

From: [Chet Myers](#)
To: [Marsh, Michael](#)
Subject: FW: Letter RE Underwater Acoustic Modeling of Explosive Rock Removal Operations
Date: Tuesday, July 16, 2013 5:43:27 PM
Attachments: [image001.jpg](#)
[image002.png](#)
[image003.png](#)
[image004.jpg](#)
[JASCO Letter.pdf](#)

Hi Mike,

FYI, Bill White forwarded over this e-mail earlier today.

I assume that Carl will distribute, but wanted you to see it before we spoke (will give you a call shortly).

Thanks,



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From: Bill White [mailto:bwhite@MassCEC.com]
Sent: Tuesday, July 16, 2013 4:56 PM
To: Eric Hines (ehines@lemessurier.com); Jay Borkland; Chet Myers
Subject: FW: Letter RE Underwater Acoustic Modeling of Explosive Rock Removal Operations

Bill White
Director, Offshore Wind Sector Development
Massachusetts Clean Energy Center
55 Summer Street, 9th Floor, Boston, MA 02110
(617) 315-9330

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From: Bill White
Sent: Tuesday, July 16, 2013 4:55 PM

To: Dierker, Carl (Dierker.Carl@epa.gov)

Cc: Alicia Barton

Subject: FW: Letter RE Underwater Acoustic Modeling of Explosive Rock Removal Operations

Carl,

Please see the attached letter from Jasco Applied Sciences and Chet Myers' note below. As you know, this is the final, critical issue and the stakes for the project schedule are enormous. Please let us know if you can provide approval as soon as possible.

Many thanks,

Bill

Bill White
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From: Chet Myers [<mailto:cmyers@apexc.com>]

Sent: Tuesday, July 16, 2013 3:00 PM

To: Bill White

Cc: Eric Hines

Subject: FW: Letter RE Underwater Acoustic Modeling of Explosive Rock Removal Operations

Hi Bill,

As you know, MassCEC has protested Condition #7 of EPA's June 13, 2013 letter, which limits the total weight of explosive charges per shot used within blasting operations at the New Bedford Marine Commerce Terminal to 50 pounds, as such a restriction is infeasible.

Explosive use is typically applied with limits "per delay" rather than "per shot" as the "peak pressure" and "peak impulse", which are the two factors that are indicative of fish mortality and injury, can be minimized by keeping successive pressure (or successive impulse) waves from overlapping via the use of "delays" (tiny breaks between blast actuation times). As the blast waves travel very quickly, the "delays" are also very short, typically measured in milliseconds.

For the purposes of the model produced by JASCO Applied Sciences, the controlling "peak pressure" and "peak impulse" used as a basis of comparison were 75.6 psi and 18.4 psi-msec, respectively, which were derived from experimental results generated (and forwarded to Apex prior to the start of modeling in 2012) by NMFS. NMFS indicated that if the "peak pressure" and

“peak impulse” of the charges could be kept below these factors, then there should be no injury and/or mortality outside of the area of impact. Please note that the NMFS experimental data was gathered via testing on shortnose sturgeon and was intended to be predictive of whether mortality and/or injury would occur to Atlantic Sturgeon.

EPA has been requesting written confirmation that the model produced by JASCO Applied Sciences, Inc. is applicable to a “charge per delay” use of explosives.

We have been working over the past few weeks to re-engage JASCO, with whom we have previously had some contractual issues. Although we are still having contractual issues with JASCO, they were kind enough to issue this clarification letter last Friday.

The letter stipulates that the modeling conducted by JASCO is applicable to “charge weights per delay” in addition to single charges. Essentially, this means that the “peak pressure” and “peak impulse” levels will not change if there is one or multiple blasts, so long as the minimum delay is utilized.

Although JASCO acknowledges that the “peak pressure” and “peak impulse” waves last no more than a few milliseconds, JASCO recommends a minimum delay of 25 milliseconds, which is consistent with the 25 millisecond delay also used by NMFS within their study.

Thanks,



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From: Marie-Noel Matthews [<mailto:Marie-Noel.Matthews@jasco.com>]
Sent: Friday, July 12, 2013 3:14 PM
To: Chet Myers
Cc: Jay Borkland; Roberto Racca; David Hannay; Scott Carr
Subject: Letter RE Underwater Acoustic Modeling of Explosive Rock Removal Operations

Chet,

Following our phone conversation on modeled results for explosive rock removal operations, I have attached the letter you requested.

If, after you read this letter, you have any concerns or questions, please don't hesitate to contact me.

Regards,

Marie-Noël R. Matthews
Project Scientist

JASCO APPLIED SCIENCES (Canada) Ltd.

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