The Pennsylvania Asphalt Improvement Network (PASIN) piloted two more successful projects during the 2008 construction season. The District 12-0 pilot project was the SR 21-Betterment in Fayette County. The Contractor, A. Folino Construction, Inc. built the project with HMA supplied by Hanson Aggregates, Inc. District 3-0 completed the SR 15-A20/A30 NB project in Lycoming County with Glenn O. Hawbaker, Inc.

A Company-wide Approach to PASIN

The PASIN pilot projects have focused on the implementation of a Quality Management System (QMS) within the time limits of a specific project. This limits the amount of time that can be dedicated to the development of the quality management system and training of the contractor personnel. All of the pilot project contractors demonstrated an ability to quickly grasp the PASIN concepts, train staff, and deliver a quality project. However, the benefits of a quality management system do not end with the final payment for the project. What happens to the corrective actions identified during the project that take longer to analyze and resolve? How about any opportunities for improvement or points of pride identified during the project? Are the best practices developed by a particular paving crew shared for the benefit of the entire company? All of these experiences from a particular project might only be remembered if a company can systematically track and handle the quality information and to be reviewed and

Continued on page 2 . . .
... Continued from page 1

shared properly. Implementation of a QMS will enable the company’s management to make more informed decisions about personnel and equipment because now they will have data from the plant field, and internal audits to support their decisions. Lastly, it provides greater benefits and efficiencies when tackling similar problems within plant operations, adjusting to new specifications or testing equipment, and sharing better ways to operate in the field.

**PASIN Executive Session Information**

The combined experiences from the 2007 and 2008 pilots, along with research of the quality improvement industry, show that top management support and “buy-in” are absolutely essential to successfully implement a quality management system. PASIN recognizes this crucial key to success and will now target the next PASIN overview sessions to top management including owners, presidents, vice-presidents, and other company leaders.

These sessions are tentatively scheduled for fall 2009. The format will be condensed from the quality manager overview sessions offered in 2007 and 2008. Of course, quality managers and personnel will be invited to the executive overview session as well. Further session information will be announced on the PAPA website once dates and venues are finalized.

**Development of the Quality Management System Within the Paving Industry**

In order to reach a wider range of asphalt paving companies, PASIN will follow the Executive Overview Session with the opportunity for companies to submit a PASIN HMA Implementation Plan for approval. PASIN will provide support through a “help-desk” to answer contractor’s questions as they develop their quality management systems. A PASIN QMS Implementation Plan template, instructions, and examples will be posted on the PASIN website to help guide the QMS development for the contractor. As the asphalt paving community works poses questions to the PASIN team, answers to frequently asked questions (FAQ) will be shared by posting an FAQ list to the PASIN website.

**2009 PASIN-Warranty Pilot Project**

An additional pilot project is slated for District 10-0. The project will be the PA28-Kittanning Avenue 3R in Armstrong County. This project will include the PASIN Quality Management System (QMS) special provision in addition to a 5-year warranty specification.
AND THE WINNER IS...

By R. Michael Anderson, P.E., Director, Research and Laboratory Services Division, Asphalt Institute

As I write this it is fast approaching the annual Academy Awards celebration where actors and actresses, directors and screenwriters, all long to hear their name or movie after the signature phrase “And the winner is...”. The best of the best... for that year. The Academy of Motion Picture Arts and Sciences also recognizes individuals that have made a significant contribution to the movie industry over their lifetime through the Lifetime Achievement Award.

If the Academy of Asphalt Mix Design and Performance were to honor any particular property for its contribution to asphalt mix design and performance, I’d certainly argue in favor of VMA.

The Résumé of VMA

VMA – the percentage of voids in the mineral aggregate – has been a property proposed since the late 1950’s for use in asphalt mix design as an additional tool for evaluating the volumetric properties of asphalt mixtures. In his later work, Norman McLeod suggested that higher durability could be achieved through the use of higher VMA.

At the same time McLeod was advocating the use of VMA, other asphalt technologists suggested that asphalt film thickness, defined using the surface area of the combined aggregate and the asphalt binder content, was essential to mixture durability. According to the researchers, VMA was not necessarily correlated with the surface area of the aggregate.

Prior to the Strategic Highway Research Program (SHRP), VMA was not extensively used as a critical mix design parameter. Research by Kandhal and Koehler indicated that in 1985 only 16 state highway agencies were using VMA as a mix design property. During SHRP, an expert panel suggested that VMA requirements should be used in the SUPERPAVE mix design process. This recommendation was considered a much stronger endorsement of the property to address durability than average film thickness, and led to the use of VMA by many state highway agencies and producers.

What is VMA? It is simply the space in a compacted asphalt mixture that is available for asphalt and air. Since VMA is calculated on the basis of the bulk specific gravity of the aggregate, the available space for asphalt is actually related to the effective asphalt content. If, in a given mix, the VMA is too low, then the mix designer is left with the choice of either maintaining a minimum effective asphalt content – which will cause the air voids in the mix to be low – or maintaining a specified percentage of air voids – which will cause the effective asphalt content to be too low.

It is this interaction between asphalt content and the percentage of air voids that allows VMA to have a significant effect on the performance of an asphalt mixture. The original intent of the VMA criterion established by McLeod and adopted by the Asphalt Institute was that the mix designer needed to achieve a certain minimum VMA at a specified percentage of air voids (usually 4%) to ensure sufficient asphalt binder in the mixture so that it did not prematurely age, resulting in early cracking. As most asphalt technologists discovered, achieving the specified minimum VMA was often difficult for traditional dense-graded asphalt mixtures.

The other, less common problem for asphalt mix designers was the asphalt mixture that had a VMA that was too high. These mixtures, often coarse or gap-graded mixtures, had so high of a VMA that the mix designer would increase the asphalt binder content to lower the percentage of air voids in the mixture. In this instance, the asphalt technologist is uneconomically reducing the percentage of air voids in the mixture by increasing asphalt binder rather than changing aggregate gradation (adding fines, changing aggregate proportions, etc.). Often these mixtures will have been designed on the “wet”...
side of the VMA curve. The “wet” side of a VMA curve, as illustrated in Figure 1, includes asphalt binder contents that are selected on the right side of the bottom of the VMA curve. At this point, the volume of asphalt binder actually causes the aggregate particles to move apart. This is indicative of an asphalt mixture that has too high an asphalt binder content and one that could experience rutting, flushing, or bleeding.

An Inconvenient Truth: Mix Performance and VMA

How much does VMA affect mixture performance? To address this issue, AI developed a small laboratory study using coarse and fine-graded mixtures with two different levels of VMA and a nominal maximum aggregate size of 12.5-mm. Relevant data on gradations and mixture volumetric properties are shown in the following tables. The goal of this study was to develop mixtures that were on either side of the minimum VMA requirement (14%). As can be seen, by fixing the percentage of air voids at 4%, increasing the VMA meant increasing the design asphalt content.

Mixture specimens were then prepared for testing using the Repeated Shear, Frequency Sweep, and Flexural Beam Fatigue tests.

The Repeated Shear test is simply a rutting test developed during SHRP. Mix specimens were tested at 52°C and the rut depth calculated from the permanent shear strain developed in the mixture during the test. Figure 2 shows the rut depth of the four mixtures.

The Flexural Beam Fatigue test is, as the name implies, a repeated bending test that measures the fatigue response of asphalt mixtures. It is typically tested at an intermediate temperature like 20°C. Figure 3 shows the fatigue life (cycles to failure) of the four mixtures.

The Frequency Sweep test is a shear modulus test for mixtures that are similar in concept to how asphalt binders are tested using the Dynamic Shear Rheometer (DSR). For...
this study, it was performed at 20°C. Figure 4 shows the shear stiffness of the four mixtures.

What’s It All About?

Lots of pretty bar charts, but what do they mean? Well, in this study increasing VMA in a mixture generally leads to an increase in rutting. This is rational, because if you fix the percentage of air voids, an increase in VMA means an increase in asphalt binder content. For this study, a 1% increase in VMA meant a 10% increase in rutting for the fine mixtures and a 13% increase in rutting for the coarse mixtures.

This study also indicated that increasing VMA in a mixture generally leads to an increase in fatigue life using the flexural beam fatigue test...once again representing an increase in asphalt binder content with a fixed percentage of air voids. For this study, a 1% increase in VMA meant a 31% increase in fatigue life for the fine mixtures and a 26% increase in fatigue life for the coarse mixtures.

Finally, the study indicated that increasing VMA in a mixture generally leads to a decrease in shear stiffness. For this study, a 1% increase in VMA meant an 8% decrease in shear stiffness for the fine mixtures and a 12% decrease in shear stiffness for the coarse mixtures.

These findings generally concur with the work done at Advanced Asphalt Technologies under Christensen and Bonaquist for NCHRP Projects 9-25 and 9-31. In their final report, they note that as VMA increases, rut resistance decreases, or rutting increases (by about 20% for every 1% change in VMA). They also note that as VMA increases, fatigue life increases (by about 16% for every 1% change in VMA).

A Balancing Act

It is clear from different research studies that VMA has to be properly balanced with the asphalt binder content and the percentage of air voids to avoid designing an asphalt mixture that is sensitive to either rutting or cracking. It is also apparent that different mixtures will react differently to changes in VMA.

In my opinion, these two ideas are what separates VMA from the crowd of mixture properties and truly earns it a “Lifetime Achievement Award” in the category of Asphalt Mix Design and Performance. ♦

Selected References (for those inclined to read more or who need an alternative to Lunesta)


Mix Design Methods for Asphalt Concrete and Other Hot Mix Types, Manual Series No. 2 (MS-2), Asphalt Institute, 1995.
Forecast – February 2009

As noted in this update to this white paper, it has become apparent over the past few months that there will not be a shortage of butadiene this year, and that, as a result, the supply of SBS for calendar year 2009 should be adequate. It is currently a very volatile economic climate and things can and do change fast. However, as of right now, there should not be shortages in the supply of either butadiene or SBS for the 2009 paving season.

Introduction

There was a shortage of styrene-butadiene polymers for the asphalt industry in 2008. The shortage involved a variety of polymers, including linear and radial SBS polymers, and diblock SB polymers. These will all be abbreviated below as ‘SBS’.

AMAP has, with the help of De Witt and Company, investigated this issue and has written this paper in an effort to explain the factors driving potential SBS polymer supply shortage and to provide some outlook for future supply. The intent of this article is to help the HMA industry understand the situation and to cope with it.

Acknowledgements: We have been ably assisted in the preparation of this article by DeWitt and Company and their consultant, Tom Brewer. Any errors or omissions are the responsibility of The Association of Modified Asphalt Producers.

Background

In order to understand the problem with SBS polymer shortages in 2008, it is critical that we first understand the supply chain. The proximate reason for shortage of SBS polymer was a shortage of butadiene. Butadiene is not produced on purpose, but is a by-product of the production of ethylene. Many chemicals, including styrene and butadiene – the two basic building blocks for SBS polymers – are obtained as by-products from ethylene production.

Ethylene is made via a steam cracking process, and it is one of the many products resulting from the process. Operators of these “crackers” can either feed a gas such as ethane, butane and propane or can feed a liquid petroleum product such as gas oil or naphtha into the process as the raw material. As the chart below shows, ethylene, propylene and benzene can be produced from either gas or liquid feed. However, butadiene and the other chemicals appearing in the flow diagram beneath the butadiene are produced only as a byproduct of cracking liquid feeds.

Cracker operators use economic models to determine the feed slate. Gas feeds, especially ethane, were less costly than liquid feeds in early 2008. The cost to produce a pound of ethylene in May 2008 using ethane feed was $.50 compared to a cost of $.70 per pound when feeding naphtha. As a result, cracker operators were running more gas feeds and producing less butadiene. The cracking slate moved 10% towards lighter products in the 1st quarter of 2008 and continued this move in the second quarter. Incentives to continue to move to lighter feed products continued to be great, and processors were working to put more gas into the cracking slate on a crash basis. Lighter feed slates resulted in less butadiene production. Butadiene...
production in 2008 was projected to be approximately 70-75% of 2007 production.

General trends in the ethylene market are as follows:
- The worldwide ethylene market is 120 million tons per year
- The primary use for ethylene is product packaging
- There are scheduled significant ethylene capacity additions in the Middle East. Most of the Middle East is gas cracking (no additional butadiene)
- There are new crackers being built in Asia. Most of the new capacity in Asia is liquid, or naphtha cracking.
- There is scheduled little or no capacity expansion in the West.
- Naphtha is short globally, and expected to carry higher prices until new refinery capacity in Asia and the Middle East comes on stream, around 2012.
- New cracking units are tending towards greater flexibility, i.e., able to handle both gas and liquid feed. This will lead to less predictable butadiene supply.

General trends in the butadiene market are as follows:
- The worldwide butadiene market is 14 million tons per year
- The primary use of butadiene is in tires (70%)
- SB and SBS polymer for asphalt modification accounts for 6% of butadiene usage
- US crude butadiene supply was tight due to light cracking in 1st half of 2008.
- US has excess purification capacity and buys crude butadiene from Europe to fill capacity.
- Europe is tight on supply due to lighter cracking, resulting in less crude butadiene to export to the US.
- New Asian capacity needs to catch up with demand.

Conclusions
A number of factors will influence future butadiene supply. Negative factors influencing future butadiene supply are as follows:
- Lighter cracking will lead to more production flexibility and potentially less butadiene productions.
- Low cost, gas-based ethylene cracking capacity in the Middle East will result in no net additional butadiene availability.
- Higher naphtha prices and structural changes in the US ethane market will lead the industry to lighter cracking and lessened butadiene availability.

Positive factors influencing increased butadiene production are listed as follows:
- New butadiene capacity in Asia will bring some relief.
- Higher butadiene prices will drive butadiene out of some applications, thus easing supply problems.
- High gasoline prices and a slowing economy have reduced demand for new vehicles and new tires. High gasoline prices have also shifted vehicle sales away from trucks and SUVs to smaller, more fuel efficient cars. These small cars will require smaller tires, thus reducing butadiene demand. Car sales in July 2008 were down 20% compared to July 2007. The shift to smaller tires should reduce butadiene demand even more. It will take time for the reduced demand to work its way up the supply chain, but in time it will provide additional butadiene to the asphalt market.

The costs of gas and liquid feeds for crackers are subject to change rapidly as the price of crude oil fluctuates. The cost of ethane rose to a level equal to the cost of naphtha in July 2008, but the cost of propane remained significantly less. The result was the availability of SBS polymers remained tight for the first three quarters of 2008.

Update - October 2008
Recent global developments have significantly changed the short term outlook:
- The drop in demand for tires resulting from reduced driving has taken place.
- The differential in cost to produce ethylene from liquid fuels compared to the cost of ethylene production from gas has significantly narrowed, from a premium of approximately $0.20/Lb. in July 2008 to a current differential of about $0.05. This will encourage a heavier cracking slate, which will produce more butadiene.
- The impact of hurricanes Ike and Gustav on butadiene prices had been lower than anticipated. Where one might have expected a spike in the range of $0.10 per lb. of butadiene as a result of production disruptions in Gulf Coast facilities, the actual number has been less than $0.05. We speculated that the reason for this is a softening in tire demand.
- Crackers in the Gulf Coast were now back in production following the hurricane cleanup, but some of the facilities that use butadiene to manufacture compounds for tires are not yet reopened, possibly due to large existing inventories of product. This has freed up butadiene supply for SBS manufacturers. As of October 2008, SBS manufacturers were no longer on butadiene allocations and were receiving 100% of their butadiene needs.

We anticipate that this will give SBS producer greater access to the raw material, and the ability to build inventory in the coming months in anticipation of the 2009 paving season.

Update – February 2009
The world-wide economic slowdown has caused ethylene demand to drop 10-20%, but the drop in tire demand is causing the butadiene demand to drop even more. Manufacturers will ramp down production of ethylene, but the overall production of butadiene will be ample to supply the needs of both the tire manufacturers and the SBS suppliers. The supply of SBS for the 2009 paving season appears to be ample at this time.

AMAP suggests the following list of modifiers as possible alternatives to SBS polymers during any future SBS supply shortage:

Continued on page 8 . . .
Styrene Butadiene Latex - SBR latex has been used extensively in the paving industry as an elastomeric modifier for asphalt, and although it has similar elemental chemical composition to SBS, it did not suffer from a severe shortage in 2008.

- Reacted Ethylene Terpolymer (Elvaloy)
- Ethyl Vinyl Acetate (EVA) – EVA modified asphalt can be subject to cracking in cold-weather climates. It can be used alone successfully as a modifier in warm climates or it can be blended with SBS to provide reasonable cracking performance in cold weather.
- Ground Tire Rubber (GTR) – the wet process is a recipe specification that adds 20% GTR to asphalt and allows it to melt and swell. However, no cross-linking occurs and the binder is not storage stable. It should also be noted that the rubber particles in this material prevent a meaningful PG grading in the Dynamic Shear Rheometer.
- Hybrid Binders – the SBS supply can be extended by blending SBS with GTR to produce cross-linked storage stable polymer-modified asphalt
- Polyphosphoric Acid (PPA) - PPA has been used successfully as a co-modifier/extender in conjunction with SBS polymer and as a catalyst/co-reactant with Elvaloy. ◆

LINDY PAVING, INC., RECEIVES SHELDON G. HAYES AWARD

By Tracie Christie, Associate Director of Awards and Marketing National Asphalt Pavement Association (NAPA)

Congratulations to Lindy Paving, Inc. of New Castle, Pennsylvania and the Pennsylvania Department of Transportation, Engineering District 11-0, for winning the prestigious Sheldon G. Hayes Award from the National Asphalt Pavement Association in 2008. This is the second time that Lindy Paving has received this honor. They won the award previously in 2005, as well.

The company won the competition for the rehabilitation of approximately six miles of full-depth hot-mix asphalt on Interstate 79 in Allegheny County. Lindy Paving and Pennsylvania DOT partnered on this 378,000 ton SUPERPAVE project from the start, overcoming scheduling challenges, and adhering to special traffic control and time requirements, to provide motorists in the state with the smoothest possible pavement.

One such challenge was a restriction in the contract to not restrict ramp traffic from entering and exiting I-79 at the three main interchanges. Paving through these crossover locations would have been completed in multiple phases. To achieve a better end product and eliminate unnecessary joints in the pavement, the contractor proposed to close these ramps, detour traffic, and thereby allow the pavers to run through the crossover locations. This reduced the amount of temporary asphalt needed to complete the work in phases and saved time on the project, as well as minimizing the project’s impact on the motoring public.

The contractor had 204 consecutive calendar days each in 2005 and 2006 to complete 93 million dollars worth of work. This was accomplished due to the contractor, Penn DOT and the highway’s designers partnering on a daily basis to keep the project running successfully, and using state-of-the-art equipment and careful construction practices. This winning project produced a smooth, durable pavement and provides one of the best ride performances of any roadway in the Pennsylvania highway system. ◆
PAPA is a great organization and is always developing ideas and information to help us with our HMA Businesses. The intent of this series of articles is to help us better control our energy cost, with some “Back to Basics” concepts and information.

BURNERS AND FUEL SYSTEMS:

The next area of the plant to examine for energy savings, once we have correct Flighting, is the Burner and fuel systems. The correct burner mounting and size, in relationship to your drum/dryer diameter, is assumed correct and you can check proper sizing with the charts in NAPA publication IS-52. Regular burner tune ups by your trained personnel or the burner manufactures is recommended biannually to maintain peak combustion efficiency.

1. **Clean Regularly**, especially on extended nose burners with all counter flow drum mixers. Nozzles, strainers, traps and even fan impellers maintained and clean will result in improved combustion and reduced fuel (reduces operating cost $$).

2. **Properly Sized Combustion Chambers**, so no aggregate can fall into the combustion zone and into the fuel. No liquid burns, only vapor. The need for clean burner nozzles, allows best atomization (smallest fuel droplet available) so the energy in the fuel can be released (turned to a vapor) more quickly. To give an example: When winter camping, my sons and I were starting a fire for warmth. I got the kindling going but my sons brought their bucket of sand with shovels, and they throw the sand onto my kindling. We all know that sand (aggregate) made our fire hard to get started. The same is true when aggregates are falling through the combustion process of your dryer/drum burner, allowing unburned fuel to travel from the combustion chamber into the veiling section of the drum and depositing the unburned fuel onto the aggregate and possibly the bags. This challenge has come because the combustion chambers needed extended when alternate fuels became more cost competitive and many plants switched to these heavier fuels. Again, properly sized chambers allow complete combustion and reduces fuel consumed (saving $$).

3. **Burning two fuels simultaneously**: There are occasions when it is advantageous to burn two fuels. All burner manufactures have the controls to allow this and can help when curtailment may cause excessive cost of one fuel type your single fuel may be completely cut-off.

4. **Recycled Fuel Oil Supply Systems (RFO)**:
   a. **Filter the incoming fuel**: When burning RFO, Continued on page 10 . . .
remember the fuel is derived only from the oils picked up from a variety of supply sources as a waste oil product. The goal of the supplier is to keep his supply tanks full of the oils picked up and then to keep them empty as the RFO is delivered to the HMA plants. The HMA plant with the best, most extensive filtering system on the RFO received will always receive the cleanest product (RFO). Savings to the HMA facility is in less build up in the plant tank and less nozzle plugging at the burner (time and fuel saved $)$

b. **Filter the fuel to the burner:** Once the fuel is being pump from the tank to the burner, another set of duplex strainers are a must to remove even the finest of particles from the RFO. Same benefit as a.

c. **Constant Viscosity is a must (R.O.C.K. = recycled oil control kit):** All fuels must be between 80 and 100 SSC viscosity in order to properly atomize (smallest fuel droplet available) through the burner. Heating the heavier RFO reduces the viscosity. The challenge, so no RFO is wasted (lost $)$, is to maintain a constant viscosity to the burner. When the viscosity of the RFO is constantly changing, because it is picked up as a waste product with varying viscosities (thick crank case oil to thin peanut oil), then a viscosity measuring device (R.O.C.K.) is needed to adjust the heat to maintain a viscosity at the burner between 80-100 SSC’s. Fluctuating viscosity wastes RFO or any heavier fuel.

We hope you have found these simple cost saving ideas easy to implement, in your efforts to reduce energy and operating cost at our HMA facilities.

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**2009-11 PENNDOT LETTING SCHEDULES**

**Following is the tentative Letting Schedule for Construction Year 2009:**

<table>
<thead>
<tr>
<th>Month</th>
<th>Letting Dates</th>
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<tbody>
<tr>
<td>January</td>
<td>8 and 22</td>
</tr>
<tr>
<td>February</td>
<td>12 and 26</td>
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<tr>
<td>March</td>
<td>5 and 19</td>
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<tr>
<td>April</td>
<td>2, 16 and 30</td>
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<td>May</td>
<td>7 and 21</td>
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<td>June</td>
<td>4 and 18</td>
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<td>July</td>
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<td>August</td>
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<td>September</td>
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<td>October</td>
<td>1, 15 and 29</td>
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<td>November</td>
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<td>December</td>
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**Following is the Tentative Letting Schedule for Construction Year 2010:**

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<tbody>
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<td>February</td>
<td>4 and 25</td>
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<tr>
<td>March</td>
<td>4 and 18</td>
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<td>1, 15 and 29</td>
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<td>May</td>
<td>13 and 27</td>
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<td>June</td>
<td>10 and 24</td>
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<td>8 and 22</td>
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<td>5 and 19</td>
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<td>September</td>
<td>2, 16 and 30</td>
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<td>October</td>
<td>7 and 21</td>
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<td>November</td>
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<td>December</td>
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**Following is the tentative Letting Schedule for Construction Year 2011:**

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<tbody>
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<td>May</td>
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<td>June</td>
<td>9 and 23</td>
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<td>July</td>
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<td>November</td>
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<td>December</td>
<td>1 and 15</td>
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*Based on project types, projects will be advertised five (5) to seven (7) weeks prior to the letting date. All lettings will be held on Thursdays at 11:00 a.m. unless otherwise advertised.*
CHANGE

Good, bad, or indifferent, we can expect change in the coming years.

As I write this, the President’s stimulus package is still being debated in the halls of Congress, we can only speculate on what effect this will actually have for the paving industry. It does appear that due to the government’s desire to put money into the economy as rapidly as possible the effect will be very positive. Obviously bringing a project from design to bid is far less time consuming for an overlay than for a new construction project. Therefore, we should expect a positive change in this area.

It should be noted that PennDOT, unlike some other DOT’s has positioned the state to take advantages of these funds by having a significant number of projects “ready to go”. This means that as stimulus dollars become available for infrastructure work Pennsylvania will be ready to let work and meet the requirements of the act.

Some other changes that hopefully are coming are an upswing in commercial projects. Flat is an understatement when describing this segment of our market. Many areas are very uncertain, liquid asphalt pricing is one of these. Where this price will go after the paving season starts is anyone’s guess. We hope the change in this area is not as drastic as the past season.

Finally, as we begin another paving season, it’s time to remember that our most valuable asset is our people. Taking time to train and/or retrain employees in safe workplace procedure is an investment that will repay dividends many times over.
Highlights of the 49th Annual Asphalt Paving Conference
The following companies have joined the Association.

**PRODUCER MEMBERSHIP**

**BARRETT ASPHALT, INC.**
14 Steel Road North
Morrisville, PA 19067
Contact: Mr. John M. Barrett, Jr., Vice President
Telephone #: (215) 428-4030
Fax #: (215) 428-4032
E-mail: jbarrett@arawakpci.com

**JOHN GLENN, INC. dba VALLEY ASPHALT**
202 Main Street
Laflin, PA 18702
Contact: Mr. Steven Slesh, Technician
Telephone #: (570) 823-0531
Fax #: (570) 823-3352
E-mail: popple2001@aol.com

**PAVING CONTRACTOR MEMBERSHIP**

**POPPLE CONSTRUCTION**
202 Main Street
Laflin, PA 18702
Contact: Mr. Steve Vansock, Foreman
Telephone #: (570) 823-0531
Fax #: (570) 823-3352
E-mail: popple2001@aol.com

The Pennsylvania Asphalt Pavement Association welcomes the new producers members and paving contractor to the Association. The membership contributes to making our industry a much stronger organization. We look forward to your participation in the Association.

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**JEFFREY FRANTZ RECIPIENT OF THE VINCENT P. ANGELO ASSOCIATION SERVICE AWARD**

The Pennsylvania Asphalt Pavement Association’s Vincent P. Angelo Association Service Award was established on September 21, 2007. The award was established in honor of Mr. Vincent P. Angelo who was a Past President of PAPA and served on PAPA’s Board of Directors and a number of PAPA committees.

Mr. Angelo was exceptionally dedicated to PAPA and demonstrated outstanding leadership and provided many contributions for the betterment of the Association during his service.

The first recipient of this honored service award as recommended by his peers from the Hot-Mix Asphalt Industry is Mr. Jeffrey Frantz. Mr. Frantz was recommended for the award for his demonstration of outstanding commitment, dedication and leadership for the betterment of the Pennsylvania Asphalt Pavement Association and the Hot-Mix Industry of Pennsylvania.

Mr. Frantz is President of Lehigh Asphalt Paving and Construction Co. He is currently a PAPA Board member and chairman of PAPA’s Technical Committee. Mr. Frantz also serves as the co-chairman of the Asphalt Paving Quality Improvement Task Force.

As an additional highlight of the service award presentation, Mr. Frantz was presented with Mr. Angelo’s Duck Unlimited Stamp Collection donated by Ms. Nancy Nye. Ms. Nye prepared a special write-up for Mr. Frantz.
UPDATE ON SPILL PREVENTION CONTROL AND COUNTERMEASURE FEDERAL DEADLINE – REVISED COMPLIANCE DATES

EPA recently requested comments on a further extension in Spill Prevention Control and Countermeasure (SPCC) Plan deadlines. There will be no further changes in the requirements – which are effective this April. The date is not yet final by which asphalt hot-mix plants must prepare and implement an updated SPCC Plan for continued operations.

Key Contingency Plan update items, as indicated in past editions of Paving The Way includes such provisions as:

- Making sure that loading and unloading ports are locked and/or pumps are disengaged to prevent tampering during off hours.
- Make sure signs are present at the plant entrance, warning of overhead piping where overhead pipes are present at an individual plant.
- Adding or having secondary containment, or where secondary containment is not present due to impracticality. Documenting the impracticality, and determining what other measures can be implemented to assure onsite containment of spilled oil or hazardous materials and to prevent discharge to waterways. Tank thickness testing may be required at many facilities.
- Ensuring the pipe system supports are adequate, and any “hot oil” systems are included in the Contingency Plan.
- Helping to ensure that inventories of oil and hazardous materials are up-to-date and complete.

EPA is expected to announce the final compliance date in a few months.

Should you have any questions on Contingency Plans, please call Gary Brown at 800-725-0593, Extension 34.

HOT-MIX ASPHALT PLANT GENERAL PERMIT 13 FOR AIR EMISSIONS ISSUED FOR PUBLIC COMMENT

On Saturday, November 22, 2008, the Pennsylvania Department of Environmental Protection (PADEP) issued a general plan approval and/or operating permit for hot mix asphalt plants, which contains a best available technology determination and other applicable requirements for air emissions from asphalt plants. The Pennsylvania Asphalt Pavement Association (PAPA) Environmental Committee worked for many years with PADEP to make this permit possible, which will make permitting conditions standard, over the next several years, and allow use of various fuels at asphalt plants, without costly time consuming re-permitting schemes.

Along with conventional fuels like propane, natural gas, No. 2 oil and No. fuel oil, bio-diesel, On Specification Waste Derived Liquid Fuel (WDLF) and other alternative fuels may be used in hot mix asphalt plants under the new permit.

The permit will be good for a period of five years, after which it will need to be renewed. Those operating under individual permits, may, submit a letter to PADEP, and begin operating under the permit, when it becomes final. The permit is not expected to become final until the middle of 2009, and PAPA Members will be advised by the Association as to when they can operate under the new permit.

A number of questions have arisen regarding the permit as follows:

- Can I operate under existing permit conditions, as well as new permit conditions?

No plants may not operate under a mix of permit conditions. You can operate under your existing permit or the new permit. All current permit holders may continue to operate under their existing permit conditions, but only until their existing permit expires. Going forward, however, the permit and operating conditions in the new General Permit are expected to become uniform throughout the Commonwealth as permits are renewed.
Was the ash content in the On Specification Waste Derived Liquid Fuel changed?

Yes, PADEP increased the maximum ash limit to 1%, as requested by the PAPA Environmental Committee. The old limit of 0.5% was found to be neither technically valid nor achievable.

Will stack tests be required going forward?

Stack tests are not expected to be required in the future, under the operating permit. Instead, there will be once yearly “tune up” testing, to make sure that burners at hot mix asphalt plants are properly adjusted, to minimize nitrogen oxide emissions. Plants, who frequently switch fuels, may need to conduct a tune up, more frequently than once a year.

How much will the “tune up” testing cost?

The tune up is expected to cost between $900 and $1,200, with a number of firms in the state, being willing to provide this service. This type of “tune up” has been used in other nearby states successfully, for a number of years.

Should you have any questions, please contact Mr. Walter Hungarter at RT Environmental Services, Inc. (RT) at 610-265-1510, Ext. 38, or by email at whungarter@rtenv.com.

IRS MILEAGE RATES FOR 2009

The IRS mileage rate includes all costs for operating the auto (gas, wear and tear, etc.). It does not include parking and tolls. If incurred, in addition to “mileage,” expenses for parking and tolls can be reimbursed.

Business:
55 cents/mile

Medical and Moving:
24 cents/mile

Volunteer/Charitable:
14 cents/mile

SECONDARY CONTAINMENT AREAS – DO YOU NEED TO MOVE YOUR ELECTRICAL LINES AND EQUIPMENT?

Although US Environmental Protection Agency (US EPA) has issued a final extension to the Spill Prevention Control and Countermeasure Regulations, some asphalt production facility owners are not aware of National Electrical Code requirements as to what equipment and wiring can be placed within secondary containment areas. Secondary containment areas are generally constructed of a block or concrete wall-built for the purpose of holding hot asphalt, or oil, in the event of tank overfill, tank rupture, or, other equipment breakage.

The National Electrical Code does not allow wiring or equipment to be placed in a position, where an area may be wet, or due to flammability concerns, inundation of lines, motors or junction boxes may cause a fire. If you are adding secondary containment around an existing tank system, wiring and appurtenances must be raised above the level of the secondary containment wall, or, would otherwise need to be upgraded. The upgrading process, to convert equipment, for wiring and equipment to be able to operate in wet areas or areas where potential flammability concerns exist is generally not cost effective. Therefore, most owners elect to raise such items as transfer pumps, electrical controls, conduits, and/or other wiring, above the top of secondary containment wall.

If you currently have equipment or appurtenances within the secondary containment area, you should evaluate them, and have an electrical contractor determine how to bring the area up to code.

For more information, call Gary Brown, P.E. at 800-725-0593 Ext. 34 or contact him by email at gbrown@rtenv.com.
### Consolidated Procedure – Pennsylvania Department of Transportation/Department of General Services
(Contract 5610-36)

#### Zone 1
- **Districts**: 3, 4, 5, 6 & 8

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(Be sure to check PAPA’s website - [www.pahotmix.org](http://www.pahotmix.org) - for monthly Price Index)

### Dates To... REMEMBER!

- **Executive Committee Meeting**
  - September 10, 2009
  - Omni Bedford Springs Resort and Spa

- **Board of Directors Meeting**
  - September 11, 2009
  - Omni Bedford Springs Resort and Spa

- **50th Annual Asphalt Paving Conference**
  - December 8-10, 2009
  - Hotel Hershey
  - Hershey, PA