



U.S. Department of Transportation
**Federal Highway
Administration**



Quality Assurance For Local Agencies

2011 Asphalt Pavement Conference

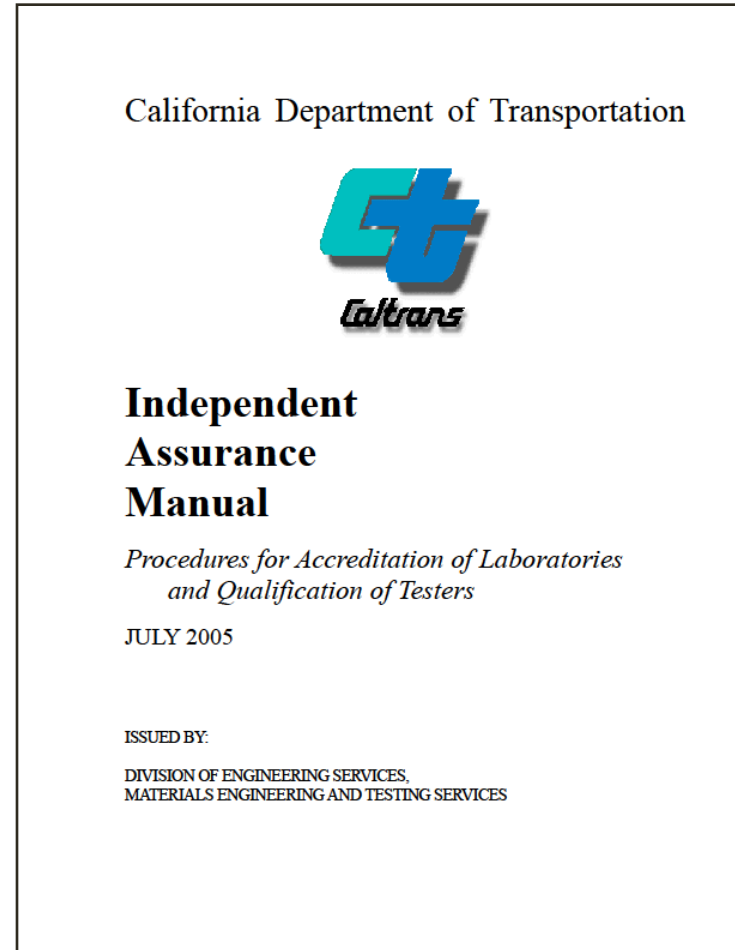


Contributors

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- Seree Yenjai, PE- CALTRANS, LA IA (Dist. 6, 7, 8, & 9)
- Jabra Kawwa, PE – CALTRANS, Oversight Engineer (Dist.8 &9)
- Melissa Ramos – Associate Engineer, City of Alhambra
- Andrew Phukunhaphan, GE, AP Engineering & Testing, Inc.

Caltrans IA Program

- Tester Qualification
- Laboratory Accreditation
 - District IA Staff
 - Local Assistance IA Staff under METS
- Reference Sample Program



Reference Manuals

Caltrans Division of Local Assistance publications

Website: <http://www.dot.ca.gov/hq/LocalPrograms/index.htm>

Local Assistance Procedures Manual (LAPM) – Feb.10, 2009

Section 16.14:

Quality Assurance Program

Section 19:

Oversight and Process Review

STATE OF CALIFORNIA
Department of Transportation
Division of Local Assistance
Office of Procedures Development & Training

LOCAL ASSISTANCE PROCEDURES MANUAL

Processing Procedures for
Implementing Federal and/or
State Funded Local Public
Transportation Projects




February 10, 2009

Reference Manuals, cont.

Quality Assurance Program (QAP) Manual for Use by Local Agencies – Jan. 20, 2011


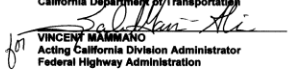
CALIFORNIA DEPARTMENT OF TRANSPORTATION



Quality Assurance Program (QAP) Manual
for Use by Local Agencies

This manual provides quality assurance guidelines for materials used
in Federal-aid projects off the State Highway System.

APPROVED BY:

 DENIX D'AMBIAH Chief Division of Local Assistance California Department of Transportation	<u>01/06/09</u> Date
 VINCENT MAMMIANO Acting California Division Administrator Federal Highway Administration	<u>1/09/09</u> Date

December 2008
Division of Local Assistance

Note: Quality Assurance Programs should be reviewed and updated every five years or more frequently.

LAPM

Local Assistance Procedures Manual

Chapter 16.14, “Quality Assurance Program”

- A sampling and testing program that will provide assurance that the materials and workmanship incorporated in each highway construction project are in conformance with the contract specifications

LAPM

Local Assistance Procedures Manual

Chapter 19, “Oversight and Process Reviews”

- Oversight activities ensure that the implementation of the Federal Aid Highway Program is done in accordance with the applicable laws, regulations and policies

QAP Manual

Consists of:

1 – An Acceptance Program

- Frequency of testing
- Test methods used (CT, ASTM, AASHTO)

2 – An Independent Assurance Program

- On the SHS, CTM used --> CT IA Program
- On the NHS, but off the SHS see QAP Section 5.0

CONCRETE	Yield	518	See test method, See Note (6)	See ASTM C172	1 for each 4 hours production	If yield test used for payment, 1 per each 1200 m ³ , min. or 2 per mix design per job.
	Ball Penetration	533			When test specimen is fabricated and when consistency or uniformity is questionable, min 2 per day	
	Modulus of Rupture	523	1 set of 3 beams 150 x 800 mm (min.) for centerpoint loading and 150 x 150 x 510 mm (min.) for third-point loading		1 set for each 3,000 m ³	Recommend min. 2 sets per shift. Normally, from each set, break 1 beam at 7 days, 1 beam at 10 days, and 3rd beam as required, 50% decrease after 10 sets if all in compliance
	Air Content	504			As required, min. once every 4 hours, each time 518 is performed	Where specified for freeze thaw resistance, acceptance testing shall not be less than once every hour
	Coarse aggregate per m ³ of concrete	529	45 kg		As required to assure uniformity of concrete, see Standard Specifications, Section 90-6.01	
	Thickness	531			As required, see Standard Specifications, Section 40-1.35	
PIGMENTED CURING COMPOUND	Compliance (See Standard Specifications & special provisions)		1-L can		As new shipments arrive on job or each time brand is changed	For chlorinated rubber base type, sample and test if not previously inspected at the source

QAP Manual

Quality Assurance Program (QAP) Manual for Use by Local Agencies – Jan. 20, 2011

- Required for all Local Assistance projects
- Signed by Registered Engineer/City Engineer
- Update once every 5 years
- To be included as part of project specifications

QAP Section 3.1 & 3.2

Guidelines on developing QAP

Section 3.1

- *When local agencies use CT methods on a Federal-aid project, Caltrans can provide IA services (certification of samplers, testers and laboratories) for that Federal-aid project.*

QAP Section 5.0

Developing an Independent Assurance (IA) Program

- For federal projects off the NHS:
 - Hire an outside qualified consultant to perform IA services
 - Have a qualified employee from within the local agency perform IA services
 - Request Caltrans provide IA services in CT methods are used

QAP Section 5.0

If the local agency has an in-house IA Program

- IA person must meet qualification of Section 5.1
- IA staff must remain INDEPENDENT from acceptance testing
 - Main function is to “test the acceptance tester”
- Certify personnel with organization
- Not valid for project outside IA’s agency jurisdiction
- IA person should be first certified in the test method used in certification; e.g. if ASTMs are used, IA person must be certified in ASTMs by recognized entity.
- Participate in a proficiency testing program

QA Checklist

Issue:

ARRA project review

- Inconsistent in project QA across the board
- Misinformation
- Interpret QAP in-correctly
- Lack of information
- Shortage of oversight personnel at local level

QA Checklist, cont.

Results:

- Material Issues
 - Material out of specification
 - May result in poor performance
 - Future maintenance burden for local agency
- Funding
 - Recommend to remove project funding by HQ Oversight Engineer or FHWA auditor (partial or entire amount)

QA Checklist, cont.

Solution:

- QA Checklist
- 1 page checklist

Quality Assurance Program (QAP):	
<input type="checkbox"/>	1. Does the local agency have a copy of their QAP in the project records? (Y/N)
<input type="checkbox"/>	2. Has the QAP been reviewed by Caltrans Local Assistance IA?
<input type="checkbox"/>	3. Who is performing acceptance testing for this project?
<input type="checkbox"/>	4. What test methods are being used? CTM ASTM AASHTO
<input type="checkbox"/>	5. If CTM is used, are current certification copies of laboratory (TL-0113) and acceptance testers (TL-0111) present
<input type="checkbox"/>	5a. If AASHTO is used, are current copies of laboratory's certification and acceptance testers's present.
<input type="checkbox"/>	5b. If ASTM is used, Independent Assurance Sampling and Testing (IAST) is required by another entity.
<input type="checkbox"/>	6. If CTM is used, indicate Caltrans Independent Assurance who issued TL-0113 and TL-0111
<input type="checkbox"/>	6a. If ASTM is used, indicate a firm that will perform independent assurance(IAST) function, follow QAP for Use by Local Agencies
<input type="checkbox"/>	7. Has the independent assurance entity/personnel been certified by Caltrans/AASHTO/NAVFAC?
<input type="checkbox"/>	8. If Independent assurance (IAST) is not certified by any entity, explain why this entity was selected?
<input type="checkbox"/>	9. Are copies of acceptance testing certifications (certification by IA) up-to-date and appropriate for the acceptance testing on this contract? (Y/N)
<input type="checkbox"/>	10. Does the QAP for this contract contain acceptance testing frequency tables? (Y/N)
<input type="checkbox"/>	11. If so, have the frequency tables been modified from those in the Local Assistance sample QAP? (Y/N)
<input type="checkbox"/>	12. Comments:

Material Testing Review:	
<input type="checkbox"/>	1. Are there acceptance sampling and acceptance tests(if ASTM) in the project files? (Y/N)
<input type="checkbox"/>	2. Are acceptance sampling and acceptance testing (if ASTM) conforming to the frequency requirements in the QAP? (Y/N) (Randomly check sampling and test results of at least two significant items containing materials identified in the frequency tables and compare against quantities placed to date.)
<input type="checkbox"/>	3. Is the frequency of acceptance sampling and acceptance testing being monitored by Resident Engineer
<input type="checkbox"/>	4. Are the sampling and testing being performed by individuals certified for those items (i.e. spot-check persons performing sampling and testing vs. certifications on file)? (Y/N)
<input type="checkbox"/>	5. Does the resident engineer see copies of the test results in a timely manner?
<input type="checkbox"/>	6. Are records of testing equipment calibrations being maintained? (Y/N)
<input type="checkbox"/>	7. Is there a summary log of acceptance testing results?
<input type="checkbox"/>	8. If there is a record of a failing material acceptance test, is there a corresponding passing material test or resolution explanation tied to the failing test?
<input type="checkbox"/>	9. Do project records contain copies of approved mix designs and approval letters?
<input type="checkbox"/>	10. Do delivery tickets/load slips contain a product identification number that corresponds to an approved mix design on file in the project records?

QA Checklist, cont.

Project Engineering Phase Review

- 1. Does the local agency have a copy of their QAP in the project records? (Y/N)
- 2. Has the QAP been reviewed by Caltrans Local Assistance IA?

QA Checklist, cont.

Sample of QAP that
has been used
by most if not all.

(Appendix Y of QAP
for Use by Local
Agencies)



Division of Local Assistance, Office of Procedures Development and Training
Quality Assurance Program (QAP) Manual for Use by Local Agencies Revised January 20, 2011

State of California and/or
Recognized by local governments or private associations.

QA Checklist, cont.

Project Engineering Phase Review

- 3. What specification is being used for this project? (Greenbook, Caltrans, etc.)
- 4. Who is performing acceptance testing for this project? (Indicate)

QA Checklist, cont.

Project Engineering Phase Review

- 4a. Who is performing independent (quality) assurance testing, if applicable, i.e. local agency hires a third lab to check on lab doing acceptance testing
- 5. What test methods are being used?
CTM ASTM AASHTO

QA Checklist, cont.

Project Engineering Phase Review

- 5a. If California Test Methods (CTMs) are used, are TL-0111 and TL-0113 presented?

QA Checklist, cont.


TL-0113

Caltrans Qualified Laboratory Inspection Report

Look for:

- 1. Location**
- 2. Test Methods**
- 3. Expiration**

State of California Department of Transportation
QUALIFYING LABORATORIES
Form TL-0113



Expiration date: 10-Mar-12
Inspected by: Seree Yenjai
IA No.: 093
Phone: 916-247-1911
File: Materials Category 500

Laboratory: LGC Inland, Inc.
Address: 41531 Date Street
City: Murrieta State: California Zip: 92562
Lab QC Mgr.: Tim Nevills e-mail: _____
Telephone: (951) 461-1919 Fax #: _____

A certified Independent Assurance (IA) visited this laboratory on (Date) 10-Mar-11
Only the equipment to be used on Caltrans construction projects and/or local construction projects on the National Highway System was checked for qualification.

At the time of qualification, this laboratory had all necessary equipment to perform the California Tests (CT) indicated below. Sampling/Testing personnel shall possess current Caltrans Form TL-0111.
"Certificate of Proficiency" prior to performing any sampling or testing.

<u>CT-105</u>	<u>CT-106</u>	<u>CT-125</u>	<u>CT-201</u>	<u>CT-202</u>
<u>CT-216</u>	<u>CT-217</u>	<u>CT-226</u>	<u>CT-231</u>	<u>CT-309</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

A visual check was performed and documents provided as necessary for the following items:

<input checked="" type="checkbox"/>	A written in-house Safety Program
<input checked="" type="checkbox"/>	A written in-house Quality Control Program
<input checked="" type="checkbox"/>	Copies of current (applicable) test procedures
<input checked="" type="checkbox"/>	Verification that the laboratory participates in Caltrans RSP correlation program
<input checked="" type="checkbox"/>	Test equipment summary for calibration/service of equipment
<input checked="" type="checkbox"/>	Calibration stickers affixed to test equipment (dated within the 12 months)
<input checked="" type="checkbox"/>	Summaries of training records
<input checked="" type="checkbox"/>	Personnel certifications/qualifications
<input checked="" type="checkbox"/>	Work experience summaries
<input checked="" type="checkbox"/>	Nuclear gage license

On 11-Mar-11 this laboratory was qualified by Seree Yenjai #093
Date (Printed name of IA person)
(Signature of IA person)

QA Checklist, cont.

TL-0111

Certificate Of Proficiency

Look for:


- 1. Name of Tester**
- 2. Methods Certified**
- 3. Expiration Date**

TL-0111 (REV.06/00)
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Presents this
CERTIFICATE OF PROFICIENCY
to

Tester Name _____


Employer _____



who is qualified to perform the following tests:

CT105 Exp. 10/26/2011	CT106 Exp. 10/26/2011
CT201 Exp. 10/26/2011	CT202 Exp. 10/26/2011
CT206 Exp. 11/18/2011	CT207 Exp. 11/18/2011
CT211 Exp. 10/26/2011	CT217 Exp. 10/26/2011
CT226 Exp. 10/26/2011	CT227 Exp. 10/26/2011
CT229 Exp. 10/26/2011	suspended until further notice.
CT304 Exp. 10/26/2011	CT301 Exp. 10/26/2011
CT309 Exp. 10/26/2011	CT308 Exp. 10/26/2011
CT382 Exp. 10/26/2011	CT366 Exp. 10/26/2011
CT539 Exp. 11/18/2011	CT521 Exp. 11/18/2011
	CT367 Exp. 08/19/2011

Test method & expiration date _____



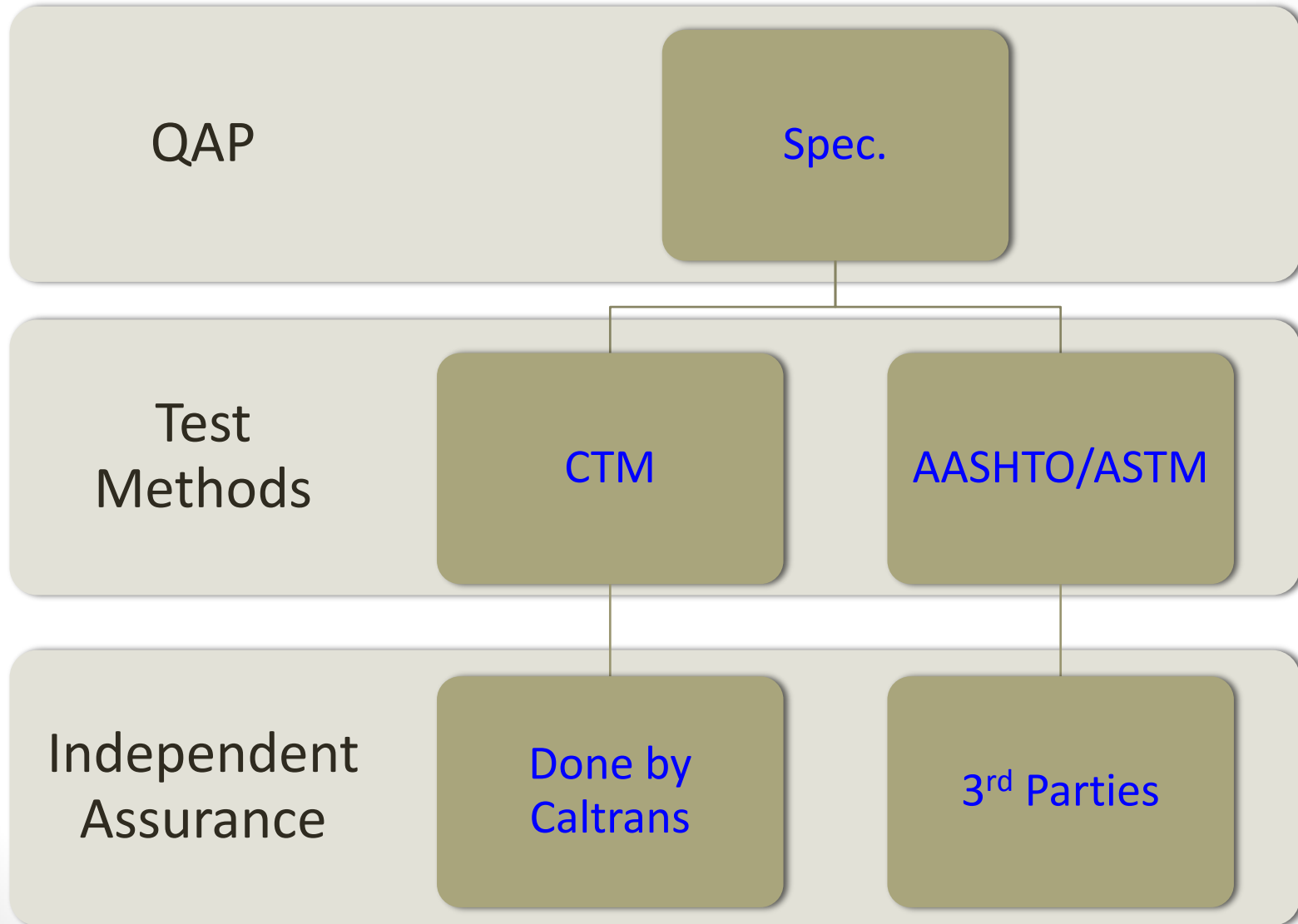
IA #. 93, Sereen Yenjai, PE
(916) 247-1911

Certified Independent Assurance (IA)

Date Issued: February 28, 2011

Note: This certificate is valid as long as the Tester complies with applicable requirements in Caltrans' Independent Assurance Program Manual.

QA Checklist, cont.



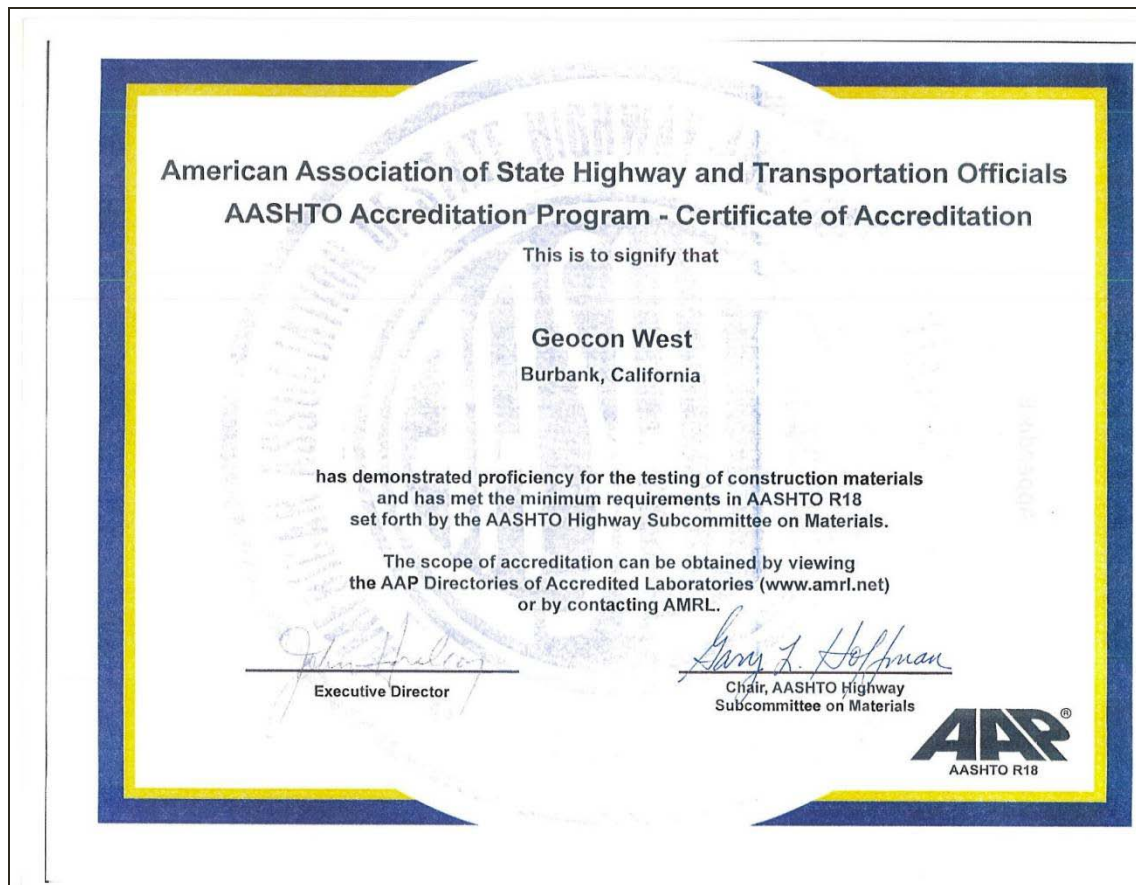
QA Checklist, cont.

Project Engineering Phase Review

- 5b. If AASHTO or ASTM test methods are used, are current (copies of) laboratory's certification on file?

QA Checklist, cont.

AASHTO Certificate of Accreditation



QA Checklist, cont.

AASHTO Accreditation Details

Look for:

1. Location
2. Test Methods
3. Expiration date 2 years after accredited.

New! Accreditation Events
[View my Accreditation Events](#)

New! My Specifiers
[View / Request Specifiers](#)

Popular AMRL Shortcuts
[Submit/View Proficiency Sample Data](#)
[View AASHTO Accreditation Directory](#)
[Apply for AMRL Services](#)
[CRL's Website](#)

My Profile
[Edit Profile / Change Password](#)

Lab Account
[Request Extra Samples](#)
[View Extra Samples](#)
[View My PSP Events](#)
[View Invoices](#)
[View Credits](#)
[View](#)
[View](#)

Lab
[Edit](#)
[Edit](#)
[Edit](#)
[Edit](#)
[Edit](#)

Lab Addresses
[Edit Mailing Address](#)
[Edit Billing Address](#)
[Edit Shipping Address](#)

Laboratory Home
AP Engineering and Testing, Inc.
Pomona, California USA

AASHTO Accreditation Details
Your Quality Analyst is Trudy Keefer. Please [Contact Us](#) with any accreditation questions.

Quality Systems - accredited since 12/7/2009
R18

Soil - accredited since 12/7/2009
R58, T88, T89, T90, T100, T176, T180, T190, T216, T236, T265, T310, D421, D422, D854, D1140, D1557, D2216, D2419, D2435, D2487, D2844, D3080, D4318, D6938

Laboratory Assessment History
Request an Assessment
AMRL Assessments:

Request	Tour	Date	Assessor(s)	Report#
View Request	27	9/10/2009	Alexis Vo	361H

External Assessments:
No external assessments found.

Quality Systems - accredited since 12/7/2009
R18

Soil - accredited since 12/7/2009
R58, T88, T89, T90, T100, T176, T180, T190, T216, T236, T265, T310, D421, D422, D854, D1140, D1557, D2216, D2419, D2435, D2487, D2844, D3080, D4318, D6938

BAC	PGB	EML	AGC	AGF	HMS	HMI
MAR	HVM	HMG	SOL	RVL	CBR	PNT

[Request Sample Change](#)
*NOTE: Hover over acronym for full sample name.

Laboratory Details
Physical Address:
2607 Pomona Blvd.
Pomona, California 91768 USA
[Company Web Site](#)
[Company Email](#)


Laboratory Contact:
Mr. Apichart Phukunhaphan
President
phone1: (909) 869-6316
phone2:
fax: (909) 869-6318
[Lab Contact Email](#)


Accreditation Contact:
Mr. Apichart Phukunhaphan
President
phone1: (909) 869-6316
phone2:
fax: (909) 869-6318
[Accreditation Contact Email](#)

Mailing Address:
2607 Pomona Blvd.
Pomona, California 91768 US

Shipping:
Mr. Apichart Phukunhaphan
President
2607 Pomona Blvd.
Pomona, California 91768 USA
phone1: (909) 869-6316
phone2:
fax: (909) 869-6318
[Shipping Contact Email](#)

Billing:
Mr. Apichart Phukunhaphan
President
2607 Pomona Blvd.
Pomona, California 91768 USA
phone1: (909) 869-6316
phone2:
fax: (909) 869-6318
[Billing Contact Email](#)


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ISO 9001:2008 Certified

QA Checklist, cont.

Army Corps of Engineers

Look for:

1. Location
2. Test Methods
3. Expiration date



DEPARTMENT OF THE ARMY
ENGINEER RESEARCH AND DEVELOPMENT CENTER, CORPS OF ENGINEERS
GEOTECHNICAL AND STRUCTURES LABORATORY
WATERWAYS EXPERIMENT STATION, 3809 HALLS FERRY ROAD
VICKSBURG, MISSISSIPPI 39180-6199

October 15, 2010

Reply to the Attention of:

Concrete and Materials Branch

Apichart Phukunhaphan
AP Engineering and Testing, Inc.
2607 Pomona Blvd.
Pomona, CA 91768

Apichart Phukunhaphan
AP Engineering and Testing, Inc.
2607 Pomona Blvd.
Pomona, CA 91768

Dear Mr. Phukunhaphan:

In reference to your check no. 3547, dated October 1, 2010, and audit agreement, dated October 6, 2010, an audit based on your AASHTO Accreditation was performed on documents submitted by your laboratory. We examined the AMRL On-site Assessment Report No. 361H, dated September 29, 2009 and the AASHTO accreditation certificate effective October 15, 2010.

Your Quality System meets the requirements of the U.S. Army Corps of Engineers. The material test methods that you are validated to perform for the U.S. Army Corps of Engineers were determined

Soil Tests: ASTM D421, D422, D854, D1140, D1557, D2216, D2419, D2435, D2487, D2844, D3080, D3740, D4318, D6938, and E329.

We will add your laboratory to the list of commercial laboratories qualified to conduct material tests for the U.S. Army Corps of Engineers; see the Materials Testing Center homepage at <http://www.wes.army.mil/ST/ATC/mtc.htm>. All Corps offices will be notified of this decision and will have the opportunity to use your services. AP Engineering and Testing, Inc., Pomona, CA will remain on our list of laboratories qualified to conduct material tests until October 15, 2012 two (2) years from the date of the audit. In the event your AASHTO accreditation is suspended in whole or part, AP Engineering and

you use your services. AP Engineering and Testing, Inc., Pomona, CA will remain qualified to conduct material tests until October 15, 2012 two (2) years from the date of the audit. In the event your AASHTO accreditation is suspended in whole or part, AP Engineering and

Sincerely,


Alfred B. Crawley, PE
Director
Materials Testing Center

Copy Furnished:
Mehrdad Golshani / Los Angeles District

QA Checklist, cont.

Project Engineering Phase Review

- 6. If CTMs are used, indicate Caltrans Independent Assurance staff who issued TL-0111 and TL-0113

Test method & expiration date	Test method & expiration date
	IA #. 93, Seree Yenjai, PE (916) 247-1911
Certified Independent Assurance (IA)	Note: This certificate is valid as long as the Tester complies with applicable requirements in Caltrans' Independent Assurance Program Manual.
Date Issued: <u>February 28, 2011</u>	

QA Checklist, cont.

Project Engineering Phase Review

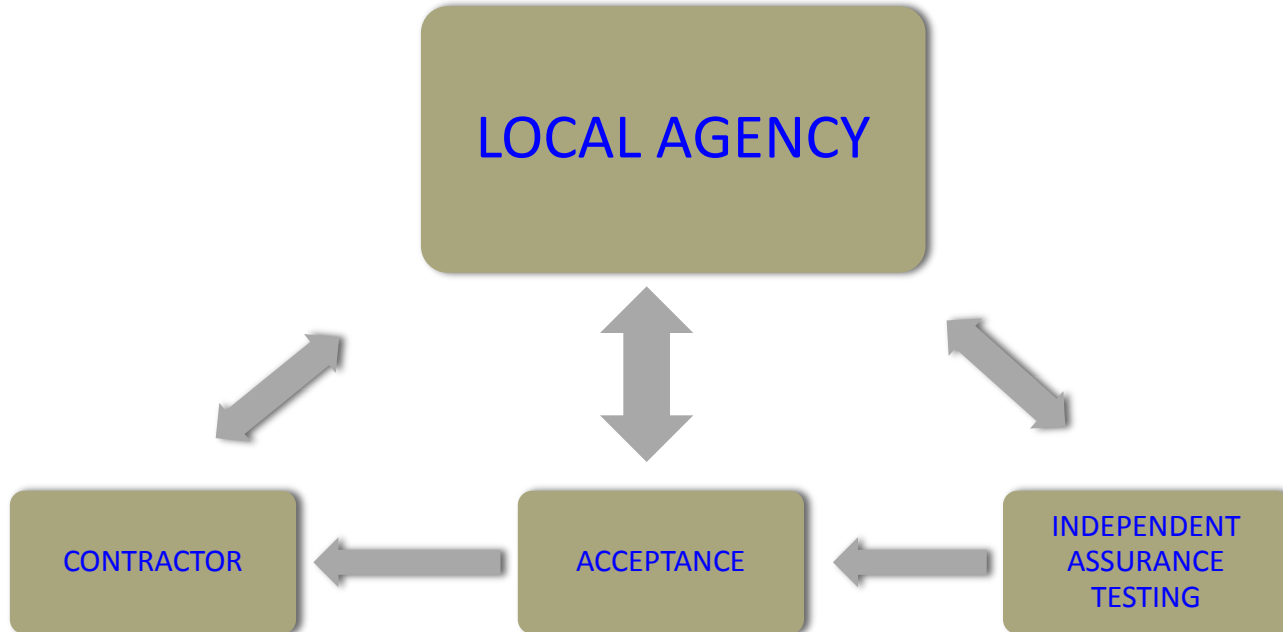
- 6a, If ASTMs or AASHTO are used, IA portion must follow QAP Manual for Use by Local Agencies, Section 5.0

~~n if the local agency's QAP uses CT methods.~~

QA Checklist, cont.

Project Engineering Phase Review

- 7. If ASTM or AASHTO are used, IA must be certified as well.



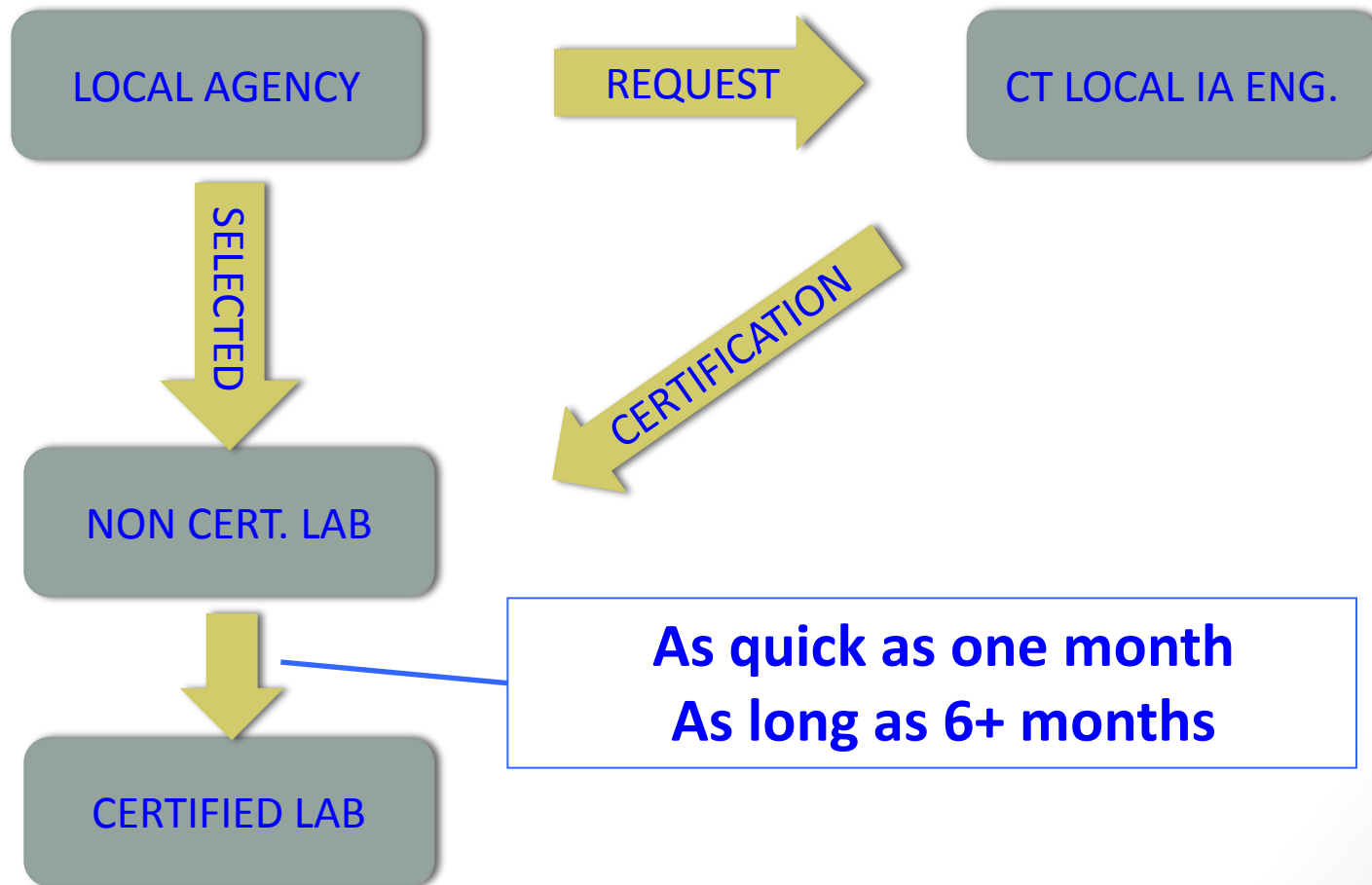
QA Checklist, cont.

Project Engineering Phase Review

8. Info: If CTMs are used, a non Caltrans certified laboratory can be selected and get certified prior to the start of the project.

QA Checklist, cont.

Becoming Caltrans Certified



QA Checklist, cont.

Project Engineering Phase Review

- 9. Are copies of acceptance testing certifications (certification by IA) up-to-date and appropriate for the acceptance testing on this contract? (Y/N)
- 10. Does the QAP for this contract contain acceptance testing frequency tables? (Y/N)

QA Checklist, cont.

Project Engineering Phase Review

- 11. (If 10 is Yes) - Have the frequency tables been modified from those in the Local Assistance sample QAP? (Y/N)
- 12. Local Agency may provide other local agency with Independent Assurance service as a contractor.

Caltrans L.A. I.A. Engineer

Bomasur Banzon, Lead IA Eng (HQ)

(916) 227-7234

Ignocencio Herrera, Dist. 1, 2, &3

(916) 227-7192

David Small, Dist. 4, 5, & 6 (upper)

(916) 247-7923

Seree Yenjai, Dist. 6 (lower), 7, 8, &9

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Afsaneh Ostovar, Dist. 11 & 12

(916) 247-6311