Laboratory Certification For

Pamir Geotechnical Services Company

Lab ID: LCP-016

Issue date: March 12th, 2018
Expiry date: Sept 11th, 2018

This extension letter confirms an additional 6-months certification for the Pamir Lab, which is located at Next to Erada Daily, corner of first junction, Dehmazang, Kabul, Afghanistan. This laboratory should now be considered as certified for use by the US Army Corps of Engineers Transatlantic Afghanistan District (USACE TAA) and other clients, for all tests listed in Table 1 to Table 7, as attached to this letter. The following tests (**ASTM D2922, ASTM D1195, ASTM D1196, ASTM D2950), are not permitted under this 6-month Certification.** This certification will be included with records that are maintained at the ABA and USACE TAA Headquarters in Bagram Airbase, Afghanistan. Retaining the certification will require yearly inspections by the ABA. This certification is also contingent upon the following conditions:

A. Continued employment of the below individual while without his oversight, the laboratory will require recertification:
    a. Mr. Mohammad Khodadadi the laboratory manager;
B. If the calibration certificates of equipment expire or become invalid as per the relevant standard;
C. If the laboratory is moved to a new location, it will require recertification; and
D. If the laboratory fails to comply by the approved lab quality management plan, safety standards, and other criteria set forth in the most up-to-date ABA lab certification manual, the lab certification may be suspended.

For verification and good standing of this certification please check our online directory of laboratories at http://aba.af/lcp_directory.php. The inspection and certification process for the Pamir adhered to procedures outlined by the Materials Testing Center (MTC), which is located at the Geotechnical and Structures Laboratory (GSL), U.S. Army Engineer Research and Development Center (ERDC) in Vicksburg, Mississippi, USA. The MTC is the USACE-authorized agency for certifying laboratories for use in quality control testing for USACE construction projects. To facilitate construction in Afghanistan, the USACE TAA has authorized the ABA to conduct laboratory certifications with strict adherence to MTC protocol. Qualifications of the authors for conducting these certifications include: 12 years of laboratory experience, 12 years of teaching classes on construction materials, and six years of teaching university-level construction classes.

Certified to perform 77 tests, as shown on attached sheets and summarized as:
Table 1: 14
Table 2: 13
Table 3: 14
Table 4: 11
Table 5: 17
Table 6: 2
Table 7: 6

Regards,

Mowdood Popal

President of Afghanistan Builders Association (ABA)

Pamir Certified Laboratory Tests

Table 1. List of Certified Soil Tests

No	Test Method	Test Procedure Title
1	AASHTO T92	Standard Method of Test for Determining the Shrinkage Factors of Soils
2	AASHTO T224	Standard Method of Test for Correction for Coarse Particles in the Soil Compaction Test
3	ASTM D421	Standard Practice for Dry Preparation for Particle Size Distribution & Soil Constants
4	ASTM D422	Standard Test Method for Particle Size Analysis of Soils
5	ASTM D854	Standard Test Method for Specific Gravity of Soils by Water Pycnometer
6	ASTM D1556	Standard Test Method for Density & Unit Weight of Soils in Place by Sand-Cone Method
7	ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics by Modified Effort
8	ASTM D1883	Standard Test Method for California Bearing Ratio (CBR) of Laboratory Compacted Soil
9	ASTM D2166	Standard Test Method for Unconfined Compressive Strength of Cohesive Soil
10	ASTM D2216	Standard Test Method for Laboratory Determination of Water(moisture) Content of Soil and Rock By Mas
11	ASTM D3017	Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
12	ASTM D4318	Standard Test Methods Liquid & Plastic Limits & Plasticity Index
13	ASTM D4718	Standard Practice for Correction of Unit Weight and Water Content for Soils Containing Oversize Particles
14	ASTM D6951	Standard Test Method for Use of the Dynamic Cone Penetrometer in Shallow Pavement Applications

Table 2. List of Certified Advance Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D1586	Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils
2	ASTM D1587	Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes
3	ASTM D2113	Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation
4	ASTM D2434	Standard Test Method for Permeability of Granular Soils (Constant Head)
5	ASTM D2435	Standard Test Methods for One-Dimensional Consolidation Properties of Soil Using Incremental Loading
6	ASTM D3080	Standard Test Method for Direct Shear Test of Soil under Consolidated Drained Condition
7	ASTM D3550	Standard Practice for Thick Wall, Ring-Lined, Split Barrel, Drive Sampling of Soils
8	ASTM D4829	Standard Test Method for Expansion Index of Soils

No	Test Method	Test Procedure Title
9	ASTM D5434	Standard Guide for Field Logging of Subsurface Exploration of Soil and Rock
10	ASTM D6032	Standard Test Method for Determining Rock Quality Designation (RQD) of Rock Core
11	ASTM D5333	Standard Test Method for Measurement of Collapse Potential of Soils
12	CRD-C655	Standard Test Method for Determining the Modulus of Soil Reaction
13	ASTM D6572	Standard Test Methods for Determining Dispersive Characteristics of Clayey Soils by the Crumb Test

Table 3. List of Certified Aggregate (Fine and Coarse) Tests

No	Test Method	Test Procedure Title
1	ASTM C29	Standard Test Method for Unit Weight and Voids in Aggregate
2	ASTM C70	Standard Test Method for Surface Moisture in Fine Aggregate
3	ASTM C127	Standard Test Method for Specific Gravity & Absorption in Coarse Aggregate
4	ASTM C128	Standard Test Method for Specific Gravity & Absorption in Fine Aggregate
5	ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
6	ASTM C535	Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
7	ASTM C566	Standard Test Method for Total Evaporation Moisture Content of Aggregate by Drying
8	ASTM C702	Standard Practice for Reducing Samples to Testing Size
9	ASTM D75	Standard Practice for Sampling Aggregate
10	ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
11	ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, Flat and Elongated Particles in Coarse Aggregate
12	ASTM D4944	Standard Test Method for Field Determination of Water (Moisture) Content of Soil by The Calcium Carbide Gas Pressure Tester
13	ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
14	CRD-C171	Standard Test Method for Determining the Percentage of Crushed Particles in Aggregate

Table 4. List of Certified Grout, Mortar, & Concrete Tests

No	Test Method	Test Procedure Title
1	ASTM C39	Standard Test Method for Compressive Strength of Cylindrical
2	ASTM C42	Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
3	ASTM C138	Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete

No	Test Method	Test Procedure Title
4	ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
5	ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete
6	ASTM C174	Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores
7	ASTM C192	Standard Practice for Making and Curing Test Specimens in Laboratory
8	ASTM C617	Standard Practice for Capping Cylindrical Specimens
9	ASTM C805	Standard Test Method for Rebound Number of Hardened Concrete
10	ASTM C1019	Standard Test Method for Sampling and Testing Grout
11	ASTM C1064	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete

Table 5. List of Certified Asphalt Cement and Asphalt Concrete Tests

No	Test Method	Test Procedure Title
1	AASHTO T59	Standard Method of Test for Emulsified Asphalts
2	AASHTO T79	Standard Method of Tests for Flash Point with Tag Open-Cup Apparatus for Use with Material Having a Flash Point Less than 93˚C (200 ˚F)
3	AASHTO T182	Standard Method of Test for Coating and Stripping of Bitumen-Aggregate Mixtures
4	AASHTO T230	Standard Method of Tests for Determining Degree of Pavement Compaction of Bituminous Aggregate Mixtures
5	ASTM D5	Standard Test Method for Penetration of Bituminous Materials
6	ASTM D36	Standard Test Method for Softening Point of Bitumen
7	ASTM D92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
8	ASTM D546	Standard Test Method for Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures
9	ASTM D2172	Standard Test Methods for Quantitative Extraction
10	ASTM D2489	Standard Practice for Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
11	ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
12	ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
13	ASTM D6926	Standard Practice for Preparation of Asphalt Mixture Specimens Using Marshall Apparatus
14	ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
15	CRD-C649	Standard Test Method for Unit Weight, Marshall Stability, and flow of Bituminous Mixtures
16	CRD-C650	Standard Method for Density and Percent Voids of Compacted Bituminous Paving Mixtures
17	CRD-C652	Standard Test Method for Measurement of Reduction in Marshal Stability of Bituminous Paving Mixtures Caused by Immersion in Water

Table 6. List of Certified Bricks & Masonry Units Tests

No	Test Method	Test Procedure Title
1	ASTM C140	Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
2	ASTM C1552	Standard Practice for Capping CMU/Related Units/Masonry Prisms for Compression Testing

Table 7. List of Certified Rock Tests

No	Test Method	Test Procedure Title
1	ASTM D5607	Standard Test Method for Performing Laboratory Direct Shear Strength Tests of Rock
2	ASTM D3976	Standard Practice for Preparation of Sediment Samples for Chemical Analysis
3	ASTM D5731	Standard Test Method for Determination of the point load strength Index of Rock
4	ASTM D4644	Standard Test Method for Slake Durability of Shales and Similar Weak Rocks
5	ASTM D2938	Standard Test Method for Unconfined Compressive Strength of Intact Rock
6	ASTM D3148	Standard Test Method for Elastic Moduli of Intact Rock Core Specimens in Uniaxial Compressive