SECTION: 1100 - Materials Management

ITEM NUMBER: 1103.2

ITEM: CONTRACT SAMPLING AND TESTING   **REVISED: 09/23/2008**

SCOPE:

To establish the policy and procedure for maintaining the SiteManager Contract sampling and testing requirements information.

GENERAL:

All Contracts let March 2006 and later, with pay items containing materials with globally defined Sampling and Testing Requirements, are required to document material sampling and testing activities utilizing SiteManager in accordance with Policies & Procedures, and QRG's published in the SSS Lotus Notes Database.

The process of generating materials as described in 1103.1 Contract Materials takes a snapshot of global default relationships that were established as defined in 1101.2 Sampling and Testing Requirements. After Contract Materials are generated, the Contract Sampling and Testing window can be used to modify the contract item materials and the sampling and testing requirements of those materials. Examples of common changes to default settings may include;

- changing a conversion factor
- setting a sample type to Small Quantity Acceptance (See QRG)
- setting the rate to Zero for a TSR test requirement on a small asphalt job
- setting the conversion factor to Zero for a fly ash requirement if fly ash is not used in the concrete design
- sample frequency change
- adding S&T Req to an item that was on the OIL. (See example 1&2 in QRG)
- changing a material code due to plan note. (See example 3 in QRG)

Anytime a revision to the Contract S&T Requirements are made, the sampling checklist process must be manually ran to update the sampling and testing requirements displayed on the sampling checklist. If this process is not ran, the effects of the revisions will not be considered by the program on estimate discrepancies or in determining if enough samples or tests have been conducted. Instructions for running the sampling checklist process can be found in the "Sampling Checklist" QRG.

Anytime a revision to the Contract S&T Requirements are made, a remark **must** be added in the

remark icon available on the Sampling and Testing Tab. Anytime a remark is entered, the user should enter a date: their name: and a brief remark. Example:

    3/5/07: Scott Seiter: Set Rate to 0. Less than 10,000 T HMA.

Remarks should be brief. Do not add blank lines in the remarks field. Most custom reports will only display the first 255 characters in a remarks field.

It is <u>not acceptable to delete a test or delete a material from a pay item</u>. This prevents a user from adding a remark as to why the change was made and removes information from the Sampling and Testing checklist and possibly other reports. Changing the testing rate or conversion factor to zero eliminates the test requirement and allows for proper documentation.

Additional guidance showing step by step procedures for making Contract S&T changes are provided in the QRG, "Mat'l Sampling & Testing Req (Revising on a contract)"

To begin:

- Click on Contract Button, double click on the desired Contract from the list
- Double click on the desired Project/Line Item*
- Double click on the desired Material or highlight it and click the OK button

*A list of line items for that project appear. Only pay items that have been associated to a material code will appear on this list. Pay items that have not been associated to any materials will not appear on this list. Materials and their test methods that have not been associated to a pay item can be added to any pay item that appears on this list.

There are two folder tabs in Contract Sampling and Testing Requirements: Materials, & Sampling and Testing. If users identify a need for additional data or modifications to data in this window, users should fill out an electronic SiteManager Support Request Form requesting such data be added or changed.

Authorized users may use the two copy capabilities of this window. The Copy Records option of the Services menu can be used for material substitutions. It will allow the association of a new material to a selected bid item. Sampling and testing requirements may then be set for the new material. The Copy Item Records option of the Services menu will copy all of the materials of an item and their Sampling and Testing requirements to another item.

SiteManager Access Assignments				
Central Office				
Group Code	**Group Name**	**Update**	**Inquiry**	**None**
CENADMIN	Administration		X	
FHWA	Federal Highway Administration		X	
CENINQRY	Inquiry		X	
REGSERV	Regulatory Services			X
SYSADMIN	System Administration	X		
Construction Division				
Group Code	**Group Name**	**Update**	**Inquiry**	**None**
CONSADMN	Administration		X	
CONEST	Records Administration A			X
CONSLOAD	Records Administration B			X
Field Division				
Group Code	**Group Name**	**Update**	**Inquiry**	**None**
DIVADMIN	Administration			X
DIVAUDIT	Auditors			X
DIVINQRY	Inquiry		X	
Materials Division				
Group Code	**Group Name**	**Update**	**Inquiry**	**None**
MATADMIN	Administration	X		
MATAUTH	Branch Managers		X	
MATIAS	Independent Assurance		X	
MATINQRY	Inquiry		X	
MATSTA	Lab Supervisors		X	
MATTEST	Recording Samples / Tests		X	
MATTRAIN	Training Updates			X
Residency				
Group Code	**Group Name**	**Update**	**Inquiry**	**None**
RESADMIN	Administration	X		
RESAUDIT	Auditors		X	
COUNTPRT	C.O. Approvals for Contractors			X
RESINQRY	Inquiry		X	
RESLABMN	Lab Managers	X		
RESLABTC	Lab Technicians		X	
RESINSP	Project Inspectors		X	
RESPRMAN	Project Managers		X	
RESSCTRY	Secretaries / Clerks			X

Materials Folder Tab

The Materials folder tab of the Contract Sampling and Testing Requirements window is used to add or modify the conversion factor and indicate approved source required for a selected material for a bid item. The Material Detail as defined in 1101.1 may also be viewed from this window by selecting the View Material option from the Services menu. This window contains the following fields:

Contract - This displays the SiteManager Contract number.

Project - This displays the SiteManager project number.

Bid Item Code - This displays the code for the bid item.

Desc. 1 and Desc. 2- This displays the description of the bid item.

Item Unit - This displays the unit of measurement and payment for the bid item.

Supp Desc1 and Supp Desc2 - These display additional bid item descriptions if any were added in some other area.

Material Code - This displays the material's code. An adjacent field displays the material's description.

Conversion Factor - The value displayed in this field can be edited. This is a factor that converts the Item unit to material testing unit. The Item quantity multiplied by the Conversion Factor equals material quantity.

Example:
Item 509(B) 0321 CLASS A CONCRETE - has a Measure Unit of CY
Material aggr057 PC Conc Aggregate No 57, Coarse - has a testing unit of TON
A Conversion Factor of 0.9160 will be used to calculate how many TON of coarse aggregate are in a CY of Class A Concrete.
System Calculation: 580 CY of CLASS A CONCRETE x 0.9160 = 531 TON of coarse aggregate.

Approved Source Required - This check box is used to indicate if an approved source must be used. In OkDOT, this indicator will not be used at this time.

Material Quantity - Computed quantity of material in the bid item. It is based on the bid item quantity and conversion factor.

Material Unit - The Material Code unit, defined in the Material Detail Window, is automatically populated in this field. The English unit is shown for English pay items, and the metric unit is shown for Metric pay items. This unit is also automatically populated in the Material Unit field on the Contract Tab of the Sample Record. The Unit displayed or chosen here will be displayed in the Custom (Microsoft Access) Sampling and Testing Checklist, (but not in the built in Sampling Checklist Process Report).

Special Instructions - Text box allowing entry of special instructions or information pertaining to that material and bid item.   Special instructions or notes concerning sampling/testing can be documented. For example; SiteManager sample frequencies are based on material quantity units. If a material is typically sampled or tested based on number of tests per day or station, the message in the special instruction window might say; "Conduct two nuclear density tests per day, minimum".

Special instructions are also provided to describe the basis for the default conversion factor, especially when it may be necessary to adjust the default conversion factor for project specific situations (examples: asphalt binder content, steel quantities in a drill shaft, etc.).

Sampling and Testing folder tab

The Sampling and Testing folder tab is used to enter and modify a material's sampling and testing information for a selected bid item. This window contains the following fields.

Contract - This displays the SiteManager Contract number.

Project - This displays the SiteManager project number.

Bid Item Code - This displays the code for the bid item.

Item Unit - This displays the unit of measurement and payment for the bid item.

Material - This displays the material code.

Material Desc. - This displays the material description.

Desc. 1 and Desc. 2- This displays the description of the bid item.

Supp Desc1 and Supp Desc2 - These display additional bid item descriptions if any were added in some other area.

Producer Supplier Code - This is a look up field for selecting the Producer Supplier. The source for this information is the Producer / Supplier Material associations created in 1105.7 Producer / Supplier Materials. An adjacent field displays the Producer Supplier Name once the record is saved. **It is <u>not</u> a requirement to select a Producer/Supplier for this field. If this field is populated, the same Producer/Supplier must be selected in a sample record for the sample to count towards satisfying Sampling & Testing requirements on a contract. It is strongly recommended to only populate this field when it is critical that a specific material source is utilized in a contract,** for example, if a specific Producer/Supplier of a material is specified in contract or plan documents, it would make sense to indicate the Producer/Supplier in this field.

Sample Type - This field identifies the type of sampling to conduct (DOC Document or MAT Material**). A Sample Type must be selected. For most pay item/material associations, a default Sample Type is defined in the global Sampling & Testing requirements of Material Detail, and is displayed here. Except for unusual contract or site specific conditions, the default Sample Type is the proper choice and should be left unchanged here. The Sample Type chosen in a sample record must match the Sample Type here for the sample record to count towards satisfying Sampling & Testing requirements on a contract.

Acceptance Method - This field identifies the area responsible to authorize the test (Construction Residency, Materials Division etc.**). An Acceptance Method must be selected. For most pay item/material associations, a default Acceptance Method is defined in the global Sampling & Testing requirements of Material Detail, and is displayed here. Except for unusual contract or site specific conditions, the default Acceptance Method is the proper choice and should be left unchanged here. The Acceptance Method chosen in a sample record must match the Acceptance Method here for the sample record to count towards satisfying Sampling & Testing requirements on a contract.

** For additional information on Sample Type and Acceptance Method reference 1109.1 Sample Information

Test Method - This is a look up field for selecting the SiteManager test template used for posting test data. An adjacent field displays the Test Description. The look up field displays only the Test Methods that have been associated to the selected material code, as defined in Material Detail. A Test Method must be selected. For most pay item/material associations, a default Test Method is defined in the global Sampling & Testing requirements of Material Detail, and is displayed here. Except for unusual contract or site specific conditions, the default Test Method is the proper choice and should be left unchanged here.The Test Method chosen in a sample record must match the Test Method here for the sample record to count towards satisfying Sampling & Testing requirements on a contract.

Sample Location - In OkDOT, this field will not be used at this time. A value of "N/A" is commonly displayed.

Sample <u>Rate</u> and <u>Frequency</u> - These fields (___ Samples per ___) define the frequency at which a Sample Information Record should be created and a test performed. The sample frequency fields works in conjunction with the conversion factor to calculate the number of samples needed. The SiteManager sample frequency may differ from frequencies in the printed Sampling & Testing Guide. This may occur when the published sampling frequency is not directly related to pay item or material units. For example, if a frequency is time based (one sample per day), or is based on number of lifts, or number of trucks, there is no way to duplicate that in SiteManager. The default sample frequency is displayed. Users with update rights can change the sample rate and/or frequency. It is recommended that Residencies and Divisions set general guidelines defining when adjustments can be made to sample frequencies. Frequency adjustments should be based on sampling issues, historical quality/performance of specific producer/suppliers, and good judgment of Certified Material Technicians and Supervisors. A brief explanation of the sample frequency adjustment shall be documented in the remarks icon on the tool bar. Valid sample frequency adjustments, properly documented in the remarks icon, shall supersede default sampling frequencies when evaluating material testing requirements for audit purposes.

<u>Example:</u>
Item: 509(B) 0321 CLASS A CONCRETE - Item Unit [CY]
Material: aggr057 PC Conc Aggregate No 57, Coarse - Material unit [TON]
Conversion Factor: 0.9160
Sample Frequency: 1 per 500.000
System Calculation: 580 CY of CLASS A CONCRETE x 0.9160 x 1/500.000 = 1.06 (2 samples)

In this situation, the system would calculate that two samples are needed. However, the second sample is needed just to satisfy a small quantity of aggregate. Assuming a good history of this producer/supplier's quality and consistency, it may make sense for this contract and pay item, to change the sampling frequency to say, 1 sample per 600, yielding a calculated sample requirement of 1. The user would open the remarks icon and type a brief explanation to document the adjustment. Include the date and your name for proper documentation.
   Example: 7/6/06 John Brown - increased frequency to avoid second sample representing a small quantity.

<u>Another example:</u>
Item: 411(S4) 5950 ASPHALT CONCRETE TYPE S4 (PG 76-28OK) - Item Unit [TON]
Material: asco010 Asphalt Concrete Type S4 (PG 76-28OK) - Material Unit [TON]
Conversion Factor: 1
Sample Frequency: 1 per 20,000 for TSR Test (C93005)
System Calculation 423 T of ASPHALT CONCRETE TYPE S4 x 1/20000 = .02115 (1 sample)

In this situation, the system will calculate that 1 sample is needed for the TSR test. However, in the special instructions, users are instructed that a TSR test is not required if there is less than 10,000 TONS of HMA. Therefore the user should change the rate to Zero. A sample will not be required.   The user would open the remarks icon, and enter something like:
Example: 7/8/06 John Brown - No TSR needed < 10,000 T

Sample Units - The unit displayed in this field is automatically populated by the Sample Unit chosen in the Sampling and Testing tab of the "Maintain Sampling and Testing Requirements" window. It may contain a real unit, a " * ", or be blank.

Sample Size - This field will be used to completely identify the required size of the sample. *Example: 110 lbs*

Sample Responsibility - This identifies the area responsible for taking the sample (Contractor, Construction Residency, Materials Division etc.). For most pay item/material associations, a default Sample Responsibility is defined in the global Sampling & Testing requirements of Material Detail, and is displayed here. Except for unusual contract or site specific conditions, the default Sample Responsibility is the proper choice and should be left unchanged here.   The value in this field has no impact on satisfying Sampling & Testing requirements, but is used in certain reports.

Test Responsibility - This identifies the area responsible for conducting the test (Bridge Division, Construction Residency, Materials Division, Traffic Division etc.). For most pay item/material associations, a default Test Responsibility is defined in the global Sampling & Testing requirements of Material Detail, and is displayed here. Except for unusual contract or site specific conditions, the default Test Responsibility is the proper choice and should be left unchanged here. The value in this field has no impact on satisfying Sampling & Testing requirements, but is used in certain reports.

Changes to the previous version of this Policy:

8/21/2007: A decision was made to begin documenting materials in SiteManager for metric projects. This required a change in the system operational parameter, "Allow Material Unit Edit", from yes to no, whereby users can no longer edit the material unit in the contract sampling and testing window. Therefore the Material Unit paragraph was revised and the following paragraphs were removed:

Changes made to the Material Unit on a line item are reflected in all sample records associated to that line item on that contract, including authorized samples.

Discussion: The Aggregate Base material unit (aggr001) defined in the material detail window is TONS (like most aggregates). Therefore the unit of TONS will display by default in the Material Unit field of the contract sampling and testing window. However, there are aggregate base pay items defined in TONS and in CU.YD. If your contract has the Aggregate Base CU.YD pay item, you can change the Material Unit here to CU.YD. and use a conversion factor of 1 (1 CU.YD. of aggregate base material in a CU.YD. of aggregate base pay item). Otherwise you would have to compute the TONS of Aggregate Base in a CU.YD. of Aggregate Base pay item and input that value as the conversion factor.

Revision on 9/23/2008 - removed "English" from English pay items reference in GENERAL (bold) paragraph at top. DSC