

LARIMER COUNTY ENVIRONMENTAL AND SCIENCE ADVISORY BOARD

2014 Annual Report





ENVIRONMENTAL AND SCIENCE ADVISORY BOARD

Post Office Box 1190
Fort Collins, Colorado 80522-1190

January 2015

Board of County Commissioners:

This annual report outlines the Environmental and Science Advisory Board's activities in 2014 and sets out our goals and direction for 2015. Several issues were referred to this Board from the Commissioners' office in 2014. Additional information about the Advisory Board, including minutes for the meetings, is available on the County's website at www.larimer.org/boards/.

The Advisory Board's review of the air emissions permit for the Martin Marietta Materials asphalt plant on North Taft Hill Road was important from both a technical and public interest perspective. The Commissioners' official comments on the air permit, and the state's response is included in the appendix in order to provide additional context for this issue.

We would like to acknowledge County staff for their continued help and commitment to sound environmental management. In 2014 representatives from the Departments of Health & Environment and Solid Waste attended ESAB meetings to assist and inform members of the Advisory Board.

We hope that the feedback we provided was useful for the County. Please feel free to contact any of our members if you would like to discuss specific issues in greater detail.

A handwritten signature in black ink that reads "Michael Jones". The signature is written in a cursive, flowing style.

Michael Jones, Chair

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2014 ANNUAL REPORT OF THE LARIMER COUNTY ENVIRONMENTAL AND SCIENCE ADVISORY BOARD

January 2015

I. INTRODUCTION

The Larimer County Commissioners established the Environmental Advisory Board (EAB) in 1993. The Board consists of up to 12 at-large members, appointed by the County Commissioners. The name of the board was changed to the Environmental and Science Advisory Board in 2013.

The role of the Advisory Board is to advise the Board of County Commissioners and appropriate departments on environmental and science-related issues that affect Larimer County. A specific objective is also to promote institutionalization of the County's Environmental Responsibility Policy. Items considered by the ESAB come from the Commissioners, staff, citizens and our own members.

The Advisory Board meets regularly on the second Tuesday of each month and on an as-needed basis for special work sessions. The first agenda item of each meeting is devoted to hearing citizen's comments about environmental issues. The list of speakers and guests that attended the ESAB meetings is presented in Section V of this report.

Important topics and actions considered by the Advisory Board are noted in Section II. Section III outlines the status of issues related to written correspondence. The actual recommendations are included in the Appendix.

The Advisory Board utilizes an Issue Index to keep track of the various issues that the board addresses. The index is updated on a monthly basis.

Lew Gaiter III was the County Commissioner liaison to the Environmental and Science Advisory Board in 2014. Doug Ryan, from the Department of Health and Environment, served as staff facilitator.

II. IMPORTANT DISCUSSION TOPICS IN 2014

MONTH	TOPICS
January	Oil & Gas Rulemaking Review related to draft state air quality regulations
March	Background on the Northern Integrated Supply Project (NISP) Water Project
April	Background on the upcoming Martin Marietta Materials asphalt plant review & discussion regarding the potential for a consultant's technical review.
June	<p>Ozone air quality: an update on the summer season ozone levels</p> <p>Floodplain regulations & September 2013 flood update</p> <p>Preble's mouse & floodplain issues</p> <p>NPDES Municipal Stormwater Permit</p>
July	<p>Annual advisory board orientation for new and continuing members.</p> <p>Background on the upcoming Martin Marietta Materials asphalt plant review for new members</p>
August 18	Joint informational meeting with the Fort Collins Air Quality Advisory Board regarding the Martin Marietta Materials asphalt plant air emissions permit.
August 26	Review and comment on the Martin Marietta Materials asphalt plant air emissions permit.
September	<p>Solid Waste: an update from the Solid Waste Department on solid waste and recycling activities.</p> <p>West Nile Virus & other zoonosis: an update on this year's activity regarding zoonotic diseases.</p>
October	<p>Environmental Stewardship Awards: recommendations to the County Commissioners on the 2014 nominations.</p> <p>NISP water project Supplemental draft EIS: review of the previous 2008 EIS review in anticipation of the pending release of the Supplemental Draft EIS.</p>

MONTH	TOPICS
December	Ozone Air Quality: consideration of the 2014 summer season and background on the EPA's proposal to strengthen the ambient air quality standards for ozone in 2015. Workplan: consideration of ESAB workplan elements for 2015

III. STATUS OF ESAB RECOMMENDATIONS IN 2014

The table below outlines the formal recommendations made by the Advisory Board, and provides a brief statement about the status of those recommendations. As an advisory board, the ESAB's written recommendations are submitted to the Board of County Commissioners or a requesting County department. The actual correspondence is in the Appendix.

Issue	Principal ESAB Actions and Recommendations	Status
Air Quality rules for the Oil & Gas industry	The advisory board reviewed the draft rules and recommended that the Commissioners support adoption of the rules by the Colorado Air Quality Control Commission.	The Commissioners reviewed the draft regulations at a work session and sent a letter of support to the Air Quality Control Commission. The rules were adopted by the Commission in February.
Martin Marietta Materials asphalt plant air permit technical evaluation	The advisory board recommended funding for a technical evaluation of the upcoming draft air emissions permit to assist the ESAB in its review of the draft permit.	The Commissioners concurred with the ESAB recommendation, and provided funding. The County and the City of Fort Collins shared the cost of the consultant contract, and retained Air Resource Specialists Inc. to prepare a review.
Martin Marietta Materials draft air emissions permit	The advisory board prepared formal review comments on the draft air emissions permit for consideration by the County Commissioners.	The Commissioners considered the ESAB comments at a public work session, and sent formal comments to the Air Pollution Control Division at the CDPHE regarding the draft permit in August. The state responded in writing to the comments, and issued the air permit on December 23, 2014. See the appendix for additional details.

IV. ENVIRONMENTAL STEWARDSHIP AWARDS

In December, the Board of County Commissioners presented three Environmental Stewardship Awards for the 20th annual presentation. These awards annually honor the environmental efforts of county residents, businesses, organizations and agencies. The ESAB reviews the nominations and makes recommendations to the County Commissioners. Environmental Stewardship Awards were first issued by Larimer County in 1995. The following description is provided for this year's awards:

The City of Fort Collins Utilities and Natural Areas Departments, for their black-footed ferret reintroduction program at the Soapstone Prairie Natural Area and Meadow Springs Ranch. Black-footed ferrets, thought to be extinct until a small population was discovered in 1981, may once again become part of the natural ecosystem on these important City properties. Fort Collins worked in collaboration with the U.S. Fish and Wildlife Service, and the Colorado Parks and Wildlife Department to plan and implement the reintroduction of captive-bred ferrets. The ferrets live in prairie dog colonies – which provide their main source of food. The actual reintroduction occurred last September. The long term impact will be to have self-sustaining black-footed ferret populations that positively contribute to the ecosystem of Soapstone Natural Area and Meadow Springs Ranch. These animals will be significant in the recovery of their species in the wild. A potential long term impact may include management of an ecosystem that produces wild young ferrets that can be transported to other sites with suitable habitat for additional re-introductions. As noted in the nomination for this award, environmental stewardship is an ethical approach and mentality to managing today's environmental resources in a manner that will provide future generations with a quality environment that includes a place for a wild population of one of the rarest mammals on Earth.

James E Gano, for his strong personal commitment and sustained effort training volunteers for conservation activities related to the Nature Conservancy's Phantom Canyon Preserve. Mr. Gano directs the Phantom Canyon Special Projects Crew, a group that he organized in 2003. A wide range of projects were implemented by the crew in 2014. These include: a sustainable dirt road design and maintenance project to capture water and minimize erosion; leading nature hikes on the Preserve; repair and improvement of structures on the Preserve; and training staff interns. The skills necessary to address these tasks include planning, teaching, motivation, and at times hard physical labor. These activities are a great benefit to the Nature Conservancy in their efforts to manage the Phantom Canyon Preserve. In addition to his work related to Phantom Canyon; Mr. Gano participates in up to six patrols each year on national forest lands for the U.S. Forest Service through the Poudre Wilderness Volunteers. James Gano is a committed leader with the ability to draw others into the work and thereby create a sustainable effort to preserve the environment beyond the present.

The Coalition for the Poudre River Watershed, for their effective efforts to improve and maintain the ecological health of the Poudre River Watershed through community collaboration. Begun initially as an informal network following the Hewlett Gulch and

High Park fires in the summer of 2012, initial activities focused on the identification of restoration needs, finding funding, training volunteers, and completing the first projects. Based on the success of those early efforts, the group made the transition to a formal non-profit, the Coalition for the Poudre River Watershed. The Coalition brings together a wide range of stakeholders to plan and implement watershed activities in order to reduce the risk of future catastrophic wildfires and to address other important watershed needs. A diverse group of stakeholders including natural resource professionals, scientist, landowners, and government agency representatives have come together in the spirit of cooperation and community benefit. Their efforts continue to provide important resources for fundraising, planning, technical assistance, training and volunteers. As noted in the nomination for this award, the Coalition is a crystallization of the shared community spirit present in Larimer County. And for full disclosure, we - Larimer County government, are a voting member of the coalition.

V. GUESTS AND INVITED SPEAKERS

MONTH	PERSON	SPEAKER'S TOPIC
March	Lew Gaiter, County Commissioner	
April	James Sharn Kenneth Ball Lisa Sigler Bule Hine Julia MacMillan Karen Hare Connie Marvel Kevin Pass Bryan Simpson Walter Wright Dave Lemesany .. and several others who did not sign-in or were illegible	
June	Connie Marvel Karen Hare Meghann Shaffer Elena Duraux Lew Gaiter, County Commissioner	
August 18	Joint informational meeting with the Fort Collins Air Quality Advisory Board City & County staff members Interested citizens Lew Gaiter, County Commissioner Steve Johnson, County Commissioner	Martin Marietta Materials asphalt plant air emissions permit
August 26	Lucinda Smith, City of Fort Collins David Lemesany, Martin Marietta Ken Ball, Martin Marietta Jerimy Runner, Martin Marietta David Stewart, Stewart Environmental Lew Gaiter, County Commissioner	Martin Marietta Materials asphalt plant air emissions permit

MONTH	PERSON	SPEAKER'S TOPIC
September	Stephen Gillette, Solid Waste Dept Steve Harem, Solid Waste Dept Edward Enriquez, Solid Waste Dept	Solid & hazardous waste
	Jessica Royer, Health and Environment	Zoonosis
December	Brandi Thomas, CSU Alyssa Meier, CSU Purna Chandramouli, CSU	
	Lew Gaiter, County Commissioner	

VI. ENVIRONMENTAL AND SCIENCE ADVISORY BOARD MEMBERS

Richard Alper	Appointed July 2014
Cassie Archuleta	
Melissa Chalona	Retired June 2014
Jeremy Deuto	Appointed July 2014
Chase Eckerdt	
Derek Esposito	
Michael Lee Jones	
Kimberly Karish	
Evelyn King	
Kiley Mcgowen	Retired June 2014
Ryan McShane	
Joseph Wilson	

Note: This list includes all Advisory Board members who served during the year. At any given time, the Board consists of a maximum of twelve members.

VII. YEAR 2015 WORKPLAN

This section provides information about the general direction the Environmental and Science Advisory Board contemplates taking in 2015. Because conditions or priorities in the County can change, a degree of flexibility needs to be maintained.

Overall: The ESAB strives to inform county governmental policies, decisions and actions that have environmental implications. To that end the ESAB will:

1. Serve as an informational resource that provides science-based recommendations to the County Commissioners and departments, points out areas of uncertainty and suggests appropriate ways to address them;
2. Identify environmental and science-based issues and opportunities for the consideration of the County Commissioners so that the BCC can be proactive in their responsibilities towards the environment. To that end, the ESAB will solicit from its membership ideas with respect to current environmental issues, and then develop a consensus of the most relevant topics to be forwarded to the BCC;
3. Develop and maintain an attitude of trust and respect among the ESAB, the Commissioners, County departments and other boards and commissions.

Response to Referrals or Requests:

1. Respond in a timely manner to issues raised by the Board of County Commissioners, the County departments and ESAB members:
2. Facilitate the response to citizen comments received by the Advisory Board with the Board of County Commissioners and appropriate County departments.

Current Environmental Topics:

1. Consider the regional implications of important environmental issues, and facilitate ways to address those issues across local jurisdictional boundaries. Examples of current issues include planning for ozone air quality compliance, and the proposed Northern Integrated Supply water project.
2. Monitor important water issues including watershed planning and proposed water projects. The Northern Integrated Supply (NISP) Project and the Halligan-Seaman Water Management Project are examples of current issues:

The Army Corps of Engineers estimates that the Supplemental Draft Environmental Impact Statement for NISP will be released for public comment in early 2015. The Advisory Board reviewed information related to the initial EIS review in 2008 in order to increase member's knowledge of the project ahead of the comment period for the Supplemental Draft EIS.

3. Monitor solid waste management issues such as landfill operations, recycling and hazardous waste disposal.
4. Monitor the status of both conventional and alternative energy development, and be available to consult with staff and the County Commissioners regarding potential environmental implications. Wind energy, uranium mining and oil and gas development are current topics of interest.
5. Consider important natural or ecological impacts associated with large-scale events such as wildfire, floods, droughts, and climate warming. Examples of items on the Advisory Board's issue index include the High Park Fire mitigation and response, forest management, watershed topics, zoonosis, and ozone air quality.

Stewardship Awards:

1. Coordinate the annual Environmental Stewardship Awards in partnership with the County Commissioners.

Communications and Process:

1. Maintain open communications with the County Commissioner liaison assigned to the Environmental and Science Advisory Board in order to facilitate communication about environmental concerns or issues seen by either the Commissioners or the Advisory Board.
2. Promote implementation of the County's Environmental Responsibility Policy.
3. Utilize the Commissioners' Administrative Matters meetings for communicating on important environmental issues as they arise.
4. Continue the practice of assigning interested ESAB members to monitor select environmental activities and provide updates to the full Advisory Board.

APPENDIX: WRITTEN CORRESPONDENCE

These documents were prepared by the Environmental and Science Advisory Board as part of their activities in 2014.

- January 15, 2014 memo to the County Commissioners regarding proposed air quality rules for the oil and gas industry under consideration by the Colorado Department of Public Health and Environment.
- April 9, 2014 memo to the County Commissioners with recommendations to utilize the services of a technical consultant to assist in the review of the anticipated draft air emissions permit for the asphalt plant at the Martin Marietta Materials facility on Taft Hill Road.
- August 28, 2014 memo to the County Commissioners regarding the Advisory Board's review and recommendations regarding the draft air emissions permit for the asphalt plant at the Martin Marietta Materials facility on Taft Hill Road.

The Larimer County Commissioners sent official written comments to the Colorado Department of Public Health and Environment regarding the Martin Marietta Materials asphalt plant permit. Those comments and the CDPHE response are included to provide additional information about this issue.


- September 2, 2014 letter to the CDPHE from the County Commissioners regarding the Martin Marietta Materials air emissions permit.
- December 23, 2014 response from the CDPHE regarding the County Commissioners written comments.



ENVIRONMENTAL AND SCIENCE
ADVISORY BOARD

Post Office Box 1190
Fort Collins, Colorado 80522-1190

To: Larimer County Board of Commissioners

From: Michael Lee Jones, Chair 

Date: January 15, 2014

Subject: Oil & Gas Rulemaking Review and Recommendations

The Larimer County Environmental and Science Advisory Board reviewed the Oil & Gas Rulemaking proposal scheduled to be considered by the Colorado Air Quality Control Commission at their public hearing on February 19-21, 2014. We conducted that review as part of our regular meeting on January 14, 2014. The proposal includes a range of regulatory requirements designed to reduce reactive volatile organic compound (VOC) and methane emissions from the oil and gas production sector. The measures to be considered include full adoption of the federal New Source Performance Standards for the Oil and Gas Industry (NSPS 0000), and expansion of the state's Regulation 7 dealing with control of ozone-forming emissions.

Considered together, these regulations provide a comprehensive system for reducing oil and gas related emissions. They span the well completion, storage, and production phases. Estimates provided by the Air Pollution Control Division indicate that the emission reductions are economically reasonable compared with previous strategies adopted for ozone reduction.

Following our discussion, the Advisory Board adopted a unanimous motion to inform the Board of County Commissioners of our support for adoption of the Oil & Gas Rulemaking proposal and to encourage the Commissioners to express your support to the Air Quality Control Commission ahead of their rulemaking hearing. Factors relevant to this motion include the following:

- Oil & gas production represents the largest uncontrolled anthropogenic source of VOCs in the Denver Metro/North Front Range Ozone Non-Attainment Area.
- The proposed regulations offer a high level of control in a consistent and cost-effective way and will result in an estimated 92,000 tons of VOC reduction on a state-wide basis per year.

- The proposed regulations close existing gaps in emission control for oil and gas operations.
- The regulations were developed in consultation with industry and environmental groups.

The Advisory Board appreciates the opportunity to consult with the Commissioners on this important issue. Please contact me or Doug Ryan if you would like to discuss any of these comments in greater detail.



ENVIRONMENTAL AND SCIENCE
ADVISORY BOARD

Post Office Box 1190
Fort Collins, Colorado 80522-1190

To: Larimer County Board of Commissioners

From: Ryan McShane, Vice Chair

Date: April 9, 2014

Subject: Martin Marietta Asphalt Emissions Permit – Consultant Recommendation

The Larimer County Environmental and Science Advisory Board considered the process for reviewing the draft Colorado air emissions permit for the Martin Marietta Materials asphalt plant located at 1800 N Taft Hill Road. The draft stationary source permit is expected to be released for public comment in the next few weeks. Our charge from the County Commissioners is to evaluate the draft and provide comments for you to consider forwarding to the Colorado Department of Public Health and Environment.

Our discussion confirmed that a number of technical issues need to be considered with regard to this permit. Those issues include the inventory of expected air emissions, dispersal modeling to predict concentrations of pollutants in the community, selection of emission control requirements, and permit conditions to measure and ensure compliance. Our members believe that evaluating these issues requires specialized expertise, and would benefit greatly by retaining the services of a qualified consultant with experience in air permit evaluation.

Following our discussion, the Advisory Board adopted a unanimous motion to request that the Board of County Commissioners authorized the expenditure of funds for an expert consultant review of the permit. We would plan to use that technical consultant's review to inform our evaluation and recommendations back to the Commissioners. Staff has indicated that this professional review expertise is available locally.

We appreciate your consideration of this request, and are confident that bringing in an experienced consultant will enhance the County's review of the draft permit.


The Advisory Board appreciates the opportunity to consult with the Commissioners on this important issue. Please contact me or Doug Ryan if you would like to discuss this issue in greater detail.



ENVIRONMENTAL AND SCIENCE
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Post Office Box 1190
Fort Collins, Colorado 80522-1190

To: Larimer County Board of Commissioners

From: Michael Lee Jones, Chair 

Date: August 28, 2014

Subject: Martin Marietta Materials Construction Draft Permit – Review and Recommendations

The Larimer County Environmental and Science Advisory Board (ESAB) has completed its review of the Colorado draft air emissions permit number 13LR2446 for the Martin Marietta Materials (MMM) asphalt plant located at 1800 North Taft Hill Road outside Fort Collins. Review by the ESAB was requested by the Board of County Commissioners to assist the Commissioners should they choose to file comments on the draft during the public comment period ending on September 3, 2014. This memo provides our conclusions and recommendations.

A primary resource used in our review was the technical analysis of the draft permit prepared by Air Resource Specialists (ARS), Inc., dated August 2014. The technical analysis was prepared for the Larimer County Department of Health and Environment and the City of Fort Collins Environmental Services Department. The analysis was helpful in three respects: first, it verified that the dispersion modeling performed by the Air Pollution Control Division (APCD) was done correctly and followed applicable regulatory guidelines; second, the analysis went beyond the modeling performed by APCD to provide information on hazardous air pollutants (HAPs) of concern to residents in the area of the source; and third, the analysis provided a number of recommended conditions that, if included in the final APCD air permit, will provide valuable assurances to the public without unreasonably burdening the operations of the facility. The ARS report relied on published data from the USEPA and the State of California Reference Exposure Levels regarding industry-specific emissions levels and potential health effects. Our review did not include a separate analysis of those primary sources.

The emissions inventory and air dispersion modeling are important tools for predicting the potential impact to the surrounding community from airborne pollutants. The ESAB found that a number of conservative assumptions were incorporated into these tools that serve to purposely over-estimate the results such that they produce a worst-case scenario of modeled emissions. Our conclusion from the State's modeling and the additional research performed by

ARS concerning HAP is that the modeled emissions are not expected to exceed published health-based standards or recommended exposure levels at the public interface.

Following our review, the ESAB adopted a unanimous motion to recommend approval of the draft air emissions permit subject to the following comments or conditions:

- a) The emissions inventory for the draft permit includes the emissions from the asphalt plant, but not from the related aggregate mining and processing operations conducted by MMM on the west side of Taft Hill Road. Under the Clean Air Act, we believe that emissions from those operations should be included as part of the air emissions sources considered for this permit. ARS suggests that it is unlikely that the added emissions from the adjoining operations will alter the minor/major source classification of the asphalt plant, but a complete and accurate analysis requires that these emissions also be considered when determining the total emissions from the source.
- b) The draft permit requires submittal of an Operations and Maintenance (O&M) Plan to the APCD for approval. It is important that the O&M Plan receive adequate review and oversight both in its initial development and as it may be updated in the future. Due to the technical nature of these plans, the need for periodic revisions, and in light of the other conditions being recommended for inclusion in the air permit, the ESAB is not recommending that a public review process be conducted. We do, however, wish to emphasize the importance of a thorough technical review by the APCD and the ultimate release and public availability of the O&M Plan.
- c) Two additional emission control methods currently in use at the asphalt plant should be made mandatory in the permit under Conditions 7, 10, and 13. Those controls are 1) the capture of volatile organic compound (VOC) emissions from the finished asphalt product silo and routing them back to the asphalt burner, and 2) the vapor condenser equipment installed on the liquid asphalt tanks. As noted in the technical report prepared by ARS, these controls are necessary to minimize asphalt emissions and odors that have been the subject of community complaints. By virtue of their existing installation and use at the facility, these controls constitute Reasonably Available Control Technology (RACT) required for ozone non-attainment areas.
- d) The emission rate value for carbon monoxide (CO) used in the draft permit is higher than the reference value listed in the USEPA AP-42 standard publication for natural gas or LPG-fired drum mix asphalt plants. The Fort Collins area is classified as an attainment maintenance area for CO. Permits issued in other jurisdictions have set the CO permit levels using the AP-42 emissions value. While it is recognized that use of a higher emission rate is a conservative assumption for the dispersion modeling, the use of the lower AP-42 emission rate could reasonably be considered as RACT in order to limit CO emissions. The ESAB recommends that the standard AP-42 CO emission rate value of 0.13 pounds/ton of asphalt be specified for this permit or, alternatively, APCD should clearly state the technical

basis for its decision to use a higher emission rate in the permit under Condition 13.

- e) The draft permit requires opacity testing in Condition 15. Because the plant is approved to operate on both natural gas and LPG as fuel, the opacity testing should be conducted for the plant on both approved fuels.
- f) Condition 16 requires a stack test within 180 days of permit issuance. The ESAB recommends that the stack test be conducted for both natural gas and LPG fuel cycles.
- g) The stack test referenced in Condition 16 does not specify if the particulate testing is required to include condensable particulate matter (CPM), a subcategory of PM_{2.5}. The hot exhaust from the baghouse emission stack suggests that CPM emissions may be present. The ESAB recommends that CPM emissions be included in the particulate matter stack test or, alternatively, that the APCD clearly state why they are not required to be measured for this permit.
- h) The stack test referenced in Condition 16 does not require testing for HAPs. These pollutants represent a significant concern for the community. Air dispersion modeling extended to HAPs by ARS in their technical review indicates that their concentrations at community locations should be well below recommended health-based thresholds. In order to verify, or “ground truth”, those results, the ESAB recommends that the APCD create an appropriate list of hazardous emissions to be included in the stack tests. Those measured emissions should then be compared to the emissions inventory referenced in Note 4 on the draft permit.
- i) Three hazardous pollutants associated with asphalt plants, xylene, hexane and polycyclic aromatic hydrocarbons (PAH), are relevant as they are listed with AP-42 emissions factors and should be added to the draft permit inventory. Also, the emission factor listed for toluene in the draft permit appears to be from #2 fuel oil rather than natural gas; this should be corrected.
- j) The ESAB understands that the requirement for a stack test is a one-time requirement for this permit issuance. In terms of maintaining consistency with other permit decisions by the APCD, the ESAB recommends that the Division consider whether a recurring stack test should be required based on APCD actions in similar situations.
- k) A relevant concern voiced by area citizens relates to the level of air emissions expected when differing amounts of recycled asphalt are used in the process. The ESAB recommends that the draft permit include a discussion of this issue with reliance on relevant literature and experience in facilities using increased levels of recycled asphalt.
- l) Condition 8 in the draft permit limits the annual production of asphalt. The ESAB recommends that the hourly production rate of 400 tons/hour also be specified as a limit,

as that production rate was used to estimate the maximum emission rates for the facility.

- m) Odor control remains an important issue for the community and is referenced in Condition 10. The ESAB encourages MMM to continue its efforts to meet community expectations through the implementation of appropriate odor control practices.

The ESAB appreciates the opportunity to advise the Commissioners on this important issue. The ESAB also wishes to express appreciation to the Commissioners for allowing expenditure for the services provided by ARS without which this detailed analysis would not have been possible. Please contact me or Doug Ryan if you would like to discuss any of these comments in greater detail.



BOARD OF COUNTY COMMISSIONERS

Post Office Box 1190
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(970) 498-7010
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September 2, 2014

Mr. K.C. Houlden
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South, APCD-SS-B1
Denver CO 80246-1530
cdphe.commentsapcd@state.co.us

Dear Mr. Houlden:

Regarding: Martin Marietta Materials draft Construction Permit 13LR2446

We are writing to provide comments on the draft construction permit for the Martin Marietta Materials facility at 1800 North Taft Hill Road in unincorporated Larimer County. As part of our deliberations, we asked the Larimer County Environmental and Science Advisory Board (ESAB) to review the draft permit and provide technical recommendations. The Advisory Board was assisted in their review by an analysis of the draft prepared by Air Resource Specialists (ARS), Inc., dated August 2014.

The ARS technical analysis was helpful in three respects: first, it verified that the dispersion modeling performed by the Air Pollution Control Division (APCD) was done correctly and followed applicable regulatory guidelines; second, the analysis went beyond the modeling performed by APCD to provide information on hazardous air pollutants (HAP) of concern to residents in the area of the source; and third, the analysis provided a number of recommended conditions that, if included in the final APCD air permit, will provide valuable assurances to the public without unreasonably burdening the operations of the facility. The ARS report relied on published data from the USEPA and the State of California Reference Exposure Levels regarding industry-specific emissions levels and potential health effects, and the County's review did not include a separate analysis of those primary sources.

The emissions inventory and air dispersion modeling are important tools for predicting the potential impact to the surrounding community from airborne pollutants. The ESAB found that a number of conservative assumptions were incorporated into these tools that serve to purposely over-estimate the results such that they produce a worst-case scenario of modeled emissions. Their conclusion from the State's modeling and the additional research performed by ARS concerning HAP emissions is that the modeled emissions are not expected to exceed published health-based standards or recommended exposure levels at the public interface.

The Larimer County Board of Commissioners recommends that issuance of the construction permit by the by the APCD be subject to the following comments or conditions:

- a) The emissions inventory for the draft permit includes the emissions from the asphalt plant, but not from the related aggregate mining and processing operations conducted by MMM on the west side of Taft Hill Road. Under the Clean Air Act, we believe that emissions from those operations should be included as part of the air emissions sources considered for this permit. ARS suggests that it is unlikely that the added emissions from the adjoining operations will alter the minor/major source classification of the asphalt plant, but a complete and accurate analysis requires that these emissions also be considered when determining the total emissions from the source.
- b) The draft permit requires submittal of an Operations and Maintenance (O&M) Plan to the APCD for approval. It is important that the O&M Plan receive adequate review and oversight both in its initial development and as it may be updated in the future. Due to the technical nature of these plans, the need for periodic revisions, and in light of the other conditions being recommended for inclusion in the air permit, we are not recommending that a public review process be conducted. The Board does, however, wish to emphasize the importance of a thorough technical review by the APCD and the ultimate release and public availability of the O&M Plan.
- c) Two additional emission control methods currently in use at the asphalt plant should be made mandatory in the permit under Conditions 7, 10, and 13. Those controls are 1) the capture of volatile organic compound (VOC) emissions from the finished asphalt product silo and routing them back to the asphalt burner, and 2) the vapor condenser equipment installed on the liquid asphalt tanks. As noted in the technical report prepared by ARS, these controls are necessary to minimize asphalt emissions and odors that have been the subject of community complaints. By virtue of their existing installation and use at the facility, these controls constitute Reasonably Available Control Technology (RACT) required for ozone non-attainment areas.
- d) The emission rate value for carbon monoxide (CO) used in the draft permit is higher than the reference value listed in the USEPA AP-42 standard publication for natural gas or LPG-fired drum mix asphalt plants. The Fort Collins area is classified as an attainment maintenance area for CO. Permits issued in other jurisdictions have set the CO permit levels using the AP-42 emissions value. While it is recognized that use of a higher emission rate is a conservative assumption for the dispersion modeling, the use of the lower AP-42 emission rate could reasonably be considered as RACT in order to limit CO emissions. We recommend that the standard AP-42 CO emission rate value of 0.13 pounds/ton of asphalt be specified for this permit or, alternatively, APCD should clearly state the technical basis

for its decision to use a higher emission rate in the permit under Condition 13.

- e) The draft permit requires opacity testing in Condition 15. Because the plant is approved to operate on both natural gas and LPG as fuel, the opacity testing should be conducted for the plant on both approved fuels.
- f) Condition 16 requires a stack test within 180 days of permit issuance. We recommend that the stack test be conducted for both natural gas and LPG fuel cycles.
- g) The stack test referenced in Condition 16 does not specify if the particulate testing is required to include condensable particulate matter (CPM), a subcategory of $PM_{2.5}$. The hot exhaust from the baghouse emission stack suggests that CPM emissions may be present. The Board recommends that CPM emissions be included in the particulate matter stack test or, alternatively, that the APCD clearly state why they are not required to be measured for this permit.
- h) The stack test referenced in Condition 16 does not require testing for HAPs. These pollutants represent a significant concern for the community. Air dispersion modeling extended to HAPs by ARS in their technical review indicates that their concentrations at community locations should be well below recommended health-based thresholds. In order to verify, or "ground truth", those results, we recommend that the APCD create an appropriate list of hazardous emissions to be included in the stack tests. Those measured emissions should then be compared to the emissions inventory referenced in Note 4 on the draft permit. It is important to note that although CDPHE does not directly regulate emissions of HAPs for asphalt plants or their ambient concentrations in the community, a stack test that showed high emission levels resulting in modeled concentrations in the community above risk based screening thresholds would constitute a serious concern. The Board believes that the Department should work to develop a regulatory framework for regulating HAPs under such a scenario.
- i) Three hazardous pollutants associated with asphalt plants, xylene, hexane and polycyclic aromatic hydrocarbons (PAH), are relevant as they are listed with AP-42 emissions factors and should be added to the draft permit inventory. Also, the emission factor listed for toluene in the draft permit appears to be from #2 fuel oil rather than natural gas; this should be corrected.
- j) The requirement for a stack test in Condition 16 is a one-time requirement for this permit issuance. We recommend that a stack test be required on an annual basis in order to demonstrate continued compliance with the emission limits specified in the permit and with emission estimates that were the basis for air dispersion modeling.



December 23, 2014

RE: Response to Larimer County Board of County Commissioners public comment dated September 2, 2014 on Martin Marietta Materials, Inc. Taft Hill Road, hot mix asphalt plant, Permit Number 13LR2446.

Dear Commissioners,

Thank you for your comments on the above referenced permit. The Air Pollution Control Division (The Division) has reviewed your comments regarding the Taft Hill Road Hot Mix Asphalt (HMA) plant. Listed below are the responses to your comments.

1. *The emissions inventory for the draft permit includes the emissions from the asphalt plant, but not from the related mining and processing operations conducted by MMM on the west side of Taft Hill Road. Under the Clean Air Act, we believe that emissions from those operations should be included as part of the air emissions sources considered for this permit. ARS suggests that it is unlikely that the added emissions from the adjoining operations will alter the minor/major source classification of the asphalt plant, but a complete and accurate analysis requires that these emissions also be considered when determining the total emissions from the source.*

Response: The aggregate operation on the west side of Taft Hill Road is currently permitted and the particulate matter emissions from this operation were considered in our analysis, though they did not trigger modeling under our modeling guidelines. The HMA plant and the aggregate operation are considered a single source and have the same facility ID with the Division. There is no requirement under Colorado's Air Quality Control Commission (AQCC) regulations that specifies that all emission points need to be included on one single permit, they only need to be added together for determination of pollutant thresholds and source status which was done as part of this permitting action. Facilities may hold multiple permits for the activities at their site as long as all activities that require permits are covered under one or more permits and that the sum total of their emissions have been evaluated together for purposes of determining source status and establishing applicable requirements. Total Suspended Particulate (TSP) or particulate matter is not a pollutant considered for Title V (major) status and fugitive emissions are not included in determining major source status either for this type of facility. The particulate matter emissions combined from the aggregate processing and from the HMA plant make the source a true minor source for this pollutant.

2. *The draft permit requires submittal of an Operations and Maintenance (O&M) Plan to the APCD for approval. It is important that the O&M Plan receive adequate review and oversight both in its initial development and as it may be updated in the future. Due to the technical nature of these plans, the need for periodic revisions, and in light of the other conditions being recommended for inclusion in the air permit, we are not recommending that a public review process be conducted. The Board does, however, wish to emphasize the importance of a thorough technical review by the APCD and the ultimate release and public availability of the O&M Plan.*

Response: The O&M plan requirement implemented by the Division is part of the final approval process. There are no specific provisions for public comment during final approval in the state's AQCC regulations.

Every O&M Plan submitted to the Division is reviewed for appropriate methodology and accuracy. Following the Division's review of the submitted plan, suggested and required changes are given to the source to update their plan prior to Division approval, and any future updates or changes must be submitted to the Division for approval. All approved O&M plans receive an approval letter stating various components of the plan, all of which, including the plan itself, is public record and as such available for anyone to request. We do not have a specific mechanism in place to alert outside entities to the submittal of these plans. At this time, such a notification process would be very challenging, in part due to the significant number of sources that the division permits each year. If the City of Fort Collins is interested, we could discuss the O&M plan for the Martin Marietta Materials HMA plant further and describe how we review the plan and the elements that compose the plan, and how we ultimately determine what is approvable.

3. *Two additional emission control methods currently in use at the plant should be made mandatory in the permit under Conditions 7, 10, and 13. Those controls are 1) the capture of volatile organic compound (VOC) emissions from the finished asphalt product silo and routing them back to the asphalt burner, and 2) the vapor condenser equipment installed on the liquid asphalt tanks. As noted in the technical report prepared by ARS, these controls are necessary to minimize asphalt emissions and odors that have been the subject of community complaints. By virtue of their existing installation and use at the facility, these controls constitute Reasonable Available Technology (RACT) required for ozone non-attainment areas.*

Response: The Division agrees that existing control equipment and practices that reduce VOC emissions should be included as part of the RACT determination for the Martin Marietta Materials HMA plant. The permit will be revised accordingly and the associated control equipment and practices will be identified as part of the RACT requirements.

4. *The emission rate value for carbon monoxide (CO) used in the draft permit is higher than the reference value listed in the USEPA AP-42 standard publication for a natural gas or LPG-fired drum mix asphalt plants. The Fort Collins area is classified as an attainment maintenance area for CO. Permits issued in other jurisdictions have set the CO permit levels using AP-42 emissions value. While it is recognized that use of a higher emission rate is a conservative assumption for the dispersion modeling, the use of the lower AP-42 emission rate could reasonably be considered as RACT in order to limit CO emissions. We recommend that the standard AP-42 CO emission rate value of 0.13 pounds/ton of asphalt be specified for this permit or, alternatively, APCD should clearly state the technical basis for its decision to use a higher emission rate in the permit under Condition 13.*

Response: AP-42 emission factor values are not intended for use in setting RACT levels, they simply express average emission rates for industrial processes and activities. In this case, as a result of stack tests performed in Colorado, it became clear that the emission factors in AP-42 were not accurate for properly tuned asphalt plants operated at altitudes in Colorado. The Division issued a memo on September 26, 1996 regarding the CO emission factor for HMA plants. The memo stated that based on stack testing results, drum mix plants should use a factor of 0.55 lb/ton for CO. On December 9, 2013 an internal memo was issued that updated the emission factor based on more stack test results. The update was to use 0.40 lb/ton for CO on drum mix plants regardless of fuel type instead of the 0.55 lb/ton. If a source wants to request lower value, a stack test will have to be performed after the permit is issued to show that the source can meet that number. In the case of the Martin Marietta Materials Fort Collins plant, they requested a value of 0.291 lb/ton. The permit requires them to conduct a stack test for CO to demonstrate that they can meet this emission factor and the corresponding emissions limit based on this factor. For asphalt plants in Colorado to meet the 0.13 lb/ton factor for CO, it is the Division's experience that they would have to run in such a manner as to result in some type corresponding increase in nitrogen oxides (NOx) emissions and a less efficient combustion process. NOx is a precursor to ozone formation. This plant is located in a non-attainment area for ozone. To require a CO

emission factor that potentially leads to less efficient combustion and increased NOx emissions would not meet the "Reasonable" criteria of RACT.

Note that the addition of post combustion emission controls for CO would not be considered RACT due to high cost per ton of pollutant removed.

5. *The draft permit requires opacity testing in Condition 15. Because the plant is approved to operate on both natural gas and LPG as fuel, the opacity testing should be conducted for the plant on both approved fuels.*

Response: The State does not typically require opacity testing strictly for the combustion of gaseous fuels (although LPG is in liquid form for shipping and storage, it is a gas when it is combusted). The reason an opacity test is required is due to the particulate matter created from the actual HMA itself, and to confirm the control equipment is operating properly. In this case, the combustion of natural gas or LPG does not significantly add to the particulate matter being created or controlled so there is no real benefit in testing opacity for both fuels.

6. *Condition 16 requires a stack test within 180 days of permit issuance. We recommend that the stack test be conducted for both natural gas and LPG Fuels.*

Response: When comparing emissions of CO, VOCs, and NOx for natural gas vs. LPG based on burner emissions in AP-42 for like sized burners based on a lb/btu factor, we found that the emissions are the same or lower for all three pollutants. Because Martin Marietta Materials is willing to use the higher 0.40 lb/ton emission factor for CO for LPG coupled with such a similarity in the two fuels, we do not see the benefit in testing for both fuels or do this testing on an annual basis, unless there is a physical change to the unit such as a new drum. It has been the Division's experience that retesting of un-modified asphalt plants on a regular basis does not provide added value if the plant is properly operated and maintained per the facility's O&M plan.

7. *The stack test referenced in Condition 16 does not require testing for HAPs. These pollutants represent a significant concern for the community. Air dispersion modeling extended to HAPs by ARS in their technical review indicates that their concentrations at community locations should be well below recommended health-based thresholds. In order to verify, or "ground truth", those results, we recommend that the APC create an appropriate list of hazardous emissions to be included in the stack tests. Those measured emissions should then be compared to the emissions inventory referenced in Note 4 on the draft permit. It is important to note that although CDPHE does not directly regulate emissions of HAPs for asphalt plants of their ambient concentrations in the community, a stack test that showed high emission levels resulting in modeled concentrations in the community above risk based screening thresholds would constitute a serious concern. The board believes that the Department should work to develop a regulatory framework for regulating HAPs under such a scenario.*

Response: Colorado requires individual HAP emissions to be reported when they equal or exceed a threshold of 250 pounds per year on an uncontrolled actual basis. Colorado has also adopted federal programs for HAPs including major source limit thresholds and Maximum Achievable Control Technology (MACT) standards for area and major sources. There is currently no federal MACT standard for Hot Mix Asphalt (HMA) plants for either area or major sources. An evaluation of risk is considered by the U.S. Environmental Protection Agency (EPA) when developing MACT standards. Colorado AQCC regulations do not separately provide for a risk assessment or comparison to some type of reference ambient concentration when considering HAP emissions. During the permitting process, the Division does not require testing of HAP emissions unless verifying compliance with a specific major source or synthetic minor permit limit or the testing is prescribed as part of an applicable MACT standard. In the case of the Martin Marietta Materials HMA plant, the Division is not aware of site-specific information that suggests the AP-42 emission factors for HAPs are not generally representative of expected levels of HAP emissions from this plant.

8. *Three hazardous pollutants associated with asphalt plants, xylene, hexane and polycyclic aromatic hydrocarbons (PAH), are relevant as they are listed with AP-42 emissions factors and should be added to the draft permit inventory. Also, the emission factor listed for toluene in the draft permit appears to be from #2 fuel oil rather than natural gas; this should be corrected.*

Response: The state has a list of hazardous air pollutants (HAPs) and other non-criteria reportable pollutants in Colorado Air Quality Control Commission (AQCC) Regulation No. 3 for inventory and billing purposes, and if any single HAP or non-criteria reportable pollutant will have an emission rate of 250 pounds (lbs) or more per year on an uncontrolled basis, the source needs to submit an Air Pollutant Emission Notice (APEN) and pay an annual inventory charge based on the emitted level. The state reporting level of 250 lbs or more per year is on a per HAP basis. The only HAP in the PAH list of HAPs in AP-42 for Drum Mix HMA plants while being run on natural gas is Naphthalene at 9.0×10^{-5} lbs per ton of HMA produced, which does not in this case make it reportable. Each HAP is treated separately, but even using the total PAH emission factor of 0.00019, it would not be reportable. Xylene was not listed in the analysis as it is not reportable at the requested annual throughput of 475,000 tons of HMA produced per year. Acetaldehyde and Quinone were included in the permit when waste oil was a requested fuel source, the HAPs were inadvertently left on the permit after the waste oil fuel was removed and this will be corrected for the permit issuance. The emission factor for Toluene in the analysis was also a waste oil emission factor, and when corrected to the natural gas emission factor it is no longer reportable and will be removed from the permit. Hexane was, however, inadvertently not included in the original analysis and it will be added to the permit in the notes to permit holder as the emissions will be reportable.

9. *The requirement for a stack test in Condition 16 is a one-time requirement for this permit issuance. We recommend that a stack test be required on an annual basis in order to demonstrate continued compliance with the emission limits specified in the permit and with emission estimates that were the basis for air dispersion modeling.*

Response: It has been the division's experience that retesting of un-modified asphalt plants on a regular basis does not provide added value if the plant is properly operated and maintained per the facility's O&M plan. Therefore, the Division does not typically require stack testing on an annual basis. Another test could be required if there is a physical change to the plant or change in the method of operation such as the installation of a new drum or the use of a new fuel type.

10. *A relevant concern voiced by area citizens relates to the level of air emissions expected when differing amounts of recycled asphalt are used in the process. It is our recommendation that the draft permit include a discussion of this issue with reliance on relevant literature and experience in facilities using increased levels of recycled asphalt.*

Response: The Division does not believe there are representative testing results available that show a significant increase or decrease in emissions related to the amount of recycled asphalt (RAP) used in the mix and as such, does not calculate emissions based on the percentage of RAP used and does not put a RAP consumption limit into the permit. RAP is a common additive to asphalt and the Colorado Department of Transportation and other public works agencies generally list an acceptable percentage in their mix requirements. Other additives such as recycled tires and shingles are not nearly as common and not allowed unless specifically requested in the application and included in the permit. In this case, a modification to the permit would need to be requested and received prior to using these materials. The air permits issued are designed to state specific regulations and requirements and do not offer an appropriate vehicle for analysis and discussion on methodology. A discussion on RAP, consistent with this comment response, will be added to the Division's preliminary analysis to document this decision.

11. *Condition 8 in the draft permit limits the annual production of asphalt. We recommend that the hourly production rate of 400 tons/hour also be specified as a limit, as that production rate was used to estimate the maximum emission rates for the facility.*

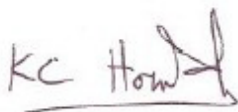
Response: The nominal maximum design rate of the plant is 400 tons per hour of asphalt. That hourly production rate was used in the dispersion modeling analysis for carbon monoxide and the facility demonstrated compliance with the carbon monoxide NAAQS. This was the only part of the technical and regulatory review completed by the Division for this permitting action that relied on a short-term production and/or emission rate. As a matter of practice, the Division does not include permit restrictions on short-term design or production rates unless such restrictions are needed to demonstrate compliance with an applicable standard. In this case, the facility was able to demonstrate compliance at the nominal maximum hourly design rate. The facility is limited based on their 12-month production total of 475,000 tons per year of asphalt and the permit emission limits were calculated based on this total.

12. *Odor control remains an important issue for the community and is referenced in Condition 10. The Board of County Commissioners encourages MMM to continue its efforts to meet community expectations for odor control through the implementation of appropriate odor control practices.*

Response: There is no provision in the AQCC regulations for including odor control measures in Construction Permits for industrial sources separate of any applicable requirements that may apply to the individual pollutants (or classes of pollutants such as VOCs) that are contributing to odors. The installation of odor control equipment requires the filing of an Air Pollutant Emission Notice (APEN). Martin Marietta Materials included the odor controls on their APEN for this plant. However, Martin Marietta Materials is required to meet the odor limitations in Regulation Number 2. Those requirements are legally enforceable and involve whether odors are detectable at certain prescribed dilution rates.

Based on the Division's analysis of the proposed project and the fact that the proposed project demonstrated compliance with all applicable requirements, including NAAQS requirements through computer dispersion modeling, the Division is moving forward with the issuance process for the permit for this project. The HAP emissions will be corrected in the notes to permit holder and in the Division's emission inventory system. The additional control requirements will also be added into the permit prior to issuance. Thank you again for your comments and your interest in this draft air permit.

Sincerely,



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