
FHWA STIC Program - 2018

Tablet Based Quality Management

Kevin McGhee, PE
Spring Asphalt Seminar 2018

STIC – State Transportation
Innovation Council

Objective

- Bring together QM staff from both contractor and agency
- Electronically integrate roles and responsibilities using tablet-based processes
- Automate quality control, acceptance and payment calculations/decisions
- Enable programmatic-level quality review, as well as in-depth, longer-term research



CUSTOMER NAME: _____
 PROJECT NUMBER: 50.3
 Date: 10/18/16 Serial # 2266
 Station # 3.1
 10/18/16 12:47 PM
 Standard test: 5046 1624
 Count Time: 1 minute
 3.0ft 15ft of center-line
 Thickness: 2.00 in.
 Marshall: 145.6 PD
 Bulkless Density: 101.0 PCF
 Density: 148.6 PCF
 99.102.0% 101-100% -1.53%
 Counts: 46, 634
 Counts: 9959 1662
 Notes: _____

alt Concrete Density Quality Control (QC) Test Report - Nuclear

Item Number: _____
 County: Santa Tampon
 To (Station, MP, Int., etc.): _____
 Lane (Inside, Center, Right, etc.): Left
 Application Rate (lb/sy): 220 lb/sy
 Asphalt Job Mix Number: 16
 Gauge Calibration Date: _____
 Depth Setting (in/mm): _____

Station # 3.2
 10/18/16 12:55 PM
 Standard test: 5046 1624
 Count Time: 1 minute
 7.0ft 15ft of center-line
 Thickness: 2.00 in.
 Marshall: 145.6 PD
 Bulkless Density: 101.0 PCF
 Density: 148.4 PCF
 99.102.5% 101-100% -1.53%
 Counts: 46, 374
 Counts: 9976 1616
 Notes: _____

nuclear Gauge:

Offset	Nuclear Density (kg/m ³)	Section A	Section B
3	148.6	14	14
7	146.4	14	14
8	143.8	14	14
4	144.0	144	144
5	143.8	144	144
9	145.4	147	147
2	147.9	147	147
10	147.4	144.1	144.1
3.7	140.99	3	3
3.10	476.0	8	8
3.11	532.5	7	7
3.12	570.5		

Average: 145.4 142.7
 PASS FAIL

Does the QC Test Section: (circle one)

Comments: Lot length = 5685 ft

QC Technician: J. Torron Date: 10/18/16
 Observed by: [Signature]



ASPHALT NUCLEAR DENSITY THIN LIFT ROLLER PATTERN - WORKSHEET

Control Slip No. 2
 Project or Schedule: Pin 24 - 2015 Item No. 162340 Date: 7-7-2014
 Route: 414 From: 5.436 MP To: 5.826 MP
 Directional Lane (NBL, SBL, etc.): NBL Lane: Right
 Application Rate: 220 Location: Blue Ridge Parkway
 Roller 1: C854 Roller 2: C854 Roller 3: _____

Roller Pattern Data

Serial No.	Calibration Date	Discn Setting	Pass No.	Nuclear Density
2362	2-16	2"	3V	152.3
C854			Site 1	147.9
			Site 2	150.2
			Site 3	150.2
			AVERAGE	148.2
			Pass No.	Nuclear Density
			Site 1	147.8
			Site 2	149.9
			Site 3	149.7
			AVERAGE	149.2
			Pass No.	Nuclear Density
			Site 1	148.7
			Site 2	149.6
			Site 3	149.2
			AVERAGE	149.2
			Pass No.	Nuclear Density
			Site 1	148.9
			Site 2	148.6
			Site 3	149.2
			AVERAGE	148.9

Testing Performed by: Robby Adams Observed by: John T. Davis



Elements

- **People:**
 - Contractor QC techs, project inspectors, researchers, field engineers, and provider professional services
- **Activities:**
 - Basic asphalt density quality control
 - System level metrics
 - Baseline comparisons
 - Ongoing performance tracking
- **Business case study:**
 - Review impacts of technology on quality management



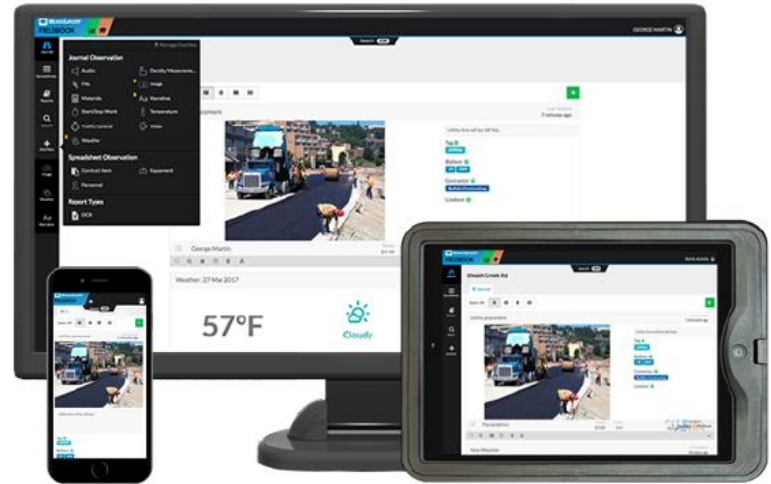
Evaluation

- **Productivity** - time spent with data entry, searching, calculations, etc.
- **Data Volume** - quantity of observations
- **Data Variety** - observation types – text, video, etc.
- **Data Completeness** - components supporting field measured values
- **Data Timeliness** – when becomes available to others
- **Data Availability** – accessibility to project participants



Provider Support

- Project Enterprise – up to 3 PM Schedules
- Electronic “field book” – field density
- Collaborating “portal” application
- Training & system support
- Hardware & connectivity:
 - 15 ruggedized tablets
 - Data plan – 2 GB per device



Schedule

- **Provider contract – Late February**
- **Selection of candidate PM Schedules – March (interested?)**
- **Deployment of Hardware/Training – late May (best case)**
- **Construction – June through November 2018 (completion of contracts)**
- **Review of Trial applications – January 2019**
- **Recommendations – March 2019**



Thank you!

