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# ***Industry Perspective on New FHWA QA Guidelines***

*Ron Sines, P.E.*

*P.J. Keating Company*

*Lunenburg, Massachusetts*



Northeast Asphalt User/Producer Group  
Burlington, Vermont

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# Industry Reaction to QA Specifications



- Initial response was one of reluctance
  - Lack of understanding / resistance to change
  - Perceived to require increased personnel
  - Increased risk, difficult to quantify

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## *Industry Reaction to QA Specifications*

- Overtime Industry has come to accept QA specifications as SOP
  - Recognize QA specifications:
    - Allow flexibility and innovation
    - Provide potential competitive advantage
    - Increased understanding of materials produced and construction methods
      - Resulting in positive impact on public and private work

# *Agency Reaction to QA Specifications*

- Generally mixed response from most agency personnel
  - Lack of understanding / resistance to change
- Those opposed to QA were concerned:
  - Specifications would result in reduction in State personnel
  - The “Fox” would be guarding the hen house

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# *Why implement QA specifications?*

- Key benefits to QA include:
  - Provide assessment of quality on real time basis
  - Provide rational method to apply incentives for work quality
    - Equitable payment for the value received
  - Allows focus on quality characteristics essential for long-term performance
  - Improved materials and construction quality

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# Complaints Regarding QA Specifications

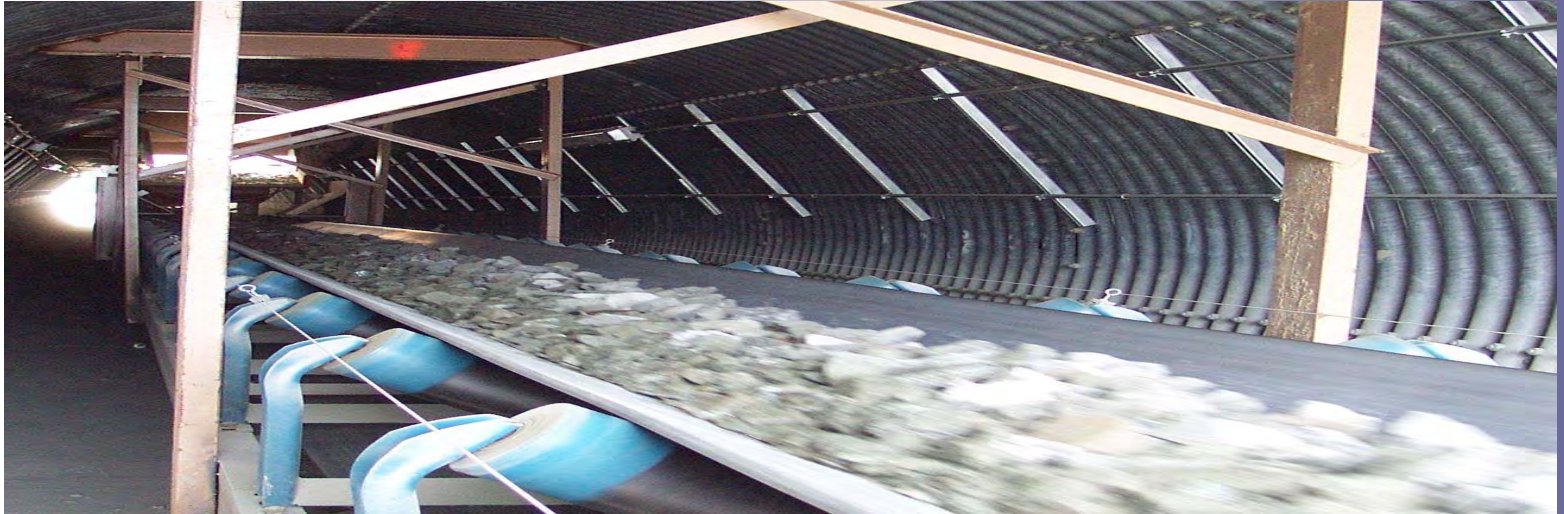


- Test frequencies / subplot sizes
- Quantity of QC testing required
  - Number of parameters monitored
    - Do specifications always focus on lonely those characteristics impacting performance?
- Proscriptive specification components
  - Are some QA specifications Method like?

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# Complaints Regarding QA Specifications



- Redundant QC / QA testing
  - Failure to consider all available data in acceptance decision
- Agency testing may be performed in substandard manner

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# QC Data Consideration

- Is the most informed acceptance decision always made?
  - Many state specifications set QA test frequencies at 1/3 to 1/4 of the rate for QC testing
  - How can the best acceptance decision be made if the larger data set is ignored?
  - Consider some of the quality characteristics specified:
    - Gradation, binder content, mixture volumetrics

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# QC Data Consideration



- Do Federal regulations allow the use of QC data in the acceptance decision?
  - Yes\*
    - \* As long as the QC data is validated through analysis of separate independent samples

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# QC Data Consideration



- Guidance for proper consideration of QC data is provided in:
  - FHWA Technical Advisory T6120.3 “Use of Contractor Test Results in the Acceptance Decision, Recommended Quality Measures, and the Identification of Contractor/Department Risks”

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## *Guidelines Summarized*

- Regulation requires the use of independent samples for verification sampling and testing in the acceptance program
  - Independent samples must contain independent information reflecting all sources of variability associated with the material, process, sampling, and testing in the test results
    - Verification sampling and testing cannot be performed by contractor employees



# *Guidelines Summarized*

- Can contractor split samples test results of agency independent verification samples be used in the acceptance decision?
  - Yes\*
    - \*Under certain conditions



# *Guidelines Summarized*

- Once validated by the agency independent verification test results the lot can be accepted based on either of the following:
  - QC test data and contractor results from split samples of agency verification samples
  - QC test data (excluding split sample results) and agency verification sample results
  - QC test data only
- Is one procedure preferred over another?
  - Results may vary slightly depending on data sets
  - Preferred method may be more perception than reality

# The Million Dollar Question

- Just because we can use Contractor QC data in the acceptance decision should we?
  - Well that depends



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# Well that depends .... On What?



- All things being equal using QC data in the acceptance decision should lead to a more informed decision
  - The larger data pool should provide better estimate of the actual quality provided
  - Procedures should be workable, not needlessly burdensome

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# *Well that depends .... On What?*

- The QA procedures used by the agency must include appropriate safeguards to ensure a level playing field (for the agency and the contracting community)
  - How can we prevent questionable data from being used in the acceptance decision?
    - Could project audits be used for this purpose?
    - Could IA play a larger role in this area?
    - Are appropriate incentives included to discourage unscrupulous behavior?
  - Need to build mechanisms into specification which will increase the level of trust on both sides of the ledger

# Other issues discussed in TA 6120.3



- PWL procedures identified as recommended quality measure
  - Generally supportive of this procedure
    - However, in some cases this procedure may be overly harsh as a lot with a mean and small STD approaches a specification limit
    - Based on the assumption lots are normally distributed, which may not be always be the case

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# Other issues discussed in TA 6120.3



- TA suggests use of computer programs to evaluate acceptance plans including payment adjustment
  - States should provide contractors with results of simulations showing EP curve will pay 100% at the AQL
  - Would lead to better understanding of QA specification acceptance plans

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# Questions

