

NTTA Projects	Original Issue Date: 07/07/2010	CRV-05
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Title: Quantity Tracking and Test Frequency Verification		

1.0 PURPOSE:

The purpose of this procedure is to describe the processes and requirements of using the Electronic Data Management System (EDMS) to track construction quantities and verify the frequencies of Project Tests and, when Owner Verification (OV) sampling and testing are considered in the NTTA acceptance decision, OV tests.

2.0 RESPONSIBILITIES

- 2.1 Project Testing Laboratory – The Project Testing Laboratory shall be responsible for performing Project Tests; meeting the requirements of NTTA Guide Schedule of Sampling and Testing; following CRV-01 “Sampling, Testing and Reporting Requirements” and CRV-02 “Random Sampling Requirements”; using the EDMS to report and authorize timely Project Tests; using the EDMS sampling and testing frequency web-reports to monitor the project testing laboratory’s sampling and testing frequency compliance; and, if necessary, adjusting sampling and testing frequencies.
- 2.2 OV Testing Laboratory – The OV Testing Laboratory, when OV sampling and testing are required by Contract Documents, shall be responsible for performing OV sampling and testing; meeting the sampling and testing frequency requirements when established for individual project(s); following CRV-01 “Sampling, Testing and Reporting Requirements” and CRV-02 “Random Sampling Requirements” for OV samples and tests; using the EDMS to report and authorize timely OV tests; using the EDMS sampling and testing frequency web-reports to monitor OV sampling and testing frequency compliance; and, if necessary, adjusting OV sampling and testing frequencies.
- 2.3 Construction Manager (CM) – The Construction Manager shall be responsible for using the NTTA provided Quantity Tracking Forms listed in Section 9.0 of this procedure and to record the locations, quantities and material used; entering construction quantity data from the quantity tracking forms into the EDMS and directing the Project Testing and/or OV testing laboratories to adjust sampling and testing frequencies based on the testing frequency adjustment recommendations provided by NTTA’s designated representative.
- 2.4 NTTA’s Designated Representative – NTTA’s designated representative shall be responsible for using the EDMS to audit and verify the Project Testing laboratory’s sampling and testing frequency compliance; when OV sampling and testing are required by the Contract Documents, using the EDMS to audit and verifying the responsible laboratories sampling and testing frequency compliance; communicating and reporting the testing frequency compliance status to the Construction Manager and the responsible laboratories on a monthly basis; communicating and providing sampling and testing frequency adjustment recommendations, if any, to the Construction Manager and /or the OV Laboratory. If minimum sampling and testing frequencies required in the Contract Documents are not met, initiating and processing a Corrective Action in accordance with QMS procedure QM-10, Corrective and Preventive Action.

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3.0 SCOPE/APPLICABILITY:

This procedure applies to all NTTA construction projects, laboratories, and personnel for sampling and testing to be considered in the NTTA acceptance decision, when directed in writing by NTTA.

4.0 REFERENCES:

- [NTTA Guide Schedule of Sampling and Testing \(Construction Manual, Appendix C\)](#)
- [TxDOT Manual of Testing Procedures](#)
- [CRV-01 Sampling, Testing and Reporting Requirements](#)
- [CRV-02 Random Sampling Requirements](#)

5.0 DEFINITIONS & ACRONYMS

- 5.1 Acceptance Decision – NTTA’s decision to accept the work based on the results and effective implementation of the Quality Assurance Program approved for the project.
 - 5.2 Construction Manager (CM) – NTTA’s representative responsible for the management of the construction, cost, time, quality, contract administration, and monitoring the Contractor’s obligation to protect the safety of on-site staff and the travelling public for a given contract.
 - 5.3 Contract Documents – documents related to a specific project by contract between the NTTA and a Contractor or Design-Build entity.
 - 5.4 Contractor – legal entity entering into an agreement/contract with NTTA through the Design-Bid-Build or Design-Build project delivery methods.
 - 5.5 CVL, Controlled Vocabulary Language – shall mean the list of agreed-upon nomenclature used to uniquely identify each testing report documented Project or OV sampling and testing activity.
 - 5.6 EDMS, Electronic Data Management System – system to electronically store data, documents and/or images for retention, communication, and/or analysis.
 - 5.7 Owner Verification (OV) – inspections, observations, auditing, sampling, testing and other activities performed by the NTTA, or performed on behalf of NTTA, to validate the quality of the work.
 - 5.8 Owner Verification Program – document established to define the OV processes and procedures to be implemented by the Owner, as part of the Quality Assurance Program.
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- 5.9 Project Tests – the tests listed in NTTA’s Construction Manual, Appendix C - These tests are described in the table(s) listed there-in for the “Material or Product” indicating the “Test For” using the “Test Number”, at the “Location”, or “Time of Sampling”, at the “Frequency of Sampling” as listed therein and includes any specific tests required to be performed as prescribed within the requirements of the Contract Documents.
- 5.10 Quality Assurance Program (QAP) – the program for quality management and control of the Project and Work, as described in the Contract Documents.

6.0 PROCEDURE

- 6.1 The Construction Manager shall select the correct Quantity Tracking Form (reference section 9.0, this document) to record the measured quantities, units of measures, and the associated bid items/description codes for general embankment and MSE retaining wall reinforced zone (select backfill,) retained zone backfill and foundation soil, backfill, treated subgrade, untreated and treated base courses, asphalt treated base courses, hydraulic cement concrete, surface treatments, and hot mixed asphalt.
- 6.2 The Construction Manager shall enter data from the forms into the EDMS and authorize quantity tracking records within 24 hours of completing the construction or material delivery to the project.
- 6.3 Both the Project Test Laboratories and the OV laboratory (when required by Contract Documents,) shall use the web-reports identified below (A, B, C) in the EDMS to present and monitor a comparison of actual tests completed versus the minimum required. If the laboratories are found to be noncompliant, they shall adjust their sampling and testing frequencies to maintain continual compliance with the requirements established by the NTTA.
- A) Field Testing Frequency Verification Reports
 - B) Field Sampling and Laboratory Testing Frequency Verification Reports
 - C) Stockpile/Source Sampling and Laboratory Testing Frequency Verification Reports
- 6.4 The NTTA Designated Representative shall use the EDMS to audit and verify that all test laboratory’s sampling and testing frequencies maintain compliance, at a minimum of once per month.
- 6.5 The NTTA Designated Representative shall communicate and report the status of sampling and test frequency compliance to the Construction Manager and the responsible laboratories for meeting Contract Document requirements.
- 6.6 The Construction Manager shall direct the Project Laboratory to adjust sampling and test frequencies to meet the minimum requirements of the Contract Documents. In the case where the OV laboratory reports directly to the NTTA, the NTTA Designated Representative shall direct the OV Laboratory to adjust sampling and test frequencies to meet the minimum requirements of the Contract Documents.
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6.7 If minimum sampling and testing frequencies are noncompliant, based on the requirements of the Contract Documents, and occur more than once, the NTTA Designated Representative shall initiate a Corrective Action Request (CAR) in accordance with QMS procedure QM-10, Corrective and Preventive Action Procedure, to the responsible party (either the Contractor for the Project Laboratory or directly to the OV laboratory).

7.0 REGULATORY REQUIREMENTS:

N/A

8.0 RELATED BOARD POLICY:

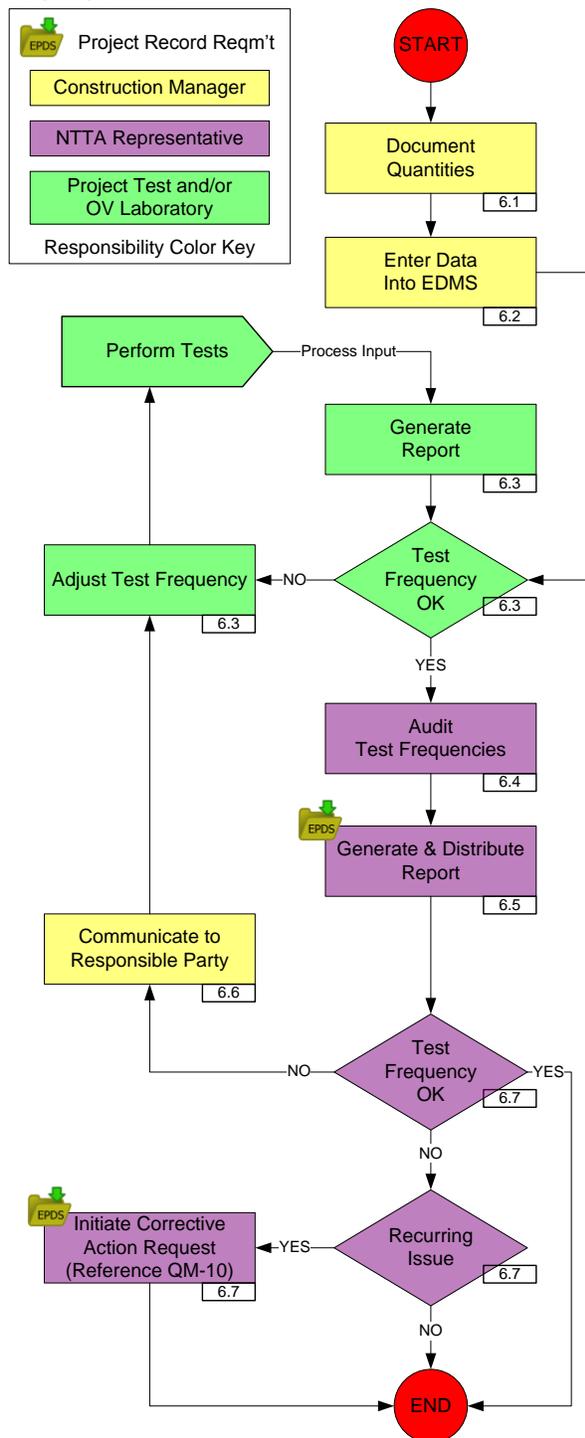
N/A

9.0 COMPONENT DOCUMENTS:

- CRV-05-F1** Placement Quantity Tracking of Earthwork
- CRV-05-F2** Placement Quantity Tracking of Base Courses
- CRV-05-F3** Placement Quantity Tracking of Surface Treatment Aggregates
- CRV-05-F4** Placement Quantity Tracking of Hydraulic Cement Concrete
- CRV-05-F5** Placement Quantity Tracking of Hot Mixed Asphalt Concrete

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10.0 FLOWCHART:



Project Record Reqmt

- Construction Manager
- NTTA Representative
- Project Test and/or OV Laboratory

Responsibility Color Key

- Construction Manager:**
- Record placement and plan quantities on paper form
- Construction Manager:**
- Enter data into EDMS Application
- Project Test & OV Laboratory:**
- Perform tests required by Contract Documents
 - Enter data into EDMS Application
- Project Test & OV Laboratory:**
- Generate reports providing actual versus planned test requirements
 - Reference Contract Documents
- Project Test & OV Laboratory:**
- Determine if sampling and test frequencies meet requirements
 - Adjust sampling and test frequencies if noncompliant
- NTTA Representative:**
- Audit the EDMS Application for sampling and test frequency compliance per the requirements of the Contract Documents
 - Audit to be performed once a month, at a minimum
- NTTA Representative:**
- Generate and communicate Audit Report results
 - Distribute Audit Report to Construction Manager & Test Laboratories
- Construction Manager or NTTA Designated Representative:**
- Direct the responsible Test laboratory to adjust sampling and test frequencies
- NTTA Representative:**
- Determine if sampling and test frequencies are compliant
 - If no, communicate to the Responsible Party (Contractor or OV Lab)
 - If no, determine if non-compliance issues are recurring
 - If yes, go to end
- NTTA Representative:**
- Initiate Corrective Action Request (CAR) to the Responsible Party (Contractor or OV Laboratory) for more than one non-compliance issue in accordance with QMS procedure QM-10

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11.0 REVISION HISTORY

Revision	Revised by:	Date Issued	DRN	Reason for Revision
0	Frank Yuan	07/07/2010	10184	Original Release