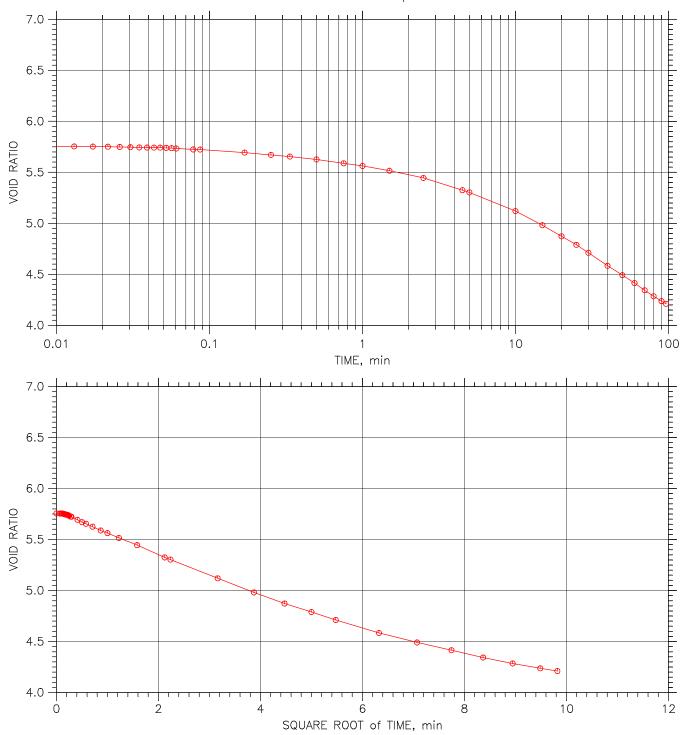
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK	
1	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1	
b	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK	
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1	
	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Remarks: ASTM D2487: PT Visual Classification: Peat				

Consolidation Test TIME CURVES Constant Load Step 6 of 19 Stress: 4000 psf

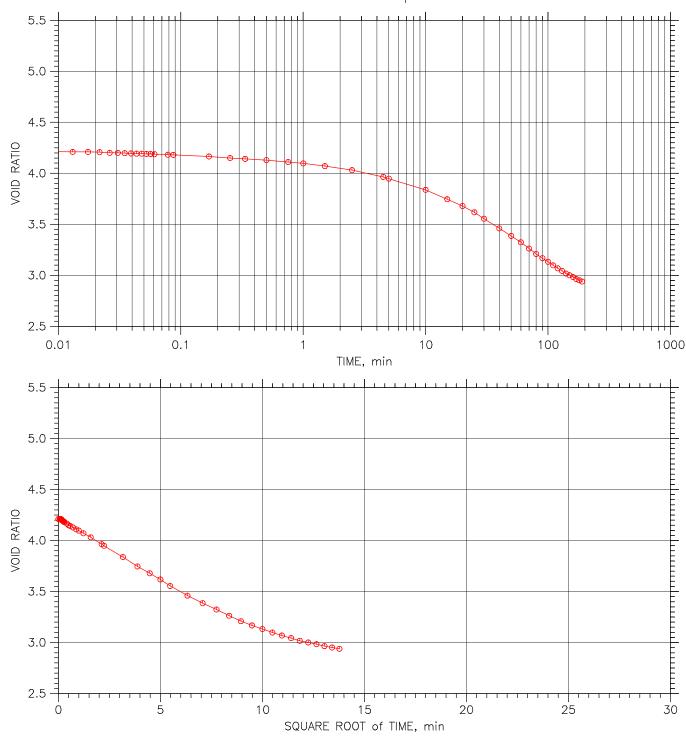


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	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1
ь	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visua	l Classification: Peat	

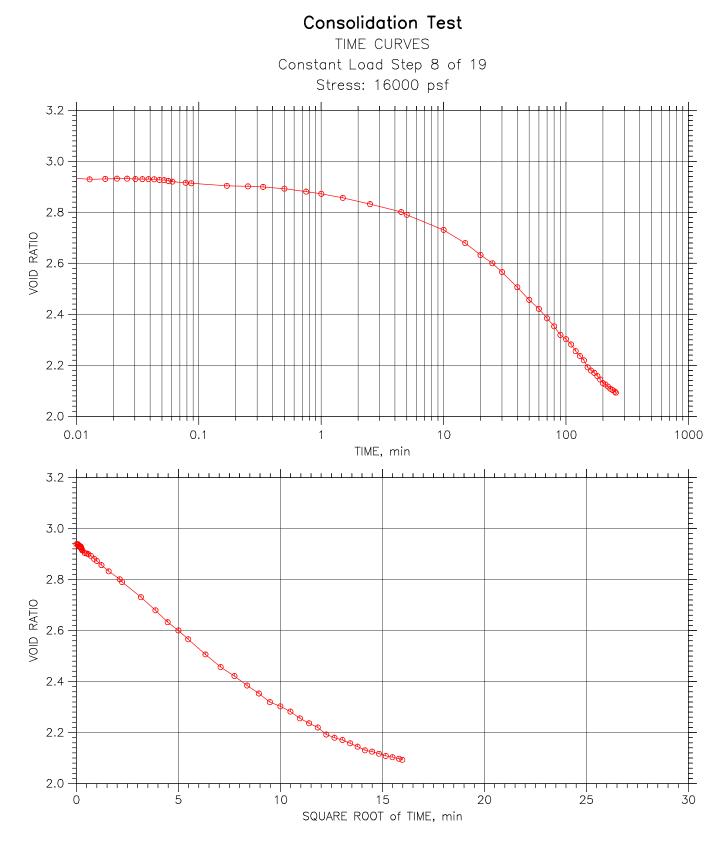
Consolidation Test

TIME CURVES Constant Load Step 7 of 19 Stress: 8000 psf



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	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1
,	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dim	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visual	l Classification: Peat	



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1
aska Testlab	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
and by	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (N	lethod A)
Non Experie	Remarks: ASTM D2487: PT Visua	l Classification: Peat	
- Marcipitse			

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Consolidation Test TIME CURVES Constant Load Step 9 of 19 Stress: 32000 psf 2.6 -2.4 -2.2 VOID RATIO 2.0 1.8 1.6 1.4 -Т Т ۱I 0.1 10 100 1000 0.01 1 TIME, min 2.6 -2.4 2.2 VOID RATIO 2.0 1.8 1.6 1.4 Т 30 5 10 15 20 25 \cap

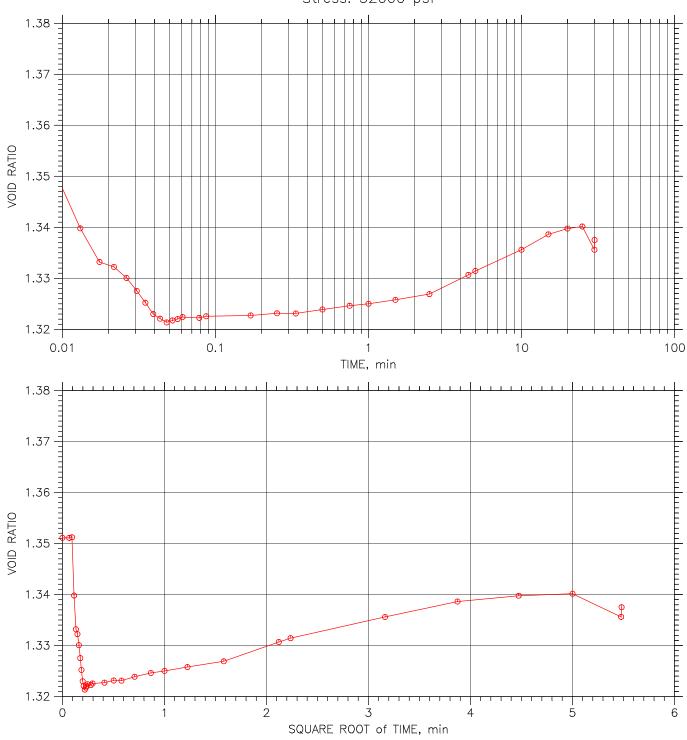


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1
6	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visua	l Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 10 of 19 Stress: 64000 psf 1.65 1.60 1.55 VOID RATIO 1.50 1.45 1.40 1.35 -0.01 0.1 10 100 1 TIME, min 1.65 1.60 1.55 VOID RATIO 1.50 1.45 1.40 1.35 Т 12 ż 6 8 10 \cap 4 SQUARE ROOT of TIME, min

Project: FedEx BOGLocation: Anchorage, AKProject No.: 220484Boring No.: BH-10Tested By: CZChecked By: MEKSample No.: Sa 2Test Date: 4/26/2022Test No.: 1Depth: 6.0-7.0Sample Type: ShelbyElevation:Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)Remarks: ASTM D2487: PTRemarks: ASTM D2487: PTVisual Classification: Peat

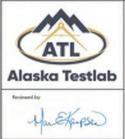
Consolidation Test TIME CURVES Constant Load Step 11 of 19 Stress: 32000 psf





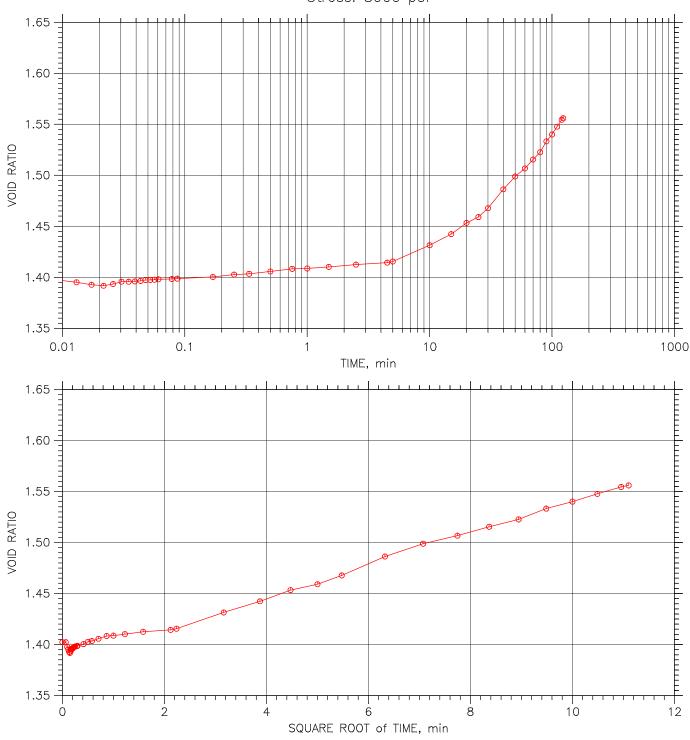
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1
ь	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visua	Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 12 of 19 Stress: 16000 psf 1.44 -1.42 -1.40 VOID RATIO 1.38 1.36 1.34 -1.32 -11 0.1 10 0.01 1 100 TIME, min 1.44 1.42 -1.40 VOID RATIO 1.38 1.36 1.34 1.32 12 2 8 10 4 6 0



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1
b	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visua	Classification: Peat	

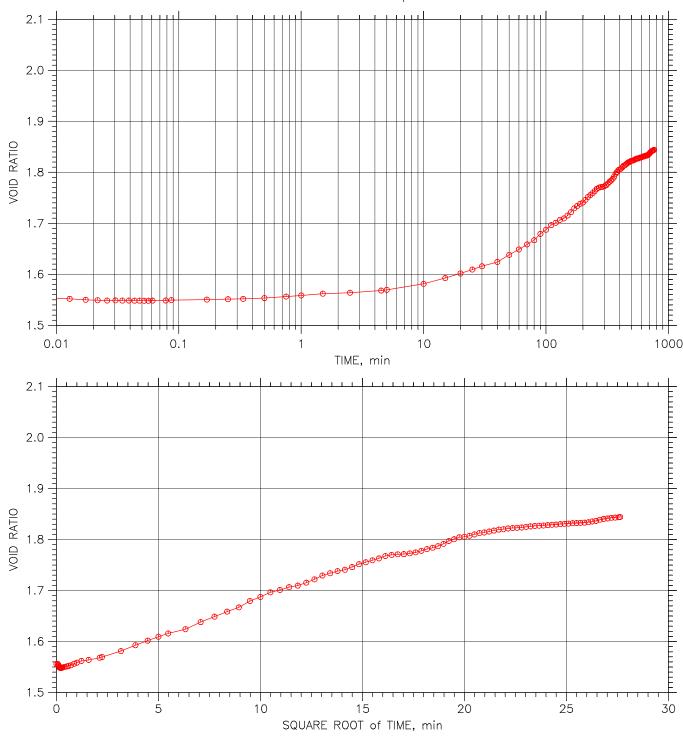
Consolidation Test TIME CURVES Constant Load Step 13 of 19 Stress: 8000 psf



Alaska Testlab
Redound by Han Hoppe

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1
	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dim	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visual	l Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 14 of 19 Stress: 4000 psf



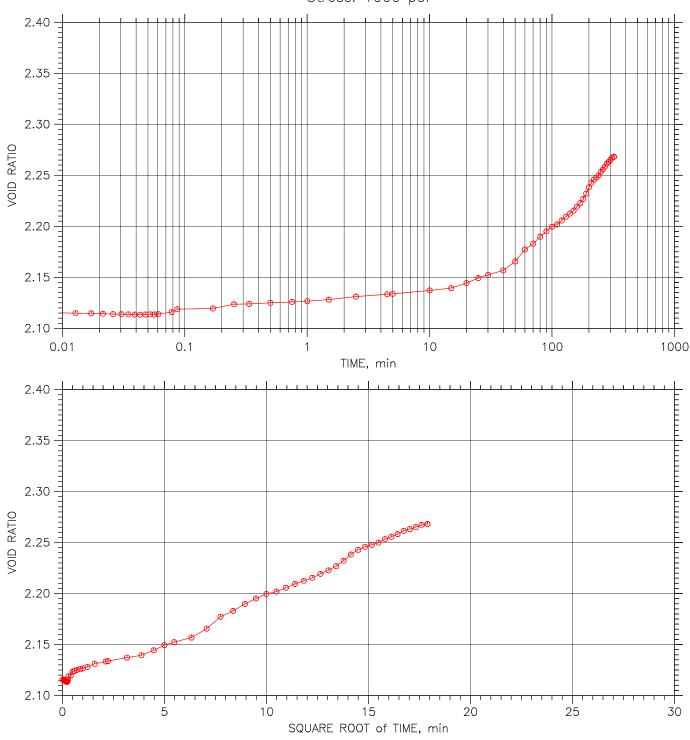
TIME CURVES Constant Load Step 15 of 19 Stress: 2000 psf 2.4 -2.3 -2.2 VOID RATIO 2.1 2.0 1.9 -1.8 -0.1 10 0.01 1 100 1000 10000 TIME, min 2.4 2.3 -2.2 VOID RATIO 2.1 2.0 1.9 -1.8 10 20 60 30 50 40 SQUARE ROOT of TIME, min

Consolidation Test

Alaska Testlab

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1
,	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visua	l Classification: Peat	

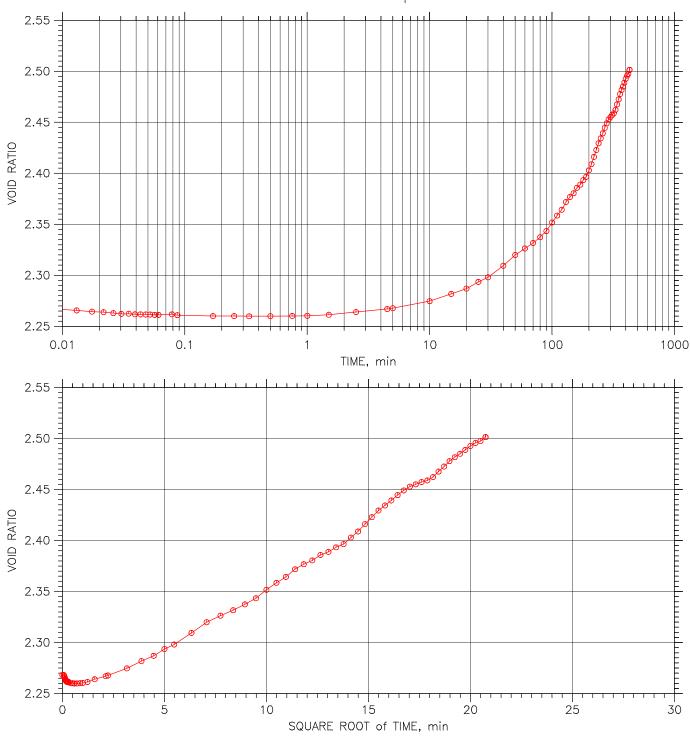
Consolidation Test TIME CURVES Constant Load Step 16 of 19 Stress: 1000 psf



ATL
Alaska Testlab
Restreed by Han Elfer PSE

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484		
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK		
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1		
,	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:		
Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)					
	Remarks: ASTM D2487: PT Visual Classification: Peat				

Consolidation Test TIME CURVES Constant Load Step 17 of 19 Stress: 500 psf





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1
	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	ethod A)	
	Remarks: ASTM D2487: PT Visua		

Consolidation Test TIME CURVES Constant Load Step 18 of 19 Stress: 250 psf 2.75 -2.70 -2.65 2.60 2.55 2.50 2.45 -Т ' | ۱I 0.1 10 0.01 1 100 1000 TIME, min 2.75 2.70 2.65 Ø 2.60 2.55 2.50 -2.45 12



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	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK	
2	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1	
ıb	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			

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VOID RATIO

VOID RATIO

Consolidation Test TIME CURVES Constant Load Step 19 of 19 Stress: 100 psf 2.620 -2.618 -2.616 VOID RATIO 2.614 2.612 2.610 -2.608 -0.1 10 0.01 1 TIME, min 2.620 -2.618 -2.616 VOID RATIO 2.614 2.612 2.610 -2.608 --|- 3.0 0.5 1.0 1.5 2.0 2.5 0.0



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK	
	Sample No.: Sa 2	Test Date: 4/26/2022	Test No.: 1	
b	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:	
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
	Remarks: ASTM D2487: PT Visual Classification: Peat			



Alaska Testlab – Anchorage 4040 B Street, Suite 102 Anchorage, AK 99503 Phone: 907-205-1987 Fax: 907-782-4409 info@alaskatestlab.com

Shelby Photo Log

 Report No.:
 1

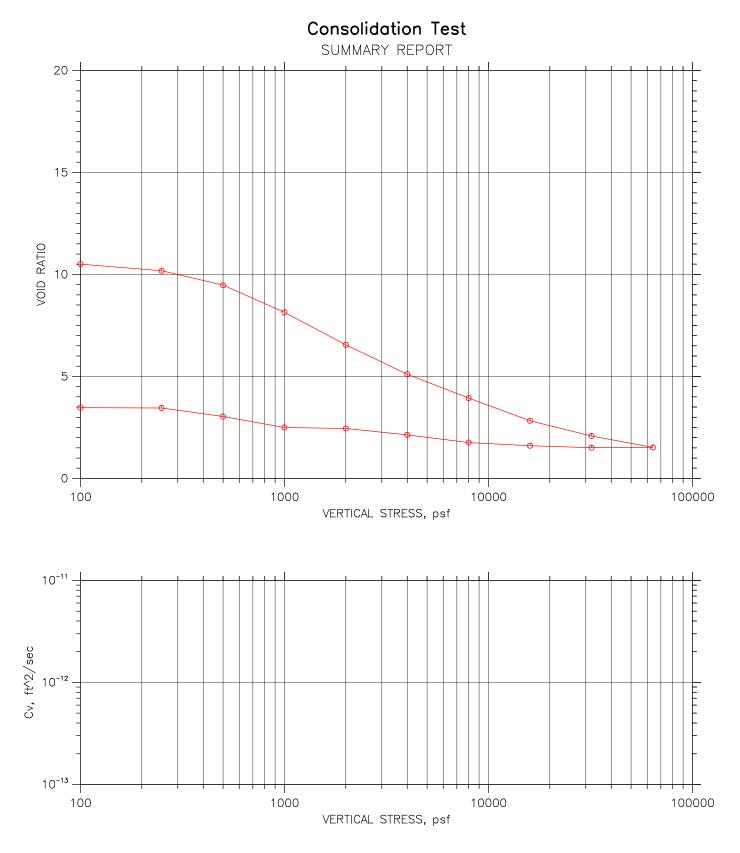
Client: CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503

Project: FedEx Bog

73138.00

Date Received:	March 21, 2022
Sample #:	22-0263-S02
Material:	BH-10 Sa2



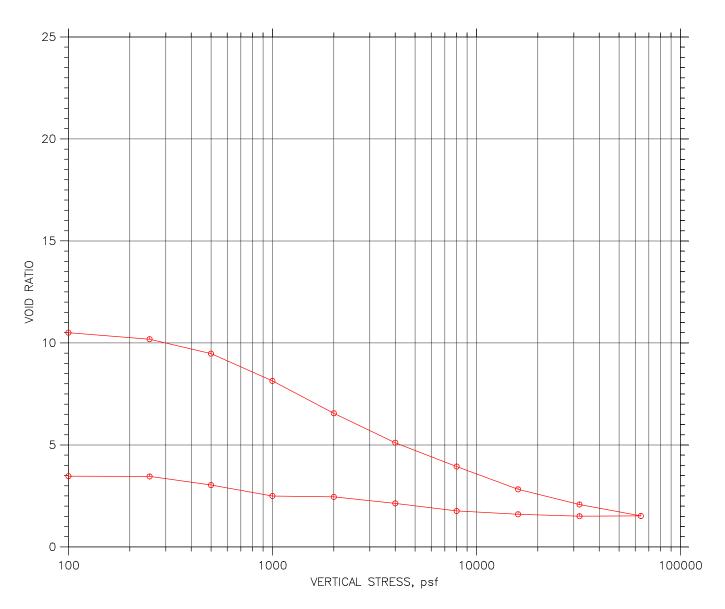


223			
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
laska Testlab	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
Resinvent by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A		ethod A)
Han Eterpsen	Remarks: ASTM D2487: PT Visual Classification: Peat		
- Lunestelow	Displacement at End of Primary		

A

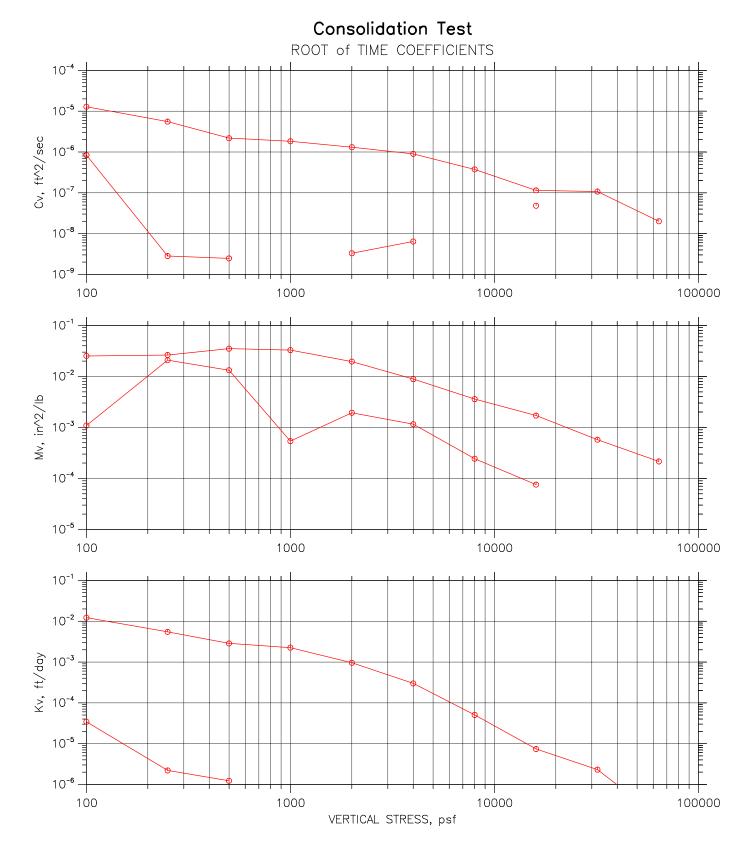
Consolidation Test

SUMMARY REPORT

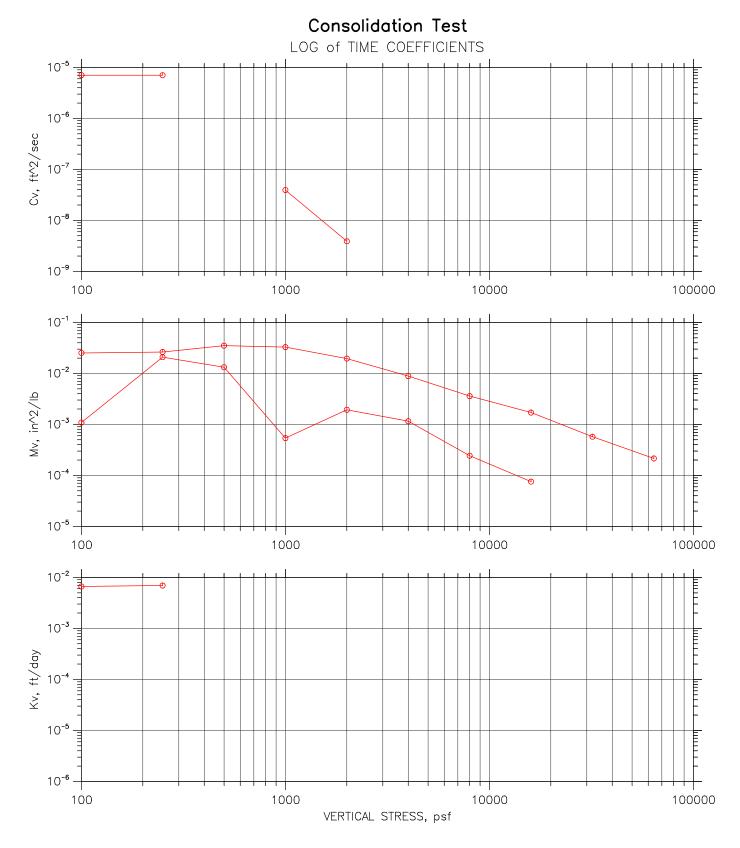


					Before Test	After Test
Overburden Pre	essure: 0 psf			Water Content, %	578.76	224.72
Preconsolidatio	Preconsolidation Pressure: 0 psf		Dry Unit Weight, pcf	9.0626	23.75	
Compression II	Compression Index: 0		Saturation, %	91.86	110.14	
Diameter: 2.49	7 in	Height: 1.001 in		Void Ratio	10.71	3.47
LL:	PL:	PI:	GS: 1.70	Back Pressure, psf	0	0

	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
Alaska Testlab	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
Reviewed by	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	lethod A)
Non Experie	Remarks: ASTM D2487: PT Visual Classification: Peat		
- churchelore	Displacement at End of Primary		

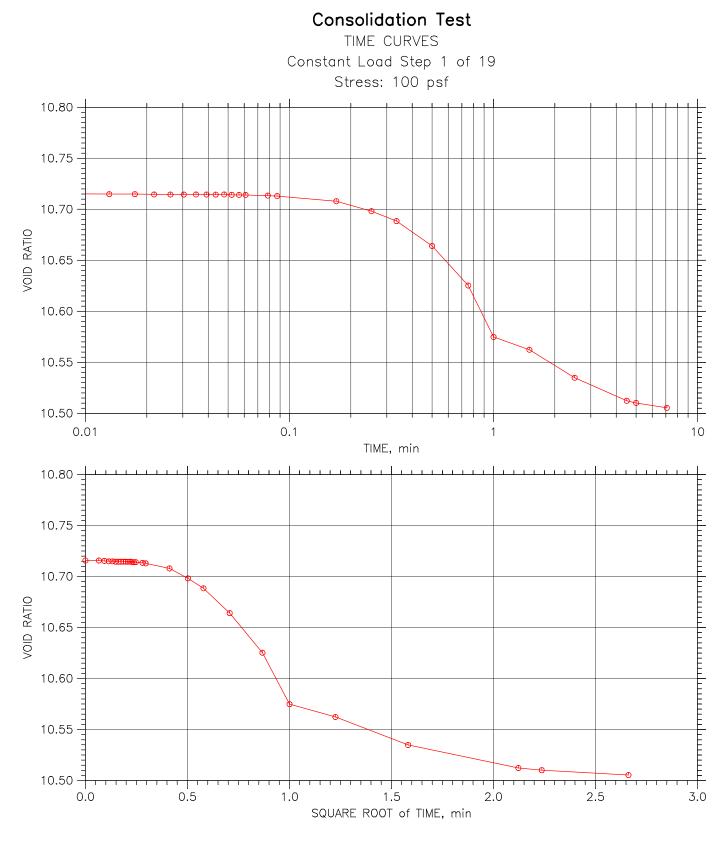


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
Alaska Testlab	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Hantkepser	Remarks: ASTM D2487: PT Visual Classification: Peat		
- Marcine	Displacement at End of Primary		



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
laska Testlab	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
desard by	Description: ASTM D2435 One-Dim	nensional Consolidation of Soils (M	ethod A)
Han Etferpsen	Remarks: ASTM D2487: PT Visual	Classification: Peat	
- charces de la	Displacement at End of Primary		

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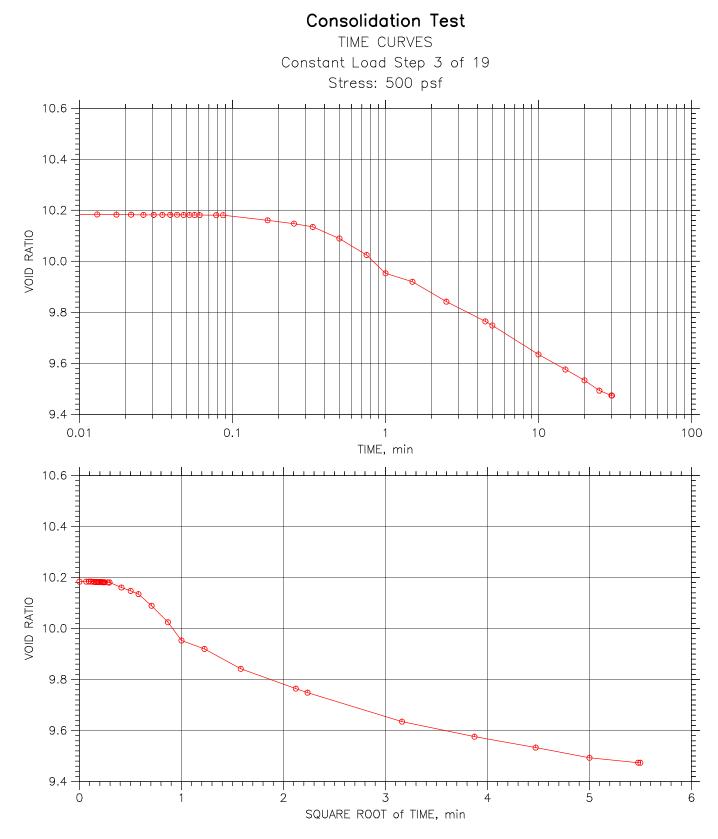


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
Alaska Testlab	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
Resinand by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			
- Marcipolite			

Consolidation Test TIME CURVES Constant Load Step 2 of 19 Stress: 250 psf 10.7 -10.6 -10.5 VOID RATIO 10.4 10.3 P 10.2 -Φ 10.1 -П 0.1 10 0.01 1 100 TIME, min 10.7 -10.6 10.5 VOID RATIO 10.4 10.3 10.2 -10.1 6 2 5 0 3 4 SQUARE ROOT of TIME, min

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Alaska Testlab	
Alaska Testlab	
Reviewed by	
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	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

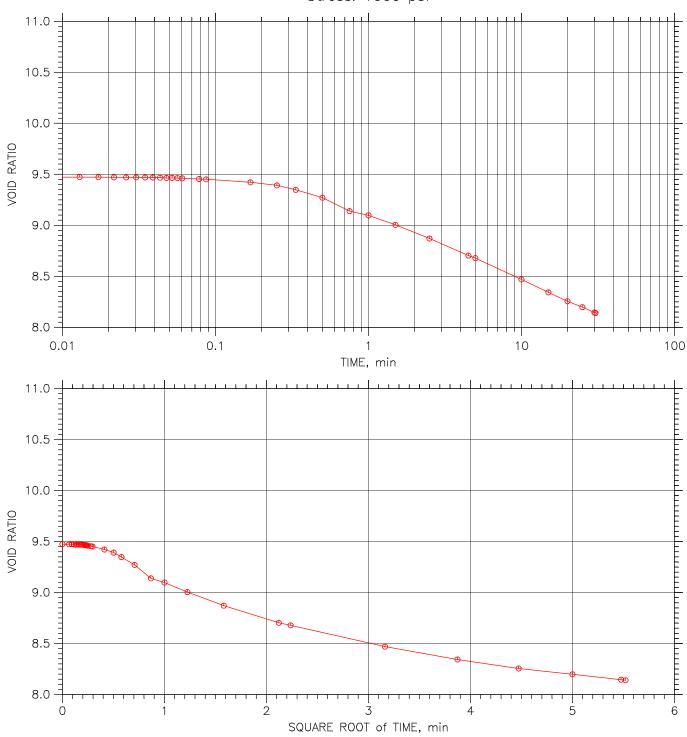


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
ska Testlab	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
by:	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Han Eterpsed	Remarks: ASTM D2487: PT Visual Classification: Peat		
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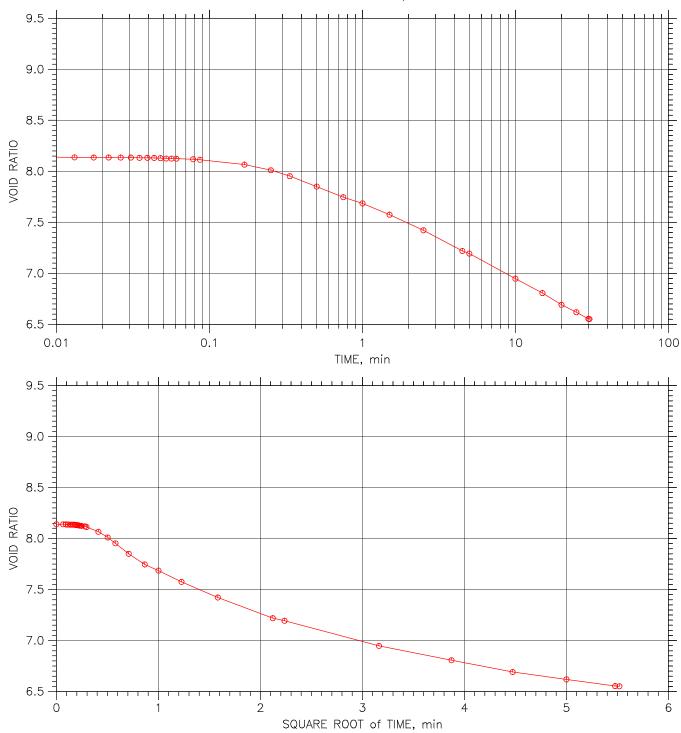
Consolidation Test TIME CURVES Constant Load Step 4 of 19 Stress: 1000 psf

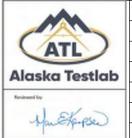




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
b	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visua	l Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 5 of 19 Stress: 2000 psf

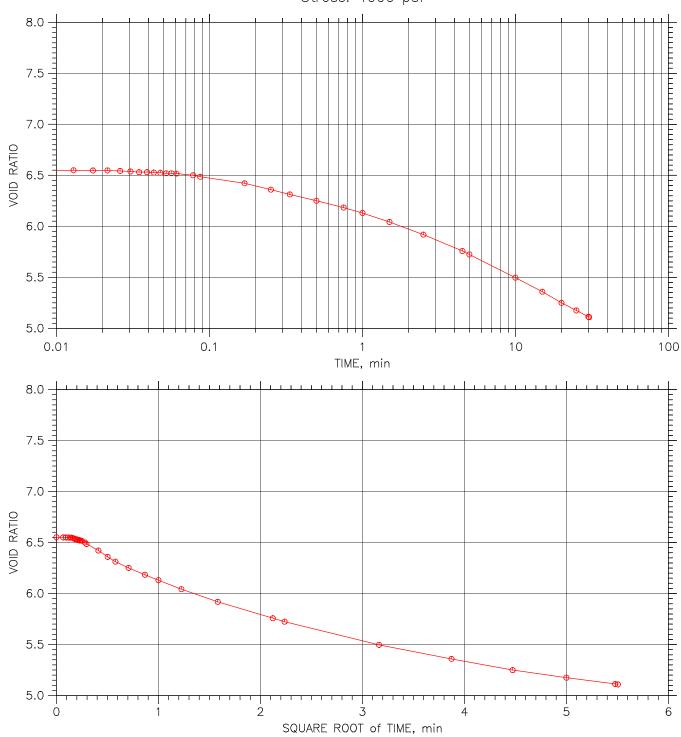




	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
b	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test

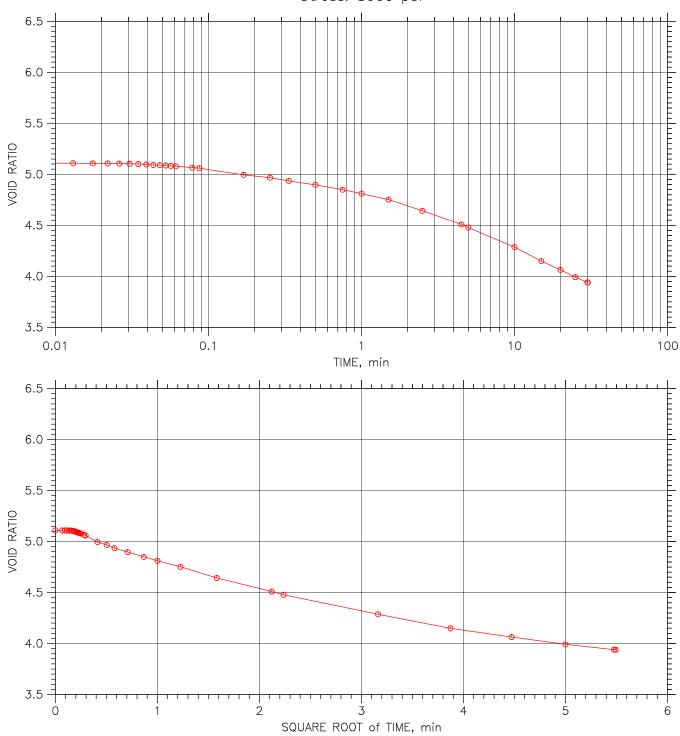
TIME CURVES Constant Load Step 6 of 19 Stress: 4000 psf





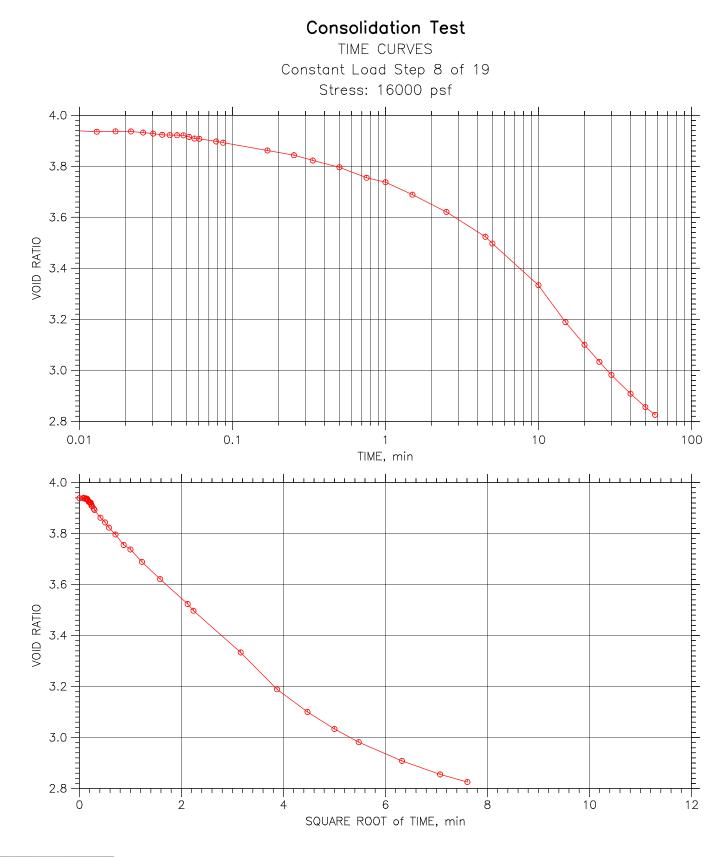
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
b	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 7 of 19 Stress: 8000 psf



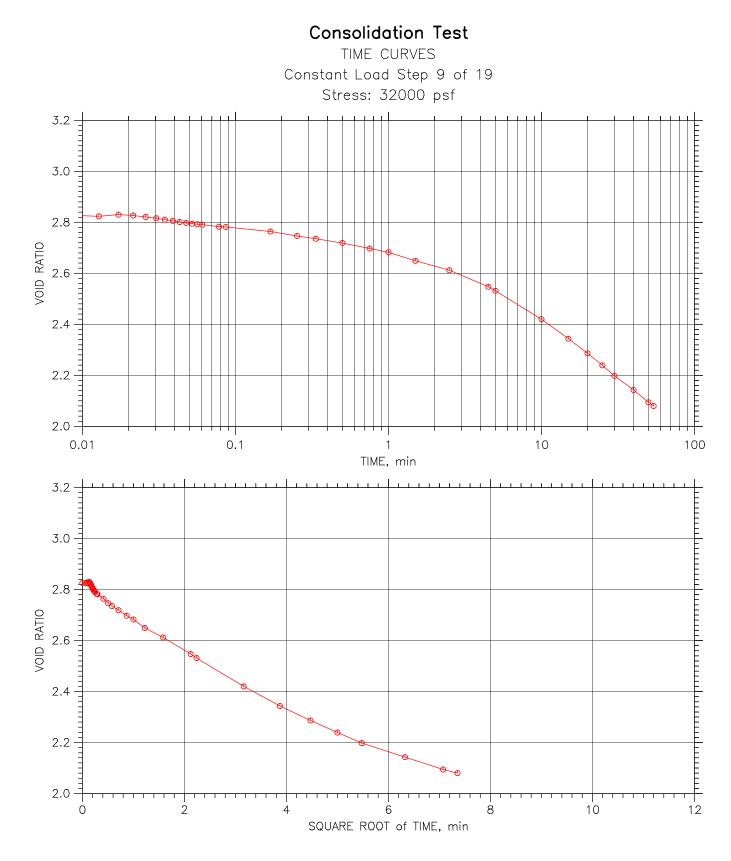


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
b	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
_	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			





	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
,	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 10 of 19 Stress: 64000 psf 2.6 -2.4 -2.2 VOID RATIO 2.0 Φ 1.8 1.6 1.4 -П 0.1 10 0.01 1 100 TIME, min 2.6 -2.4 2.2 VOID RATIO 2.0 1.8 1.6 භ 1.4 12 2 10 8 4 6 0



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
b	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visua	Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 11 of 19 Stress: 32000 psf 1.56 -1.54 -1.52 VOID RATIO 1.50 1.48 1.46 1.44 -П 0.1 0.01 1 10 100 TIME, min 1.56 1.54 1.52 -VOID RATIO 1.50 1.48 1.46 1.44 Т 2 6 5 3 4 0



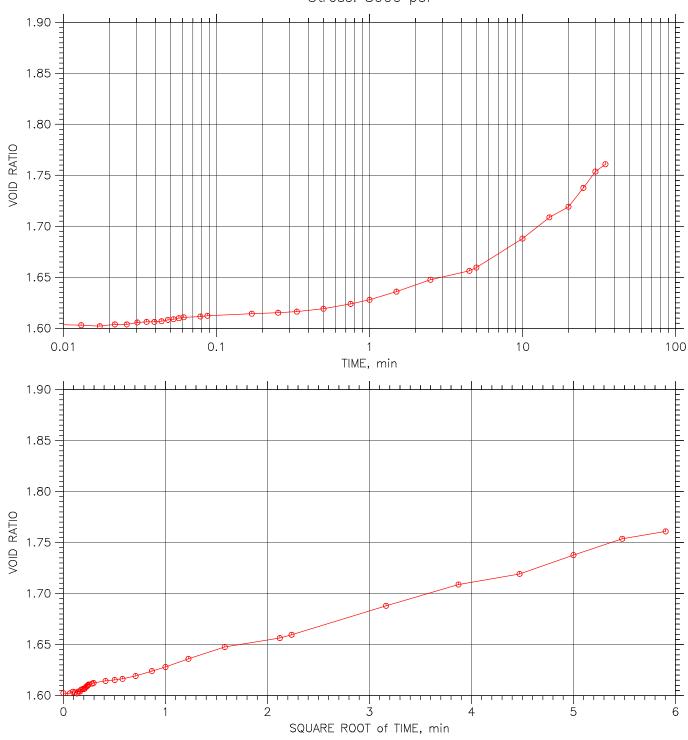
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
ь	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
_	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 12 of 19 Stress: 16000 psf 1.75 -1.70 -1.65 VOID RATIO 1.60 1.55 1.50 Æ 1.45 -۲I 0.1 0.01 1 10 100 TIME, min 1.75 -1.70 -1.65 VOID RATIO 1.60 1.55 1.50 -1.45 Т 2 6 5 3 4 0 SQUARE ROOT of TIME, min



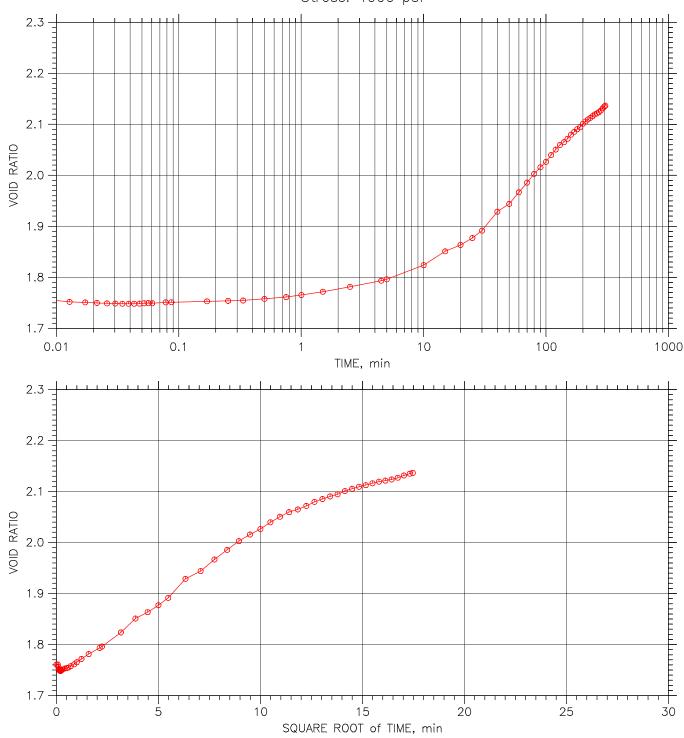
	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
,	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visua	l Classification: Peat	

Consolidation Test TIME CURVES Constant Load Step 13 of 19 Stress: 8000 psf



	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
ь	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visua	l Classification: Peat	

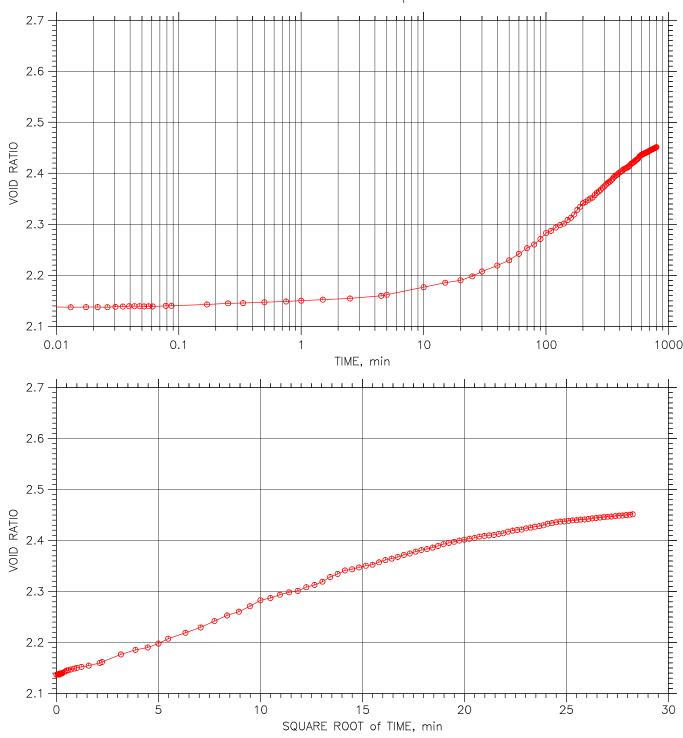
Consolidation Test TIME CURVES Constant Load Step 14 of 19 Stress: 4000 psf



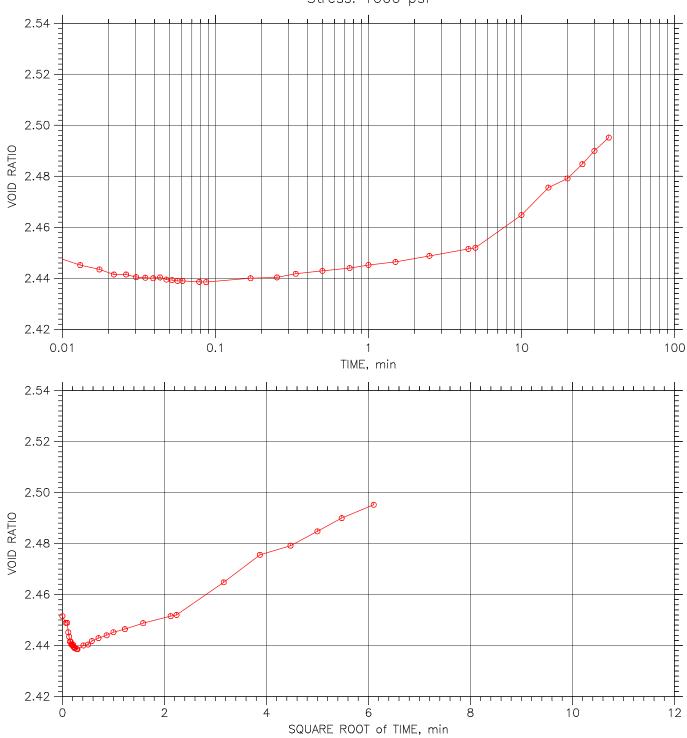


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
6	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 15 of 19 Stress: 2000 psf



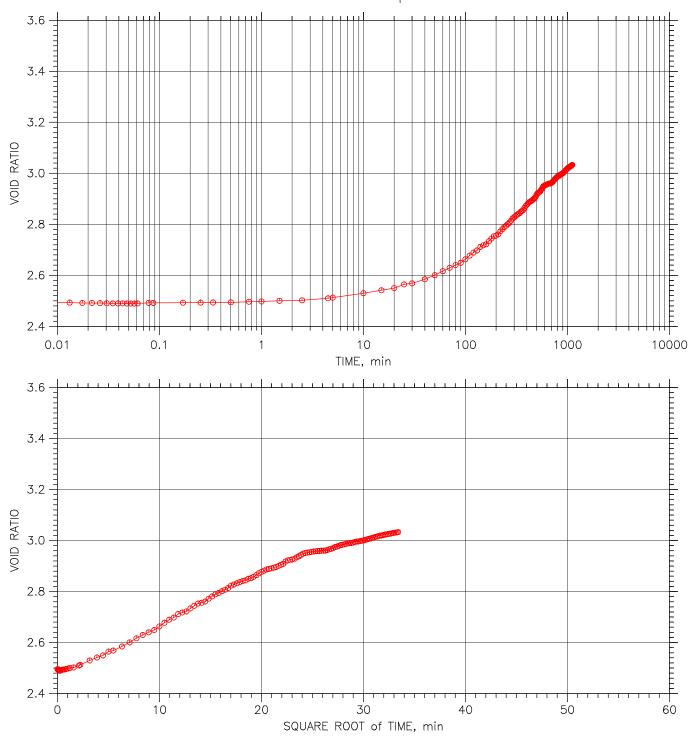
Consolidation Test TIME CURVES Constant Load Step 16 of 19 Stress: 1000 psf



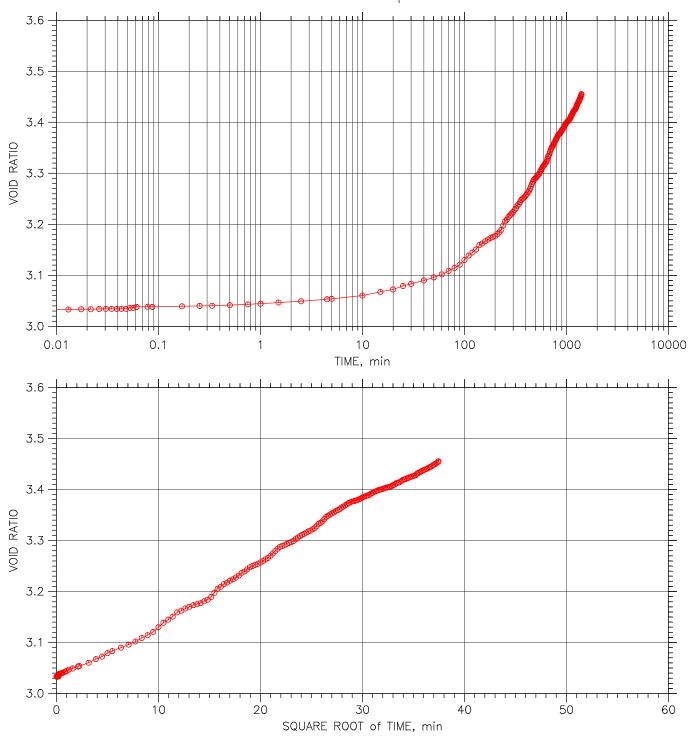


	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
b	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 17 of 19 Stress: 500 psf



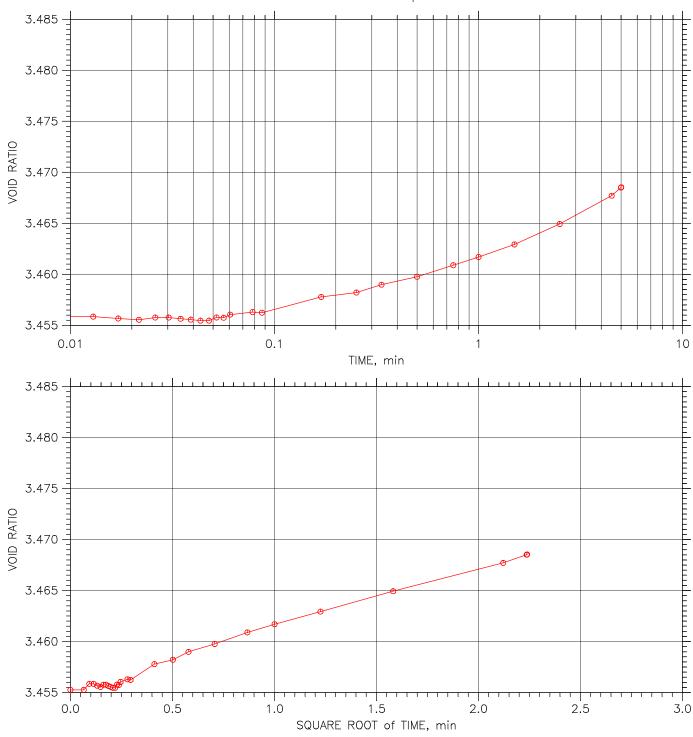
Consolidation Test TIME CURVES Constant Load Step 18 of 19 Stress: 250 psf



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Alaska Testlab	Depth
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	Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
	Boring No.: BH-10	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
	Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			ethod A)
Remarks: ASTM D2487: PT Visual Classification: Peat			

Consolidation Test TIME CURVES Constant Load Step 19 of 19 Stress: 100 psf



Project: FedEx BOG	Location: Anchorage, AK	Project No.: 220484
Boring No.: BH-10	Tested By: CZ	Checked By: MEK
Sample No.: Sa 2	Test Date: 5/4/2022	Test No.: 2
Depth: 6.0-7.0	Sample Type: Shelby	Elevation:
Description: ASTM D2435 One-Dim	nensional Consolidation of Soils (M	ethod A)
Remarks: ASTM D2487: PT Visual	l Classification: Peat	
	Boring No.: BH-10 Sample No.: Sa 2 Depth: 6.0-7.0 Description: ASTM D2435 One-Din	Boring No.: BH-10Tested By: CZSample No.: Sa 2Test Date: 5/4/2022

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Alaska Testlab – Anchorage 4040 B Street, Suite 102 Anchorage, AK 99503 Phone: 907-205-1987 Fax: 907-782-4409 info@alaskatestlab.com

Shelby Photo Log

 Report No.:
 1

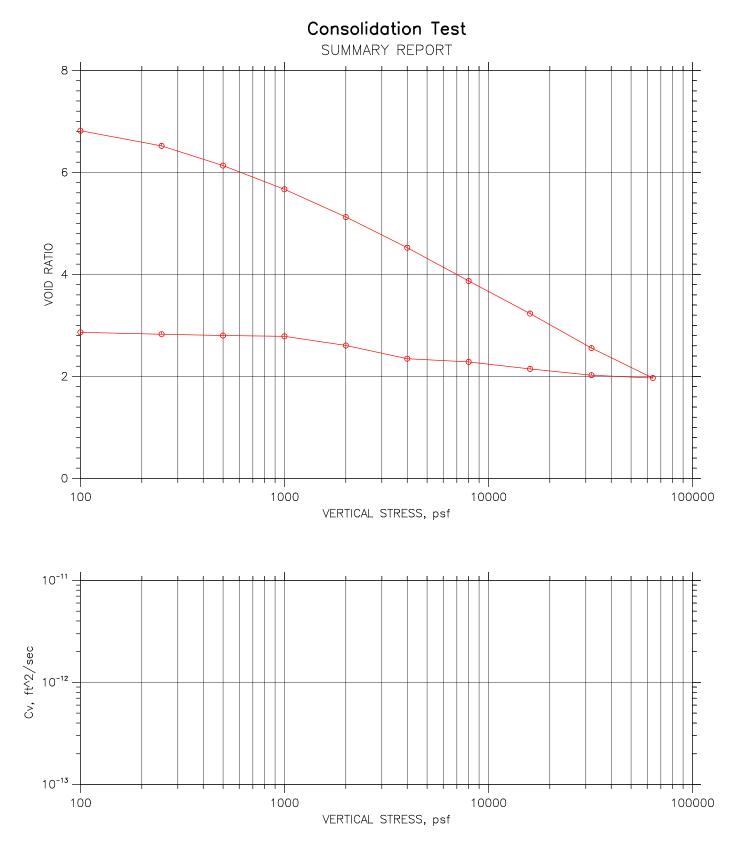
Client: CRW Engineering Group, LLC 3940 Arctic Blvd., Ste. 300 Anchorage, AK, 99503

Project: FedEx Bog

73138.00

Date Received:	March 21, 2022
Sample #:	22-0263-S03
Material:	BH-10 Sa2

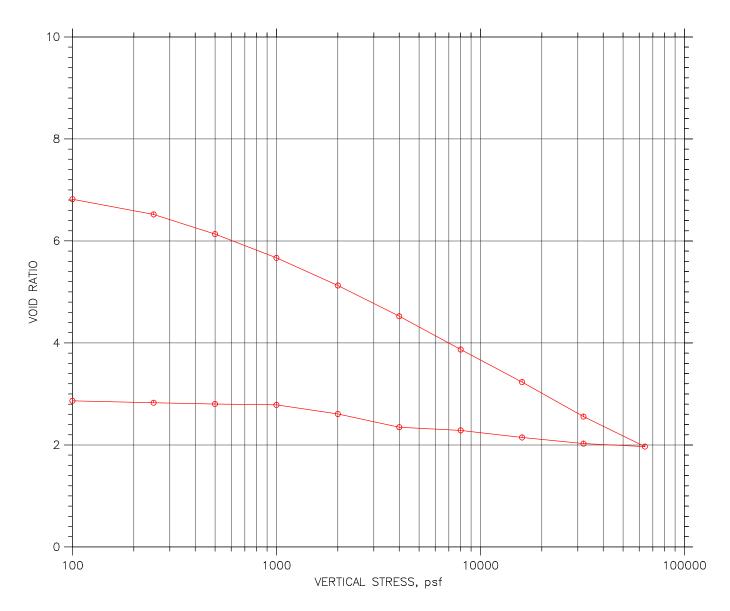




	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: 12	Tested By: CZ	Checked By: MEK	
ATL	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1	
Alaska Testlab	Depth: 4.0	Sample Type: Shelby	Elevation:	
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Mar Exprese	Remarks: ASTM D2487: PT Visua	emarks: ASTM D2487: PT Visual Classification: Peat		
- opener google	Displacement at End of Primary			

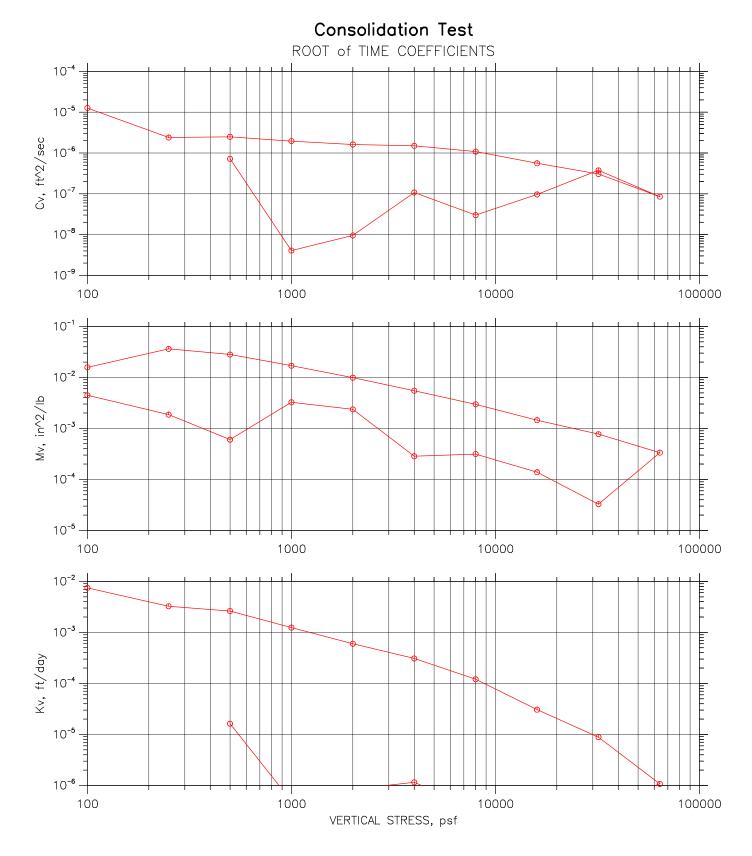
Consolidation Test

SUMMARY REPORT

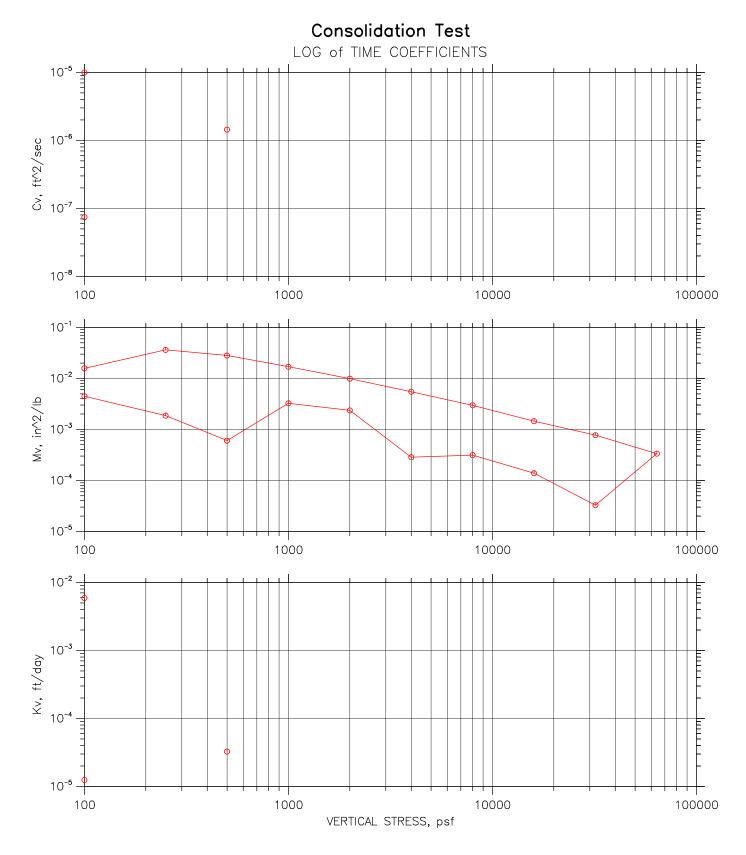


					Before Test	After Test
Overburden Pressure: 0 psf			Water Content, %	264.10	115.43	
Preconsolidation Pressure: 0 psf			Dry Unit Weight, pcf	18.164	37.156	
Compression Index: 0			Saturation, %	87.97	92.69	
Diameter: 2.497 in Height: 1.001 in		Void Ratio	6.90	2.86		
LL:	PL:	PI:	GS: 2.30	Back Pressure, psf	0	0

	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: 12	Tested By: CZ	Checked By: MEK	
ATL	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1	
Alaska Testlab	Depth: 4.0	Sample Type: Shelby	Elevation:	
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Han Experie	Remarks: ASTM D2487: PT Visual Classification: Peat			
oppicoportie	Displacement at End of Primary			

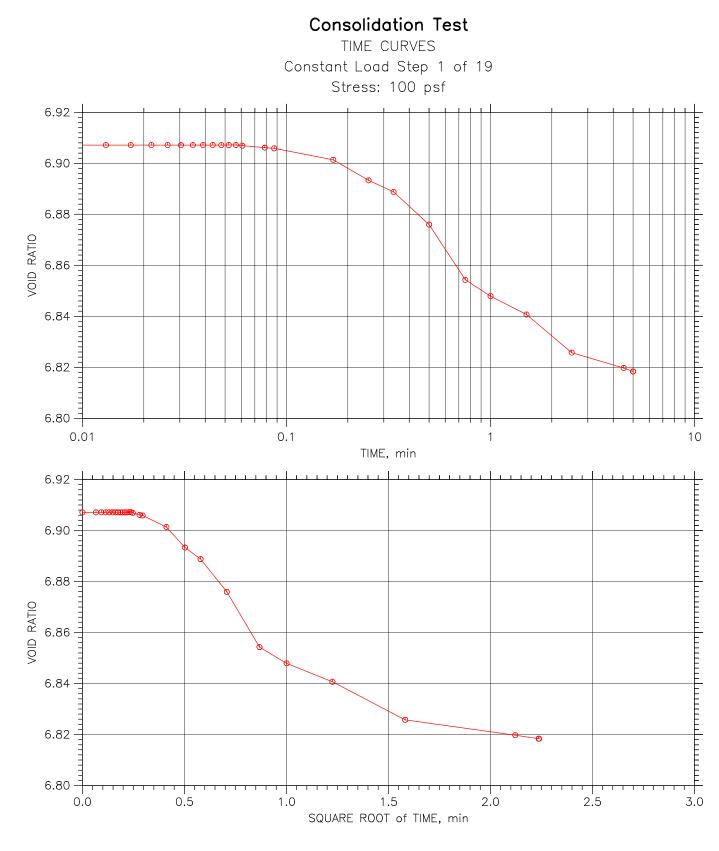


	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: 12	Tested By: CZ	Checked By: MEK	
ATL	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1	
Alaska Testlab Depth: 4.0 Sample Type: Shelby		Sample Type: Shelby	Elevation:	
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
Mar Exprese	Remarks: ASTM D2487: PT Visua			
- openergister	Displacement at End of Primary			



	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
Alaska Testlab	Depth: 4.0	Sample Type: Shelby	Elevation:
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Mar Eterpsed	Remarks: ASTM D2487: PT Visual Classification: Peat		
- marcipolice	Displacement at End of Primary		

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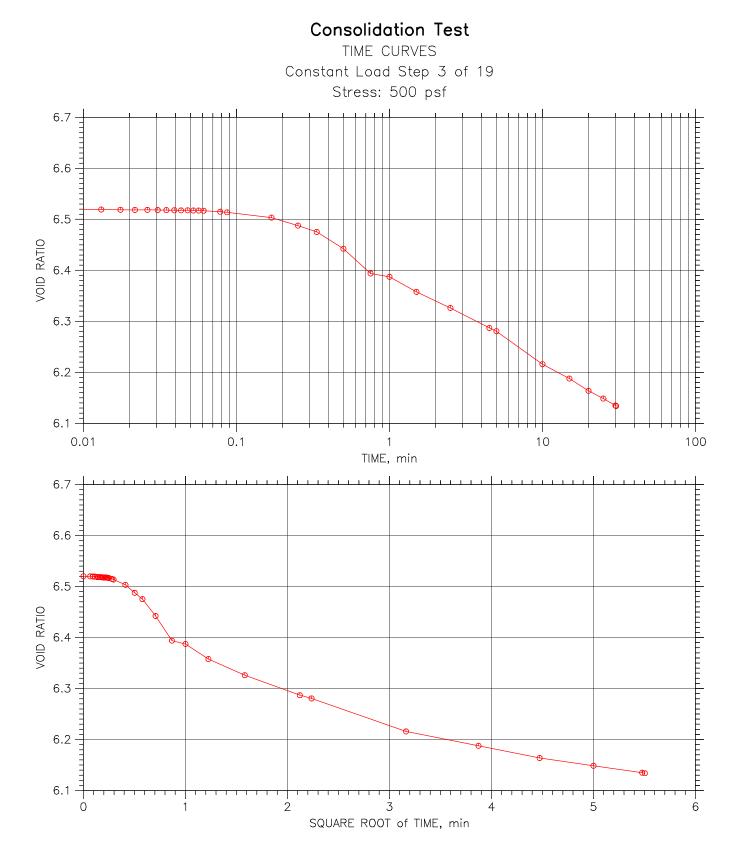
	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
ATL	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
laska Testlab	Depth: 4.0	Sample Type: Shelby	Elevation:
desared by:	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Han Etferpsed	Remarks: ASTM D2487: PT Visual Classification: Peat		
marchipe			

Ale

Consolidation Test TIME CURVES Constant Load Step 2 of 19 Stress: 250 psf 7.1 – 7.0-6.9 VOID RATIO 6.8 6.7 6.6 6.5 -П 0.1 10 0.01 1 100 TIME, min 7.1 7.0 -6.9 VOID RATIO 6.8 6.7 6.6 6.5 6 2 5 3 4 0 1 SQUARE ROOT of TIME, min

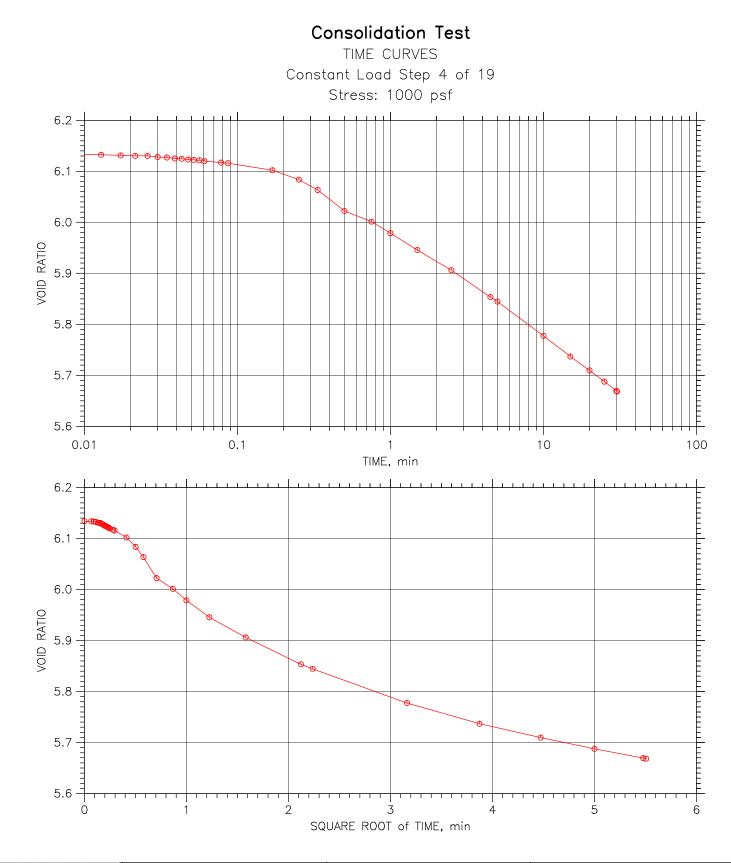
Alaska Testlab

	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
	Depth: 4.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)
	Remarks: ASTM D2487: PT Visua		



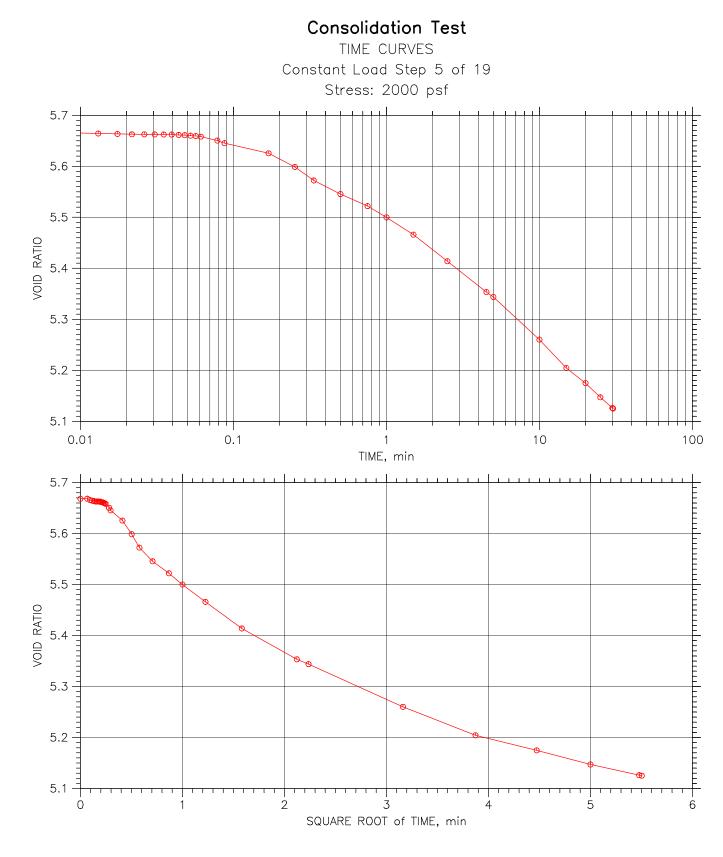


	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484	
	Boring No.: 12	Tested By: CZ	Checked By: MEK	
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1	
	Depth: 4.0	Sample Type: Shelby	Elevation:	
_	Description: ASTM D2435 One-Din	nensional Consolidation of Soils (M	ethod A)	
	Remarks: ASTM D2487: PT Visual Classification: Peat			



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	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
	Depth: 4.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

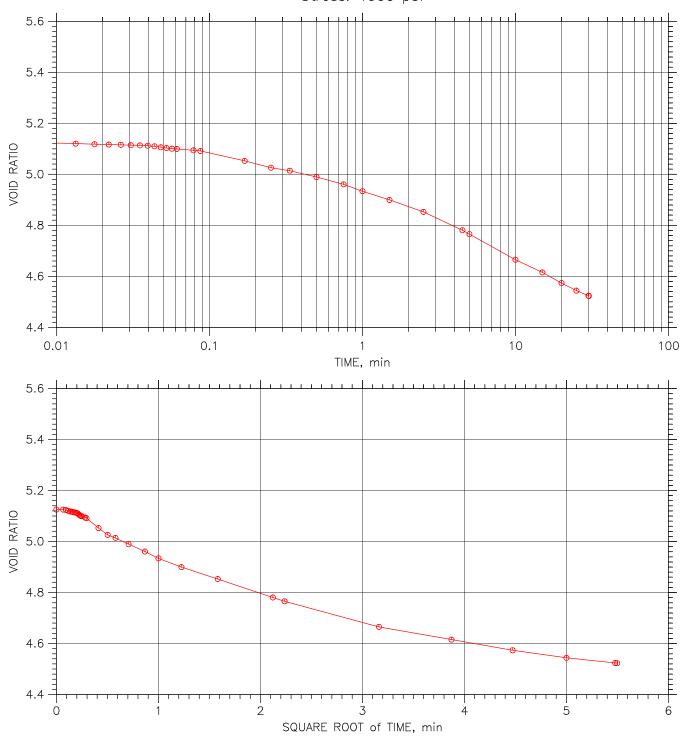




	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
	Depth: 4.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test

TIME CURVES Constant Load Step 6 of 19 Stress: 4000 psf

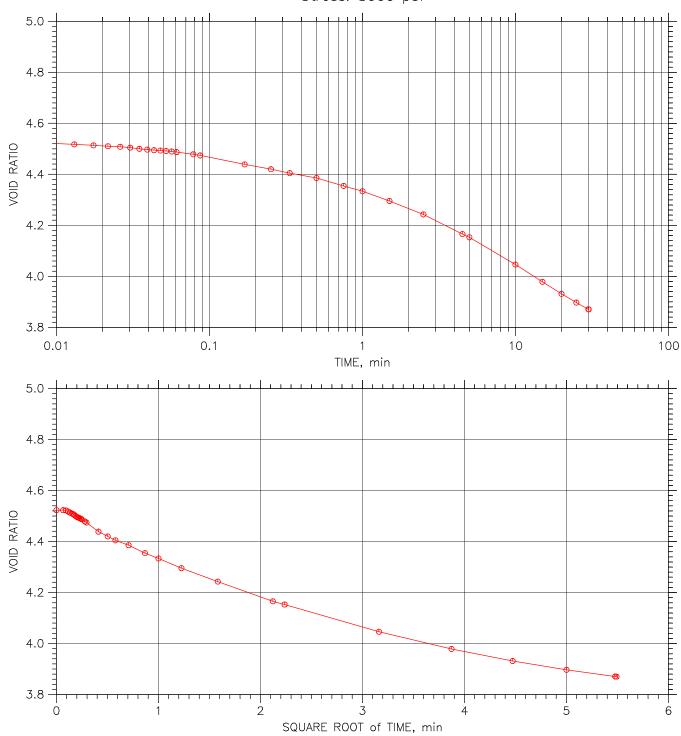


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	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
b	Depth: 4.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual	Classification: Peat	

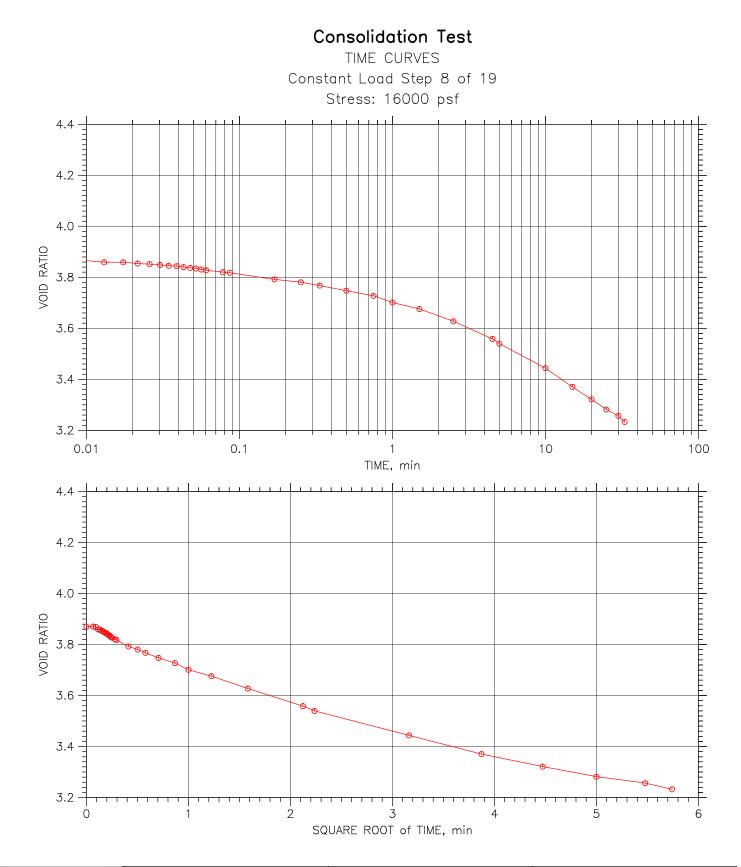
Consolidation Test

TIME CURVES Constant Load Step 7 of 19 Stress: 8000 psf



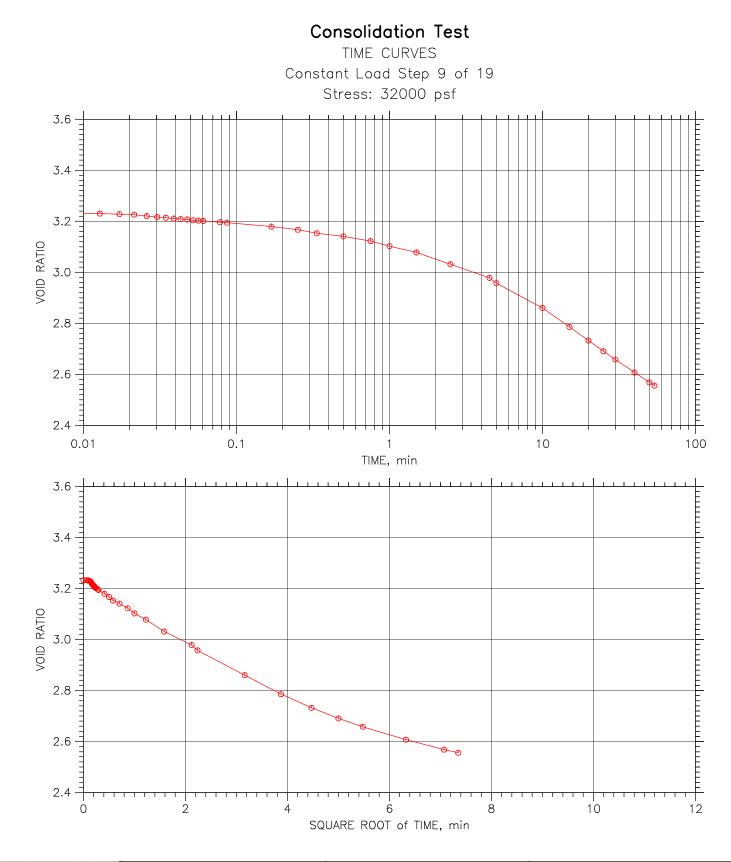
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	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
ь	Depth: 4.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		





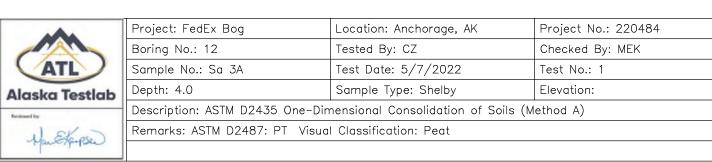
	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
	Depth: 4.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		



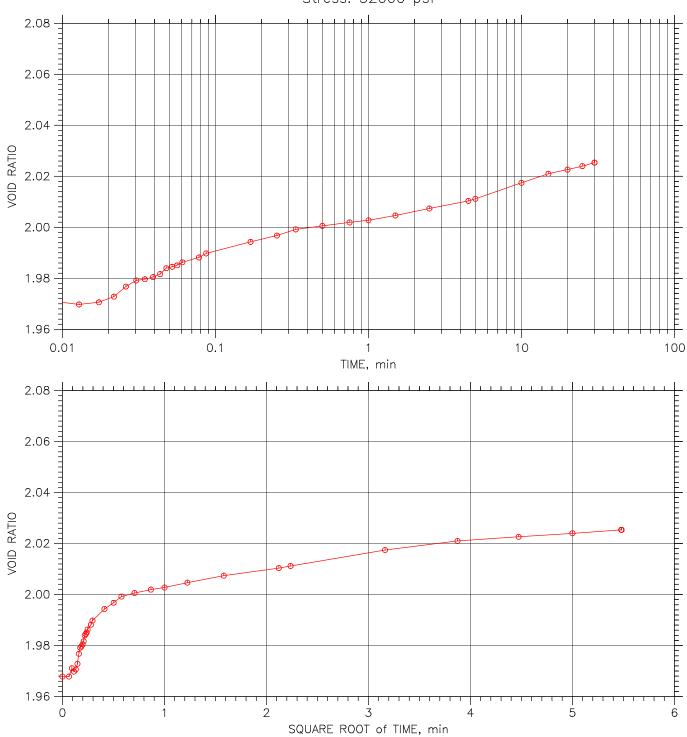


	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
•	Depth: 4.0	Sample Type: Shelby	Elevation:
	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 10 of 19 Stress: 64000 psf 3.0 2.8 2.6 VOID RATIO 2.4 2.2 2.0 1.8 -0.01 0.1 10 100 1 TIME, min 3.0 2.8 2.6 VOID RATIO 2.4 2.2 2.0 0-0 1.8 Т 12 ż 6 8 10 \cap 4 SQUARE ROOT of TIME, min



Consolidation Test TIME CURVES Constant Load Step 11 of 19 Stress: 32000 psf



Project No.: 220484

Checked By: MEK

Test No.: 1 Elevation:

	Project: FedEx Bog	Location: Anchorage, AK	Project N	
	Boring No.: 12	Tested By: CZ	Checked	
ATL	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.:	
Alaska Testlab	Depth: 4.0	Sample Type: Shelby	Elevation	
Reviewed by	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)			
1) El an	Remarks: ASTM D2487: PT Visua	l Classification: Peat		
appression				

Consolidation Test TIME CURVES Constant Load Step 12 of 19 Stress: 16000 psf 2.30 -2.25 2.20 VOID RATIO 2.15 2.10 2.05 -2.00 -. | 0.1 10 0.01 1 100 TIME, min 2.30 2.25 2.20 VOID RATIO 2.15 2.10 2.05 -2.00 12 2 8 10 6

SQUARE ROOT of TIME, min

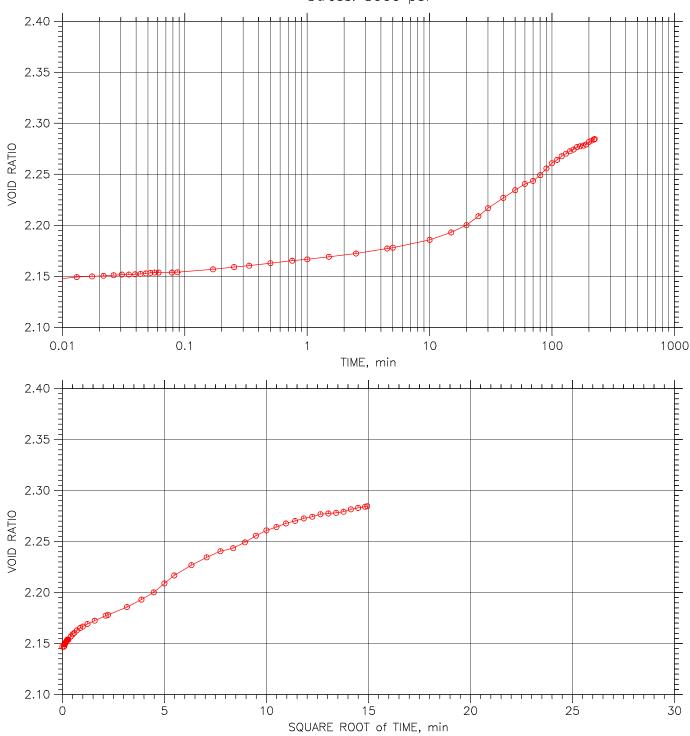
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	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
9	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
b	Depth: 4.0	Sample Type: Shelby	Elevation:
_	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visua	Classification: Peat	

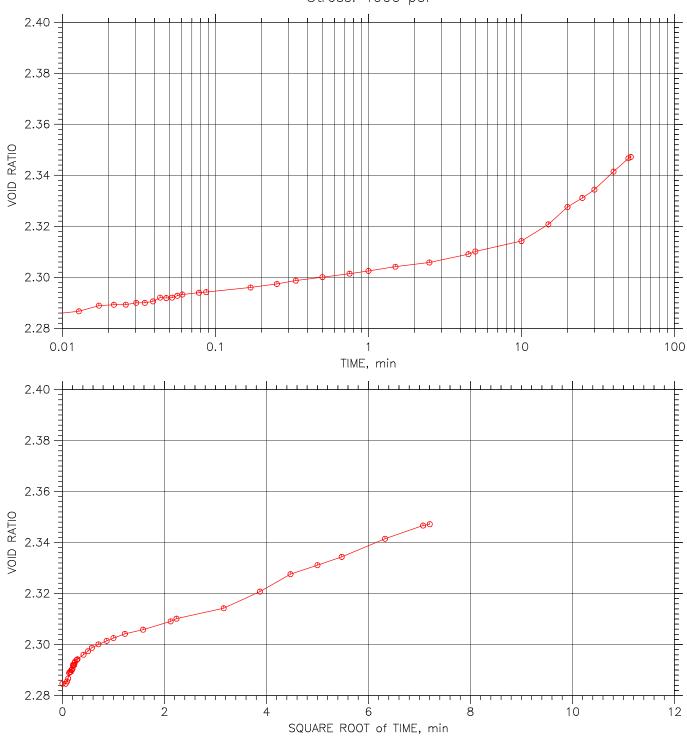
Consolidation Test TIME CURVES Constant Load Step 13 of 19 Stress: 8000 psf



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	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
>	Depth: 4.0	Sample Type: Shelby	Elevation:
	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

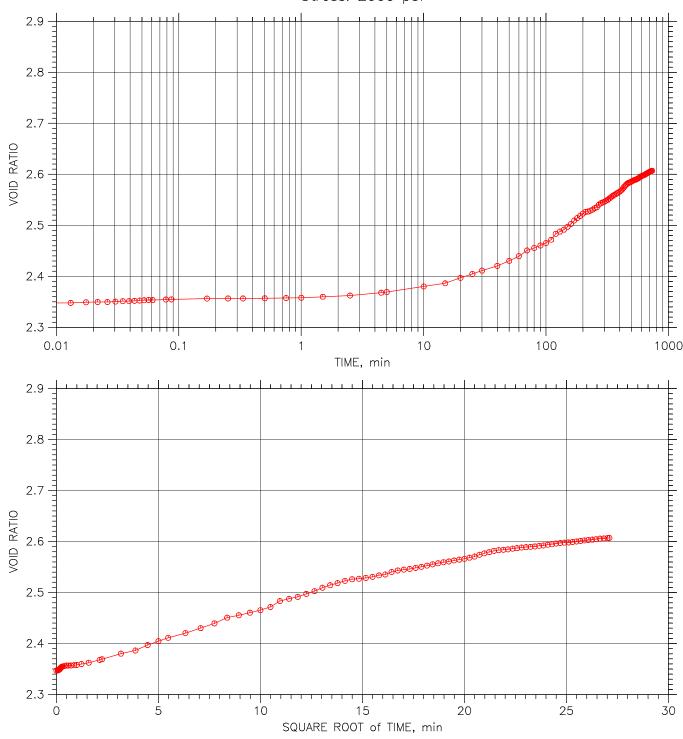
Consolidation Test TIME CURVES Constant Load Step 14 of 19 Stress: 4000 psf





	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
b	Depth: 4.0	Sample Type: Shelby	Elevation:
	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 15 of 19 Stress: 2000 psf



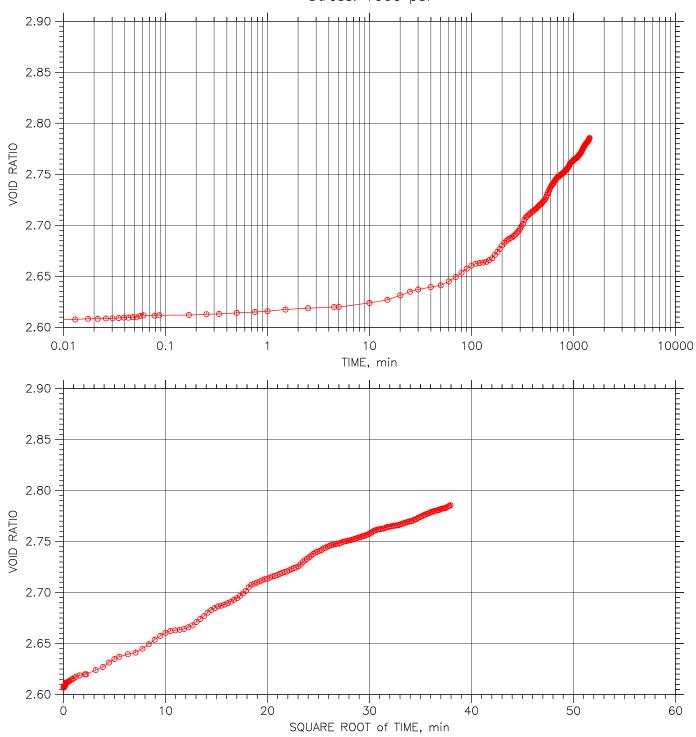
Project No.: 220484

Checked By: MEK

Test No.: 1

Elevation:

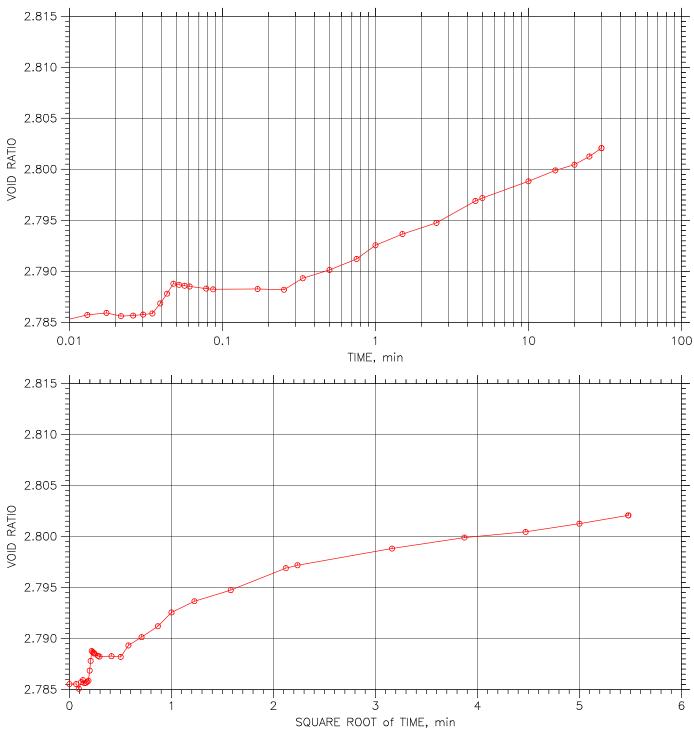
Consolidation Test TIME CURVES Constant Load Step 16 of 19 Stress: 1000 psf





	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
ь	Depth: 4.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 17 of 19 Stress: 500 psf



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	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
	Depth: 4.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
Remarks: ASTM D2487: PT Visual Classification: Peat			

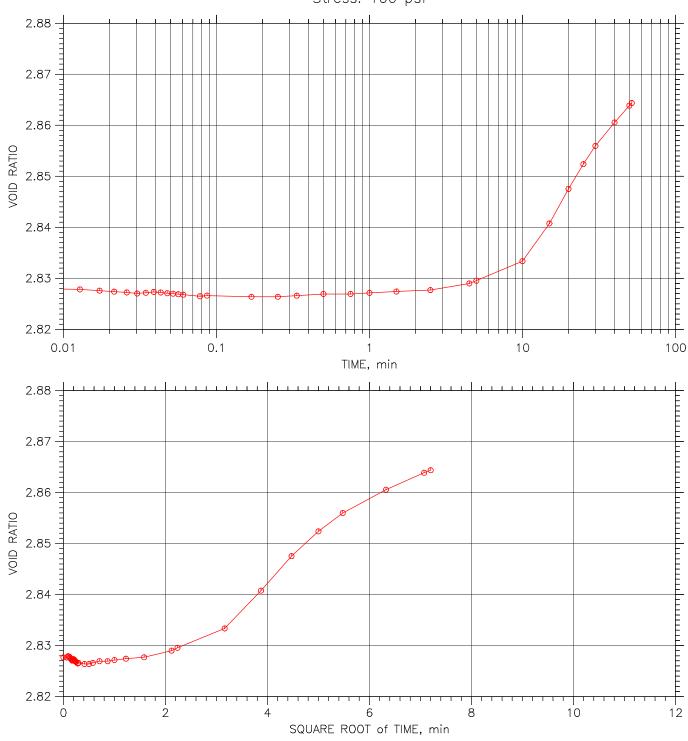
Consolidation Test TIME CURVES Constant Load Step 18 of 19 Stress: 250 psf 2.85 -2.84 -2.83 VOID RATIO 2.82 2.81 2.80 2.79 -. | 0.1 0.01 1 10 100 TIME, min 2.85 -2.84 2.83 ø VOID RATIO 2.82 2.81 2.80 2.79 Т 2 6 5 3 4 \cap

SQUARE ROOT of TIME, min



	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
ь	Depth: 4.0	Sample Type: Shelby	Elevation:
-	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		

Consolidation Test TIME CURVES Constant Load Step 19 of 19 Stress: 100 psf





	Project: FedEx Bog	Location: Anchorage, AK	Project No.: 220484
	Boring No.: 12	Tested By: CZ	Checked By: MEK
	Sample No.: Sa 3A	Test Date: 5/7/2022	Test No.: 1
ь	Depth: 4.0	Sample Type: Shelby	Elevation:
_	Description: ASTM D2435 One-Dimensional Consolidation of Soils (Method A)		
	Remarks: ASTM D2487: PT Visual Classification: Peat		



Alaska Testlab – Anchorage 4040 B Street, Suite 102 Anchorage, AK 99503 Phone: 907-205-1987 Fax: 907-782-4409 info@alaskatestlab.com

Shelby Photo Log

 Report No.:
 1

Client: Project:			
		Date Received:	March 21, 2022
	73138.00	Sample #:	22-0265-S03

