

August 3, 2023

PA Department of Environmental Protection
Bureau of District Mining Operations – Pottsville DMO
2nd Floor, 5 West Laurel Blvd
Pottsville, PA 17901

Subject: **SUPPLEMENTAL FIELD EXPLORATION MEMO**
SOLEBURY TOWNSHIP - BUCKS COUNTY, PA
NEW HOPE CRUSHED STONE & LIME COMPANY, INC. (NHCS)
QUARRY DISCHARGE OUTLET

New Hope Crushed Stone & Lime Co., Inc. (NHCS) operated a quarry in Solebury Township, Bucks County. The permittee, NHCS, has forfeited the site, and PADEP District Mining Operations (DMO) is taking over reclamation at the site. Tetra Tech was retained to assist PADEP with stream restoration of Primrose Creek from the point where it exits the quarry pit and downstream to the existing undisturbed channel. The Project intent was to supplement subsurface data collected in June 2022 using test pits to assess the historic elevation of the natural ground surface and the nature of the contact between the overburden fill material and the native ground along the eastern rim of the quarry and near Primrose Creek.

LOCATION AND DESCRIPTION

The New Hope Crushed Stone Quarry is located in Solebury Township along Phillips Mill Road, west of the intersection with River Road (Route 32), and approximately 0.90 miles from the Delaware River. Two unnamed tributaries drain a contiguous unnamed basin to the northeast and flow east to the Delaware River Canal. Three small unnamed tributaries drain the Primrose Basin in the northwest and form the Primrose Creek near Phillips Mill Road. Primrose Creek then flows eastward discharging into the NCHS quarry. The discharge collects in the quarry pit and the water level in the quarry is currently controlled by pumping into the Primrose Creek channel east of the quarry.

SITE EXPLORATION

The supplemental subsurface exploration for the site consisted of six (6) test pits (TP) between the eastern rim of the quarry pit and Primrose Creek. The intent of the exploration program was to assess the top of native ground east of the quarry pit and downstream to the existing stream channel. On July 12, 2023, Eric DiFatta, PE; Mike Byle P.E; and Mustaki Ahmed of Tetra Tech met representatives from DMO to finalize test pit locations and assess native ground elevations.

Test pit locations were jointly selected by Tetra Tech and DMO along an existing channel that was put in place by DMO. Exploration locations were field located by Tetra Tech personnel with an EOS Arrow Gold and iPad with active cellular service. All test pits were excavated until native ground was determined. The test pits, and soil interval elevations presented in this memo are based upon the GPS unit coordinates and elevations together. Previous test pit locations and elevations were based on topographic survey performed in October 2022. A plan of the test pits can be found on the attached Site Plan. A summary of test pits is provided on Table 1.



Within each test pit, Tetra Tech noted visual observations of the mixed fill material, depth of mixed fill, and depth to native material. Fill material consisted predominantly of angular sand, gravel with cobble and boulder sized rock fragments, but also included some silt and clay materials. Fill was encountered within all six (6) test pits and ranging from 1.5 to 8 feet thick. Native material consisted of silt with roots and traces of organics to shaley silt to clay, and fine gravel. In test pit TP-A3, approximately 7.2 feet below ground surface a 36-inch reinforced concrete pipe (RCP) was uncovered. Profiles, test pit logs and test pit photographs are attached.

The soil and rock conditions discussed in this report represents conditions observed by Tetra Tech at the test pit locations. The subsurface conditions may differ between the exploratory locations at other locations on the site.

Respectfully Submitted,

Tetra Tech, Inc.

A handwritten signature in blue ink that reads "Eric A. DiFatta".

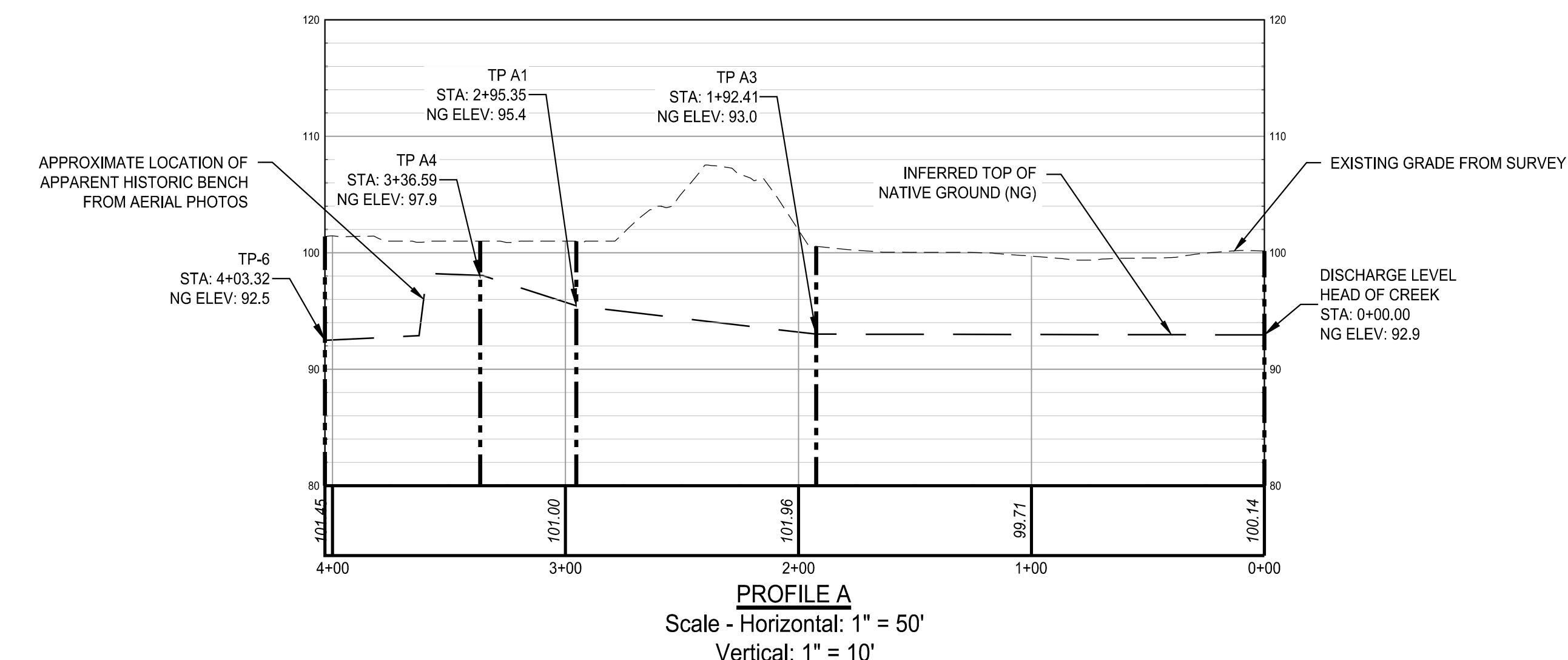
Eric A. DiFatta, P.E.

Enclosures:



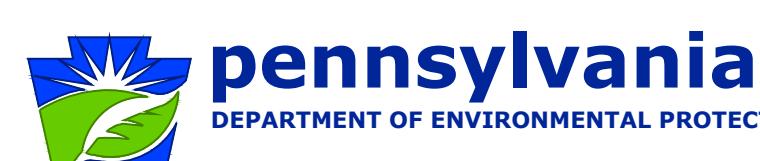
TETRA TECH

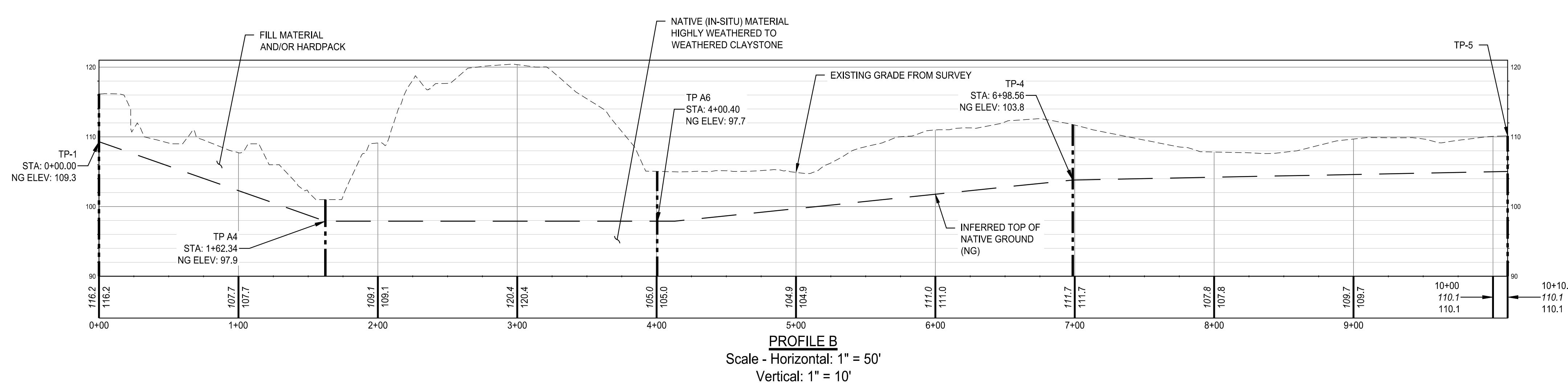
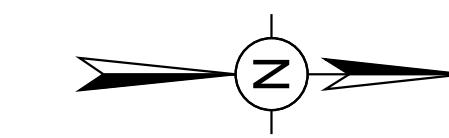
SITE PLAN



NOTES:

1. EXISTING GROUND CONTOUR DATA SURVEYED BY NORTHEAST SURVEYORS, LLC, DATED OCTOBER 2022.
2. ALL AND ANY UTILITY LOCATIONS ARE UNKNOWN.
3. TEST PIT LOCATIONS WERE VISUALLY IDENTIFIED. TEST PIT "A" LOCATIONS WERE LOCATED WITH EOS ARROW GOLD AND IPAD WITH ACTIVE CELLULAR SERVICE.
4. AERIAL IMAGERY SHOWN IS PER GOOGLE EARTH MAPPING DATED 2023.
5. TETRA TECH IS NOT RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING DISCHARGE SPILLWAY.

 TETRA TECH www.tetratech.com			 pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION POTTSVILLE OFFICE			SUBMITTED BY: Heather Trexler, PG, Project Manager TETRA TECH, INC. DRAWN BY: JNB APPROVED BY: ACAD FILE NAME: ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE			DATE: 07/06/2022 PLOT DATE: 8/2/2023 SCALE: 0 50' 100' DRAWN BY: JNB CHECKED BY: HT EXISTING SITE PLAN		
0 JNB 08/02/23 ISSUED FOR REVIEW			NO. BY DATE DESCRIPTION						QUARRY DISCHARGE OUTLET PROJECT NEW HOPE CRUSHED STONE & LIME CO. SOLEBURY TOWNSHIP BUCKS COUNTY		
									DRAWING NUMBER: 02248-C-100		
REVISIONS											



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TABLE 1 – SUMMARY OF TEST PITS

Tetra Tech, Inc.

TABLE 1 - SCHEDULE OF TEST PITS

New Hope Crushed Stone & Lime Co., Inc. (NHCS)

Solebury Township, Bucks County, PA

TP Designation	Field Collection Date	Latitude	Longitude	Surveyed GS EL (feet)	Inferred Thickness of hardpack (feet)	Inferred Thickness of fill Mat'l (feet)	Depth to Native Ground (ft)	Elevation of Native Ground (ft)
TP-1	6/22/2022	40.37710	-74.97683	116.3	2	5	7	109.3
TP-2	6/22/2022	40.37786	-74.97667	105.2	7	NE	NE	NE
TP-3	6/22/2022	40.37787	-74.97602	100.8	NE	5	5	95.8
TP-4	6/22/2022	40.37891	-74.97624	111.8	2	6	8	103.8
TP-5	6/22/2022	40.37965	-74.97567	110.1	5	NE	5	105.1
TP-6	6/22/2022	40.37753	-74.97668	101.5	NE	9	9	92.5
TP A1	7/12/2023	40.377452	-74.976319	100.9			5.5	95.4
TP A2	7/12/2023	40.377456	-74.975990	100.8			1.5	99.3
TP A3	7/12/2023	40.377566	-74.975981	100.2			7.2	93.0
	7/12/2023	40.377566	-74.975978	97.1			Top of culvert	--
	7/12/2023	40.377566	-74.975976	93.8			Bottom of culvert	--
TP A4	7/12/2023	40.377448	-74.976467	101.1			3.2	97.9
TP A5	7/12/2023	40.378117	-74.976085	103.1			6.7	96.4
TP A6	7/12/2023	40.378098	-74.976372	105.71			8.0	97.7

NE = Not Encountered

GS = Ground Surface

EL = Elevation

Surveyed Ground Surface Elevations provided by Northeast Surveyors on October 3, 2022

Elevations of data collected on July 12, 2023 obtained using an EOS Arrow Gold and Ipad with active cellular service



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SUPPLEMENTAL TEST PIT LOGS

Project: New Hope Crushed Stone & Lime Company - New Hope, PA 18938			Project Code 212c-pb-02541	TP-A1					
Sheet No. 1 of 1			Date Started 7/12/2023						
Test Pit Location: 40.37745219, -74.97631863			Field Rep M. J. Byle, E. DiFatta						
G.S. Elevation (ft msl): 101			Date Completed 7/12/2023						
Equipment Used:			Note Depths of Seepage Inflow Comment on Trench Stability & Unraveling of Sidewalls						
Test Pit Dimensions (ft):		L x W x D							
DEPTH (feet)	SAMPLE NO. and TYPE	USCS SYMBOL	DESCRIPTION OF MATERIAL	U.C.S. (tsf) ⁽¹⁾	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PI (dim)	FINER No. 200 (%)
	gp		Crushed stone 100						
2	gp		Sand and gravel with angular stone fill 98						
4	sp		Sand 97.5						
4	gp		Angular cobbles 96						
6	sp		Sand, coarse angular 95.5						
6	sm		Native red brown silty sand with gravel oriented to bedding with organic soil 93.5						
8			Bottom of Test Pit 7.2'						
10									
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN SITU, THE TRANSITION MAY BE GRADUAL. --- INTERPRETATIONS BY OTHERS MIGHT DIFFER ---									

⁽¹⁾ UNCONFINED COMPRESSIVE STRENGTHS FOR SOIL SAMPLES BASED ON POCKET PENETROMETER TESTS.

Project: New Hope Crushed Stone & Lime Company - New Hope, PA 18938			Project Code 212c-pb-02541		TP-A2					
			Sheet No. 1 of 1		Date Started 7/12/2023					
Test Pit Location: 40.37745580, -74.97598984			Field Rep M. J. Byle, E. DiFatta		Date Completed 7/12/2023					
G.S. Elevation (ft msl): 101										
Equipment Used:			Note Depths of Seepage Inflow Comment on Trench Stability & Unraveling of Sidewalls							
Test Pit Dimensions (ft):			L x W x D							
DEPTH (feet)	SAMPLE NO. and TYPE	USCS SYMBOL	DESCRIPTION OF MATERIAL	U.C.S. (tsf) ⁽¹⁾	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PI (dim)	FINER No. 200 (%)	
		gp	Angular gravel and cobble fill							
			99.5							
2		ml	Native silt brown with roots							
			97.7							
4			Bottom of Test Pit 3.3'							
6										
8										
10										
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Project: New Hope Crushed Stone & Lime Company - New Hope, PA 18938			Project Code 212c-pb-02541			TP-A3					
			Sheet No. 1 of 1			Date Started 7/12/2023					
Test Pit Location: 40.37756646, -74.97598070 G.S. Elevation (ft msl): 100.3			Field Rep M. J. Byle, E. DiFatta			Date Completed 7/12/2023					
Equipment Used:			<i>Note Depths of Seepage Inflow</i> <i>Comment on Trench Stability & Unraveling of Sidewalls</i>								
Test Pit Dimensions (ft):			<i>L x W x D</i>								
DEPTH (feet)	SAMPLE NO. and TYPE	USCS SYMBOL	DESCRIPTION OF MATERIAL EL (ft): GWT EL:		U.C.S. (tsf) ⁽¹⁾	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PI (dim)	FINER No. 200 (%)	
2	gp		Mixed fill. Encountered 36" RCP apparently used for stream crossing bedded in screenings (angular pea stone)								
4	ml		Native red brown silt located at invert of pipe and in west face of excavation.								
6			93.1 Bottom of Test Pit 8'								
8			92.3								
10			Bottom of Test Pit 8'								
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Project: New Hope Crushed Stone & Lime Company - New Hope, PA 18938			Project Code 212c-pb-02541			TP-A4					
			Sheet No. 1 of 1			Date Started 7/12/2023					
Test Pit Location: 40.37744832, -74.97646655			Field Rep M. J. Byle, E. DiFatta			Date Completed 7/12/2023					
G.S. Elevation (ft msl): 101.2											
Equipment Used:			<i>Note Depths of Seepage Inflow</i> <i>Comment on Trench Stability & Unraveling of Sidewalls</i>								
Test Pit Dimensions (ft):			L x W x D								
DEPTH (feet)	SAMPLE NO. and TYPE	USCS SYMBOL	DESCRIPTION OF MATERIAL		U.C.S. (tsf) ⁽¹⁾	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PI (dim)	FINER No. 200 (%)	
			EL (ft):		GWT EL:						
			Mixed gravelly fill								
2		gp	98								
4			Native silt with trace organics								
6		ml	94.8								
			Bottom of Test Pit 6.4'								
8											
10											
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN SITU, THE TRANSITION MAY BE GRADUAL. --- INTERPRETATIONS BY OTHERS MIGHT DIFFER ---											

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Project: New Hope Crushed Stone & Lime Company - New Hope, PA 18938			Project Code 212c-pb-02541			TP-A5					
			Sheet No. 1 of 1			Date Started 7/12/2023					
Test Pit Location: 40.37811709, -74.97608500			Field Rep M. J. Byle, E. DiFatta			Date Completed 7/12/2023					
G.S. Elevation (ft msl): 103.2											
Equipment Used:			Note Depths of Seepage Inflow Comment on Trench Stability & Unraveling of Sidewalls								
Test Pit Dimensions (ft):			L x W x D								
DEPTH (feet)	SAMPLE NO. and TYPE	USCS SYMBOL	DESCRIPTION OF MATERIAL		U.C.S. (tsf) ⁽¹⁾	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PI (dim)	FINER No. 200 (%)	
2		sp	Gray sand								
4											
6											
			96.5								
8		ml	Native yellow brown silt, mottled								
			95.5								
10			Bottom of Test Pit 7.7'								
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN SITU, THE TRANSITION MAY BE GRADUAL. --- INTERPRETATIONS BY OTHERS MIGHT DIFFER ---											

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Project: New Hope Crushed Stone & Lime Company - New Hope, PA 18938			Project Code 212c-pb-02541			TP-A6					
			Sheet No. 1 of 1			Date Started 7/12/2023					
Test Pit Location: 40.37809782, -74.97637233 G.S. Elevation (ft msl): 105.8			Field Rep M. J. Byle, E. DiFatta			Date Completed 7/12/2023					
Equipment Used: Test Pit Dimensions (ft): <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td></td><td></td><td></td></tr> </table> L x W x D									<i>Note Depths of Seepage Inflow</i> <i>Comment on Trench Stability & Unraveling of Sidewalls</i>		
DEPTH (feet)	SAMPLE NO. and TYPE	USCS SYMBOL	DESCRIPTION OF MATERIAL EL (ft): GWT EL:		U.C.S. (tsf) ⁽¹⁾	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PI (dim)	FINER No. 200 (%)	
2			Fill sand cobbles angular gravel								
4		sp	Native yellow brown shaley silt and clay								
8		cl	97.8								
10			97.3		Bottom of Test Pit 8.5'						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN SITU, THE TRANSITION MAY BE GRADUAL. --- INTERPRETATIONS BY OTHERS MIGHT DIFFER ---											

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SUPPLEMENTAL TEST PIT PHOTOGRAPHS

Test Pit Excavations
New Hope Crushed Stone & Lime Company
New Hope, PA



Description: TP-A1

Date: 7/12/23

Photograph No. 1

Test Pit Excavations
New Hope Crushed Stone & Lime Company
New Hope, PA



Description: TP-A2

Date: 7/12/23

Photograph No. 2

Test Pit Excavations
New Hope Crushed Stone & Lime Company
New Hope, PA



Description: TP-A3

Date: 7/12/23

Photograph No. 3

**Test Pit Excavations
New Hope Crushed Stone & Lime Company
New Hope, PA**



Description: TP-A4

Date: 7/12/23

Photograph No. 4

Test Pit Excavations
New Hope Crushed Stone & Lime Company
New Hope, PA



Description: TP-A5

Date: 7/12/23

Photograph No. 5

Test Pit Excavations
New Hope Crushed Stone & Lime Company
New Hope, PA



Description: TP-A6

Date: 7/12/23

Photograph No. 6