
**DRAFT REPORT
SUBGRADE EXPLORATION REPORT
PER-13-19.67
PERRY COUNTY, OHIO
PID#: 95461**

Prepared For:

Michael Baker International
1111 Superior Avenue, Suite 2300
Cleveland, OH 44114

Prepared by:

NATIONAL ENGINEERING AND ARCHITECTURAL SERVICES INC.
2800 Corporate Exchange Drive, Suite 240
Columbus, Ohio 43231

NEAS PROJECT 22-0006

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1. INTRODUCTION

1.1. General

National Engineering & Architectural Services, Inc. (NEAS) presents our Subgrade Exploration Report for the roadway rehabilitation project (PER-13-19.67, PID 95461) along State Route 13 (SR-13) between the Villages of New Lexington and Somerset in Perry County, Ohio. It is our understanding that the objective of the proposed project is the full-depth replacement of the existing SR-13 pavement extending from the northern corporation line of New Lexington to the southern corporation line of Somerset. We understand that the proposed pavement replacement will maintain the existing pavement footprint (horizontal alignment) as well as the existing vertical alignment. This report presents a summary of the project encountered surficial and subsurface conditions and our recommendations for subgrade stabilization and pavement design parameters. The roadway analysis performed as part of this report has been performed in accordance with ODOT's July 2021 revision of *Geotechnical Bulletin 1* (GB1) (ODOT [1], 2021) and *Pavement Design Manual* (PDM) (ODOT, 2022).

The exploration was conducted in general accordance with NEAS's proposal to Michael Baker International (MBI), dated November 29, 2021, and with the provisions of the January 2022 (ODOT, 2022) revisions of ODOT's *Specifications for Geotechnical Explorations* (SGE).

The scope of work performed by NEAS as part of the referenced project included: a review of published geotechnical information; performing 105 total test borings; laboratory testing of soil samples in accordance with the SGE; performing geotechnical engineering analysis to assess subgrade and recommended pavement design parameters; and development of this summary report.

2. GEOLOGY AND OBSERVATIONS OF THE PROJECT

2.1. Geology and Physiography

The project site is located within the Muskingum-Pittsburgh Plateau, part of the Allegheny Plateaus (ODGS, 1998). This is a moderately high to high relief (300 to 600 ft), dissected plateau, having broad major valleys that contain outwash terraces and tributaries with lacustrine terraces and medium-grained bedrock. Remnants of ancient Teays-age drainage system are uncommon. Soils in this region are characteristically Wisconsin-age sand, gravel, lacustrine silt, and silt-loam colluvium over Mississippian- to Pennsylvanian-age shales, siltstones, sandstones, and economically important coals and claystones.

Based on the Quaternary Geology Map of Ohio, the geology along the southern portion of the project extending from the southern project limits to County Road (Rd) 113 (CR-113) is mapped as late Wisconsinian-age lacustrine clay, deposited in the calm water of glacial lakes, and is mostly laminated and covered in some places with thin organic deposits. The geology along the central portion of the project site from CR-113 to about 0.25 miles south of Green Rd NE/Town Highway 146 is mapped as Cenozoic-age colluvium derived from local bedrock in unglaciated area, and includes scattered area of residuum, weathered material, landslides, and bedrock outcroppings. The geology along the remaining northern portion of the project site extending to the northern project limits is mapped as Illinoian-age water-deposited dissected ground moraine which occurs on ridgetops and is mixed with weathered bedrock as colluvium on slopes. These soils are all underlain by Pennsylvanian-age shale, siltstone, coal, and underclay bedrock (Pavey et al., 1999).

Based on the Bedrock Geologic Units Map of Ohio (USGS & ODGS, 2006), bedrock within the project area consists of shale, siltstone, coal and underclay of the Allegheny and Pottsville groups, undivided. This

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unit is comprised of Pennsylvanian-age shale and siltstone with minor lithologic constituents of coal and underclay. The shale in this formation is described as black, gray, and olive in color, locally fossiliferous, and calcareous in part. The siltstone in this unit is described as gray, greenish, and olive in color, clayey to sandy, thin to medium bedded and locally fossiliferous. The underclay, which is commonly rooted and underlies coal beds, is described as gray and olive in color, and clayey to silty. The coal in this unit is mostly banded bituminous, locally cannel and generally in discrete beds though locally contains shale partings split into multiple beds. Bedrock is anticipated to gently rise from south to north throughout the project site with the central portion of the site having a gentler slope than the northern and southern portions (ODGS, 2003). Based on the ODNR bedrock topography map of Ohio, bedrock elevations at the project site can be expected to be at about 850 to 1000 ft above mean sea level (amsl), putting bedrock at a depth ranging from about 70 ft below ground surface (bgs) to outcropping (above the ground surface) in locations.

The predominant soils at the project site have been mapped (Web Soil Survey) by the Natural Resources Conservation Service (USDA, 2015) as: 1) Alford silt loam; 2) Cincinnati silt loam; and, 3) Homewood-Westmoreland silt loam. It should be noted that a portion of the project between Palmer Rd NE and Town Highway 150 has been mapped as Newark silt loam. Soils in the Alford series, generally underlying the southern portion of the project, are characterized as very deep, well drained soils formed in loess on loess hills and less commonly on outwash plains. Soils in the Cincinnati silt loam series, generally underlying the northern portion of the project, are characterized as very deep, well drained soils that are moderately deep to fragipan. These soils are formed in a mantle of loess, a thin layer of pedisegment, and a paleosol formed in the underlying till on till plains. Soils in the Homewood-Westmoreland combined silt loam series which underly the central portion of the project are characterized as very deep, moderately well drained soils that are moderately deep or shallow to fragipan. These soils are formed in a thin mantle of loess and in the underlying weathered Illinoian-age till on till plains. Soils in the Newark silt loam series are characterized as very deep, somewhat poorly drained soils formed in mixed alluvium from limestone, shale, siltstone, sandstone, and loess on nearly level flood plains and in depressions. The Alford and Cincinnati series are comprised of primarily fine-grained soils and classify as A-4 and A-6 type soils according to the AASHTO method of soil classification. The Homewood-Westmoreland combined series is comprised of both coarse- and fine-grained soils and classifies as A-1, A-2, A-4, A-6, and A-7 type soils according to the AASHTO method of soil classification. The Newark series is comprised of both coarse- and fine-grained soils and classifies as A-4, A-6 and A-7 type soils according to the AASHTO method of soil classification (USDA, 2015). Though the indicated soil types are mapped as the dominant units underlying the project sites, various other less prominent soil series (i.e., less than 5 percent of the project area) were mapped within the project boundaries. These less prominent soil series consisted of Bethesda channery silt loam, Euclid silt loam, Fitchville silt loam, Glenford silt loam, Guernsey-Westmoreland silt loam, Kinnick-Lindside silt loam, Mentor silt loam, Peoga silt loam, Wellston silt loam, Westmoreland silt loam and Zanesville silt loam.

2.2. Hydrology/Hydrogeology

Groundwater at the project site can be expected at an elevation consistent with that of Rush Creek (southern/central portions) and Somerset Creek (northern portion) as they are the most dominant hydraulic influences in the vicinity of the project's boundaries. The water level of Rush and Somerset Creek may be generally representative of the local groundwater table. However, it should be noted that perched groundwater systems may be existent in areas due to the presence of fine-grained soils making it difficult for groundwater to permeate to the phreatic surface.

The project site is not located within a special flood hazard area based on available mapping by the Federal Emergency Management Agency's (FEMA) National Flood Hazard mapping program (FEMA, 2016).

2.3. Mining and Oil/Gas Production

Based on ODNR's Abandoned Underground Mine Locator, multiple abandoned mines are noted within 200 to 800 ft of the portion of SR-13 that extends approximately 0.1 miles north of and 0.5 miles south of the intersection with Green Rd NE/Town Highway 146. The mines consisted of surface coal mines and were abandoned between 1932 and 1980. Documentation of these abandoned mines was not available for review (ODNR [1], 2016).

Two (2) actively producing oil and gas wells are noted on ODNR's Oil and Gas Well Locator in the immediate vicinity of the project site. The well summary logs including coordinates of the referenced well locations can be found in Appendix A (ODNR [2], 2016).

2.4. Historical Records and Previous Phases of Project Exploration

A historic record search was performed through ODOT's Geotechnical Data Management System (GeoMS), and the following report/plans were available for review and evaluation for this report:

- Soil Boring Logs as part of ODOT Geohazard Exploration Project PER-13-26.08, prepared by Ohio State Highway Testing Laboratory., dated December 10, 1971; and,
- Soil Boring Logs as part of ODOT Soil Profile New Alignment Project PER-13-15.00/7.77, prepared by Ohio State Highway Testing Laboratory., dated April 7, 1965.

However, the historic boring information may not be representative of the current subgrade the project is located in, therefore; historic borings are not referenced within this report nor within the project developed Soil Profile Exploration Sheets.

2.5. Field Reconnaissance

A field reconnaissance visit for the overall project area was conducted on May 5, 2022 and May 18, 2022, along the project portions of SR-13 between northern corporation limit of New Lexington and the southern corporation limit of Somerset. Site conditions including existing pavement conditions were noted and photographed during the visit. Photographs of notable pavement distress and a summary of our observations are provided below.

2.5.1. Land Use and Cover

The land use of the project area generally consists of: 1) agricultural land; 2) woodland; 3) residential properties; 4) industrial properties; and, 5) utility infrastructure (i.e., transformer substations and gas pipeline valve houses).

2.5.2. State Route 13

In general, the SR-13 pavement within the project limits were observed to be in fair to poor condition with various signs of weathering and surface wear. The exception would be the southernmost 450 ft of SR-13 which was observed to be in good condition with less frequent and severe cracking/weathering. Along SR-13 occasional to extensive, moderate to high severity longitudinal and transverse cracking, edge cracking, map cracking, and crack sealing deficiencies were observed (Photograph 1). Occasional high severity patching and low severity rutting were also observed. With respect to drainage, the pavement along SR-13 appeared to be well-drained with no signs of standing water in the roadway though some standing water was observed in the drainage ditches on either side of SR-13. The roadway throughout the project typically drained to drainage ditches on either side with some areas draining directly down adjacent slopes to various streams and culverts.

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The surrounding land along the project portions of SR-13 was generally hilly with the roadway extending through a combination of side-hill cuts/fills, valleys/cuts and ridges/embankments. The exception being areas near the southern and northern limits of the project which were relatively short segments that extended through relatively flat terrain. Side slopes along the hilly portions of SR-13 were generally more gradual though some steeper side slopes as well as rock outcroppings were observed in some areas (Photograph 2).

During our office reconnaissance, seven (7) locations throughout the project site were flagged as potential geohazards through ODOT's Geotechnical Data Management System (GeoMS). These sites were subsequently visited during our site reconnaissance visit and any potential signs of geotechnical instability were noted and photographed. Potential signs of geotechnical instability were observed at five (5) of the seven (7) flagged locations and included medium to high severity edge cracking and high severity patching. Signs of potential remediation measures such as riprap/slope protection and soldier pile lagging wall support were also observed in certain locations. The site at which potential signs of instability were observed include the following sites: 1) between straight line mile (SLM) 22.813 and SLM 22.829 (Photograph 3); 2) between SLM 22.961 and SLM 23.035 (Photograph 4); 3) between SLM 23.466 and SLM 23.482 (Photograph 5); 4) between SLM 23.832 and SLM 23.890 (Photograph 6); and, 5) between SLM 24.923 and SLM 24.937 (Photograph 7). No other apparent signs of geotechnical instability were observed along the project portion of SR-13 during our visit.

Photograph 1: Overall pavement condition of SR-13



Photograph 2: Rock outcroppings observed along eastern shoulder of SR-13



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Photograph 3: Geohazard site between SLM 22.813 and SLM 22.829



Photograph 4: Geohazard site between SLM 22.961 and SLM 23.035



Photograph 5: Geohazard site between SLM 23.466 and SLM 23.482



Photograph 6: Geohazard site between SLM 23.832 and SLM 23.890



Photograph 7: Geohazard site between SLM 24.923 and SLM 24.937



3. GEOTECHNICAL EXPLORATION

3.1. Exploration Program

The subsurface exploration for the project was conducted by NEAS between June 7, 2022 and June 30, 2022 and included 105 borings each drilled to a depth of 7.5 ft bgs. The boring locations were selected by NEAS in general accordance with the guidelines contained in the SGE with the intent to evaluate subsurface soil and groundwater conditions. Borings were typically located within existing pavement areas that are planned to undergo full-depth replacement. Target boring locations were located in the field by NEAS prior to drilling utilizing handheld GPS equipment and the boring locations were drilled in areas that were not restricted by underground utilities or dictated by terrain (i.e., steep embankment slopes). Each as-drilled project boring location and corresponding ground surface elevation was surveyed in the field following drilling. Each individual project boring log (included within Appendix C) includes the recorded boring latitude and longitude location (based on the surveyed Ohio State Plane South, NAD83, location) and the corresponding ground surface elevation. The boring locations are depicted within the boring location plan provided in Appendix B.

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Borings were drilled using a CME 75 truck-mounted drilling rig utilizing 3.25-inch (inner diameter) hollow stem augers. Soil samples were typically recovered continuously to a depth of 7.5 ft bgs, using an 18-inch split spoon sampler (AASHTO T-206 “Standard Method for Penetration Test and Split Barrel Sampling of Soils.”). The soil samples obtained from the exploration program were visually observed in the field by the NEAS field representative and preserved for review by a Geologist for possible laboratory testing. Standard penetration tests (SPT) were conducted using a CME auto hammer that has been calibrated on January 24, 2022 to be 79% efficient as indicated on the boring logs (Appendix C).

Field boring logs were prepared by drilling personnel and included pavement description (where present), lithological description, SPT results recorded as blows per 6-inch increment of penetration and estimated unconfined shear strength values on specimens exhibiting cohesion (using a hand-penetrometer). Groundwater level observations were recorded both during and after the completion of drilling. These groundwater level observations are included on the individual boring logs (provided in Appendix C). After completing the borings, the boreholes were backfilled with either auger cuttings, bentonite chips, or a combination of these materials and patched accordingly with cold patch asphalt and/or cement when drilled through the roadway.

3.2. Laboratory Testing Program

The laboratory testing program consisted of classification testing, moisture content determinations, and sulfate content testing. Data from the laboratory testing program were incorporated onto the boring logs (Appendix C). Soil samples are retained at the laboratory for 60 days following report submittal, after which time they will be discarded.

3.2.1. Classification Testing

Representative soil samples were selected for index property (Atterberg Limits) and gradation testing for classification purposes on approximately forty-nine percent (49%) of the samples. At each subgrade boring location, the upper two samples obtained below the proposed top of subgrade elevation were generally tested while additional samples were selected for testing with the intent of properly classifying the subsurface soil and groundwater conditions within the planned project limits. Soils not selected for testing were compared to laboratory tested samples/strata and classified visually. Moisture content testing was conducted on all samples. The laboratory testing was performed in general accordance with applicable AASHTO specifications and ODOT Supplements.

Final classification of soil strata in accordance with AASHTO M-145 “Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes,” as modified by ODOT “Classification of Soils” was made once laboratory test results became available. The results of the soil classification are presented on the boring logs in Appendix C.

3.2.2. Standard Penetration Test Results

Standard Penetration Tests (SPT) and split-barrel (commonly known as split-spoon) sampling of soils were performed continuously in the project borings performed. To account for the high efficiency (automatic) hammers used during SPT sampling, field SPT N-values were converted based on the calibrated efficiency (energy ratio) of the specific drill rig's hammer. Field N-values were converted to an equivalent rod energy of 60% (N_{60}) for use in analysis or for correlation purposes. The resulting N_{60} values are shown on the boring logs provided in Appendix C.

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3.2.3. Sulfate Testing

Sulfate testing was generally performed on one sample from each subgrade/roadway boring performed for pavement/subgrade design purposes. The selected samples were tested in accordance with ODOT Supplement 1122, "Determining Sulfate Content in Soils" dated July 17, 2015. In general, the upper most sample (within 3 ft of the proposed subgrade elevation) from each boring was tested when feasible. Testing results are summarized in Table 1 below, provided in Appendix D and presented on the boring logs within Appendix C.

Table 1: Sulfate Test Summary by Boring

Boring ID	Depth (ft)	Elevation (ft)	Average Sulfate Content (ppm)	Boring ID	Depth (ft)	Elevation (ft)	Average Sulfate Content (ppm)
B-001-0-21	1.5 - 3.0	856.3 - 854.8	120	B-049-0-21	1.5 - 3.0	977.9 - 976.4	360
B-002-0-21	1.5 - 3.0	865.5 - 864.0	400	B-050-0-21	1.5 - 3.0	987.5 - 986.0	120
B-003-0-21	1.5 - 3.0	892.6 - 891.1	80	B-051-0-21	3.0 - 4.5	998.5 - 997.0	273
B-004-0-21	1.5 - 3.0	913.9 - 912.4	533	B-052-0-21	1.5 - 3.0	1006.6 - 1005.1	180
B-005-0-21	1.5 - 3.0	922.2 - 920.7	107	B-053-0-21	1.5 - 3.0	1015.7 - 1014.2	100
B-006-0-21	3.0 - 4.5	931.3 - 929.8	60	B-054-0-21	1.5 - 3.0	1018.8 - 1017.3	360
B-007-0-21	1.5 - 3.0	933.1 - 931.6	73	B-055-0-21	1.5 - 3.0	1025.3 - 1023.8	60
B-008-0-21	1.5 - 3.0	917.7 - 916.2	20	B-056-0-21	3.0 - 4.5	1009.4 - 1007.9	553
B-009-0-21	1.5 - 3.0	899.1 - 897.6	20	B-057-0-21	3.0 - 4.5	1008.8 - 1007.3	513
B-010-0-21	1.5 - 3.0	876.3 - 874.8	53	B-058-0-21	1.5 - 3.0	1026.0 - 1024.5	40
B-011-0-21	1.5 - 3.0	870.9 - 869.4	153	B-059-0-21	1.5 - 3.0	1012.7 - 1011.2	127
B-012-0-21	3.0 - 4.5	870.7 - 869.2	0	B-060-0-21	1.5 - 3.0	995.1 - 993.6	100
B-013-0-21	1.5 - 3.0	877.9 - 876.4	600	B-061-0-21	1.5 - 3.0	988.2 - 986.7	160
B-014-0-21	3.0 - 4.5	885.9 - 884.4	13	B-062-0-21	1.5 - 3.0	982.1 - 980.6	20
B-015-0-21	3.0 - 4.5	885.7 - 884.2	40	B-063-0-21	1.5 - 3.0	976.7 - 975.2	27
B-016-0-21	1.5 - 3.0	889.9 - 888.4	140	B-064-0-21	1.5 - 3.0	982.3 - 980.8	307
B-017-0-21	1.5 - 3.0	902.9 - 901.4	100	B-065-0-21	3.0 - 4.5	991.1 - 989.6	120
B-018-0-21	1.5 - 3.0	912.8 - 911.3	20	B-066-0-21	1.5 - 3.0	984.7 - 983.2	60
B-019-0-21	3.0 - 4.5	908.5 - 907.0	60	B-067-0-21	1.5 - 3.0	959.7 - 958.2	60
B-020-0-21	3.0 - 4.5	915.2 - 913.7	60	B-068-0-21	1.5 - 3.0	940.1 - 938.6	133
B-021-0-21	1.5 - 3.0	907.3 - 905.8	60	B-069-0-21	1.5 - 2.3	920.5 - 919.0	420
B-022-0-21	4.5 - 6.0	889.8 - 888.3	40	B-070-0-21	1.5 - 3.0	908.8 - 907.3	0
B-023-0-21	1.5 - 3.0	896.4 - 894.9	40	B-071-0-21	3.0 - 4.5	910.7 - 909.2	67
B-024-0-21	1.5 - 3.0	912.4 - 910.9	60	B-072-0-21	3.0 - 4.5	916.9 - 915.4	40
B-025-0-21	1.5 - 3.0	918.1 - 916.6	60	B-073-0-21	3.0 - 4.5	932.2 - 930.7	93
B-026-0-21	3.0 - 4.5	914.4 - 912.9	320	B-074-0-21	1.5 - 3.0	946.6 - 945.1	100
B-027-0-21	1.5 - 3.0	908.3 - 906.8	20	B-075-0-21	1.5 - 3.0	962.1 - 960.6	93
B-028-0-21	1.5 - 3.0	902.6 - 901.1	160	B-076-0-21	1.5 - 3.0	966.4 - 964.9	47
B-029-0-21	1.5 - 3.0	908.4 - 906.9	0	B-077-0-21	1.5 - 3.0	983.0 - 981.5	140
B-030-0-21	1.5 - 3.0	910.3 - 908.8	20	B-078-0-21	3.0 - 4.5	982.8 - 981.3	87
B-031-0-21	3.0 - 4.5	909.6 - 908.1	40	B-079-0-21	1.5 - 3.0	996.1 - 994.6	80
B-032-0-21	3.0 - 4.5	911.7 - 910.2	220	B-080-0-21	1.5 - 3.0	1005.2 - 1003.7	180
B-033-0-21	3.0 - 4.5	914.3 - 912.8	20	B-081-0-21	3.0 - 4.5	1009.9 - 1008.4	40
B-034-0-21	3.0 - 4.5	916.1 - 914.6	133	B-082-0-21	1.5 - 3.0	1033.0 - 1031.5	233
B-035-0-21	3.0 - 4.5	922.4 - 920.9	73	B-083-0-21	1.5 - 3.0	1042.8 - 1041.3	40
B-036-0-21	3.0 - 4.5	926.5 - 925.0	180	B-084-0-21	1.5 - 3.0	1046.3 - 1044.8	160
B-037-0-21	3.0 - 4.5	929.7 - 928.2	67	B-085-0-21	3.0 - 4.5	1054.1 - 1052.6	20
B-038-0-21	3.0 - 4.5	932.4 - 930.9	467	B-086-0-21	1.5 - 3.0	1059.7 - 1058.2	80
B-039-0-21	1.5 - 3.0	939.9 - 938.4	73	B-087-0-21	1.5 - 3.0	1061.0 - 1059.5	180
B-040-0-21	3.0 - 4.5	942.0 - 940.5	320	B-088-0-21	1.5 - 3.0	1063.8 - 1062.3	80
B-041-0-21	1.5 - 3.0	949.0 - 947.5	60	B-089-0-21	1.5 - 3.0	1062.5 - 1061.0	80
B-042-0-21	3.0 - 4.5	952.1 - 950.6	40	B-090-0-21	3.0 - 4.5	1063.9 - 1062.4	60
B-043-0-21	1.5 - 3.0	956.9 - 955.4	60	B-091-0-21	1.5 - 3.0	1064.4 - 1062.9	40
B-044-0-21	1.5 - 3.0	962.0 - 960.5	100	B-092-0-21	3.0 - 4.5	1064.0 - 1062.5	20
B-045-0-21	3.0 - 4.5	977.7 - 976.2	60	B-093-0-21	1.5 - 3.0	1066.3 - 1064.8	320
B-046-0-21	1.5 - 3.0	965.4 - 963.9	40	B-094-0-21	1.5 - 3.0	1067.8 - 1066.3	80
B-047-0-21	3.0 - 4.5	969.2 - 967.7	40	B-095-0-21	1.5 - 3.0	1068.0 - 1066.5	100
B-048-0-21	3.0 - 4.5	973.4 - 971.9	0	B-096-0-21	1.5 - 3.0	1068.7 - 1067.2	40

Table 1 (continued): Sulfate Test Summary by Boring

Boring ID	Depth (ft)	Elevation (ft)	Average Sulfate Content (ppm)	Boring ID	Depth (ft)	Elevation (ft)	Average Sulfate Content (ppm)
B-097-0-21	1.5 - 3.0	1068.6 - 1067.1	140	B-102-0-21	1.5 - 3.0	1041.1 - 1039.6	60
B-098-0-21	1.5 - 3.0	1068.1 - 1066.6	387	B-103-0-21	1.5 - 3.0	1029.1 - 1027.6	293
B-099-0-21	1.5 - 3.0	1065.1 - 1063.6	60	B-104-0-21	1.5 - 3.0	1013.6 - 1012.1	80
B-100-0-21	1.5 - 2.8	1059.5 - 1058.0	573	B-105-0-21	1.5 - 3.0	1009.0 - 1007.5	160
B-101-0-21	1.5 - 3.0	1051.1 - 1049.6	220				

4. FINDINGS

The subsurface conditions encountered during NEAS's explorations are described in the following subsections and/or on each boring log presented in Appendix C. The boring logs represent NEAS's interpretation of the subsurface conditions encountered at each boring location based on our site observations, field logs, visual review of the soil samples by NEAS's geologist, and laboratory test results. The lines designating the interfaces between various soil strata on the boring logs represent the approximate interface location; the actual transition between strata may be gradual and indistinct. The subsurface soil and groundwater characterizations included herein, including summary test data, are based on the subsurface findings from the geotechnical explorations performed by NEAS as part of the referenced project. It should be noted that for the purposes of this report and our analysis the term 'subgrade' has been assumed to represent soils and/or soil conditions from 1.5 ft below proposed final pavement grades to a depth of 7.5 ft below the proposed pavement grades.

4.1. Existing Pavement

The pavement section thicknesses in terms of asphalt, brick and granular base were measured at representative project subgrade borings during the subsurface exploration for the project and are recorded on the test boring logs provided in Appendix C. A summary of these measurements is provided in Table 2 below.

Table 2: Measured Pavement Thickness at Boring Locations

Boring ID	Asphalt Thickness (in)	Base Thickness (in)	Brick Thickness (in)	Boring ID	Asphalt Thickness (in)	Base Thickness (in)	Brick Thickness (in)
B-001-0-21	13	7	-	B-023-0-21	14	4	-
B-002-0-21	12	3	6	B-024-0-21	14	4	-
B-003-0-21	13	6	-	B-025-0-21	12	6	-
B-004-0-21	11	7	-	B-026-0-21	14	5	-
B-005-0-21	16	4	5	B-027-0-21	13	5	-
B-006-0-21	16	2	6	B-028-0-21	15	5	-
B-007-0-21	17	3	-	B-029-0-21	15	4	-
B-008-0-21	13	6	-	B-030-0-21	15	-	4
B-009-0-21	14	5	-	B-031-0-21	14	4	-
B-010-0-21	12	8	-	B-032-0-21	15	4	-
B-011-0-21	13	23	-	B-033-0-21	14	4	-
B-012-0-21	18	-	4	B-034-0-21	15	5	-
B-013-0-21	13	6	-	B-035-0-21	15	5	-
B-014-0-21	17	4	-	B-036-0-21	15	6	-
B-015-0-21	14	4	-	B-037-0-21	15	4	-
B-016-0-21	16	2	-	B-038-0-21	16	3	-
B-017-0-21	14	5	-	B-039-0-21	16	4	-
B-018-0-21	15	3	-	B-040-0-21	16	6	-
B-019-0-21	16	4	-	B-041-0-21	16	3	-
B-020-0-21	14	3	-	B-042-0-21	14	5	-
B-021-0-21	16	3	-	B-043-0-21	16	2	-
B-022-0-21	13	5	6	B-044-0-21	14	3	-

Table 2 (continued): Measured Pavement Thickness at Boring Locations

Boring ID	Asphalt Thickness (in)	Base Thickness (in)	Brick Thickness (in)	Boring ID	Asphalt Thickness (in)	Base Thickness (in)	Brick Thickness (in)
B-045-0-21	18	-	4	B-076-0-21	14	4	-
B-046-0-21	16	3	-	B-077-0-21	15	4	-
B-047-0-21	13	5	4	B-078-0-21	15	3	-
B-048-0-21	15	4	-	B-079-0-21	12	5	-
B-049-0-21	15	5	-	B-080-0-21	15	4	-
B-050-0-21	15	5	-	B-081-0-21	14	4	-
B-051-0-21	14	4	-	B-082-0-21	15	3	-
B-052-0-21	15	3	-	B-083-0-21	16	4	-
B-053-0-21	15	3	-	B-084-0-21	14	4	-
B-054-0-21	16	3	-	B-085-0-21	12	7	-
B-055-0-21	16	3	-	B-086-0-21	12	6	-
B-056-0-21	14	3	-	B-087-0-21	15	7	-
B-057-0-21	14	4	-	B-088-0-21	18	4	-
B-058-0-21	15	3	-	B-089-0-21	8	8	-
B-059-0-21	15	3	-	B-090-0-21	13	4	-
B-060-0-21	15	4	-	B-091-0-21	13	6	-
B-061-0-21	15	4	-	B-092-0-21	14	5	-
B-062-0-21	13	4	-	B-093-0-21	11	5	-
B-063-0-21	14	5	-	B-094-0-21	13	5	-
B-064-0-21	12	5	-	B-095-0-21	11	6	-
B-065-0-21	17	3	-	B-096-0-21	13	5	-
B-066-0-21	12	5	-	B-097-0-21	9	8	-
B-067-0-21	13	5	-	B-098-0-21	17	3	-
B-068-0-21	14	4	-	B-099-0-21	12	7	-
B-069-0-21	16	4	-	B-100-0-21	16	3	-
B-070-0-21	17	4	-	B-101-0-21	8	7	-
B-071-0-21	15	3	-	B-102-0-21	17	4	-
B-072-0-21	15	5	-	B-103-0-21	10	8	-
B-073-0-21	16	3	-	B-104-0-21	15	3	-
B-074-0-21	18	5	-	B-105-0-21	7	8	-
B-075-0-21	16	4	-				

4.2. Subgrade Conditions

The subgrade conditions within the project limits are relatively consistent and are generally comprised of natural soils consisting of predominantly low to moderately plastic sandy silt and silt/clay combinations. The subgrade soils encountered within the project limits are generally classified as either A-4a, A-4b, A-6a, A-6b or A-7-5 or A-7-6 type soils. The exception to this is occasional granular soils that were encountered throughout the project site that classified as either A-1-a, A-1-b, A-2-4 or A-3a type soils. With respect to sulfate within the subgrade soil, based on the project laboratory testing program, each subgrade soil sample tested was determined to have a sulfate content of less than 5,000 parts per million (ppm) (i.e., lower than the level which ODOT considers high and may prevent the use of chemical stabilization).

The following subsection presents a brief summary of the subsurface conditions encountered along the project portion of SR-13 with problem areas highlighted where present.

4.2.1. State Route 13

Along the project portion of SR-13, ninety percent (90%) of the soil samples were identified as fine-grained, cohesive soils comprised of: 1) cohesive Sandy Silt (A-4a, 13% of samples); 2) cohesive Silt (A-4b, 13% of samples); 3) Silt and Clay (A-6a, 30% of samples); 4) Silty Clay (A-6b, 13% of samples); 5) Elastic Clay (A-7-5, 1% of samples); and, 6) Clay (A-7-6, 20% of samples). With respect to the consistency of the fine-grained, cohesive soils, the descriptions varied from very soft to hard correlating to converted SPT-N values (N_{60}) between 0 blows per foot (bpf) and SPT-N refusal (i.e., less than 6 inches of penetration over

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50 blows). Natural moisture contents ranged from 4 to 55 percent. Based on Atterberg Limit tests performed on representative samples of these fine-grained subgrade soils, the liquid and plastic limits ranged from 23 to 73 percent and from 16 to 32 percent, respectively.

Eight percent (8%) of the samples taken along the proposed roadway were classified as coarse-grained, non-cohesive soils and were comprised of: 1) Gravel (A-1-a, 1 sample); 2) Gravel and/or Stone Fragments with Sand (A-1-b, 1% of samples); 3) Gravel and/or Stone Fragments with Sand and Silt (A-2-4, 1% of samples); 4) Coarse and Fine sand (A-3a, 1 of sample); 5) non-cohesive Sandy Silt (A-4a, 2% of samples); and, 6) non-cohesive Silt (A-4b, 3% of samples). With respect to the relative density of the coarse-grained soils, the descriptions varied from very loose to very dense correlating to N_{60} values between 4 bpf and SPT-N refusal. Natural moisture contents ranged from 4 to 28 percent.

The remaining two percent (2%) of the samples were identified as Rock generally classified as either sandstone or shale.

4.2.2. Groundwater

Groundwater measurements were taken during the boring drilling procedures and/or immediately following the completion of each borehole. Groundwater was not encountered within the proposed subgrade depths in any of the borings performed as part of the project subgrade exploration. It should be noted that groundwater is affected by many hydrologic characteristics in the area and may vary from those measured at the time of the exploration. The specific groundwater readings are included on the individual test boring logs located within Appendix C.

5. ANALYSES AND RECOMMENDATIONS

We understand that full depth pavement replacement of the portion of SR-13 between New Lexington and Somerset, Ohio is planned as part of the rehabilitation project PER-13-19.67 (PID 95461). For this purpose, a subgrade exploration and subsequent analysis was completed for the referenced project. The analysis completed for the proposed reconstruction included a subgrade analysis performed in accordance with ODOT's GB1 criteria utilizing the ODOT provided *GB1: Subgrade Analysis Spreadsheet* (GB1_SubgradeAnalysis.xls, Version 14.6 dated February 11, 2022). Input information for the spreadsheet was based on the soil characteristics gathered during NEAS's subgrade exploration (i.e., SPT results, laboratory test results, etc.).

Based on our evaluation of the subsurface conditions and our geotechnical engineering analyses of the proposed reconstruction, it is our opinion that subgrade conditions are generally satisfactory, and pavement can be supported by the underlying subsurface material utilizing either 14-inches of chemical stabilization (global stabilization) or 36-inches of Excavate and Replace with geotextile (Item 204) per ODOT's GB1. Further detail regarding our subgrade analysis and the recommended remediation are provided in Section 5.1 and Section 5.2 of this report, respectively.

5.1. Subgrade Analysis

A GB1 (subgrade) analysis was performed to identify the method, location, and dimensions (including depth) of required subgrade stabilization for the project. In addition to identifying stabilization recommendations, pavement design parameters are also determined to aid in pavement section design. The subsections below present the results of our GB1 analysis including pavement design parameters and unsuitable subgrade conditions identified within the project limits. GB1 analysis spreadsheets are provided in Appendix E.

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Again, it should be noted that for the purposes of this report and our analysis, the term 'proposed subgrade' has been assumed to represent soils and/or soil conditions from 1.5 ft below proposed final pavement grades to a depth of 7.5 ft below the proposed pavement grades.

5.1.1. Pavement Design Recommendations

It is our understanding that pavement analysis and design is to be performed to determine the proposed SR-13 pavement section for the portion to undergo full depth replacement. A GB1 analysis was performed using the subgrade soil data obtained during our field exploration program to evaluate the soil characteristics and develop pavement parameters for use in pavement design. The subgrade parameters recommended for use in pavement design are presented in Table 3 below. Provided in the table are ranges of maximum, minimum and average N_{60L} values for the indicated segments as well as the design CBR value recommended for use in pavement design.

Table 3: Pavement Design Values

Segment	Maximum N_{60L}	Minimum N_{60L}	Average N_{60L}	Ave PI	Design CBR
SR-13	30	0	7	14	6

5.1.2. Unsuitable Subgrade

Per ODOT's GB1, the presence of select subgrade conditions (i.e., unsuitable) are prohibited within the subgrade zone for new pavement construction. These unsuitable subgrade conditions generally include the presence of rock and specific soil types. With respect to the proposed pavement reconstruction project these subgrade conditions are further discussed in the following subsections.

5.1.2.1. Rock

Rock was encountered within the subgrade in four (4) borings performed within the project roadway limits. In these borings, bedrock was encountered at depths ranging from 1.0 ft to 1.5 ft below the top of the assumed subgrade elevation. Per ODOT's GB1, if rock is encountered within 24 inches of the bottom of the proposed asphalt or concrete pavement it is to be removed in accordance with Section 204.05 of the ODOT Construction Material Specifications (CMS) and replaced with Item 204 Embankment. Of the four borings in which rock was encountered, remediation is required at each of the boring locations. A summary of the boring locations where rock was encountered within the proposed subgrade are shown in Table 4 below.

Table 4: Shallow Rock Location Summary

Boring ID	Station/Offset	Depth Below Subgrade (ft)	Top of Rock Elevation (ft)
SR-13			
B-099-0-21	1397+57, 13' LT	1.5	1063.6
B-100-0-21	1401+22, 13' RT	1.0	1058.5
B-101-0-21	1405+26, 14' LT	1.5	1049.6
B-102-0-21	1409+05, 12' RT	1.5	1039.6

5.1.2.2. Unsuitable Soils

Unsuitable soil types per the GB1, which include A-4b, A-2-5, A-5, A-7-5, A-8a, A-8b, and soils with liquid limits greater than 65, were encountered within the subgrade of the referenced SR-13 project limits. Soil type A-4b (Silt) was encountered within twenty-six (26) borings while A-7-5 (Elastic Clay) type soil was encountered at one boring location. A summary of the prohibited soils encountered and the associated GB1 recommended remediation depths are shown in Table 5 below.

Table 5: Prohibited Soils Location Summary

Boring ID	Prohibited Soil Type	Depth Below Subgrade (ft)	Remediation Depth (inches)	
			Excavate and Replace (Item 204 w/ Geotextile)	Chemical Stabilization (Item 206)
SR-13				
B-003-0-21	A-4b	1.5 - 3.0	36	14
B-007-0-21	A-4b	1.5 - 3.0	36	14
B-008-0-21	A-4b	0.0 - 2.5	30	14
B-010-0-21	A-4b	0.0 - 3.0	36	14
B-012-0-21	A-4b	1.5 - 3.0	36	14
B-013-0-21	A-4b	1.5 - 3.0	36	14
B-014-0-21	A-4b	1.5 - 3.0	36	14
B-015-0-21	A-4b	1.5 - 3.0	36	14
B-017-0-21	A-4b	1.5 - 3.0	36	14
B-018-0-21	A-4b	0.0 - 3.0	36	14
B-019-0-21	A-4b	0.0 - 3.0	36	14
B-028-0-21	A-4b	0.0 - 1.5	18	14
B-030-0-21	A-4b	0.0 - 1.5	18	14
B-031-0-21	A-4b	1.5 - 3.0	36	14
B-039-0-21	A-4b	0.0 - 1.5	18	14
B-046-0-21	A-4b	1.5 - 3.0	36	14
B-054-0-21	A-4b	0.0 - 3.0	36	14
B-059-0-21	A-4b	1.5 - 3.0	36	14
B-060-0-21	A-4b	0.0 - 3.0	36	14
B-063-0-21	A-4b	0.0 - 3.0	36	14
B-074-0-21	A- 7-5	0.0 - 3.0	36	14
B-086-0-21	A-4b	0.0 - 1.5	18	14
B-093-0-21	A-4b	1.5 - 3.0	36	14
B-095-0-21	A-4b	1.5 - 3.0	36	14
B-096-0-21	A-4b	0.0 - 1.5	18	14
B-100-0-21	A-4b	0.0 - 1.5	24 (Rock)	N/A (Rock)
B-102-0-21	A-4b	0.0 - 1.5	24 (Rock)	N/A (Rock)

5.1.3. Unstable Soils

The GB1 recommends subgrade stabilization for soils considered unstable in which the N_{60} value of a particular soil sample (SS) at a referenced boring location is less than 12 bpf and in some cases less than 15 bpf (i.e., where moisture content is greater than optimum plus 3 percent). Based on the specific N_{60} value at the subject boring, *Figure B - Subgrade Stabilization* within the GB1 recommends a depth of subgrade stabilization for ODOT standard stabilization methods. It should be noted that *Figure B - Subgrade Stabilization* does not apply to soil types A-1-a, A-1-b, A-3, or A-3a, nor to soils with N_{60L} values of 15 or more. Per GB1 guidance, *these soils should be reworked to stabilize the subgrade*. It should be noted that although a soil sample's N_{60} value may meet the criteria to be considered an unstable soil, the depth in which the unstable soil is encountered in relation to the proposed subgrade is considered when each individual subgrade boring is analyzed. For example, if the GB1 recommends an excavate and replace of 12 inches within a weak soil underlying 18 inches of stable material, it would be unreasonable to recommend the removal of both the stable and unstable material for a total of 30 inches of excavate and replace.

Based on N_{60} values encountered within the project borings, our GB1 analysis suggests the need for either 12 to 14 inches of either chemical treatment or 12 to 24 inches of excavate and replace at select locations. A summary of the boring locations where weak soils were encountered and determined to have a potential impact on subgrade performance are shown in Table 6 below. Also included is the associated GB1 recommended remediation depth at that location.

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Table 6: Unstable Soil Locations Summary

Boring ID	N _{60L}	Depth Below Subgrade (ft)	Remediation Depth (inches)	
			Excavate and Replace w/ Geotextile	Chemical Stabilization
SR-13				
B-003-0-21	5	0.0 - 3.0	12	14
B-004-0-21	12	0.0 - 3.0	12	12
B-008-0-21	8	0.0 - 3.0	12	14
B-009-0-21	4	0.0 - 3.0	21	14
B-010-0-21	3	0.0 - 3.0	12	12
B-013-0-21	2	0.0 - 3.0	15	14
B-015-0-21	6	0.0 - 3.0	12	12
B-017-0-21	6	0.0 - 3.0	12	14
B-019-0-21	5	0.0 - 3.0	12	12
B-020-0-21	6	0.0 - 3.0	12	14
B-021-0-21	3	0.0 - 3.0	12	12
B-023-0-21	4	0.0 - 3.0	24	14
B-024-0-21	8	0.0 - 3.0	12	14
B-025-0-21	11	0.0 - 3.0	12	12
B-026-0-21	6	0.0 - 3.0	15	14
B-027-0-21	5	0.0 - 3.0	15	14
B-028-0-21	5	0.0 - 3.0	12	14
B-029-0-21	7	0.0 - 1.5	15	14
B-030-0-21	5	0.0 - 3.0	15	14
B-032-0-21	7	0.0 - 3.0	12	14
B-034-0-21	6	0.0 - 3.0	12	14
B-035-0-21	7	0.0 - 3.0	15	14
B-036-0-21	6	0.0 - 3.0	12	12
B-037-0-21	4	0.0 - 3.0	24	14
B-038-0-21	5	0.0 - 3.0	21	14
B-039-0-21	5	0.0 - 3.0	18	14
B-041-0-21	4	0.0 - 3.0	12	12
B-042-0-21	4	0.0 - 3.0	12	12
B-043-0-21	6	0.0 - 3.0	18	14
B-048-0-21	1	0.0 - 3.0	15	14
B-049-0-21	6	0.0 - 3.0	18	14
B-050-0-21	4	0.0 - 3.0	12	14
B-051-0-21	8	0.0 - 3.0	12	14
B-052-0-21	5	0.0 - 3.0	15	14
B-053-0-21	6	0.0 - 3.0	15	14
B-054-0-21	5	0.0 - 3.0	12	12
B-055-0-21	7	0.0 - 3.0	15	14
B-056-0-21	5	0.0 - 3.0	12	14
B-057-0-21	5	0.0 - 1.5	12	12
B-058-0-21	6	0.0 - 3.0	15	14
B-059-0-21	2	0.0 - 3.0	15	14
B-060-0-21	4	0.0 - 3.0	12	14
B-061-0-21	6	0.0 - 3.0	18	14
B-062-0-21	5	0.0 - 3.0	21	14
B-063-0-21	6	0.0 - 3.0	12	14
B-064-0-21	6	0.0 - 3.0	18	14
B-065-0-21	7	0.0 - 3.0	12	14
B-067-0-21	7	0.0 - 3.0	15	14
B-068-0-21	8	0.0 - 3.0	12	14
B-070-0-21	2	0.0 - 3.0	12	14
B-071-0-21	1	0.0 - 3.0	21	14
B-072-0-21	6	0.0 - 3.0	15	14
B-073-0-21	6	0.0 - 3.0	15	14
B-074-0-21	6	0.0 - 3.0	18	14
B-075-0-21	4	0.0 - 3.0	18	14
B-076-0-21	5	0.0 - 3.0	12	14
B-077-0-21	8	0.0 - 1.5	12	14
B-078-0-21	6	0.0 - 3.0	12	14

Table 6 (continued): Unstable Soil Locations Summary

Boring ID	N _{60L}	Depth Below Subgrade (ft)	Remediation Depth (inches)	
			Excavate and Replace w/ Geotextile	Chemical Stabilization
SR-13				
B-079-0-21	10	0.0 - 1.5	12	14
B-080-0-21	7	0.0 - 3.0	15	14
B-081-0-21	4	0.0 - 3.0	12	12
B-082-0-21	11	0.0 - 1.5	12	12
B-083-0-21	5	0.0 - 3.0	12	14
B-084-0-21	7	0.0 - 3.0	12	14
B-085-0-21	4	0.0 - 3.0	12	14
B-086-0-21	5	0.0 - 3.0	12	14
B-087-0-21	10	0.0 - 1.5	12	14
B-088-0-21	6	0.0 - 3.0	15	14
B-089-0-21	8	0.0 - 1.5	12	14
B-090-0-21	6	0.0 - 3.0	12	14
B-092-0-21	6	0.0 - 1.5	18	14
B-094-0-21	8	0.0 - 3.0	12	14
B-099-0-21	7	0.0 - 1.5	15	14
B-101-0-21	11	0.0 - 1.5	12	12
B-105-0-21	10	0.0 - 1.5	12	14

5.1.3.1. High Moisture Content Soils

High moisture content soils are defined by the GB1 as soils that exceed the estimated optimum moisture content (per *Figure A - Optimum Moisture Content* within the GB1) for a given classification by 3 percent or more. Per the GB1, soils determined to be above the identified moisture content levels are a likely indication of the presence of an unstable subgrade and may require some form of subgrade stabilization. Similar to our analysis of unstable soils, although a soil sample's moisture content may meet the criteria to be considered high, the depth in which the high moisture soil is encountered in relation to the proposed subgrade is considered when each individual subgrade boring is analyzed for stabilization recommendations. Summaries of the boring locations where high moisture content conditions were encountered in the top 3 ft of subgrade within the limits of the proposed roadway segment are shown in Table 7 below.

Table 7: High Moisture Content Soils Location Summary

Boring ID	Moisture Content (%)	Optimum Moisture Content (%)	Depth Below Subgrade (ft)
SR-13			
B-002-0-21	18	10	1.5 - 3.0
B-005-0-21	24	18	0.0 - 3.0
B-007-0-21	16	10	0.0 - 3.0
B-011-0-21	25	15	1.5 - 3.0
B-016-0-21	18	14	0.0 - 3.0
B-018-0-21	24	10	0.0 - 3.0
B-022-0-21	19	10	0.0 - 3.0
B-031-0-21	26	18	1.5 - 3.0
B-033-0-21	10	6	0.0 - 3.0
B-040-0-21	26	19	1.5 - 3.0
B-066-0-21	20	14	1.5 - 3.0
B-069-0-21	28	18	1.5 - 3.0
B-098-0-21	14	10	1.5 - 3.0

5.2. Stabilization Recommendations

5.2.1. Subgrade Stabilization

Based on the results of our analysis, subgrade soils designated by ODOT's GB1 as both "unstable" and "unsuitable" were present at various locations throughout the project. Subgrade conditions designated as "unsuitable" consisting of soils classified as A-4b (Silt), A-7-5 (Elastic Clay), and bedrock were encountered within subgrade depths of SR-13. These "unsuitable" conditions require remediation at 29 boring locations performed within the project limits. Subgrade conditions designated as "unstable" that require remediation were encountered within subgrade depths in 75 borings performed as part of our exploration. Guidance from ODOT's GB1 states that *"if it is determined that 30 percent or more of the subgrade area must be stabilized, consideration should be given to stabilizing the entire project (global stabilization)"*, therefore; we recommend that SR-13 within the project limits be globally stabilized and that a cost analysis be performed to select the appropriate stabilization method. If chemical stabilization is utilized for the referenced subgrade stabilization included within this project, it should be performed to a minimum depth of 14 inches utilizing either lime or cement as the stabilizing chemical. If Excavate and Replace with geotextile (Item 204) is utilized for the project, it should be performed to a depth of 36 inches.

Furthermore, guidance from ODOT's GB1 states that, *if rock is encountered within 24 inches of the bottom of the asphalt or concrete pavement it is to be removed*. Based on the borings performed, at the locations where bedrock is encountered within two feet of the bottom of the proposed asphalt or concrete pavement, it is recommended that the rock encountered be excavated in accordance with Section 204.05 "Rock, Shale, or Coal Subgrade" of ODOT's CMS and replaced with Item 204 Embankment. The recommended subgrade stabilization for the project including required rock excavation can be found in Table 8 below.

Table 8: Stabilization Recommendations

Start Station	End Station	Excavate and Replace w/ Item 204 ⁽¹⁾ (inches)	Chemical Stabilization (inches)	Unsuitable Subgrade Conditions	Borings Considered
Entire Project		36	14	A-4b (Silt), A-7-5 (Elastic Clay), LL > 65	See report Table 7
1395+50	1411+00	24	N/A	Rock	B-099-0-21, B-100-0-21, B-101-0-21, B-102-0-21

If chemical stabilization is selected for use on the referenced proposed subgrade soils, the stabilization efforts should extend a minimum of 18-inches beyond the edge of the paved roadway, shoulder or median. The mix design should be conducted in accordance with ODOT's CMS Supplement 1120 (Mixture Design for Chemically Stabilized Soils). For design purposes it may be assumed that the cement or lime addition will be 5% using the following formula.

$$\text{Cement/Lime: } C = 0.75 \times T \times 115 \times 0.05$$

Where: C = amount of chemical in pounds / square yard and

T = thickness of the treatment zone in inches

A dry density of 115-pounds per cubic foot (pcf) is assumed.

It should also be noted that per ODOT's GB1, *typical chemical stabilization equipment cannot stabilize areas less than 8 ft in width*. If it is anticipated that the project will require multiple maintenance of traffic phases, it is recommended that the roadway work is coordinated with the maintenance of traffic schemes in such a way that an 8-ft minimum width for chemical stabilization exists. If areas of less than 8 ft in width are anticipated, subgrade soils may be excavated out, mixed with stabilization chemical, and compacted in place, though this method is not practical for large areas.

Subgrade Exploration Report

PER-13-19.67

Perry County, Ohio

PID: 95461

6. QUALIFICATIONS

This investigation was performed in accordance with accepted geotechnical engineering practice for the purpose of characterizing the subsurface conditions along the referenced portions of roadways. This report has been prepared for MBI, ODOT and their design consultants to be used solely in evaluating the subgrade soils within the project limits and presenting geotechnical engineering recommendations specific to this project. The assessment of general site environmental conditions or the presence of pollutants in the soil, rock and groundwater of the site was beyond the scope of this geotechnical exploration. Our recommendations are based on the results of our field explorations, laboratory test results from representative soil samples, and geotechnical engineering analyses. The results of the field explorations and laboratory tests, which form the basis of our recommendations, are presented in the appendices as noted. This report does not reflect any variations that may occur between the borings or elsewhere on the site, or variations whose nature and extent may not become evident until a later stage of construction. In the event that any changes occur in the nature, design or location of the proposed roadway rehabilitation work, the conclusions and recommendations contained in this report should not be considered valid until they are reviewed and have been modified or verified in writing by a geotechnical engineer.

It has been a pleasure to be of service to Michael Baker International in performing this geotechnical exploration for the PER-13-19.67 rehabilitation project. Please call if there are any questions, or if we can be of further service.

Respectfully Submitted,

Brendan P. Andrews, P.E.
Project Geotechnical Engineer

Kevin C. Arens, P.E.
Geotechnical Engineer

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APPENDIX A

ODNR OIL AND GAS WELL REPORTS

WELL SUMMARY

ODNR DIVISION OF OIL & GAS RESOURCES MANAGEMENT

API Well Number	34127243230000										Permit Issued	4/25/1979
Well Name	MCMILLAN ANDREW					Acres	57	Well No.	1	Date Commenced	5/21/1979	
Owner	SNIDER WM. J & REBECCA M							Well No.	1	Date Completed	6/21/1979	
Logging Co.	Perfection Services Inc.			Core No.		Sample No.						
County	PERRY	Township PIKE			Quadrangle	NEW LEXINGTON					Zone	S
Section	5	Lot	Tract		Twp. Qtr.	Surface X	2078350	Y	631300	Bottom X	Y	NAD27
Measured						Surface Lon	-82.221417	Lat	39.732994	Bottom Lon	Lat	NAD27
						Surface X	2046885	Y	631338	Bottom X	Y	NAD83 SPS
						Prop TD				Class	POOL	Tool
GL	870	DF	872	KB	LTD	DTD	3202	PB Depth		Date PB		
TD Form.	CLINTON SAND				Prod. Form.	CLINTON SAND			Status	Domestic Well		
IP Natural				IP AT	100 MCF & 25 BO			Initial Rock Pressure		Date Abandoned		
Perforations	PI: 0, Cmmnt:											
Stimulations	SI: 0-0, Type: H2O, Vol: 1300 Bbl, #Prop: 35000											
Casing Record												
Log Types	Gamma ray, Neutron											

Formations

Formation	Top	Bottom	Source	Prod.	Non-Standard	Remarks
SHALE	0	30	Card	No		
LIME	30	35	Card	No		
SANDSTONE	35	45	Card	No		HFFW 40
SHALE	45	80	Card	No		
CLAY	80	110	Card	No		
SANDSTONE	110	210	Card	No		BROKEN
SHALE	210	280	Card	No		
BIG INJUN SAND	280	580	Card	No		
SHALE	580	869	Card	No		
BEREA SANDSTONE	869	906	Card	No		
SHALE	906	2154	Card	No		
BIG LIME	2154	3018	Card	No		HFSW 2665
SHALE	3018	3108	Card	No		
PACKER SHELL	3108	3136	Card	No		
SHALE	3136	3146	Card	No		
CLINTON SAND	3146	3156	Card	No		
SHALE	3156	3166	Card	No		
CLINTON SAND	3166	3183	Card	No		
SHALE	3183	3202	Card	No		T.D.

Annual Production

Year	Quarter	Source	Oil (Barrels)	Gas (MCF)	Water (Barrels)	Remarks
1990	N\A	RBDMS	108	0	0	
1991	N\A	RBDMS	110	0	220	
1992	N\A	RBDMS	109	0	0	
1993	N\A	RBDMS	106	0	130	
1994	N\A	RBDMS	103	0	215	
1995	N\A	RBDMS	45	0	0	
1996	N\A	RBDMS	93	0	0	

1997	N\A	RBDMS	54	0	140
1998	N\A	RBDMS	0	0	135
1999	N\A	RBDMS	48	0	0
1999	N\A	RBDMS	0	0	100
2000	N\A	RBDMS	0	0	0
2000	N\A	RBDMS	70		145
2001	N\A	RBDMS	73	0	140
2002	N\A	RBDMS	77	0	140
2003	N\A	RBDMS	78	0	140
2004	N\A	RBDMS	73	0	70
2005	N\A	RBDMS	150	0	140
2006	N\A	RBDMS	77	0	70
2007	N\A	RBDMS	70	0	140
2008	N\A	RBDMS	52	0	105

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WELL SUMMARY

ODNR DIVISION OF OIL & GAS RESOURCES MANAGEMENT

API Well Number	34127262650000										Permit Issued	3/15/1984	
Well Name	DENNY & SON				Acres	91	Well No.	J-1			Date Commenced	5/21/1984	
Owner	DIVERSIFIED PRODUCTION LLC						Well No.	J-1			Date Completed	7/12/1984	
Logging Co.	Columbine, Ohio Division of Geological Survey, Renegade Services, Tally Drilling Services, Workover Solutions				Core No.	Sample No.							
County	PERRY		Township	CLAYTON		Quadrangle	NEW LEXINGTON					Zone	S
Section	31	Lot	Tract		Twp. Qtr.	Surface X	2074150	Y	636210	Bottom X	Y	NAD27	
						Surface Lon	-82.236300	Lat	39.746509	Bottom Lon	Lat	NAD27	
Measured	1533' SL & 700' WL OF NE QTR, SEC 31					Surface X	2042684	Y	636248	Bottom X	Y	NAD83 SPS	
						Prop TD			Class	POOL	Tool	CT	
GL	910	DF	KB	LTD	DTD	3215	PB Depth			Date PB			
TD Form.	QUEENSTON FORMATION				Prod. Form.	CLINTON GROUP			Status	Producing			
IP Natural	10 MCF & 1 BO			IP AT	50 MCF & 5 BO			Initial Rock Pressure			Date Abandoned		
Perforations	PI: 3130-3155, Csg: COND, Cmmnt:												
Stimulations	SI: 0-0, Fmtn Cd: 357170, Type: H2O, Vol: 2400 Bbl, #Prop: 25000, Cmmnt:												
Casing Record	I1 7 0-0, Comment: COND 11 0-26, Comment: T1 4.5 0-94, Comment: SURF 8.625 0-612, Comment: PROD 5.5 0-3130, Comment:												
Log Types													

Formations

Formation	Top	Bottom	Source	Prod.	Non-Standard	Remarks
BIG INJUN SAND	327	393	Driller	No		
BEREA SANDSTONE	877	932	Driller	No		
BIG LIME	2128	2985	Driller	No		
PACKER SHELL	3100	3105	Driller	No		
CLINTON SAND	3130	3155	Driller	Yes		

Annual Production

Year	Quarter	Source	Oil (Barrels)	Gas (MCF)	Water (Barrels)	Remarks
1984	N\A	RBDMS	1425	1305	0	
1985	N\A	RBDMS	3619	4213	136	
1986	N\A	RBDMS	2271	3242	382	
1987	N\A	RBDMS	1488	1088	1108	
1988	N\A	RBDMS	1149	368	0	
1989	N\A	RBDMS	1001	13	43	
1990	N\A	RBDMS	857	0	0	
1991	N\A	RBDMS	1095	136	52	
1992	N\A	RBDMS	1031	0	40	
1993	N\A	RBDMS	934	0	40	
1994	N\A	RBDMS	845	0	40	
1995	N\A	RBDMS	709	0	440	
1996	N\A	RBDMS	583	0	1241	
1997	N\A	RBDMS	616	0	1715	
1998	N\A	RBDMS	625	0	2205	
1999	N\A	RBDMS	187	0	957	
2000	N\A	RBDMS	428	0	1929	
2001	N\A	RBDMS	601	0	1160	
2002	N\A	RBDMS	763	0	1050	
2003	N\A	RBDMS	678	0	765	

2004	N\A	RBDMS	599	0	647
2005	N\A	RBDMS	361	0	515
2006	N\A	RBDMS	530	0	530
2007	N\A	RBDMS	377	0	460
2008	N\A	RBDMS	378	0	392
2009	N\A	RBDMS	311	0	465
2010	N\A	RBDMS	376	0	445
2011	N\A	RBDMS	307	0	380
2012	N\A	RBDMS	381	0	363
2013	N\A	RBDMS	317	0	320
2014	N\A	RBDMS	237	0	353
2015	N\A	RBDMS	249	0	300
2016	N\A	RBDMS	64	0	215
2016	N\A	RBDMS	0	0	0
2017	N\A	RBDMS	42	0	60
2018	N\A	RBDMS	0	0	0
2019	N\A	RBDMS	0	0	0
2020	N\A	RBDMS	0	0	0
2021	N\A	RBDMS	299	0	0

APPENDIX B

BORING LOCATION PLAN



TARGET BORING LOCATION



TARGET BORING LOCATION

		DRAWN KCA		TARGET BORING LOCATION PLAN	PER-13-19.67		
		CHECKED BPA					

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TARGET BORING LOCATION



TARGET BORING LOCATION AT POTENTIAL GEOHAZARD LOCATION



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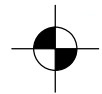
TARGET BORING LOCATION



TARGET BORING LOCATION AT POTENTIAL GEOHAZARD LOCATION

TARGET BORING LOCATION PLAN

PER-13-19.67

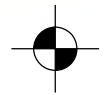


TARGET BORING LOCATION



TARGET BORING LOCATION AT POTENTIAL GEOHAZARD LOCATION





TARGET BORING LOCATION



TARGET BORING LOCATION AT POTENTIAL GEOHAZARD LOCATION





TARGET BORING LOCATION

APPENDIX C

BORING LOGS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:40 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: <u>PER-13-19.67</u>		DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u>		DRILL RIG: <u>CME 75T</u>		STATION / OFFSET: <u>1040+68, 15' LT.</u>		EXPLORATION ID <u>B-001-0-21</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR-13</u>														
PID: <u>SFN:</u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>1/24/22</u>		ELEVATION: <u>857.8 (MSL)</u> EOB: <u>7.5 ft.</u>		PAGE 1 OF 1												
START: <u>6/7/22</u> END: <u>6/7/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>79</u>		LAT / LONG: <u>39.721101, -82.218688</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		857.8							GR	CS	FS	SI	CL	LL	PL	PI	WC			
13.0" ASPHALT AND 7.0" BASE (DRILLERS DESCRIPTION)		856.3	1																	
MEDIUM DENSE, BROWNISH GRAY, GRAVEL WITH SAND AND SILT , LITTLE CLAY, DAMP		854.8	2	7	13	50	SS-1	-	-	-	-	-	-	-	-	-	12	A-2-4 (V)	120	
SOFT TO MEDIUM STIFF, BROWNISH GRAY, SILT AND CLAY , SOME SAND, TRACE GRAVEL, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP TO MOIST			3	2	4	72	SS-2	-	3	12	19	44	22	29	18	11	17	A-6a (7)	-	
		851.8	4	2	5	100	SS-3	-	-	-	-	-	-	-	-	-	19	A-6a (V)	-	
			5	2																
VERY SOFT, GRAY AND BROWN, SILT AND CLAY , "AND" SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST		850.3	6	1	4	100	SS-4	0.10	3	6	29	36	26	33	18	15	27	A-6a (7)	-	
			7	1																
			EOB	2																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/25/22 11:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: <u>PER-13-19.67</u>		DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u>		DRILL RIG: <u>CME 75T</u>		STATION / OFFSET: <u>1044+45, 7' LT.</u>		EXPLORATION ID <u>B-002-0-21</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR-13</u>														
PID: <u>SFN:</u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>1/24/22</u>		ELEVATION: <u>867.3 (MSL)</u> EOB: <u>7.5 ft.</u>		PAGE 1 OF 1												
START: <u>6/7/22</u> END: <u>6/7/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>79</u>		LAT / LONG: <u>39.722149, -82.218695</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		867.3							GR	CS	FS	SI	CL	LL	PL	PI	WC			
12.0" ASPHALT AND 3.0" BASE AND 6.0" BRICK (DRILLERS DESCRIPTION)																				
		865.3	1	5																
MEDIUM DENSE, BROWN AND RED, GRAVEL AND STONE FRAGMENTS WITH SAND , TRACE SILT, TRACE CLAY, CONTAINS BRICK FRAGMENTS, DAMP (FILL)		864.3	2	8	20	22	SS-1	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	400	
			3	3																
		862.8	4	2	4	22	SS-2	-	-	-	-	-	-	-	-	-	18	A-4a (V)	-	
SOFT, BROWNISH GRAY AND BROWN, SANDY SILT , SOME CLAY, TRACE GRAVEL, CONTAINS NO INTACT SOIL FOR HP READINGS, MOIST			5	10																
			6	9	18	28	SS-3	3.00	0	2	9	35	54	54	29	25	25	A-7-6 (17)	-	
VERY STIFF, BROWN MOTTLED WITH GRAY, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, DAMP		859.8	7	5	14	17	SS-4	3.50	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-	
			EOB	6																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS		SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
											GR	CS	FS	SI	CL	LL	PL	PI				
13.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION)			894.2																			
			892.6	1																		
VERY STIFF, BROWN MOTTLED WITH GRAY, SILT AND CLAY, LITTLE SAND, LITTLE GRAVEL, CONTAINS IRON STAINING, DAMP			891.2	2	4	9	50	SS-1	2.75	14	7	10	49	20	30	19	11	18	A-6a (7)	80		
STIFF, BROWN MOTTLED WITH GRAY, SILT, SOME CLAY, TRACE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST			889.7	3	1	5	100	SS-2	1.25	0	1	9	68	22	29	19	10	22	A-4b (8)	-		
			888.2	4	1	9	100	SS-3	2.00	1	0	34	46	19	23	16	7	18	A-4a (6)	-		
STIFF TO VERY STIFF, BROWN MOTTLED WITH GRAY, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, MOIST			887.2	5	3	13	100	SS-4A	1.50	-	-	-	-	-	-	-	-	18	A-4a (V)	-		
			886.7	6	4					-	-	-	-	-	-	-	-					
STIFF, BROWN MOTTLED WITH GRAY, SANDY SILT				7	5				SS-4B	2.00	-	-	-	-	-	-	-	27	A-7-6 (V)	-		

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:40 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1052+18, 12' RT.		EXPLORATION ID B-004-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 915.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/7/22 END: 6/7/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.724254, -82.218652														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		915.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
11.0" ASPHALT AND 7.0" BASE (DRILLERS DESCRIPTION)		913.9	1																	
VERY STIFF TO HARD, ORANGISH BROWN, SILTY CLAY, TRACE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST			2	7	12	39	SS-1	4.25	-	-	-	-	-	-	-	-	22	A-6b (V)	533	
			3	4	5															
		910.9	4	5	14	100	SS-2	3.75	0	1	7	63	29	37	21	16	22	A-6b (10)	-	
			5	3	16	100	SS-3	4.25	0	1	2	35	62	50	26	24	25	A-7-6 (16)	-	
VERY STIFF TO HARD, ORANGISH BROWN AND GRAY, CLAY, SOME SILT, TRACE SAND, TRACE GRAVEL, INTERBEDDED, SS-3 CONTAINS IRON STAINING, DAMP			6	7	7															
SS-4 BECOMES GRAY AND BROWN		907.9	7	8	21	100	SS-4	3.50	-	-	-	-	-	-	-	-	26	A-7-6 (V)	-	
			EOB	8																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:40 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1055+92, 12' LT.		EXPLORATION ID B-005-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 923.7 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/7/22 END: 6/7/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.725264, -82.218917														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		923.7							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 4.0" BASE AND 5.0" BRICK (DRILLERS DESCRIPTION)																				
		921.6	1																	
MEDIUM STIFF TO STIFF, BROWN, CLAY, SOME SILT, TRACE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST			2	18		20	28	SS-1	0.75	-	-	-	-	-	-	-	24	A-7-6 (V)	107	
			3	10	5															
			4	3		4	28	SS-2	1.25	1	1	3	65	30	42	22	20	26	A-7-6 (12)	-
VERY STIFF, BROWN, SILT, SOME CLAY, TRACE SAND, TRACE GRAVEL, MOIST TO DAMP		919.2	5	2	1	7	100	SS-3	2.50	0	0	8	68	24	30	20	10	21	A-4b (8)	-
			6	1																
			7	8	3															
		916.2	7	8	7	20	100	SS-4	2.75	-	-	-	-	-	-	-	19	A-4b (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:40 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1059+91, 11' RT.		EXPLORATION ID B-006-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 934.3 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/7/22 END: 6/7/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.726357, -82.219038														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		934.3							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 2.0" BASE AND 6.0" BRICK (DRILLERS DESCRIPTION)																				
SS-1 IS CRUSHED BRICK FRAGMENTS		932.3	1	50/5"	-	80	SS-1	-	-	-	-	-	-	-	-	-	4	UCF (V)	-	
VERY STIFF, BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, DAMP			2																	
			3	5																
		929.8	4	4	9	100	SS-2	3.25	9	6	19	47	19	31	25	6	17	A-4a (6)	60	
VERY STIFF, BROWN, SILT, SOME SAND, LITTLE CLAY, TRACE GRAVEL, DAMP			5	4																
			6	3	5	100	SS-3	3.75	0	6	21	53	20	31	23	8	17	A-4b (8)	-	
SS-4 BECOMES VERY SOFT, MOIST			7	2																
		926.8	7	1	4	100	SS-4	0.10	-	-	-	-	-	-	-	-	25	A-4b (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1063+81, 12' LT.		EXPLORATION ID B-007-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 934.6 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/7/22 END: 6/7/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.727406, -82.219331														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		934.6							GR	CS	FS	SI	CL	LL	PL	PI	WC			
17.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		932.9	1																	
HARD, BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, DAMP		931.6	2	11	7	16	33	SS-1	4.50	-	-	-	-	-	-	-	16	A-4a (V)	73	
LOOSE, BROWN, SILT, LITTLE SAND, TRACE TO LITTLE CLAY, TRACE GRAVEL, WET			3	6	3	8	100	SS-2	-	0	1	16	71	12	NP	NP	NP	22	A-4b (8)	-
			4	3	3															
			5	3	2	5	100	SS-3	-	0	0	12	81	7	NP	NP	NP	28	A-4b (8)	-
			6	2	2															
		927.1	7	2	3	7	100	SS-4	-	-	-	-	-	-	-	-	27	A-4b (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/25/22 11:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1067+95, 12' LT.		EXPLORATION ID B-008-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 918.7 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/7/22 END: 6/7/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.728487, -82.219459															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		918.7							GR	CS	FS	SI	CL	LL	PL	PI	WC				
13.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION)		917.1	1																		
MEDIUM STIFF TO STIFF, ORANGISH BROWN AND GRAY, SILT, LITTLE TO SOME CLAY, TRACE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, CONTAINS NO INTACT SOIL FOR HP READINGS, MOIST		914.7	2	5	3	9	100	SS-1	-	4	1	6	76	13	28	24	4	23	A-4b (8)	20	
			3	2	3	8	100	SS-2A	-	0	1	5	71	23	29	21	8	22	A-4b (8)	-	
STIFF TO VERY STIFF, ORANGISH BROWN AND GRAY, SILT AND CLAY, TRACE GRAVEL, TRACE SAND, CONTAINS IRON STAINING, MOIST			4	2	3			SS-2B	2.50	-	-	-	-	-	-	-	-	27	A-6a (V)	-	
			5	3	9	100	SS-3	2.25	10	1	4	56	29	31	20	11	24	A-6a (8)	-		
		911.2	6	4																	
			7	5	13	100	SS-4	2.00	-	-	-	-	-	-	-	-	22	A-6a (V)	-		
			EOB	5																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/25/22 11:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1071+71, 17' RT.		EXPLORATION ID B-009-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 899.2 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/7/22 END: 6/7/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.729556, -82.219770														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		899.2							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		897.6	1																	
MEDIUM STIFF, BROWN, SILTY CLAY, SOME SAND, SOME GRAVEL, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP TO MOIST			2	3																
			2	2	5	61	SS-1	-	21	11	13	36	19	40	23	17	20	A-6b (7)	20	
			3	2																
SOFT TO MEDIUM STIFF, BROWN AND ORANGISH BROWN, SILTY CLAY, TRACE SAND, TRACE GRAVEL, MOIST		894.7	4	3	8	39	SS-2	-	-	-	-	-	-	-	-	-	24	A-6b (V)	-	
			5	1	4	100	SS-3	0.75	0	0	4	70	26	39	22	17	29	A-6b (11)	-	
			6	2																
		891.7	7	3	11	100	SS-4	0.50	-	-	-	-	-	-	-	-	29	A-6b (V)	-	
			EOB	5																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/25/22 11:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1075+36, 7' LT.		EXPLORATION ID B-010-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 878.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/7/22 END: 6/7/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.730562, -82.219886														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		878.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
12.0" ASPHALT AND 8.0" BASE (DRILLERS DESCRIPTION)		876.7	1																	
HARD, BROWN AND ORANGISH BROWN, SILT, SOME SAND, LITTLE CLAY, TRACE GRAVEL, MOIST		875.4	2	7	11	100	SS-1	4.25	2	7	18	55	18	27	18	9	19	A-4b (8)	53	
SOFT, GRAY, SILT, SOME CLAY, LITTLE SAND, TRACE GRAVEL, MOIST			3	4	2	100	SS-2	0.25	0	2	15	62	21	29	19	10	24	A-4b (8)	-	
BECOMES VERY STIFF, LITTLE SAND, DAMP			4	2	4	100	SS-2	0.25	0	2	15	62	21	29	19	10	24	A-4b (8)	-	
			5	2	3	100	SS-3	2.75	-	-	-	-	-	-	-	-	25	A-4b (V)	-	
			6	2	1															
		870.9	7	3	9	100	SS-4	3.00	-	-	-	-	-	-	-	-	22	A-4b (V)	-	
			EOB	4																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1079+40, 15' LT.		EXPLORATION ID												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13		B-011-0-21												
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 872.4 (MSL) EOB: 7.5 ft.		PAGE												
START: 6/7/22 END: 6/7/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.731652, -82.220019		1 OF 1												
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		872.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
13.0" ASPHALT AND 23.0" BASE (DRILLERS DESCRIPTION)																				
SS-1 IS GRANULAR BASE, WOULD CLASSIFY AS A-1-b																				
		869.4																		
HARD, BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, MOIST																				
		867.9																		
STIFF, GRAY, CLAY, "AND" SILT, LITTLE SAND, TRACE GRAVEL, MOIST																				
		864.9																		
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1082+49, 11' RT.		EXPLORATION ID B-012-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 873.8 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/8/22 END: 6/8/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.732490, -82.219804														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		873.8							GR	CS	FS	SI	CL	LL	PL	PI	WC			
18.0" ASPHALT AND 4.0" BRICK (DRILLERS DESCRIPTION)																				
SS-1 IS BRICK AND ASPHALT FRAGMENTS		871.8	1	50/4"	-	75	SS-1	-	-	-	-	-	-	-	-	-	-	UCF (V)	-	
HARD, BROWNISH GRAY, SILT, SOME SAND, LITTLE CLAY, TRACE GRAVEL, CONTAINS TRACE BLACK ORGANIC STREAKS, DAMP			2																	
			3	6																
		869.3	4	7	16	100	SS-2	4.50	0	3	19	62	16	23	20	3	15	A-4b (8)	0	
			5	2																
STIFF TO VERY STIFF, YELLOWISH BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, MOIST			6	1	4	100	SS-3	2.50	0	1	17	47	35	39	21	18	23	A-6b (11)	-	
			7	2																
		866.3	7	3	8	100	SS-4	1.50	-	-	-	-	-	-	-	-	24	A-6b (V)	-	
				3																
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1086+09, 14' LT.		EXPLORATION ID B-013-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 879.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/20/22 END: 6/20/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.733400, -82.220250														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		879.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
13.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION)		877.8	1																	
MEDIUM STIFF, BROWN AND DARK GRAY, SILT AND CLAY, SOME SAND, LITTLE GRAVEL, CONTAINS ASPHALT FRAGMENTS, DAMP		876.4	2	6	4	7	100	SS-1	-	14	15	11	40	20	30	18	12	14	A-6a (6)	600
STIFF, BROWN, SILT, SOME CLAY, LITTLE SAND, TRACE GRAVEL, MOIST			3	2	2	5	100	SS-2	1.50	1	1	11	63	24	27	19	8	22	A-4b (8)	-
		873.4	4	2	2															
			5	2		4	100	SS-3	1.50	-	-	-	-	-	-	-	-	24	A-4b (V)	-
SOFT TO MEDIUM STIFF, BROWN, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, SLIGHTLY ORGANIC, CONTAINS TRACE DECAYED PLANT MATTER, MOIST		871.9	6	2	1															
			7	1	1	2	100	SS-4	0.50	1	1	4	63	31	38	24	14	33	A-6a (10)	-
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1089+77, 12' RT.		EXPLORATION ID B-014-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 888.9 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/8/22 END: 6/8/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.734134, -82.221132														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		888.9							GR	CS	FS	SI	CL	LL	PL	PI	WC			
17.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)																				
		887.1	1																	
HARD, ORANGISH BROWN MOTTLED WITH GRAY, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, DAMP		885.9	2	3	12	44	SS-1	4.25	9	4	12	45	30	38	23	15	17	A-6a (10)	-	
			3	4	14	41	SS-2	-	0	1	20	61	18	32	25	7	12	A-4b (8)	13	
HARD, GRAY AND ORANGISH BROWN, SILT, LITTLE TO SOME SAND, LITTLE CLAY, TRACE GRAVEL, CONTAINS IRON STAINING, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP			4	17	75	100	SS-3	-	-	-	-	-	-	-	-	-	13	A-4b (V)	-	
			5	6	25															
			6	32	80	100	SS-4	-	-	-	-	-	-	-	-	-	12	A-4b (V)	-	
		881.4	7	4	24															
				37																
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1093+65, 11' LT.		EXPLORATION ID B-015-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 888.7 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/20/22 END: 6/20/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.734762, -82.222253														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		888.7							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		887.2	1																	
MEDIUM DENSE, BROWN, GRAVEL WITH SAND AND SILT, TRACE CLAY, DAMP		885.7	2	7	11	22	SS-1	-	-	-	-	-	-	-	-	-	12	A-2-4 (V)	-	
MEDIUM STIFF, BROWN AND BROWNISH GRAY, SILT, SOME CLAY, TRACE SAND, TRACE GRAVEL, CONTAINS NO INTACT SOIL FOR HP READINGS, MOIST		884.2	3	5	6	100	SS-2	-	0	1	7	68	24	28	21	7	24	A-4b (8)	40	
VERY STIFF, BROWN WITH GRAY MOTTLES, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, SS-4 CONTAINS IRON STAINING, MOIST		881.2	4	2	6	100	SS-3	3.00	1	0	1	50	48	49	23	26	25	A-7-6 (16)	-	
			5	2	6	100	SS-3	3.00	1	0	1	50	48	49	23	26	25	A-7-6 (16)	-	
			6	3	7	100	SS-4	2.25	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-	
			7	3	7	100	SS-4	2.25	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-	
			EOB	3																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1097+42, 11' RT.		EXPLORATION ID B-016-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 891.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/8/22 END: 6/8/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.735463, -82.223240														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		891.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 2.0" BASE (DRILLERS DESCRIPTION)		889.9	1																	
VERY STIFF, BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, DAMP		888.4	2	16	29	28	SS-1	3.75	1	1	14	46	38	32	18	14	18	A-6a (10)	140	
			3	4																
VERY STIFF, BROWN, SILTY CLAY, LITTLE TO SOME SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST TO DAMP			4	5	13	44	SS-2	4.00	-	-	-	-	-	-	-	-	21	A-6b (V)	-	
			5	4																
			6	6	13	50	SS-3	3.50	6	6	23	33	32	36	20	16	19	A-6b (8)	-	
		883.9	7	7	20	100	SS-4	3.75	-	-	-	-	-	-	-	-	22	A-6b (V)	-	
			8	8																
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1101+37, 11' LT.		EXPLORATION ID B-017-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 904.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/20/22 END: 6/20/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.736104, -82.224374														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		904.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		902.8	1																	
LOOSE, BROWN AND DARK BROWN, GRAVEL WITH SAND AND SILT, TRACE CLAY, CONTAINS ASPHALT FRAGMENTS, DAMP		901.6	2	7	3	8	28	SS-1	-	-	-	-	-	-	-	-	15	A-2-4 (V)	100	
			3	6	4															
MEDIUM STIFF TO STIFF, BROWN BECOMING BROWNISH GRAY, SILT, SOME CLAY, LITTLE SAND, TRACE GRAVEL, NO INTACT SOIL FOR HP READINGS, SS-3 IS SLIGHTLY ORGANIC, DAMP TO MOIST			4	4	4	10	17	SS-2	-	-	-	-	-	-	-	-	18	A-4b (V)	-	
			5	3	3	6	100	SS-3	-	1	2	10	64	23	30	21	9	23	A-4b (8)	-
			6	2	2															
		896.9	7	3	4	8	100	SS-4	-	-	-	-	-	-	-	-	21	A-4b (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1105+21, 12' RT.		EXPLORATION ID B-018-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 914.3 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/8/22 END: 6/8/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.736820, -82.225381														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		914.3							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		912.8	1																	
LOOSE TO MEDIUM DENSE, BROWN, SILT, TRACE CLAY, TRACE SAND, TRACE GRAVEL, WET			2	7	16	100	SS-1	-	0	1	1	89	9	NP	NP	NP	24	A-4b (8)	20	
			3	3	5	100	SS-2	-	1	0	0	90	9	NP	NP	NP	28	A-4b (8)	-	
			4	2																
			5	2	5	100	SS-3	-	-	-	-	-	-	-	-	-	26	A-4b (V)	-	
			6	2																
		906.8	7	3	8	100	SS-4	-	-	-	-	-	-	-	-	-	26	A-4b (V)	-	
			EOB	3																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/25/22 11:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1109+43, 12' LT.		EXPLORATION ID B-019-0-21														
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13																
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 911.6 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1														
START: 6/20/22 END: 6/20/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.737503, -82.226596																
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL		
		911.6							GR	CS	FS	SI	CL	LL	PL	PI	WC					
16.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		909.9	1																			
STIFF TO VERY STIFF, BROWN AND ORANGISH BROWN, SILT, SOME TO "AND" SAND, LITTLE CLAY, TRACE GRAVEL, IRON STAINING, SS-1 CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP TO MOIST			2	10	7	13	22	SS-1	-	-	-	-	-	-	-	-	-	14	A-4b (V)	-		
			3	3	2	3	6	78	SS-2	1.25	10	4	18	50	18	25	17	8	19	A-4b (7)	60	
			4																			
			5	3	4	3	8	100	SS-3	2.25	-	-	-	-	-	-	-	-	20	A-4b (V)	-	
			6	3																		
			7	2	5	100	SS-4	2.50	-	-	-	-	-	-	-	-	-	-	20	A-4b (V)	-	
		904.1	EOB	2	2																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																						
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																						

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1112+98, 12' LT.		EXPLORATION ID B-020-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 918.2 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/20/22 END: 6/20/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.738121, -82.227573															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		918.2							GR	CS	FS	SI	CL	LL	PL	PI	WC				
14.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		916.8	1																		
STIFF, BROWN, SILT AND CLAY, SOME SAND, TRACE GRAVEL, IRON STAINING, SS-1 CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP TO MOIST			2	5	10	11	SS-1	-	-	-	-	-	-	-	-	-	14	A-6a (V)	-		
			3	6	3	6	100	SS-2	1.75	3	4	22	49	22	31	17	14	19	A-6a (9)	60	
			4	3	2																
			5	4	3	6	100	SS-3	1.75	0	1	21	52	26	30	17	13	23	A-6a (9)	-	
STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, IRON STAINING, MOIST		912.2	6	3	2																
		910.7	7	3	2	6	100	SS-4	1.50	0	3	15	53	29	37	19	18	27	A-6b (11)	-	
			EOB																		
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1116+83, 11' RT.		EXPLORATION ID B-021-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 908.8 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/8/22 END: 6/8/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.738922, -82.228465															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		908.8							GR	CS	FS	SI	CL	LL	PL	PI	WC				
16.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		907.2	1																		
VERY STIFF TO HARD, GRAY, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, DAMP TO MOIST			2	8	5	11	100	SS-1	3.75	4	5	28	45	18	25	17	8	16	A-4a (6)	60	
			3	2	1	3	100	SS-2	2.25	-	-	-	-	-	-	-	23	A-4a (V)	-		
SS-3 BECOMES BROWN MOTTLED WITH GRAY, SOME CLAY, CONTAINS IRON STAINING			4	3	6	17	100	SS-3	4.50	10	5	25	33	27	28	18	10	14	A-4a (5)	-	
			5	6	7																
			6	6	7																
		901.3	7	7	8	20	100	SS-4	3.25	-	-	-	-	-	-	-	16	A-4a (V)	-		
			EOB																		
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1120+74, 13' LT.		EXPLORATION ID B-022-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 894.3 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/20/22 END: 6/20/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.739737, -82.229372														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		894.3							GR	CS	FS	SI	CL	LL	PL	PI	WC			
13.0" ASPHALT AND 5.0" BASE AND 6.0" BRICK (DRILLERS DESCRIPTION)																				
		892.3	1	9																
STIFF TO HARD, BROWNISH GRAY, SANDY SILT, SOME CLAY, LITTLE GRAVEL, CONTAIN NO INTACT SOIL PLUGS FOR HP READINGS, DAMP			2	32 17	59	17	SS-1	-	-	-	-	-	-	-	-	-	14	A-4a (V)	-	
			3	3																
		889.8	4	4 4	10	28	SS-2	-	-	-	-	-	-	-	-	-	19	A-4a (V)	-	
STIFF TO VERY STIFF, GRAY MOTTLED WITH BROWN, CLAY, "AND" SILT, LITTLE SAND, TRACE GRAVEL, MOIST			5	2	5	100	SS-3	2.00	1	1	17	38	43	41	20	21	25	A-7-6 (13)	40	
			6	2																
		886.8	7	3 4	8	100	SS-4	1.75	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1124+63, 13' RT.		EXPLORATION ID B-023-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 897.9 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/8/22 END: 6/8/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.740629, -82.230137														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		897.9							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		896.4	1																	
STIFF, GRAY, SILTY CLAY, TRACE SAND, TRACE GRAVEL, MOIST		894.9	2	4	1	4	100	SS-1	1.50	0	1	4	59	36	37	20	17	24	A-6b (11)	40
			3	1	2															
STIFF TO VERY STIFF, ORANGISH BROWN MOTTLED WITH GRAY, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST TO DAMP			4	2	3	7	100	SS-2	1.50	1	1	2	61	35	47	23	24	29	A-7-6 (15)	-
			5	1	3	7	100	SS-3	1.25	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-
			6	4	2															
		890.4	7	4	5	12	100	SS-4	3.25	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1128+59, 13' LT.		EXPLORATION ID B-024-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 913.9 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/20/22 END: 6/20/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.741452, -82.231062															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		913.9							GR	CS	FS	SI	CL	LL	PL	PI	WC				
14.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		912.4	1																		
HARD, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, SILTY CLAY, SOME SAND, TRACE GRAVEL, IRON STAINING, MOIST		910.9	2	6	4	8	56	SS-1	4.25	2	3	18	41	36	37	20	17	22	A-6b (11)	60	
			3	7	3																
VERY STIFF TO HARD, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, SILT AND CLAY, SOME SAND, TRACE GRAVEL, IRON STAINING, MOIST			4	4	4	10	100	SS-2	4.00	4	6	20	46	24	31	18	13	20	A-6a (8)	-	
			5	4	5	12	100	SS-3	4.25	-	-	-	-	-	-	-	-	22	A-6a (V)	-	
			6	5	5																
		906.4	7	6	5	13	100	SS-4	4.25	-	-	-	-	-	-	-	-	19	A-6a (V)	-	
			EOB																		
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1132+42, 12' RT.		EXPLORATION ID B-025-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 919.6 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/8/22 END: 6/8/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.742351, -82.231762														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		919.6							GR	CS	FS	SI	CL	LL	PL	PI	WC			
12.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION)		918.1	1																	
MEDIUM DENSE, ORANGISH BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST		916.6	2	6	4	11	100	SS-1	-	1	14	47	16	22	NP	NP	NP	15	A-4a (1)	60
VERY STIFF, ORANGISH BROWN, SILTY CLAY, "AND" SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST		915.1	3	4	4	12	100	SS-2	2.50	0	6	45	22	27	37	16	21	20	A-6b (7)	-
MEDIUM DENSE, ORANGISH BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, CONTAINS IRON STAINING, WET TO MOIST		912.1	4	4	5	14	100	SS-3	-	-	-	-	-	-	-	-	-	20	A-4a (V)	-
			5	4	6	14	100	SS-3	-	-	-	-	-	-	-	-	-	20	A-4a (V)	-
			6	5	5	14	100	SS-3	-	-	-	-	-	-	-	-	-	20	A-4a (V)	-
			7	8	7	20	100	SS-4	-	-	-	-	-	-	-	-	-	18	A-4a (V)	-
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1136+40, 12' LT.		EXPLORATION ID B-026-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 917.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/20/22 END: 6/20/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.743323, -82.232408														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		917.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		915.8	1																	
STIFF TO VERY STIFF, BROWN AND ORANGISH BROWN, CLAY, "AND" SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, IRON STAINING, DAMP TO MOIST			2	4	3	7	22	SS-1	3.50	-	-	-	-	-	-	-	17	A-7-6 (V)	-	
			3	1	3															
		912.9	4	3	2	6	100	SS-2	1.50	3	5	14	50	28	41	20	21	24	A-7-6 (13)	320
HARD, BROWN AND ORANGISH BROWN, SILT AND CLAY, SOME TO "AND" SAND, TRACE TO LITTLE GRAVEL, IRON STAINING, DAMP			5	3	8	21	100	SS-3	4.50	18	14	25	26	17	31	18	13	14	A-6a (2)	-
			6	6	9															
		909.9	7	9	10	23	100	SS-4	4.50	-	-	-	-	-	-	-	17	A-6a (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1143+86, 11' LT.		EXPLORATION ID B-028-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 904.1 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/20/22 END: 6/20/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.745143, -82.233576														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		904.1							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		902.4	1																	
MEDIUM STIFF, BROWN AND BROWNISH GRAY, SILT, LITTLE SAND, LITTLE CLAY, TRACE GRAVEL, DAMP		901.1	2	3	4	8	100	SS-1	-	5	5	15	57	18	25	19	6	18	A-4b (8)	160
MEDIUM STIFF TO VERY STIFF, BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, SILTY CLAY, SOME SAND, TRACE TO LITTLE GRAVEL, IRON STAINING, MOIST			3	1																
			4	1	3	5	100	SS-2	1.00	0	3	24	43	30	34	18	16	25	A-6b (10)	-
		898.1	5	2	4	7	13	100	SS-3	3.25	-	-	-	-	-	-	-	19	A-6b (V)	-
HARD, BROWN, SANDY SILT, SOME CLAY, TRACE STONE FRAGMENTS, FISSILE LAMINATIONS, DAMP		896.6	6	6																
			7	10	11	25	100	SS-4	4.50	-	-	-	-	-	-	-	-	16	A-4a (V)	-
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 75T		STATION / OFFSET: 1147+78, 14' RT.		EXPLORATION ID B-029-0-21														
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13																
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 910.0 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1														
START: 6/8/22 END: 6/8/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 79		LAT / LONG: 39.745963, -82.234480																
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL		
		910.0							GR	CS	FS	SI	CL	LL	PL	PI	WC					
15.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		908.4	1																			
VERY STIFF, BROWN MOTTLED WITH GRAY, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST SS-3 AND SS-4 CONTAIN NO INTACT SOIL FOR HP READINGS			2	4	2	7	44	SS-1	3.50	1	5	4	58	32	44	19	25	23	A-7-6 (15)	0		
			3	2	3																	
			4	3	6	12	39	SS-2	2.25	-	-	-	-	-	-	-	-	-	21	A-7-6 (V)	-	
			5	5	6	18	100	SS-3	-	0	1	5	55	39	44	20	24	25	A-7-6 (14)	-		
			6	4	8																	
			7	6	7	17	100	SS-4	-	-	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-	
			7	6	7																	
		902.5	EOB																			
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																						
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																						

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1151+54, 11' LT.				EXPLORATION ID B-030-0-21									
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13													
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 911.8 (MSL) EOB: 7.5 ft.				PAGE 1 OF 1									
START: 6/22/22 END: 6/22/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.746621, -82.235513													
MATERIAL DESCRIPTION AND NOTES		ELEV. 911.8	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)			ATTERBERG				ODOT CLASS (Gl)	SO4 ppm	BACK FILL	
									GR	CS	FS	SI	CL	LL	PL	PI	WC		
15.0" ASPHALT AND 4.0" BRICK (DRILLERS DESCRIPTION)		910.2																	
VERY STIFF, GRAY, SILT, LITTLE CLAY, LITTLE SAND, TRACE GRAVEL, MOIST		908.6	1	3	7	100	SS-1	2.50	1	3	14	64	18	28	20	8	21	A-4b (8)	20
VERY STIFF, GRAY, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, MOIST		907.3	2	2	6	100	SS-2	3.00	-	-	-	-	-	-	-	-	24	A-6a (V)	-
STIFF, GRAY, SILTY CLAY, TRACE SAND, TRACE GRAVEL, MOIST		905.8	3	2	5	100	SS-3	1.50	2	1	7	57	33	34	18	16	25	A-6b (10)	-
VERY STIFF, BROWN MOTTLED WITH GRAY, CLAY, "AND" SILT, SOME SAND, TRACE GRAVEL, CONTAINS IRON STAINING, DAMP		904.3	4	3	8	100	SS-4	2.50	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-
			EOB	4															

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:ACTIVE PROJECTS:ACTIVE SOIL PROJECTS:PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1154+86, 12' RT.		EXPLORATION ID B-031-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 912.6 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/21/22 END: 6/21/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.747293, -82.236314														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		912.6							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		911.1	1																	
MEDIUM DENSE, DARK GRAY, GRAVEL WITH SAND, TRACE SILT, TRACE CLAY, RESEMBLES GRANULAR BASE, CONTAINS ASPHALT FRAGMENTS, DAMP		909.6	2	6	5	11	28	SS-1	-	-	-	-	-	-	-	-	6	A-1-b (V)	-	
STIFF TO VERY STIFF, BROWNISH GRAY, SILT, SOME CLAY, LITTLE SAND, TRACE GRAVEL, MOIST		908.1	3	5	3	7	100	SS-2	2.00	2	4	11	57	26	33	23	10	26	A-4b (8)	40
VERY LOOSE, GRAY, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, WET		906.6	4	1	3															
			5	1	4	100	SS-3	-	2	8	34	37	19	NP	NP	NP	28	A-4a (4)	-	
VERY STIFF, GRAY AND BROWN, SILT AND CLAY, SOME SAND, TRACE GRAVEL, DAMP		905.1	6	4	2															
			7	5	12	33	SS-4	4.00	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
			EOB	5	5															
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: <u>PER-13-19.67</u>		DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u>		DRILL RIG: <u>CME 45B</u>		STATION / OFFSET: <u>1157+19, 12' RT.</u>		EXPLORATION ID <u>B-032-0-21</u>													
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR-13</u>															
PID: <u>SFN:</u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>1/24/22</u>		ELEVATION: <u>914.7 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1													
START: <u>6/21/22</u> END: <u>6/21/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>72.6</u>		LAT / LONG: <u>39.747732, -82.236916</u>															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		914.7							GR	CS	FS	SI	CL	LL	PL	PI	WC				
15.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)																					
		913.1	1																		
STIFF TO VERY STIFF, BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, SILT AND CLAY , TRACE TO LITTLE SAND, TRACE GRAVEL, IRON STAINING, SS-2 IS SLIGHTLY ORGANIC, DAMP TO MOIST			2	6	4	8	17	SS-1	-	-	-	-	-	-	-	-	21	A-6a (V)	-		
			3	3	3	7	100	SS-2	2.50	1	3	7	43	46	39	25	14	26	A-6a (10)	220	
			4	3	3																
			5	2	8	12	100	SS-3	1.75	-	-	-	-	-	-	-	-	20	A-6a (V)	-	
		908.7	6	2																	
HARD, BLACK, SILT AND CLAY , SOME SAND, TRACE GRAVEL, SLIGHTLY ORGANIC, CONTAINS FISSILE LAMINATIONS, DAMP		907.7	7	20																	
			EOB	50	-	83	SS-4	4.50	1	4	22	41	32	34	21	13	13	A-6a (9)	-		
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1160+95, 15' LT.		EXPLORATION ID B-033-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 917.3 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/22/22 END: 6/22/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.748386, -82.237955														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		917.3							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		915.8	1																	
LOOSE, DARK GRAY, GRAVEL WITH SAND, LITTLE SILT, TRACE CLAY, CONTAINS ASPHALT FRAGMENTS, DAMP		914.3	2	6	3	7	44	SS-1	-	-	-	-	-	-	-	-	10	A-1-b (V)	-	
VERY SOFT, GRAY, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, CONTAINS NO INTACT SOIL FOR HP READINGS, WET		912.8	3	0	0	100	SS-2	-	1	1	31	48	19	27	19	8	28	A-4a (6)	20	
STIFF, ORANGISH BROWN, SILT AND CLAY, "AND" SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST		911.3	4	0																
		910.3	5	0	1	4	39	SS-3	1.75	0	16	30	31	23	34	20	14	24	A-6a (5)	-
LOOSE, ORANGISH BROWN, SANDY SILT, TRACE CLAY, TRACE GRAVEL, CONTAINS IRON STAINING, WET		909.8	6	1	2															
			7	3	4	8	100	SS-4A	-	-	-	-	-	-	-	-	26	A-4a (V)	-	
VERY STIFF, GRAY, SILTY CLAY, TRACE SAND, TRACE GRAVEL, DAMP								SS-4B	3.25	-	-	-	-	-	-	-	20	A-6b (V)	-	
EOB																				
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1165+18, 13' RT.		EXPLORATION ID B-034-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 919.1 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/21/22 END: 6/21/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.749239, -82.238983														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		919.1							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		917.4	1																	
MEDIUM STIFF TO STIFF, BROWN AND GRAY, SILT AND CLAY, SOME SAND, SOME GRAVEL, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP			2	8	6	10	28	SS-1	-	-	-	-	-	-	-	-	17	A-6a (V)	-	
			3	3	2															
		914.6	4	2	3	6	100	SS-2	-	28	17	16	25	14	29	18	11	17	A-6a (1)	133
MEDIUM DENSE, BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, WET			5	2	6	13	33	SS-3	-	2	9	42	32	15	NP	NP	NP	20	A-4a (2)	-
		912.1	6	3	5															
		911.6	7	4	6	12	100	SS-4A	-	-	-	-	-	-	-	-	19	A-4a (V)	-	
STIFF, WHITE, CLAY, SOME SILT, TRACE SAND, TRACE GRAVEL, DAMP								SS-4B	1.75	-	-	-	-	-	-	-	19	A-7-6 (V)	-	
EOB																				
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

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PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1168+91, 13' LT.		EXPLORATION ID B-035-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 925.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/22/22 END: 6/22/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.749898, -82.240001														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		925.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		923.7	1																	
STIFF, DARK GRAY, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP		922.4	2	7	4	7	22	SS-1	1.50	1	5	17	39	38	45	23	22	27	A-7-6 (14)	-
STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, SILTY CLAY, SOME STONE FRAGMENTS, SOME SAND, IRON STAINING, MOIST		920.9	3	2	4	10	100	SS-2	1.50	17	19	17	28	19	32	18	14	17	A-6a (4)	73
SOFT TO MEDIUM STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, CLAY, SOME SILT, LITTLE SAND, TRACE GRAVEL, IRON STAINING, MOIST			4	3	3	7	100	SS-3	0.50	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-
		917.9	5	3	3															
			6	3	4	10	100	SS-4	0.75	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-
			7	4	4															
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

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PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1172+86, 11' RT.		EXPLORATION ID B-036-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 929.6 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/21/22 END: 6/21/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.750705, -82.240941														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		929.6							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION)																				
		927.8	1																	
STIFF TO VERY STIFF, GRAY AND BROWN BECOMING BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, SILT AND CLAY, "AND" SAND, TRACE GRAVEL, IRON STAINING, MOIST			2	10																
			3	6	11	50	SS-1	1.50	-	-	-	-	-	-	-	-	18	A-6a (V)	-	
			4	2	6	39	SS-2	2.25	4	10	33	26	27	32	17	15	20	A-6a (6)	180	
VERY STIFF, ORANGISH BROWN, SILT AND CLAY, SOME SAND, SOME STONE FRAGMENTS, IRON STAINING, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP		925.1	5	5	19	100	SS-3	-	29	13	21	23	14	31	19	12	16	A-6a (1)	-	
			6	7																
		922.1	7	6	16	100	SS-4	-	-	-	-	-	-	-	-	-	18	A-6a (V)	-	
			EOB	7																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1176+80, 12' LT.		EXPLORATION ID B-037-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 932.7 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/22/22 END: 6/22/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.751421, -82.241996														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		932.7							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		931.1	1																	
SOFT TO MEDIUM STIFF, BROWN, SILT AND CLAY, LITTLE SAND, LITTLE GRAVEL, CONTAINS ASPHALT FRAGMENTS, DAMP		929.7	2	8	3	6	17	SS-1	0.50	-	-	-	-	-	-	-	18	A-6a (V)	-	
SOFT TO MEDIUM STIFF, BROWN WITH GRAY MOTTLES, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, MOIST		928.2	3	4	2	4	67	SS-2	0.50	3	16	43	22	16	26	19	7	23	A-4a (1)	67
STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, SILT AND CLAY, "AND" SAND, TRACE GRAVEL, IRON STAINING, MOIST		926.6	4	2	1															
		925.2	5	2	3	6	33	SS-3	1.25	7	10	27	30	26	33	20	13	23	A-6a (5)	-
VERY DENSE, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT, LITTLE CLAY, IRON STAINING, CONTAINS STONE FRAGMENTS >1.25", DAMP		925.2	6	3																
			7	5	50	67	22	SS-4	-	-	-	-	-	-	-	-	18	A-2-4 (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

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PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1180+12, 12' RT.		EXPLORATION ID B-038-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 935.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/21/22 END: 6/21/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.752108, -82.242779														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		935.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		933.8	1																	
MEDIUM STIFF, GRAY, SANDY SILT, SOME CLAY, LITTLE GRAVEL, CONTAINS ASPHALT FRAGMENTS, NO INTACT SOIL FOR HP READINGS, MOIST		932.4	2	5	2	5	44	SS-1	-	-	-	-	-	-	-	-	17	A-4a (V)	-	
VERY STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, SILTY CLAY, SOME SAND, TRACE GRAVEL, IRON STAINING, DAMP		930.9	3	3	2	5	100	SS-2	3.00	2	3	18	40	37	38	20	18	20	A-6b (11)	467
VERY STIFF, GRAY AND ORANGISH BROWN, CLAY, SOME SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, DAMP			4	3	2	18	100	SS-3	3.25	1	3	2	28	66	52	23	29	21	A-7-6 (18)	-
			5	6	9															
			6	5		19	100	SS-4	3.75	-	-	-	-	-	-	-	23	A-7-6 (V)	-	
		927.9	7	8	8															
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

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PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1184+12, 12' LT.		EXPLORATION ID B-039-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 941.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/22/22 END: 6/22/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.752831, -82.243851														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		941.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		939.7	1																	
VERY STIFF, BROWN AND GRAY, SILT, SOME CLAY, SOME SAND, TRACE GRAVEL, IRON STAINING, DAMP		938.4	2	9	3	6	100	SS-1	3.00	1	5	17	50	27	28	19	9	19	A-4b (8)	73
STIFF TO VERY STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, SILTY CLAY, LITTLE TO SOME SAND, TRACE GRAVEL, IRON STAINING, MOIST TO DAMP			3	2	2	5	100	SS-2	1.75	-	-	-	-	-	-	-	22	A-6b (V)	-	
			4	2	2	5	100	SS-3	1.75	3	6	14	43	34	37	19	18	22	A-6b (11)	-
			5	3	2	5	100	SS-3	1.75	3	6	14	43	34	37	19	18	22	A-6b (11)	-
			6	3	2	5	100	SS-3	1.75	3	6	14	43	34	37	19	18	22	A-6b (11)	-
		933.9	7	4	4	10	100	SS-4	3.50	-	-	-	-	-	-	-	18	A-6b (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1187+40, 11' RT.		EXPLORATION ID B-040-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 945.0 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/21/22 END: 6/21/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.753508, -82.244623														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		945.0							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION)																				
		943.2	1																	
LOOSE, BLACK, GRAVEL WITH SAND, TRACE SILT, TRACE CLAY, RESEMBLES GRANULAR BASE, CONTAINS ASPHALT FRAGMENTS, DAMP		942.0	2	10	5	10	39	SS-1	-	-	-	-	-	-	-	-	5	A-1-b (V)	-	
			3	1	2	5	100	SS-2	1.50	2	4	17	36	41	41	22	19	26	A-7-6 (12)	320
STIFF TO VERY STIFF, GRAY BECOMING BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, CLAY, SOME TO "AND" SILT, SOME SAND, TRACE GRAVEL, IRON STAINING, SS-2 IS SLIGHTLY ORGANIC AND CONTAINS ROOTS, MOIST TO DAMP			4	2	3	6	44	SS-3	2.00	2	6	17	31	44	45	23	22	25	A-7-6 (14)	-
			5	2	3															
			6	3	4	8	100	SS-4	2.25	-	-	-	-	-	-	-	23	A-7-6 (V)	-	
		937.5	7	4	3															
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1190+94, 15' LT.		EXPLORATION ID B-041-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 950.5 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/22/22 END: 6/22/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.754239, -82.245456															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		950.5							GR	CS	FS	SI	CL	LL	PL	PI	WC				
16.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		948.9	1																		
VERY STIFF, BROWNISH GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL, DAMP		947.5	2	12	6	11	100	SS-1	3.50	4	6	16	47	27	29	19	10	18	A-4a (8)	60	
STIFF, BROWNISH GRAY AND GRAY, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, SLIGHTLY ORGANIC, MOIST		946.0	3	2	2	4	100	SS-2	1.50	-	-	-	-	-	-	-	24	A-6a (V)	-		
STIFF TO VERY STIFF, GRAY WITH TRACE ORANGISH BROWN MOTTLES, SILTY CLAY, SOME SAND, TRACE GRAVEL, TRACE IRON STAINING, MOIST		943.0	4	2	2	5	100	SS-3	3.00	1	5	21	34	39	38	19	19	22	A-6b (11)	-	
			5	2	2	7	100	SS-4	1.50	-	-	-	-	-	-	-	21	A-6b (V)	-		
			6	3																	
			7	2	4																
			EOB																		
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:41 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1195+09, 14' RT.		EXPLORATION ID B-042-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 955.1 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/21/22 END: 6/21/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.755307, -82.245996														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		955.1							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		953.5	1																	
SOFT TO STIFF, GRAY AND BROWNISH GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL, DAMP TO MOIST			2	9	8	15	72	SS-1	1.25	-	-	-	-	-	-	-	16	A-4a (V)	-	
			3	3	4															
		950.6	4	2	2	5	100	SS-2	0.50	2	5	23	44	26	26	17	9	20	A-4a (7)	40
MEDIUM STIFF TO STIFF, GRAY AND BROWNISH GRAY, SILT AND CLAY, "AND" SAND, TRACE GRAVEL, IRON STAINING, MOIST			5	3	2	4	100	SS-3	0.75	5	8	30	33	24	31	17	14	21	A-6a (6)	-
			6	3	1															
		947.6	7	2	4	7	100	SS-4	1.25	-	-	-	-	-	-	-	24	A-6a (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1198+30, 13' LT.		EXPLORATION ID B-043-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 958.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/22/22 END: 6/22/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.755993, -82.246723														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		958.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 2.0" BASE (DRILLERS DESCRIPTION)		956.9	1																	
HARD, BROWN, SILT AND CLAY, SOME SAND, LITTLE GRAVEL, DAMP TO MOIST			2	4	6	61	SS-1	4.50	17	10	16	35	22	29	18	11	16	A-6a (5)	60	
			3	3	2															
		953.9	4	3	6	100	SS-2	4.25	-	-	-	-	-	-	-	-	22	A-6a (V)	-	
STIFF TO VERY STIFF, BROWN WITH ORANGISH BROWN AND GRAY, SILT AND CLAY, "AND" SAND, TRACE GRAVEL, IRON STAINING, MOIST			5	2	6	100	SS-3	1.75	4	7	35	32	22	29	17	12	22	A-6a (5)	-	
			6	3																
		950.9	7	4	15	100	SS-4	2.50	-	-	-	-	-	-	-	-	18	A-6a (V)	-	
			EOB	8																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1201+00, 16' RT.		EXPLORATION ID B-044-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 963.5 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/21/22 END: 6/21/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.756644, -82.247183														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		963.5							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		962.1	1																	
HARD, BROWN, SANDY SILT, LITTLE CLAY, LITTLE GRAVEL, IRON STAINING, DAMP			2	13	17	39	SS-1	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	100	
			3	7	6															
		959.0	4	12	24	83	SS-2	4.50	14	12	13	44	17	29	22	7	10	A-4a (5)	-	
MEDIUM DENSE, BROWN, SILT, SOME SAND, LITTLE CLAY, TRACE GRAVEL, IRON STAINING, DAMP			5	3	22	44	SS-3	-	10	9	12	50	19	NP	NP	NP	12	A-4b (7)	-	
			6	8	9															
		956.0	7	10	28	100	SS-4	-	-	-	-	-	-	-	-	-	15	A-4b (V)	-	
			EOB	13																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

[illegible]

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1205+06, 13' RT.		EXPLORATION ID B-046-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 966.9 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/21/22 END: 6/21/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.757684, -82.247338														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		966.9							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		965.3	1																	
HARD, BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, IRON STAINING, DAMP		963.9	2	5	21	100	SS-1	4.50	7	10	25	39	19	27	20	7	12	A-4a (5)	40	
HARD, BROWN, SILT, LITTLE TO SOME SAND, LITTLE CLAY, TRACE GRAVEL AND STONE FRAGMENTS, CONTAINS FISSILE LAMINATIONS, DAMP			3	6	38	100	SS-2	4.50	8	7	13	52	20	31	24	7	11	A-4b (7)	-	
			4	12	46	100	SS-3	4.50	-	-	-	-	-	-	-	-	13	A-4b (V)	-	
			5	11	53	100	SS-4	4.50	-	-	-	-	-	-	-	-	10	A-4b (V)	-	
		959.4	6	13																
			7	18																
			EOB	26																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1212+04, 10' RT.		EXPLORATION ID B-048-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 976.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/21/22 END: 6/21/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.759573, -82.246929															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		976.4							GR	CS	FS	SI	CL	LL	PL	PI	WC				
15.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		974.8	1																		
STIFF TO VERY STIFF, BROWNISH GRAY AND GRAY, SILT AND CLAY, LITTLE TO SOME SAND, TRACE GRAVEL, MOIST			2	5	3	7	44	SS-1	2.75	1	5	14	55	25	31	19	12	22	A-6a (9)	-	
			3	2	3																
		971.9	4	2	2	5	100	SS-2	1.75	1	7	23	39	30	35	20	15	25	A-6a (9)	0	
VERY SOFT, GRAY, SILT AND CLAY, SOME SAND, LITTLE STONE FRAGMENTS, CONTAINS NO INTACT SOIL FOR HP READINGS, WET		970.4	5	2		1	100	SS-3	-	-	-	-	-	-	-	-	53	A-6a (V)	-		
VERY STIFF, BROWN AND GRAY, SILT AND CLAY, LITTLE SAND, TRACE STONE FRAGMENTS, MOIST		968.9	6	2																	
			7	3	4	8	56	SS-4	2.50	-	-	-	-	-	-	-	27	A-6a (V)	-		
			EOB																		
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1215+78, 10' LT.		EXPLORATION ID B-049-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 979.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/22/22 END: 6/22/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.760593, -82.247030															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		979.4							GR	CS	FS	SI	CL	LL	PL	PI	WC				
15.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		977.7	1																		
MEDIUM STIFF, BROWN AND DARK BROWN, SILTY CLAY , SOME SAND, SOME GRAVEL, CONTAINS ASPHALT FRAGMENTS, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP STIFF TO HARD, GRAY AND BROWN, SILT AND CLAY , "AND" SAND, LITTLE GRAVEL, MOIST		976.4	2	7	3	6	56	SS-1	-	26	22	9	27	16	34	18	16	12	A-6b (3)	360	
			3	2																	
			4	3	2	7	33	SS-2	2.50	11	16	29	25	19	28	17	11	18	A-6a (2)	-	
			5	2	3	6	100	SS-3	1.75	-	-	-	-	-	-	-	-	20	A-6a (V)	-	
			6	3																	
		971.9	7	3	8	100	SS-4	4.25	-	-	-	-	-	-	-	-	20	A-6a (V)	-		
			EOB	4																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1219+84, 12' RT.		EXPLORATION ID B-050-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 989.0 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/21/22 END: 6/21/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.761659, -82.247432														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		989.0							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		987.3	1																	
STIFF TO VERY STIFF, BROWN AND GRAY, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, MOIST			2	4	10	39	SS-1	3.25	1	1	3	61	34	43	21	22	22	A-7-6 (13)	120	
			3	2																
		984.5	4	1	4	100	SS-2	1.25	-	-	-	-	-	-	-	-	29	A-7-6 (V)	-	
			5	2																
MEDIUM STIFF TO STIFF, BROWN AND GRAY, SILTY CLAY, TRACE SAND, TRACE GRAVEL, MOIST			6	4	8	100	SS-3	0.75	0	1	6	62	31	36	18	18	23	A-6b (11)	-	
			7	4	11	100	SS-4	1.75	-	-	-	-	-	-	-	-	21	A-6b (V)	-	
		981.5	EOB	5																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1223+72, 11' LT.		EXPLORATION ID B-051-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1001.5 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/22/22 END: 6/22/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.762619, -82.248038															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		1001.5							GR	CS	FS	SI	CL	LL	PL	PI	WC				
14.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)																					
VERY STIFF TO HARD, BROWN WITH GRAY MOTTLES, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST TO DAMP		1000.0	1																		
			2	3	8	39	SS-1	3.25	-	-	-	-	-	-	-	-	-	30	A-7-6 (V)	-	
			3	4																	
			4	3	8	100	SS-2	4.50	1	0	2	38	59	63	26	37	23	A-7-6 (20)	273		
			5	6	16	100	SS-3	4.50	-	-	-	-	-	-	-	-	-	19	A-7-6 (V)	-	
SS-4 BECOMES LIGHT GRAY WITH BROWN			6	7																	
		994.0	7	8	28	100	SS-4	4.50	-	-	-	-	-	-	-	-	17	A-7-6 (V)	-		
			EOB	11																	
				12																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: <u>PER-13-19.67</u>		DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u>		DRILL RIG: <u>CME 45B</u>		STATION / OFFSET: <u>1227+50, 13' RT.</u>		EXPLORATION ID <u>B-052-0-21</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR-13</u>														
PID: <u>SFN:</u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>1/24/22</u>		ELEVATION: <u>1008.1 (MSL)</u> EOB: <u>7.5 ft.</u>		PAGE 1 OF 1												
START: <u>6/23/22</u> END: <u>6/23/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>72.6</u>		LAT / LONG: <u>39.763603, -82.248474</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1008.1							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		1006.6	1																	
MEDIUM STIFF TO VERY STIFF, BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, IRON STAINING, MOIST			2	6																
			3	3	7	39	SS-1	2.75	2	3	8	51	36	38	16	22	21	A-6b (13)	180	
			4	3																
		1003.6	5	2	5	33	SS-2	1.00	-	-	-	-	-	-	-	-	25	A-6b (V)	-	
VERY STIFF, BROWN AND ORANGISH BROWN, SILT , SOME CLAY, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST		1002.1	6	4	10	100	SS-3	2.75	0	1	5	68	26	28	18	10	20	A-4b (8)	-	
HARD, BROWN AND ORANGISH BROWN, SILT AND CLAY , TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST		1000.6	7	4																
			EOB	5	12	100	SS-4	4.50	0	1	6	61	32	29	17	12	19	A-6a (9)	-	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1231+57, 13' LT.		EXPLORATION ID B-053-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1017.2 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/22/22 END: 6/22/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.764606, -82.249115															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		1017.2							GR	CS	FS	SI	CL	LL	PL	PI	WC				
15.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		1015.7	1																		
STIFF, BROWN AND ORANGISH BROWN, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, IRON STAINING, MOIST			2	4	3	7	89	SS-1	1.75	8	8	4	54	26	37	20	17	23	A-6b (11)	100	
			3	3	3																
		1012.7	4	2	3	6	100	SS-2	1.50	-	-	-	-	-	-	-	29	A-6b (V)	-		
SOFT TO MEDIUM STIFF, BROWN AND ORANGISH BROWN, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST		1011.2	5	4	3	6	100	SS-3	0.50	3	2	5	65	25	33	18	15	26	A-6a (10)	-	
			6	2	2																
SOFT TO MEDIUM STIFF, ORANGISH BROWN MOTTLED WITH GRAY, CLAY, SOME SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST		1009.7	7	3	2	6	100	SS-4	0.50	-	-	-	-	-	-	-	23	A-7-6 (V)	-		
EOB																					
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1235+55, 10' RT.		EXPLORATION ID B-054-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1020.3 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/23/22 END: 6/23/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.765641, -82.249585														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1020.3							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		1018.7	1																	
VERY STIFF TO HARD, BROWNISH GRAY AND ORANGISH BROWN, SILT, SOME CLAY, TRACE SAND, TRACE GRAVEL, IRON STAINING, DAMP TO MOIST			2	12	6	12	44	SS-1	4.25	3	2	4	64	27	31	21	10	20	A-4b (8)	360
			3	3	4															
		1015.8	4	2	2	5	89	SS-2	4.00	2	3	4	67	24	33	23	10	26	A-4b (8)	-
STIFF, ORANGISH BROWN MOTTLED WITH GRAY, SILTY CLAY, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST			5	1	2	5	100	SS-3	1.25	1	0	1	66	32	40	20	20	28	A-6b (12)	-
			6	2	2															
		1012.8	7	3	3	7	100	SS-4	1.50	-	-	-	-	-	-	-	-	28	A-6b (V)	-
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

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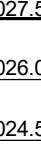
PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1238+79, 12' LT.		EXPLORATION ID B-055-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1026.8 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/30/22 END: 6/30/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.766439, -82.250099														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1026.8							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		1025.2	1																	
VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY, SILT AND CLAY, LITTLE TO SOME SAND, TRACE GRAVEL, DAMP TO MOIST			2	3	7	56	SS-1	4.25	3	5	12	46	34	30	18	12	16	A-6a (9)	60	
			3	3																
			4	4	13	100	SS-2	2.50	0	1	25	47	27	30	18	12	20	A-6a (9)	-	
STIFF, BROWN AND ORANGISH BROWN. SILT AND CLAY, SOME SAND, TRACE GRAVEL, IRON STAINING, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP		1022.3	5	3																
		1021.2	6	6	15	100	SS-3A	-	0	3	21	52	24	33	21	12	21	A-6a (9)	-	
VERY STIFF TO HARD, ORANGISH BROWN MOTTLED WITH GRAY, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, DAMP			7	7			SS-3B	2.25	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-	
		1019.3	7	7	19	100	SS-4	4.25	-	-	-	-	-	-	-	-	18	A-7-6 (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

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PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1241+62, 11' RT.		EXPLORATION ID B-056-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1012.4 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/23/22 END: 6/23/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.767181, -82.250409														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1012.4							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		1011.0	1																	
VERY STIFF, BROWN AND ORANGISH BROWN, SILTY CLAY, SOME SAND, TRACE GRAVEL, CONTAINS ASPHALT FRAGMENTS AND IRON STAINING, MOIST TO DAMP			2	6	4	10	28	SS-1	3.25	-	-	-	-	-	-	-	18	A-6b (V)	-	
			3	3	4															
		1007.9	4	2	3	6	78	SS-2	3.00	9	17	12	36	26	37	17	20	15	A-6b (9)	553
MEDIUM STIFF TO STIFF, GRAY AND BROWNISH GRAY, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, CONTAINS A STRONG PETROLIFEROUS ODOR, SLIGHTLY TO MODERATELY ORGANIC, MOIST TO WET			5	3	2	5	100	SS-3	1.75	1	1	6	63	29	30	19	11	23	A-6a (8)	-
		1004.9	6	2	2															
			7	2	3	6	100	SS-4	0.75	-	-	-	-	-	-	-	27	A-6a (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1243+38, 11' RT.		EXPLORATION ID B-057-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1011.8 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/23/22 END: 6/23/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.767625, -82.250649														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1011.8							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		1010.3	1																	
HARD, BROWN, SANDY SILT, SOME CLAY, LITTLE GRAVEL, CONTAINS ASPHALT FRAGMENTS, MOIST		1008.8	2	8	6	12	22	SS-1	4.25	-	-	-	-	-	-	-	17	A-4a (V)	-	
MEDIUM STIFF TO VERY STIFF, GRAY AND BROWN, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, DAMP			3	3	3	7	28	SS-2	3.00	3	5	5	62	25	34	20	14	20	A-6a (10)	513
			4	3	3															
			5	4	2	6	100	SS-3	1.50	1	0	1	73	25	32	21	11	27	A-6a (8)	-
			6	2	3															
			7	2	5	100	SS-4	0.75	0	0	3	69	28	33	20	13	27	A-6a (9)	-	
		1004.3	EOB	2	2															
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

MATERIAL DESCRIPTION AND NOTES		ELEV. 1027.5	DEPTHS		SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL	
										GR	CS	FS	SI	CL	LL	PL	PI					
15.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		1026.0		1																		
MEDIUM STIFF, BROWN, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, MOIST		1024.5		2	4	3	7	100	SS-1	-	1	3	3	65	28	33	21	12	22	A-6a (9)	-	
STIFF TO VERY STIFF, ORANGISH BROWN MOTTLED WITH GRAY, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST		1020.0		3	2																	
				4	2	3	6	100	SS-2	2.50	0	1	2	67	30	46	23	23	26	A-7-6 (14)	-	
				5	2	3	7	100	SS-3	1.75	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-	
				6	3																	
				7	2	4	7	100	SS-4	1.25	-	-	-	-	-	-	-	-	-	26	A-7-6 (V)	-
			FOR																			

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

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PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1251+02, 11' RT.		EXPLORATION ID B-059-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1014.2 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/23/22 END: 6/23/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.769507, -82.251855														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1014.2							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		1012.7	1																	
VERY STIFF, BROWN, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, MOIST		1011.2	2	8	3	7	78	SS-1	2.50	3	2	4	62	29	34	19	15	20	A-6a (10)	127
			3	1	1	2	100	SS-2	0.25	0	2	6	68	24	29	21	8	26	A-4b (8)	-
SOFT TO STIFF, BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, SILT, SOME CLAY, TRACE TO LITTLE SAND, TRACE GRAVEL, IRON STAINING, MOIST TO DAMP			4	1	1	4	100	SS-3	0.75	-	-	-	-	-	-	-	-	19	A-4b (V)	-
			5	1	2															
			6	2	3	8	100	SS-4	1.00	-	-	-	-	-	-	-	-	16	A-4b (V)	-
		1006.7	7	3	4															
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1254+66, 12' LT.		EXPLORATION ID B-060-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 996.6 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/30/22 END: 6/30/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.770261, -82.252708														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		996.6							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		995.0	1																	
STIFF TO VERY STIFF, GRAY, SILT, SOME CLAY, TRACE TO SOME SAND, TRACE GRAVEL, DAMP SS-2 THROUGH SS-4 BECOME WET TO MOIST, SLIGHTLY ORGANIC, CONTAIN BLACK PLANT MATTER			2	4	10	28	SS-1	2.25	-	-	-	-	-	-	-	-	14	A-4b (V)	100	
			3	1																
			4	2	4	100	SS-2	2.00	0	2	8	67	23	36	27	9	35	A-4b (8)	-	
			5	2	5	100	SS-3	1.75	3	7	15	54	21	32	22	10	25	A-4b (8)	-	
			6	2																
			7	2	6	100	SS-4	1.50	-	-	-	-	-	-	-	-	-	24	A-4b (V)	-
		989.1	EOB	3																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1258+07, 14' RT.		EXPLORATION ID B-061-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 989.7 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/23/22 END: 6/23/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.771055, -82.253352														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		989.7							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		988.1	1																	
STIFF TO VERY STIFF, BROWN, SILTY CLAY, SOME SAND, TRACE GRAVEL, SLIGHTLY ORGANIC, MOIST			2	8	4	6	44	SS-1	1.00	-	-	-	-	-	-	-	25	A-6b (V)	160	
			3	1	2	6	100	SS-2	2.00	5	9	20	38	28	36	19	17	21	A-6b (9)	-
		985.2	4	2	3															
VERY STIFF TO HARD, ORANGISH BROWN AND GRAY, SILT AND CLAY, SOME SAND, TRACE GRAVEL, HEAVY IRON STAINING, MOIST TO DAMP			5	2	3	7	100	SS-3	4.25	3	6	21	47	23	34	22	12	23	A-6a (8)	-
			6	5	7															
		982.2	7	7	8	18	100	SS-4	3.00	-	-	-	-	-	-	-	21	A-6a (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

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PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1261+06, 11' LT.		EXPLORATION ID B-062-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 983.6 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/30/22 END: 6/30/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.771775, -82.253857															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		983.6							GR	CS	FS	SI	CL	LL	PL	PI	WC				
13.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		982.2	1																		
VERY STIFF, BROWNISH GRAY BECOMING BROWN AND ORANGISH BROWN, SANDY SILT , LITTLE TO SOME GRAVEL, LITTLE TO SOME CLAY, CONTAINS IRON STAINING, WET TO DAMP			2	4	2	5	28	SS-1	2.25	-	-	-	-	-	-	-	28	A-4a (V)	20		
			3	1	2																
			4	3	4	8	100	SS-2	2.50	27	16	20	23	14	29	20	9	16	A-4a (0)	-	
			5	2	3	7	50	SS-3	2.50	-	-	-	-	-	-	-	-	27	A-4a (V)	-	
SOFT TO MEDIUM STIFF, BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, SILT , SOME CLAY, TRACE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST		977.6	6	3	3																
		976.1	7	4	5	11	67	SS-4	0.50	1	2	8	64	25	31	22	9	26	A-4b (8)	-	
			EOB																		
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: <u>PER-13-19.67</u>		DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u>		DRILL RIG: <u>CME 45B</u>		STATION / OFFSET: <u>1264+93, 10' RT.</u>		EXPLORATION ID <u>B-063-0-21</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR-13</u>														
PID: <u>SFN:</u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>1/24/22</u>		ELEVATION: <u>978.2 (MSL)</u> EOB: <u>7.5 ft.</u>		PAGE 1 OF 1												
START: <u>6/23/22</u> END: <u>6/23/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>72.6</u>		LAT / LONG: <u>39.772833, -82.254044</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		978.2							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		976.6	1																	
STIFF TO VERY STIFF, GRAY AND BROWN AND ORANGISH BROWN, SILT , LITTLE CLAY, TRACE SAND, TRACE GRAVEL, IRON STAINING, DAMP		975.2	2	3	8	100	SS-1	2.00	1	1	5	73	20	28	21	7	21	A-4b (8)	27	
SAND, TRACE GRAVEL, IRON STAINING, DAMP			3	2																
LOOSE, GRAY AND BROWN AND ORANGISH BROWN, SILT , LITTLE CLAY, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST TO DAMP			4	3	6	100	SS-2	-	1	0	3	82	14	NP	NP	NP	25	A-4b (8)	-	
			5	2	6	100	SS-3	-	-	-	-	-	-	-	-	-	23	A-4b (V)	-	
		972.2	6	7																
VERY STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, SANDY SILT , LITTLE CLAY, LITTLE GRAVEL, IRON STAINING, DAMP		970.7	7	7	18	100	SS-4	3.50	-	-	-	-	-	-	-	-	17	A-4a (V)	-	
			EOB	8																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1268+60, 12' LT.		EXPLORATION ID B-064-0-21														
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13																
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 983.8 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1														
START: 6/30/22 END: 6/30/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.773802, -82.254398																
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL		
		983.8							GR	CS	FS	SI	CL	LL	PL	PI	WC					
12.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		982.4	1																			
MEDIUM STIFF TO VERY STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, CLAY, "AND" SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, IRON STAINING, MOIST			2	3	6	44	SS-1	2.75	2	4	2	64	28	41	22	19	24	A-7-6 (12)	-			
			3	3																		
			4	4	11	100	SS-2	2.50	2	5	9	50	34	44	18	26	23	A-7-6 (15)	-			
			5	3																		
			6	2	6	100	SS-3	0.75	-	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-		
			7	3	8	100	SS-4	1.25	-	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-		
			7	4																		
		976.3	EOB																			
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																						
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																						

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1272+78, 12' RT.		EXPLORATION ID B-065-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 994.1 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/23/22 END: 6/23/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.774912, -82.254776														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		994.1							GR	CS	FS	SI	CL	LL	PL	PI	WC			
17.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)																				
		992.4	1																	
VERY STIFF, BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, DAMP		991.1	2	9	4	8	44	SS-1	3.00	7	8	16	46	23	25	17	8	16	A-4a (7)	-
			3	3	3															
VERY STIFF TO HARD, BROWN, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, DAMP			4	3	3	7	100	SS-2	2.75	1	3	9	51	36	38	22	16	19	A-6b (10)	120
			5	5	6	16	100	SS-3	4.50	-	-	-	-	-	-	-	-	16	A-6b (V)	-
			6	6	7															
		986.6	7	8	21	100	SS-4	4.50	-	-	-	-	-	-	-	-	-	17	A-6b (V)	-
			EOB	9																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1276+69, 12' LT.		EXPLORATION ID B-066-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 986.2 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/30/22 END: 6/30/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.775911, -82.255290														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		986.2							GR	CS	FS	SI	CL	LL	PL	PI	WC			
12.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		984.8	1																	
VERY STIFF TO HARD, BROWN, SILT AND CLAY, LITTLE TO SOME SAND, TRACE GRAVEL, DAMP TO MOIST			2	4	12	100	SS-1	3.50	5	6	16	45	28	33	19	14	16	A-6a (9)	-	
			3	3	12	100	SS-2	2.50	3	5	12	55	25	33	19	14	20	A-6a (10)	-	
			4	5	12	100	SS-2	2.50	3	5	12	55	25	33	19	14	20	A-6a (10)	-	
			5	3	16	100	SS-3	4.50	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
			6	6	7	16	100	SS-3	4.50	-	-	-	-	-	-	-	15	A-6a (V)	-	
			7	10	28	100	SS-4	4.50	-	-	-	-	-	-	-	-	17	A-6a (V)	-	
		978.7	EOB	13																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1280+64, 11' RT.		EXPLORATION ID B-067-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 961.2 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/23/22 END: 6/23/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.776961, -82.255651															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		961.2							GR	CS	FS	SI	CL	LL	PL	PI	WC				
13.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		959.7	1																		
VERY STIFF, BROWN, SILT AND CLAY, LITTLE TO SOME SAND, TRACE GRAVEL, DAMP			2	4	3	7	39	SS-1	2.75	-	-	-	-	-	-	-	18	A-6a (V)	60		
			3	3	3	10	100	SS-2	4.00	2	5	13	44	36	32	20	12	17	A-6a (9)	-	
			4	3	5																
			5	4	6	15	100	SS-3	2.75	3	10	24	40	23	28	17	11	15	A-6a (6)	-	
			6	5	6																
			7	7	7	17	100	SS-4	2.50	-	-	-	-	-	-	-	-	-	15	A-6a (V)	-
		953.7	EOB																		
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1284+43, 12' LT.		EXPLORATION ID B-068-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 941.6 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/29/22 END: 6/29/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.777930, -82.256150														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		941.6							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		940.1	1																	
VERY STIFF, BROWN, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, CONTAINS INTERBEDDED SAND SEAMS, MOIST		938.6	2	3	8	100	SS-1	2.50	0	0	11	33	56	40	22	18	27	A-6b (11)	-	
STIFF, BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, WET			3	3																
			4	4	10	100	SS-2	1.50	0	0	24	43	33	25	18	7	23	A-4a (8)	-	
		935.6	5	2																
			6	3	10	100	SS-3	1.25	-	-	-	-	-	-	-	-	24	A-4a (V)	-	
MEDIUM DENSE, BROWN, COARSE AND FINE SAND, SOME SILT, TRACE CLAY, TRACE GRAVEL, WET		934.1	7	5																
			8	8	21	100	SS-4	-	-	-	-	-	-	-	-	-	24	A-3a (V)	-	
			9	9																
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1288+45, 11' RT.		EXPLORATION ID B-069-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 922.0 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/23/22 END: 6/23/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.778985, -82.256575														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		922.0							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		920.5	1																	
VERY DENSE, BROWN, STONE FRAGMENTS WITH SAND AND SILT, TRACE CLAY, DAMP		919.0	2	6 50/4"	-	40	SS-1	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	420	
MEDIUM STIFF TO STIFF, BROWN, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, MOIST			3	5																
			4	4 3	8	22	SS-2	1.50	-	-	-	-	-	-	-	-	28	A-7-6 (V)	-	
			5	1 2	4	50	SS-3	1.00	1	1	5	46	47	42	23	19	29	A-7-6 (12)	-	
		914.5	6	2 3	6	44	SS-4	1.25	1	2	7	41	49	45	27	18	30	A-7-6 (12)	-	
			7																	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1292+42, 11' LT.		EXPLORATION ID B-070-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 910.3 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/29/22 END: 6/29/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.779881, -82.257391														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		910.3							GR	CS	FS	SI	CL	LL	PL	PI	WC			
17.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		908.5	1																	
STIFF, BROWN AND BROWNISH GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, MOIST			2	3	8	50	SS-1	-	3	7	8	47	35	37	19	18	20	A-6b (11)	-	
			3	1																
		905.8	4	1	2	100	SS-2	1.50	-	-	-	-	-	-	-	-	32	A-6b (V)	-	
MEDIUM STIFF TO STIFF, BROWNISH GRAY, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, MOIST TO WET			5	0	2	100	SS-3	1.25	1	2	5	64	28	32	20	12	27	A-6a (9)	-	
			6	1																
		902.8	7	1	4	100	SS-4	0.75	-	-	-	-	-	-	-	-	31	A-6a (V)	-	
			EOB	2																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1297+07, 13' RT.		EXPLORATION ID B-071-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 913.7 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/23/22 END: 6/23/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.780984, -82.258225														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		913.7							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		912.2	1																	
SOFT TO STIFF, BROWN AND GRAY, SILT AND CLAY, LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, IRON STAINING, MOIST TO DAMP			2	2	5	33	SS-1	0.75	11	11	12	46	20	31	19	12	20	A-6a (7)	-	
			3	1																
			4	1	2	100	SS-2	0.75	2	2	11	59	26	35	21	14	27	A-6a (10)	67	
			5	0	1	100	SS-3	0.25	-	-	-	-	-	-	-	-	30	A-6a (V)	-	
			6	2	1															
		906.2	7	3	10	100	SS-4	1.50	-	-	-	-	-	-	-	-	18	A-6a (V)	-	
			EOB	5																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1300+88, 11' LT.		EXPLORATION ID B-072-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 919.9 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/29/22 END: 6/29/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.781823, -82.259042														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		919.9							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		918.2	1																	
STIFF TO VERY STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, SILTY CLAY , SOME TO "AND" SAND, TRACE TO LITTLE GRAVEL, IRON STAINING, MOIST		915.4	2	3	7	28	SS-1	2.25	-	-	-	-	-	-	-	-	25	A-6b (V)	-	
			3	2	6	44	SS-2	1.75	11	10	26	29	24	35	18	17	21	A-6b (6)	-	
			4	3																
STIFF TO VERY STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, SILT AND CLAY , SOME SAND, LITTLE TO SOME STONE FRAGMENTS, IRON STAINING, DAMP		912.4	5	4	7	100	SS-3	2.75	27	11	17	27	18	33	18	15	18	A-6a (4)	-	
			6	3																
			7	3	8	100	SS-4	1.50	-	-	-	-	-	-	-	-	-	18	A-6a (V)	-
			EOB	4																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1308+84, 11' LT.		EXPLORATION ID B-074-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 948.1 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/29/22 END: 6/29/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.783647, -82.260597														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		948.1							GR	CS	FS	SI	CL	LL	PL	PI	WC			
18.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)																				
		946.2	1																	
VERY STIFF, BROWN AND ORANGISH BROWN BECOMING LIGHT BROWN, ELASTIC CLAY, LITTLE TO SOME SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, DAMP			2	2	6	33	SS-1	3.50	-	-	-	-	-	-	-	-	28	A-7-5 (V)	100	
			3	2																
			4	3	8	100	SS-2	2.75	1	2	3	20	74	73	32	41	29	A-7-5 (20)	-	
			5	3																
		942.1	6	4	8	100	SS-3	3.25	-	-	-	-	-	-	-	-	23	A-7-5 (V)	-	
HARD, LIGHT BROWN AND ORANGISH BROWN, SANDY SILT, LITTLE CLAY, TRACE STONE FRAGMENTS, IRON STAINING, DAMP		940.6	7	6	19	100	SS-4	4.50	1	1	48	30	20	24	18	6	9	A-4a (3)	-	
			EOB	10																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1312+94, 14' RT.		EXPLORATION ID B-075-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 963.6 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/24/22 END: 6/24/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.784624, -82.261330														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		963.6							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		961.9	1																	
MEDIUM STIFF, BROWN, SILT AND CLAY, SOME SAND, SOME GRAVEL AND STONE FRAGMENTS, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP		960.6	2	3	6	56	SS-1	-	24	19	11	29	17	32	18	14	15	A-6a (3)	93	
SOFT TO STIFF, BROWN AND GRAY, SILT AND CLAY, LITTLE SAND, TRACE TO LITTLE GRAVEL, TRACE IRON STAINING, MOIST TO DAMP			3	2	4	39	SS-2	1.50	12	8	6	54	20	31	19	12	22	A-6a (9)	-	
		957.6	4	2																
			5	1	4	100	SS-3	0.50	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
		956.1	6	2	6	100	SS-4	2.50	-	-	-	-	-	-	-	-	29	A-7-6 (V)	-	
			7	2																
			EOB	3																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1313+57, 14' RT.		EXPLORATION ID B-076-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 967.9 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/24/22 END: 6/24/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.784767, -82.261456														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		967.9							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		966.4	1																	
VERY STIFF, BROWN, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST		964.9	2	6	4	8	100	SS-1	2.50	8	5	4	59	24	33	21	12	22	A-6a (9)	47
SOFT TO VERY STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST			3	2	2	5	100	SS-2	2.50	0	1	4	60	35	43	21	22	26	A-7-6 (13)	-
			4	2	2															
			5	2	4	10	100	SS-3	0.50	-	-	-	-	-	-	-	-	23	A-7-6 (V)	-
			6	4	4															
			7	4	11	100	SS-4	0.50	-	-	-	-	-	-	-	-	-	24	A-7-6 (V)	-
		960.4	EOB	5																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:42 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1315+50, 11' RT.		EXPLORATION ID B-077-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 984.5 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/24/22 END: 6/24/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.785210, -82.261826														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		984.5							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		982.9	1																	
VERY STIFF TO HARD, BROWN WITH TRACE GRAY MOTTLES, SILT AND CLAY, LITTLE TO SOME GRAVEL, LITTLE SAND, IRON STAINING, DAMP		980.0	2	3	8	39	SS-1	3.75	-	-	-	-	-	-	-	-	18	A-6a (V)	140	
			3	4																
			4	5	15	100	SS-2	4.25	26	7	11	33	23	32	19	13	14	A-6a (5)	-	
VERY STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, CLAY, SOME SILT, LITTLE GRAVEL AND STONE FRAGMENTS, LITTLE SAND, IRON STAINING, DAMP		977.0	5	4	21	100	SS-3	2.75	20	6	9	29	36	41	21	20	17	A-7-6 (10)	-	
			6	7																
			7	10	27	100	SS-4	3.25	-	-	-	-	-	-	-	-	17	A-7-6 (V)	-	
			EOB	12																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1316+81, 13' RT.		EXPLORATION ID B-078-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 985.8 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/24/22 END: 6/24/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.785522, -82.262058														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		985.8							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		984.3	1																	
VERY STIFF, BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, IRON STAINING, DAMP		982.8	2	9	5	10	22	SS-1	2.50	-	-	-	-	-	-	-	17	A-4a (V)	-	
STIFF TO VERY STIFF, BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, IRON STAINING, MOIST TO DAMP			3	2	2	6	100	SS-2	1.25	1	5	12	54	28	36	21	15	22	A-6a (10)	87
		979.8	4	2	3															
			5	2	3	8	100	SS-3	2.25	3	6	12	50	29	37	23	14	22	A-6a (10)	-
STIFF TO VERY STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, CLAY, "AND" SILT, LITTLE SAND, TRACE GRAVEL, IRON STAINING, DAMP		978.3	6	4	4	10	100	SS-4	2.00	-	-	-	-	-	-	-	25	A-7-6 (V)	-	
			7	4	4															
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1320+68, 12' LT.		EXPLORATION ID B-079-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 997.6 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/29/22 END: 6/29/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.786417, -82.262808															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		997.6							GR	CS	FS	SI	CL	LL	PL	PI	WC				
12.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		996.2	1																		
HARD, BROWN MOTTLED WITH GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL, DAMP			2	4														16	A-4a (V)	80	
			3	3	5	10	33	SS-1	4.50	-	-	-	-	-	-	-	-	-	-	-	
			4	7	9	19	100	SS-2	4.50	4	7	14	49	26	30	21	9	15	A-4a (8)	-	
			5	4	6	16	100	SS-3	4.50	-	-	-	-	-	-	-	-	18	A-4a (V)	-	
HARD, BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, CLAY, "AND" SILT, LITTLE SAND, TRACE GRAVEL, IRON STAINING, DAMP		991.6	6	7																	
		990.1	7	9	22	100	SS-4	4.50	2	5	13	38	42	42	23	19	22	A-7-6 (12)	-		
			EOB	9																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1324+61, 11' RT.		EXPLORATION ID B-080-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1006.7 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/27/22 END: 6/27/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.787391, -82.263413														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1006.7							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)																				
		1005.1	1																	
STIFF TO VERY STIFF, BROWN, SILT AND CLAY, SOME SAND, LITTLE GRAVEL, DAMP TO MOIST			2	7	3	7	89	SS-1	3.50	16	12	9	46	17	33	21	12	16	A-6a (6)	-
			3	2	3															
		1002.2	4	3	3	7	100	SS-2	1.25	-	-	-	-	-	-	-	24	A-6a (V)	-	
VERY STIFF, BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, IRON STAINING, DAMP			5	5	5	13	100	SS-3	3.75	7	9	15	46	23	31	21	10	18	A-4a (7)	-
			6	5	6															
		999.2	7	6	7	16	100	SS-4	4.00	-	-	-	-	-	-	-	18	A-4a (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1328+49, 12' LT.		EXPLORATION ID B-081-0-21														
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13																
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1012.9 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1														
START: 6/28/22 END: 6/28/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.788288, -82.264159																
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL		
		1012.9							GR	CS	FS	SI	CL	LL	PL	PI	WC					
14.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		1011.4	1																			
STIFF TO VERY STIFF, BROWN, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, DAMP TO MOIST			2	10																		
			3	6	11	22	SS-1	2.00	-	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-		
			4	1	4	61	SS-2	1.75	0	1	2	64	33	44	22	22	25	A-7-6 (14)	40			
			5	2	8	100	SS-3	2.00	0	0	1	69	30	43	22	21	25	A-7-6 (13)	-			
			6	3	8	100	SS-4	1.25	-	-	-	-	-	-	-	-	-	28	A-7-6 (V)	-		
			7	3	8	100	SS-4	1.25	-	-	-	-	-	-	-	-	-	28	A-7-6 (V)	-		
		1005.4	EOB	4																		
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																						
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																						

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1332+26, 14' RT.		EXPLORATION ID B-082-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1034.5 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/27/22 END: 6/27/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.789222, -82.264744														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1034.5							GR	CS	FS	SI	CL	LL	PL	PI	WC			
15.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		1033.0	1																	
HARD, BROWN, SILTY CLAY, SOME SAND, LITTLE GRAVEL, DAMP		1031.5	2	6	4	11	100	SS-1	4.25	19	14	9	34	24	39	22	17	14	A-6b (7)	233
HARD, BROWN, SILT AND CLAY, TRACE TO LITTLE SAND, TRACE GRAVEL, IRON STAINING, DAMP			3	4	6	18	50	SS-2	4.50	3	4	13	51	29	37	25	12	17	A-6a (9)	-
			4	5	7	18	100	SS-3	4.50	-	-	-	-	-	-	-	-	15	A-6a (V)	-
			5	8	8	21	100	SS-4	4.50	-	-	-	-	-	-	-	-	13	A-6a (V)	-
		1027.0	6	8																
			7	9																
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1336+23, 11' LT.		EXPLORATION ID B-083-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1044.3 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/28/22 END: 6/28/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.790137, -82.265519														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1044.3							GR	CS	FS	SI	CL	LL	PL	PI	WC			
16.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		1042.6	1																	
STIFF, BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, MOIST			2	3	10	33	SS-1	1.50	-	-	-	-	-	-	-	-	23	A-4a (V)	40	
			3	4	4															
		1039.8	4	1	5	56	SS-2	1.50	1	12	23	38	26	30	21	9	24	A-4a (6)	-	
STIFF, BROWN, SILTY CLAY, TRACE SAND, TRACE GRAVEL, MOIST			5	2																
		1038.3	6	3	11	100	SS-3	1.50	2	3	5	63	27	39	22	17	24	A-6b (11)	-	
			7	6																
DENSE, BROWN, SILT, LITTLE CLAY, TRACE SAND, TRACE GRAVEL, DAMP		1036.8	7	9	34	100	SS-4	-	-	-	-	-	-	-	-	-	15	A-4b (V)	-	
				12																
				16																
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: <u>PER-13-19.67</u>		DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u>		DRILL RIG: <u>CME 45B</u>		STATION / OFFSET: <u>1340+02, 13' RT.</u>		EXPLORATION ID <u>B-084-0-21</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR-13</u>														
PID: <u>SFN:</u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>1/24/22</u>		ELEVATION: <u>1047.8 (MSL)</u> EOB: <u>7.5 ft.</u>		PAGE 1 OF 1												
START: <u>6/27/22</u> END: <u>6/27/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>72.6</u>		LAT / LONG: <u>39.791074, -82.266111</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1047.8							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		1046.3	1																	
VERY STIFF, BROWN, CLAY , "AND" SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, DAMP			2	7	8	39	SS-1	2.25	-	-	-	-	-	-	-	-	15	A-7-6 (V)	-	
			3	4																
		1043.3	4	3	7	100	SS-2	2.75	2	2	2	43	51	54	25	29	25	A-7-6 (18)	-	
HARD, BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, CLAY , "AND" SILT, LITTLE SAND, TRACE GRAVEL, IRON STAINING, DAMP			5	3	12	100	SS-3	4.25	3	5	8	41	43	48	26	22	22	A-7-6 (14)	-	
			6	5																
		1040.3	7	8	21	100	SS-4	4.25	-	-	-	-	-	-	-	-	17	A-7-6 (V)	-	
			EOB	9																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1343+90, 10' LT.		EXPLORATION ID B-085-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1057.2 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/28/22 END: 6/28/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.791970, -82.266863														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1057.2							GR	CS	FS	SI	CL	LL	PL	PI	WC			
12.0" ASPHALT AND 7.0" BASE (DRILLERS DESCRIPTION)																				
STIFF TO VERY STIFF, BROWN, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, DAMP TO MOIST		1055.6	1																	
			2	3	4	10	44	SS-1	3.75	-	-	-	-	-	-	-	19	A-7-6 (V)	-	
			3	1	4															
			4	2	1	4	100	SS-2	2.25	0	0	2	68	30	41	22	19	28	A-7-6 (12)	20
STIFF, BROWN MOTTLED WITH ORANGISH BROWN AND GRAY, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST		1051.2	5	1	2	6	100	SS-3	2.00	-	-	-	-	-	-	-	25	A-7-6 (V)	-	
			6	3	3															
		1049.7	7	4	10	100	SS-4	1.50	1	1	2	66	30	42	21	21	27	A-7-6 (13)	-	
			EOB	4																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1347+84, 13' RT.		EXPLORATION ID B-086-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1061.2 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/27/22 END: 6/27/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.792942, -82.267479														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1061.2							GR	CS	FS	SI	CL	LL	PL	PI	WC			
12.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION)		1059.7	1																	
STIFF TO VERY STIFF, BROWN, SILT, SOME CLAY, TRACE SAND, TRACE GRAVEL, DAMP		1058.2	2	4	5	10	89	SS-1	2.00	3	6	4	62	25	30	21	9	19	A-4b (8)	-
STIFF TO HARD, BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, CLAY, "AND" SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST TO DAMP			3	2	2	5	100	SS-2	1.50	0	1	1	68	30	41	23	18	27	A-7-6 (11)	-
			4	2	2															
			5	2	3	10	100	SS-3	4.50	-	-	-	-	-	-	-	-	21	A-7-6 (V)	-
			6	5	5															
		1053.7	7	7	9	19	100	SS-4	4.50	-	-	-	-	-	-	-	-	18	A-7-6 (V)	-
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1351+78, 12' LT.		EXPLORATION ID B-087-0-21													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13															
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1062.5 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1													
START: 6/28/22 END: 6/28/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.793850, -82.268249															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		1062.5							GR	CS	FS	SI	CL	LL	PL	PI	WC				
15.0" ASPHALT AND 7.0" BASE (DRILLERS DESCRIPTION)																					
HARD, BROWN AND GRAYISH BROWN, SILT AND CLAY, LITTLE TO SOME SAND, TRACE GRAVEL, CONTAINS A RELIC FISSILE ROCK STRUCTURE, DAMP		1060.7	1																		
			2	4	10	44	SS-1	4.50	2	8	17	44	29	36	21	15	16	A-6a (10)	180		
			3	2																	
			4	4	12	50	SS-2	4.50	-	-	-	-	-	-	-	-	13	A-6a (V)	-		
			5	3	15	100	SS-3	4.50	2	8	9	56	25	35	24	11	14	A-6a (8)	-		
			6	10																	
			7	12	33	100	SS-4	4.50	-	-	-	-	-	-	-	-	13	A-6a (V)	-		
		1055.0	EOB	15																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1355+62, 14' RT.		EXPLORATION ID B-088-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1065.3 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/27/22 END: 6/27/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.794755, -82.268950														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1065.3							GR	CS	FS	SI	CL	LL	PL	PI	WC			
18.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)																				
		1063.5	1																	
HARD, BROWNISH GRAY, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, DAMP		1062.3	2	7	3	7	28	SS-1	4.50	-	-	-	-	-	-	-	12	A-4a (V)	-	
			3	2	3															
VERY STIFF TO HARD, BROWN, SILT AND CLAY, SOME SAND, LITTLE TO SOME STONE FRAGMENTS, DAMP			4	3	2	6	44	SS-2	2.25	18	12	12	40	18	34	22	12	15	A-6a (5)	-
			5	3	5	13	50	SS-3	4.50	11	15	14	41	19	35	24	11	12	A-6a (5)	-
			6	6	6															
		1057.8	7	7	10	21	100	SS-4	4.50	-	-	-	-	-	-	-	10	A-6a (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1349+62, 12' LT.		EXPLORATION ID													
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13		B-089-0-21													
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1064.0 (MSL) EOB: 7.5 ft.		PAGE													
START: 6/28/22 END: 6/28/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.795411, -82.270091		1 OF 1													
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		1064.0							GR	CS	FS	SI	CL	LL	PL	PI	WC				
8.0" ASPHALT AND 8.0" BASE (DRILLERS DESCRIPTION)		1062.7	1																		
HARD, GRAY, CLAY, SOME SILT, TRACE SAND, TRACE GRAVEL, DAMP			2	3	8	17	SS-1	4.25	-	-	-	-	-	-	-	-	18	A-7-6 (V)	-		
			3	3	4																
			4	5	13	83	SS-2	4.50	0	0	1	21	78	49	24	25	17	A-7-6 (16)	80		
			5	4	6																
			6	6	15	100	SS-3	4.50	0	1	1	21	77	48	23	25	17	A-7-6 (16)	-		
			7	6	6																
		1056.5	7	7	17	100	SS-4	4.50	-	-	-	-	-	-	-	-	17	A-7-6 (V)	-		
			EOB	7																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: <u>PER-13-19.67</u>		DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u>		DRILL RIG: <u>CME 45B</u>		STATION / OFFSET: <u>1363+33, 15' RT.</u>		EXPLORATION ID <u>B-090-0-21</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR-13</u>														
PID: <u>SFN:</u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>1/24/22</u>		ELEVATION: <u>1066.9 (MSL)</u> EOB: <u>7.5 ft.</u>		PAGE 1 OF 1												
START: <u>6/27/22</u> END: <u>6/27/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>72.6</u>		LAT / LONG: <u>39.795905, -82.271245</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1066.9							GR	CS	FS	SI	CL	LL	PL	PI	WC			
13.0" ASPHALT AND 4.0" BASE (DRILLERS DESCRIPTION)		1065.5	1																	
VERY STIFF TO HARD, BROWN, SANDY SILT , LITTLE CLAY, LITTLE STONE FRAGMENTS, DAMP			2	8	5	10	22	SS-1	4.50	-	-	-	-	-	-	-	11	A-4a (V)	-	
			3	3	3															
		1062.4	4	3	2	6	78	SS-2	2.75	16	9	12	45	18	34	24	10	14	A-4a (6)	60
VERY STIFF TO HARD, BROWN AND ORANGISH BROWN, SILTY CLAY , TRACE SAND, TRACE STONE FRAGMENTS, IRON STAINING, DAMP			5	3	4	13	100	SS-3	4.00	0	1	3	63	33	38	20	18	20	A-6b (11)	-
			6	6	7															
		1059.4	7	11	12	28	100	SS-4	4.50	-	-	-	-	-	-	-	20	A-6b (V)	-	
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1367+20, 11' LT.		EXPLORATION ID B-091-0-21															
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13																	
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1065.9 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1															
START: 6/28/22 END: 6/28/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.796122, -82.272599																	
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL			
		1065.9							GR	CS	FS	SI	CL	LL	PL	PI	WC						
13.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION)																							
HARD, BROWN, SILT AND CLAY, LITTLE SAND, TRACE TO LITTLE STONE FRAGMENTS, DAMP		1064.3	1																				
			2	6	5	13	33	SS-1	4.50	-	-	-	-	-	-	-	-	12	A-6a (V)	40			
			3	3	3	4	8	100	SS-2	4.50	3	7	13	53	24	35	24	11	13	A-6a (8)	-		
			4																				
			5	4	5	6	13	100	SS-3	4.50	4	6	14	49	27	36	23	13	16	A-6a (9)	-		
			6	6																			
			7	7	9	19	100	SS-4	4.50	-	-	-	-	-	-	-	-	-	13	A-6a (V)	-		
		1058.4	EOB																				
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																							
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																							

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1371+06, 15' RT.		EXPLORATION ID B-092-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1067.0 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/27/22 END: 6/27/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.796466, -82.273903														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1067.0							GR	CS	FS	SI	CL	LL	PL	PI	WC			
14.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		1065.4	1																	
VERY STIFF, BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP		1064.0	2	6	2	6	22	SS-1	2.75	-	-	-	-	-	-	-	17	A-6a (V)	-	
HARD, BROWNISH GRAY AND ORANGISH BROWN, CLAY, "AND" SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, CONTAINS INTERBEDDED SILT SEAMS, DAMP			3	5	15	44	28	SS-2	4.50	1	1	1	59	38	42	27	15	8	A-7-6 (10)	20
			4	5	21															
			5	9	46	44	SS-3	4.50	0	2	3	50	45	44	26	18	10	A-7-6 (12)	-	
			6	7	29															
			7	10	51	100	SS-4	4.50	-	-	-	-	-	-	-	-	-	13	A-7-6 (V)	-
		1059.5	EOB	32																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: <u>PER-13-19.67</u>		DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u>		DRILL RIG: <u>CME 45B</u>		STATION / OFFSET: <u>1374+58, 12' LT.</u>		EXPLORATION ID <u>B-093-0-21</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR-13</u>														
PID: <u>SFN:</u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>1/24/22</u>		ELEVATION: <u>1067.8 (MSL)</u> EOB: <u>7.5 ft.</u>		PAGE 1 OF 1												
START: <u>6/28/22</u> END: <u>6/28/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>72.6</u>		LAT / LONG: <u>39.796646, -82.275137</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1067.8							GR	CS	FS	SI	CL	LL	PL	PI	WC			
11.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)																				
HARD, BROWN AND ORANGISH BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL AND STONE FRAGMENTS, IRON STAINING, DAMP		1066.5	1	3																
			2	4	15	72	SS-1	4.50	3	10	17	43	27	34	24	10	17	A-4a (7)	320	
		1064.8	3	5	8															
HARD, BROWN AND ORANGISH BROWN, SILT, SOME CLAY, LITTLE SAND, TRACE GRAVEL AND STONE FRAGMENTS, CONTAINS A FISSILE RELIC ROCK STRUCTURE, DAMP			4	21	53	100	SS-2	4.50	0	4	8	63	25	35	26	9	11	A-4b (8)	-	
			5	8	25	70	SS-3	4.50	-	-	-	-	-	-	-	-	12	A-4b (V)	-	
			6	11	33															
		1060.3	7	29	85	100	SS-4	4.50	-	-	-	-	-	-	-	-	12	A-4b (V)	-	
			EOB	41																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1377+96, 14' RT.		EXPLORATION ID B-094-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1069.3 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/27/22 END: 6/27/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.796933, -82.276285														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1069.3							GR	CS	FS	SI	CL	LL	PL	PI	WC			
13.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)		1067.8	1																	
MEDIUM STIFF TO STIFF, GRAYISH BROWN, SILT AND CLAY. SOME SAND, TRACE GRAVEL, NO INTACT SOIL FOR HP READINGS, DAMP SS-2 CONTAINS A 1.5" STONE FRAGMENT			2	6																
			3	4	8	22	SS-1	-	7	12	20	36	25	33	20	13	13	A-6a (6)	80	
			4	4	8	17	SS-2	-	-	-	-	-	-	-	-	-	13	A-6a (V)	-	
			5	4	13	22	SS-3	-	-	-	-	-	-	-	-	-	14	A-6a (V)	-	
		1063.3	6	9																
VERY STIFF, BROWN AND GRAY, SILT AND CLAY, SOME SAND, TRACE GRAVEL, DAMP		1061.8	7	11	30	44	SS-4	3.50	7	11	22	33	27	33	21	12	14	A-6a (6)	-	
			EOB	14																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67\GINT FILES\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1382+04, 13' LT.		EXPLORATION ID B-095-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1069.5 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/28/22 END: 6/28/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.797049, -82.277730														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1069.5							GR	CS	FS	SI	CL	LL	PL	PI	WC			
11.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION)		1068.1	1																	
HARD, BROWN AND GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL AND STONE FRAGMENTS, IRON STAINING, DAMP		1066.5	2	5	6	16	100	SS-1	4.50	8	11	16	44	21	32	22	10	13	A-4a (6)	100
HARD, BROWN AND GRAY, SILT, SOME CLAY, LITTLE SAND, TRACE GRAVEL, DAMP			3	2	4	11	100	SS-2	4.50	3	9	10	53	25	36	26	10	16	A-4b (8)	-
			4	5																
			5	5	6	16	100	SS-3	4.50	-	-	-	-	-	-	-	-	15	A-4b (V)	-
			6	9	7															
		1062.0	7	10	13	28	100	SS-4	4.50	-	-	-	-	-	-	-	-	13	A-4b (V)	-
			EOB																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1385+87, 15' RT.		EXPLORATION ID B-096-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1070.2 (MSL) EOB: 6.9 ft.		PAGE 1 OF 1												
START: 6/27/22 END: 6/27/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.797246, -82.279073														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1070.2							GR	CS	FS	SI	CL	LL	PL	PI	WC			
13.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION)																				
VERY STIFF, BROWN AND BROWNISH GRAY, SILT, SOME CLAY, LITTLE SAND, TRACE GRAVEL, DAMP		1068.7	1	6	28	100	SS-1	-	1	6	7	58	28	31	22	9	12	A-4b (8)	40	
		1067.2	2	17																
HARD, BROWN AND BROWNISH GRAY, SANDY SILT, LITTLE CLAY, TRACE STONE FRAGMENTS, CONTAINS A FISSILE RELIC ROCK STRUCTURE, DAMP			3	9	45	100	SS-2	-	3	7	21	49	20	28	22	6	9	A-4a (7)	-	
			4	14																
			5	23	83	100	SS-3	-	-	-	-	-	-	-	-	-	10	A-4a (V)	-	
			6	31																
		1063.3	6	38	-	45	SS-4	-	-	-	-	-	-	-	-	-	12	A-4a (V)	-	
				20																
				50/5"																
EOB																				
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1389+85, 13' LT.		EXPLORATION ID B-097-0-21												
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13														
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1070.1 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1												
START: 6/28/22 END: 6/28/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.797292, -82.280492														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		1070.1							GR	CS	FS	SI	CL	LL	PL	PI	WC			
9.0" ASPHALT AND 8.0" BASE (DRILLERS DESCRIPTION)		1068.7	1																	
VERY STIFF, BROWN, SANDY SILT, LITTLE GRAVEL, LITTLE CLAY, DAMP			2	4	6	13	22	SS-1	3.00	-	-	-	-	-	-	-	12	A-4a (V)	-	
			3	3	6	11	100	SS-2	3.00	19	20	12	31	18	29	21	8	11	A-4a (3)	140
VERY STIFF, BROWNISH GRAY, SILT AND CLAY, SOME SAND, TRACE GRAVEL, DAMP		1065.6	4	2	6	8	50	SS-3	3.75	5	9	12	44	30	34	23	11	15	A-6a (8)	-
			5	2	6	16	56	SS-4	3.75	-	-	-	-	-	-	-	13	A-6a (V)	-	
		1062.6	6	6																
			7	6																
			EOB	7																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1393+78, 13' RT.		EXPLORATION ID B-098-0-21														
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13																
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1069.6 (MSL) EOB: 7.5 ft.		PAGE 1 OF 1														
START: 6/27/22 END: 6/27/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.797482, -82.281873																
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL		
		1069.6							GR	CS	FS	SI	CL	LL	PL	PI	WC					
17.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)																						
		1067.9		1																		
VERY STIFF TO HARD, GRAY, SANDY SILT, LITTLE CLAY, TRACE TO LITTLE GRAVEL, DAMP				2	8	7	16	28	SS-1	2.75	8	14	19	41	18	28	20	8	13	A-4a (5)	387	
				3	3	3	6	33	SS-2	2.75	-	-	-	-	-	-	-	14	A-4a (V)	-		
				4	5	5	15	33	SS-3	4.50	13	12	18	41	16	30	23	7	12	A-4a (4)	-	
				5	6	6	23	50	SS-4	4.50	-	-	-	-	-	-	-	13	A-4a (V)	-		
		1062.1	EOB	7	9	10																
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																						
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																						

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/25/22 12:18 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1401+22, 13' RT.		EXPLORATION ID B-100-0-21														
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13																
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1061.0 (MSL) EOB: 6.4 ft.		PAGE 1 OF 1														
START: 6/27/22 END: 6/27/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.797709, -82.284504																
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL		
		1061.0							GR	CS	FS	SI	CL	LL	PL	PI	WC					
16.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)		1059.4		1																		
HARD, GRAY, SILT, SOME SAND, LITTLE CLAY, TRACE STONE FRAGMENTS, RELIC ROCK STRUCTURE, DAMP SHALE, GRAY, SEVERELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, FISSILE.		1058.5	TR	2	9	-	44	SS-1	4.50	3	7	19	53	18	28	21	7	6	A-4b (7)	573		
				3	32	-	50	SS-2	-	-	-	-	-	-	-	-	4	Rock (V)	-			
				4	50/2"																	
				5	50	-	50	SS-3	-	-	-	-	-	-	-	-	4	Rock (V)	-			
		1054.6	EOB	6	50/5"	-	60	SS-4	-	-	-	-	-	-	-	-	5	Rock (V)	-			
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																						
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																						

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: PER-13-19.67		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 1405+26, 14' LT.		EXPLORATION ID B-101-0-21														
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-13																
PID: SFN:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/24/22		ELEVATION: 1052.6 (MSL) EOB: 6.3 ft.		PAGE 1 OF 1														
START: 6/28/22 END: 6/28/22		SAMPLING METHOD: SPT		ENERGY RATIO (%): 72.6		LAT / LONG: 39.797756, -82.285942																
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL		
		1052.6							GR	CS	FS	SI	CL	LL	PL	PI	WC					
8.0" ASPHALT AND 7.0" BASE (DRILLERS DESCRIPTION)		1051.3		1																		
HARD, BROWN AND GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL, DAMP		1049.6		2	5	4	11	100	SS-1	4.50	7	10	11	47	25	32	23	9	15	A-4a (7)	220	
SANDSTONE, GRAY, HIGHLY WEATHERED, SLIGHTLY STRONG, FRIABLE, SILTY.		1048.1	TR	3	3																	
SHALE, GRAY, HIGHLY WEATHERED, VERY WEAK TO WEAK, FISSILE, SILTY.		1046.3		4	28		44		SS-2	-	-	-	-	-	-	-	-	6	Rock (V)	-		
				5	50		67		SS-3	-	-	-	-	-	-	-	-	5	Rock (V)	-		
			EOB	6	50/4"		50		SS-4	-	-	-	-	-	-	-	-	4	Rock (V)	-		
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																						
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																						

MATERIAL DESCRIPTION AND NOTES		ELEV. 1030.6	DEPTHS		SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO ₄ ppm	BACK FILL	
										GR	CS	FS	SI	CL	LL	PL	PI	WC				
10.0" ASPHALT AND 8.0" BASE (DRILLERS DESCRIPTION)		1029.1		1																		
HARD, BROWN AND GRAY, CLAY , "AND" SILT, LITTLE SAND, TRACE GRAVEL, DAMP			2		5	12	33	SS-1	4.50	-	-	-	-	-	-	-	-	16	A-7-6 (V)	293		
			3		5	11	33	SS-2	4.50	2	5	7	48	38	42	26	16	21	A-7-6 (11)	-		
			4		5	12	100	SS-3	4.50	3	10	6	46	35	41	26	15	18	A-7-6 (10)	-		
			5		4	6	21	100	SS-4	4.50	-	-	-	-	-	-	-	-	18	A-7-6 (V)	-	
			6		6	8																
			7		8	9																
		1023.1																				

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: <u>PER-13-19.67</u>		DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u>		DRILL RIG: <u>CME 45B</u>		STATION / OFFSET: <u>1416+87, 14' RT.</u>		EXPLORATION ID <u>B-104-0-21</u>													
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR-13</u>															
PID: <u>SFN:</u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>1/24/22</u>		ELEVATION: <u>1015.1 (MSL)</u> EOB: <u>7.5 ft.</u>		PAGE 1 OF 1													
START: <u>6/27/22</u> END: <u>6/27/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>72.6</u>		LAT / LONG: <u>39.798306, -82.289996</u>															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		1015.1							GR	CS	FS	SI	CL	LL	PL	PI	WC				
15.0" ASPHALT AND 3.0" BASE (DRILLERS DESCRIPTION)																					
VERY STIFF TO HARD, BROWN AND GRAY, SILT AND CLAY, SOME SAND, TRACE TO LITTLE GRAVEL AND STONE FRAGMENTS, IRON STAINING, DAMP		1013.6	1																		
			2	5																	
			3	5	12	17	SS-1	4.50	-	-	-	-	-	-	-	-	-	13	A-6a (V)	-	
			4	5	12	100	SS-2	3.75	14	12	15	36	23	32	20	12	14	A-6a (6)	80		
			5	6	18	100	SS-3	4.50	-	-	-	-	-	-	-	-	16	A-6a (V)	-		
			6	7																	
			7	10	29	100	SS-4	4.50	2	5	18	44	31	34	23	11	15	A-6a (8)	-		
		1007.6	EOB	14																	
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/24/22 15:43 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\PER-13-19.67.GPJ

PROJECT: <u>PER-13-19.67</u>		DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u>		DRILL RIG: <u>CME 45B</u>		STATION / OFFSET: <u>1420+20, 14' LT.</u>		EXPLORATION ID <u>B-105-0-21</u>														
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR-13</u>																
PID: <u>SFN:</u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>1/24/22</u>		ELEVATION: <u>1010.5 (MSL)</u> EOB: <u>7.5 ft.</u>		PAGE 1 OF 1														
START: <u>6/28/22</u> END: <u>6/28/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>72.6</u>		LAT / LONG: <u>39.798655, -82.291094</u>																
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL		
		1010.5							GR	CS	FS	SI	CL	LL	PL	PI	WC					
7.0" ASPHALT AND 8.0" BASE (DRILLERS DESCRIPTION)																						
HARD, BROWN AND GRAY, SILT AND CLAY , SOME SAND, TRACE GRAVEL, IRON STAINING, DAMP		1009.2	1																			
			2	5	4	10	28	SS-1	4.25	-	-	-	-	-	-	-	-	13	A-6a (V)	-		
			3	2	3	7	12	100	SS-2	4.50	9	12	14	41	24	34	23	11	16	A-6a (6)	160	
			4																			
			5	4	5	4	11	100	SS-3	4.50	6	11	20	38	25	33	22	11	16	A-6a (6)	-	
			6	5																		
			7	7	8	18	100	SS-4	4.25	-	-	-	-	-	-	-	-	-	18	A-6a (V)	-	
		1003.0	EOB																			
NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.																						
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS																						

APPENDIX D

SULFATE TEST DATA REPORT



OHIO DEPARTMENT OF TRANSPORTATION DETERMINING SULFATE CONTENT IN SOILS SUPPLEMENT 1122

Project C-R-S: PER-13-19.67
 PID No: 95461
 Report Date: 8/25/2022
 Consultant: NEAS Inc.
 Technician: PJ

Boring ID & Sample #	Station	Offset	Latitude & Longitude or State Plane Coordinates		Elevation	Soaking Time (hr)	Replicate Sample Readings						Sulfate Content (ppm)
							1		2		3		
							Dilution	Reading	Dilution	Reading	Dilution	Reading	
B-001-0-21 SS-1	1040+67.72	15.16LT	39.721101	-82.218688	857.77	16.9	20	6	20	6	20	6	120
B-002-0-21 SS-1	1044+44.59	7.091LT	39.722149	-82.218695	867.04	17.8	20	18	20	20	20	22	400
B-003-0-21 SS-1	1048+53.65	12.27LT	39.723255	-82.218713	894.15	18.2	20	4	20	4	20	4	80
B-004-0-21 SS-1	1052+17.73	11.52RT	39.724254	-82.218652	915.41	16.9	20	28	20	26	20	26	533
B-005-0-21 SS-1	1055+91.91	11.81LT	39.725264	-82.218917	923.72	17.8	20	4	20	6	20	6	107
B-006-0-21 SS-2	1059+90.85	11.23RT	39.726357	-82.219038	934.32	18.0	20	3	20	3	20	3	60
B-007-0-21 SS-1	1063+80.99	11.64LT	39.727406	-82.219331	934.63	17.8	20	3	20	4	20	4	73
B-008-0-21 SS-1	1067+95.06	12.056LT	39.728487	-82.219459	919.24	18.0	20	1	20	1	20	1	20
B-009-0-21 SS-1	1071+71.44	17.001RT	39.729556	-82.219770	900.61	18.1	20	1	20	1	20	1	20
B-010-0-21 SS-1	1075+36.43	7.494LT	39.730562	-82.219886	877.81	18.1	20	3	20	2	20	3	53
B-011-0-21 SS-1	1079+39.89	14.98LT	39.731652	-82.220019	872.36	18.1	20	8	20	7	20	8	153
B-012-0-21 SS-2	1082+49.10	10.6RT	39.732490	-82.219804	873.75	18.2	20	0	20	0	20	0	0
B-013-0-21 SS-1	1086+09.06	13.56LT	39.733400	-82.220250	879.41	16.9	20	30	20	30	20	30	600
B-014-0-21 SS-2	1089+76.52	11.52RT	39.734134	-82.221132	888.90	16.9	20	0	20	1	20	1	13
B-015-0-21 SS-2	1093+65.47	11.26LT	39.734762	-82.222253	888.65	16.9	20	2	20	2	20	2	40
B-016-0-21 SS-1	1097+41.92	10.58RT	39.735463	-82.223240	891.40	16.9	20	7	20	7	20	7	140
B-017-0-21 SS-1	1101+36.72	10.54LT	39.736104	-82.224374	904.36	18.3	20	5	20	5	20	5	100
B-018-0-21 SS-1	1105+21.01	11.79RT	39.736820	-82.225381	914.30	16.9	20	1	20	1	20	1	20
B-019-0-21 SS-2	1109+43.02	12.19LT	39.737503	-82.226596	911.51	17.6	20	3	20	3	20	3	60
B-020-0-21 SS-2	1112+98.32	12.11LT	39.738121	-82.227573	918.23	17.6	20	3	20	3	20	3	60

B-021-0-21 SS-1	1116+83.17	11.11RT	39.738922	-82.228465	908.77	16.9	20	3	20	3	20	3	60
B-022-0-21 SS-3	1120+73.94	12.52LT	39.739737	-82.229372	894.33	17.6	20	2	20	2	20	2	40
B-023-0-21 SS-1	1124+63.07	12.74RT	39.740629	-82.230137	897.90	16.9	20	2	20	2	20	2	40
B-024-0-21 SS-1	1128+59.11	13.05LT	39.741452	-82.231062	913.94	18.3	20	3	20	3	20	3	60
B-025-0-21 SS-1	1132+41.54	12.1RT	39.742351	-82.231762	919.60	16.9	20	3	20	3	20	3	60
B-026-0-21 SS-2	1136+39.56	12.17LT	39.743323	-82.232408	917.42	16.9	20	16	20	16	20	16	320
B-027-0-21 SS-1	1140+18.94	14.07RT	39.744314	-82.232836	909.81	16.9	20	1	20	1	20	1	20
B-028-0-21 SS-1	1143+85.74	11.31LT	39.745143	-82.233576	904.08	18.3	20	8	20	8	20	8	160
B-029-0-21 SS-1	1147+78.21	13.63RT	39.745963	-82.234480	909.95	16.9	20	0	20	0	20	0	0
B-030-0-21 SS-1	1151+54.03	11.19LT	39.746621	-82.235513	911.80	17.6	20	1	20	1	20	1	20
B-031-0-21 SS-2	1154+85.69	12.21RT	39.747293	-82.236314	912.60	18.5	20	2	20	2	20	2	40
B-032-0-21 SS-2	1157+18.54	12.46RT	39.747732	-82.236916	914.67	18.3	20	11	20	11	20	11	220
B-033-0-21 SS-2	1160+94.51	14.55LT	39.748386	-82.237955	917.31	17.6	20	1	20	1	20	1	20
B-034-0-21 SS-2	1165+18.26	13.38RT	39.749239	-82.238983	919.09	18.3	20	6	20	7	20	7	133
B-035-0-21 SS-2	1168+90.96	13.38LT	39.749898	-82.240001	925.35	19.8	20	4	20	3	20	4	73
B-036-0-21 SS-2	1172+85.65	10.59RT	39.750705	-82.240941	929.55	18.3	20	9	20	9	20	9	180
B-037-0-21 SS-2	1176+79.87	11.72LT	39.751421	-82.241996	932.66	19.8	20	2	20	4	20	4	67
B-038-0-21 SS-2	1180+12.42	12.04RT	39.752108	-82.242779	935.37	16.9	20	22	20	25	20	23	467
B-039-0-21 SS-1	1184+12.00	11.94LT	39.752831	-82.243851	941.36	19.8	20	3	20	4	20	4	73
B-040-0-21 SS-2	1187+39.59	11.36RT	39.753508	-82.244623	945.03	16.9	20	16	20	16	20	16	320
B-041-0-21 SS-1	1190+93.95	15.15LT	39.754239	-82.245456	950.51	17.6	20	3	20	3	20	3	60
B-042-0-21 SS-2	1195+09.18	13.79RT	39.755307	-82.245996	955.12	18.3	20	2	20	2	20	2	40
B-043-0-21 SS-1	1198+30.23	12.78LT	39.755993	-82.246723	958.36	17.6	20	3	20	3	20	3	60
B-044-0-21 SS-1	1200+99.72	15.69RT	39.756644	-82.247183	963.49	18.3	20	5	20	5	20	5	100
B-045-0-21 SS-2	1203+95.03	12.76LT	39.757400	-82.247511	980.68	17.5	20	3	20	3	20	3	60
B-046-0-21 SS-1	1205+05.99	13.12RT	39.757684	-82.247338	966.93	18.3	20	2	20	2	20	2	40
B-047-0-21 SS-2	1208+45.94	12.11RT	39.758592	-82.247043	972.16	18.1	20	2	20	2	20	2	40
B-048-0-21 SS-2	1212+03.86	9.84RT	39.759573	-82.246929	976.40	18.8	20	0	20	0	20	0	0
B-049-0-21 SS-1	1215+78.10	10.34LT	39.760593	-82.247030	979.44	17.3	20	20	20	14	20	20	360
B-050-0-21 SS-1	1219+83.52	12.14RT	39.761659	-82.247432	988.98	18.8	20	6	20	6	20	6	120
B-051-0-21 SS-2	1223+71.73	10.91LT	39.762619	-82.248038	1001.50	17.3	20	13	20	14	20	14	273
B-052-0-21 SS-1	1227+50.03	13.44RT	39.763603	-82.248474	1008.06	17.6	20	9	20	9	20	9	180
B-053-0-21 SS-1	1231+56.50	12.93LT	39.764606	-82.249115	1017.17	17.6	20	5	20	5	20	5	100
B-054-0-21 SS-1	1235+55.31	9.86RT	39.765641	-82.249585	1020.27	17.3	20	14	20	25	20	15	360

B-055-0-21 SS-1	1238+79.24	12.15LT	39.766439	-82.250099	1026.83	17.9	20	3	20	3	20	3	60
B-056-0-21 SS-2	1241+62.16	11.25RT	39.767181	-82.250409	1012.37	17.3	20	30	20	23	20	30	553
B-057-0-21 SS-2	1243+37.66	10.98RT	39.767625	-82.250649	1011.75	17.3	20	25	20	26	20	26	513
B-058-0-21 SS-1	1247+33.71	10.67LT	39.768605	-82.251262	1027.49	16.2	20	2	20	2	20	2	40
B-059-0-21 SS-1	1251+01.95	11.49RT	39.769507	-82.251855	1014.24	18.3	20	6	20	7	20	6	127
B-060-0-21 SS-1	1254+65.70	11.71LT	39.770261	-82.252708	996.56	16.0	20	5	20	5	20	5	100
B-061-0-21 SS-1	1258+07.35	13.74RT	39.771055	-82.253352	989.67	18.3	20	9	20	7	20	8	160
B-062-0-21 SS-1	1261+05.71	11.17LT	39.771775	-82.253857	983.63	16.0	20	1	20	1	20	1	20
B-063-0-21 SS-1	1264+93.31	9.98RT	39.772833	-82.254044	978.19	18.3	20	2	20	1	20	1	27
B-064-0-21 SS-1	1268+60.00	11.91LT	39.773802	-82.254398	983.79	16.2	20	18	20	12	20	16	307
B-065-0-21 SS-2	1272+77.95	11.78RT	39.774912	-82.254776	994.08	16.6	20	6	20	6	20	6	120
B-066-0-21 SS-1	1276+68.82	11.95LT	39.775911	-82.255290	986.17	16.2	20	3	20	3	20	3	60
B-067-0-21 SS-1	1280+63.97	11RT	39.776961	-82.255651	961.22	16.6	20	3	20	3	20	3	60
B-068-0-21 SS-1	1284+42.94	12.03LT	39.777930	-82.256150	941.64	16.2	20	6	20	7	20	7	133
B-069-0-21 SS-1	1288+44.61	11.27RT	39.778985	-82.256575	922.03	16.6	20	20	20	22	20	21	420
B-070-0-21 SS-1	1292+42.37	10.95LT	39.779881	-82.257391	910.33	16.2	20	0	20	0	20	0	0
B-071-0-21 SS-2	1297+07.00	13.39RT	39.780984	-82.258225	913.71	18.3	20	3	20	2	20	5	67
B-072-0-21 SS-2	1300+88.43	11.24LT	39.781823	-82.259042	919.94	16.2	20	2	20	2	20	2	40
B-073-0-21 SS-2	1304+93.15	11.88RT	39.782787	-82.259762	935.25	18.3	20	5	20	4	20	5	93
B-074-0-21 SS-1	1308+83.99	11.35LT	39.783647	-82.260597	948.05	16.0	20	5	20	5	20	5	100
B-075-0-21 SS-1	1312+94.28	14.22RT	39.784624	-82.261330	963.62	18.3	20	5	20	4	20	5	93
B-076-0-21 SS-1	1313+57.31	13.61RT	39.784767	-82.261456	967.89	19.8	20	3	20	3	20	1	47
B-077-0-21 SS-1	1315+49.72	11.48RT	39.785210	-82.261826	984.46	19.8	20	7	20	5	20	9	140
B-078-0-21 SS-2	1316+81.23	12.99RT	39.785522	-82.262058	985.83	19.8	20	6	20	5	20	2	87
B-079-0-21 SS-1	1320+68.47	12.37LT	39.786417	-82.262808	997.59	17.9	20	4	20	4	20	4	80
B-080-0-21 SS-1	1324+61.29	11.35RT	39.787391	-82.263413	1006.69	16.2	20	9	20	9	20	9	180
B-081-0-21 SS-2	1328+49.15	11.63LT	39.788288	-82.264159	1012.90	16.0	20	2	20	2	20	2	40
B-082-0-21 SS-1	1332+26.03	13.7RT	39.789222	-82.264744	1034.52	16.0	20	12	20	11	20	12	233
B-083-0-21 SS-1	1336+23.49	10.98LT	39.790137	-82.265519	1044.34	18.8	20	2	20	2	20	2	40
B-084-0-21 SS-1	1340+02.39	13.01RT	39.791074	-82.266111	1047.84	16.2	20	8	20	8	20	8	160
B-085-0-21 SS-2	1343+90.45	10.19LT	39.791970	-82.266863	1057.15	16.0	20	1	20	1	20	1	20
B-086-0-21 SS-1	1347+84.09	13.3RT	39.792942	-82.267479	1061.20	16.2	20	4	20	4	20	4	80
B-087-0-21 SS-1	1351+78.46	12.49LT	39.793850	-82.268249	1062.49	18.8	20	9	20	9	20	9	180
B-088-0-21 SS-1	1355+61.78	13.56RT	39.794755	-82.268950	1065.27	16.2	20	4	20	4	20	4	80

B-089-0-21 SS-1	1349+62.09	11.55LT	39.795411	-82.270091	1064.00	18.8	20	4	20	4	20	4	80
B-090-0-21 SS-2	1363+32.69	14.89RT	39.795905	-82.271245	1066.91	16.0	20	3	20	3	20	3	60
B-091-0-21 SS-1	1367+19.87	11.02LT	39.796122	-82.272599	1065.90	16.6	20	2	20	2	20	2	40
B-092-0-21 SS-2	1371+06.32	14.86RT	39.796466	-82.273903	1067.00	16.6	20	1	20	1	20	1	20
B-093-0-21 SS-1	1374+58.08	11.8LT	39.796646	-82.275137	1067.82	16.6	20	18	20	15	20	15	320
B-094-0-21 SS-1	1377+96.26	14.38RT	39.796933	-82.276285	1069.28	18.8	20	4	20	4	20	4	80
B-095-0-21 SS-1	1382+03.72	13LT	39.797049	-82.277730	1069.50	18.1	20	5	20	5	20	5	100
B-096-0-21 SS-1	1385+86.99	14.9RT	39.797246	-82.279073	1070.23	17.9	20	2	20	2	20	2	40
B-097-0-21 SS-2	1389+85.05	12.52LT	39.797292	-82.280492	1070.08	18.1	20	7	20	7	20	7	140
B-098-0-21 SS-1	1393+78.46	13.43RT	39.797482	-82.281873	1069.64	17.9	20	21	20	18	20	19	387
B-099-0-21 SS-1	1397+56.68	13.29LT	39.797524	-82.283221	1066.62	16.6	20	3	20	3	20	3	60
B-100-0-21 SS-1	1401+22.31	13.48RT	39.797709	-82.284504	1060.98	16.6	20	28	20	29	20	29	573
B-101-0-21 SS-1	1405+25.95	14.08LT	39.797756	-82.285942	1052.64	18.1	20	11	20	11	20	11	220
B-102-0-21 SS-1	1409+05.43	11.75RT	39.797942	-82.287274	1042.61	18.1	20	3	20	3	20	3	60
B-103-0-21 SS-1	1412+95.09	12.84LT	39.797993	-82.288662	1030.64	16.6	20	14	20	15	20	15	293
B-104-0-21 SS-2	1416+87.10	13.75RT	39.798306	-82.289996	1015.08	18.1	20	4	20	4	20	4	80
B-105-0-21 SS-2	1420+20.38	14.14LT	39.798655	-82.291094	1010.48	18.1	20	8	20	8	20	8	160

APPENDIX E

GEOTECHNICAL BULLETIN 1 (GB1) ANALYSIS SPREADSHEETS



OHIO DEPARTMENT OF TRANSPORTATION

OFFICE OF GEOTECHNICAL ENGINEERING

**PLAN SUBGRADES
Geotechnical Bulletin GB1**

**PER-13-19.67
95461**

SR-13 between the Villages of New Lexington and Somerset in Perry County, Ohio

NEAS Inc.

Prepared By: Brendan P. Andrews
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**Brendan P. Andrews
1329 East Kemper Road
Suite 4104B
Cincinnati, OH 45246
513.337.9823
brendan.andrews@neasinc.com**

NO. OF BORINGS: **105**

#	Boring ID	Alignment	Station	Offset	Dir	Drill Rig	ER	Boring EL.	Proposed Subgrade EL	Cut Fill
1	B-001-0-21	SR-13	1040+68	15	LT	CME 75T	79	857.8	856.3	1.5 C
2	B-002-0-21	SR-13	1044+49	7	LT	CME 75T	79	867.0	865.5	1.5 C
3	B-003-0-21	SR-13	1048+54	12	LT	CME 75T	79	894.1	892.6	1.5 C
4	B-004-0-21	SR-13	1052+18	12	RT	CME 75T	79	915.4	913.9	1.5 C
5	B-005-0-21	SR-13	1055+92	12	LT	CME 75T	79	923.7	922.2	1.5 C
6	B-006-0-21	SR-13	1059+91	11	RT	CME 75T	79	934.3	932.8	1.5 C
7	B-007-0-21	SR-13	1063+81	12	LT	CME 75T	79	934.6	933.1	1.5 C
8	B-008-0-21	SR-13	1067+95	12	LT	CME 75T	79	919.2	917.7	1.5 C
9	B-009-0-21	SR-13	1071+71	17	RT	CME 75T	79	900.6	899.1	1.5 C
10	B-010-0-21	SR-13	1075+36	7	LT	CME 75T	79	877.8	876.3	1.5 C
11	B-011-0-21	SR-13	1079+40	15	LT	CME 75T	79	872.4	870.9	1.5 C
12	B-012-0-21	SR-13	1082+49	11	RT	CME 75T	79	873.7	872.2	1.5 C
13	B-013-0-21	SR-13	1086+09	14	LT	CME 45B	73	879.4	877.9	1.5 C
14	B-014-0-21	SR-13	1089+77	12	RT	CME 75T	79	888.9	887.4	1.5 C
15	B-015-0-21	SR-13	1093+65	11	LT	CME 45B	73	888.7	887.2	1.5 C
16	B-016-0-21	SR-13	1097+42	11	RT	CME 75T	79	891.4	889.9	1.5 C
17	B-017-0-21	SR-13	1101+37	11	LT	CME 45B	73	904.4	902.9	1.5 C
18	B-018-0-21	SR-13	1105+21	12	RT	CME 75T	79	914.3	912.8	1.5 C
19	B-019-0-21	SR-13				CME 45B	73	911.5	910.0	1.5 C
20	B-020-0-21	SR-13	1112+98	12	LT	CME 45B	73	918.2	916.7	1.5 C
21	B-021-0-21	SR-13	1116+83	11	RT	CME 75T	79	908.8	907.3	1.5 C
22	B-022-0-21	SR-13	1120+74	13	LT	CME 45B	73	894.3	892.8	1.5 C
23	B-023-0-21	SR-13	1124+63	13	RT	CME 75T	79	897.9	896.4	1.5 C
24	B-024-0-21	SR-13	1128+59	13	LT	CME 45B	73	913.9	912.4	1.5 C
25	B-025-0-21	SR-13	1132+42	12	RT	CME 75T	79	919.6	918.1	1.5 C
26	B-026-0-21	SR-13	1136+40	12	LT	CME 45B	73	917.4	915.9	1.5 C
27	B-027-0-21	SR-13	1140+19	14	RT	CME 75T	79	909.8	908.3	1.5 C
28	B-028-0-21	SR-13	1143+86	11	LT	CME 45B	73	904.1	902.6	1.5 C
29	B-029-0-21	SR-13	1147+78	14	RT	CME 75T	79	909.9	908.4	1.5 C
30	B-030-0-21	SR-13	1151+54	11	LT	CME 45B	73	911.8	910.3	1.5 C
31	B-031-0-21	SR-13	1154+86	12	RT	CME 45B	73	912.6	911.1	1.5 C
32	B-032-0-21	SR-13	1157+19	12	RT	CME 45B	73	914.7	913.2	1.5 C
33	B-033-0-21	SR-13	1160+95	15	LT	CME 45B	73	917.3	915.8	1.5 C
34	B-034-0-21	SR-13	1165+18	13	RT	CME 45B	73	919.1	917.6	1.5 C
35	B-035-0-21	SR-13	1168+91	13	LT	CME 45B	73	925.4	923.9	1.5 C
36	B-036-0-21	SR-13	1172+86	11	RT	CME 45B	73	929.5	928.0	1.5 C
37	B-037-0-21	SR-13	1176+80	12	LT	CME 45B	73	932.7	931.2	1.5 C
38	B-038-0-21	SR-13	1180+12	12	RT	CME 45B	73	935.4	933.9	1.5 C
39	B-039-0-21	SR-13	1184+12	12	LT	CME 45B	73	941.4	939.9	1.5 C
40	B-040-0-21	SR-13	1187+40	11	RT	CME 45B	73	945.0	943.5	1.5 C
41	B-041-0-21	SR-13	1190+94	15	LT	CME 45B	73	950.5	949.0	1.5 C
42	B-042-0-21	SR-13	1195+09	14	RT	CME 45B	73	955.1	953.6	1.5 C
43	B-043-0-21	SR-13	1198+30	13	LT	CME 45B	73	958.4	956.9	1.5 C
44	B-044-0-21	SR-13	1201+00	16	RT	CME 45B	73	963.5	962.0	1.5 C
45	B-045-0-21	SR-13	1203+95	13	LT	CME 45B	73	980.7	979.2	1.5 C

#	Boring ID	Alignment	Station	Offset	Dir	Drill Rig	ER	Boring EL.	Proposed Subgrade EL	Cut Fill
46	B-046-0-21	SR-13	1205+06	13	RT	CME 45B	73	966.9	965.4	1.5 C
47	B-047-0-21	SR-13	1208+46	12	RT	CME 45B	73	972.2	970.7	1.5 C
48	B-048-0-21	SR-13	1212+04	10	RT	CME 45B	73	976.4	974.9	1.5 C
49	B-049-0-21	SR-13	1215+78	10	LT	CME 45B	73	979.4	977.9	1.5 C
50	B-050-0-21	SR-13	1219+84	12	RT	CME 45B	73	989.0	987.5	1.5 C
51	B-051-0-21	SR-13	1223+72	11	LT	CME 45B	73	1001.5	1000.0	1.5 C
52	B-052-0-21	SR-13	1227+50	13	RT	CME 45B	73	1008.1	1006.6	1.5 C
53	B-053-0-21	SR-13	1231+57	13	LT	CME 45B	73	1017.2	1015.7	1.5 C
54	B-054-0-21	SR-13	1235+59	10	RT	CME 45B	73	1020.3	1018.8	1.5 C
55	B-055-0-21	SR-13	1238+79	12	LT	CME 45B	73	1026.8	1025.3	1.5 C
56	B-056-0-21	SR-13	1241+62	11	RT	CME 45B	73	1012.4	1010.9	1.5 C
57	B-057-0-21	SR-13	1243+38	11	RT	CME 45B	73	1011.8	1010.3	1.5 C
58	B-058-0-21	SR-13	1247+34	11	LT	CME 45B	73	1027.5	1026.0	1.5 C
59	B-059-0-21	SR-13	1251+02	11	RT	CME 45B	73	1014.2	1012.7	1.5 C
60	B-060-0-21	SR-13	1254+66	12	LT	CME 45B	73	996.6	995.1	1.5 C
61	B-061-0-21	SR-13	1258+07	14	RT	CME 45B	73	989.7	988.2	1.5 C
62	B-062-0-21	SR-13	1261+06	11	LT	CME 45B	73	983.6	982.1	1.5 C
63	B-063-0-21	SR-13	1264+93	10	RT	CME 45B	73	978.2	976.7	1.5 C
64	B-064-0-21	SR-13	1268+60	12	LT	CME 45B	73	983.8	982.3	1.5 C
65	B-065-0-21	SR-13	1272+78	12	RT	CME 45B	73	994.1	992.6	1.5 C
66	B-066-0-21	SR-13	1276+69	12	LT	CME 45B	73	986.2	984.7	1.5 C
67	B-067-0-21	SR-13	1280+64	11	RT	CME 45B	73	961.2	959.7	1.5 C
68	B-068-0-21	SR-13	1284+43	12	LT	CME 45B	73	941.6	940.1	1.5 C
69	B-069-0-21	SR-13	1288+45	11	RT	CME 45B	73	922.0	920.5	1.5 C
70	B-070-0-21	SR-13	1292+42	11	LT	CME 45B	73	910.3	908.8	1.5 C
71	B-071-0-21	SR-13	1297+07	13	RT	CME 45B	73	913.7	912.2	1.5 C
72	B-072-0-21	SR-13	1300+88	11	LT	CME 45B	73	919.9	918.4	1.5 C
73	B-073-0-21	SR-13	1304+93	12	RT	CME 45B	73	935.2	933.7	1.5 C
74	B-074-0-21	SR-13	1308+84	11	LT	CME 45B	73	948.1	946.6	1.5 C
75	B-075-0-21	SR-13	1312+94	14	RT	CME 45B	73	963.6	962.1	1.5 C
76	B-076-0-21	SR-13	1313+57	14	RT	CME 45B	73	967.9	966.4	1.5 C
77	B-077-0-21	SR-13	1315+50	11	RT	CME 45B	73	984.5	983.0	1.5 C
78	B-078-0-21	SR-13	1316+81	13	RT	CME 45B	73	985.8	984.3	1.5 C
79	B-079-0-21	SR-13	1320+68	12	LT	CME 45B	73	997.6	996.1	1.5 C
80	B-080-0-21	SR-13	1324+61	11	RT	CME 45B	73	1006.7	1005.2	1.5 C
81	B-081-0-21	SR-13	1328+49	12	LT	CME 45B	73	1012.9	1011.4	1.5 C
82	B-082-0-21	SR-13	1332+26	14	RT	CME 45B	73	1034.5	1033.0	1.5 C
83	B-083-0-21	SR-13	1336+23	11	LT	CME 45B	73	1044.3	1042.8	1.5 C
84	B-084-0-21	SR-13	1340+02	13	RT	CME 45B	73	1047.8	1046.3	1.5 C
85	B-085-0-21	SR-13	1343+90	10	LT	CME 45B	73	1057.1	1055.6	1.5 C
86	B-086-0-21	SR-13	1347+84	13	RT	CME 45B	73	1061.2	1059.7	1.5 C
87	B-087-0-21	SR-13	1351+78	12	LT	CME 45B	73	1062.5	1061.0	1.5 C
88	B-088-0-21	SR-13	1355+62	14	RT	CME 45B	73	1065.3	1063.8	1.5 C
89	B-089-0-21	SR-13	1349+62	12	LT	CME 45B	73	1064.0	1062.5	1.5 C
90	B-090-0-21	SR-13	1363+33	15	RT	CME 45B	73	1066.9	1065.4	1.5 C

#	Boring ID	Alignment	Station	Offset	Dir	Drill Rig	ER	Boring EL.	Proposed Subgrade EL	Cut Fill
91	B-091-0-21	SR-13	1367+20	11	LT	CME 45B	73	1065.9	1064.4	1.5 C
92	B-092-0-21	SR-13	1371+06	15	RT	CME 45B	73	1067.0	1065.5	1.5 C
93	B-093-0-21	SR-13	1374+58	12	LT	CME 45B	73	1067.8	1066.3	1.5 C
94	B-094-0-21	SR-13	1377+96	14	RT	CME 45B	73	1069.3	1067.8	1.5 C
95	B-095-0-21	SR-13	1382+04	13	LT	CME 45B	73	1069.5	1068.0	1.5 C
96	B-096-0-21	SR-13	1385+87	15	RT	CME 45B	73	1070.2	1068.7	1.5 C
97	B-097-0-21	SR-13	1389+85	13	LT	CME 45B	73	1070.1	1068.6	1.5 C
98	B-098-0-21	SR-13	1393+78	13	RT	CME 45B	73	1069.6	1068.1	1.5 C
99	B-099-0-21	SR-13	1397+57	13	LT	CME 45B	73	1066.6	1065.1	1.5 C
100	B-100-0-21	SR-13	1401+22	13	RT	CME 45B	73	1061.0	1059.5	1.5 C
101	B-101-0-21	SR-13	1405+26	14	LT	CME 45B	73	1052.6	1051.1	1.5 C
102	B-102-0-21	SR-13	1409+05	12	RT	CME 45B	73	1042.6	1041.1	1.5 C
103	B-103-0-21	SR-13	1412+95	13	LT	CME 45B	73	1030.6	1029.1	1.5 C
104	B-104-0-21	SR-13	1416+87	14	RT	CME 45B	73	1015.1	1013.6	1.5 C
105	B-105-0-21	SR-13	1420+20	14	LT	CME 45B	73	1010.5	1009.0	1.5 C



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable	
1	B 001-0 21	SS-1	1.5	3.0	0.0	1.5	13									12	10	A-2-4	0	120					
		SS-2	3.0	4.5	1.5	3.0	4			29	18	11	44	22	66	17	14	A-6a	7			N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	5									19	14	A-6a	10						
		SS-4	6.0	7.5	4.5	6.0	4	4	0.1	33	18	15	36	26	62	27	14	A-6a	7						
2	B 002-0 21	SS-1	1.5	3.0	0.0	1.5	20									6	6	A-1-b	0	400					
		SS-2	3.0	4.5	1.5	3.0	4									18	10	A-4a	8			N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	18		3	54	29	25	35	54	89	25	26	A-7-6	17						
		SS-4	6.0	7.5	4.5	6.0	14	4	3.5							25	18	A-7-6	16						
3	B 003-0 21	SS-1	1.5	3.0	0.0	1.5	9		2.75	30	19	11	49	20	69	18	14	A-6a	7	80		N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	5		1.25	29	19	10	68	22	90	55	14	A-4b	8		A-4b	HP & Mc	36"		
		SS-3	4.5	7.0	3.0	5.5	9		2	23	16	7	46	19	65	18	11	A-4a	6						
		SS-4	7.0	7.5	5.5	6.0	13	5	1.5							18	10	A-4a							
4	B 004-0 21	SS-1	1.5	3.0	0.0	1.5	12		4.25							22	16	A-6b	16	533		N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	14		3.75	37	21	16	63	29	92	22	16	A-6b	10			N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	16		4.25	50	26	24	35	62	97	25	23	A-7-6	16						
		SS-4	6.0	7.5	4.5	6.0	21	12	3.5							26	18	A-7-6	16						
5	B 005-0 21	SS-1	1.5	3.0	0.0	1.5	20		0.75							24	18	A-7-6	16	107		HP & Mc		18"	
		SS-2	3.0	4.5	1.5	3.0	4		1.25	42	22	20	65	30	95	26	19	A-7-6	12			HP & Mc			
		SS-3	4.5	6.0	3.0	4.5	7		2.5	30	20	10	68	24	92	21	15	A-4b	8						
		SS-4	6.0	7.5	4.5	6.0	20	4	2.75							19	10	A-4b	8						
6	B 006-0 21	SS-1	1.5	1.9	0.0	0.4	30									4									
		SS-2	3.0	4.5	1.5	3.0	9		3.25	31	25	6	47	19	66	17	20	A-4a	6	60		N ₆₀			
		SS-3	4.5	6.0	3.0	4.5	5		3.75	31	23	8	53	20	73	17	18	A-4b	8						
		SS-4	6.0	7.5	4.5	6.0	4	4	0.1							25	10	A-4b	8						
7	B 007-0 21	SS-1	1.5	3.0	0.0	1.5	16		4.5							16	10	A-4a	8	73		Mc			
		SS-2	3.0	4.5	1.5	3.0	8			NP	NP	NP	71	12	83	22	11	A-4b	8		A-4b	N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	5			NP	NP	NP	81	7	88	28	11	A-4b	8						
		SS-4	6.0	7.5	4.5	6.0	7	5								27	10	A-4b	8						
8	B 008-0 21	SS-1	1.5	3.0	0.0	1.5	9			28	24	4	76	13	89	23	19	A-4b	8	20	A-4b	N ₆₀ & Mc		12"	
		SS-2A	3.0	4.0	1.5	2.5	8			29	21	8	71	23	94	22	16	A-4b	8		A-4b	N ₆₀ & Mc	30"		
		SS-3	4.0	6.0	2.5	4.5	9		2.25	31	20	11	56	29	85	27	15	A-6a	8						
		SS-4	6.0	7.5	4.5	6.0	13	8	2							22	14	A-6a	10						
9	B 009-0 21	SS-1	1.5	3.0	0.0	1.5	5			40	23	17	36	19	55	20	18	A-6b	7	20		N ₆₀		21"	
		SS-2	3.0	4.5	1.5	3.0	8									24	16	A-6b	16			N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	4		0.75	39	22	17	70	26	96	29	17	A-6b	11						
		SS-4	6.0	7.5	4.5	6.0	11	4	0.5							29	16	A-6b	16						



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics					Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)	
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
10	B 010-0 21	SS-1	1.5	3.0	0.0	1.5	11	3	4.25	27	18	9	55	18	73	19	13	A-4b	8	53	A-4b	N ₆₀ & Mc	12"		
		SS-2	3.0	4.5	1.5	3.0	4		0.25	29	19	10	62	21	83	24	14	A-4b	8		A-4b	HP & Mc	36"		
		SS-3	4.5	6.0	3.0	4.5	3		2.75						25	10	A-4b	8							
		SS-4	6.0	7.5	4.5	6.0	9		3						22	10	A-4b	8							
11	B 011-0 21	SS-1	1.5	3.0	0.0	1.5	32	3								5	6	A-1-b	0	153					
		SS-2	3.0	4.5	1.5	3.0	12		4.25	32	20	12	63	25	88	25	15	A-6a	9		N ₆₀ & Mc				
		SS-3	4.5	6.0	3.0	4.5	3		1.5	43	25	18	49	39	88	29	22	A-7-6	12						
		SS-4	6.0	7.5	4.5	6.0	3		1.75						29	18	A-7-6	16							
12	B 012-0 21	SS-1	1.5	1.8	0.0	0.3	30	4																	
		SS-2	3.0	4.5	1.5	3.0	16		4.5	23	20	3	62	16	78	15	15	A-4b	8	0	A-4b				
		SS-3	4.5	6.0	3.0	4.5	4		2.5	39	21	18	47	35	82	23	16	A-6b	11						
		SS-4	6.0	7.5	4.5	6.0	8		1.5						24	16	A-6b	16							
13	B 013-0 21	SS-1	1.5	3.0	0.0	1.5	7	2		30	18	12	40	20	60	14	14	A-6a	6	600		N ₆₀		15"	
		SS-2	3.0	4.5	1.5	3.0	5		1.5	27	19	8	63	24	87	22	14	A-4b	8		A-4b	HP & Mc	36"		
		SS-3	4.5	6.0	3.0	4.5	4		1.5						24	10	A-4b	8							
		SS-4	6.0	7.5	4.5	6.0	2		0.5	38	24	14	63	31	94	33	19	A-6a	10						
14	B 014-0 21	SS-1	1.5	3.0	0.0	1.5	12	12	4.25	38	23	15	45	30	75	17	18	A-6a	10						
		SS-2	3.0	4.5	1.5	3.0	30			32	25	7	61	18	79	12	20	A-4b	8	13	A-4b				
		SS-3	4.5	6.0	3.0	4.5	30								13	10	A-4b	8							
		SS-4	6.0	7.5	4.5	6.0	30								12	10	A-4b	8							
15	B 015-0 21	SS-1	1.5	3.0	0.0	1.5	11	6							12	10	A-2-4	0			N ₆₀		12"		
		SS-2	3.0	4.5	1.5	3.0	6			28	21	7	68	24	92	24	16	A-4b	8	40	A-4b	N ₆₀ & Mc	36"		
		SS-3	4.5	6.0	3.0	4.5	6		3	49	23	26	50	48	98	25	20	A-7-6	16						
		SS-4	6.0	7.5	4.5	6.0	7		2.25						27	18	A-7-6	16							
16	B 016-0 21	SS-1	1.5	3.0	0.0	1.5	29	13	3.75	32	18	14	46	38	84	18	14	A-6a	10	140		Mc			
		SS-2	3.0	4.5	1.5	3.0	13		4						21	16	A-6b	16			N ₆₀ & Mc				
		SS-3	4.5	6.0	3.0	4.5	13		3.5	36	20	16	33	32	65	19	16	A-6b	8						
		SS-4	6.0	7.5	4.5	6.0	20		3.75						22	16	A-6b	16							
17	B 017-0 21	SS-1	1.5	3.0	0.0	1.5	8	6								15	10	A-2-4	0	100		N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	10								18	10	A-4b	8		A-4b	N ₆₀ & Mc	36"			
		SS-3	4.5	6.0	3.0	4.5	6			30	21	9	64	23	87	23	16	A-4b	8						
		SS-4	6.0	7.5	4.5	6.0	8								21	10	A-4b	8							
18	B 018-0 21	SS-1	1.5	3.0	0.0	1.5	16	5					89	9	98	24	10	A-4b	8	20	A-4b	Mc			
		SS-2	3.0	4.5	1.5	3.0	5						90	9	99	25	10	A-4b	8		A-4b	N ₆₀ & Mc	36"		
		SS-3	4.5	6.0	3.0	4.5	5								26	10	A-4b	8							
		SS-4	6.0	7.5	4.5	6.0	8								26	10	A-4b	8							



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics					Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable	
19	B 019-0 21	SS-1	1.5	3.0	0.0	1.5	13	5							14	10	A-4b	8		A-4b	N ₆₀ & Mc	12"		
		SS-2	3.0	4.5	1.5	3.0	6		1.25	25	17	8	50	18	68	19	12	A-4b	7	60	A-4b	HP & Mc		36"
		SS-3	4.5	6.0	3.0	4.5	8		2.25							20	10	A-4b	8					
		SS-4	6.0	7.5	4.5	6.0	5		2.5							20	10	A-4b	8					
20	B 020-0 21	SS-1	1.5	3.0	0.0	1.5	10	6							14	14	A-6a	10			N ₆₀	12"		
		SS-2	3.0	4.5	1.5	3.0	6		1.75	31	17	14	49	22	71	19	14	A-6a	9	60		HP & Mc		
		SS-3	4.5	6.0	3.0	4.5	6		1.75	30	17	13	52	26	78	23	14	A-6a	9					
		SS-4	6.0	7.5	4.5	6.0	6		1.5	37	19	18	53	29	82	27	16	A-6b	11					
21	B 021-0 21	SS-1	1.5	3.0	0.0	1.5	11	3	3.75	25	17	8	45	18	63	16	12	A-4a	6	60		N ₆₀ & Mc	12"	
		SS-2	3.0	4.5	1.5	3.0	3		2.25							23	10	A-4a	8		N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	17		4.5	28	18	10	33	27	60	14	13	A-4a	5					
		SS-4	6.0	7.5	4.5	6.0	20		3.25							16	10	A-4a	8					
22	B 022-0 21	SS-1	1.5	3.0	0.0	1.5	30	5							14	10	A-4a	8			Mc			
		SS-2	3.0	4.5	1.5	3.0	10								19	10	A-4a	8		N ₆₀ & Mc				
		SS-3	4.5	6.0	3.0	4.5	5		2	41	20	21	38	43	81	25	18	A-7-6	13	40				
		SS-4	6.0	7.5	4.5	6.0	8		1.75							22	18	A-7-6	16					
23	B 023-0 21	SS-1	1.5	3.0	0.0	1.5	4	4	1.5	37	20	17	59	36	95	24	16	A-6b	11	40		HP & Mc	24"	
		SS-2	3.0	4.5	1.5	3.0	7		1.5	47	23	24	61	35	96	29	20	A-7-6	15		HP & Mc			
		SS-3	4.5	6.0	3.0	4.5	7		1.25							22	18	A-7-6	16					
		SS-4	6.0	7.5	4.5	6.0	12		3.25							20	18	A-7-6	16					
24	B 024-0 21	SS-1	1.5	3.0	0.0	1.5	8	8	4.25	37	20	17	41	36	77	22	16	A-6b	11	60		N ₆₀ & Mc	12"	
		SS-2	3.0	4.5	1.5	3.0	10		4	31	18	13	46	24	70	20	14	A-6a	8		N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	12		4.25							22	14	A-6a	10					
		SS-4	6.0	7.5	4.5	6.0	13		4.25							19	14	A-6a	10					
25	B 025-0 21	SS-1	1.5	3.0	0.0	1.5	11	11		NP	NP	NP	16	22	38	15	11	A-4a	1	60		N ₆₀ & Mc	12"	
		SS-2	3.0	4.5	1.5	3.0	12		2.5	37	16	21	22	27	49	20	16	A-6b	7		N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	14									20	10	A-4a	8					
		SS-4	6.0	7.5	4.5	6.0	20									18	10	A-4a	8					
26	B 026-0 21	SS-1	1.5	3.0	0.0	1.5	7	6	3.5							17	18	A-7-6	16		N ₆₀	15"		
		SS-2	3.0	4.5	1.5	3.0	6		1.5	41	20	21	50	28	78	24	18	A-7-6	13	320		HP & Mc		
		SS-3	4.5	6.0	3.0	4.5	21		4.5	31	18	13	26	17	43	14	14	A-6a	2					
		SS-4	6.0	7.5	4.5	6.0	23		4.5							17	14	A-6a	10					
27	B 027-0 21	SS-1	1.5	3.0	0.0	1.5	7	5	3.5	35	20	15	38	30	68	18	15	A-6a	9	20		N ₆₀ & Mc	15"	
		SS-2	3.0	4.5	1.5	3.0	9		3	37	20	17	36	34	70	18	16	A-6b	10		N ₆₀			
		SS-3	4.5	6.0	3.0	4.5	7		2.75							18	10	A-4a	8					
		SS-4	6.0	7.5	4.5	6.0	5		1.75							24	14	A-6a	10					



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics					Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)	
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
28	B 028-0 21	SS-1	1.5	3.0	0.0	1.5	8	5		25	19	6	57	18	75	18	14	A-4b	8	160	A-4b	N ₆₀ & Mc	18"	12"	
		SS-2	3.0	4.5	1.5	3.0	5		1	34	18	16	43	30	73	25	16	A-6b	10			HP & Mc			
		SS-3	4.5	6.0	3.0	4.5	13		3.25							19	16	A-6b	16						
		SS-4	6.0	7.5	4.5	6.0	25		4.5							16	10	A-4a	8						
29	B 029-0 21	SS-1	1.5	3.0	0.0	1.5	7	7	3.5	44	19	25	58	32	90	23	18	A-7-6	15	0		N ₆₀ & Mc		15"	
		SS-2	3.0	4.5	1.5	3.0	12		2.25							21	18	A-7-6	16			N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	18			44	20	24	55	39	94	25	18	A-7-6	14						
		SS-4	6.0	7.5	4.5	6.0	17									25	18	A-7-6	16						
30	B 030-0 21	SS-1	1.5	3.0	0.0	1.5	7	5	2.5	28	20	8	64	18	82	21	15	A-4b	8	20	A-4b	N ₆₀ & Mc	18"	15"	
		SS-2	3.0	4.5	1.5	3.0	6		3							24	14	A-6a	10			N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	5		1.5	34	18	16	57	33	90	25	16	A-6b	10						
		SS-4	6.0	7.5	4.5	6.0	8		2.5							20	18	A-7-6	16						
31	B 031-0 21	SS-1	1.5	3.0	0.0	1.5	11	4								6	6	A-1-b	0						
		SS-2	3.0	4.5	1.5	3.0	7		2	33	23	10	57	26	83	26	18	A-4b	8	40	A-4b	N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	4			NP	NP	NP	37	19	56	28	11	A-4a	4						
		SS-4	6.0	7.5	4.5	6.0	12		4							15	14	A-6a	10						
32	B 032-0 21	SS-1	1.5	3.0	0.0	1.5	8	7								21	14	A-6a	10			N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	7		2.5	39	25	14	43	46	89	26	20	A-6a	10	220		N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	12		1.75							20	14	A-6a	10						
		SS-4	6.0	7.0	4.5	5.5	30		4.5	34	21	13	41	32	73	13	16	A-6a	9						
33	B 033-0 21	SS-1	1.5	3.0	0.0	1.5	7	0								10	6	A-1-b	0						
		SS-2	3.0	4.5	1.5	3.0	0			27	19	8	48	19	67	28	14	A-4a	6	20		N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	4		1.75	34	20	14	31	23	54	24	15	A-6a	5						
		SS-4	6.0	7.0	4.5	5.5	8									26	10	A-4a	8						
34	B 034-0 21	SS-1	1.5	3.0	0.0	1.5	10	6								17	14	A-6a	10			N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	6			29	18	11	25	14	39	17	14	A-6a	1	133		N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	13			NP	NP	NP	32	15	47	20	11	A-4a	2						
		SS-4	6.0	7.0	4.5	5.5	12									19	10	A-4a	8						
35	B 035-0 21	SS-1	1.5	3.0	0.0	1.5	7	7	1.5	45	23	22	39	38	77	27	20	A-7-6	14			HP & Mc		15"	
		SS-2	3.0	4.5	1.5	3.0	10		1.5	32	18	14	28	19	47	17	14	A-6a	4	73		HP & Mc			
		SS-3	4.5	6.0	3.0	4.5	7		0.5							22	18	A-7-6	16						
		SS-4	6.0	7.5	4.5	6.0	10		0.75							25	18	A-7-6	16						
36	B 036-0 21	SS-1	1.5	3.0	0.0	1.5	11	6	1.5							18	14	A-6a	10			HP & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	6		2.25	32	17	15	26	27	53	20	14	A-6a	6	180		N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	19			31	19	12	23	14	37	16	14	A-6a	1						
		SS-4	6.0	7.5	4.5	6.0	16									18	14	A-6a	10						



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics					Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)		
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable	
37	B 037-0 21	SS-1	1.5	3.0	0.0	1.5	6	4	0.5							18	14	A-6a	10			HP & Mc		24"		
		SS-2	3.0	4.5	1.5	3.0	4		0.5	26	19	7	22	16	38	23	14	A-4a	1	67		HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	6		1.25	33	20	13	30	26	56	23	15	A-6a	5							
		SS-4	6.0	7.5	4.5	6.0	30									18	10	A-2-4	0							
38	B 038-0 21	SS-1	1.5	3.0	0.0	1.5	5	5								17	10	A-4a	8			N ₆₀ & Mc		21"		
		SS-2	3.0	4.5	1.5	3.0	5		3	38	20	18	40	37	77	20	16	A-6b	11	467		N ₆₀ & Mc				
		SS-3	4.5	6.0	3.0	4.5	18		3.25	52	23	29	28	66	94	21	20	A-7-6	18							
		SS-4	6.0	7.5	4.5	6.0	19		3.75							23	18	A-7-6	16							
39	B 039-0 21	SS-1	1.5	3.0	0.0	1.5	6	5	3	28	19	9	50	27	77	19	14	A-4b	8	73	A-4b	N ₆₀ & Mc	18"	18"		
		SS-2	3.0	4.5	1.5	3.0	5		1.75							22	16	A-6b	16			HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	5		1.75	37	19	18	43	34	77	22	16	A-6b	11							
		SS-4	6.0	7.5	4.5	6.0	10		3.5							18	16	A-6b	16							
40	B 040-0 21	SS-1	1.5	3.0	0.0	1.5	10	5								5	6	A-1-b	0							
		SS-2	3.0	4.5	1.5	3.0	5		1.5	41	22	19	36	41	77	26	19	A-7-6	12	320		HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	6		2	45	23	22	31	44	75	25	20	A-7-6	14							
		SS-4	6.0	7.5	4.5	6.0	8		2.25							23	18	A-7-6	16							
41	B 041-0 21	SS-1	1.5	3.0	0.0	1.5	11	4	3.5	29	19	10	47	27	74	18	14	A-4a	8	60			N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	4		1.5							24	14	A-6a	10			HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	5		3	38	19	19	34	39	73	22	16	A-6b	11							
		SS-4	6.0	7.5	4.5	6.0	7		1.5							21	16	A-6b	16							
42	B 042-0 21	SS-1	1.5	3.0	0.0	1.5	15	4	1.25							16	10	A-4a	8			HP & Mc		12"		
		SS-2	3.0	4.5	1.5	3.0	5		0.5	26	17	9	44	26	70	20	12	A-4a	7	40		HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	4		0.75	31	17	14	33	24	57	21	14	A-6a	6							
		SS-4	6.0	7.5	4.5	6.0	7		1.25							24	14	A-6a	10							
43	B 043-0 21	SS-1	1.5	3.0	0.0	1.5	6	6	4.5	29	18	11	35	22	57	16	14	A-6a	5	60			N ₆₀		18"	
		SS-2	3.0	4.5	1.5	3.0	6		4.25							22	14	A-6a	10			N ₆₀ & Mc				
		SS-3	4.5	6.0	3.0	4.5	6		1.75	29	17	12	32	22	54	22	14	A-6a	5							
		SS-4	6.0	7.5	4.5	6.0	15		2.5							18	14	A-6a	10							
44	B 044-0 21	SS-1	1.5	3.0	0.0	1.5	17	17	4.5							11	10	A-4a	8	100						
		SS-2	3.0	4.5	1.5	3.0	24		4.5	29	22	7	44	17	61	10	17	A-4a	5							
		SS-3	4.5	6.0	3.0	4.5	22			NP	NP	NP	50	19	69	12	11	A-4b	7							
		SS-4	6.0	7.5	4.5	6.0	28									15	10	A-4b	8							
45	B 045-0 21	SS-1	1.5	3.0	0.0	1.5	30	6								4	6	A-1-b	0							
		SS-2	3.0	4.5	1.5	3.0	16		4.25	34	23	11	47	16	63	12	18	A-6a	6	60						
		SS-3	4.5	6.0	3.0	4.5	10		4.5							13	14	A-6a	10							
		SS-4	6.0	7.5	4.5	6.0	6		4.25							19	14	A-6a	10							



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics					Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)		
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable	
46	B 046-0 21	SS-1	1.5	3.0	0.0	1.5	21	21	4.5	27	20	7	39	19	58	12	15	A-4a	5	40						
		SS-2	3.0	4.5	1.5	3.0	30		4.5	31	24	7	52	20	72	11	19	A-4b	7		A-4b					
		SS-3	4.5	6.0	3.0	4.5	30		4.5							13	10	A-4b	8							
		SS-4	6.0	7.5	4.5	6.0	30		4.5							10	10	A-4b	8							
47	B 047-0 21	SS-1	1.5	3.0	0.0	1.5	30	11									6	A-1-a	0							
		SS-2	3.0	4.5	1.5	3.0	17		3	43	21	22	56	28	84	17	18	A-7-6	13	40						
		SS-3	4.5	6.0	3.0	4.5	11		2.25							20	18	A-7-6	16							
		SS-4	6.0	7.5	4.5	6.0	24		2.5	NP	NP	NP	25	12	37	14	11	A-4a	0							
48	B 048-0 21	SS-1	1.5	3.0	0.0	1.5	7	1	2.75	31	19	12	55	25	80	22	14	A-6a	9			N ₆₀ & Mc		15"		
		SS-2	3.0	4.5	1.5	3.0	5		1.75	35	20	15	39	30	69	25	15	A-6a	9	0		HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	1									53	14	A-6a	10							
		SS-4	6.0	7.5	4.5	6.0	8		1.5							27	14	A-6a	10							
49	B 049-0 21	SS-1	1.5	3.0	0.0	1.5	6	6		34	18	16	27	16	43	12	16	A-6b	3	360			N ₆₀		18"	
		SS-2	3.0	4.5	1.5	3.0	7		2.5	28	17	11	25	19	44	18	14	A-6a	2			N ₆₀ & Mc				
		SS-3	4.5	6.0	3.0	4.5	6		1.75							20	14	A-6a	10							
		SS-4	6.0	7.5	4.5	6.0	8		4.25							20	14	A-6a	10							
50	B 050-0 21	SS-1	1.5	3.0	0.0	1.5	10	4	3.25	43	21	22	61	34	95	22	18	A-7-6	13	120			N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	4		1.25							29	18	A-7-6	16			HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	8		0.75	36	18	18	62	31	93	23	16	A-6b	11							
		SS-4	6.0	7.5	4.5	6.0	11		1.75							21	16	A-6b	16							
51	B 051-0 21	SS-1	1.5	3.0	0.0	1.5	8	8	3.25							30	18	A-7-6	16			N ₆₀ & Mc		12"		
		SS-2	3.0	4.5	1.5	3.0	8		4.5	63	26	37	38	59	97	23	23	A-7-6	20	273		N ₆₀				
		SS-3	4.5	6.0	3.0	4.5	16		4.5							19	18	A-7-6	16							
		SS-4	6.0	7.5	4.5	6.0	28		4.5							17	18	A-7-6	16							
52	B 052-0 21	SS-1	1.5	3.0	0.0	1.5	7	5	2.75	38	16	22	51	36	87	21	16	A-6b	13	180			N ₆₀ & Mc		15"	
		SS-2	3.0	4.5	1.5	3.0	5		1							25	16	A-6b	16			HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	10		2.75	28	18	10	68	26	94	20	13	A-4b	8							
		SS-4	6.0	7.5	4.5	6.0	12		4.5	29	17	12	61	32	93	19	14	A-6a	9							
53	B 053-0 21	SS-1	1.5	3.0	0.0	1.5	7	6	1.75	37	20	17	54	26	80	23	16	A-6b	11	100			HP & Mc		15"	
		SS-2	3.0	4.5	1.5	3.0	6		1.5							29	16	A-6b	16			HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	6		0.5	33	18	15	65	25	90	26	14	A-6a	10							
		SS-4	6.0	7.5	4.5	6.0	6		0.5							23	18	A-7-6	16							
54	B 054-0 21	SS-1	1.5	3.0	0.0	1.5	12	5	4.25	31	21	10	64	27	91	20	16	A-4b	8	360	A-4b	N ₆₀ & Mc		12"		
		SS-2	3.0	4.5	1.5	3.0	5		4	33	23	10	67	24	91	26	18	A-4b	8		A-4b	N ₆₀ & Mc	36"			
		SS-3	4.5	6.0	3.0	4.5	5		1.25	40	20	20	66	32	98	28	16	A-6b	12							
		SS-4	6.0	7.5	4.5	6.0	7		1.5							28	16	A-6b	16							



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics					Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)	
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
55	B 055-0 21	SS-1	1.5	3.0	0.0	1.5	7	7	4.25	30	18	12	46	34	80	16	14	A-6a	9	60		N ₆₀		15"	
		SS-2	3.0	4.5	1.5	3.0	13		2.5	30	18	12	47	27	74	20	14	A-6a	9		N ₆₀ & Mc				
		SS-3	4.5	5.6	3.0	4.1	15			33	21	12	52	24	76	21	16	A-6a	9						
		SS-4	5.6	7.5	4.1	6.0	19		2.25							20	18	A-7-6	16						
56	B 056-0 21	SS-1	1.5	3.0	0.0	1.5	10	5	3.25							18	16	A-6b	16			N ₆₀		12"	
		SS-2	3.0	4.5	1.5	3.0	6		3	37	17	20	36	26	62	15	16	A-6b	9	553		N ₆₀			
		SS-3	4.5	6.0	3.0	4.5	5		1.75	30	19	11	63	29	92	23	14	A-6a	8						
		SS-4	6.0	7.5	4.5	6.0	6		0.75							27	14	A-6a	10						
57	B 057-0 21	SS-1	1.5	3.0	0.0	1.5	12	5	4.25							17	10	A-4a	8			N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	7		3	34	20	14	62	25	87	20	15	A-6a	10	513		N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	6		1.5	32	21	11	73	25	98	27	16	A-6a	8						
		SS-4	6.0	7.5	4.5	6.0	5		0.75	33	20	13	69	28	97	27	15	A-6a	9						
58	B 058-0 21	SS-1	1.5	3.0	0.0	1.5	7	6		33	21	12	65	28	93	22	16	A-6a	9	40		N ₆₀ & Mc		15"	
		SS-2	3.0	4.5	1.5	3.0	6		2.5	46	23	23	67	30	97	26	20	A-7-6	14		N ₆₀ & Mc				
		SS-3	4.5	6.0	3.0	4.5	7		1.75							27	18	A-7-6	16						
		SS-4	6.0	7.5	4.5	6.0	7		1.25							26	18	A-7-6	16						
59	B 059-0 21	SS-1	1.5	3.0	0.0	1.5	7	2	2.5	34	19	15	62	29	91	20	14	A-6a	10	127		N ₆₀ & Mc		15"	
		SS-2	3.0	4.5	1.5	3.0	2		0.25	29	21	8	68	24	92	26	16	A-4b	8		A-4b	HP & Mc	36"		
		SS-3	4.5	6.0	3.0	4.5	4		0.75							19	10	A-4b	8						
		SS-4	6.0	7.5	4.5	6.0	8		1							16	10	A-4b	8						
60	B 060-0 21	SS-1	1.5	3.0	0.0	1.5	10	4	2.25							14	10	A-4b	8	100	A-4b	N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	4		2	36	27	9	67	23	90	35	22	A-4b	8		A-4b	N ₆₀ & Mc	36"		
		SS-3	4.5	6.0	3.0	4.5	5		1.75	32	22	10	54	21	75	25	17	A-4b	8						
		SS-4	6.0	7.5	4.5	6.0	6		1.5							24	10	A-4b	8						
61	B 061-0 21	SS-1	1.5	3.0	0.0	1.5	6	6	1							25	16	A-6b	16	160		HP & Mc		18"	
		SS-2	3.0	4.5	1.5	3.0	6		2	36	19	17	38	28	66	21	16	A-6b	9			N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	7		4.25	34	22	12	47	23	70	23	17	A-6a	8						
		SS-4	6.0	7.5	4.5	6.0	18		3							21	14	A-6a	10						
62	B 062-0 21	SS-1	1.5	3.0	0.0	1.5	5	5	2.25							28	10	A-4a	8	20		N ₆₀ & Mc		21"	
		SS-2	3.0	4.5	1.5	3.0	8		2.5	29	20	9	23	14	37	16	15	A-4a	0			N ₆₀			
		SS-3	4.5	6.0	3.0	4.5	7		2.5							27	10	A-4a	8						
		SS-4	6.0	7.5	4.5	6.0	11		0.5	31	22	9	64	25	89	26	17	A-4b	8						
63	B 063-0 21	SS-1	1.5	3.0	0.0	1.5	8	6	2	28	21	7	73	20	93	21	16	A-4b	8	27	A-4b	N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	6			NP	NP	NP	82	14	96	25	11	A-4b	8		A-4b	N ₆₀ & Mc	36"		
		SS-3	4.5	6.0	3.0	4.5	6									23	10	A-4b	8						
		SS-4	6.0	7.5	4.5	6.0	18		3.5							17	10	A-4a	8						



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics					Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)		
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable	
64	B 064-0 21	SS-1	1.5	3.0	0.0	1.5	6	6	2.75	41	22	19	64	28	92	24	19	A-7-6	12	307		N ₆₀ & Mc		18"		
		SS-2	3.0	4.5	1.5	3.0	11		2.5	44	18	26	50	34	84	23	18	A-7-6	15			N ₆₀ & Mc				
		SS-3	4.5	6.0	3.0	4.5	6		0.75							27	18	A-7-6	16							
		SS-4	6.0	7.5	4.5	6.0	8		1.25							27	18	A-7-6	16							
65	B 065-0 21	SS-1	1.5	3.0	0.0	1.5	8	7	3	25	17	8	46	23	69	16	12	A-4a	7			N ₆₀ & Mc		12"		
		SS-2	3.0	4.5	1.5	3.0	7		2.75	38	22	16	51	36	87	19	17	A-6b	10	120		N ₆₀				
		SS-3	4.5	6.0	3.0	4.5	16		4.5							16	16	A-6b	16							
		SS-4	6.0	7.5	4.5	6.0	21		4.5							17	16	A-6b	16							
66	B 066-0 21	SS-1	1.5	3.0	0.0	1.5	12	12	3.5	33	19	14	45	28	73	16	14	A-6a	9	60						
		SS-2	3.0	4.5	1.5	3.0	12		2.5	33	19	14	55	25	80	20	14	A-6a	10			N ₆₀ & Mc				
		SS-3	4.5	6.0	3.0	4.5	16		4.5							15	14	A-6a	10							
		SS-4	6.0	7.5	4.5	6.0	28		4.5							17	14	A-6a	10							
67	B 067-0 21	SS-1	1.5	3.0	0.0	1.5	7	7	2.75							18	14	A-6a	10	60		N ₆₀ & Mc		15"		
		SS-2	3.0	4.5	1.5	3.0	10		4	32	20	12	44	36	80	17	15	A-6a	9			N ₆₀				
		SS-3	4.5	6.0	3.0	4.5	15		2.75	28	17	11	40	23	63	15	14	A-6a	6							
		SS-4	6.0	7.5	4.5	6.0	17		2.5							15	14	A-6a	10							
68	B 068-0 21	SS-1	1.5	3.0	0.0	1.5	8	8	2.5	40	22	18	33	56	89	27	17	A-6b	11	133		N ₆₀ & Mc		12"		
		SS-2	3.0	4.5	1.5	3.0	10		1.5	25	18	7	43	33	76	23	13	A-4a	8			HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	10		1.25							24	10	A-4a	8							
		SS-4	6.0	7.5	4.5	6.0	21									24	8	A-3a	0							
69	B 069-0 21	SS-1	1.5	3.0	0.0	1.5	30	4								11	10	A-2-4	0	420						
		SS-2	3.0	4.5	1.5	3.0	8		1.5							28	18	A-7-6	16			HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	4		1	42	23	19	46	47	93	29	20	A-7-6	12							
		SS-4	6.0	7.5	4.5	6.0	6		1.25	45	27	18	41	49	90	30	24	A-7-6	12							
70	B 070-0 21	SS-1	1.5	3.0	0.0	1.5	8	2		37	19	18	47	35	82	20	16	A-6b	11	0			N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	2		1.5							32	16	A-6b	16			HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	2		1.25	32	20	12	64	28	92	27	15	A-6a	9							
		SS-4	6.0	7.5	4.5	6.0	4		0.75							31	14	A-6a	10							
71	B 071-0 21	SS-1	1.5	3.0	0.0	1.5	5	1	0.75	31	19	12	46	20	66	20	14	A-6a	7			HP & Mc		21"		
		SS-2	3.0	4.5	1.5	3.0	2		0.75	35	21	14	59	26	85	27	16	A-6a	10	67		HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	1		0.25							30	14	A-6a	10							
		SS-4	6.0	7.5	4.5	6.0	10		1.5							18	14	A-6a	10							
72	B 072-0 21	SS-1	1.5	3.0	0.0	1.5	7	6	2.25							25	16	A-6b	16			N ₆₀ & Mc		15"		
		SS-2	3.0	4.5	1.5	3.0	6		1.75	35	18	17	29	24	53	21	16	A-6b	6	40		HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	7		2.75	33	18	15	27	18	45	18	14	A-6a	4							
		SS-4	6.0	7.5	4.5	6.0	8		1.5							18	14	A-6a	10							



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)	
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable		
73	B 073-0 21	SS-1	1.5	3.0	0.0	1.5	7	6	4.25							15	10	A-4a	8			N ₆₀ & Mc		15"		
		SS-2	3.0	4.5	1.5	3.0	6		1.25	39	21	18	64	29	93	30	16	A-6b	11	93		HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	6		1.75							23	16	A-6b	16							
		SS-4	6.0	7.5	4.5	6.0	10		4.25	36	21	15	63	28	91	25	16	A-6a	10							
74	B 074-0 21	SS-1	1.5	3.0	0.0	1.5	6	6	3.5							28		A-7-5	16	100	A-7-5	N ₆₀		18"		
		SS-2	3.0	4.5	1.5	3.0	8		2.75	73	32	41	20	74	94	29		A-7-5	20		A-7-5 & High LL	N ₆₀	36"			
		SS-3	4.5	6.0	3.0	4.5	8		3.25							23		A-7-5	16							
		SS-4	6.0	7.5	4.5	6.0	19		4.5	24	18	6	30	20	50	9	13	A-4a	3							
75	B 075-0 21	SS-1	1.5	3.0	0.0	1.5	6	4		32	18	14	29	17	46	15	14	A-6a	3	93			N ₆₀		18"	
		SS-2	3.0	4.5	1.5	3.0	4		1.5	31	19	12	54	20	74	22	14	A-6a	9			HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	4		0.5							15	14	A-6a	10							
		SS-4	6.0	7.5	4.5	6.0	6		2.5							29	18	A-7-6	16							
76	B 076-0 21	SS-1	1.5	3.0	0.0	1.5	8	5	2.5	33	21	12	59	24	83	22	16	A-6a	9	47			N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	5		2.5	43	21	22	60	35	95	26	18	A-7-6	13			N ₆₀ & Mc				
		SS-3	4.5	6.0	3.0	4.5	10		0.5							23	18	A-7-6	16							
		SS-4	6.0	7.5	4.5	6.0	11		0.5							24	18	A-7-6	16							
77	B 077-0 21	SS-1	1.5	3.0	0.0	1.5	8	8	3.75							18	14	A-6a	10	140			N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	15		4.25	32	19	13	33	23	56	14	14	A-6a	5							
		SS-3	4.5	6.0	3.0	4.5	21		2.75	41	21	20	29	36	65	17	18	A-7-6	10							
		SS-4	6.0	7.5	4.5	6.0	27		3.25							17	18	A-7-6	16							
78	B 078-0 21	SS-1	1.5	3.0	0.0	1.5	10	6	2.5							17	10	A-4a	8			N ₆₀ & Mc		12"		
		SS-2	3.0	4.5	1.5	3.0	6		1.25	36	21	15	54	28	82	22	16	A-6a	10	87			HP & Mc			
		SS-3	4.5	6.0	3.0	4.5	8		2.25	37	23	14	50	29	79	22	18	A-6a	10							
		SS-4	6.0	7.5	4.5	6.0	10		2							25	18	A-7-6	16							
79	B 079-0 21	SS-1	1.5	3.0	0.0	1.5	10	10	4.5							16	10	A-4a	8	80			N ₆₀ & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	19		4.5	30	21	9	49	26	75	15	16	A-4a	8							
		SS-3	4.5	6.0	3.0	4.5	16		4.5							18	10	A-4a	8							
		SS-4	6.0	7.5	4.5	6.0	22		4.5	42	23	19	38	42	80	22	20	A-7-6	12							
80	B 080-0 21	SS-1	1.5	3.0	0.0	1.5	7	7	3.5	33	21	12	46	17	63	16	16	A-6a	6	180			N ₆₀		15"	
		SS-2	3.0	4.5	1.5	3.0	7		1.25							24	14	A-6a	10				HP & Mc			
		SS-3	4.5	6.0	3.0	4.5	13		3.75	31	21	10	46	23	69	18	16	A-4a	7							
		SS-4	6.0	7.5	4.5	6.0	16		4							18	10	A-4a	8							
81	B 081-0 21	SS-1	1.5	3.0	0.0	1.5	11	4	2							22	18	A-7-6	16			N ₆₀ & Mc		12"		
		SS-2	3.0	4.5	1.5	3.0	4		1.75	44	22	22	64	33	97	25	19	A-7-6	14	40			HP & Mc			
		SS-3	4.5	6.0	3.0	4.5	8		2	43	22	21	69	30	99	25	19	A-7-6	13							
		SS-4	6.0	7.5	4.5	6.0	8		1.25							28	18	A-7-6	16							



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics					Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)	
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
82	B 082-0 21	SS-1	1.5	3.0	0.0	1.5	11	11	4.25	39	22	17	34	24	58	14	17	A-6b	7	233		N ₆₀		12"	
		SS-2	3.0	4.5	1.5	3.0	18		4.5	37	25	12	51	29	80	17	20	A-6a	9						
		SS-3	4.5	6.0	3.0	4.5	18		4.5						15	14	A-6a	10							
		SS-4	6.0	7.5	4.5	6.0	21		4.5						13	14	A-6a	10							
83	B 083-0 21	SS-1	1.5	3.0	0.0	1.5	10	5	1.5							23	10	A-4a	8	40		HP & Mc		12"	
		SS-2	3.0	4.5	1.5	3.0	5		1.5	30	21	9	38	26	64	24	16	A-4a	6		HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	11		1.5	39	22	17	63	27	90	24	17	A-6b	11						
		SS-4	6.0	7.5	4.5	6.0	30								15	16	A-6b	16							
84	B 084-0 21	SS-1	1.5	3.0	0.0	1.5	8	7	2.25							15	18	A-7-6	16	160		N ₆₀		12"	
		SS-2	3.0	4.5	1.5	3.0	7		2.75	54	25	29	43	51	94	25	22	A-7-6	18		N ₆₀ & Mc				
		SS-3	4.5	6.0	3.0	4.5	12		4.25	48	26	22	41	43	84	22	23	A-7-6	14						
		SS-4	6.0	7.5	4.5	6.0	21		4.25							17	18	A-7-6	16						
85	B 085-0 21	SS-1	1.5	3.0	0.0	1.5	10	4	3.75							19	18	A-7-6	16			N ₆₀		12"	
		SS-2	3.0	4.5	1.5	3.0	4		2.25	41	22	19	68	30	98	28	19	A-7-6	12	20		N ₆₀ & Mc			
		SS-3	4.5	6.0	3.0	4.5	6		2							25	18	A-7-6	16						
		SS-4	6.0	7.5	4.5	6.0	10		1.5	42	21	21	66	30	96	27	18	A-7-6	13						
86	B 086-0 21	SS-1	1.5	3.0	0.0	1.5	10	5	2	30	21	9	62	25	87	19	16	A-4b	8	80	A-4b	N ₆₀ & Mc	18"	12"	
		SS-2	3.0	4.5	1.5	3.0	5		1.5	41	23	18	68	30	98	27	20	A-7-6	11		HP & Mc				
		SS-3	4.5	6.0	3.0	4.5	10		4.5							21	18	A-7-6	16						
		SS-4	6.0	7.5	4.5	6.0	19		4.5							18	18	A-7-6	16						
87	B 087-0 21	SS-1	1.5	3.0	0.0	1.5	10	10	4.5	36	21	15	44	29	73	16	16	A-6a	10	180		N ₆₀		12"	
		SS-2	3.0	4.5	1.5	3.0	12		4.5							13	14	A-6a	10						
		SS-3	4.5	6.0	3.0	4.5	15		4.5	35	24	11	56	25	81	14	19	A-6a	8						
		SS-4	6.0	7.5	4.5	6.0	30		4.5							13	14	A-6a	10						
88	B 088-0 21	SS-1	1.5	3.0	0.0	1.5	7	6	4.5							12	10	A-4a	8	80		N ₆₀		15"	
		SS-2	3.0	4.5	1.5	3.0	6		2.25	34	22	12	40	18	58	15	17	A-6a	5		N ₆₀				
		SS-3	4.5	6.0	3.0	4.5	13		4.5	35	24	11	41	19	60	12	19	A-6a	5						
		SS-4	6.0	7.5	4.5	6.0	21		4.5							10	14	A-6a	10						
89	B 089-0 21	SS-1	1.5	3.0	0.0	1.5	8	8	4.25							18	18	A-7-6	16			N ₆₀		12"	
		SS-2	3.0	4.5	1.5	3.0	13		4.5	49	24	25	21	78	99	17	21	A-7-6	16	80					
		SS-3	4.5	6.0	3.0	4.5	15		4.5	48	23	25	21	77	98	17	20	A-7-6	16						
		SS-4	6.0	7.5	4.5	6.0	17		4.5							17	18	A-7-6	16						
90	B 090-0 21	SS-1	1.5	3.0	0.0	1.5	10	6	4.5							11	10	A-4a	8			N ₆₀		12"	
		SS-2	3.0	4.5	1.5	3.0	6		2.75	34	24	10	45	18	63	14	19	A-4a	6	60		N ₆₀			
		SS-3	4.5	6.0	3.0	4.5	13		4	38	20	18	3	63	66	20	16	A-6b	9						
		SS-4	6.0	7.5	4.5	6.0	28		4.5							20	16	A-6b	16						



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)	
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable		
91	B 091-0 21	SS-1	1.5	3.0	0.0	1.5	13	8	4.5							12	14	A-6a	10	40						
		SS-2	3.0	4.5	1.5	3.0	8		4.5	35	24	11	53	24	77	13	19	A-6a	8			N ₆₀				
		SS-3	4.5	6.0	3.0	4.5	13		4.5	36	23	13	49	27	76	16	18	A-6a	9							
		SS-4	6.0	7.5	4.5	6.0	19		4.5							13	14	A-6a	10							
92	B 092-0 21	SS-1	1.5	3.0	0.0	1.5	6	6	2.75							17	14	A-6a	10				N ₆₀ & M _C		18"	
		SS-2	3.0	4.5	1.5	3.0	30		4.5	42	27	15	59	38	97	8	24	A-7-6	10	20						
		SS-3	4.5	6.0	3.0	4.5	30		4.5	44	26	18	50	45	95	10	23	A-7-6	12							
		SS-4	6.0	7.5	4.5	6.0	30		4.5							13	18	A-7-6	16							
93	B 093-0 21	SS-1	1.5	3.0	0.0	1.5	15	15	4.5	34	24	10	43	27	70	17	19	A-4a	7	320						
		SS-2	3.0	4.5	1.5	3.0	30		4.5	35	26	9	63	25	88	11	21	A-4b	8		A-4b					
		SS-3	4.5	6.0	3.0	4.5	30		4.5							12	10	A-4b	8							
		SS-4	6.0	7.5	4.5	6.0	30		4.5							12	10	A-4b	8							
94	B 094-0 21	SS-1	1.5	3.0	0.0	1.5	8	8		33	20	13	36	25	61	13	15	A-6a	6	80			N ₆₀		12"	
		SS-2	3.0	4.5	1.5	3.0	8									13	14	A-6a	10			N ₆₀				
		SS-3	4.5	6.0	3.0	4.5	13									14	14	A-6a	10							
		SS-4	6.0	7.5	4.5	6.0	30		3.5	33	21	12	33	27	60	14	16	A-6a	6							
95	B 095-0 21	SS-1	1.5	3.0	0.0	1.5	16	11	4.5	32	22	10	44	21	65	13	17	A-4a	6	100						
		SS-2	3.0	4.5	1.5	3.0	11		4.5	36	26	10	53	25	78	16	21	A-4b	8		A-4b	N ₆₀				
		SS-3	4.5	6.0	3.0	4.5	16		4.5							15	10	A-4b	8							
		SS-4	6.0	7.5	4.5	6.0	28		4.5							13	10	A-4b	8							
96	B 096-0 21	SS-1	1.5	3.0	0.0	1.5	28	28		31	22	9	58	28	86	12	17	A-4b	8	40	A-4b			18"		
		SS-2	3.0	4.5	1.5	3.0	30			28	22	6	49	20	69	9	17	A-4a	7							
		SS-3	4.5	6.0	3.0	4.5	30									10	10	A-4a	8							
		SS-4	6.0	7.5	4.5	6.0	30									12	10	A-4a	8							
97	B 097-0 21	SS-1	1.5	3.0	0.0	1.5	13	8	3							12	10	A-4a	8							
		SS-2	3.0	4.5	1.5	3.0	11		3	29	21	8	31	18	49	11	16	A-4a	3	140			N ₆₀			
		SS-3	4.5	6.0	3.0	4.5	8		3.75	34	23	11	44	30	74	15	18	A-6a	8							
		SS-4	6.0	7.5	4.5	6.0	16		3.75							13	14	A-6a	10							
98	B 098-0 21	SS-1	1.5	3.0	0.0	1.5	16	6	2.75	28	20	8	41	18	59	13	15	A-4a	5	387						
		SS-2	3.0	4.5	1.5	3.0	6		2.75							14	10	A-4a	8			N ₆₀ & M _C				
		SS-3	4.5	6.0	3.0	4.5	15		4.5	30	23	7	41	16	57	12	18	A-4a	4							
		SS-4	6.0	7.5	4.5	6.0	23		4.5							13	10	A-4a	8							
99	B 099-0 21	SS-1	1.5	3.0	0.0	1.5	7	7	4.25							10	14	A-6a	10	60			N ₆₀		15"	
		SS-2	3.0	4.5	1.5	3.0	30									0	Rock	0		Rock			36"			
		SS-3	4.5	6.0	3.0	4.5	30									0	Rock	0								
		SS-4	6.0	7.5	4.5	6.0	30								4	0	Rock	0								



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics					Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)	
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
100	B	SS-1	1.5	2.5	0.0	1.0	30	30	4.5	28	21	7	53	18	71	6	16	A-4b	7	573	A-4b				
	100-0	SS-2	2.5	4.5	1.0	3.0										4	0	Rock	0		Rock	N ₆₀ & Mc	36"	0"	
	21	SS-3	4.5	6.0	3.0	4.5										4	0	Rock	0						
		SS-4	6.0	7.5	4.5	6.0										5	0	Rock	0						
101	B	SS-1	1.5	3.0	0.0	1.5	11	11	4.5	32	23	9	47	25	72	15	18	A-4a	7	220		N ₆₀		12"	
	101-0	SS-2	3.0	4.5	1.5	3.0	30									6	0	Rock	0		Rock	Mc	36"		
	21	SS-3	4.5	6.0	3.0	4.5	30									5	0	Rock	0						
		SS-4	6.0	7.5	4.5	6.0	30									4	0	Rock	0						
102	B	SS-1	1.5	3.0	0.0	1.5	28	28	4.5	32	23	9	57	29	86	11	18	A-4b	8	60	A-4b				
	102-0	SS-2	3.0	4.5	1.5	3.0			4.5							10	0	Rock	0		Rock	N ₆₀ & Mc	36"		
	21	SS-3	4.5	6.0	3.0	4.5										10	0	Rock	0						
		SS-4	6.0	7.5	4.5	6.0										9	0	Rock	0						
103	B	SS-1	1.5	3.0	0.0	1.5	12	11	4.5							16	18	A-7-6	16	293					
	103-0	SS-2	3.0	4.5	1.5	3.0	11		4.5	42	26	16	48	38	86	21	23	A-7-6	11			N ₆₀			
	21	SS-3	4.5	6.0	3.0	4.5	12		4.5	41	26	15	46	35	81	18	23	A-7-6	10						
		SS-4	6.0	7.5	4.5	6.0	21		4.5							15	18	A-7-6	16						
104	B	SS-1	1.5	3.0	0.0	1.5	12	12	4.5							13	14	A-6a	10						
	104-0	SS-2	3.0	4.5	1.5	3.0	12		3.75	32	20	12	36	23	59	14	15	A-6a	6	80					
	21	SS-3	4.5	6.0	3.0	4.5	18		4.5							16	14	A-6a	10						
		SS-4	6.0	7.5	4.5	6.0	29		4.5	34	23	11	44	31	75	15	18	A-6a	8						
105	B	SS-1	1.5	3.0	0.0	1.5	10	10	4.25							13	14	A-6a	10			N ₆₀		12"	
	105-0	SS-2	3.0	4.5	1.5	3.0	12		4.5	34	23	11	41	24	65	16	18	A-6a	6	160					
	21	SS-3	4.5	6.0	3.0	4.5	11		4.5	33	22	11	38	25	63	16	17	A-6a	6						
		SS-4	6.0	7.5	4.5	6.0	18		4.25							18	14	A-6a	10						

PID: 95461

County-Route-Section: PER-13-19.67

No. of Borings: 105

Geotechnical Consultant: NEAS Inc.

Prepared By: Brendan P. Andrews

Date prepared: 7/26/2022

Chemical Stabilization Options		
320	Rubblize & Roll	No
206	Cement Stabilization	Option
	Lime Stabilization	No
206	Depth	14"

Excavate and Replace Stabilization Options	
Global Geotextile Average(N60L): Average(HP):	15" 0"
Global Geogrid Average(N60L): Average(HP):	0" 0"

Design CBR	6
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% Samples within 6 feet of subgrade			
$N_{60} \leq 5$	16%	$HP \leq 0.5$	4%
$N_{60} < 12$	61%	$0.5 < HP \leq 1$	4%
$12 \leq N_{60} < 15$	10%	$1 < HP \leq 2$	20%
$N_{60} \geq 20$	16%	$HP > 2$	51%
M+	31%		
Rock	2%		
Unsuitable	19%		

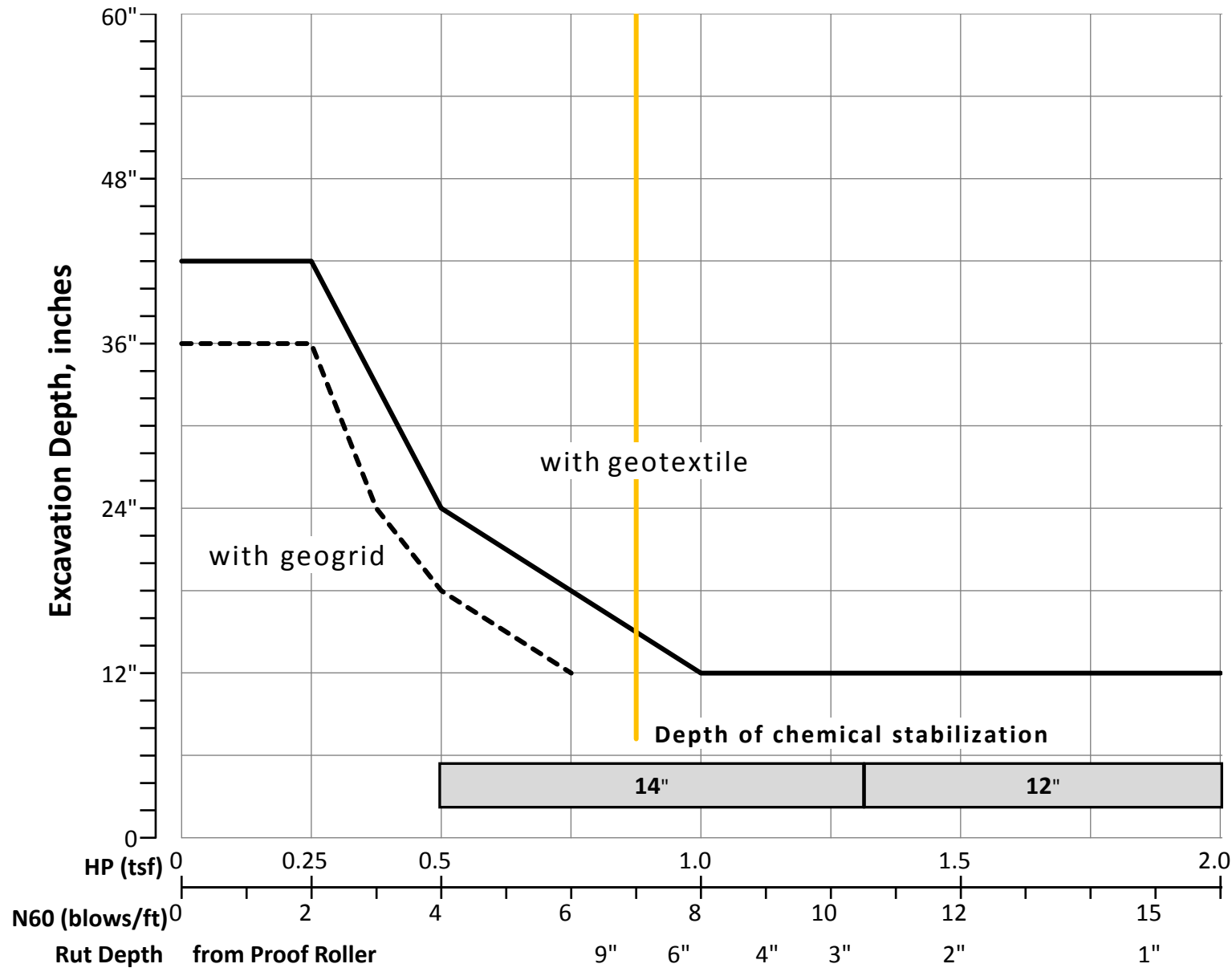
Excavate and Replace at Surface	
Average	0"
Maximum	0"
Minimum	0"

% Proposed Subgrade Surface	
Unstable & Unsuitable	99%
Unstable	80%
Unsuitable	19%

	N_{60}	N_{60L}	HP	LL	PL	PI	Silt	Clay	P 200	M_C	M_{OPT}	GI
Average	12	7	2.83	35	21	14	48	28	76	19	15	9
Maximum	32	30	4.50	73	32	41	90	78	99	55	26	20
Minimum	0	0	0.10	23	16	3	3	7	37	4	0	0

Classification Counts by Sample																			
ODOT Class	Rock	A-1-a	A-1-b	A-2-4	A-2-5	A-2-6	A-2-7	A-3	A-3a	A-4a	A-4b	A-5	A-6a	A-6b	A-7-5	A-7-6	A-8a	A-8b	Totals
Count	12	1	6	5	0	0	0	0	1	63	65	0	125	53	3	84	0	0	418
Percent	3%	0%	1%	1%	0%	0%	0%	0%	0%	15%	16%	0%	30%	13%	1%	20%	0%	0%	100%
% Rock Granular Cohesive	3%	18%									79%								100%
Surface Class Count	4	1	6	4	0	0	0	0	0	39	33	0	60	29	2	31	0	0	209
Surface Class Percent	2%	0%	3%	2%	0%	0%	0%	0%	0%	19%	16%	0%	29%	14%	1%	15%	0%	0%	100%

GB1 Figure B – Subgrade Stabilization



OVERRIDE TABLE

Calculated Average	New Values	Check to Override
2.83	0.50	☐ HP
7.08	6.00	☐ N60L

Average HP

Average N_{60L}



The subgrade analysis workbook consists of five worksheets. Each worksheet functions independently. In all of the worksheets the fields are color coded as follows:

- Every yellow highlighted field indicates a field to be entered by the user.
- Every salmon field is to indicate a problem/issue.
- Every gray or green field is a heading/informational field.

IMPORTANT: The sequence of filling out the data needs to be followed as outlined below:

1. Cover Sheet: this worksheet is designed for the purpose of entering the project information.
Enter all the following fields:

County-Route-Section	This includes the county, route, section number assigned to the project.
PID	the Project Identification Number
Project Description	See Cover Sheet for list of example details
Geotechnical Consultant	The Geotechnical Consultant performing the analysis.
Prepared By	The preparer of the subgrade analysis
Date prepared	The date the analysis is performed.
Contact Information	Name, address, telephone #, and email address
No. of Borings	Enter the total number of borings within the alignment that is being analyzed.

2. Boring Logs Entry Worksheet: this worksheet has a programming code that will run in the background every time the sheet is activated and will make the sheet unresponsive for less than a minute. The code is designed to read the total number of borings from the cover sheet and generate the needed number of fields.

- a. All yellow highlighted fields are user's entry.
- b. ODOT has developed a text table export from gINT (*GB 1 Borings Log Entry Tab*) that will allow for copy and paste of all highlighted fields with the exception of proposed subgrade elevation. The designer must provide a proposed subgrade elevation in order for the spreadsheet to function properly.
- c. The Cut/Fill field is a calculated field that, based on the difference between the boring elevation and the proposed subgrade elevation, will highlight the cell either gray and adds the letter "C" to the end in a cut situation or highlights the cell in light purple and adds the letter "F" to the end in a fill situation.
- d. Every duplicate boring ID will be highlighted in salmon background and red text.
- e. **IMPORTANT:** After entering all the borings' information, the user must click "Add Subgrade Analysis Entry Fields" button. This will generate all the required fields in the "Subgrade Analysis" Worksheet.

3. Subgrade Analysis Worksheet:

- a. The boring number and boring ID is read from the "Boring Logs Entry Worksheet" excluding every boring that has six feet or more of fill.
- b. All yellow highlighted fields are to be entered by the user and salmon highlighted fields indicates a problem or issue.
- c. Every sample that has a Sulfate Content greater than or equal to 3000 will be highlighted in light salmon background. Every sample that has a Sulfate Content greater than or equal to 8000 will be highlighted in darker salmon background. **Note the revised sulfate criteria in GB1 issued July 20, 2018.**

d. Unsuitable/Unstable:

- i. Unsuitable samples that are within 3 feet of the top of subgrade will be highlighted with salmon background and the class will be showing in this field.
- ii. Unstable Samples that are within 3 feet of top of subgrade will be highlighted with salmon background and text to indicate the problem as follows:

Criterion	Stabilization Need Check	Text displayed in the field
A-1-a, A-1-b, A-3, or A-3a Soil Class	No Stabilization is needed	
$HP \geq 1.875$	No Stabilization is needed	
$N_{60} \geq 15$	No Stabilization is needed	
$1.875 \geq HP \geq 1.5$ and $M_c \geq \text{Opt. } M_c + 3$	Unstable Subgrade	HP & M_c
$15 \geq N_{60} \geq 12$ and $M_c \geq \text{Opt. } M_c + 3$	Unstable Subgrade	N_{60} & M_c
$HP \leq 1.5$	Unstable Subgrade	HP
$N_{60} \leq 12$	Unstable Subgrade	N_{60}

- iii. The field is formulated to check for HP first and check for N_{60} second.

e. Excavate and Replace (Item 204) is going to be calculated based on the subgrade depth for each sample indicating an unsuitable or unstable problem.

f. Recommendation:

- i. Geotextile Option is calculated and rounded to a multiple of 3 inches based on the subgrade depth for every sample indicating an unsuitable or unstable problem.
- ii. GEOGRID Option is only offered in case of unstable subgrade problem and if the geotextile option indicates the need to excavate greater than 12 inches.

PLEASE NOTE: The Problem, Excavate & Replace, and Recommendation Fields are the responsibility of the Designer. These fields are being enhanced to attempt to capture the ODOT philosophy regarding the GB1 stabilization chart, but are considered still under development. If there are discrepancies between the spreadsheet output and the GB1 chart - the chart governs in conjunction with engineering judgement. Please contact Steve Taliaferro at stephen.taliaferro@dot.ohio.gov if you have any questions.

PLEASE NOTE: It is the Designer's responsibility to identify the most representative data when samples have been separated into multiple specimen (say 1.5 to 2.3 feet and 2.3 to 3.0 feet). The spreadsheet is not capable at this time of addressing this issue within a direct data export from gINT.

4. Results Summary:

All fields in this sheet are password protected and are either calculated or read from the other worksheets.

5. Graph Worksheet:

This worksheet is designed to read the average N_{60L} and the average HP from the Cover Sheet and plot a blue line for Average HP and orange line for Average N_{60L} on GB1 Figure B – Subgrade Stabilization. The Override Table can be used to enter HP and/or N_{60L} values that are different than the calculated averages. The Override values will change the global undercut recommendation in the Results Summary.