

TO: Project Leader: Trenton Diehl, trenton.diehl@strand.com

Manager: Mike Novey DAAR, mike.novey@daarcorp.com

Supervisor: Mark Sponem, mark.sponem@dot.wi.gov

The Division of Transportation System Development, Performance Management Strategic Initiative, Technical Services- Materials Testing Compliance, is compiling information for a random review of the construction materials sampling, testing, and documentation processes. The performance measures of the QA Internal Audit are used for the DTSD criteria for the Materials Testing Measurement Dashboard.

**Key Objectives for the QA Internal Process Audit is for the Project Leader to Confirm the Following:**

* Project staff is performing the program requirements as mandated by Title 23, Code of Federal Regulations Part 637 and the WisDOT Standard Specification for acceptance of WisDOT sampling and testing frequencies for the applicable Quality Management Program(s)
* Project staff is utilizing the suitable HTCP certified technician(s) at the specified time of procuring WisDOT random test sample(s) and performing the required testing measurements on the specified materials
* Project staff is receiving and reviewing all QMP documentation in a timely manner to ensure all required material requirements are being met at the time of the scheduled construction QMP activities

At this time, the BTS-Quality Assurance Unit has selected 15 random statewide construction contracts to be audited for materials sampling and testing compliance. **Contract ID: 20160209010/Project 6723-00-71 CTH E - CTH GG** has been randomly selected for materials sampling and testing audit. The comprehensive audit is based on the review of all the electronic (MTS and MRS) records, construction materials field diary entries, and summary of the Quality Management Program QC documents.

The following QMP Bid Items have been selected for the Construction Materials Sampling/Testing and Documentation review:

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| --- |
| **Quality Management Program Items Selected for Review:** |
| QMP Base Aggregate |
|  QMP Concrete Pavement/Concrete Aggregates |
|  QMP Concrete Masonry Bridges/Concrete Aggregates |
|  Ancillary Concrete Items (Class II and Class III) |

**QA Internal Audit Instructions:**

1) Please make a copy of the attached ***“Construction Materials Sampling/Testing/Documentation questionnaire”*** and save to a file folder for completion.

2) Please assemble the following Quality Management Program (QMP) documentation as requested and provide answers to the Quality Control (QC) and Quality Verification (QV) sampling and testing questions in the ***“Construction Materials Sampling/Testing/Documentation questionnaire”***:

3) Please record the actual Quality Verification tests performed vs. the Quality Verification tests required; as well as, the actual Quality Control tests performed vs. the Quality Control tests required in the following tables.

4) Please record the actual HTCP certified technicians at the specified time procuring WisDOT random test samples and performing field testing on the appropriate materials in the following tables.

**QMP Base Aggregate** – Original “hand written” worksheets as per CMM for each QC test conducted, control charts, as well as all QMP documentation required per WisDOT Standard specifications.

1) Please summarize all QC QMP testing data in the table below as required by WisDOT Standard Specifications.

| **Item Description-List all Approved Aggregate Sources used on Project** | **Item #** | **Quantity** | **No. QV Tests Performed** | **No. QV Tests****Required** | **No. QC Tests Performed** | **No. QC Tests****Required** | **Conforms to frequency****Yes - No** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Base Aggregate Dense 3/4 Inch (Alsum Pit)** | 305.0110 | 21 Tons | 0 | **0** | **1** | **1** | ***Yes*** |
| Base Aggregate Dense 1-1/4 Inch (Alsum Pit) | 305.0110 | 1647 Tons | 0 | **0** | **1** | **1** | **Yes** |
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Remarks:

2) Please explain the rationale for any missing tests per WisDOT Standard Specifications for Quality Control (QC) or Quality Verification (QV) sampling and testing.

**Per Special Provisions, if material quantity is <6000 tons, QV Sampling and testing is optional.**

3) Please provide random number calculations for QC and QV testing for each test sample procured.

**Used production test results.**

4) Please list all HTCP Certified Testers who have performed QC/QV Sampling and Testing and verify the samplers and testers were qualified at the time the samples and tests were conducted. (Note: Expand the table as needed).

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| **List of HTCP Certified Samplers/Testers for Aggregates** | **QC/QV Sampling and Testing Date(s)** | **Date of HTCP Certification Expiration Date** |
| Jason Lohry | 8/17/2015 | 7/31/2018 |
|  |  |  |
|  |  |  |

5) Please identify any QC/QV **Non-Certified** samplers and/or testers conducting work requiring HTCP certifications.

**QMP Concrete Pavement** – all Original “hand written” worksheets as per CMM for each QC test conducted, cylinder reports and graphs, aggregate gradations, as well as all QMP documentation required per WisDOT Standard specifications.

1) Please summarize all QC QMP testing data in the table below as required by WisDOT Standard Specifications.

| **Item Description-Identify number of Sublots tested**  | **Item #** | **Quantity** | **No. QV Tests Performed** | **No. QV Tests****Required** | **No. QC Tests Performed** | **No. QC Tests****Required** | **Conforms to frequency****Yes - No** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Concrete Pavement, 8-Inch (1 Sublot)** | 415.0080 | 64.5 cy | 1 | **1** | **1** | **1** | **Yes** |
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Remarks:

2) Please identify the number of QC concrete aggregate samples procured and tested.

| **Item Description-List all Approved Aggregate Sources used on Project** | **Item #** | **Quantity** | **No. QV Tests Performed** | **No. QV Tests****Required** | **No. QC Tests Performed** | **No. QC Tests****Required** | **Conforms to frequency****Yes - No** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Plover Pit, Fine Aggregate** | 415.0080 | 64.5 cy | 0 | **0** | **1** | **1** | ***Yes*** |
| Carew-Alto Pit, #1 Stone | 415.0080 | 64.5 cy | 0 | **0** | **1** | **1** | **Yes** |
| **Carew-Alto Pit, #2 Stone** | 415.0080 | 64.5 cy | 0 | **0** | **1** | **1** | **Yes** |
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Remarks:

3) Please explain the rationale for any missing tests per WisDOT Standard Specifications for Quality Control (QC) or Quality Verification (QV) sampling and testing.

4) Please provide random number calculations for QC and QV testing for each test sample procured.

5) Please list all HTCP Certified Testers who have performed QC/QV Sampling and Testing and verify the samplers and testers were qualified at the time the samples and tests were conducted. (Note: Expand the table as needed).

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| **List of HTCP Certified Samplers/Testers for Aggregates** | **QC/QV Sampling and Testing Date(s)** | **Date of HTCP Certification Expiration Date** |
| Travis Kurey | 9/6/2016 | 3/12/2018 |
| David Hassman | 9/6/2016 | 3/8/2019 |
|  |  |  |

6) Please identify any QC/QV **Non-Certified** samplers and/or testers conducting work requiring HTCP certifications.

**Concrete Masonry Bridges** - all Original “hand written” worksheets as per CMM for each QC test conducted, control charts, cylinder reports and graphs, aggregate gradations, as well as all QMP documentation required per WisDOT Standard specifications.

1) Please summarize all QC QMP testing data in the table below as required by WisDOT Standard Specifications.

| **Item Description-Identify number of Sublots tested**  | **Item #** | **Quantity** | **No. QV Tests Performed** | **No. QV Tests****Required** | **No. QC Tests Performed** | **No. QC Tests****Required** | **Conforms to frequency****Yes - No** |
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| **Pier #1 Footing (1 Sublot)** | 502.0100 | 81 cy | 0 | **0** | **1** | **1** | ***Yes*** |
| Pier #1 Column (1 Sublot) | 502.0100 | 28.5 cy | 0 | **0** | **1** | **1** | **Yes** |
| **Pier #2 Footing (1 Sublot)** | 502.0100 | 80 cy | 1 | **1** | **1** | **1** | **Yes** |
| **Pier #2 Column (1 Sublot)** | 502.0100 | 28.5 cy | 0 | **0** | **1** | **1** | **Yes** |
| **Pier #1 Column (0 Sublots)** | 502.0100 | 33 cy | 0 | **0** | **0** | **0** | **Yes** |
| **Pier #2 Column (1 Sublot)** | 502.0100 | 33 cy | 0 | **0** | **1** | **1** | **Yes** |
| **Pier #1 Cap (1 Sublot)** | 502.0100 | 33.5 cy | 0 | **0** | **1** | **0** | **Yes** |
| **Pier #2 Cap (1 Sublot)** | 502.0100 | 33.5 cy | 0 | **0** | **1** | **1** | **Yes** |
| **North Abutment (1 Sublot)** | 502.0100 | 45 cy | 0 | **0** | **1** | **1** | **Yes** |
| **South Abutment (0 Sublots)** | 502.0100 | 46.5 cy | 0 | **0** | **0** | **0** | **Yes** |
| **Deck (6 Sublots)** | 502.0100 | 279 cy | 1 | **1** | **7** | **5** | **Yes** |
| **Parapet-East (1Sublot)** | 502.0100 | 27.5 cy | 0 | **0** | **1** | **1** | **Yes** |
| **Parapet (1 Sublot)** | 502.0100 | 27.5 cy | 1 | **1** | **1** | **0** | **Yes** |
| **Parapet-Northwest (0 Sublots)** | 502.0100 | 12 cy | 0 | **0** | **0** | **0** | **Yes** |
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Remarks:

2) Please identify the number of QC concrete aggregate samples procured and tested.

| **Item Description-List all Approved Aggregate Sources used on Project** | **Item #** | **Quantity** | **No. QV Tests Performed** | **No. QV Tests****Required** | **No. QC Tests Performed** | **No. QC Tests****Required** | **Conforms to frequency****Yes - No** |
| --- | --- | --- | --- | --- | --- | --- | --- |
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| **Carew-Alto Quarry #1 Stone (Portage Plant)** | 502.0100 | 636 cy | 0 | **0** | **3** | **3** | ***Yes*** |
| Carew-Alto Quarry #2 Stone (Portage Plant) | 502.0100 | 636 cy | 0 | **0** | **3** | **3** | **Yes** |
| **Plover Pit-Fine Aggregate (Portage Plant)** | 502.0100 | 636 cy | 0 | **0** | **3** | **3** | **Yes** |
| **Carew-Alto Quarry #1 Stone (Waupun Plant)** | 502.0100 | 279 cy | 0 | **0** | **1** | **1** | **Yes** |
| **Carew-Alto Quarry #2 Stone (Waupun Plant)** | 502.0100 | 279 cy | 0 | **0** | **1** | **1** | **Yes** |
| **Plover Pit-Fine Aggregate (Portage Plant)** | 502.0100 | 279 cy | 0 | **0** | **1** | **1** | **Yes** |

Remarks:

3) Please explain the rationale for any missing tests per WisDOT Standard Specifications for Quality Control (QC) or Quality Verification (QV) sampling and testing.

4) Please provide random number calculations for QC and QV testing for each test sample procured.

5) Please list all HTCP Certified Testers who have performed QC/QV Sampling and Testing and verify the samplers and testers were qualified at the time the samples and tests were conducted. (Note: Expand the table as needed).

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| **List of HTCP Certified Samplers/Testers for Aggregates** | **QC/QV Sampling and Testing Date(s)** | **Date of HTCP Certification Expiration Date** |
| Ed Olszewski | 5/26/2016 – 6/16/2016 |  |
| Dan Bachinski | 6/9/2016 – 8/25/2016 | 12/31/2016 |
| Lucas Mebdaugh | 8/4/2016 | 12/31/2016 |

6) Please identify any QC/QV **Non-Certified** samplers and/or testers conducting work requiring HTCP certifications.

**Ancillary Concrete** - including WS5013 forms, as well as all QMP documentation required per WisDOT Standard specifications.

1) Please List all Bid items accepted by Class II Concrete and derive the amount of Cubic Yards allocated for QC sampling and testing. Please identify the number of QC tests (cylinders fabricated) and the number of QV (cylinders fabricated) which are required by the WisDOT Standard Specifications.

| **Item Description-Identify Number of Sublots Tested**  | **List No. of Bid Items** **To be Tested** | **Quantity to be tested in CY** | **No. QV Tests Performed** | **No. QV Tests****Required** | **No. QC Tests Performed** | **No. QC Tests****Required** | **Conforms to frequency****Yes - No** |
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| **Concrete Curb & Gutter** | 601.0557 | 25 cy | 0 | **0** | **1** | **1** | ***Yes*** |
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Remarks:

2) Please identify the number of QC concrete aggregate samples procured and tested.

| **Item Description-List all Approved Aggregate Sources used on Project** | **Item #** | **Quantity** | **No. QV Tests Performed** | **No. QV Tests****Required** | **No. QC Tests Performed** | **No. QC Tests****Required** | **Conforms to frequency****Yes - No** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Concrete Curb & Gutter, Carew-Alto Quarry #1 Stone (Waupun Plant)** | 601.0557 | 25 cy | 0 | **0** | **1** | **1** | ***Yes*** |
| Concrete Curb & Gutter, Plover Pit Fine Aggregate (Waupun Plant) | 601..0557 | 25 cy | 0 | **0** | **1** | **1** | **Yes** |
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Remarks:

3) Please List all Bid items accepted by Class III Concrete by Certification: n/a

4) Please explain the rationale for any missing tests per WisDOT Standard Specifications for Quality Control (QC) or Quality Verification (QV) sampling and testing. n/a

5) Please provide random number calculations for QC and QV testing for each test sample procured.

6) Please list all HTCP Certified Testers who have performed QC/QV Sampling and Testing and verify the samplers and testers were qualified at the time the samples and tests were conducted. (Note: Expand the table as needed).

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| **List of HTCP Certified Samplers/Testers for Aggregates** | **QC/QV Sampling and Testing Date(s)** | **Date of HTCP Certification Expiration Date** |
| David Hassman | 9/8/2016 | 3/8/2019 |
| Derik Bedward | 9/8/2016 |  |
|  |  |  |

7) Please identify any QC/QV **Non-Certified** samplers and/or testers conducting work requiring HTCP certifications.

**Acquisition of Requested QA Audit Materials:**

1)Upon completion of this questionnaire; please attach the ***“Construction Materials Sampling/Testing/Documentation questionnaire”.***

2) Please send your QMP documentation for each specified Item by email, CD rom, flash drive or place on a dedicated FTP link so the QMP information may copied to a BTS-Quality Assurance Drive within two weeks after receiving this announcement.

**ACTION ITEM: Please email the response to** **keith.lundin@dot.wi.gov** **within two weeks after receiving this announcement.**

Your cooperation in the Internal QA Audit is truly appreciated. Please contact me if you have additional concerns or questions.

Keith H. Lundin

**Internal Quality Assurance Auditor**Quality Assurance Unit

Materials Management Section
Bureau of Technical Services

Materials Management Section
Division of Transportation System Development
Wisconsin Dept. of Transportation
**Cell: 608-220-8847**
FAX: 608-245-8959
keith.lundin@dot.wi.gov