CLNG: Responses to motions to strike

- Consolidated intervenors Professional Mariners and Concerned Citizens (PM-CC)

- Consolidated intervenors Industrial Energy Consumer Group, Maine Chamber of Commerce and Maine Workers for Healthier Environment (ICM)

- National Park Service (NPS)

STATE OF MAINE
BOARD OF ENVIRONMENTAL PROTECTION

CALAIS LNG PROJECT CO., LLC and CALAIS LNG PIPELINE CO., Calais, Baring Plantation, Baileyville, and Princeton Washington County, Maine, applications for #A-1029-71-A-N (air emission) #L-24843-26-A-N (site law of development) #L-24843-TG-B-N (natural resources) #L-24843-IW-C-N (natural resources) #L-24843-L6-D-N (natural resources) #L-24843-4P-E-N (natural resources) #W-9056-50-A-N (water quality certification)	CONCERNED CITIZENS FOR CLEAN AND SECURE ENERGY, INC., and PROFESSIONAL MARINERS AND WATERWAY USERS OF PASSAMAQUODDY BAY REGION, RESPONSE TO MOTIONS TO STRIKE PRE-FILED DIRECT TESTIMONY

Consolidated intervenors Concerned Citizens for Clean and Secure Energy, Inc. ("Citizens"), and Professional Mariners and Waterway Users of Passamaquoddy Bay Region ("Mariners"), provide the following response to the motions to strike and letters regarding site visits submitted to the Board of Environmental Protection ("Board") in this matter on June 9.

1. Citizens Response to the Motion to Strike filed by Save Passamaquoddy Bay/NN.

Save Passamaquoddy Bay/NN ("SPB") moved to strike testimony by Citizens' witnesses Kenneth Thomas, Yvon Labbé and Anthony Brinkley. Citizens request that the Board deny the motion as it relates to each of these witnesses.

In Mr. Thomas's case, SPB alleges that his testimony should be struck because Mr. Thomas "opines on the tourist trade but he neither works in the tourist trade, nor is he qualified as an expert in the tourist trade." SPB Motion to Strike, at 7. Both allegations are patently false. Mr. Thomas is the second-generation owner/manager of the International Motel in Calais, which – as specifically noted in his testimony – has annually provided lodging for tourists visiting the region since 1955. *See* Thomas Direct, CC/PM Bates Stamp p. 26-27. Thus, as a person who was born into and has spent his entire life working and managing one of the larger hotels in Calais, Mr. Thomas is eminently qualified to opine on the steep declines and terrible state of the

tourist trade in Washington County. His testimony is fully admissible based both on a lifetime of personal knowledge as well as his expertise as someone with specialized knowledge, skill, experience, and training concerning the tourist trade in the area. Mr. Thomas's testimony that Calais is "not really a tourist destination," *id.*, CC/PM Bates Stamp p. 24, and that "Washington County is just not a tourist destination anymore," *id.*, CC/PM Bates Stamp p. 25, goes to the state of the industry – not to Mr. Thomas's experience or qualifications. Thus, SPB's motion to strike Mr. Thomas's testimony should be rejected.

With regard to Yvon Labbé and Anthony Brinkley, SPB concedes that these witnesses are qualified experts on Maines' Franco-American heritage. SPB Motion to Strike, at 8. And, as SPB further acknowledges, Messer's. Labbé and Brinkley's joint testimony addresses the cultural and historical significance of St. Croix Island as it relates to Maine's Franco-American heritage and the historical and current uses of the island, proximate areas of the mainland, and the St. Croix waterway. Accordingly, SPB has no argument. Messer's. Labbé and Brinkley's expertise and testimony are directly relevant to the Board's determination of the visual impact of the proposed project on cultural and historical resources. *See* DEP Rules, 06-096 CMR ch. 315, § 1 *et. seq.* SPB's motion to strike is, therefore, entirely without basis and should be rejected.

2. Mariners Response to the Motion to Strike filed by Save Passamaquoddy Bay/NN.

Mariners will address the SPB Motion to Strike at tomorrow's pre-hearing conference.

3. Citizens and Mariners Response to Suggestions for the Board's Site Visit.

Citizens and Mariners agree with the applicant and other parties that the Board cannot see everything in one day and that it should therefore concentrate on the areas of controversy. We note that the all parties agreed, as do we, that at a minimum the tour should involve a visit to the proposed LNG terminal location and either a boat trip along the LNG transit route, or stops at representative viewing locations (including both locations with open views and locations representative of limited or blocked views) along the shoreline between Calais and Eastport.

Citizens and Mariners object, however, to certain suggestions. First, since the National Park Service actively discourages public visitation of St. Croix Island, we believe it would misrepresent the average experience of the general public for the Board to visit the island or to

tour private property on the mainland that is not open to the general public. Instead, it would be more appropriate for the Board to view St. Croix Island from the NPS interpretive site and from the water (which it will if it takes a boat trip anyway).

Second, Citizens and Mariners disagree that the Board should visit private properties along the route; such properties are not accessible to the general public and are not representative of the public viewing experience. Third, Citizens and Mariners disagree with suggestions that the Board visits any Canadian locations; nonetheless, if such a visit occurs, it should include the Bayside Port and Quarry located directly across the St. Croix River from the proposed LNG terminal.

Respectfully Submitted, June 9, 2010

By: Stephen F. Hinchman

Stephen F. Hinchman, for Citizens for Clean and Secure Energy, Inc. *and*
Professional Mariners and Waterway Users of Passamaquoddy Bay Region

Stephen F. Hinchman, Esq.
Attorney for CCSE
537 Fosters Point Road
West Bath, ME 04350
207.837.8637
SteveHinchman@gmail.com

Edmond J. Bearor, Esq.
Timothy A. Pease, Esq.
Attorneys for PMWU
Rudman & Winchell, LLC
P.O. Box 1401
Bangor, ME 04402-1401
(207) 947-4501
ebearor@rudman-winchell.com
tpease@rudman-winchell.com

PretiFlaherty

Anthony W. Buxton
abuxton@preti.com

June 10, 2010

VIA ELECTRONIC AND REGULAR U.S. MAIL

Susan Lessard, Chair
c/o Terry Hanson
Maine Board of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

Re: Calais LNG Project Company, LLC and Calais Pipeline Company, LLC

Dear Chair Lessard:

The Industrial Energy Consumer Group ("IECG"), Maine State Chamber of Commerce ("Chamber"), and Maine Workers for a Healthier Environment, Inc. ("Workers") (collectively "Business Intervenors") have reviewed the motion to strike submitted yesterday afternoon by Save Passamaquoddy Bay – U.S. and NN (collectively "SPB/NN"). SPB/NN's motion aims a battery of attacks at certain testimony offered by Business Intervenors in this proceeding.

Business Intervenors strenuously oppose SPB/NN's motion. Following the Board's procedural order consolidating the three parties that comprise the Business Intervenors, IECG, the Chamber, and Workers have worked closely together to coordinate testimony, eliminate redundancy, and focus on the essentials of their cases. Each witness and each piece of testimony offered by Business Intervenors provides the Board with important evidence that is directly relevant to the Board's consideration of the applications currently before it. Accordingly, none of Business Intervenors' testimony should be stricken.

Business Intervenors have also reviewed the schedule proposed by the Applicants, and have considered the practical challenges and constraints placed upon effective advocacy given the timeline for this proceeding and the relatively short hearing schedule given the critical importance of Applicants' project to Maine people and businesses. In light of these

considerations, at tomorrow's pre-hearing conference, Business Intervenors will be prepared to identify several witnesses to eliminate from Business Intervenors' designated list of witnesses by panel, provided that other intervenors similarly reduce the volume of their witnesses, and provided that such prefiled intervenor testimony by witnesses eliminated from the panels will be admitted into the record during the public witness hearing without the need for such witnesses to personally appear.

Very truly yours,

Anthony W. Buxton
Todd J. Griset

cc: Calais Service List

United States Department of the Interior

NATIONAL PARK SERVICE
Saint Croix Island International Historic Site
c/o Acadia National Park
P.O. Box 177
Bar Harbor, Maine 04609

IN REPLY REFER TO:

June 11, 2010

VIA ELECTRONIC AND U.S. POSTAL MAIL

L7619(SACR)

Ms. Susan M. Lessard, Presiding Officer
Maine Board of Environmental Protection
c/o Terry Hanson
#17 State House Station
Augusta, Maine 04333-0017

Re: Calais LNG Project Co., LLC and Calais LNG Pipeline Co., LLC Applications for Site Location of Development Act, Natural Resources Protections Act, Air Emission, and Water Discharge

Dear Ms. Lessard:

We are writing to provide information to the Board of Environmental Protection for its consideration of motions to strike pre-filed direct testimony in regard to the above-referenced matter, which we hope will allow the Board to make a more informed decision.

The National Park Service has reviewed the Motion to Strike of the Industrial Energy Consumer Group, Maine State Chamber of Commerce, and Maine Workers for a Healthier Environment, Inc. (collectively, Business Intervenors), and offers the following points of fact in regard to the Downeast LNG's pre-filed direct testimony on air quality by Gary Napp and visual impacts by Terrence DeWan at Saint Croix Island International Historic Site.

Air Quality:

- Saint Croix Island International Historic Site is a Class II area under the Clean Air Act.
- Roosevelt Campobello International Park and the 7,500-acre wilderness area in Moosehorn National Wildlife Refuge are Class I areas under the Clean Air Act.
- In the enclosed memorandum dated November 21, 2006, the U.S. Department of the Interior notified the Maine Department of Environmental Protection of the air quality analyses needed to evaluate the impacts of the proposed Quoddy Bay LNG and Downeast LNG projects on these National Park Service and U.S. Fish and Wildlife Service managed lands.

- The memorandum states, "Because of the proximity, the NPS is also concerned that emissions from the two proposed LNG facilities may impact resources at Saint Croix Island International Historic Site. For this reason, we ask that the air quality analyses performed for the Class I areas also include this National Park Service Class II area."
- Federal land managers will make the same request to the Maine Department of Environmental Protection in regard to air emissions of the Calais LNG project.

Visual Impacts:

- Congress authorized the National Park Service to acquire up to 50 acres of land on the mainland to be used to support its administration of Saint Croix Island International Historic Site, and to provide a landing dock for access to Saint Croix Island (16 United States Code § 450hh).
- The authorized boundary of Saint Croix Island International Historic Site includes a 2.25-acre parcel (NPS Tract No. 01-103) of shorefront land at Red Beach in the City of Calais known as the Livingstone property (see enclosed map). While privately owned, this parcel is currently within Saint Croix Island International Historic Site, which is a unit of the National Park System. The National Park Service is in regular contact with the landowner to stay informed of any interest in the possible sale or donation of the property.
- On July 31, 2008, the National Park Service conducted a site visit of Saint Croix Island International Historic Site with representatives of Calais LNG and Woodard and Curran, to understand the visual impacts of the proposed LNG facilities. To facilitate its visual impact assessment, Calais LNG flew balloons to represent the height of the three proposed LNG storage tanks. The group toured the Livingstone property specifically to identify views of the proposed LNG facilities from that location, and determined that the LNG storage tanks and pier would be clearly visible from the shore of this property. Calais LNG, however, did not include views from the Livingstone property in its visual impact assessment for the Board's consideration.

We would be happy to clarify this information and provide supporting documentation at your request.

Sincerely,

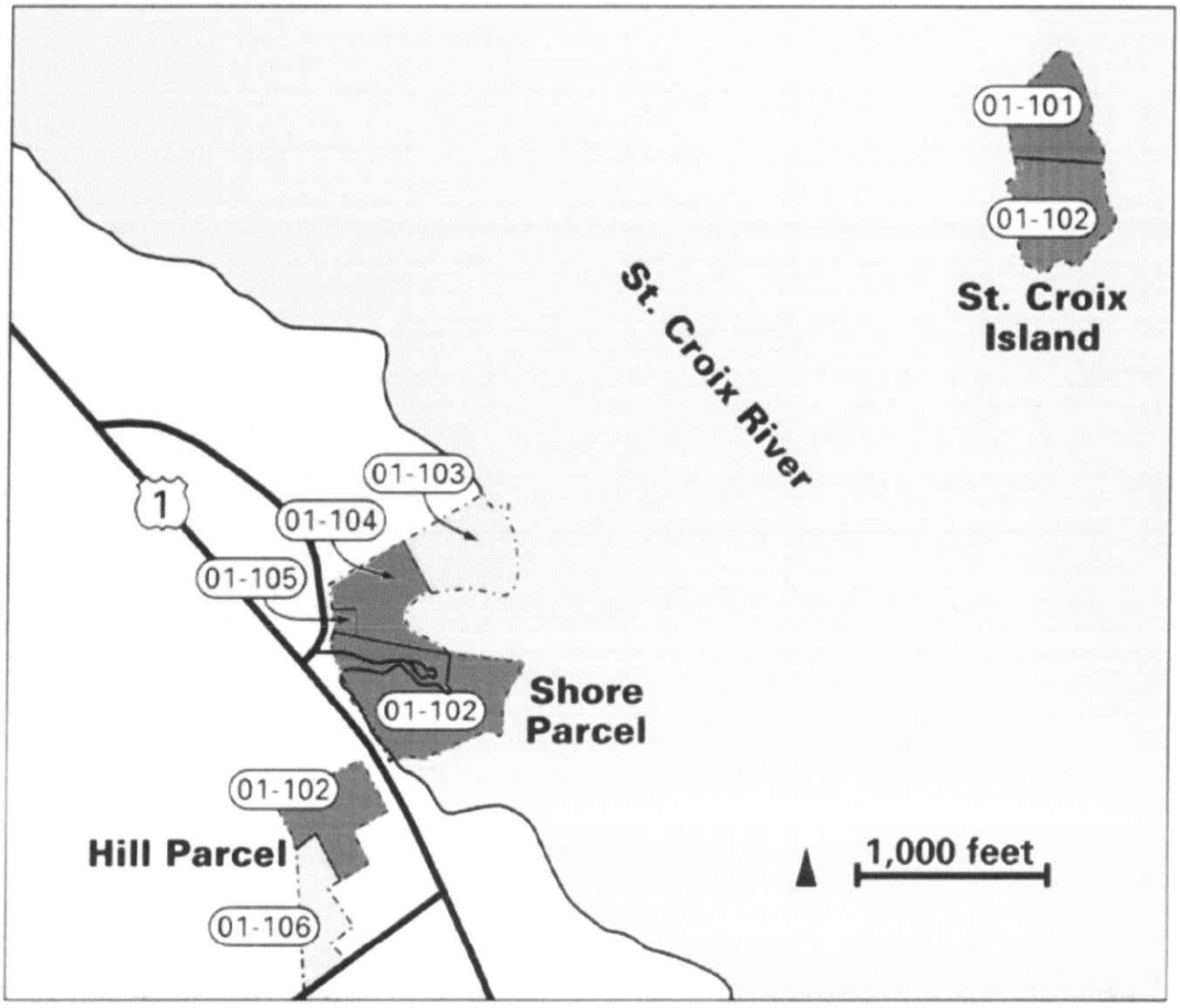
John T. Kelly

John T. Kelly
Park Planner

Enclosures (2)

cc: Board of Environmental Protection Service List (05-11-10) for Calais LNG

Saint Croix Island International Historic Site



NPS authorized by public law (63 Stat. 158) to own land within area

NPS-owned tracts

non-NPS tracts authorized for acquisition

01-101 NPS tract number

VIA E-MAIL
November 21, 2006

TO: Kevin Ostrowski
Senior Meteorologist – Air Quality Modeling
Maine Department of Environment Protection - Bureau of Air Quality

FROM: Meredith A. Bond, PE
Deputy Chief
Fish and Wildlife Service, Branch of Air Quality

CC: Maine Department of Environmental Protection:
Bruce Sproul, Tom Downs, Eric Kennedy, Marc Cone
Passamaquoddy Tribe/Sipayik Environmental Department:
Marvin Cling
USEPA Region 1:
Brendan McCahill, Brian Hennessey, Dan Brown
Federal Energy Regulatory Commission:
Eric Tomasi, Gertrude Fernandez, Robert Kopka, Shannon Dunn
NPS-Air Resources Division:
Dee Morse, John Bunyak, John Notar
NPS-Roosevelt Campobello International Park:
Paul Cole, Harold Bailey
NPS-Acadia (St. Croix Island International Historic Site):
David Manski, John Kelly
FWS-Branch of Air Quality:
Sandra Silva, Tim Allen, Catherine Collins, Jill Webster
FWS-Moosehorn National Wildlife Refuge:
Bill Kolodnicki, Maurice Mills
FWS-Region 5:
Tony Leger
USDA/Forest Service:
Chuck Sams, Livia Crowley, Ann Acheson

SUBJ: Quoddy Bay LNG Terminal and Down East LNG Terminal - Air Quality Analyses for DOI Lands

Kevin,

Thank you for your e-mail of November 13, 2006, regarding the proposed Quoddy Bay Liquified Natural Gas (LNG) terminal. Last week, you had conversations with Dee Morse of the National Park Service - Air Resources Division (NPS-ARD), and I spoke with Eric Tomasi of the Federal Energy Regulatory Commission (FERC), about these projects. During these conversations, we all also discussed the nearby proposed Down East LNG terminal. This e-mail outlines the visibility and air quality related values (AQRV) analyses that we will need in order to evaluate the impacts of these two proposed facilities on both National Park Service (NPS) and Fish and Wildlife (FWS) managed lands.

The FWS Branch of Air Quality (FWS-AQB) and the NPS-ARD carry out technical work on behalf of the Department of the Interior (DOI), Assistant Secretary for Fish, Wildlife, and Parks, who is the official Federal Land Manager for Clean Air Act concerns at DOI managed lands. NPS-ARD and FWS-AQB will be coordinating our reviews of both the Quoddy Bay and Down East LNG projects, and I will be your lead contact for both offices. You can expect formal written communications to be jointly signed, and consider our e-mail communications to represent both bureaus.

These facilities are proposed to be located very near to several NPS and FWS managed lands. The nearest, ranging from 9 km to about 20 km away, include: Moosehorn National Wildlife Refuge, Roosevelt Campobello International Park, and Saint Croix Island International Historic Site. Both Roosevelt Campobello International

Park and the wilderness area at Moosehorn National Wildlife Refuge are designated as Class I areas under the Clean Air Act, and are thus afforded specific additional air quality and AQRV protections. Because of the proximity, the NPS is also concerned that emissions from the two proposed LNG facilities may impact resources at Saint Croix Island International Historic Site. For this reason, we ask that the air quality analyses performed for the Class I areas also include this National Park Service Class II area.

We really appreciate that you are involving us in your permitting process at an early stage. The information below seeks to answer the initial questions that you raised, as well as provide additional direction regarding the AQRV analyses for NPS and FWS lands.

1. INCLUDING VESSEL EMISSIONS WHILE HOTELLING/OFFLOADING

Your e-mail described the air pollution emitting sources at the Quoddy Bay LNG terminal that are considered in the estimates of potential emissions from this facility. You then state that: "There will be additional Project-related emissions not directly associated with operation of the LNG Terminal air emission sources identified previously...." The categories listed include, "Emissions from LNG carriers at berth (emissions associated with unloading LNG and hotelling emissions)," and "Emissions from mobile marine vessels including LNG carriers, tug assists, and Coast Guard escort boats." I understand from your message that the current plans for the permit do not address these excluded categories.

FWS and NPS specifically disagree with excluding the LNG carriers' emissions while docked at the terminal and conducting offloading/hotelling operations. These emissions generally are much greater than those of the terminal itself, and would not occur if it were not for the existence of the LNG terminal. Furthermore, the LNG carriers' offloading/hotelling operations are necessary to the functioning of the LNG terminal. Since these emissions will be added into the airshed because of the new LNG terminal, and are necessary to the operation of the facility, they need to be considered in assessing potential impacts to air quality and AQRVs.

While writing this message, I found it helpful to locate a clear definition of some key terms. I found an EPA document that includes a discussion of terminology for vessel movement and modes of operation that is useful:

> "Hotelling is the time at PWD [pier/wharf/dock] or anchorage when the vessel is operating auxiliary engines only. Auxiliary engines are operating at some load conditions the entire time the vessel is manned, but peak loads will occur after the propulsion engines are shut down either because the auxiliary engines are then responsible for all onboard power or because they are being used to power off-loading equipment, or both." (Table 3-1, page 3-4, EPA420-R-99-020, Commercial Marine Activity for Deep Sea Ports in the United States, Final Report, September 1999, available at: http://www.epa.gov/otaq/marine.htm, along with parallel document that discusses inland and Great Lakes ports – scroll to near bottom under "Miscellaneous Documents" heading.)

Reading this, I understand that there may be two different categories of activity when an LNG carrier is considered to be "hotelling" – while it is actually at the LNG terminal and accomplishing its product offloading operations, and should it need to wait in a staging area (i.e., an anchorage) before approaching the terminal itself. To clarify, the emissions from the first category – while conducting product offloading operations – are what we believe at a minimum must be included when evaluating air quality impacts due to the facility.

Over the past few years, we have reviewed several LNG terminal permit actions, both at shore and also in "deepwater" locations. Consistently, we have asked for and seen these projects include at a minimum the LNG carriers' offloading/hotelling emissions, and in some cases also the emissions of any "stand-by" tug/emergency assist vessels that are required to stay alongside during the offloading operations. (These stand-by vessels are required for safety considerations at some ports, especially those on shore or inland.) The following items highlight how some recent projects have addressed this issue. Note that, in some of these examples, the term "hotelling" appears to be interpreted as only one or the other of the two aspects described above. However, from the context of each discussion, the consistent requirement to include LNG carrier emissions relating to offloading/hotelling operations when evaluating air quality impacts is evident.

- The TORP Bienville project is located offshore in the Gulf of Mexico. EPA Region 4 is the permitting authority and Stan Krivo is the permitting contact. When evaluating the emissions from this project, the

"platform equipment plus the LNG carrier engines and boilers during LNG unloading" were included in the visibility and AQRV analyses.

- The Compass Port project is also located offshore in the Gulf of Mexico. EPA Region 4 is the permitting authority and Stan Krivo is the permitting contact. In comments Mr. Krivo provided on December 9, 2005, for this facility's modeling analysis, he said: "The project emissions were divided into Primary and Secondary emissions. The primary emission included the LNG carrier emissions associated with the offloading operations and those of the stationary sources on the LNG platform (i.e., 5 turbine generators, diesel emergency generator, 2 diesel firewater pump engines, and 2 diesel cranes). The secondary emissions included other LNG carrier emissions (i.e., cruising and maneuvering within the 500 m exclusion zone, and hotelling), 3 tugboats, supply boats, crew boats, and helicopters. The distinction between these emissions was based on the agreement that mobile source emissions and hotelling emissions are not included in PSD applicability determination but are included in the impact assessments Therefore, the primary and secondary emissions should be included when assessing cumulative NAAQS and/or PSD increment impacts and in assessing AQRV impacts to PSD Class I areas."

- The Freeport McMoRan – Main Pass Energy Hub project is located offshore in the Gulf of Mexico. EPA Region 6 is the permitting authority and Eric Synder is the permitting contact. The February 20, 2006, "Addendum to Appendix F (Modeling Report)", contains the following statement on page 2, Section 2.1: "emissions for the tugs and LNG Carriers are represented by line source with performing ingress and egress operations within the 500 meter safety zone; and emissions for one tug and the LNG carrier are represented by point sources during hotelling ("offloading")."

- The Southern LNG/Elba Island facility is located on shore. The Georgia Environmental Protection Division is the permitting authority and Dr. J. Boylan is the permitting contact. After the EPD's initial review of the Elba III Terminal Expansion permit application, Georgia EPD sent a letter to Southern LNG requesting emissions data from vessels at berth and dispersion modeling that includes activities of vessels at berth. (June 5, 2006, letter from Jeng-Hon Su, Environmental Engineer, GA-DNR, to Mr. James Tangeman, Southern LNG, Inc.)

- In a February 9, 2005 letter from the Alabama Department of Environmental Management (ADEM) to the Regional Administrator of EPA Region 4, ADEM stated, in response to the ConocoPhillips application for an LNG facility, that "the Department's interpretation of its rules is that the emissions generated by the vessel which are attributed to the loading and unloading activities while the vessel is docked at the port would be included in the port's potential emissions."

- In an October 28, 2003 letter from EPA Region 6 Regional Council to the El Paso Energy Bridge Gulf of Mexico, EPA stated "El Paso has acknowledged that sources on the port metering platform will produce air emissions.... These emissions should be included in the applicability determinations for [Clean Air Act] preconstruction and operating permits. In addition, the much greater vessel emissions associated with the re-gasification process and the transfer of gas to the port should be included."

We would be glad to provide copies of any of the documents identified above, should you need them.

2. VISIBILITY ANALYSIS

For the Quoddy Bay and Down East LNG terminal projects, the applicants will need to conduct visibility analyses to address potential impacts at Moosehorn National Wildlife Refuge, Roosevelt Campobello International Park, and Saint Croix Island International Historic Site. Since all of these areas are within 50 kilometers of the proposed facilities, "near field" visibility analyses are indicated. The following is additional information to assist the applicants with the procedures for a near field visibility analysis.

As described in the *Federal Land Managers' Air Quality Related Values Workgroup Report* (FLAG, December 2000, available at: http://www2.nature.nps.gov/air/Permits/flag/flagDoc/index.cfm), assessments to evaluate visibility impacts for sources locating generally within 50 km of a Class I area involve the use of one or more EPA guideline models for the regions within Class I areas that may be affected by plumes or layers viewed

against a background. These evaluations consist of estimates of delta-E (change in color) and plume contrast with respect to natural conditions and compared to specific thresholds. Because this process may involve multiple steps and site specific information, our suggestion to all applicants is to obtain recommendations from the appropriate Federal Land Manager (FLM) representative on the specific reference levels (i.e., estimate of natural conditions) and, if applicable, FLM recommended plume/observer geometries and receptor locations prior to submitting applications for review. For more complex analyses, a written modeling protocol, approved in advance, serves to document the procedures agreed upon by the applicant, state permitting authorities, and the federal land management agencies, and also streamline our review of the resulting permit package. [Note: in these cases for the two LNG terminals, written modeling protocols for any refined analyses are indicated.]

Reference values or thresholds for analysis comparison are specified in FLAG. For screening analysis, a demonstration must show that emissions will not cause a plume with any hourly estimate of delta-E greater or equal to 2.0, or the absolute value of the contrast greater or equal to 0.05. For more refined analysis (i.e., PLUVUE II, described under "Level-3," below), a lower threshold of delta-E < 1.0 and absolute value of contrast < 0.02 applies.

All analysis for Class I visibility impacts must include all visibility impairing emissions. This means that even if a facility is only considered significant for one pollutant, all pollutants that may contribute to impairment must be modeled together. Since visibility is an instantaneous value, short term (24 hour or shorter) emission maximums are used.

Level-1 Near Field Screening

Conducting a complete refined plume blight analysis can become rather complex so three levels of evaluation are available to an applicant. The first, Level-1 screening, is the simplest and most conservative method. As described in the EPA VISCREEN manual (*Workbook for Visual Impact Screening and Analysis (Revised)*, EPA-450/R-92-023, 1992):

> *Level-1 Screening:*
> *Level-1 screening is designed to provide a conservative estimate of plume visual impacts (i.e., impacts that would be larger than those calculated with more realistic input and modeling assumptions). This conservatism is achieved by the use within the screening model VISCREEN of worst-case meteorological conditions: extremely stable (F) atmospheric condition, coupled with a very low wind speed (1 m/s) persisting for 12 hours, with a wind that would transport the plume directly adjacent to the observer (as shown schematically in Figure 7).*

Since little project specific information is used for a Level-1 screening analysis, documentation requirements are minimal. Basic information of emissions, meteorological parameters, and model results should be provided. Applicants are encouraged to supply electronic copies of all files necessary to reproduce the results. If an application shows estimated impact values within the thresholds, it is unlikely that additional evaluation will be necessary.

Level-2 Near Field Screening

If Level-2 screening is necessary, project specific information is now incorporated. Actual meteorology from the area and emission characteristics of the facility are used. Again, as described in the EPA VISCREEN manual:

> *Level-2 Screening:*
> *As shown in Figure 1, Level-2 plume visual impact screening is done if the Level-1 results exceed the screening criteria. The objective of Level-2 screening is identical to that of Level-1—the estimation of worst-day plume visual impacts—but in Level-2 screening more realistic (less conservative) input, representative of the given source and the Class I area, is provided. This situation-specific input may include particle size distributions for plume and background that are different from those used in the default Level-1 analysis. Median background visual range based on on-site measurements rather than the map shown in Figure 9 might be used. However, the*

most important potential difference in input between Level-1 and Level-2 analysis centers on meteorology and plume transport and dispersion patterns. While the Level-1 analysis assumes F stability, a 1 m/s wind speed, and a wind direction that would carry plume material very close to the observer, in the Level-2 analysis, meteorological data and topography representative of the source area and Class I area may suggest that worst-case plume dispersion conditions are different.

It is important to note that the FLMs have maintained the requirement for all applicants to compare estimated modeled impacts from a facility against natural conditions. This is true for all analysis levels. The use of 5 years of site representative meteorology and facility specific emission characteristics is what makes this analysis different.

As a result of the increased project specific information, documentation also must include summaries and/or tables describing the additional datasets and evaluation steps taken to conduct the analysis.

Once again, meeting screening thresholds means that it is likely that the FLM's Class I air quality modeling requirements will have been satisfied.

Level-3 Near Field Refined Analysis

A Level-3 analysis is the final assessment. An applicant can conduct a full refined analysis demonstrating estimates of frequency, magnitude, and spatial extent of a proposed project's visibility impacts. In EPA's VISCREEN manual, it says:

Level-3 Analysis:
In Level-3 analysis, the objective is broadened from conservative analysis of worst-case conditions to a realistic analysis of all conditions that would be expected to occur in a typical year in the region that includes both the emission source and the observer. Level-3 analysis is no longer considered screening because it is a comprehensive analysis of the magnitude and frequency of occurrence of plume visual impacts as observed at a sensitive Class I area vista.

It is important to determine the frequency of occurrence of visual impact because the adversity or significance of impact is dependent on how frequently an impact of a given magnitude occurs. For example, if a plume is perceptible from a Class I area a third of the time, the impact would be considered much more significant than if it were perceptible only one day per year. The assessment of frequency of occurrence of impact should be an integral part of Level-3 visual impact analysis.

As mentioned above, the threshold values for this analysis step changed. For this step, EPA's PLUVUE II model is currently recommended. One main difference with PLUVUE II is its inability to evaluate more than one hour of impact per run. Because it is customary to evaluate 5 years of site specific meteorology, it can become an extensive process. Applicants may want to develop and utilize tools to group hourly meteorological and post processing scenarios. The analysis identifies specific locations for plume/observer relationships. These observation points must be established within each potentially impacted Class I area. With each observer, potential impacts are calculated for all possible views. As with the meteorology, PLUVUE II is only able to assess one observer location per model run. Specific information on setup methods can be found in EPA's VISCREEN manual and PLUVUE II manual (*User's Manual for the Plume Visibility Model, PLUVUE II (Revised)*, EPA-454/B-92-008, 1992, and *Addendum to the User's Manual for the Plume Visibility Model, PLUVUE II (Revised)*, EPA-454/B-95-001, 1996).

Substantial documentation is needed for this significant analysis. The discussion must summarize data sources, processing methods, and modeling utilities used, and information regarding all assumptions or consolidation criteria. In short, sufficient information and electronic files should be provided to the FLM that will allow reviewers to reproduce the results.

If the estimated plume parameters exceed the aforementioned values, the FLM would rely on a case-by-case effects-based test (NPS 1993), taking into account magnitude, frequency, duration, and other factors, to decide whether to make an adverse impact determination.

3. DEPOSITION ANALYSIS OPTIONS

In your conversations with Dee Morse, you also asked about whether deposition analyses would be required, and if so, if we would need for the applicants to perform CALPUFF modeling to accomplish this. Deposition analyses for these projects are important to informing the FLM evaluation of AQRV impacts.

Generally, for sources that are more distant than 50 km from the area where impacts are being assessed, the applicant is already running the CALPUFF model to evaluate visibility impacts. In such cases, it is simple to include sulfur and nitrogen deposition directly as part of the CALPUFF analysis.

In the Quoddy Bay and Down East LNG Terminal assessments, however, the applicants will not be using CALPUFF for visibility analyses. We recommend that the applicants choose one of the following options in order to assess deposition at the FWS and NPS areas of interest:

A. AERMOD model - Quoddy Bay has indicated to you that its Class II and NAAQS analyses will utilize the AERMOD model. Sulfur and nitrogen deposition can be calculated using this model, also. It is my understanding that this model is likely to be conservative – that is, it tends to overpredict deposition because of how it handles the atmospheric chemistry effects, as compared to CALPUFF, especially over short distances.

B. CALPUFF model – the applicants always have the option to also conduct a CALPUFF analysis to address deposition. This analysis should employ three years of MM4/MM5 meteorological data or five years of National Weather Service data, and follow default regulatory settings for model options.

C. CALPUFF-Lite model – you are correct that the FLM agencies no longer recommend CALPUFF-Lite for visibility analyses. (CALPUFF-Lite, or CALPUFF in Screening Mode, refers to applying the model using single station meteorology as is used for ISCST3, and evaluating discrete receptor rings.) To be clear, *this position has not changed.* However, in this unique situation, because the projects will not otherwise require a full CALPUFF analysis for visibility, and because of the very short distances from sources to receptors, CALPUFF-Lite for assessing deposition impacts would be acceptable.

4. INDIAN COUNTRY JURISDICTION

Your e-mail identified the Quoddy Bay LNG Terminal as being, "located at the Pleasant Point Reservation of the Passamaquoddy Indian Tribe and in the Town of Perry, Maine." In general, my experience with air pollution sources located on tribal lands is that EPA holds the permitting authority until a tribe has developed its own Tribal Implementation Plan and air quality permitting program. However, I also know that in some instances tribes may enter into agreements with states such that air quality programs are carried out by the state on the tribe's behalf. I am not familiar with the relationship between Maine and the Passamaquoddy Tribe at Pleasant Point. Please explain Maine Department of Environmental Protection's jurisdiction for this air permitting action.

I hope that this has addressed the questions that you raised so far, and helps the applicants move forward to the next steps. We look forward to working with you and the companies to firm up written modeling protocols for the projects, and are happy to help with any questions you or they may have. You can reach me at 303-914-3808 and Meredith_Bond@fws.gov. Again, thank you for involving us early in the development of these projects.