Laboratory Assessment Preparation List

***General Assessment Guidance**: This document is intended to provide guidance for laboratories preparing for an AASHTO re:source On-Site Laboratory Assessment, specifically with regard to the preparation and availability of materials required for demonstration of the test method(s). Preparing for the assessment will improve the efficiency, productivity, and benefit of the assessment for the laboratory.*

This document does not address all of the apparatus and procedural requirements which may be evaluated during the assessment. Please consult the applicable AASHTO or ASTM standard for specific requirements. The laboratory may elect to demonstrate the AASHTO, ASTM, or both versions of the test method. The laboratory should be prepared to present required apparatus and to perform the test method in its entirety. Please contact us at (240) 436-4900 if your laboratory has additional questions with regard to preparing for the On-Site Assessment.

Please note, Rock methods have been moved to their own preparation list.

AASHTO	ASTM	Soil Assessment Preparation
R58	**D421**	Have a dry soil sample ready to demonstrate the steps used to prepare samples for applicable tests (T88/D422; T100; T89 and T90). See actual test methods below for further instruction on preparing the samples that will be used for demonstration.
R74		Have a dry sample ready to demonstrate the procedure.
T88	**D422**	Have a sample soaking in dispersion agent. Be prepared to discuss the preparation of the sample to soaking. Be prepared to demonstrate testing procedures after soaking. Have a report showing all calculations and graphing available for review. Have composite correction data for the hydrometer available.
T89	**D4318**	Liquid Limit – Have a soil sample ready to be mixed that exhibits plasticity. A sample may also be pre-mixed. Demonstrate either the one-point method or the multipoint method in its entirety. Have a report demonstrating all calculations and graphs to present for review.
T90		Plastic Limit – Have a soil sample ready to be mixed that exhibits plasticity. A portion of the liquid limit material may be used as applicable. Be prepared to demonstrate the procedure in its entirety using either the hand rolling method or the plastic limit rolling device. Have a report demonstrating all calculations.
T99 **T180**	**D698** **D1557**	Have a cohesive soil sample (avoid sandy and free-draining soils) ready to demonstrate the procedure. The sample may be pre-mixed to a moisture content near optimum. The compaction of one or more points will be observed. The demonstration can be completed using mechanical or manual equipment with a standard or modified effort. Have an example report demonstrating the calculations, graphs, and oversize particle corrections to present for review. Have the calibration data for mechanical equipment available for review.
T100	**D854**	Have a soil sample ready to demonstrate. Be prepared to demonstrate sample preparation, air removal and subsequent steps, and calculations. If the laboratory is requesting both AASHTO and ASTM methods, the lab is required to demonstrate the ASTM version even if the laboratory does not perform it on a regular basis. Be prepared to present pycnometer calibration records.
T134	**D558**	Have a soil sample and cement ready to mix. All other expectations coincide with those listed in T99 / T180 and D698 / D1557.
T135	**D559**	Have two previously compacted samples advanced to the water bath stage and retain all test data.
T136	**D560**	Have two previously compacted samples advanced to the freezer stage and retain all test data.
T190	**D2844**	Have a sample mixed to the desired water content for compaction. It is also recommended that a separate sample be compacted and ready for expansion - pressure testing. Prepare to demonstrate sample preparation, demonstrate compaction, and expansion - pressure testing.

AASHTO	ASTM	Soil Assessment Preparation continued
T191	**D1556**	Have a suitable location to complete testing, the proper apparatus, and sand available. It may be necessary to compact a sample in a controlled environment such as a suitably sized bucket, or wheelbarrow if conditions outside of the laboratory are unsuitable. Be prepared to demonstrate cone correction factor, bulk density of sand, proper field procedures, moisture content determination, and all calculations. Have the sand gradation available for review. If necessary, prior to the assessment, please coordinate the availability of a field technician to demonstrate the test.
T193	**D1883**	Have a sample prepared according to sample preparation method A or B. Be prepared to demonstrate the compaction procedure. A second compacted sample may be prepared and soaking prior to the assessment. Be prepared to demonstrate draining, penetration, and any calculations. Have a sample report available for review.
T208	**D2166**	Have a field sample ready to be extruded or material available for compaction. Be prepared to demonstrate extrusion, trimming, volume determination, and compressive strength testing. Have a report demonstrating all calculations and graphs to present for review.
T215	**D2434**	Have a dry granular soil available for testing. Be prepared to demonstrate sample preparation, apparatus setup, and testing. Have a report demonstrating all calculations to present for review.
T216	**D2435** **D4546**	Have a field sample ready to be extruded or material available for compaction. Be prepared to demonstrate extrusion, trimming, volume determination, and consolidation testing using either method A or B. Have a report demonstrating all calculations and graphs to present for review. Have equipment calibration records available.
T217	**D4944**	Have a field sample containing moisture available for testing. Demonstrate the procedure using the appropriate calcium carbide reagent and have all calibration data available. Be able to complete all calculations.
T236	**D3080**	Have a field sample ready to be extruded or material available for compaction. Be prepared to demonstrate extrusion, trimming, volume determination, consolidation, and shearing of the test sample. Have a test report demonstrating all calculations and graphs for review. Have equipment calibration records available.
T265	**D2216**	Have a sample containing moisture available for testing.
T267	**D2974**	Have a sample containing organics available for testing and furnace at temperature if performing AASHTO method.
T288		Have a dry soil sample available to demonstrate separation over the No.10 sieve and test procedure. Be prepared to demonstrate the calibration of the resistivity meter and perform any calculations at the completion of testing.
T289		Have a dry (if applicable) soil sample available to demonstrate separation over the appropriate sieve(s). Have available the required buffer solutions available. Be prepared to demonstrate the standardization of the meter and the entire test procedure.
T290		Have a dry (if applicable) soil sample available to demonstrate separation over the appropriate sieve(s). Have available the required solutions for demonstrating method B. Be prepared to demonstrate the entire test procedure. Have the calibration curve available for review.
T291		Have a dry (if applicable) soil sample available to demonstrate separation over the appropriate sieve(s). Have available the required solutions and safety precautions for demonstrating method A or B. Be prepared to demonstrate the entire test procedure. If performing method B, have the calibration curve available for review.
T296	**D2850**	Have a field sample ready to be extruded or material available for compaction. If possible, also have a specimen ready for the shearing portion of the test. Be prepared to demonstrate extrusion, trimming, volume determination, mounting the specimen, saturation, and shearing of the test sample. Have a report demonstrating all calculations and graphs to present for review.

AASHTO	ASTM	Soil Assessment Preparation continued
T297	**D4767**	Have a field sample ready to be extruded or material available for compaction. If possible, also have a specimen ready for the shearing portion of the test. Be prepared to demonstrate extrusion, trimming, volume determination, mounting the specimen, saturation, consolidation, and shearing of the test sample. Have a report demonstrating all calculations and graphs to present for review.
T310	**D6938**	Have a nuclear gauge available for test demonstration on-site. It may be necessary to compact a sample in a controlled environment such as a suitably sized bucket, or wheelbarrow if conditions outside of the laboratory are unsuitable. The assessor will view the standard count determination, site preparation, as well as backscatter and/or direct transmission demonstrations (as applicable). Ensure test site areas are prepared to demonstrate the procedure. If necessary, prior to the assessment, please coordinate the availability of a field technician to demonstrate the test. Current gauge calibration records will be examined.
T311		Have a representative sample meeting the mass required based on nominal max size of material. Be prepared to demonstrate initial sample separation, steps performed on plus ¼ inch and minus ¼ inch material, moisture content determination, sample washing and sieving. Have a report available that includes data from both the plus ¼-inch material and the minus ¼ inch material.
	D1140	Have a sample ready to wash. Be able to demonstrate sample preparation, either method A or B of the washing procedure, and the appropriate calculations. If the sample required a significant amount of soaking, please have available the initial sample mass. Have available a report or data sheet for review.
	D1632 (Cylinders)	Have sample and materials ready to demonstrate mixing and molding of cylinders. Be prepared to perform any calculations at the completion of the test. If possible, have a 2nd sample curing, ready to be extruded. Have a report or data sheet available for review.
	D1633	Have a compacted cylinder prepared according to D559, D560 or D1632 and curing in accordance with D1632. Be prepared to demonstrate the steps beginning from the moist-cure period, demonstrate capping if required, compression testing, and all calculations required. Have a report available for review.
	D2487	Have two to four reports ready to present with all information required for D2487 reports or reports in which a Unified Soil Classification System (USCS) classification was reported. Bore logs are one type of report which may contain D2487 information.
	D2488	Have a sample prepared to demonstrate dry strength by natural dry lumps or molded balls. Have an additional wet/moist sample prepared to demonstrate dilatancy, toughness, and plasticity. The laboratory may prepare extra material during sample preparation for T89/D4318 then set the extra material aside for D2488. The assessor may conduct an evaluation of other portions of D2488 through a discussion of terminology as needed.
	D2937	Ensure outdoor test site areas are prepared to demonstrate the procedure. If necessary, please coordinate the availability of a field technician prior to the assessment. If an outside demonstration of the method is not practical, the laboratory shall prepare a bin of compacted soil at least 6 inches in depth and large enough to facilitate demonstration of the test method.
	D4253	Have a sample available to demonstrate either the dry or wet method. Have the calibration records for the molds, surcharge baseplate, dial reading and vibrating table available for review.
	D4254	Have an oven-dry sample available for demonstration. Be prepared to perform any calculations at the completion of testing and have a report available for review.
	D4643	Have a sample containing moisture available for testing and a microwave available.
	D4718	Have results from a Proctor test or field density test, preferably a sample containing at least 5% oversize material, available for calculation of the oversize correction. Have the results of a coarse specific gravity test of the oversize material available.

AASHTO	ASTM	Soil Assessment Preparation continued
	D4829	Have a sample mixed to the appropriate water content and conditioning for 16 hours. Have a data sheet with the required data from the sample preparation recorded. Be prepared to demonstrate compaction and testing procedures after the 16 hours soak period and perform any calculations. Have a completed report available for review.
	D4943	Have a sample prepared to a 10-blow count per D4318. Be prepared to demonstrate specimen preparation. If possible, have a 2nd shrinkage dish with dried material ready to demonstrate the testing procedures. Have the appropriate wax mixture warming prior to test demonstration. Have available the records for the volume determination of the shrinkage dish and wax density.
	D4972	Have enough dry sample available to demonstrate testing procedures. Have all solutions and buffers prepared prior to the assessment. Be prepared to demonstrate standardization of the pH meter and testing procedures. Have a completed report available for review.
	D5084	Have a field sample ready to be extruded or material available for compaction. If possible, also have a specimen ready for the permeability portion of the test. Be prepared to demonstrate extrusion, trimming, volume determination, mounting the specimen, saturation, consolidation, and permeation of the test sample. Have a report demonstrating all calculations and graphs to present for review.
	D6913	Have enough sample prepared according to the method to perform single set or composite sieving. Be prepared to discuss the process for determining which method of sieving is performed. Be prepared to demonstrate the entire testing procedure. A second sample that has been processed and dried can be prepared prior to the assessment for the sieving demonstration portion. Have available for review the sieves and mechanical shaker verification records and completed report.
	D6951	Have a sufficient area prepared to demonstrate the test. It may be necessary to prepare a testing area in a controlled environment such as a in suitably sized bucket or other means if conditions outside of the laboratory are unsuitable. If necessary, prior to the assessment, please coordinate the availability of a field technician to demonstrate the test. Have available the data sheet and report for review.
	D7698	Have a sufficient area prepared to demonstrate the test. It may be necessary to prepare a testing area in a controlled environment such as in a suitably sized bucket or other means if conditions outside of the laboratory are unsuitable. If necessary, prior to the assessment, please coordinate the availability of a field technician to demonstrate the test. Be prepared to demonstrate the test in its entirety. Have available for review the calibration or standardization record for the CIMI, data sheets and a report.
	D7928	Have enough material that has already been initially processed available to demonstrate testing procedures. Be prepared to demonstrate testing procedures from the point of adding sodium hexametaphosphate and water to the sample. Have a report showing all calculations and graphing available for review. Have records available showing that the following have been checked: critical dimensions of the hydrometer, hydrometer volume determination, hydrometer buoyancy, sedimentation cylinder dimensions, temperature-density correction, and meniscus correction.
	G51	Have a sufficient area prepared to demonstrate the test. It may be necessary to prepare a testing area in a controlled environment such as in a suitably sized bucket or other means if conditions outside of the laboratory are unsuitable. If necessary, prior to the assessment, please coordinate the availability of a field technician to demonstrate the test. Be prepared to demonstrate the test in its entirety. Be prepared to demonstrate the standardization of the meter.

AASHTO	ASTM	Soil Assessment Preparation continued
	G57	Have a sample prepared to demonstrate the laboratory portion of the test. Have an outdoor test site area prepared to demonstrate the field procedure. It may be necessary to prepare a testing area in a controlled environment such as in a suitably sized bucket or other means if conditions outside of the laboratory are unsuitable. If necessary, prior to the assessment, please coordinate the availability of a field technician to demonstrate the test. Be prepared to demonstrate the test in its entirety. Have available records related to the accuracy of the voltmeter and the soil box (as applicable).
	G187	Have enough material to fill the soil box appropriately. Be prepared to demonstrate the test in its entirety and perform any calculations at the completion of testing. Have available the records related to the standardization and calibration of the resistance meter and soil box.

State		Soil Assessment Preparation - Other Methods
FM 1-T180		Have a soil sample ready to demonstrate the procedure. The sample may be pre-mixed to a moisture content near optimum. The compaction of one or more points will be observed. The demonstration can be completed using mechanical or manual equipment with a standard or modified effort. Have a report demonstrating all calculations and graphs to present for review.
FM 5-515		Have a sample prepared and ready to demonstrate the compaction procedure and an additional sample soaking. Be able to demonstrate sample preparation, compaction, obtain moisture contents from the sample, and to complete the penetration testing. Have a report demonstrating all calculations.
FM 5-550		Have samples that are typically tested available for demonstration. All buffers and materials should be at room temperature prior to testing and samples should be in their proper storage containers. Field soil samples should have some retained moisture. When leachate is tested, please have the original material soaking in a suitable container covered with water. Be prepared to demonstrate the preparation of a soil sample. Be prepared to demonstrate the calibration of the pH meter and testing procedures on applicable samples.
FM 5-551		Have samples that are typically tested available for demonstration. For soil samples, have a dried sample ready to be screened. When leachate is tested, please have the original material soaking in a suitable container covered with water. All samples and materials should be at room temperature prior to demonstration. Be prepared to demonstrate applicable resistivity portions of the test method according to the materials prepared.
FM 5-552		Have samples that are typically tested available for demonstration. Have all materials available for demonstration purposes according to the procedure being demonstrated. Please be prepared to demonstrate one of the following: **FM5-552:** For soil samples, have a dried sample ready to be screened. When leachate is tested, please have the original material soaking in a suitable container covered with water. Be prepared to demonstrate verification of the Hach Model 8-P meter for low range and Hach Model CD-51 for high range (if applicable). Be prepared to demonstrate soil sample processing. Be prepared to demonstrate the test in its entirety. **SMEWW Section 4110B:** Have the ion chromatograph at equilibrium and all working solutions prepared prior to demonstration. Be prepared to demonstrate calibration of the instrument. Be prepared to analyze a typical sample. If a soil sample is being analyzed, be prepared to demonstrate the soil preparation. Please be able to access or print a copy of the calibration and data report for review. **SMEWW Section 4500CL^- B (for water samples only):** Have a water sample and all reagents available for titration demonstration. Be prepared to demonstrate titrating a reagent blank and a sample, and preparing the sample for testing if any interferences exist in the sample.

State		Soil Assessment Preparation - Other Methods continued
FM 5-553		Have samples that are typically tested available for demonstration. Have all materials available for demonstration purposes according to the procedure being demonstrated. Please be prepared to demonstrate one of the following: **FM5-553:** For soil samples, have a dried sample ready to be screened. When leachate is tested, please have the original material soaking in a suitable container covered with water. Be prepared to demonstrate verification of the pocket colorimeter II for low range. Be prepared to demonstrate soil sample processing. Be prepared to demonstrate the test in its entirety. **SMEWW Section 4110B:** Have the ion chromatograph at equilibrium and all working solutions prepared prior to demonstration. Be prepared to demonstrate calibration of the instrument. Be prepared to analyze a typical sample. If a soil sample is being analyzed, be prepared to demonstrate the soil preparation. Please be able to access or print a copy of the calibration and data report for review. **SMEWW Section 4500SO_4^{2-} E (for water samples only):** Have a water sample and all reagents prepared to demonstrate testing. Be prepared to demonstrate a calibration curve, testing of samples and any correction for interferences. Be prepared to perform any calculations.
Tex-113-E		Have a soil sample ready to demonstrate the procedure. The sample may be pre-mixed to a moisture content near optimum. The compaction of one or more points will be observed. The demonstration can be completed using mechanical or manual equipment with a standard or modified effort. Have a report demonstrating all calculations and graphs to present for review.
Tex-148-E		Have a dried soil available for demonstration. Be prepared to demonstrate soil prep and extraction. Have all calibration solutions prepared prior to the demonstration. Be prepared to demonstrate calibration of the photometer and testing of extracted samples. Be prepared to generate best-fit line graph and perform and perform calculation.