WACA/WSDOT Meeting
Minutes for Thursday, December 11, 2008 Meeting

Attendees:

Adam Hiler, BASF	Eric Clark, Corliss	Felix Chandra, Stoneway
Scott DiLoreto, BASF		Neil Guptill, Glacier NW
Dave Heizenrader, WSDOT	Dick Boss, Cadman	Kent Balcom, Headwaters
Steve Ford, Miles Sand & Gravel		Craig Matteson, Central Pre-Mix
Kurt Williams, WSDOT	Mo Sheikhizadeh, WSDOT	Mike Polodna, WSDOT

Location: **WACA Office in Des Moines, WA, 9:30 am to noon**

Next WACA Meeting Date:
Thursday, March 5, 2009 at WSDOT HQ Mats Lab, Main Conf Room, 9:30 am to noon

Future WACA Meetings Dates:
Tuesday, June 2, 2009, at WACA's Office in Des Moines, 9:30 AM – 12:00 Noon
Tuesday, September 22, 2009, at WSDOT HQ Mats Lab, Main Conf Room, 9:30 AM – 12:00 Noon
Tuesday, December 8, 2009, at WACA's Office in Des Moines, 9:30 AM – 12:00 Noon

Meeting Minutes are available at: http://www.wsdot.wa.gov/biz/mats/

Issue: Performance Specifications for Concrete Mix Designs - Mo S.
Develop performance specification parameters for concrete that can be developed into specifications.

12/11/08 – Mo led a discussion on the proposed performance specification for concrete. There was discussion that the proposed performance spec may be too restrictive, and may lead to all mixes being developed with the optional prescriptive spec. There was discussion of aggregate sizes in shaft, pile and deck mixes. WSDOT has successful mixes for specific uses. How would WSDOT maintain preferred aggregate sizes with a performance spec?

The group discussed the use of larger (1 ½" – 2") aggregates for deck mixes and effects on shrinkage cracking, and that air requirements of 6 ½% - 9 ½% in deck mixes may be difficult to achieve. The also discussed gradations in WSDOT aggregate Standard Specification Section 9-03. Are gradation specifications needed with a performance concrete spec? Will the performance testing expose all low quality concrete? Dick Boss inquired whether Section 9-03 precludes the use of fine aggregate specs with combined gradations. Kurt and Mike will investigate.

Answer: 9-03.1(2)B Grading, and 9-03.1(5) B Grading are independent of each other. If you are using the Combined Gradation chart in 9-03.1(5)B, your fine aggregate does not need to meet 9-03.1(2)B. Section 9-03.1(2)B applies only when you are using 9-03.1(4) C Grading for your coarse aggregate.

Mo presented changes made by the subcommittee to the performance test limits in 6-02.3(2)C. It was suggested to add a lab certification requirement to run these tests.
Discussion of Section 6-02.3(2)D SCC Concrete included the need for the fineness modulus, whether concrete temperature limits of 55-90 degrees are achievable on hot days, column segregation, and viscosity modifying admixture.

Mo will move 6-02.3(5)D Test Methods to Section 9.

6-02.3(6)E Mass Concrete – Mo handed out an article from FHWA regarding high performance concrete and mass concrete. One mix used 83% fly ash and slag. See the attached notes.

Action Plan: Further discussion at March 2009 WACA meeting– Mo S.

Issue: Degradation for concrete Aggregate/Base Course – Kurt W.
A research study is on-going to test the effect of using aggregate with low degradation values in concrete mixes.

12/11/2008 – Kurt reported that samples were cast at WSU in November. The study will take 1 year. The aggregate used in the study tested out at a WSDOT degradation of 30. We discussed that we may need to use crushed aggregate in order to get lower degradation values. Dick has a source of crushed aggregate with a degradation of 4 that could be used in the next round.

Action Plan: Continue to give updates to WACA at Monthly Meetings – Mike P.

Issue: Truck Scales – Gary A.
An update to WSDOT Standard Specification Section 1-09.2 Weighing Equipment is being considered by the WSDOT/AGC Administration Team.

12/11/2008 – Gary Albert was not in attendance to provide an update.

Action Plan: issue complete until update available from AGC on this issue.

Issue: Acceptance Test for pumped concrete – Bob R.
The air content in concrete changes when the concrete is pumped, and there is variability in how much the air content changes depending on the type of pump and boom configuration.

12/11/2008 – This issue is complete unless it is brought up again.

Action Plan: Issue Complete.

New Issue: Class 4000P Concrete – Nominal Maximum Aggregate Size of ½ inch – Mo S.
Standard Specification Section 6-02.3(2)A Contractor Mix Design requires the nominal maximum size aggregate for Class 4000P to be ½ inch. This requires a AASHTO Grading No.7 per Section 9-03.1(4)C of the Standard Specifications. There have been cases of AASHTO Grading No. 8 being used for class 4000P and WSDOT has been informed that AASHTO Grade No. 7 is not always available.
AASHTO Gradations from Section 9-03.1(4)C are shown in Table on next page:

Passing	**AASHTO Grading No. 467**		**AASHTO Grading No. 4**		**AASHTO Grading No. 57**		**AASHTO Grading No. 67**		**AASHTO Grading No. 7**		**AASHTO Grading No. 8**	
Sieve Size	**Min.**	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**
2" square	100	—	100	--	—	—	—	—	—	—	—	—
1½ square	95	100	90	100	100	—	—	—	—	—	—	—
1 square	—	—	20	55	95	100	100	—	—	—	—	—
¾ square	35	70	0	15	—	—	90	100	100	—	—	—
½ square	—	—	--	--	25	60	—	—	90	100	100	—
⅜ square	10	30	0	5	—	—	20	55	40	70	85	100
U.S. No. 4	0	5	--	--	0	10	0	10	0	15	10	30
U.S. No. 8	—	—	--	--	0	5	0	5	0	5	0	10
U.S. No. 16	—	—	--	--	—	—	—	—	—	—	0	5

12/11/2008 – Mo reported that the NMS for the WSDOT 4000P mix will be changed from ½" to 3/8"is in the December 1 amendment package and will be in the January 2008 Specification amendments. This will allow the use of AASHTO Grading No. 8.

<u>Action Plan: Issue Complete</u>

New Issue: Concrete Mix Design Documentation Requirements – Tamson Omps
09/17/2008 – Tamson would like to submit multiple cement brands on 1 mix design form. She noted that she's sent mix designs to an Olympic Region PE office and been repeatedly rejected and taking a long time to review. The WSDOT PE office wants an A,B,C, or D on the submittals to identify the different cement brands. Kurt noted that currently WSDOT does not accept multiple cements on mix designs and he does not see this changing any time soon in part because the FHWA will need to buy into any changes to the concrete mix design process. As far as the concrete mix designs taking a long time to review Kurt noted that the ultimate solution could be an online concrete mix design submittal process, but that is in the future. Kurt noted that he would contact the Olympic Region to check on hold ups on the concrete mix designs.
Craig Matteson reported that he submits 2 different mix designs for the 2 cements he has been using.
<u>Action Plan: Mo, Kurt, and Mike will discuss internally and work with the Olympic Region to improve the process.</u>

New Issue: Streambed Aggregates – Gary Albert
This regards WSDOT Standard Specification 9-03.11 Streambed Aggregates.

09/17/2008 – Gary Albert passed out a handout questioning why 65%-95% must pass the 2" sieve for 9-03.11(1) Streambed Sediment. Gary thinks it should be 65%-100% as in the Power Point presentation on the WSDOT Materials website. Sand and gravel operations in Skagit and Snohomish Counties cannot meet this spec with bank-run material. They found only one operator that could meet the spec by blending materials from 2 different pits. There usually isn't enough tonnage on the projects to make this worth the trouble.

12/11/08 – Kurt noted the information below and reported that the 2" size is required by WDFW.
Answer: The Washington Department of Fish and Wildlife (WDFW) was concerned that the material would be to fine and wanted 2 inch material in the stream bed gravel. In order to meet this requirement WSDOT set the limit to ensure that some 2" aggregate would be retained. This gradation structure satisfies the flow conditions of many lowland streams with out the addition of cobbles. *Issue Complete*

Item 2 for 9-03.11(1); 5%-9% passing the #200 sieve is required. Gary reports that in the past, the contractor would be fined for putting that much silt into a river. This is a significant departure from the past and the Power Point does not address the rationale for the change. He thinks the spec should read 0%-9% passing.

12/11/08 – Kurt noted the information below and reported that the fines are used to plug in the coarser aggregate and to avoided the creation of french drains where water disappears into the coarse aggregate. The use of the fines has been validated on 2 WSDOT projects.
Answer: The main reason this specification was developed was due to reported failures of streambeds placed in low flow streams during the summer months. The aggregate structures used in the past had no fines in it (material passing the No. 4 sieve). The mode of failure was piping and sub-surface flow during low flow conditions. In other words, the stream would disappear when it entered the rehabilitated area and then reappear on the other side of the rehabilitated area. The WSDOT was inadvertently making french drain systems in our fish barrier removal projects. To ensure a good seal, fines are needed. Also base on our experience on Wild Creek (emergency scour protection, and fish barrier removal project) and SWR Bowman creek project validated use of these fines. In both of these projects the water cleared up in about 15 - 20 minutes. *Issue Complete*

Item 3 regards re-using material excavated out of the streambed. On a job Gary was involved in, the contractor could not re-use the material and had to use new material.
12/11/08 – Kurt noted the information below and agreed that reuse is the best option and the issue is being further reviewed.
Answer: WSDOTs research indicates reusing streambed material is the best option. The streambed aggregate team (HQ Materials, Hydraulics, and WDFW) investigated the regions and Western Federal Lands. The original streambed material has been re-used on fish barrier removal projects successfully and no performance problems were reported. This issue is being looked into further to determine why this is not allowed on WSDOT projects.

Item 4 regards 9-03.11(2) Streambed Cobbles. Cobbles (and Boulders?) have to be tested and re-approved annually. Gary questions the need for this when these are the most durable of the gravel family, and concrete aggregates only need re-approval every 5 years. He also states that nobody re-screens cobbles to make 4", 6", 8", 10", or 12" cobbles.

12/11/08 – Kurt agreed to allow 5 year approval. This needs to be updated in the ASA data base which requires programming information for streambed gravel.
Answer: WSDOT agrees that the approval length for streambed aggregates should be 5 years and is working to update the ASA data base so this is reflected. The update is expected to be completed sometime early next year.

Item 5 regards 9-03.11(4) Habitat Boulders. Gary reports using quarried rock in many applications as fish "resting" rocks in streams in the past. Some think that the rocks need to be rounded so they are fish friendly. Gary thinks not. There are few pits where you can get boulders, and the larger ones are even scarcer.
12/11/08- This issue is being looked into by WDFW and WSDOT HQ Hydraulics.
Answer: The streambed aggregate team was aware that this could be a potential challenge and it does not appear that WDFW had any issues using quarried rock for streambed material and habitat boulders. This issue as well as the use of quarry rock for cobbles is being looked into with the WDFW and WSDOT HQ Hydraulics section.

Action Plan: Issues are completed as noted above and other items will be tracked to completion: Mike and Kurt

New Issue: Qualification of Concrete Supplier – Concrete Mixer Truck Approval – Steve Ford
This regards NRMCA stickers on mixer trucks and WSDOT Standard Specification 6-02.3(4)A.

12/11/08 – Kurt and Mo determined that the sticker is not required per WSDOT spec. Dave H stated that the Construction Manual needs to be updated.

Update to Section 6-2.2B On-Site Inspection of Trucks of the Construction Manual has been submitted and states the following:
Whenever ready mix concrete is used on the project, the Inspector shall be alert to the condition of the trucks being used for delivery. Trucks used for delivery of other than commercial or lean concrete must be pre approved for use. Pre approval of trucks is part of the plant approval process described in 6-2.2(A). Approved trucks will be identified on a NRMCA truck list (for plant manager inspected facilities) or by an NRMCA sticker for the years of approval. In some cases an approved truck may not yet have received a sticker from NRMCA. In these cases the ready-mix producer shall notify the Project Engineer in writing that the truck has passed inspection, and that it has been approved for use. The inspector should verify that trucks meet the following: Per Standard Specification 6-02.3(4)A: All delivery trucks must have operational revolution counters and a device to measure the amount of water added at the site. All trucks are required to be operated within the rated capacity stated on the manufacturer's data plate. The Inspector needs to check the concrete being discharged down the chute to ensure the concrete is uniformly mixed. If the concrete does not appear uniformly mixed the inspector can request that the concrete plant re-inspect the truck. If the concrete mixer truck cannot deliver uniformly mixed concrete the truck needs to be rejected.

Action Plan: Update the Construction Manual – Dave H.

New Issue: Proposed changes to STD Specs Section 9-23 Admixtures – Kurt Williams

12/11/08 – The group proposed adding a Type S admixture to the specifications and some format changes. Latest Revision date January 22, 2009 is shown below:

9-23.6 Chemical Admixtures for Concrete

Acceptance of chemical admixtures will be based on Manufacturer's Certificate of Compliance. If required by the Engineer, admixtures shall be sampled and tested before they are used. A 1 pint (500 milliliter) sample of the admixture shall be submitted

to the WSDOT Headquarters Materials Laboratory for testing 10 days prior to use. Chemical Admixtures shall contain less than one percent chloride ion (Cl-) by weight of admixture.

9-23.6(1) Air Entraining Admixtures

Air Entraining Admixtures shall meet the requirements of AASHTO M 154 or ASTM C 260.

9-23.6(2) Type A Water-Reducing Admixtures

Type A Water-Reducing admixtures shall conform to the requirements of AASHTO M 194 Type A or ASTM C 494 Type A.

9-23.6(3) Type B Retarding Admixtures

Type B Retarding admixtures shall conform to the requirements of AASHTO M 194 Type B or ASTM C 494 Type B.

9-23.6(4) Type C Accelerating Admixtures

Type C Accelerating admixtures shall conform to the requirements of AASHTO M 194 Type C or ASTM C 494 Type C and only non-chloride accelerating admixtures shall be used.

9-23.6(5) Type D Water-Reducing and Retarding Admixtures

Type D Water-Reducing and Retarding admixtures shall conform to the requirements of AASHTO M 194 Type D or ASTM C 494 Type D.

9-23.6(6) Type E Water-Reducing and Accelerating Admixtures

Type E Water-Reducing and Accelerating admixtures shall conform to the requirements of AASHTO M 194 Type E or ASTM C 494 Type E and only non-chloride accelerating admixtures shall be used.

9-23.6(7) Type F Water-Reducing, High Range Admixtures

Type F Water-Reducing, High Range admixtures shall conform to the requirements of AASHTO M 194 Type F or ASTM C 494 Type F.

9-23.6(8) Type G Water-Reducing, High Range and Retarding Admixtures

Type G Water-Reducing, High Range and Retarding admixtures shall conform to the requirements of AASHTO M 194 Type G or ASTM C 494 Type G.

9-23.6(9) Type S Specific Performance Admixtures

Type S Specific Performance Admixtures shall conform to the requirements of ASTM C 494 Type S. When a Type S admixture is used a report on the performance characteristics of the Type S admixture shall be submitted along with the WSDOT concrete mix design (WSDOT Form 350-040). The report shall describe the performance characteristics and provide data substantiating the specific characteristics of the Type S admixture in accordance with ASTM C 494.

~~Admixture~~	~~Specification~~	
~~Air entraining~~	~~AASHTO M 154~~	~~ASTM C 260~~
~~Water Reducing~~	~~AASHTO M 194 Type A~~	~~ASTM C 494 Type A~~
~~Set Retarding~~	~~AASHTO M 194 Type B~~	~~ASTM C 494 Type B~~
~~* Accelerating~~	~~AASHTO M 194 Type C~~	~~ASTM C 494 Type C~~
~~Water Reducing/ Set Retarding~~	~~AASHTO M 194 Type D~~	~~ASTM C 494 Type D~~
~~* Water Reducing/~~	~~AASHTO M 194 Type E~~	~~ASTM C 494 Type E~~
~~Accelerating High Range Water-Reducing~~	~~AASHTO M 194 Type F and G~~	~~ASTM C 494 Type F and G~~

~~* Accelerating admixtures are only allowed for use in the following applications: In Controlled Density Fill (also known as Controlled Low Strength Material) in accordance with Section 2-09.3(1)E Backfilling, in Portland Cement Concrete Pavement in accordance with Section 5-05, and in Section 5-05.3(1) Concrete Mix Designs for Paving.~~

~~In addition to the above Specifications, admixtures proposed for use shall contain less than one percent chloride ion (Cl-) by weight of admixture and only non-chloride accelerating admixtures shall be used.~~

~~Acceptance of admixtures will be based on Manufacturer's Certificate of Compliance.~~

~~If required by the Engineer, admixtures shall be sampled and tested before they are used.~~

~~Samples shall be submitted for testing 10 days prior to use.~~

Action Plan: Add Type S to WSDOT Std Spec 9-23

New Issue: Proposed Specification Change to Section 6-02.3(2) Proportioning Materials - Mo

This regards changes to the allowable chloride ion content in concrete. Proposed specification is shown below:

6-02.3(2) Proportioning Materials

The soluble chloride ion content shall be determined by the concrete supplier and included with the mix design. The soluble chloride ion content shall be determined by (1) testing mixed concrete cured at least 28 days or (2) totaled from tests of individual concrete ingredients (cement, aggregate, admixtures, water, fly ash, ground granulated blast furnace slag, and other supplementary cementing materials). Chloride ion limits for admixtures and water are provided in Sections 9-23 and 9-25. Soluble chloride ion limits for mixed concrete shall not exceed the following percent by mass of cement when tested in accordance with AASHTO T 260:

Category	Acid-soluble	Water-soluble
Prestressed concrete	0.08	0.06
Reinforced concrete	0.10	0.08

~~The total water soluble Chloride ion (Cl-) content of the mixed concrete shall not exceed 0.06 percent by weight of cementitious material for prestressed concrete nor 0.10 percent by weight of cementitious material for reinforced concrete. An initial evaluation may be obtained by testing individual concrete ingredients for total chloride ion content per AASHTO T 260 and totaling these to determine the total water soluble Chloride ion (Cl-) or the total water soluble Chloride ion (Cl-) in accordance with ASTM C 1218.~~

Unless otherwise specified, the Contractor shall use Type I or II Portland cement in all concrete as defined in Section 9-01.2(1).

The use of fly ash is required for Class 4000D and 4000P concrete, except that ground granulated blast furnace slag may be substituted for fly ash at a 1:1 ratio. The use of fly ash and ground granulated blast furnace slag is optional for all other classes of concrete.

Fly ash, if used, shall not exceed 35-percent by weight of the total cementitious material and shall conform to Section 9-23.9. Ground granulated blast furnace slag, if used, shall not exceed 25-percent by weight of the total cementitious material and shall conform to Section 9-23.10. When both ground granulated blast furnace slag and fly ash are included in the concrete mix, the total weight of both these materials is limited to 35-percent by weight of the total cementitious material.

The water/cement ratio shall be calculated on the total weight of cementitious material. The following are considered cementitious materials: Portland cement, fly ash, ground granulated blast furnace slag and microsilica.

As an alternative to the use of fly ash, ground granulated blast furnace slag and cement as separate components, a blended hydraulic cement that meets the requirements of Section 9-01.2(4) Blended Hydraulic Cements may be used.

12/11/08 – Mo presented proposed changes to 6-02.3(2). There were questions regarding whether only acid soluble tests were required, if sources could be tested and results listed on the ASA database, if the test would be good for 5 years, and if there the percentage will need to be listed on the concrete mix design forms.

Action Plan: Mo will update at the next meeting

New Issue: Proposed Specification Change to Section 9-25.1 Water for Concrete – Kurt W

Currently Section 9-25 Water is out of date because ASTM C 94 Standard Specification for Ready Mix Concrete no longer has a Section 5.1.3 or a table 2 or 3. ASTM C 94 now refers to ASTM C 1602 and Section 9-25 has been updated to reflect this. Proposed specification is shown below.

9-25.1 Water for Concrete

Water for concrete, grout, and mortar ~~or concrete~~ shall be clear~~, and~~ apparently clean, and suitable for human consumption (potable). If the water contains substances that cause discoloration, unusual ~~or objectionable~~ smell or taste, or other suspicious content, the Engineer may require the Contractor to provide test results documenting that the water meets the physical test requirements and chemical limits described in ASTM C1602 for non-potable water.~~94M Section 5.1.3, Tables 2 and 3.~~

Water from mixer washout operations may be used in concrete provided it meets or exceeds the above criteria as well as the following additional requirements:

1. Concrete with water from mixer washout operations shall not be used in bridge roadway deck slabs, flat slab bridge superstructures, modified concrete overlays, or prestressed concrete.
2. Specific Gravity shall not exceed 1.07.
3. Alkalies, expressed as [Na2O+0.658 K2O], shall not exceed 600 ppm.
4. Shall be free of coloring agents.
5. If the wash water contains admixtures from different manufacturers, the Contractor shall provide evidence that the combination of admixtures are compatible and do not adversely affect the air void system of the hardened concrete as per Section 6-02.3(3).

12/11/08 – Kurt presented changes that replaced ASTM C 94 with ASTM C 1602 and corrects the current out of date ASTM test in the WSDOT specifications. *The group discussed the specification language with some comments reflecting that the specification could be simplified to just reflect ASTM C 94.*

Action Plan: Issue complete.

New Issue: Proposed Specification Change to 9-23.9 Fly Ash

Currently Centralia Power Plants is producing fly ash that at times exceeds the allowable limits of Table 2 in AASHTO M 295. Table 2 is a supplementary chemical requirement for available alkalies as equivalent Na_2O and sets a maximum percentage of 1.5. Below is proposed specification language for addressing mitigation when levels of alkalies exceed the 1.5 limit. Proposed Specification Change is shown below:

Section 9-03.1 Aggregates for Portland Cement Concrete

9-03.1(1) General Requirements

Portland cement concrete aggregates shall be manufactured from ledge rock, talus, or sand and gravel in accordance with the provisions of Section 3-01.

The material from which concrete aggregate is manufactured shall meet the following test requirements:

Los Angeles Wear, 500 Rev.	35 max.
Degradation Factor (Structural and Paving Concrete)	30 min.
Degradation Factor (Other as defined in 6-02.3(2)B	20 min.

Aggregates tested in accordance with AASHTO T 303 or ASTM C 1260 with expansion greater than 0.20 percent are Alkali Silica Reactive (ASR) and will require mitigating measures. Aggregates tested in accordance with ASTM C 1293 with expansion greater than 0.04 percent are Alkali Silica Reactive (ASR) and will require mitigating measures.

Aggregates for use in Commercial Concrete as defined in 6-02.3(2)B shall not require mitigation.

Mitigating measures for aggregates with expansions from 0.21 to 0.45 percent, when tested in accordance with AASHTO T 303 or ASTM C 1260, may be accomplished by using low alkali cement as per 9-01.2(3) or by using 25% Class F fly ash by total weight of the cementitious materials. The Contractor may submit an alternative mitigating measure through the Project Engineer to the State Materials Laboratory for approval along with evidence in the form of test results from ASTM C 1567 that demonstrate the mitigation when used with the proposed aggregate controls expansion to 0.20 percent or less. The agency may test the proposed ASR mitigation measure to verify its effectiveness. In the event of a dispute, the agency's results will prevail.

Mitigating measures for aggregates with expansions greater than 0.45 percent when tested in accordance with AASHTO T-303 or ASTM C-1260 shall include the use of low alkali cement per 9-01.2(3) and may include the use of fly ash, lithium compound admixtures, ground granulated blast furnace slag or other material as approved by the Engineer. The Contractor shall submit evidence in the form of test results from ASTM C 1567 through the Project Engineer to the State Materials Laboratory that demonstrate the proposed mitigation when used with the aggregates proposed will control the potential expansion to 0.20 percent or less before the aggregate source may be used in concrete. The agency may test the proposed ASR mitigation measure to verify its effectiveness. In the event of a dispute, the agency's results will prevail.

The use of fly ash that does not meet the requirements of Table 2 of AASHTO M295 may be approved for use for aggregates with expansions greater than 0.21 percent. The Contractor shall submit evidence in the form of test results from ASTM C 1567 through the Project Engineer to the State Materials Laboratory that demonstrate that the proposed fly ash when used with the proposed aggregates and portland cement will control the potential expansion to 0.20 percent or less before the fly ash and aggregate sources may be used in concrete. The agency may test the proposed ASR mitigation measure to verify its effectiveness. In the event of a dispute, the agency's results will prevail.

Passing petrographic analysis (ASTM C 295) accepted by WSDOT prior to August 1, 2005, is acceptable as proof of mitigation until the aggregate source is reevaluated.

ASTM C 1293 sampling and testing must be coordinated through the WSDOT State Materials Laboratory, Documentation Section utilizing the ASA (Aggregate Source Approval) process. Cost of sampling, testing, and processing will be borne by the source owner.

12/11/08 – Kurt presented a proposed change to allow use of fly ash with alkalies exceeding 1.5% for ASR mitigation provided testing proved that it controlled expansion to 0.20 percent or less. There were no objections to proceeding with the changes as presented.

Action Plan: Kurt and Mike to investigate further and will report back at the next meeting.

New Issue: Use of Fly Ash and Slag - Kurt

12/11/08 – Kurt inquired whether anyone tracks the tonnage of fly ash and slag used each year. No one knew if or how this was tracked.

Action Plan: Issue complete.

New Issue: Cement Acceptance Program (CAP) - Kurt

12/11/08 – Kurt reported that WSDOT has re-written the CAP procedures and will begin enforcing the requirement for quarterly split sample submittals beginning January 1, 2009. He will send letters to all producers by then informing them to comply with the requirement.

Action Plan: Letters to cement producers regarding quarterly sample requirements. Issue Complete

New Issue: Naturally Occurring Hazardous Materials (NOHM)

Oregon DOT is currently conducting a study: Exposure to Naturally Occurring Hazardous Minerals During Construction Activity. This study is being monitored by WSDOT to see where it leads. The reports states, "Ash Grove Cement in Baker County currently finds itself; the belated

and unexpected discovery that some of their limestone contains elevated levels of mercury. The Department of Environmental Quality (DEQ) has identified Ash Grove as one of the largest industrial emitters of mercury in the nation." Consequently, ODOT's rock source pits and private sources—used for state highway projects—could contain NOHM, as does rock moved from cuts to fills during construction activities

12/11/08 – Kurt reviewed the above information and Oregon DOT is currently conducting a study on NOHM. WSDOT is monitoring this study and as concerns arise will bring this to WACA's attention. .

Action Plan: Will update WACA as issues warrant. Issue complete.